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### Sample records for katrina wind investigation

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#### 1. [Hurricane Katrina Wind Investigation Report](#)

[DOE Office of Scientific and Technical Information \(OSTI.GOV\)](#)

Desjarlais, A. O.

This investigation of roof damage caused by Hurricane Katrina is a joint effort of the Roofing Industry Committee on Weather Issues, Inc. (RICOWI) and the Oak Ridge National Laboratory/U.S. Department of Energy (ORNL/DOE). The Wind Investigation Program (WIP) was initiated in 1996. Hurricane damage that met the criteria of a major windstorm event did not materialize until Hurricanes Charley and Ivan occurred in August 2004. Hurricane Katrina presented a third opportunity for a wind damage investigation in August 29, 2005. The major objectives of the WIP are as follows: (1) to investigate the field performance of roofing assemblies after majormore wind events; (2) to factually describe roofing assembly performance and modes of failure; and (3) to formally report results of the investigations and damage modes for substantial wind speeds The goal of the WIP is to perform unbiased, detailed investigations by credible personnel from the roofing industry, the insurance industry, and academia. Data from these investigations will, it is hoped, lead to overall improvement in roofing products, systems, roofing application, and durability and a reduction in losses, which may lead to lower overall costs to the public. This report documents the results of an extensive and well-planned investigative effort. The following program changes were implemented as a result of the lessons learned during the Hurricane Charley and Ivan investigations: (1) A logistics team was deployed

to damage areas immediately following landfall; (2) Aerial surveillance—imperative to target wind damage areas—was conducted; (3) Investigation teams were in place within 8 days; (4) Teams collected more detailed data; and (5) Teams took improved photographs and completed more detailed photo logs. Participating associations reviewed the results and lessons learned from the previous investigations and many have taken the following actions: (1) Moved forward with recommendations for new installation

## 2. [Hurricane Katrina winds damaged longleaf pine less than loblolly pine](#)

### [Treesearch](#)

Kurt H. Johnsen; John R. Butnor; John S. Kush; Ronald C. Schmidting; C. Dana Nelson

2009-01-01

Some evidence suggests that longleaf pine might be more tolerant of high winds than either slash pine (*Pinus elliotii* Englem.) or loblolly pine (*Pinus taeda* L.). We studied wind damage to these three pine species in a common garden experiment in southeast Mississippi following Hurricane Katrina,...

## 3. [Gone with the Wind? Integrity and Hurricane Katrina](#)

### [ERIC Educational Resources Information Center](#)

Lucas, Frances; Katz, Brit

2011-01-01

Hurricane Katrina slammed into 80 miles of Mississippi shoreline on August 29, 2005. It was the nation's worst natural disaster, a perfect storm. One hundred sixty miles-per-hour winds sent 55-foot-tall waves and a 30-foot wall of water across the shore and miles inland. It displaced 400,000 residents along the coast of the Mississippi, and

## 4. [Evaluation of Vertically Resolved Water Winds from AIRS using Hurricane Katrina](#)

### [NASA Technical Reports Server \(NTRS\)](#)

Aumann, Hartmut H.; Dobkowski, Edwin C.; Gregorich, David T.

2005-01-01

The knowledge of wind velocity as a function of altitude is key to weather forecast improvements. The ability of hyperspectral sounders in principle to measure vertically resolved water winds, which has long been recognized, has been tested with Atmospheric Infrared Sounder (AIRS) data. AIRS retrievals of total column water above 300 mb have been correlated with the radiosonde upper-tropospheric wind velocity and moisture data. The excellent correlation is illustrated with results obtained from

hurricane Katrina and from the western United States. AIRS is a hyperspectral infrared sounder in low Earth orbit. It was launched in May 2002. We illustrate the use of AIRS data for the measurement of upper tropospheric water by using the 2387/cm CO<sub>2</sub> R-branch channel and the 1551/cm water vapor channel. The 2387/cm channel measures the temperature at 300 mb totally independent of water vapor. The weighting function of the 1551/cm channel peaks at 300 mb only under moist conditions; the peak shifts downward (higher temperature) for less water and upward (lower temperature) for more water. The difference between the brightness temperatures bt<sub>2387</sub> and bt<sub>1551</sub> cancels the local several degree weather related variability of the temperature and measures the component due to the water vapor at 300 mb.

## 5. [Child mortality after Hurricane Katrina.](#)

[PubMed](#)

Kanter, Robert K

2010-03-01

Age-specific pediatric health consequences of community disruption after Hurricane Katrina have not been analyzed. Post-Katrina vital statistics are unavailable. The objectives of this study were to validate an alternative method to estimate child mortality rates in the greater New Orleans area and compare pre-Katrina and post-Katrina mortality rates. Pre-Katrina 2004 child mortality was estimated from death reports in the local daily newspaper and validated by comparison with pre-Katrina data from the Louisiana Department of Health. Post-Katrina child mortality rates were analyzed as a measure of health consequences. Newspaper-derived estimates of mortality rates appear to be valid except for possible underreporting of neonatal rates. Pre-Katrina and post-Katrina mortality rates were similar for all age groups except infants. Post-Katrina, a 92% decline in mortality rate occurred for neonates (<28 days), and a 57% decline in mortality rate occurred for postneonatal infants (28 days-1 year). The post-Katrina decline in infant mortality rate exceeds the pre-Katrina discrepancy between newspaper-derived and Department of Health-reported rates. A declining infant mortality rate raises questions about persistent displacement of high-risk infants out of the region. Otherwise, there is no evidence of long-lasting post-Katrina excess child mortality. Further investigation of demographic changes would be of interest to local decision makers and planners for recovery after public health emergencies in other regions.

## 6. [Surviving Hurricane Katrina: Winds of Change Transform a New Orleans Addiction Treatment Agency](#)

[ERIC Educational Resources Information Center](#)

Toriello, Paul J.; Pedersen-Wasson, Else; Crisham, Erin M.; Ellis, Robert; Morse, Patricia; Morse, Edward V.

2007-01-01

Hurricane Katrina's impact on the operations of the largest residential, addiction treatment organization in New Orleans is described. Pre- and post-Katrina experiences are discussed and augmented with organizational performance data. Suggestions for future research are provided. (Contains 4 figures.)

## 7. Mortality associated with Hurricane Katrina—Florida and Alabama, August–October 2005.

[PubMed](#)

2006-03-10

On August 25, 2005, Hurricane Katrina made landfall between Hallandale Beach and Aventura, Florida, as a Category 1 hurricane, with sustained winds of 80 mph. Storm effects, primarily rain, flooding, and high winds, were substantial; certain areas reported nearly 12 inches of rainfall. After crossing southern Florida and entering the Gulf of Mexico, the hurricane strengthened and made landfall in southeastern Louisiana on August 29 as a Category 3 hurricane, with sustained winds of 125 mph. Katrina was one of the strongest hurricanes to strike the United States during the past 100 years and was likely the nation's costliest natural disaster to date. This report summarizes findings and recommendations from a review of mortality records of Florida's Medical Examiners Commission (FMEC) and the Alabama Department of Forensic Science (ADFS). CDC was invited by the Florida Department of Health (FDOH) and the Alabama Department of Public Health (ADPH) to assess the mortality related to Hurricane Katrina. The mortality review was intended to provide county-based information that would be used to 1) define the impact of the hurricane, 2) describe the etiology of deaths, and 3) identify strategies to prevent or reduce future hurricane-related mortality. Combined, both agencies identified five, 23, and 10 deaths, respectively, that were directly, indirectly, or possibly related to Hurricane Katrina. Information from the characterization of these deaths will be used to reduce hurricane-related mortality through early community awareness of hurricane-related risk, prevention measures, and effective communication of a coordinated hurricane response plan.

## 8. Large-scale Vertical Motions, Intensity Change and Precipitation Associated with Land falling Hurricane Katrina over the Gulf of Mexico

[NASA Astrophysics Data System \(ADS\)](#)

Reddy, S. R.; Kwembe, T.; Zhang, Z.

2016-12-01

We investigated the possible relationship between the large-scale heat fluxes and intensity change associated with the landfall of Hurricane Katrina. After reaching the category 5 intensity on August 28th, 2005 over the central Gulf of Mexico, Katrina weakened to category 3 before making landfall (August 29th, 2005) on the Louisiana coast with the maximum sustained winds of over 110 knots. We also examined the vertical motions associated with the intensity change of the hurricane. The data for

Convective Available Potential Energy for water vapor (CAPE), sea level pressure and wind speed were obtained from the Atmospheric Soundings, and NOAA National Hurricane Center (NHC), respectively for the period August 24 to September 3, 2005. We also computed vertical motions using CAPE values. The study showed that the large-scale heat fluxes reached maximum (7960W/m<sup>2</sup>) with the central pressure 905mb. The Convective Available Potential Energy and the vertical motions peaked 3-5 days before landfall. The large atmospheric vertical motions associated with the land falling hurricane Katrina produced severe weather including thunderstorm, tornadoes, storm surge and floods. Numerical model (WRF/ARW) with data assimilations have been used for this research to investigate the model's performances on hurricane tracks and intensities associated with the hurricane Katrina, which began to strengthen until reaching Category 5 on 28 August 2005. The model was run on a doubly nested domain centered over the central Gulf of Mexico, with grid spacing of 90 km and 30 km for 6 hr periods, from August 28th to August 30th. The model output was compared with the observations and is capable of simulating the surface features, intensity change and track associated with hurricane Katrina.

## 9. Effects of Hurricane Katrina on the forest structure of taxodium distichum swamps of the Gulf Coast, USA

[USGS Publications Warehouse](#)

Middleton, B.A.

2009-01-01

Hurricane Katrina pushed mixed *Taxodium distichum* forests toward a dominance of *Taxodium distichum* (baldcypress) and *Nyssa aquatica* (water tupelo) because these species had lower levels of susceptibility to wind damage than other woody species. This study documents the volume of dead versus live material of woody trees and shrubs of *T. distichum* swamps following Hurricane Katrina along the Gulf Coast of Mississippi and Louisiana. Pearl River Wildlife Management Area near Canton, Mississippi had the highest winds of the study areas, and these forests were located in the northeast quadrant of Hurricane Katrina (sustained wind 151 kph (94 mph)). Jean Lafitte National Historical Park and Preserve south of New Orleans had medium to high winds (sustained winds 111 kph (69 mph) at the New Orleans lakefront). Cat Island National Wildlife Refuge had a lower level of winds and was positioned on the western edge of the storm. The forests at Pearl River and to a lesser extent at Jean Lafitte had the highest amount of structural damage in the study. For Cat Island, Jean Lafitte, and Pearl River, the total volume of dead material (debris) was 50, 80, and 370 m<sup>3</sup> ha<sup>-1</sup>, respectively. The ratio of dead to live volume was 0.010, 0.082, and 0.039, respectively. For both of the dominant species, *T. distichum* and *N. aquatica*, the percentage of dead to live volume was less than 1. Subdominant species including *Acer rubrum*, *Liquidambar styraciflua*, *Quercus lyrata*, and *Quercus nigra* were more damaged by the storm at both Pearl River and Jean Lafitte. Only branches were damaged by Hurricane Katrina at Cat Island. Shrubs such as *Morella cerifera*, *Euonymus* sp., and *Vaccinium* sp. were often killed by the storm, while other species such as *Cephalanthus occidentalis*,

Forestiera acuminata, and Cornus florida were not killed. Despite the fact that Hurricane Katrina was a Category 3 storm and struck Pearl River and Jean Lafitte fairly directly, dominant species of the T. distichum swamps were

## 10. [Mental illness and suicidality after Hurricane Katrina.](#)

[PubMed Central](#)

Kessler, Ronald C.; Galea, Sandro; Jones, Russell T.; Parker, Holly A.

2006-01-01

**OBJECTIVE:** To estimate the impact of Hurricane Katrina on mental illness and suicidality by comparing results of a post-Katrina survey with those of an earlier survey. **METHODS:** The National Comorbidity Survey-Replication, conducted between February 2001 and February 2003, interviewed 826 adults in the Census Divisions later affected by Hurricane Katrina. The post-Katrina survey interviewed a new sample of 1043 adults who lived in the same area before the hurricane. Identical questions were asked about mental illness and suicidality. The post-Katrina survey also assessed several dimensions of personal growth that resulted from the trauma (for example, increased closeness to a loved one, increased religiosity). Outcome measures used were the K6 screening scale of serious mental illness and mild-moderate mental illness and questions about suicidal ideation, plans and attempts. **FINDINGS:** Respondents to the post-Katrina survey had a significantly higher estimated prevalence of serious mental illness than respondents to the earlier survey (11.3% after Katrina versus 6.1% before;  $\chi^2(2) = 10.9$ ;  $P < 0.001$ ) and mild-moderate mental illness (19.9% after Katrina versus 9.7% before;  $\chi^2(2) = 22.5$ ;  $P < 0.001$ ). Among respondents estimated to have mental illness, though, the prevalence of suicidal ideation and plans was significantly lower in the post-Katrina survey (suicidal ideation 0.7% after Katrina versus 8.4% before;  $\chi^2(2) = 13.1$ ;  $P < 0.001$ ; plans for suicide 0.4% after Katrina versus 3.6% before;  $\chi^2(2) = 6.0$ ;  $P = 0.014$ ). This lower conditional prevalence of suicidality was strongly related to two dimensions of personal growth after the trauma (faith in one's own ability to rebuild one's life, and realization of inner strength), without which between-survey differences in suicidality were insignificant. **CONCLUSION:** Despite the estimated prevalence of mental illness doubling after Hurricane Katrina, the prevalence of suicidality was unexpectedly low. The role of post

## 11. [Hurricane Katrina](#)

[Atmospheric Science Data Center](#)

2013-01-08

... Mississippi regions were acquired before and one day after Katrina made landfall along the Gulf of Mexico coast, and highlight many of the ...

[http://eosweb.larc.nasa.gov/HPDOCS/misr/misr\\_html/hurricane\\_katrina\\_flood.html](http://eosweb.larc.nasa.gov/HPDOCS/misr/misr_html/hurricane_katrina_flood.html) ...

## 12. [Some Studies in Large-Scale Surface Fluxes and Vertical Motions Associated with Land falling Hurricane Katrina over the Gulf of Mexico](#)

[NASA Astrophysics Data System \(ADS\)](#)

Reddy, S. R.

2010-12-01

We investigated the possible relationship between the large-scale heat fluxes and intensity change associated with the landfall of Hurricane Katrina. After reaching the category 5 intensity on August 28th, 2005 over the central Gulf of Mexico, Katrina weakened to category 3 before making landfall (August 29th, 2005) on the Louisiana coast with the maximum sustained winds of over 110 knots. We also examined the vertical motions associated with the intensity change of the hurricane. The data on Convective Available Potential Energy (CAPE), sea level pressure and wind speed were obtained from the Atmospheric Soundings, and NOAA National Hurricane Center (NHC), respectively for the period August 24 to September 3, 2005. We developed an empirical model and a C++ program to calculate surface potential temperatures and heat fluxes using the above data. We also computed vertical motions using CAPE values. The study showed that the large-scale heat fluxes reached maximum (7960W/m<sup>2</sup>) with the central pressure 905mb. The Convective Available Potential Energy and the vertical motions peaked 3-5 days before landfall. The large atmospheric vertical motions associated with the land falling hurricane Katrina produced severe weather including thunderstorms and tornadoes.

## 13. [ENVIRONMENTAL CONDITIONS IN NORTHERN GULF OF MEXICO COASTAL WATERS FOLLOWING HURRICANE KATRINA](#)

[EPA Science Inventory](#)

On the morning of August 29, 2005 Hurricane Katrina struck the coast of Louisiana, between New Orleans and Biloxi, Mississippi, as a strong category three hurricane on the Saffir-Simpson scale. The massive winds and flooding had the potential for a tremendous environmental impac...

## 14. [Tropical Storm Katrina](#)

[Atmospheric Science Data Center](#)

2014-05-15

... Cloud Spirals and Outflow in Tropical Storm Katrina  ... time Katrina was weakening and no longer classified as a hurricane, and would soon become an extratropical depression. Measurements such ...

## 15. [Upper Ocean Response to Hurricanes Katrina and Rita \(2005\) from Multi-sensor Satellites](#)

[NASA Astrophysics Data System \(ADS\)](#)

Gierach, M. M.; Bulusu, S.

2006-12-01

Analysis of satellite observations and model simulations of the mixed layer provided an opportunity to assess the biological and physical effects of hurricanes Katrina and Rita (2005) in the Gulf of Mexico. Oceanic cyclonic circulation was intensified by the hurricanes' wind field, maximizing upwelling, surface cooling, and deepening the mixed layer. Two areas of maximum surface chlorophyll-a concentration and sea surface cooling were detected with peak intensities ranging from 2-3 mg m<sup>-3</sup> and 4-6°C, along the tracks of Katrina and Rita. The temperature of the mixed layer cooled approximately 2°C and the depth of the mixed layer deepened by approximately 33-52 m. The forced deepening of the mixed layer injected nutrients into the euphotic zone, generating phytoplankton blooms 3-5 days after the passage of Katrina and Rita (2005).

16. [The Impacts of Aerosols on Hurricane Katrina under the Effect of Air-Sea Coupling](#)[NASA Astrophysics Data System \(ADS\)](#)

Lin, Y.; Hsieh, J. S.; Wang, Y.; Zhang, R.

2017-12-01

Aerosols can affect the development of tropical cyclones, which often involve intense interactions with the ocean. Therefore, the impacts of aerosols on the tropical cyclones are reckoned closely associated with the effect of ocean feedback, a priori, which has often been omitted by most of the previous modeling studies about the aerosol effects on tropical cyclones. We investigate the synergetic effects of aerosols and ocean feedback on the development of hurricane Katrina using a convection-resolving coupled regional model (WRF-ROMS). In comparison with observations, our coupled simulation under pristine aerosol condition well captures the pressure drop near the center of Katrina with maximum mean sea level pressure in good agreement with the observation albeit the simulated maximal wind speed is relatively weaker than the observation. Preliminary results suggest that the ocean feedback tends to work with (against) aerosols to suppress (enhance) the hurricane's center pressure drop/maximum wind intensity at the developing (decaying) stage, suggesting a positive (negative) feedback to the aerosols' suppression effect on hurricanes. Moreover, the size of the simulated hurricane considerably expands due to the elevated polluted aerosols while the expansion is weakened, along with the increased precipitation, by the effect of air-sea interactions during the developing stage, which demonstrates intricate nonlinear interactions between aerosols, the hurricane and the ocean.

17. ["Keeping it Real -High School Science Curriculum"- Hurricane Katrina and BP Oil Spill inspire creative curriculum by Dave Jungblut, Oakcrest High School Science Teacher, Mays Landing, NJ](#)

## [NASA Astrophysics Data System \(ADS\)](#)

Jungblut, D.

2011-12-01

After Hurricane Katrina devastated Gulf Coast homes in 2005, Oakcrest High School science teacher and geologist, Dave Jungblut, traveled from Gulfport to Ocean Springs, Mississippi and conducted research to determine whether property damage was caused by wind or water. Jungblut wrote several studies, " Katrina Straight- Line Wind Field Study", "Applying Research to Practical Use for Hurricane Katrina Homeowners", and "Hurricane Katrina Wind Study" proving wind damage. Jungblut's research, done pro bono, helped thousands of homeowner's in the Mississippi area be reimbursed by insurance companies for wind damage caused by Hurricane Katrina <http://www.hurricanekatrinastudy.com/> Jungblut incorporated his extensive data, in a high school curriculum that is now part of the science program he teaches each year. In January 2010, Jungblut presented "Hurricane Forensics" curriculum at the Rutgers Center for Mathematics, Science and Computer January 2009 Workshop <http://www.dimacs.rutgers.edu/wst/>. Through labs and creative hands-on activities, Jungblut challenged his students to analyze the photographic evidence, and data he collected, for themselves. Jungblut taught his students how to use geologic and forensic inquiry techniques to discover the difference between straight-line winds from microburst activity. The students applied the concept of the Geological Principle of Relative Dating, to determine the sequence of events that happened during Hurricane Katrina. They built model structures, which were subjected to wind and water forces to better understand the effects of these phenomena, Finally, the students evaluated local and worldwide environmental issues, such as land use risks and benefits, in the face of global warming, In the spring of 2010 when the BP Oil Spill occurred, Jungblut realized, another opportunity to bring real world issues into the classroom. After exploring scientific concepts relating to this environmental crisis, Jungblut challenged his students to

### 18. [Retention of Displaced Students after Hurricanes Katrina and Rita](#)

[ERIC Educational Resources Information Center](#)

Coco, Joshua Christian

2017-01-01

The purpose of the study was to investigate the strategies that university leaders implemented to improve retention of displaced students in the aftermaths of Hurricanes Katrina and Rita. The universities that participated in this study admitted displaced students after Hurricanes Katrina and Rita. This study utilized a qualitative

### 19. [Katrina: macro-ethical issues for engineers.](#)

[PubMed](#)

Newberry, Byron

2010-09-01

Hurricane Katrina was one of the worst disasters in United States history. Failures within New Orleans' engineered hurricane protection system (levees and floodwalls) contributed to the severity of the event and have drawn considerable public attention. In the time since Katrina, forensic investigations have uncovered a range of issues and problems related to the engineering work. In this article, my goal is to distill from these investigations, and the related literature that has accumulated, some overarching macro-ethical issues that are relevant for all engineers. I attempt to frame these issues, using illustrative examples taken from Katrina, in a way that might be of pedagogical use and benefit for engineering educators interested in engaging their students in discussions of engineering ethics, societal impact of engineered systems, engineering design, or related topics. Some of the issues discussed are problems of unanticipated failure modes, faulty assumptions, lack or misuse of information, the importance of resiliency, the effects of time, balancing competing interests, attending to the details of interfaces, the fickleness of risk perception, and how the past constrains the present.

## 20. [Status of Mississippi gulf coast Live Oak trees after Hurricane Katrina](#)

[Treesearch](#)

Julie Ann Dobbs; David W. Held; Nebeker T. Evan

2006-01-01

Live oak trees, *Quercus virginiana*, have long been considered to be the symbol of the Old South. Part of the attraction of the Atlantic and Gulf Coasts is the stately live oaks. These majestic live oaks have weathered many hurricanes in their >200 yr life span. Most recently, on 29 August 2005 Hurricane Katrina, with sustained winds exceeding 160...

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## 21. [Assessing Hurricane Katrina Damage to the Mississippi Gulf Coast Using IKONOS Imagery](#)

[NASA Technical Reports Server \(NTRS\)](#)

Spruce, Joseph P.; McKellip, Rodney

2007-01-01

Hurricane Katrina hit southwestern Mississippi on August 29, 2005, at 10 a.m. CDT as a category 3 event with storm surges up to approximately 9 m and sustained winds of approximately 120 mph. The hurricane ravaged several coastal towns, destroying or severely damaging hundreds of homes. Hurricane Katrina deposited millions of tons of debris and caused severe damage to coastal forests. In response, several Federal agencies have been using a broad range of remotely sensed data (e.g., IKONOS) to aid damage assessment and disaster recovery efforts. This presentation discusses an effort to use IKONOS data for damage assessment, based on data collected over southwestern coastal Mississippi on September 2, 2005.

## 22. [Simulations of Hurricane Katrina \(2005\) with the 0.125 degree finite-volume General Circulation Model on the NASA Columbia Supercomputer](#)

[NASA Technical Reports Server \(NTRS\)](#)

Shen, B.-W.; Atlas, R.; Reale, O.; Lin, S.-J.; Chern, J.-D.; Chang, J.; Henze, C.

2006-01-01

Hurricane Katrina was the sixth most intense hurricane in the Atlantic. Katrina's forecast poses major challenges, the most important of which is its rapid intensification. Hurricane intensity forecast with General Circulation Models (GCMs) is difficult because of their coarse resolution. In this article, six 5-day simulations with the ultra-high resolution finite-volume GCM are conducted on the NASA Columbia supercomputer to show the effects of increased resolution on the intensity predictions of Katrina. It is found that the 0.125 degree runs give comparable tracks to the 0.25 degree, but provide better intensity forecasts, bringing the center pressure much closer to observations with differences of only plus or minus 12 hPa. In the runs initialized at 1200 UTC 25 AUG, the 0.125 degree simulates a more realistic intensification rate and better near-eye wind distributions. Moreover, the first global 0.125 degree simulation without convection parameterization (CP) produces even better intensity evolution and near-eye winds than the control run with CP.

## 23. [Fuels management on the National Forests in Mississippi after Hurricane Katrina](#)

[Treesearch](#)

Danny Bryant; Jay Boykin

2007-01-01

On August 29, 2005, Hurricane Katrina made landfall in southern Mississippi. As the storm passed through Mississippi, it maintained hurricane force winds through the northern part of the State affecting all of the Forests. The eye of the storm passed within a few miles of the De Soto Ranger District, the Forest's southern-most district. Much of the District received...

24. [Recovering from Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Coleman, Nadine

2006-01-01

The Gulf Coast region suffered an unusually severe hurricane season in 2005: Hurricane Katrina (August 28-29, 2005) devastated much of southern Mississippi and Louisiana. Approximately 2,700 licensed early care and education facilities in those states and in Alabama were affected by Katrina, in addition to an unknown number of family child care

25. [Lessons Learned from a Bout with Hurricane Katrina: The Delgado College Community Story](#)

[ERIC Educational Resources Information Center](#)

Johnson, Alex B.; Nolan, Gayle; Siegrist, Cynthia

2006-01-01

When Hurricane Katrina struck the Gulf Coast on August 29, 2005, it inflicted wind and flooding damage on all but one of the five campuses and centers of Delgado Community College, the oldest and largest two-year institution in Louisiana. Hardest hit was Delgado's main location, the City Park Campus in New Orleans, where three to six feet of flood

26. [The Chaos of Katrina](#)

[DTIC Science & Technology](#)

2007-03-01

partners for their mutual benefit. Unfortunately, based on government reports, FEMA did not have adequate control of its supply chain information ...is one attractor . "Edge of chaos" systems have two to eight attractors and in chaotic systems many attractors . Some are called strange

attractors ...investigates whether chaos theory, part of complexity science, can extract information from Katrina contracting data to help managers make better logistics

## 27. [DRUG MARKET RECONSTITUTION AFTER HURRICANE KATRINA: LESSONS FOR LOCAL DRUG ABUSE CONTROL INITIATIVES](#)

[PubMed Central](#)

Bennett, Alex S.; Golub, Andrew; Dunlap, Eloise

2011-01-01

Hurricane Katrina accomplished what no law enforcement initiative could ever achieve: It completely eradicated the New Orleans drug market. However, Katrina did little to eliminate the demand for drugs. This article documents the process of the drug market reconstitution that occurred 2005–2008 based on in-depth interviews and focus groups with predominately low-income drug users and sellers. Before Katrina, the drug market was largely characterized by socially-bonded participants involved with corporate style distribution. After Katrina, a violent freelance market emerged. The conclusion draws recommendations for law enforcement for dealing with drug markets after a major disaster. This article uses New Orleans as a case study to chart the process of drug market reconstitution following an extreme disaster, namely Hurricane Katrina. On August 29, 2005, Hurricane Katrina made landfall and engulfed the New Orleans area, overwhelming levees and causing extensive flooding and destruction across the city. The storm generated 30- to 40-foot waves, which demolished many cities and small towns in Southern Mississippi and Alabama and caused considerable wind damage further inland. Although the hurricane eye missed central New Orleans by about 30 miles, the wave action in Lake Pontchartrain caused several levees to break and flood most of eastern New Orleans, which was under sea level. The storm had an impact on practically all New Orleans residents and almost destroyed New Orleans (Cooper & Block, 2006; Levitt & Whitaker, 2009; Lee, 2006). Our research focused on the impact of this storm on the drug markets in New Orleans. Katrina destroyed the physical environment and organizational structure that sustained the drug trade, yet drug use and sales did not disappear. During and soon after the storm, improvised sales and distribution organizations provided a wide range of illicit drugs to users (see Dunlap, Johnson, Kotarba, & Fackler, 2009; Dunlap & Golub, 2010; Dunlap

## 28. [Hurricane Katrina deaths, Louisiana, 2005.](#)

[PubMed](#)

Brunkard, Joan; Namulanda, Gonza; Ratard, Raoult

2008-12-01

Hurricane Katrina struck the US Gulf Coast on August 29, 2005, causing unprecedented damage to numerous communities in Louisiana and Mississippi. Our objectives were to verify, document, and

characterize Katrina-related mortality in Louisiana and help identify strategies to reduce mortality in future disasters. We assessed Hurricane Katrina mortality data sources received in 2007, including Louisiana and out-of-state death certificates for deaths occurring from August 27 to October 31, 2005, and the Disaster Mortuary Operational Response Team's confirmed victims' database. We calculated age-, race-, and sex-specific mortality rates for Orleans, St Bernard, and Jefferson Parishes, where 95% of Katrina victims resided and conducted stratified analyses by parish of residence to compare differences between observed proportions of victim demographic characteristics and expected values based on 2000 US Census data, using Pearson chi square and Fisher exact tests. We identified 971 Katrina-related deaths in Louisiana and 15 deaths among Katrina evacuees in other states. Drowning (40%), injury and trauma (25%), and heart conditions (11%) were the major causes of death among Louisiana victims. Forty-nine percent of victims were people 75 years old and older. Fifty-three percent of victims were men; 51% were black; and 42% were white. In Orleans Parish, the mortality rate among blacks was 1.7 to 4 times higher than that among whites for all people 18 years old and older. People 75 years old and older were significantly more likely to be storm victims ( $P < .0001$ ). Hurricane Katrina was the deadliest hurricane to strike the US Gulf Coast since 1928. Drowning was the major cause of death and people 75 years old and older were the most affected population cohort. Future disaster preparedness efforts must focus on evacuating and caring for vulnerable populations, including those in hospitals, long-term care facilities, and personal residences. Improving mortality reporting

## 29. [Hurricane Katrina as a "teachable moment"](#)

### [NASA Astrophysics Data System \(ADS\)](#)

Glantz, M. H.

2008-04-01

By American standards, New Orleans is a very old, very popular city in the southern part of the United States. It is located in Louisiana at the mouth of the Mississippi River, a river which drains about 40% of the Continental United States, making New Orleans a major port city. It is also located in an area of major oil reserves onshore, as well as offshore, in the Gulf of Mexico. Most people know New Orleans as a tourist hotspot; especially well-known is the Mardi Gras season at the beginning of Lent. People refer to the city as the "Big Easy". A recent biography of the city refers to it as the place where the emergence of modern tourism began. A multicultural city with a heavy French influence, it was part of the Louisiana Purchase from France in early 1803, when the United States bought it, doubling the size of the United States at that time. Today, in the year 2007, New Orleans is now known for the devastating impacts it withstood during the onslaught of Hurricane Katrina in late August 2005. Eighty percent of the city was submerged under flood waters. Almost two years have passed, and many individuals and government agencies are still coping with the hurricane's consequences. And insurance companies have been withdrawing their coverage for the region. The 2005 hurricane season set a record, in the sense that there were 28 named storms that calendar year. For the first time in

hurricane forecast history, hurricane forecasters had to resort to the use of Greek letters to name tropical storms in the Atlantic and Gulf (Fig.~1). Hurricane Katrina was a Category 5 hurricane when it was in the middle of the Gulf of Mexico, after having passed across southern Florida. At landfall, Katrina's winds decreased in speed and it was relabeled as a Category 4. It devolved into a Category 3 hurricane as it passed inland when it did most of its damage. Large expanses of the city were inundated, many parts under water on the order of 20 feet or so. The Ninth Ward, heavily

### 30. [Investigation of Wind Turbine Rotor Concepts for Offshore Wind Farms](#)

[NASA Astrophysics Data System \(ADS\)](#)

Ceyhan, Ã-zlem; Grasso, Francesco

2014-06-01

Current plans in offshore wind energy developments call for further reduction of cost of energy. In order to contribute to this goal, several wind turbine rotor concepts have been investigated. Assuming the future offshore wind turbines will operate only in the offshore wind farms, the rotor concepts are not only evaluated for their stand-alone performances and their potential in reducing the loads, but also for their performance in an offshore wind farm. In order to do that, the 10MW reference wind turbine designed in Innwind.EU project is chosen as baseline. Several rotor parameters have been modified and their influences are investigated for offshore wind turbine design purposes. This investigation is carried out as a conceptual parametrical study. All concepts are evaluated numerically with BOT (Blade optimisation tool) software in wind turbine level and with Farmflow software in wind farm level for two wind farm layouts. At the end, all these concepts are compared with each other in terms of their advantages and disadvantages.

### 31. [Hurricane Forecasts with a Global Mesoscale-resolving Model on the NASA Columbia Supercomputer Preliminary Simulations of Hurricane Katrina \(2005\)](#)

[NASA Technical Reports Server \(NTRS\)](#)

Shen, B.-W.; Atlas, R.; Reale, O.; Chern, J.-D.; Li, S.-J.; Lee, T.; Chang, J.; Henze, C.; Yeh, K.-S.

2006-01-01

It is known that the General Circulation Models (GCMs) have sufficient resolution to accurately simulate hurricane near-eye structure and intensity. To overcome this limitation, the mesoscale-resolving finite-element GCM (fvGCM) has been experimentally deployed on the NASA Columbia supercomputer, and its performance is evaluated choosing hurricane Katrina as an example in this study. On late August 2005 Katrina underwent two stages of rapid intensification and became the sixth most intense hurricane in the Atlantic. Six 5-day simulations of Katrina at both 0.25 deg and 0.125 deg show comparable track forecasts, but the 0.125 deg runs provide much better intensity forecasts, producing center pressure with errors of only +/- 12 hPa. The 0.125 deg simulates better

near-eye wind distributions and a more realistic average intensification rate. A convection parameterization (CP) is one of the major limitations in a GCM, the 0.125 deg run with CP disabled produces very encouraging results.

### 32. [Katrina Effect on Mathematics Achievement in Mississippi](#)

[ERIC Educational Resources Information Center](#)

Lamb, John; Lewis, Mark; Gross, Sarah

2013-01-01

Hurricane Katrina caused severe physical damage to the Gulf Coast states of Louisiana, Mississippi, and Alabama. Homes and businesses were destroyed. Natural habitats were annihilated, and many Americans were displaced for days, weeks, and even years. This study investigated the within-subject effects and contrasts of poverty, rurality, and

### 33. [Cloud Spirals and Outflow in Tropical Storm Katrina](#)

[NASA Technical Reports Server \(NTRS\)](#)

2005-01-01

On Tuesday, August 30, 2005, NASA's Multi-angle Imaging SpectroRadiometer retrieved cloud-top heights and cloud-tracked wind velocities for Tropical Storm Katrina, as the center of the storm was situated over the Tennessee valley. At this time Katrina was weakening and no longer classified as a hurricane, and would soon become an extratropical depression. Measurements such as these can help atmospheric scientists compare results of computer-generated hurricane simulations with observed conditions, ultimately allowing them to better represent and understand physical processes occurring in hurricanes.

Because air currents are influenced by the Coriolis force (caused by the rotation of the Earth), Northern Hemisphere hurricanes are characterized by an inward counterclockwise (cyclonic) rotation towards the center. It is less widely known that, at high altitudes, outward-spreading bands of cloud rotate in a clockwise (anticyclonic) direction. The image on the left shows the retrieved cloud-tracked winds as red arrows superimposed across the natural color view from MISR's nadir (vertical-viewing) camera. Both the counter-clockwise motion for the lower-level storm clouds and the clockwise motion for the upper clouds are apparent in these images. The speeds for the clockwise upper level winds have typical values between 40 and 45 m/s (144-162 km/hr). The low level counterclockwise winds have typical values between 7 and 24 m/s (25-86 km/hr), weakening with distance from the storm center. The image on the right displays the cloud-top height retrievals. Areas where cloud heights could not be retrieved are shown in dark gray. Both the wind velocity vectors and the cloud-top height field were produced by automated computer recognition of displacements in spatial features within successive MISR images acquired at different view angles and at slightly different times.

The Multi-angle Imaging SpectroRadiometer observes the daylit Earth continuously, viewing the

#### 34. [Hurricane Katrina](#)

[Atmospheric Science Data Center](#)

2014-05-15

... Katrina is one of the most powerful and destructive storms on record for the Atlantic Basin. The animation progresses from ... tops" are also characteristic of strong and rapidly growing storms. The Multi-angle Imaging SpectroRadiometer observes the daylit Earth ...

#### 35. [Hospitalization rates among dialysis patients during Hurricane Katrina.](#)

[PubMed](#)

Howard, David; Zhang, Rebecca; Huang, Yijian; Kutner, Nancy

2012-08-01

Dialysis centers struggled to maintain continuity of care for dialysis patients during and immediately following Hurricane Katrina's landfall on the US Gulf Coast in August 2005. However, the impact on patient health and service use is unclear. The impact of Hurricane Katrina on hospitalization rates among dialysis patients was estimated. Data from the United States Renal Data System were used to identify patients receiving dialysis from January 1, 2001 through August 29, 2005 at clinics that experienced service disruptions during Hurricane Katrina. A repeated events duration model was used with a time-varying Hurricane Katrina indicator to estimate trends in hospitalization rates. Trends were estimated separately by cause: surgical hospitalizations, medical, non-renal-related hospitalizations, and renal-related hospitalizations. The rate ratio for all-cause hospitalization associated with the time-varying Hurricane Katrina indicator was 1.16 (95% CI, 1.05-1.29;  $P = .004$ ). The ratios for cause-specific hospitalization were: surgery, 0.84 (95% CI, 0.68-1.04;  $P = .11$ ); renal-related admissions, 2.53 (95% CI, 2.09-3.06);  $P < .001$ ), and medical non-renal related, 1.04 (95% CI, 0.89-1.20;  $P = .63$ ). The estimated number of excess renal-related hospital admissions attributable to Katrina was 140, representing approximately three percent of dialysis patients at the affected clinics. Hospitalization rates among dialysis patients increased in the month following the Hurricane Katrina landfall, suggesting that providers and patients were not adequately prepared for large-scale disasters.

#### 36. [Hurricane Katrina storm surge distribution and field observations on the Mississippi Barrier Islands](#)

[NASA Astrophysics Data System \(ADS\)](#)

Fritz, Hermann M.; Blount, Chris; Sokoloski, Robert; Singleton, Justin; Fuggle, Andrew; McAdoo, Brian G.; Moore, Andrew; Grass, Chad; Tate, Banks

2007-08-01

Hurricane Katrina (23–30 August 2005) struck low-lying coastal plains particularly vulnerable to storm surge flooding. Maximum storm surges, overland flow depths, and inundation distances were measured along the Gulf Coast of Florida, Alabama, Mississippi and Louisiana. The vehicle based survey was complemented by inspections with the reconnaissance boat along the Gulf Coast and the Mississippi Barrier Islands. The storm surge peaked to the East of Katrina's path exceeding 10 meters in several locations along the Mississippi coastline. The storm surge measurements show that the lower floors of specially designed buildings were damaged by the surge of seawater and associated wave action, while the upper floors sustained minimal wind damage. Furthermore, the storm surge measurements along New Orleans's Lake shore indicate that the 17th Street Canal levee failed prior to overtopping. The land loss on the barrier islands resulted in an increased vulnerability of the US Gulf Coast to future hurricane storm surges.

### 37. [Hurricane Katrina impacts on Mississippi forests](#)

[Treesearch](#)

Sonja N. Oswalt; Christopher Oswalt; Jeffery Turner

2008-01-01

Hurricane Katrina triggered public interest and concern for forests in Mississippi that required rapid responses from the scientific community. A uniform systematic sample of 3,590 ground plots were established and measured in 687 days immediately after the impact of Hurricane Katrina on the Gulf Coast. The hurricane damaged an estimated 521 million trees with more...

### 38. [The Incidence, Risk Factors, and Chronobiology of Acute Myocardial Infarction Ten Years After Hurricane Katrina.](#)

[PubMed](#)

Moscona, John C; Peters, Matthew N; Maini, Rohit; Katigbak, Paul; Deere, Bradley; Gonzales, Holly; Westley, Christopher; Baydoun, Hassan; Yadav, Kapil; Ters, Patrick; Jabbar, Ahmad; Boulad, Alaa; Mahata, Indrajeet; Gadiraju, Taraka V; Nelson, Ryan; Srivastav, Sudesh; Irimpen, Anand

2018-04-12

The purpose of this study was to investigate the 10-year impact of Hurricane Katrina on the incidence of acute myocardial infarction (AMI) along with contributing risk factors and any alteration in chronobiology of AMI. A single-center, retrospective, comparison study of AMI incidence was performed at Tulane University Health Sciences Center from 2 years before Hurricane Katrina to 10 years after Hurricane Katrina. A 6-year, pre-Katrina and 10-year, post-Katrina cohort were also compared according to pre-specified demographic, clinical, and chronobiological data. AMI incidence

increased from 0.7% (150/21,079) to 2.8% (2,341/84,751) post-Katrina ( $P < 0.001$ ). The post-Katrina cohort had higher rates of coronary artery disease (36.4% vs. 47.9%,  $P = 0.01$ ), diabetes mellitus (31.3% vs. 39.9%,  $P = 0.04$ ), hyperlipidemia (45.4% vs. 59.3%,  $P = 0.005$ ), smoking (34.4% vs. 53.8%,  $P < 0.001$ ), drug abuse (10.2% vs. 15.4%,  $P = 0.02$ ), psychiatric illness (6.7% vs. 14.9%,  $P < 0.001$ ), medication non-adherence (7.3% vs. 15.3%,  $P < 0.001$ ), and lack of employment (7.2% vs. 16.4%,  $P < 0.001$ ). The post-Katrina group had increased rates of AMI during nights (29.8% vs. 47.8%,  $P < 0.001$ ) and weekends (16.1% vs. 29.1%,  $P < 0.001$ ). Even 10 years after the storm, Hurricane Katrina continues to be associated with increased incidence of AMI, higher prevalence of traditional cardiovascular and psychosocial risk factors, and an altered chronobiology of AMI toward nights and weekends. (Disaster Med Public Health Preparedness. 2018;page 1 of 6).

### 39. [Race differences in depression vulnerability following Hurricane Katrina.](#)

[PubMed](#)

Ali, Jeanelle S; Farrell, Amy S; Alexander, Adam C; Forde, David R; Stockton, Michelle; Ward, Kenneth D

2017-05-01

This study investigated whether racial disparities in depression were present after Hurricane Katrina. Data were gathered from 932 New Orleans residents who were present when Hurricane Katrina struck, and who returned to New Orleans the following year. Multiple logistic regression models evaluated racial differences in screening positive for depression (a score  $\geq 16$  on the Center for Epidemiologic Studies Depression Scale), and explored whether differential vulnerability (prehurricane physical and mental health functioning and education level), differential exposure to hurricane-related stressors, and loss of social support moderated and/or reduced the association of race with depression. A univariate logistic regression analysis showed the odds for screening positive for depression were 86% higher for African Americans than for Caucasians (odds ratio [OR] = 1.86 [1.28–2.71],  $p = .0012$ ). However, after controlling simultaneously for sociodemographic characteristics, preexisting vulnerabilities, social support, and trauma-specific factors, race was no longer a significant correlate for screening positive for depression (OR = 1.54 [0.95–2.48],  $p = .0771$ ). The racial disparity in postdisaster depression seems to be confounded by sociodemographic characteristics, preexisting vulnerabilities, social support, and trauma-specific factors. Nonetheless, even after adjusting for these factors, there was a nonsignificant trend effect for race, which could suggest race played an important role in depression outcomes following Hurricane Katrina. Future studies should examine these associations prospectively, using stronger assessments for depression, and incorporate measures for discrimination and segregation, to further understand possible racial disparities in depression after Hurricane Katrina. (PsycINFO Database Record (c) 2017 APA, all rights reserved).

### 40. [Race Differences in Depression Vulnerability Following Hurricane Katrina](#)

[PubMed Central](#)

Ali, Jeanelle S.; Farrell, Amy S.; Alexander, Adam C.; Forde, David R.; Stockton, Michelle; Ward, Kenneth D.

2016-01-01

**OBJECTIVE** This study investigated whether racial disparities in depression were present after Hurricane Katrina. **METHOD** Data were gathered from 932 New Orleans residents who were present when Hurricane Katrina struck, and who returned to New Orleans the following year. Multiple logistic regression models evaluated racial differences in screening positive for depression (a score  $\geq 16$  on the Center for Epidemiologic Studies Depression scale), and explored whether differential vulnerability (pre-hurricane physical and mental health functioning and education level), differential exposure to hurricane-related stressors, and loss of social support moderated and/or reduced the association of race with depression. **RESULTS** A univariate logistic regression analysis showed the odds for screening positive for depression were 86% higher for African Americans than for Caucasians (OR=1.86 [1.28–2.71],  $p=.0012$ ). However, after controlling simultaneously for sociodemographic characteristics, preexisting vulnerabilities, social support, and trauma-specific factors, race was no longer a significant correlate for screening positive for depression (OR=1.54 [0.95–2.48],  $p=.0771$ ). **CONCLUSIONS** The racial disparity in post disaster depression seems to be confounded by sociodemographic characteristics, preexisting vulnerabilities, social support, and trauma-specific factors. Nonetheless, even after adjusting for these factors, there was a non-significant trend effect for race, which could suggest race played an important role in depression outcomes following Hurricane Katrina. Future studies should examine these associations prospectively, using stronger assessments for depression, and incorporate measures for discrimination and segregation, to further understand possible racial disparities in depression after Hurricane Katrina. PMID:27869461

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#### 41. [Law Enforcement Officers' Involvement Level in Hurricane Katrina and Alcohol Use.](#)

[PubMed](#)

Heavey, Sarah Cercone; Homish, Gregory G; Andrew, Michael E; McCanlies, Erin; Mnatsakanova, Anna; Violanti, John M; Burchfiel, Cecil M

2015-03-01

The purpose of this work is to examine the relationship between alcohol use and level of involvement during Hurricane Katrina among law enforcement officers, and to investigate whether marital status or previous military training offer resilience against negative outcomes. Officers in the immediate New Orleans geographic area completed surveys that assessed their involvement in Hurricane Katrina and alcohol use (Alcohol Use and Disorders Identification Test (AUDIT) score). Negative binomial regression models were used to analyze level of hazardous alcohol use; interactions were tested to examine protective influences of marriage and prior military training (controlling for age and gender). There was a significant association between heavy involvement in Hurricane Katrina and having a greater AUDIT score ( $\exp(\hat{\beta}^2)[EB]=1.81$ ; 95% CI: 1.03, 3.17;  $p<0.05$ ), indicating higher levels of hazardous alcohol use. Contrary to original hypotheses, marital status and military training were not protective against alcohol use ( $p>0.05$ ). These results illustrate an association between law enforcement officers' heavy involvement during Hurricane Katrina and greater levels of hazardous alcohol use when compared to officers with low or moderate involvement. This has important treatment implications for those with high involvement in disasters as they may require targeted interventions to overcome the stress of such experiences.

#### 42. [Risk to life due to flooding in post-Katrina New Orleans](#)

[NASA Astrophysics Data System \(ADS\)](#)

Miller, A.; Jonkman, S. N.; Van Ledden, M.

2014-01-01

After the catastrophic flooding of New Orleans due to hurricane Katrina in the year 2005, the city's hurricane protection system has been improved to provide protection against a hurricane load with a 1/100 per year exceedance frequency. This paper investigates the risk to life in post-Katrina New Orleans. In a risk-based approach the probabilities and consequences of various flood scenarios have been analyzed for the central area of the city (the metro bowl) to give a preliminary estimate of the risk to life in the post-Katrina situation. A two-dimensional hydrodynamic model has been used to simulate flood characteristics of various breaches. The model for estimation of fatality rates is based on the loss of life data for Hurricane Katrina. Results indicate that - depending on the flood scenario - the estimated loss of life in case of flooding ranges from about 100 to nearly 500, with the highest life loss due to breaching of the river levees leading to large flood depths. The probability and consequence estimates are combined to determine the individual risk and societal risk for New Orleans. When compared to risks of other large scale engineering systems (e.g. other flood prone areas, dams and

the nuclear sector) and acceptable risk criteria found in literature, the risks for the metro bowl are found to be relatively high. Thus, despite major improvements to the flood protection system, the flood risk of post-Katrina New Orleans is still expected to be significant. Effects of reduction strategies on the risk level are discussed as a basis for further evaluation.

#### 43. [Assessing Hurricane Katrina Vegetation Damage at Stennis Space Center using IKONOS Image Classification Techniques](#)

[NASA Technical Reports Server \(NTRS\)](#)

Spruce, Joseph P.; Ross, Kenton W.; Graham, William D.

2007-01-01

Hurricane Katrina hit southwestern Mississippi on August 29, 2005, at 9:45 a.m. CDT as a category 3 storm with surges up to approx. 9 m and sustained winds of approx. 120 mph. The hurricane's wind, rain, and flooding devastated several coastal towns, from New Orleans through Mobile. The storm also caused significant damage to infrastructure and vegetation of NASA's SSC (Stennis Space Center). Storm recovery at SSC involved not only repairs of critical infrastructure but also forest damage mitigation (via timber harvests and control burns to reduce fire risk). This presentation discusses an effort to use commercially available high spatial resolution multispectral IKONOS data for vegetation damage assessment, based on data collected over SSC on September 2, 2005.

#### 44. [Project Katrina](#)

[ERIC Educational Resources Information Center](#)

Aghayan, Carol; Schellhaas, Andree; Wayne, Angela; Burts, Diane C.; Buchanan, Teresa K.; Benedict, Joan

2005-01-01

This article describes a spontaneous project that emerged from a group of 3- and 4-year-old children in Louisiana after Hurricane Katrina. The article describes how the teachers adapted the classroom and curriculum to meet the diverse needs of children who were evacuees, as well as those children who were affected in other ways by the hurricane.

#### 45. [Risk to life due to flooding in post-Katrina New Orleans](#)

[NASA Astrophysics Data System \(ADS\)](#)

Miller, A.; Jonkman, S. N.; Van Ledden, M.

2015-01-01

Since the catastrophic flooding of New Orleans due to Hurricane Katrina in 2005, the city's hurricane protection system has been improved to provide protection against a hurricane load with a 1/100 per year exceedance frequency. This paper investigates the risk to life in post-Katrina New Orleans. In a flood risk analysis the probabilities and consequences of various flood scenarios have been analyzed for the central area of the city (the metro bowl) to give a preliminary estimate of the risk to life in the post-Katrina situation. A two-dimensional hydrodynamic model has been used to simulate flood characteristics of various breaches. The model for estimation of fatality rates is based on the loss of life data for Hurricane Katrina. Results indicate that - depending on the flood scenario - the estimated loss of life in case of flooding ranges from about 100 to nearly 500, with the highest life loss due to breaching of the river levees leading to large flood depths. The probability and consequence estimates are combined to determine the individual risk and societal risk for New Orleans. When compared to risks of other large-scale engineering systems (e.g., other flood prone areas, dams and the nuclear sector) and acceptable risk criteria found in literature, the risks for the metro bowl are found to be relatively high. Thus, despite major improvements to the flood protection system, the flood risk to life of post-Katrina New Orleans is still expected to be significant. Indicative effects of reduction strategies on the risk level are discussed as a basis for further evaluation and discussion.

#### 46. [The Winds of Katrina Still Call Our Names: How Do Teachers and Schools Confront Social Justice Issues?](#)

[ERIC Educational Resources Information Center](#)

Wynne, Joan T.

2007-01-01

Certainly, individuals in many colleges and public schools address the impact of race, class, and power on schools, yet the institutions as a whole continue, even a year after Katrina, to ignore the imperative to explicitly and consistently deal with these issues. Human justice must become an institutional mantra, not just the conversation of a

#### 47. [Breakup of New Orleans Households after Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Rendall, Michael S.

2011-01-01

Theory and evidence on disaster-induced population displacement have focused on individual and population-subgroup characteristics. Less is known about impacts on households. I estimate excess incidence of household breakup resulting from Hurricane Katrina by comparing a probability sample of pre-Katrina New Orleans resident adult household heads

#### 48. [Earth Observations to Assess Impact of Hurricane Katrina on John C. Stennis Space Center](#)

[NASA Technical Reports Server \(NTRS\)](#)

Graham, William D.; Ross, Kenton W.

2007-01-01

The peril from hurricanes to Space Operations Centers is real and is forecast to continue; Katrina, Rita, and Wilma of 2005 and Charley, Frances, Ivan, and Jeanne of 2004 are sufficient motivation for NASA to develop a multi-Center plan for preparedness and response. As was demonstrated at SSC (Stennis Space Center) in response to Hurricane Katrina, NASA Centers are efficiently activated as local command centers, playing host to Federal and State agencies and first responders to coordinate and provide evacuation, relocation, response, and recovery activities. Remote sensing decision support provides critical insight for managing NASA infrastructure and for assisting Center decision makers. Managers require geospatial information to manage the federal city. Immediately following Katrina, SSC's power and network connections were disabled, hardware was inoperative, technical staff was displaced and/or out of contact, and graphical decision support tools were non-existent or less than fully effective. Despite this circumstance, SSC EOC (Emergency Operations Center) implemented response operations to assess damage and to activate recovery plans. To assist Center Managers, the NASA ASP (Applied Sciences Program) made its archive of high-resolution data over the site available. In the weeks and months after the immediate crisis, NASA supplemented this data with high-resolution, post-Katrina imagery over SSC and much of the affected coastal areas. Much of the high-resolution imagery was made available through the Department of Defense Clear View contract and was distributed through U.S. Geological Survey Center for Earth Resources Observation and Science "Hurricane Katrina Disaster Response" Web site. By integrating multiple image data types with other information sources, ASP applied an all-source solutions approach to develop decision support tools that enabled managers to respond to critical issues, such as expedient access to infrastructure and deployment of resources

#### 49. [Hurricane Katrina-linked environmental injustice: race, class, and place differentials in attitudes.](#)

[PubMed](#)

Adeola, Francis O; Picou, J Steven

2017-04-01

Claims of environmental injustice, human neglect, and racism dominated the popular and academic literature after Hurricane Katrina struck the United States in August 2005. A systematic analysis of environmental injustice from the perspective of the survivors remains scanty or nonexistent. This paper presents, therefore, a systematic empirical analysis of the key determinants of Katrina-induced environmental injustice attitudes among survivors in severely affected parishes (counties) in

Louisiana and Mississippi three years into the recovery process. Statistical models based on a random sample of survivors were estimated, with the results revealing significant predictors such as age, children in household under 18, education, homeownership, and race. The results further indicate that African-Americans were more likely to perceive environmental injustice following Katrina than their white counterparts. Indeed, the investigation reveals that there are substantial racial gaps in measures of environmental injustice. The theoretical, methodological, and applied policy implications of these findings are discussed. © 2017 The Author(s). Disasters © Overseas Development Institute, 2017.

50. [Natural disasters and myocardial infarction: the six years after Hurricane Katrina.](#)

[PubMed](#)

Peters, Matthew N; Moscona, John C; Katz, Morgan J; Deandrade, Kevin B; Quevedo, Henry C; Tiwari, Sumit; Burchett, Andrew R; Turnage, Thomas A; Singh, Kanwar Y; Fomunung, Edmond N; Srivastav, Sudesh; Delafontaine, Patrice; Irimpen, Anand M

2014-04-01

To determine the prolonged effect of Hurricane Katrina on the incidence and timing of acute myocardial infarction (AMI) in the city of New Orleans. Our study population consisted of 1476 patients with AMI before (August 29, 1999, to August 28, 2005) and after (February 14, 2006, to February 13, 2012) Hurricane Katrina at Tulane University Health Sciences Center to determine post-Katrina alterations in the occurrence and timing of AMI. Compared with pre-Katrina values, there was a more than 3-fold increase in the percentage of admissions for AMI during the 6 years after Hurricane Katrina ( $P < .001$ ). The percentage of admissions for AMI after Hurricane Katrina increased significantly on nights ( $P < .001$ ) and weekends ( $P < .001$ ) and decreased significantly on mornings ( $P < .001$ ), Mondays ( $P < .001$ ), and weekdays ( $P < .001$ ). Patients with AMI after Hurricane Katrina also had significantly higher rates of psychiatric comorbidities ( $P = .01$ ), smoking ( $P < .001$ ), lack of health insurance ( $P < .05$ ), and unemployment ( $P < .001$ ). These results indicate that the effect of natural disasters on the occurrence of AMI may persist for at least a 6-year period and may be related to various factors including population shifts, alterations in the health care system, and the effects of chronic stress and associated behaviors. Copyright © 2014 Mayo Foundation for Medical Education and Research. Published by Elsevier Inc. All rights reserved.

51. [Intimate partner violence and Hurricane Katrina: predictors and associated mental health outcomes.](#)

[PubMed](#)

Schumacher, Julie A; Coffey, Scott F; Norris, Fran H; Tracy, Melissa; Clements, Kahni; Galea, Sandro

2010-01-01

This study sought to establish the prevalence and correlates of intimate partner violence (IPV) victimization in the 6 months before and after Hurricane Katrina. Participants were 445 married or cohabiting persons who were living in the 23 southernmost counties of Mississippi at the time of Hurricane Katrina. Data for this study were collected as part of a larger, population-based, representative study. The percentage of women reporting psychological victimization increased from 33.6% prior to Hurricane Katrina to 45.2% following Hurricane Katrina ( $p < .001$ ). The percentage of men reporting psychological victimization increased from 36.7% to 43.1% ( $p = .01$ ). Reports of physical victimization increased from 4.2% to 8.3% for women ( $p = .01$ ) but were unchanged for men. Significant predictors of post-Katrina victimization included pre-Katrina victimization, age, educational attainment, marital status, and hurricane-related stressors. Reports of IPV were associated with greater risk of post-Katrina depression and posttraumatic stress disorder. Data from the first population-based study to document IPV following a large-scale natural disaster suggest that IPV may be an important but often overlooked public health concern following disasters.

## 52. [Intimate partner violence and Hurricane Katrina: Predictors and associated mental health outcomes](#)

[PubMed Central](#)

Schumacher, Julie A.; Coffey, Scott F.; Norris, Fran H.; Tracy, Melissa; Clements, Kahni; Galea, Sandro

2012-01-01

This study sought to establish the prevalence and correlates of intimate partner violence (IPV) victimization in the six months before and after Hurricane Katrina. Participants were 445 married or cohabiting persons who were living in the 23 southernmost counties of Mississippi at the time of Hurricane Katrina. Data for this study were collected as part of a larger, population-based, representative study. The percentage of women reporting psychological victimization increased from 33.6% prior to Hurricane Katrina to 45.2 % following Hurricane Katrina ( $p < 0.001$ ). The percentage of men reporting psychological victimization increased from 36.7% to 43.1% ( $p = 0.01$ ). Reports of physical victimization increased from 4.2% to 8.3% for women ( $p=.01$ ), but were unchanged for men. Significant predictors of post-Katrina victimization included pre-Katrina victimization, age, educational attainment, marital status and hurricane-related stressors. Reports of IPV were associated with greater risk of post-Katrina depression and posttraumatic stress disorder. Data from the first population-based study to document IPV following a large scale natural disaster suggest that IPV may be an important, but often overlooked public health concern following disasters.

PMID:21061866

## 53. [Investigation on installation of offshore wind turbines](#)

[NASA Astrophysics Data System \(ADS\)](#)

Wang, Wei; Bai, Yong

2010-06-01

Wind power has made rapid progress and should gain significance as an energy resource, given growing interest in renewable energy and clean energy. Offshore wind energy resources have attracted significant attention, as, compared with land-based wind energy resources, offshore wind energy resources are more promising candidates for development. Sea winds are generally stronger and more reliable and with improvements in technology, the sea has become a hot spot for new designs and installation methods for wind turbines. In the present paper, based on experience building offshore wind farms, recommended foundation styles have been examined. Furthermore, wave effects have been investigated. The split installation and overall installation have been illustrated. Methods appropriate when installing a small number of turbines as well as those useful when installing large numbers of turbines were analyzed. This investigation of installation methods for wind turbines should provide practical technical guidance for their installation.

#### 54. [Covering \(Up?\) Katrina: Discursive Ambivalence in Coverage of Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Berger, Aimee; Cochran, Kate

2007-01-01

Long before Katrina, the South functioned in the social imaginary to contain racism and poverty, and the Mason-Dixon acts then in the national imagination as a buffer to safeguard the nation from the taint of such undemocratic realities. More and more, in many countries of America, a system known as "neoliberalism" prevails; based on a€¦

#### 55. [Hurricane Katrina's carbon footprint on U.S. Gulf Coast forests.](#)

[PubMed](#)

Chambers, Jeffrey Q; Fisher, Jeremy I; Zeng, Hongcheng; Chapman, Elise L; Baker, David B; Hurtt, George C

2007-11-16

Hurricane Katrina's impact on U.S. Gulf Coast forests was quantified by linking ecological field studies, Landsat and Moderate Resolution Imaging Spectroradiometer (MODIS) image analyses, and empirically based models. Within areas affected by relatively constant wind speed, tree mortality and damage exhibited strong species-controlled gradients. Spatially explicit forest disturbance maps coupled with extrapolation models predicted mortality and severe structural damage to approximately 320 million large trees totaling 105 teragrams of carbon, representing 50 to 140% of the net annual U.S. forest tree carbon sink. Changes in disturbance regimes from increased storm activity expected under a warming

climate will reduce forest biomass stocks, increase ecosystem respiration, and may represent an important positive feedback mechanism to elevated atmospheric carbon dioxide.

#### 56. [Hurricane Katrina Soil Sampling](#)

##### [EPA Pesticide Factsheets](#)

Hurricane Katrina made landfall in August 2005, causing widespread devastation along the Gulf Coast of the United States. EPA emergency response personnel worked with FEMA and state and local agencies to respond to the emergencies throughout the Gulf.

#### 57. [Hurricane Katrina Water Sampling](#)

##### [EPA Pesticide Factsheets](#)

Hurricane Katrina made landfall in August 2005, causing widespread devastation along the Gulf Coast of the United States. EPA emergency response personnel worked with FEMA and state and local agencies to respond to the emergencies throughout the Gulf.

#### 58. [Hurricane Katrina Sediment Sampling](#)

##### [EPA Pesticide Factsheets](#)

Hurricane Katrina made landfall in August 2005, causing widespread devastation along the Gulf Coast of the United States. EPA emergency response personnel worked with FEMA and state and local agencies to respond to the emergencies throughout the Gulf.

#### 59. [Break-up of New Orleans Households after Hurricane Katrina](#)

##### [PubMed Central](#)

Rendall, Michael S.

2011-01-01

Theory and evidence on disaster-induced population displacement have focused on individual and population-subgroup characteristics. Less is known about impacts on households. I estimate excess incidence of household break-up due to Hurricane Katrina by comparing a probability sample of pre-Katrina New Orleans resident adult household heads and non-“household heads (N = 242), traced just over a year later, with a matched sample from a nationally representative survey over an equivalent period. One in three among all adult non-“household heads, and one in two among adult children of household heads, had separated from the household head 1 year post-Katrina. These rates were, respectively, 2.2 and 2.7 times higher than national rates. A 50% higher prevalence of adult children living with parents in pre-Katrina New Orleans than nationally increased the hurricane’s impact on

household break-up. Attention to living arrangements as a dimension of social vulnerability in disaster recovery is suggested. PMID:21709733

## 60. [Katrina: boon or bust for freshwater fish communities?](#)

[Treeseearch](#)

Susan B. Adams

2005-01-01

Hurricane Katrina was the most damaging storm to hit the Mississippi Gulf Coast in recent history. Although catastrophic in human terms, was Katrina a disaster for freshwater ecosystems? Were the storm and its impacts on freshwater fish communities "natural"? The naturalness of the storm's effects on freshwater communities varies depending on previous anthropogenic...

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## 61. [Adverse respiratory symptoms and environmental exposures among children and adolescents following Hurricane Katrina.](#)

[PubMed](#)

Rath, Barbara; Young, Elizabeth A; Harris, Amy; Perrin, Keith; Bronfin, Daniel R; Ratard, Raoult; Vandyke, Russell; Goldshore, Matthew; Magnus, Manya

2011-01-01

Children and adolescents are especially vulnerable to environmental exposures and their respiratory effects. Following Hurricane Katrina in 2005, residents experienced multiple adverse environmental

exposures. We characterized the association between upper respiratory symptoms (URS) and lower respiratory symptoms (LRS) and environmental exposures among children and adolescents affected by Hurricane Katrina. We conducted a cross-sectional study following the return of the population to New Orleans after Hurricane Katrina (October 2005 and February 2006) among a convenience sample of children and adolescents attending New Orleans health facilities. We used uni-, bi-, and multivariable analyses to describe participants, exposures, and associations with URS/LRS. Of 1,243 participants, 47% were Caucasian, 50% were male, and 72% were younger than 11 years of age. Multiple environmental exposures were identified during and after the storm and at current residences: roof/glass/storm damage (50%), outside mold (22%), dust (18%), and flood damage (15%). Self-reported URS and LRS (76% and 36%, respectively) were higher after the hurricane than before the hurricane (22% and 9%, respectively,  $p < 0.0001$ ). Roof/glass/storm damage at home was associated with URS (adjusted odds ratio [AOR] = 1.59, 95% confidence interval [CI] = 1.15, 2.21) and LRS (AOR = 1.35, 95% CI 1.01, 1.80), while mold growth at home was associated with LRS (AOR = 1.47, 95% CI 1.02, 2.12). Children and adolescents affected by Hurricane Katrina experienced environmental exposures associated with increased prevalence of reported URS and LRS. Additional research is needed to investigate the long-term health impacts of Hurricane Katrina.

## 62. [Hurricane Katrina: addictive behavior trends and predictors.](#)

[PubMed](#)

Beaudoin, Christopher E

2011-01-01

Post-disaster trends in alcohol consumption and cigarette smoking, as well as their predictors, were identified. Methods. Data from cross-sectional and panel surveys of African American adults in New Orleans, Louisiana, were used from before (2004:  $n = 1,867$ ; 2005:  $n = 879$ ) and after (2006a:  $n = 500$ ; 2006b:  $n = 500$ ) Hurricane Katrina. Alcohol consumption increased significantly from pre- to post-Hurricane Katrina, while cigarette smoking remained constant. In 2006, posttraumatic stress disorder (PTSD) was associated with cigarette smoking, whereas "news attention" and "provided social support" were inversely associated with cigarette smoking. "News attention" was also inversely associated with cigarette smoking frequency, while "neighborliness" was associated with alcohol consumption. In addition, the effects of PTSD on alcohol consumption were moderated by "neighborliness." In the wake of Hurricane Katrina, there were complex predictive processes of addictive behaviors involving PTSD, news information, and social capital-related measures.

## 63. [Recovery from PTSD following Hurricane Katrina.](#)

[PubMed](#)

McLaughlin, Katie A; Berglund, Patricia; Gruber, Michael J; Kessler, Ronald C; Sampson, Nancy A; Zaslavsky, Alan M

2011-06-01

We examined patterns and correlates of speed of recovery of estimated posttraumatic stress disorder (PTSD) among people who developed PTSD in the wake of Hurricane Katrina. A probability sample of prehurricane residents of areas affected by Hurricane Katrina was administered a telephone survey 7-19 months following the hurricane and again 24-27 months posthurricane. The baseline survey assessed PTSD using a validated screening scale and assessed a number of hypothesized predictors of PTSD recovery that included sociodemographics, prehurricane history of psychopathology, hurricane-related stressors, social support, and social competence. Exposure to posthurricane stressors and course of estimated PTSD were assessed in a follow-up interview. An estimated 17.1% of respondents had a history of estimated hurricane-related PTSD at baseline and 29.2% by the follow-up survey. Of the respondents who developed estimated hurricane-related PTSD, 39.0% recovered by the time of the follow-up survey with a mean duration of 16.5 months. Predictors of slow recovery included exposure to a life-threatening situation, hurricane-related housing adversity, and high income. Other sociodemographics, history of psychopathology, social support, social competence, and posthurricane stressors were unrelated to recovery from estimated PTSD. The majority of adults who developed estimated PTSD after Hurricane Katrina did not recover within 18-27 months. Delayed onset was common. Findings document the importance of initial trauma exposure severity in predicting course of illness and suggest that pre- and posttrauma factors typically associated with course of estimated PTSD did not influence recovery following Hurricane Katrina. © 2011 Wiley-Liss, Inc.

#### 64. [Contemplating Katrina's Chaos](#)

[ERIC Educational Resources Information Center](#)

Roach, Ronald

2005-01-01

To get some notion of how deeply scholars have been affected by Hurricane Katrina, one might look to someone like Dr. Erma Lawson, a medical sociologist from the University of North Texas. Lawson, who has coordinated the assistance efforts for the Association of Black Sociologists, has not hesitated to call on colleagues, graduate students, civil

#### 65. [Lessons from Katrina](#)

[ERIC Educational Resources Information Center](#)

Albrecht, Kay

2005-01-01

In this article, the author relates the lessons she learned from Hurricane Katrina. During the first few days after the hurricane, it took 2,500 volunteers per hour around the clock to do what needed to be

done. That included medical volunteers; crisis counselors and mental health professionals; and volunteers to distribute water and snacks, serve

## 66. [The Katrina Kids](#)

[ERIC Educational Resources Information Center](#)

Meyer, B. L.

2007-01-01

As the second anniversary of Hurricane Katrina rolls in, thoughts return again to those bleak days, watching people cling to their rooftops, waiting for a hand. Marking milestones, celebrating small victories, and sharing stories when things work out is a big part of life for those who work to support and connect families of children with

## 67. [Satellite altimetry and the intensification of Hurricane Katrina](#)

[NASA Astrophysics Data System \(ADS\)](#)

Scharroo, Remko; Smith, Walter H. F.; Lillibridge, John L.

Remotely sensed infrared images of Hurricane Katrina taken on 26, 27, and 28 August 2005 (Figure 1, left panels) show the aerial extent of the cloud cover and the central "eye" increasing as the storm that swamped areas of the U.S. Gulf Coast intensified. Computer animations of such image sequences show forecasters the tracks of storms and are a familiar staple of weather news. Less well known is the role that satellite altimetry plays both in forecasting conditions that can intensify a tropical storm and in observing the storm conditions at the sea surface. Satellite altimeter data indicate that Katrina intensified over areas of anomalously high dynamic topography rather than areas of unusually warm surface waters. Altimeter data from Katrina also for the first time observed the building of a storm surge.

## 68. [Environmental impact of Hurricane Katrina on Lake Pontchartrain: Chapter 7G in Science and the storms—the USGS response to the hurricanes of 2005](#)

[USGS Publications Warehouse](#)

Heitmuller, Thomas; Perez, Brian C.

2007-01-01

Hurricane Katrina slammed the Louisiana-Mississippi Gulf Coast with 135-mi/hour (217-km/hour) winds and up to a 30-ft (9-m) storm surge. Lake Pontchartrain was further subjected to environmental threat by way of the millions of gallons of contaminated flood water that were pumped daily from the city of New Orleans into the lake.

## 69. Hurricane Katrina: Addictive Behavior Trends and Predictors

[PubMed Central](#)

Beaudoin, Christopher E.

2011-01-01

Objective Post-disaster trends in alcohol consumption and cigarette smoking, as well as their predictors, were identified. Methods Data from cross-sectional and panel surveys of African American adults in New Orleans, Louisiana, were used from before (2004: n=1,867; 2005: n=879) and after (2006a: n=500; 2006b: n=500) Hurricane Katrina. Results Alcohol consumption increased significantly from pre- to post-Hurricane Katrina, while cigarette smoking remained constant. In 2006, posttraumatic stress disorder (PTSD) was associated with cigarette smoking, whereas "news attention" and "provided social support" were inversely associated with cigarette smoking. "News attention" was also inversely associated with cigarette smoking frequency, while "neighborliness" was associated with alcohol consumption. In addition, the effects of PTSD on alcohol consumption were moderated by "neighborliness." Conclusions In the wake of Hurricane Katrina, there were complex predictive processes of addictive behaviors involving PTSD, news information, and social capital-related measures. PMID:21553669

## 70. The Rebirth of Montessori: Rebuilding a Public Charter Montessori School in Post-Katrina New Orleans

[ERIC Educational Resources Information Center](#)

Selvidge, Ellen

2008-01-01

"Pre-Katrina" and "Post-Katrina" are common terms for time frames these days in New Orleans, often reminding me of the BCE/CE timeline distinctions. You hear "Pre-Katrina" and "Post-Katrina" on the news, in the paper, and in everyday conversations. Although more and more people have moved back to New

## 71. Effect of Hurricane Katrina on incidence of acute myocardial infarction in New Orleans three years after the storm.

[PubMed](#)

Jiao, Zhen; Kakoulides, Socrates V; Moscona, John; Whittier, Jabar; Srivastav, Sudesh; Delafontaine, Patrice; Irimpen, Anand

2012-02-15

To detect a long-term increase in the incidence of acute myocardial infarction (AMI) after Hurricane Katrina and to investigate the pertinent contributing factors, we conducted a single-center retrospective cohort observational study. The patients admitted with AMI to Tulane University Hospital in the 2 years before Katrina and the 3 years after the hospital reopened were identified from the hospital medical records. The pre- and post-Katrina groups were compared for prespecified demographic and clinical data. In the 3-year post-Katrina group, 418 admissions (2.0%) for AMI occurred of a total census of 21,092 patients compared to 150 (0.7%) of a census of 21,079 in the 2-year pre-Katrina group ( $p < 0.0001$ ). The post-Katrina group had a greater prevalence of unemployment ( $p < 0.0001$ ), lack of medical insurance ( $p < 0.001$ ), smokers ( $p < 0.01$ ), medical noncompliance ( $p < 0.0001$ ), first-time hospitalizations ( $p < 0.001$ ), history of coronary artery disease ( $p < 0.01$ ), multiple vessel disease ( $p < 0.05$ ), and percutaneous coronary interventions ( $p < 0.0001$ ). The mean age of onset of AMI decreased from 62 years before Katrina to 59 years after Katrina ( $p < 0.05$ ), and a significantly greater percentage of patients were men ( $p < 0.05$ ). No significant differences were found between the two groups in terms of race, substance abuse, and a history of hypertension or diabetes mellitus. Our data suggest that chronic stress after natural disasters may significantly affect cardiovascular risk factors such as tobacco abuse and increase medical noncompliance. In conclusion, our data is consistent with a significant change in the overall health of the population and support the need for additional study into the health effects of chronic stress after natural disasters. Copyright © 2012 Elsevier Inc. All rights reserved.

## 72. [Adverse Respiratory Symptoms and Environmental Exposures Among Children and Adolescents Following Hurricane Katrina](#)

[PubMed Central](#)

Rath, Barbara; Young, Elizabeth A.; Harris, Amy; Perrin, Keith; Bronfin, Daniel R.; Ratard, Raoult; VanDyke, Russell; Goldshore, Matthew; Magnus, Manya

2011-01-01

**Objectives** Children and adolescents are especially vulnerable to environmental exposures and their respiratory effects. Following Hurricane Katrina in 2005, residents experienced multiple adverse environmental exposures. We characterized the association between upper respiratory symptoms (URS) and lower respiratory symptoms (LRS) and environmental exposures among children and adolescents affected by Hurricane Katrina. **Methods** We conducted a cross-sectional study following the return of the population to New Orleans after Hurricane Katrina (October 2005 and February 2006) among a convenience sample of children and adolescents attending New Orleans health facilities. We used uni-, bi-, and multivariable analyses to describe participants, exposures, and associations with URS/LRS. **Results** Of 1,243 participants, 47% were Caucasian, 50% were male, and 72% were younger than 11 years of age. Multiple environmental exposures were identified during and after the storm and at current residences: roof/glass/storm damage (50%), outside mold (22%), dust (18%), and flood damage (15%). Self-reported URS and LRS (76% and 36%, respectively) were higher after the hurricane

than before the hurricane (22% and 9%, respectively,  $p < 0.0001$ ). Roof/glass/storm damage at home was associated with URS (adjusted odds ratio [AOR] = 1.59, 95% confidence interval [CI] = 1.15, 2.21) and LRS (AOR=1.35, 95% CI 1.01, 1.80), while mold growth at home was associated with LRS (AOR=1.47, 95% CI 1.02, 2.12). Conclusions Children and adolescents affected by Hurricane Katrina experienced environmental exposures associated with increased prevalence of reported URS and LRS. Additional research is needed to investigate the long-term health impacts of Hurricane Katrina. PMID:22043101

### 73. [Recovery from PTSD following Hurricane Katrina](#)

#### [PubMed Central](#)

McLaughlin, Katie A.; Berglund, Patricia; Gruber, Michael J.; Kessler, Ronald C.; Sampson, Nancy A.; Zaslavsky, Alan M.

2011-01-01

**Background** We examined patterns and correlates of speed of recovery of estimated posttraumatic stress disorder (PTSD) among people who developed PTSD in the wake of Hurricane Katrina. **Method** A probability sample of pre-hurricane residents of areas affected by Hurricane Katrina was administered a telephone survey 7-19 months following the hurricane and again 24-27 months post-hurricane. The baseline survey assessed PTSD using a validated screening scale and assessed a number of hypothesized predictors of PTSD recovery that included socio-demographics, pre-hurricane history of psychopathology, hurricane-related stressors, social support, and social competence. Exposure to post-hurricane stressors and course of estimated PTSD were assessed in a follow-up interview. **Results** An estimated 17.1% of respondents had a history of estimated hurricane-related PTSD at baseline and 29.2% by the follow-up survey. Of the respondents who developed estimated hurricane-related PTSD, 39.0% recovered by the time of the follow-up survey with a mean duration of 16.5 months. Predictors of slow recovery included exposure to a life-threatening situation, hurricane-related housing adversity, and high income. Other socio-demographics, history of psychopathology, social support, social competence, and post-hurricane stressors were unrelated to recovery from estimated PTSD. **Conclusions** The majority of adults who developed estimated PTSD after Hurricane Katrina did not recover within 18-27 months. Delayed onset was common. Findings document the importance of initial trauma exposure severity in predicting course of illness and suggest that pre- and post-trauma factors typically associated with course of estimated PTSD did not influence recovery following Hurricane Katrina. PMID:21308887

### 74. [Barrier Island Failure During Hurricane Katrina](#)

#### [NASA Astrophysics Data System \(ADS\)](#)

Sallenger, A.; Howd, P.; Stockdon, H.; Wright, C. W.; Fauver, L.; Guy, K.

2006-12-01

Classical models of barrier-island response to storms predict that wave runup can periodically overtop an island and transport sand from its seaside to its bayside, forcing the island to migrate landward. While this process can destroy fixed human developments, the island survives with little net change in form or dimensions. In contrast, we find that Louisiana's Chandeleur Islands during Hurricane Katrina were not periodically overtopped by waves, but were continuously inundated by storm surge. When such inundation occurs locally on a barrier island, it can force the erosion of a narrow breach that connects sea and bay. However, little is known about the response of a barrier island when it is entirely submerged. Here, we show that the Chandeleur Islands approached complete failure, losing 84% of their surface area. Their Gulf of Mexico shorelines retreated landward an average of 268 m, the largest retreat ever reported for a storm. Sand was stripped from the islands, reducing their peak elevation from >6 m to <3 m and exposing them to further degradation and potential failure by future hurricanes of less intensity than Katrina. Further, the islands that survived Katrina were marsh remnants composed of mud and vegetation that relatively small waves diminished following the storm. The Chandeleur Islands are prone to failure because of their location on the Mississippi delta where small sand supply and large sea-level rise (induced locally by land subsidence) limit natural rebuilding of the islands following a storm. The response of the delta's barrier islands during Hurricane Katrina provides a warning of how the world's barrier islands might respond to storm-surge inundation should predictions of accelerated global sea level rise prove accurate.

75. [Physically and sexually violent experiences of reproductive-aged women displaced by Hurricane Katrina.](#)

[PubMed](#)

Picardo, Carla W; Burton, Shirley; Naponick, John

2010-01-01

Measure the frequency of physical and sexual abuse in a sample of reproductive aged women displaced by Hurricane Katrina, and compare those experiences to the year before Hurricane Katrina. Sixty-six English-speaking women aged 18-49 years residing in Louisiana Federal Emergency Management Agency (FEMA) housing were screened for physical and sexual abuse seven to nine months after Hurricane Katrina, using modified 30x7 cluster sampling methodology. Twenty-three percent (95% confidence interval [CI], 14, 34%) of women reported being hit or verbally threatened since Hurricane Katrina. Abuse had increased for 33% (95% CI, 13, 63%) and decreased for 13% (95% CI, 4, 37%) of women. Twenty percent (95% CI, 6, 51%) of abused women were with a new partner, while 13% (95% CI, 4, 39%) reported new abuse with the same partner. Four women reported sexual abuse since Hurricane Katrina. Compared to before the storm, the frequency of sexual abuse was the same for two women, and one reported new abuse with the same partner. Physical abuse was not uncommon among displaced women following Hurricane Katrina. Increasing and new abuse were the most commonly reported experiences. Violence against women should not be overlooked as a

continued, and perhaps escalating, occurrence requiring attention following displacement after disasters of such magnitude as Hurricane Katrina.

76. [A lesson from Katrina: pastoral care from an Asian theological perspective.](#)

[PubMed](#)

Lee, Jacob Hee Cheol

2007-01-01

Situating pastoral caregivers in the dramatic catastrophe caused by hurricane "Katrina" in New Orleans, this article attempts to address some appropriate pastoral responses toward the disaster from an Asian theological perspective. The article highlights the significance of remembrance and connection rather than repression and forgetfulness in order to bring justice to all victims of Katrina. It builds on Jacoby's "social amnesia," calls for redefining the meaning of community, and attempts to address the human predicaments on the surface of Katrina through an Asian perspective. In order to address pastoral responses, the article builds upon Martin Luther King, Jr.'s concept of interrelatedness and shared destiny. It critically examines Jung Young Lee's theology of marginality, and draws the pastoral implications of this theology of marginality with respect to Katrina.

77. [Damage to offshore infrastructure in the Gulf of Mexico by hurricanes Katrina and Rita](#)

[NASA Astrophysics Data System \(ADS\)](#)

Cruz, A. M.; Krausmann, E.

2009-04-01

and occurred on both fixed and floating platforms. The total number of pipelines damaged by Hurricanes Katrina and Rita as of May 1, 2006, was 457. Pipeline damage was mostly caused by damage or failure of the host platform or its development and production piping, the impact of dragging and displaced objects, and pipeline interaction at a crossing. Damage to pipelines was a major contributing factor in delaying start up of offshore oil and gas production. During our analysis of the NRC database we identified 611 reported hazardous-materials releases directly attributed to offshore platforms and pipelines affected by the two hurricanes. There were twice as many releases during Hurricane Katrina than during Rita; 80% or more of the releases reported in the NRC database occurred from platforms. Our analysis suggests that the majority of releases were petroleum products, such as crude oil and condensate, followed by natural gas. In both Katrina and Rita, releases were more likely in the front, right quadrant of the storm. Storm-surge values were highest closer to the coastline. This may help explain the higher number of releases in shallow waters. The higher number of hazardous-materials releases from platforms during Katrina may partly be attributed to the higher wind speeds for this storm as it approached land.

## 78. [The Roiling Clouds of Katrina](#)

[NASA Image and Video Library](#)

2005-08-31

This anaglyph from the MISR instrument aboard NASA Terra spacecraft shows the strong convective development of Hurricane Katrina as it moved west through the Gulf of Mexico. 3D glasses are necessary to view this image.

## 79. [Post-Katrina: study in crisis-related program adaptability.](#)

[PubMed](#)

Pero, Colin D; Pou, Anna M; Arriaga, Moises A; Nuss, Daniel W

2008-03-01

To discuss disaster planning, didactic reorganization, and clinical realignments useful in rebuilding academic otolaryngology residency programs after disaster. We describe our reorganization and analysis of objective measures in resident education before and after Hurricane Katrina. Post-Katrina, the number of full-time faculty and part-time clinical instructors/gratis faculty has decreased (4 vs 9 and 36 vs 43, respectively), but the number of part-time LSU faculty (private-academic partnership) has increased (0 vs 3) with overall improved resident supervision. Resident complement decreased by 9.3%. Surgical case loads are essentially unchanged. Reorganization of the didactic schedule has increased attendance and maintained examination scores above national averages. Establishment of two new practice sites provided an adequate number of patients for residency training. Poststorm reorganization has maintained or exceeded pre-Katrina performance standards. Establishment of communication and data retrieval proved irreplaceable and demand advance preparation.

## 80. [Satellite imagery maps Hurricane Katrina-induced flooding and oil slicks](#)

[USGS Publications Warehouse](#)

Rykhus, Russell P.

2005-01-01

Katrina also caused major damage to the region's oil and natural gas production and refining capabilities. On 2 September 2005, the Associated Press reported that Katrina had damaged 58 oil platforms, 30 of which were reported lost; one damaged platform had been blown nearly 100 km from its original location.

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## 81. [Comparison of the Effects of RAS vs. Kain-Fritsch Convective Schemes on Katrina Forecasts with GEOS-5](#)

[NASA Technical Reports Server \(NTRS\)](#)

Miller, Timothy L.; Cohen, Charles; Paxton, Jessica; Robertson, F. R. (Pete)

2009-01-01

Global forecasts were made with the 0.25-degree latitude version of GEOS-5, with the RAS scheme and with the Kain-Fritsch scheme. Examination was made of the Katrina (2005) hurricane simulation. Replacement of the RAS convective scheme with the K-F scheme results in a much more vigorous Katrina, closer to reality. Still, the result is not as vigorous as reality. In terms of wind maximum, the gap was closed by 50%. The result seems to be due to the RAS scheme drying out the boundary layer, thus hampering the grid-scale secondary circulation and attending cyclone development. The RAS case never developed a full warm core, whereas the K-F case did. Not shown here: The K-F scheme also resulted in a more vigorous storm than when GEOS-5 is run with no convective parameterization. Also not shown: An experiment in which the RAS firing level was moved up by 3 model levels resulted in a stronger, warm-core storm, though not as strong as the K-F case. Effects on storm track were noticed, but not studied.

## 82. [Effect of Hurricane Katrina on the incidence of acute coronary syndrome at a primary angioplasty center in New Orleans.](#)

[PubMed](#)

Gautam, Sandeep; Menachem, Jonathan; Srivastav, Sudesh K; Delafontaine, Patrice; Irimpen, Anand

2009-10-01

In August 2005, New Orleans was hit by Hurricane Katrina, the costliest natural disaster in US history. Previous studies have shown an increase in acute myocardial infarction (AMI) in the immediate hours to weeks after natural disasters. The goals of our study were to detect any long-term increase in the incidence of AMI after Katrina and to investigate any pertinent contributing factors. This was a single-center retrospective cohort observational study. Patients admitted with AMI to Tulane Health Sciences Center hospital in the 2 years before Katrina and in the 2 years after the hospital reopened (5 months after Katrina) were identified from hospital records. The 2 groups (pre- and post-Katrina) were compared for prespecified demographic and clinical data. In the post-Katrina group, there were 246 admissions for AMI, out of a total census of 11,282 patients (2.18%), as compared with 150 AMI admissions out of a total of 21,229 patients (0.71%) in the pre-Katrina group ( $P < 0.0001$ ). The post-Katrina group had a significantly higher prevalence of unemployment ( $P = 0.0003$ ), lack of medical insurance ( $P < 0.0001$ ), medication noncompliance ( $P = 0.0001$ ), smoking ( $P = 0.001$ ), substance abuse ( $P = 0.03$ ), first-time hospitalization ( $P < 0.001$ ), local residents rather than visitors affected ( $P < 0.0001$ ), and people living in temporary housing ( $P = 0.003$ ). The role of chronic stress in the pathogenesis of AMI is poorly understood, especially in the aftermath of natural disasters. Our data suggest that Katrina was associated with prolonged loss of employment and insurance, decreased access to preventive health services, and an increased incidence of AMI. In addition, it appears that chronic stress after a natural disaster can be associated with tobacco abuse and medication and therapeutic noncompliance. We found a 3-fold increased incidence of AMI more than 2 years after Hurricane Katrina. Even allowing for the loss of some local hospitals after the disaster, this represents a

### 83. [Flooding in the Aftermath of Hurricane Katrina](#)

#### [NASA Technical Reports Server \(NTRS\)](#)

2005-01-01

These views of the Louisiana and Mississippi regions were acquired before and one day after Katrina made landfall along the Gulf of Mexico coast, and highlight many of the changes to the rivers and vegetation that occurred between the two views. The images were acquired by NASA's Multi-angle Imaging SpectroRadiometer (MISR) on August 14 and August 30, 2005. These multiangular, multispectral false-color composites were created using red band data from MISR's 46° backward and forward-viewing cameras, and near-infrared data from MISR's nadir camera. Such a display causes water bodies and inundated soil to appear in blue and purple hues, and highly vegetated areas to appear bright green. The scene differentiation is a result of both spectral effects (living vegetation is highly reflective at near-infrared wavelengths whereas water is absorbing) and of angular effects (wet surfaces preferentially forward scatter sunlight). The two images were processed identically and extend from the regions of Greenville, Mississippi (upper left) to Mobile Bay, Alabama (lower right).

There are numerous rivers along the Mississippi coast that were not apparent in the pre-Katrina image; the most dramatic of these is a new inlet in the Pascagoula River that was not apparent before

Katrina. The post-Katrina flooding along the edges of Lake Pontchartrain and the city of New Orleans is also apparent. In addition, the agricultural lands along the Mississippi floodplain in the upper left exhibit stronger near-infrared brightness before Katrina. After Katrina, many of these agricultural areas exhibit a stronger signal to MISR's oblique cameras, indicating the presence of inundated soil throughout the floodplain. Note that clouds appear in a different spot for each view angle due to a parallax effect resulting from their height above the surface.

The Multi-angle Imaging SpectroRadiometer observes the daylit Earth continuously, viewing the entire globe between 82° north and 82°

#### 84. [Shelf sediment transport during hurricanes Katrina and Rita](#)

##### [NASA Astrophysics Data System \(ADS\)](#)

Xu, Kehui; Mickey, Rangle C.; Chen, Qin; Harris, Courtney K.; Hetland, Robert D.; Hu, Kelin; Wang, Jiase

2016-05-01

Hurricanes can greatly modify the sedimentary record, but our coastal scientific community has rather limited capability to predict hurricane-induced sediment deposition. A three-dimensional sediment transport model was developed in the Regional Ocean Modeling System (ROMS) to study seabed erosion and deposition on the Louisiana shelf in response to Hurricanes Katrina and Rita in the year 2005. Sensitivity tests were performed on both erosional and depositional processes for a wide range of erosional rates and settling velocities, and uncertainty analysis was done on critical shear stresses using the polynomial chaos approximation method. A total of 22 model runs were performed in sensitivity and uncertainty tests. Estimated maximum erosional depths were sensitive to the inputs, but horizontal erosional patterns seemed to be controlled mainly by hurricane tracks, wave-current combined shear stresses, seabed grain sizes, and shelf bathymetry. During the passage of two hurricanes, local resuspension and deposition dominated the sediment transport mechanisms. Hurricane Katrina followed a shelf-perpendicular track before making landfall and its energy dissipated rapidly within about 48 h along the eastern Louisiana coast. In contrast, Hurricane Rita followed a more shelf-oblique track and disturbed the seabed extensively during its 84-h passage from the Alabama-Mississippi border to the Louisiana-Texas border. Conditions to either side of Hurricane Rita's storm track differed substantially, with the region to the east having stronger winds, taller waves and thus deeper erosions. This study indicated that major hurricanes can disturb the shelf at centimeter to meter levels. Each of these two hurricanes suspended seabed sediment mass that far exceeded the annual sediment inputs from the Mississippi and Atchafalaya Rivers, but the net transport from shelves to estuaries is yet to be determined. Future studies should focus on the modeling of sediment exchange between

#### 85. [Diabetes Care Provided to Children Displaced by Hurricane Katrina.](#)

[PubMed](#)

Quast, Troy; Mortensen, Karoline

2015-10-01

Although previous studies have examined the impact of Hurricane Katrina on adults with diabetes, less is known about the effects on children with diabetes and on those displaced by the storm. We analyzed individual-level enrollment and utilization data of children with diabetes who were displaced from Louisiana and were enrolled in the Texas Medicaid Hurricane Katrina emergency waiver (TexKat). We compared the utilization and outcomes of children displaced from Louisiana with those of children who lived in areas less affected by Hurricane Katrina. Data from both before and after the storm were used to calculate difference-in-difference estimates of the effects of displacement on the children. We analyzed 4 diabetes management procedures (glycated hemoglobin [HbA1C] tests, eye exams, microalbumin tests, and thyroid tests) and a complication from poor diabetes management (diabetic ketoacidosis). Children enrolled in the waiver generally did not experience a decrease in care relative to the control group while the waiver program was in effect. After the waiver ended, however, we observed a drop in care and an increase in complications relative to the control group. Although the waiver appeared to have been largely successful immediately following Katrina, future waivers may be improved by ensuring that enrollees continue to receive care after the waivers expire.

86. [Patterns of substance use among Hurricane Katrina evacuees in Houston, Texas](#)

[PubMed Central](#)

Cepeda, Alice; Valdez, Avelardo; Kaplan, Charles; Hill, Larry E.

2010-01-01

This paper focuses on changing patterns of substance use among low income, African American drug users evacuated from New Orleans, Louisiana, during Hurricane Katrina of August 2005. It examines the relationship between increases and decreases in alcohol and tobacco (AT) use and illicit drug (ID) use after Katrina and pre-disaster and within-disaster factors. Data from structured interviews with 200 Katrina evacuees currently living in Houston were collected 8–14 months after the disaster. Multivariate analysis revealed that rises in AT use were positively associated with education. Females and younger evacuees were more likely to have increased AT use. ID use increase was positively associated with resource loss and leaving the city before Katrina. Decreases in AT and ID use were found to be associated with disaster-related exposure. The paper discusses the specific consequences of disasters on disadvantaged minority substance users and the importance of developing public health disaster policies that target this population. PMID:19863564

87. [Injuries after Hurricane Katrina among Gulf Coast Evacuees sheltered in Houston, Texas.](#)

[PubMed](#)

Faul, Mark; Weller, Nancy F; Jones, Julie A

2011-09-01

After Hurricane Katrina and a decline in the living conditions at a major temporary shelter in New Orleans, Louisiana, residents were offered transport to a Mega-Shelter in Houston, Texas. Approximately 200,000 Gulf Coast residents were transported to Houston's Astrodome/Reliant Center Complex for appropriate triage and transfer to other shelter facilities. The Katrina Clinic was quickly organized to treat evacuees with acute injuries and illnesses as well as chronic medical conditions. Clinic physicians documented 1130 hurricane-related injuries during Katrina Clinic's operational interval, September 1-22, 2005. This article documents the nature, extent, and location of injuries treated at that clinic. We compare the frequency of injury among Katrina evacuees who visited the clinic to that of injuries among clinic outpatient records recorded in a nationally representative database. Using the Barell Matrix system and codes from the International Classification of Diseases, Ninth Revision, we classify Katrina injuries by body region and nature of injury; we also document the large number of hurricane-related immunizations distributed at the temporary outpatient clinic. The results show a 42% higher injury proportion among Katrina evacuees and that approximately half of all of the evacuees required immunizations. Lower leg extremity injuries were among the most frequent injuries. Future planning for hurricanes should take into account nonfatal injuries requiring medical treatment and other supportive care. Copyright © 2011 Emergency Nurses Association. Published by Mosby, Inc. All rights reserved.

88. [Mapping the Distribution of Sand Live Oak \(\*Quercus geminata\*\) and Determining Growth Responses to Hurricane Katrina \(2005\) on Cat Island, Mississippi](#)

[NASA Astrophysics Data System \(ADS\)](#)

Funderburk, W.; Carter, G. A.; Harley, G. L.

2013-12-01

William R. Funderburk, Gregory A. Carter, Grant Harley Gulf Coast Geospatial Center, University of Southern Mississippi Department of Geography and Geology Stennis Space Center, MS 39529 U.S.A. william.funderburk@usm.edu The Mississippi-Alabama barrier islands serve to buffer mainland coastal areas from the impacts of hurricanes and other extreme weather events. On August 29, 2005, they were impacted heavily by the wind, waves, and storm surges of Hurricane Katrina. The purpose of this study is to determine the growth responses of *Quercus geminata*, a dominant tree species on Cat Island, MS, in relation to the impact of Hurricane Katrina. Remotely sensed data was utilized in conjunction with ground data to assess growth response post Hurricane Katrina. The main objectives of this study were: 1) determine growth response of *Q. geminata* through tree ring analysis; 2) understand how *Q. geminata* adapted to intense weather and climatic phenomena on Cat Island. The hypotheses tested were: 1) growth rates of *Q. geminata* on Cat Island were decreased by the impact of Hurricane Katrina 2) trees at higher elevations survived or recovered while trees at lower elevations

did not recover or died. Decadal scale stability is required for forest stand development on siliciclastic barrier islands. Thus, monitoring the distribution of forest climax community species is key to understanding siliciclastic, subsiding, barrier island geomorphic processes and their relationships to successional patterns and growth rates. Preliminary results indicate that *Q. geminata* produces a faint growth ring, survive for at least two to three hundred years and is well-adapted to frequent salt water flooding. Cat Island: False color Image

89. [The Moderating Effects of Maternal Psychopathology on Children's Adjustment Post-Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Spell, Annie W.; Kelley, Mary Lou; Wang, Jing; Self-Brown, Shannon; Davidson, Karen L.; Pellegrin, Angie; Palcic, Jeannette L.; Meyer, Kara; Paasch, Valerie; Baumeister, Audrey

2008-01-01

This study investigated the role of maternal psychopathology in predicting children's psychological distress in a disaster-exposed sample. Participants consisted of 260 children (ages 8-16) recruited from public schools and their mothers. These families were displaced from New Orleans because of Hurricane Katrina in 2005. Assessment took place 3â€¦

90. [Reactive Aggression and Posttraumatic Stress in Adolescents Affected by Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Marsee, Monica A.

2008-01-01

The current study tests a theoretical model illustrating a potential pathway to reactive aggression through exposure to a traumatic event (Hurricane Katrina) in 166 adolescents (61% female, 63% Caucasian) recruited from high schools on the Gulf Coast of Mississippi. Results support an association between exposure to Hurricane Katrina and reactiveâ€¦

91. [Post-Katrina mortality in the greater New Orleans area, Louisiana.](#)

[PubMed](#)

Eavey, Joanna; Ratard, Raoult C

2008-01-01

Death rates in the Greater New Orleans area were examined by month from 2002 to 2006 to assess whether mortality increased after Hurricane Katrina. Finalized death data from the Louisiana Office of Vital Statistics and the most recent population estimates were used to calculate annual mortality

rates in the Greater New Orleans area by month for 2002–2006. Causes of death were also examined for changes. There was no significant increase in the death rates in the Greater New Orleans area post-Katrina. The only excesses were seen in Orleans Parish from January to June 2006. In the latter months of 2006, rates decreased to those of previous years. Mortality rates for the Greater New Orleans (GNO) area during the same time period showed no increase. In the first months of 2006, deaths due to septicemia and accidents increased significantly in Orleans Parish and returned to normal in the latter half of 2006. Causes of death in the GNO area showed no significant change after Katrina. There was no significant or lasting increase in mortality rates in the Greater New Orleans area following Hurricane Katrina.

92. [A comparison of the nursing home evacuation experience between hurricanes katrina \(2005\) and gustav \(2008\).](#)

[PubMed](#)

Blanchard, Gary; Dosa, David

2009-11-01

One of the tragic legacies of Hurricane Katrina was the loss of life among Louisiana (LA) nursing home (NH) residents. Katrina revealed a staggering lack of emergency preparation and understanding of how to safely evacuate frail populations. Three years later, LA braced for Hurricane Gustav, a storm heralded to rival Katrina's power. Although its magnitude of destruction ultimately paled to Katrina, the warnings and predicted path preceding Gustav yielded a process of NH evacuations similar to Katrina. The goal of this article was to ascertain whether NH administrative directors (ADs) felt more prepared to evacuate before Gustav. In 2006, Dosa et al(5)(J Am Med Dir Assoc, 3/07), interviewed 20 NH ADs by qualitative telephone survey to evaluate their lessons learned from Katrina. Administrators at these 20 participating nursing homes were contacted and asked to participate in a follow-up survey to compare hurricane preparedness between 2005 and 2008. Specifically, ADs were asked if they evacuated before Gustav, their destination, and about logistical issues with evacuation (eg, transportation, injuries). ADs were asked to rate their confidence with state assistance, hurricane transportation, and evacuation preparedness on a 10-point scale (10=most confident) and compare their preparedness to Katrina. Sixteen of the 20 NHs that participated in 2006 agreed to be surveyed—11 of whom held the same position before Katrina. Unlike Katrina, when only 45% evacuated before the storm, all 16 NHs evacuated before Gustav (56% to another NH and 46% to a church, gym, college, or other facility). Overall, ADs rated their confidence in preparedness for Gustav as a mean of 8.3 (range 5 to 10) compared with a mean of 5.4 (range 3 to 8) for Katrina, a 54% improvement. Of the 11 ADs employed pre-Katrina, 73% reported improved collaboration with the state and 55% noted improved transportation. Nevertheless, 7 ADs noted significant logistical problems during evacuation (mostly

93. [Social and mental health needs assessment of Katrina evacuees.](#)

[PubMed](#)

Coker, Ann L; Hanks, Jeanne S; Eggleston, Katherine S; Risser, Jan; Tee, P Grace; Chronister, Karen J; Troisi, Catherine L; Arafat, Raouf; Franzini, Luisa

2006-01-01

Hurricane Katrina made landfall along the Gulf Coast as a Category 3 storm on August 29, 2005. Many residents were evacuated to neighboring cities owing to massive destruction. Working with the City of Houston Health Department, researchers conducted a medical and psychological needs assessment of 124 Hurricane Katrina evacuees in Houston shelters from September 4-12, 2005. Among those willing to talk about their experiences, 41% were afraid they would die, 16% saw someone close to them injured or die, 17% saw violence, and 6% directly experienced physical violence. When using a version of the Impact of Stress Experiences scale, the majority of evacuees scored as experiencing moderate (38.6%) to severe (23.9%) post-traumatic stress disorder (PTSD) symptoms. These data suggest that in addition to challenges in finding loved ones, housing, and jobs, many Katrina survivors have experienced significant psychological trauma that may lead to future PTSD.

94. [An experimental investigation on wind turbine aeromechanics and wake interferences among multiple wind turbines](#)

[NASA Astrophysics Data System \(ADS\)](#)

Ozbay, Ahmet

A comprehensive experimental study was conducted to investigate wind turbine aeromechanics and wake interferences among multiple wind turbines sited in onshore and offshore wind farms. The experiments were carried out in a large-scale Aerodynamic/Atmospheric Boundary Layer (AABL) Wind Tunnel available at Iowa State University. An array of scaled three-blade Horizontal Axial Wind Turbine (HAWT) models were placed in atmospheric boundary layer winds with different mean and turbulence characteristics to simulate the situations in onshore and offshore wind farms. The effects of the important design parameters for wind farm layout optimization, which include the mean and turbulence characteristics of the oncoming surface winds, the yaw angles of the turbines with respect to the oncoming surface winds, the array spacing and layout pattern, and the terrain topology of wind farms on the turbine performances (i.e., both power output and dynamic wind loadings) and the wake interferences among multiple wind turbines, were assessed in detail. The aeromechanic performance and near wake characteristics of a novel dual-rotor wind turbine (DRWT) design with co-rotating or counter-rotating configuration were also investigated, in comparison to a conventional single rotor wind turbine (SRWT). During the experiments, in addition to measuring dynamic wind loads (both forces and moments) and the power outputs of the scaled turbine models, a high-resolution Particle Image Velocity (PIV) system was used to conduct detailed flow field measurements (i.e., both free-run and phase-locked flow fields measurements) to reveal the transient behavior of the unsteady wake vortices and turbulent flow structures behind wind turbines and to quantify the characteristics of the wake interferences among the wind turbines sited in non-homogenous surface winds. A miniature

cobra anemometer was also used to provide high-temporal-resolution data at points of interest to supplement the full field PIV

## 95. [Cleansing the Superdome: The Paradox of Purity and Post-Katrina Guilt](#)

[ERIC Educational Resources Information Center](#)

Grano, Daniel A.; Zagacki, Kenneth S.

2011-01-01

The reopening of the New Orleans Superdome after Hurricane Katrina on Monday Night Football dramatized problematic rhetorical, visual, and spatial norms of purification rituals bound up in what Burke calls the paradox of purity. Hurricane Katrina was significant as a visually traumatic event in large part because it signified the ghetto as a

## 96. [Symptoms of Posttraumatic Stress Disorder in a New Orleans Workforce Following Hurricane Katrina](#)

[PubMed Central](#)

Hyre, Amanda D.; Ompad, Danielle C.; Menke, Andy; Tynes, L. Lee; Muntner, Paul

2007-01-01

On August 29, 2005, Hurricane Katrina made landfall resulting in catastrophic damage and flooding to New Orleans, LA, and the Gulf Coast, which may have had significant mental health effects on the population. To determine rates and predictors of symptoms consistent with a diagnosis of posttraumatic stress disorder (PTSD) in New Orleans residents following Hurricane Katrina, we conducted a web-based survey 6 months after Hurricane Katrina made landfall. Participants included 1,542 employees from the largest employer in New Orleans. The prevalence of PTSD symptoms was 19.2%. Predictors of PTSD symptoms in a multivariate-adjusted regression model included female sex, non-black race, knowing someone who died in the storm, not having property insurance, having had a longer evacuation, a much longer work commute compared to before Hurricane Katrina, and currently living in a newly purchased or rented house or in a temporary trailer. Despite universal health coverage and the benefits of an employee assistance program for all employees, only 28.5% of those with PTSD symptoms had talked to a health professional about the events of Hurricane Katrina or issues encountered since the storm. A significant burden of PTSD symptoms was present 6 months following Hurricane Katrina among a large group of adults who had returned to work in New Orleans. Given their key role in the economic redevelopment of the region, there is a tremendous need to identify those in the workforce with symptoms consistent with PTSD and to enhance treatment options. The strong relationship between displacement from ones pre-Katrina residence and symptoms of PTSD suggests a need to focus resource utilization and interventions on individuals living in temporary housing. PMID:17226081

## 97. [Symptoms of posttraumatic stress disorder in a New Orleans workforce following Hurricane Katrina.](#)

[PubMed](#)

DeSalvo, Karen B; Hyre, Amanda D; Ompad, Danielle C; Menke, Andy; Tynes, L Lee; Muntner, Paul

2007-03-01

On August 29, 2005, Hurricane Katrina made landfall resulting in catastrophic damage and flooding to New Orleans, LA, and the Gulf Coast, which may have had significant mental health effects on the population. To determine rates and predictors of symptoms consistent with a diagnosis of posttraumatic stress disorder (PTSD) in New Orleans residents following Hurricane Katrina, we conducted a web-based survey 6 months after Hurricane Katrina made landfall. Participants included 1,542 employees from the largest employer in New Orleans. The prevalence of PTSD symptoms was 19.2%. Predictors of PTSD symptoms in a multivariate-adjusted regression model included female sex, non-black race, knowing someone who died in the storm, not having property insurance, having had a longer evacuation, a much longer work commute compared to before Hurricane Katrina, and currently living in a newly purchased or rented house or in a temporary trailer. Despite universal health coverage and the benefits of an employee assistance program for all employees, only 28.5% of those with PTSD symptoms had talked to a health professional about the events of Hurricane Katrina or issues encountered since the storm. A significant burden of PTSD symptoms was present 6 months following Hurricane Katrina among a large group of adults who had returned to work in New Orleans. Given their key role in the economic redevelopment of the region, there is a tremendous need to identify those in the workforce with symptoms consistent with PTSD and to enhance treatment options. The strong relationship between displacement from one's pre-Katrina residence and symptoms of PTSD suggests a need to focus resource utilization and interventions on individuals living in temporary housing.

## 98. [Trends in Serious Emotional Disturbance among Youths Exposed to Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

McLaughlin, Katie A.; Fairbank, John A.; Gruber, Michael J.; Jones, Russell T.; Osofsky, Joy D.; Pfefferbaum, Betty; Sampson, Nancy A.; Kessler, Ronald C.

2010-01-01

Objective: To examine patterns and predictors of trends in "DSM-IV" serious emotional disturbance (SED) among youths exposed to Hurricane Katrina. Method: A probability sample of adult pre-hurricane residents of the areas affected by Katrina completed baseline and follow-up telephone surveys 18 to 27 months post-hurricane and 12 to 18 months post-hurricane.

## 99. [Out of New Orleans: Race, Class, and Researching the Katrina Diaspora](#)

[ERIC Educational Resources Information Center](#)

Morris, Jerome E.

2008-01-01

The torrential rains from Hurricane Katrina, the breaking of the levees, and the subsequent flooding of New Orleans resulted in another Black Diaspora. This article focuses on Black children and families who were displaced by Hurricane Katrina but now reside in cities, towns, and suburbs outside of the Crescent City. Informed by the author's

100. [Hurricane Katrina: A Teachable Moment](#)

[ERIC Educational Resources Information Center](#)

Bertrand, Peggy

2009-01-01

This article presents suggestions for integrating the phenomenon of hurricanes into the teaching of high school fluid mechanics. Students come to understand core science concepts in the context of their impact upon both the environment and human populations. Suggestions for using information about hurricanes, particularly Hurricane Katrina, in

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101. [A Resiliency Profile of Hurricane Katrina Adolescents: A Psychosocial Study of Disaster](#)

[ERIC Educational Resources Information Center](#)

Nelson, Larry P.

2008-01-01

Information about the psychological status of children following a natural disaster is rare. Therefore, the purpose of this investigation is to create a psychosocial profile of relocated Hurricane Katrina youth (N = 83, ages 13 to 17) and integrate the findings into a growing body of literature on the psychological effects of disaster. Data were

## 102. [Investigation on wind turbine wakes: wind tunnel tests and field experiments with LIDARs](#)

[NASA Astrophysics Data System \(ADS\)](#)

lungo, Giacomo; Wu, Ting; Ceff, Juliette; Port-Agel, Fernando; WIRE Team

2011-11-01

An investigation on the interaction between atmospheric boundary layer flow and wind turbines is carried out with wind tunnel and LIDAR measurements. The former were carried out using hot-wire anemometry and multi-hole pressure probes in the wake of a three-bladed miniature wind turbine. The wind turbine wake is characterized by a strong velocity defect in the proximity of the rotor, and its recovery is found to depend on the characteristics of the incoming atmospheric boundary layer (mean velocity and turbulence intensity profiles). Field experiments were performed using three wind LIDARs. Bi-dimensional scans are performed in order to analyse the wake wind field with different atmospheric boundary layer conditions. Furthermore, simultaneous measurements with two or three LIDARs allow the reconstruction of multi-component velocity fields. Both LIDAR and wind tunnel measurements highlight an increased turbulence level at the wake boundary for heights comparable to the top-tip of the blades; this flow feature can produce dangerous fatigue loads on following wind turbines.

## 103. [Hurricane Katrina - Murphy Oil Spill Boundary](#)

[EPA Pesticide Factsheets](#)

Hurricane Katrina made landfall in August 2005, causing widespread devastation along the Gulf Coast of the United States. EPA emergency response personnel worked with FEMA and state and local agencies to respond to the emergencies throughout the Gulf.

## 104. [StenniSphere reopens after Hurricane Katrina](#)

[NASA Image and Video Library](#)

2006-01-18

StenniSphere reopened Jan. 18, 2006, almost five months after Hurricane Katrina damaged the basement of the building that houses the visitor center. Thanks to the staff's careful preparations before the storm, no artifacts or exhibits were harmed.

## 105. [StenniSphere reopens after Hurricane Katrina](#)

## [NASA Technical Reports Server \(NTRS\)](#)

2006-01-01

StenniSphere reopened Jan. 18, 2006, almost five months after Hurricane Katrina damaged the basement of the building that houses the visitor center. Thanks to the staff's careful preparations before the storm, no artifacts or exhibits were harmed.

### 106. [Higher Education in Katrina's Wake](#)

#### [ERIC Educational Resources Information Center](#)

Fields, Cheryl

2005-01-01

Anyone who has ever complained that colleges and universities are highly bureaucratic entities, almost inherently incapable of moving quickly, should be gratified by what we saw in the aftermath of Hurricane Katrina. With amazing swiftness, colleges and universities across the country—from large publics to small privates to community and

### 107. [The Immigrant Children of Katrina](#)

#### [ERIC Educational Resources Information Center](#)

Reyes, Augustina H.

2010-01-01

In August 2005, Hurricane Katrina displaced the largest number of public school children ever affected by any disaster. Approximately 370,000 children, including 15,000 Latino/Hispanic children from Louisiana, were scattered throughout the 48 U.S. states (Landrieu, 2010; Louisiana Department of Education, 2004). Although much of the media

### 108. [STEM Progress in Katrina's Wake](#)

#### [ERIC Educational Resources Information Center](#)

Gonzales, Dana

2008-01-01

When Hurricane Katrina hit New Orleans in 2005, it caused a devastating impact on the Crescent City's public education system. The devastating storm and its aftermath completely wiped out the educational infrastructure of the New Orleans Public Schools, making one of the country's largest metropolitan school districts virtually disappear. Two

## 109. [A Comparison of the Nursing Home Evacuation Experience between Hurricanes Katrina \(2005\) and Gustav \(2008\)](#)

[PubMed Central](#)

Blanchard, Gary; Dosa, David

2009-01-01

Background One of the tragic legacies of Hurricane Katrina was the loss of life among Louisiana (LA) nursing home (NH) residents. Katrina revealed a staggering lack of emergency preparation and understanding of how to safely evacuate frail populations. Three years later, LA braced for Hurricane Gustav, a storm heralded to rival Katrina's power. Though its magnitude of destruction ultimately paled to Katrina, the warnings and predicted path preceding Gustav yielded a process of NH evacuations similar to Katrina. The goal of this paper was to ascertain whether NH administrative directors (ADs) felt more prepared to evacuate before Gustav. Methods In 2006, Dosa, et. al. (JAMDA, 3/07), interviewed 20 NH ADs by qualitative telephone survey to evaluate their lessons learned from Katrina. Administrators at these 20 participating nursing homes were contacted and asked to participate in a follow-up survey to compare hurricane preparedness between 2005 and 2008. Specifically, ADs were asked if they evacuated prior to Gustav, their destination, and about logistical issues with evacuation (e.g., transportation, injuries). ADs were asked to rate their confidence with state assistance, hurricane transportation, and evacuation preparedness on a 10-point scale (10=most confident) and compare their preparedness to Katrina. Results Sixteen of the 20 NHs that participated in 2006 agreed to be surveyed – 11 of whom held the same position before Katrina. Unlike Katrina, when only 45% evacuated prior to the storm, all 16 NHs evacuated before Gustav. (56% to another NH and 46% to a church, gym, college, or other facility). Overall, ADs rated their confidence in preparedness for Gustav as a mean of 8.3 (range 5 to 10) – compared with a mean of 5.4 (range 3 to 8) for Katrina, a 54% improvement. Of the 11 ADs employed pre-Katrina, 73% reported improved collaboration with the state and 55% noted improved transportation. Nevertheless, seven ADs noted significant logistical problems during

## 110. [SSC marks anniversary of Hurricane Katrina](#)

[NASA Technical Reports Server \(NTRS\)](#)

2006-01-01

At the Hurricane Katrina observance held Aug. 29 in the StenniSphere auditorium, Stennis Space Center Deputy Director David Throckmorton (left) and RAdm. Timothy McGee, Commander, Naval Meteorology and Oceanography Command, unveil a plaque dedicated to SSC employees.

## 111. [SSC marks anniversary of Hurricane Katrina](#)

[NASA Image and Video Library](#)

2006-08-29

At the Hurricane Katrina observance held Aug. 29 in the StenniSphere auditorium, Stennis Space Center Deputy Director David Throckmorton (left) and RAdm. Timothy McGee, Commander, Naval Meteorology and Oceanography Command, unveil a plaque dedicated to SSC employees.

## 112. [Importance of air-sea interaction on wind waves, storm surge and hurricane simulations](#)

[NASA Astrophysics Data System \(ADS\)](#)

Chen, Yingjian; Yu, Xiping

2017-04-01

It was reported from field observations that wind stress coefficient levels off and even decreases when the wind speed exceeds 30-40 m/s. We propose a wave boundary layer model (WBLM) based on the momentum and energy conservation equations. Taking into account the physical details of the air-sea interaction process as well as the energy dissipation due to the presence of sea spray, this model successfully predicts the decreasing tendency of wind stress coefficient. Then WBLM is embedded in the current-wave coupled model FVCOM-SWAVE to simulate surface waves and storm surge under the forcing of hurricane Katrina. Numerical results based on WBLM agree well with the observed data of NDBC buoys and tide gauges. Sensitivity analysis of different wind stress evaluation methods also shows that large anomalies of significant wave height and surge elevation are captured along the passage of hurricane core. The differences of the local wave height are up to 13 m, which is in accordance with the general knowledge that the ocean dynamic processes under storm conditions are very sensitive to the amount of momentum exchange at the air-sea interface. In the final part of the research, the reduced wind stress coefficient is tested in the numerical forecast of hurricane Katrina. A parabolic formula fitted to WBLM is employed in the atmosphere-ocean coupled model COAWST. Considering the joint effects of ocean cooling and reduced wind drag, the intensity metrics - the minimum sea level pressure and the maximum 10 m wind speed - are in good inconsistency with the best track result. Those methods, which predict the wind stress coefficient that increase or saturate in extreme wind condition, underestimate the hurricane intensity. As a whole, we unify the evaluation methods of wind stress in different numerical models and yield reasonable results. Although it is too early to conclude that WBLM is totally applicable or the drag coefficient does decrease for high wind speed, our current

## 113. [Investigating the Roles of Neighborhood Environments and Housing-based Social Support in the Relocation of Persons Made Homeless by Hurricane Katrina](#)

[PubMed Central](#)

Kloos, Bret; Flory, Kate; Hankin, Benjamin L.; Cheely, Catherine A.; Segal, Michelle

2008-01-01

This study examined whether social support tied to relocation efforts and neighborhood social climate may mediate the effects of stressful life events on mental health outcomes following Hurricane Katrina. Participants were 108 adult persons made homeless by Hurricane Katrina and evacuated to Columbia, SC. Civic leaders developed an intervention model that emphasized (a) a one-stop point of entry, (b) living in hotels and apartments rather than shelters, and (c) matching hotels with volunteer "hosts" to assist in relocation efforts. Results revealed that perceived neighborhood factors and satisfaction with host relationship were related to several mental health outcomes. Neighborhood social climate partially mediated several mental health outcomes. Implications of this intervention model and the utility of social ecological perspectives on homelessness interventions are discussed. PMID:19363774

#### 114. [After Katrina, Teachers Reaching Out](#)

[ERIC Educational Resources Information Center](#)

Perlmutter, David D.

2005-01-01

In this article, the author talks about teachers communicating with students to show willingness to listen and care. In cases of real emotional distress, he refers students to the proper campus counseling services, but after Hurricane Katrina, it broke the barriers of his disengagement from students' personal problem. He learned that in many

#### 115. [Investigation on wind energy-compressed air power system.](#)

[PubMed](#)

Jia, Guang-Zheng; Wang, Xuan-Yin; Wu, Gen-Mao

2004-03-01

Wind energy is a pollution free and renewable resource widely distributed over China. Aimed at protecting the environment and enlarging application of wind energy, a new approach to application of wind energy by using compressed air power to some extent instead of electricity put forward. This includes: explaining the working principles and characteristics of the wind energy-compressed air power system; discussing the compatibility of wind energy and compressor capacity; presenting the theoretical model and computational simulation of the system. The obtained compressor capacity vs wind power relationship in certain wind velocity range can be helpful in the designing of the wind power-compressed air system. Results of investigations on the application of high-pressure compressed air for pressure reduction led to conclusion that pressure reduction with expander is better than the throttle regulator in energy saving.

116. [Reflecting on "Project Katrina" and Developmentally Appropriate Practices: A Graduate Student's Perspective](#)

[ERIC Educational Resources Information Center](#)

Schellhaas, Andree; Burts, Diane C.; Aghayan, Carol

2007-01-01

This article describes the independent study project of a student who was a graduate assistant in a child development laboratory preschool when Hurricanes Katrina and Rita struck the Gulf Coast area. Through her experiences with "Project Katrina" she deepens her understanding of developmentally appropriate practices as she learns firsthand about

117. [SIMULATION OF FRESHWATER PLUME FROM LAKE PONTCHARTRAIN AND THE MISSISSIPPI RIVER IN THE WAKE OF HURRICANE KATRINA](#)

[EPA Science Inventory](#)

In the spirit of a post-Katrina response, a three-dimensional hydrodynamic model was set up and applied to the hurricane Katrina affected region of Mississippi River delta, Lake Pontchartran, and the Gulf of Mexico coastline near New Orleans. Following Katrina, there was concern ...

118. [Just-in-Time Training: The Lessons of Hurricane Katrina, 10 Years Later](#)

[ERIC Educational Resources Information Center](#)

Boerner, Heather

2016-01-01

Hurricane Katrina reshaped college workforce development programs as thoroughly as it did the coastline—but in this case, the changes were for the good of students, employers and the community. This article discusses the effects and changes made by 4 community colleges who were effected by Hurricane Katrina: (1) Louisiana Community and Technical

119. [Lessons: Katrina and Beginning Anew](#)

[ERIC Educational Resources Information Center](#)

Kirylo, James D.

2005-01-01

New Orleans, fondly known in better days for its spectacular cuisine, cool jazz, and good times, was the leading story on television news broadcasts the world over when a massive hurricane came. As Katrina

took its destructive path, culminating in the devastating rupture of ill-prepared levee systems, the world was riveted by stories about the

## 120. Investigations of Wind/WAVES Dust Impacts

### NASA Astrophysics Data System (ADS)

St Cyr, O. C.; Wilson, L. B., III; Rockcliffe, K.; Mills, A.; Nieves-Chinchilla, T.; Adrian, M. L.; Malaspina, D.

2017-12-01

The Wind spacecraft launched in November 1994 with a primary goal to observe and understand the interaction between the solar wind and Earth's magnetosphere. The waveform capture detector, TDS, of the radio and plasma wave investigation, WAVES [Bougeret et al., 1995], onboard Wind incidentally detected micron-sized dust as electric field pulses from the recollection of the impact plasma clouds (an unintended objective). TDS has detected over 100,000 dust impacts spanning almost two solar cycles; a dataset of these impacts has been created and was described in Malaspina & Wilson [2016]. The spacecraft continues to collect data about plasma, energetic particles, and interplanetary dust impacts. Here we report on two investigations recently conducted on the Wind/WAVES TDS database of dust impacts. One possible source of dust particles is the annually-recurring meteor showers. Using the nine major showers defined by the American Meteor Society, we compared dust count rates before, during, and after the peak of the showers using averaging windows of varying duration. However, we found no statistically significant change in the dust count rates due to major meteor showers. This appears to be an expected result since smaller grains, like the micron particles that Wind is sensitive to, are affected by electromagnetic interactions and Poynting-Robertson drag, and so are scattered away from their initial orbits. Larger grains tend to be more gravitationally dominated and stay on the initial trajectory of the parent body so that only the largest dust grains (those that create streaks as they burn up in the atmosphere) are left in the orbit of the parent body. Ragot and Kahler [2003] predicted that coronal mass ejections (CMEs) near the Sun could effectively scatter dust grains of comparable size to those observed by Wind. Thus, we examined the dust count rates immediately before, during, and after the passage of the 350 interplanetary CMEs observed by Wind over its 20+ year

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## 121. [Changes in CD4 count among persons living with HIV/AIDS following Hurricane Katrina.](#)

[PubMed](#)

Robinson, William T; Wendell, Deborah; Gruber, DeAnn

2011-07-01

To examine the effects of Hurricane Katrina on the disease progression of persons living with HIV/AIDS (PLWH/A), CD4 counts during the 18 months immediately prior and subsequent to Katrina were obtained from the Louisiana Office of Public Health. PLWH/A were determined to be either non-residents of the New Orleans area, returning evacuees or evacuees who had returned to the area within 18 months. A mixed model repeated measures ANOVA showed significant effects for race, sex, age, year of diagnosis, and mode of exposure. A significant main effect for residence was found, as well as an interaction of residence by time of CD4 count (pre-Katrina vs. post-Katrina), indicating that, while non-returning evacuees had lower overall CD4 counts, the change in CD4 counts of non-returning evacuees dropped more sharply than those of the returning PLWH/A or non-residents. While these results point to a potential need for the population of PLWH/A who continue to be affected by Katrina, they also provide important data on the effect that large-scale disasters and stressful life events may have on individuals with chronic disease.

## 122. [Wind Tunnel Investigation of Ground Wind Loads for Ares Launch Vehicle](#)

[NASA Technical Reports Server \(NTRS\)](#)

Keller, Donald F.; Ivanco, Thomas G.

2010-01-01

A three year program was conducted at the NASA Langley Research Center (LaRC) Aeroelasticity Branch (AB) and Transonic Dynamics Tunnel (TDT) with the primary objective to acquire scaled steady and dynamic ground-wind loads (GWL) wind-tunnel data for rollout, on-pad stay, and on-pad launch configurations for the Ares I-X Flight Test Vehicle (FTV). The experimental effort was conducted to obtain an understanding of the coupling of aerodynamic and structural characteristics that can result in large sustained wind-induced oscillations (WIO) on such a tall and slender launch vehicle and to generate a unique database for development and evaluation of analytical methods for predicting steady and dynamic GWL, especially those caused by vortex shedding, and resulting in significant WIO. This paper summarizes the wind-tunnel test program that employed two dynamically-

aeroelastically scaled GWL models based on the Ares I-X Flight Test Vehicle. The first model tested, the GWL Checkout Model (CM), was a relatively simple model with a secondary objective of restoration and development of processes and methods for design, fabrication, testing, and data analysis of a representative ground wind loads model. In addition, parametric variations in surface roughness, Reynolds number, and protuberances (on/off) were investigated to determine effects on GWL characteristics. The second windtunnel model, the Ares I-X GWL Model, was significantly more complex and representative of the Ares I-X FTV and included the addition of simplified rigid geometrically-scaled models of the Kennedy Space Center (KSC) Mobile Launch Platform (MLP) and Launch Complex 39B primary structures. Steady and dynamic base bending moment as well as model response and steady and unsteady pressure data was acquired during the testing of both models. During wind-tunnel testing of each model, flow conditions (speed and azimuth) where significant WIO occurred, were identified and thoroughly investigated. Scaled data from

### 123. [Real-Time Teaching: Lessons from Katrina](#)

[ERIC Educational Resources Information Center](#)

Phillips, Antoinette S.; Phillips, Carl R.

2008-01-01

Professors strive constantly to find ways for students to apply what they are learning in the classroom, thereby reinforcing principles being taught and increasing student interest and involvement in the learning process. Hurricane Katrina's devastating impact on the Gulf Coast had wide-ranging consequences. As a result, many individualsâ€¦

### 124. [Going Home after Hurricane Katrina: Determinants of Return Migration and Changes in Affected Areas. Working Paper 428](#)

[ERIC Educational Resources Information Center](#)

Groen, Jeffrey A.; Polivka, Anne E.

2009-01-01

This paper examines the decision of Hurricane Katrina evacuees to return to their pre- Katrina areas and documents how the composition of the Katrina-affected region changed over time. Using data from the Current Population Survey, we show that an evacuee's age and the severity of damage in an evacuee's county of origin are important determinantsâ€¦

### 125. [A National Children's Resiliency Response Initiative: 2006-2007 Plan to Help Katrina's Kids](#)

[ERIC Educational Resources Information Center](#)

Britt, Alice Mae

2006-01-01

The 2006 National Resiliency Response Initiative for Katrina's Kids is a systematic approach to providing resiliency support to the over 200,000 children victimized by one of the worst natural disasters in American history. From the Gulf States region, children suffered trauma during and after Hurricane Katrina as they became displaced young

126. [Flooding in the Aftermath of Hurricane Katrina](#)

[NASA Image and Video Library](#)

2005-09-21

These views of the Louisiana and Mississippi regions were acquired before and one day after Katrina made landfall along the Gulf of Mexico coast. The images were acquired by NASA Terra spacecraft on August 14 and August 30, 2005.

127. [Investigation of aircraft landing in variable wind fields](#)

[NASA Technical Reports Server \(NTRS\)](#)

Frost, W.; Reddy, K. R.

1978-01-01

A digital simulation study is reported of the effects of gusts and wind shear on the approach and landing of aircraft. The gusts and wind shear are primarily those associated with wind fields created by surface wind passing around bluff geometries characteristic of buildings. Also, flight through a simple model of a thunderstorm is investigated. A two-dimensional model of aircraft motion was represented by a set of nonlinear equations which accounted for both spatial and temporal variations of winds. The landings of aircraft with the characteristics of a DC-8 and a DHC-6 were digitally simulated under different wind conditions with fixed and automatic controls. The resulting deviations in touchdown points and the controls that are required to maintain the desired flight path are presented. The presence of large bluff objects, such as buildings in the flight path is shown to have considerable effect on aircraft landings.

128. [Health of Medicare Advantage plan enrollees at 1 year after Hurricane Katrina.](#)

[PubMed](#)

Burton, Lynda C; Skinner, Elizabeth A; Uscher-Pines, Lori; Lieberman, Richard; Leff, Bruce; Clark, Rebecca; Yu, Qilu; Lemke, Klaus W; Weiner, Jonathan P

2009-01-01

To assess the effects of Hurricane Katrina on mortality, morbidity, disease prevalence, and service utilization during 1 year in a cohort of 20,612 older adults who were living in New Orleans, Louisiana, before the disaster and who were enrolled in a managed care organization (MCO). Observational study comparing mortality, morbidity, and service use for 1 year before and after Hurricane Katrina, augmented by a stratified random sample of 303 enrollees who participated in a telephone survey after Hurricane Katrina. Sources of data for health and service use were MCO claims. Mortality was based on reports to the MCO from the Centers for Medicare & Medicaid Services; morbidity was measured using adjusted clinical groups case-mix methods derived from diagnoses in ambulatory and hospital claims data. Mortality in the year following Hurricane Katrina was not significantly elevated (4.3% before vs 4.9% after the hurricane). However, overall morbidity increased by 12.6% ( $P < .001$ ) compared with a 3.4% increase among a national sample of Medicare managed care enrollees. Nonwhite subjects from Orleans Parish experienced a morbidity increase of 15.9% ( $P < .001$ ). The prevalence of numerous treated medical conditions increased, and emergency department visits and hospitalizations remained significantly elevated during the year. The enormous health burden experienced by older individuals and the disruptions in service utilization reveal the long-term effects of Hurricane Katrina on this vulnerable population. Although quick rebuilding of the provider network may have attenuated more severe health outcomes for this managed care population, new policies must be introduced to deal with the health consequences of a major disaster.

129. [Use of an innovative design mobile hospital in the medical response to Hurricane Katrina.](#)

[PubMed](#)

Blackwell, Thomas; Bosse, Michael

2007-05-01

On August 29, 2005, Hurricane Katrina caused widespread devastation to the Gulf Coast region of the United States. Although New Orleans had extensive damage from flooding, many communities in Mississippi had equal damage from storm surge and wind. Because the medical resources in many of these areas were incapacitated, resources from North Carolina were deployed to assist in the medical mission. This response included the initial use of Carolinas MED-1, a mobile hospital that incorporates an emergency department, surgical suite, critical care beds, and general treatment and admitting area. This asset, along with additional state resources, provided comprehensive diagnostic and definitive patient care until the local medical infrastructure was rebuilt and functional. The use of a mobile hospital may be advantageous for future deployments to large-scale disasters, especially when integrated with specialty teams.

130. [Going home after Hurricane Katrina: Determinants of return migration and changes in affected areas.](#)

[PubMed](#)

Groen, Jeffrey A; Polivka, Anne E

2010-11-01

This article examines the decision of Hurricane Katrina evacuees to return to their pre-Katrina areas and documents how the composition of the Katrina-affected region changed over time. Using data from the Current Population Survey, we show that an evacuee's age, family income, and the severity of damage in an evacuee's county of origin are important determinants of whether an evacuee returned during the first year after the storm. Blacks were less likely to return than whites, but this difference is primarily related to the geographical pattern of storm damage rather than to race per se. The difference between the composition of evacuees who returned and the composition of evacuees who did not return is the primary force behind changes in the composition of the affected areas in the first two years after the storm. Katrina is associated with substantial shifts in the racial composition of the affected areas (namely, a decrease in the percentage of residents who are black) and an increasing presence of Hispanics. Katrina is also associated with an increase in the percentage of older residents, a decrease in the percentage of residents with low income/education, and an increase in the percentage of residents with high income/education.

### 131. [Lessons Learnt From Hurricane Katrina.](#)

[NASA Astrophysics Data System \(ADS\)](#)

Akundi, Murty

2008-03-01

Hurricane Katrina devastated New Orleans and its suburbs on Monday August 29<sup>th</sup>, 2005. The previous Friday morning, August 26, the National Hurricane Center indicated that Katrina was a Category One Hurricane, which was expected to hit Florida. By Friday afternoon, it had changed its course, and neither the city nor Xavier University was prepared for this unexpected turn in the hurricane's path. The university had 6 to 7 ft of water in every building and Xavier was closed for four months. Students and university personnel that were unable to evacuate were trapped on campus and transportation out of the city became a logistical nightmare. Email and all electronic systems were unavailable for at least a month, and all cell phones with a 504 area code stopped working. For the Department, the most immediate problem was locating faculty and students. Xavier created a list of faculty and their new email addresses and began coordinating with faculty. Xavier created a web page with advice for students, and the chair of the department created a separate blog with contact information for students. The early lack of a clear method of communication made worse the confusion and dismay among the faculty on such issues as when the university would reopen, whether the faculty would be retained, whether they should seek temporary (or permanent) employment elsewhere, etc. With the vision and determination of President Dr. Francis, Xavier was able to reopen the university in January and ran a full academic year from January through August. Since Katrina, the university has asked every department and unit to prepare emergency preparedness plans. Each department has been asked to collect e-mail addresses (non-Xavier), cell phone numbers and out of

town contact information. The University also established an emergency website to communicate. All faculty have been asked to prepare to teach classes electronically via Black board or the web. Questions remain about the longer term issues of

### 132. [Educators Reach out to Katrina Victims](#)

[ERIC Educational Resources Information Center](#)

Hardy, Lawrence

2006-01-01

The emotional trauma of recent events may never go away. A million people were uprooted by Hurricane Katrina, including an estimated 372,000 children of school age. Three weeks later, Hurricane Rita slammed into the Texas-Louisiana coastline, forcing thousands more to evacuate. Acute symptoms of trauma range from confusion, nightmares, and

### 133. [Urban sprawl and body mass index among displaced Hurricane Katrina survivors.](#)

[PubMed](#)

Arcaya, Mariana; James, Peter; Rhodes, Jean E; Waters, Mary C; Subramanian, S V

2014-08-01

Existing research suggests that walkable environments are protective against weight gain, while sprawling neighborhoods may pose health risks. Using prospective data on displaced Hurricane Katrina survivors, we provide the first natural experimental data on sprawl and body mass index (BMI). The analysis uses prospectively collected pre- (2003-2005) and post-hurricane (2006-2007) data from the Resilience in Survivors of Katrina (RISK) project on 280 displaced Hurricane Katrina survivors who had little control over their neighborhood placement immediately after the disaster. The county sprawl index, a standardized measure of built environment, was used to predict BMI at follow-up, adjusted for baseline BMI and sprawl; hurricane-related trauma; and demographic and economic characteristics. Respondents from 8 New Orleans-area counties were dispersed to 76 counties post-Katrina. Sprawl increased by an average of 1.5 standard deviations (30 points) on the county sprawl index. Each one point increase in sprawl was associated with approximately .05kg/m<sup>2</sup> higher BMI in unadjusted models (95%CI: .01-.08), and the relationship was not attenuated after covariate adjustment. We find a robust association between residence in a sprawling county and higher BMI unlikely to be caused by self-selection into neighborhoods, suggesting that the built environment may foster changes in weight. Copyright © 2014 Elsevier Inc. All rights reserved.

### 134. [Urban Sprawl and Body Mass Index Among Displaced Hurricane Katrina Survivors](#)

[PubMed Central](#)

Arcaya, Mariana; James, Peter; Rhodes, Jean; Waters, Mary C; Subramanian, S V

2014-01-01

Objective Existing research suggests that walkable environments are protective against weight gain, while sprawling neighborhoods may pose health risks. Using prospective data on displaced Hurricane Katrina survivors, we provide the first natural experimental data on sprawl and body mass index (BMI). Methods The analysis uses prospectively collected pre- (2003–2005) and post-hurricane (2006–2007) data from the Resilience in Survivors of Katrina (RISK) project on 280 displaced Hurricane Katrina survivors who had little control over their neighborhood placement immediately after the disaster. The county sprawl index, a standardized measure of built environment, was used to predict BMI at follow-up, adjusted for baseline BMI and sprawl; Hurricane-related trauma; and demographic and economic characteristics. Results Respondents from 8 New Orleans-area counties were dispersed to 76 counties post-Katrina. Sprawl increased by an average of 1.5 standard deviations (30 points) on the county sprawl index. Each one point increase in sprawl was associated with approximately .05 kg/m<sup>2</sup> higher BMI in unadjusted models (95%CI: .01–.08), and the relationship was not attenuated after covariate adjustment. Conclusions We find a robust association between residence in a sprawling county and higher BMI unlikely to be caused by self-selection into neighborhoods, suggesting that the built environment may foster changes in weight. PMID:24732717

### 135. [Wind Ressources in Complex Terrain investigated with Synchronized Lidar Measurements](#)

[NASA Astrophysics Data System \(ADS\)](#)

Mann, J.; Menke, R.; Vasiljevic, N.

2017-12-01

The Perdigao experiment was performed by a number of European and American universities in Portugal 2017, and it is probably the largest field campaign focussing on wind energy resources in complex terrain ever conducted. 186 sonic anemometers on 50 masts, 20 scanning wind lidars and a host of other instruments were deployed. The experiment is a part of an effort to make a new European wind atlas. In this presentation we investigate whether scanning the wind speed over ridges in this complex terrain with multiple Doppler lidars can lead to an efficient mapping of the wind resources at relevant positions. We do that by having pairs of Doppler lidars scanning 80 m above the ridges in Perdigao. We compare wind resources obtained from the lidars and from the mast-mounted sonic anemometers at 80 m on two 100 m masts, one on each of the two ridges. In addition, the scanning lidar measurements are also compared to profiling lidars on the ridges. We take into account the fact that the profiling lidars may be biased due to the curvature of the streamlines over the instrument, see Bingol et al, Meteorolog. Z. vol. 18, pp. 189-195 (2009). We also investigate the impact of interruptions of the lidar measurements on the estimated wind resource. We calculate the relative differences of wind along the ridge from the lidar measurements and compare those to the same obtained from various micro-scale models. A particular subject investigated is how stability affects

the wind resources. We often observe internal gravity waves with the scanning lidars during the night and we quantify how these affect the relative wind speed on the ridges.

136. [Why not the University of New Orleans? Social disorganization and sexual violence among internally displaced women of Hurricane Katrina.](#)

[PubMed](#)

Fagen, Jennifer L; Sorensen, William; Anderson, Peter B

2011-10-01

Researchers have reported that natural disasters lead to an increase in sexual violence against women and this is echoed by the current situation in Haiti. This is a social pattern throughout the world during periods of war, as well as natural disasters such as tsunamis, famine, and hurricanes. This article examines the prevalence of sexual violence experienced by women students at the University of New Orleans (UNO) before and after Hurricane Katrina using the CORE Alcohol and Drug Survey. Two hundred and thirty seven women participated in the pre-Katrina study and 215 women participated in the post-Katrina study. We hypothesized that, due to the trauma of this disaster, there would be a higher prevalence of sexual aggression against women after Katrina than there was before Katrina. Our analyses yielded no significant differences in any of the measures of sexual violence toward women (nine CORE survey items) pre to post Katrina, so our hypothesis was not supported. We suggest that social organization and cultural attenuation—often indicators of sexual assault in FEMA Greenfield communities—were mitigated by social cohesion found on the UNO campus post-Katrina.

137. [Revisiting the Gulf Coast after Katrina](#)

[ERIC Educational Resources Information Center](#)

Principal, 2009

2009-01-01

In August 2005, the world witnessed one of the most destructive natural disasters on America's mainland. Hurricane Katrina, followed a month later by Hurricane Rita, brought more than broken levees, flooded streets and homes, and destroyed businesses. It caused changes in the dynamics and the demographic and cultural makeup of the region. One of

138. [Rebuilding New Orleans Schools after Katrina](#)

[ERIC Educational Resources Information Center](#)

Vail, Kathleen

2006-01-01

In this article, the author talks about the rebuilding of the public school system in New Orleans after Hurricane Katrina. A group of local and state educators, community leaders, and business people, headed by Tulane University President Scott Cowen, recommended that New Orleans become a hybrid of traditional public schools and charter schools,â€¦

139. [Reconstruction of New Orleans after Hurricane Katrina: A research perspective](#)

[PubMed Central](#)

Kates, R. W.; Colten, C. E.; Laska, S.; Leatherman, S. P.

2006-01-01

Four propositions drawn from 60 years of natural hazard and reconstruction research provide a comparative and historical perspective on the reconstruction of New Orleans after Hurricane Katrina. Decisions taken over its 288-year history that have made New Orleans so vulnerable to Katrina reflect a long-term pattern of societal response to hazard events—reducing consequences to relatively frequent events, and increasing vulnerability to very large and rare events. Thus Katrina's consequences for New Orleans were truly catastrophic—accounting for most of the estimated 1,570 deaths of Louisiana residents and \$40–50 billion in monetary losses. A comparative sequence and timing of recovery provides a calendar of historical experience against which to gauge progress in reconstruction. Using this calendar, the emergency postdisaster period appears to be longer in duration than that of any other studied disaster. The restoration period, the time taken to restore urban services for the smaller population, is in keeping with or ahead of historical experience. The effort to reconstruct the physical environment and urban infrastructure is likely to take 8–11 years. Conflicting policy goals for reconstruction of rapid recovery, safety, betterment, and equity are already evident. Actions taken demonstrate the rush to rebuild the familiar in contrast to planning efforts that emphasize betterment. Because disasters tend to accelerate existing economic, social, and political trends, the large losses in housing, population, and employment after Katrina are likely to persist and, at best, only partly recover. However, the possibility of breaking free of this gloomy trajectory is feasible and has some historical precedent. PMID:17003119

140. [Reconstruction of New Orleans after Hurricane Katrina: a research perspective.](#)

[PubMed](#)

Kates, R W; Colten, C E; Laska, S; Leatherman, S P

2006-10-03

Four propositions drawn from 60 years of natural hazard and reconstruction research provide a comparative and historical perspective on the reconstruction of New Orleans after Hurricane Katrina. Decisions taken over its 288-year history that have made New Orleans so vulnerable to Katrina reflect a long-term pattern of societal response to hazard events—reducing consequences to relatively

frequent events, and increasing vulnerability to very large and rare events. Thus Katrina's consequences for New Orleans were truly catastrophic—accounting for most of the estimated 1,570 deaths of Louisiana residents and \$40–50 billion in monetary losses. A comparative sequence and timing of recovery provides a calendar of historical experience against which to gauge progress in reconstruction. Using this calendar, the emergency post-disaster period appears to be longer in duration than that of any other studied disaster. The restoration period, the time taken to restore urban services for the smaller population, is in keeping with or ahead of historical experience. The effort to reconstruct the physical environment and urban infrastructure is likely to take 8–11 years. Conflicting policy goals for reconstruction of rapid recovery, safety, betterment, and equity are already evident. Actions taken demonstrate the rush to rebuild the familiar in contrast to planning efforts that emphasize betterment. Because disasters tend to accelerate existing economic, social, and political trends, the large losses in housing, population, and employment after Katrina are likely to persist and, at best, only partly recover. However, the possibility of breaking free of this gloomy trajectory is feasible and has some historical precedent.

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#### 141. [The Impact of Hurricane Katrina on Students' Behavioral Disorder: A Difference-in-Difference Analysis](#)

[PubMed Central](#)

Tian, Xian-Liang; Guan, Xian

2015-01-01

Objective: The objective of this paper is to examine the impact of Hurricane Katrina on displaced students' behavioral disorder. Methods: First, we determine displaced students' likelihood of discipline infraction each year relative to non-evacuees using all K12 student records of the U.S. state

of Louisiana during the period of 2000–2008. Second, we investigate the impact of hurricane on evacuee students' in-school behavior in a difference-in-difference framework. The quasi-experimental nature of the hurricane makes this framework appropriate with the advantage that the problem of endogeneity is of least concern and the causal effect of interest can be reasonably identified. Results: Preliminary analysis demonstrates a sharp increase in displaced students' relative likelihood of discipline infraction around 2005 when the hurricane occurred. Further, formal difference-in-difference analysis confirms the results. To be specific, post Katrina, displaced students' relative likelihood of any discipline infraction has increased by 7.3% whereas the increase in the relative likelihood for status offense, offense against person, offense against property and serious crime is 4%, 1.5%, 3.8% and 2.1%, respectively. Conclusion: When disasters occur, as was the case with Hurricane Katrina, in addition to assistance for adult evacuees, governments, in cooperation with schools, should also provide aid and assistance to displaced children to support their mental health and in-school behavior. PMID:26006127

142. [The Impact of Hurricane Katrina on Students' Behavioral Disorder: A Difference-in-Difference Analysis.](#)

[PubMed](#)

Tian, Xian-Liang; Guan, Xian

2015-05-22

The objective of this paper is to examine the impact of Hurricane Katrina on displaced students' behavioral disorder. First, we determine displaced students' likelihood of discipline infraction each year relative to non-evacuees using all K12 student records of the U.S. state of Louisiana during the period of 2000–2008. Second, we investigate the impact of hurricane on evacuee students' in-school behavior in a difference-in-difference framework. The quasi-experimental nature of the hurricane makes this framework appropriate with the advantage that the problem of endogeneity is of least concern and the causal effect of interest can be reasonably identified. Preliminary analysis demonstrates a sharp increase in displaced students' relative likelihood of discipline infraction around 2005 when the hurricane occurred. Further, formal difference-in-difference analysis confirms the results. To be specific, post Katrina, displaced students' relative likelihood of any discipline infraction has increased by 7.3% whereas the increase in the relative likelihood for status offense, offense against person, offense against property and serious crime is 4%, 1.5%, 3.8% and 2.1%, respectively. When disasters occur, as was the case with Hurricane Katrina, in addition to assistance for adult evacuees, governments, in cooperation with schools, should also provide aid and assistance to displaced children to support their mental health and in-school behavior.

143. [Turbulence Impact on Wind Turbines: Experimental Investigations on a Wind Turbine Model](#)

[NASA Astrophysics Data System \(ADS\)](#)

Al-Abadi, A.; Kim, Y. J.; Ertunç, A.; Delgado, A.

2016-09-01

Experimental investigations have been conducted by exposing an efficient wind turbine model to different turbulence levels in a wind tunnel. Nearly isotropic turbulence is generated by using two static squared grids: fine and coarse one. In addition, the distance between the wind-turbine and the grid is adjusted. Hence, as the turbulence decays in the flow direction, the wind-turbine is exposed to turbulence with various energy and length scale content. The developments of turbulence scales in the flow direction at various Reynolds numbers and the grid mesh size are measured. Those measurements are conducted with hot-wire anemometry in the absence of the wind-turbine. Detailed measurements and analysis of the upstream and downstream velocities, turbulence intensity and spectrum distributions are done. Performance measurements are conducted with and without turbulence grids and the results are compared. Performance measurements are conducted with an experimental setup that allow measuring of torque, rotational speed from the electrical parameters. The study shows the higher the turbulence level, the higher the power coefficient. This is due to many reasons. First, is the interaction of turbulence scales with the blade surface boundary layer, which in turn delay the stall. Thus, suppressing the boundary layer and preventing it from separation and hence enhancing the aerodynamics characteristics of the blade. In addition, higher turbulence helps in damping the tip vortices. Thus, reduces the tip losses. Adding winglets to the blade tip will reduce the tip vortex. Further investigations of the near and far wake-surrounding intersection are performed to understand the energy exchange and the free stream entrainment that help in retrieving the velocity.

144. [Preexisting mental illness and risk for developing a new disorder after hurricane Katrina.](#)

[PubMed](#)

Sullivan, Greer; Vasterling, Jennifer J; Han, Xiaotong; Tharp, Andra Teten; Davis, Teri; Deitch, Elizabeth A; Constans, Joseph I

2013-02-01

To investigate predisaster mental illness as a risk factor of poor postdisaster mental health outcomes, veterans with (n = 249) and without (n = 250) preexisting mental illness residing in the Gulf Coast during Hurricane Katrina were surveyed after Katrina and screened for posttraumatic stress disorder (PTSD), depression, generalized anxiety disorder, and panic. Logistic regression examined the association between preexisting mental disorders and positive screens after the hurricane, adjusting for demographics and exposure to hurricane-related stressors. The odds of screening positive for any new mental disorder were 6.8 times greater for those with preexisting mental illness compared with those without preexisting mental illness. Among those with preexisting PTSD, the odds of screening positive for any new mental illness were 11.9 times greater; among those with schizophrenia, 9.1 times greater; and among those with affective disorders, 4.4 times greater. Persons with preexisting mental

illnesses, particularly PTSD, should be considered a high-risk group for poor outcomes after a disaster.

145. [Serious emotional disturbance among youths exposed to Hurricane Katrina 2 years postdisaster.](#)

[PubMed](#)

McLaughlin, Katie A; Fairbank, John A; Gruber, Michael J; Jones, Russell T; Lakoma, Matthew D; Pfefferbaum, Betty; Sampson, Nancy A; Kessler, Ronald C

2009-11-01

To estimate the prevalence of serious emotional disturbance (SED) among children and adolescents exposed to Hurricane Katrina along with the associations of SED with hurricane-related stressors, sociodemographics, and family factors 18 to 27 months after the hurricane. A probability sample of prehurricane residents of areas affected by Hurricane Katrina was administered a telephone survey. Respondents provided information on up to two of their children ( $n = 797$ ) aged 4 to 17 years. The survey assessed hurricane-related stressors and lifetime history of psychopathology in respondents, screened for 12-month SED in respondents' children using the Strengths and Difficulties Questionnaire, and determined whether children's emotional and behavioral problems were attributable to Hurricane Katrina. The estimated prevalence of SED was 14.9%, and 9.3% of the youths were estimated to have SED that is directly attributable to Hurricane Katrina. Stress exposure was associated strongly with SED, and 20.3% of the youths with high stress exposure had hurricane-attributable SED. Death of a loved one had the strongest association with SED among prehurricane residents of New Orleans, whereas exposure to physical adversity had the strongest association in the remainder of the sample. Among children with stress exposure, parental psychopathology and poverty were associated with SED. The prevalence of SED among youths exposed to Hurricane Katrina remains high 18 to 27 months after the storm, suggesting a substantial need for mental health treatment resources in the hurricane-affected areas. The youths who were exposed to hurricane-related stressors, have a family history of psychopathology, and have lower family incomes are at greatest risk for long-term psychiatric impairment.

146. [Numerical Investigation of the Turbulent Wind Flow Through Elevated Windbreak](#)

[NASA Astrophysics Data System \(ADS\)](#)

Agarwal, Ashish; Irtaza, Hassan

2018-06-01

Analysis of airflow through elevated windbreaks is presented in this paper. Permeable nets and impermeable film increases considerable wind forces on the windbreaks which is susceptible to damage during high wind. A comprehensive numerical investigation has been carried out to analyze the effects of wind on standalone elevated windbreak clad with various permeable nets and an

impermeable film. The variation of airflow behavior around and through permeable nets and airflow behavior around impermeable film were also been investigated. Computational fluid dynamics techniques using Reynolds Averaged Navier-Stokes equations has been used to predict the wind force coefficient and thus wind forces on panels supporting permeable nets and impermeable film for turbulent wind flow. Elevated windbreak panels were analyzed for seven different permeable nets having various solidity ratio, specific permeability and aerodynamic resistant coefficients. The permeable nets were modelled as porous jump media obeying Forchheimer's law and an impermeable film modelled as rigid wall.

#### 147. [Numerical Investigation of the Turbulent Wind Flow Through Elevated Windbreak](#)

[NASA Astrophysics Data System \(ADS\)](#)

Agarwal, Ashish; Irtaza, Hassan

2018-04-01

Analysis of airflow through elevated windbreaks is presented in this paper. Permeable nets and impermeable film increases considerable wind forces on the windbreaks which is susceptible to damage during high wind. A comprehensive numerical investigation has been carried out to analyze the effects of wind on standalone elevated windbreak clad with various permeable nets and an impermeable film. The variation of airflow behavior around and through permeable nets and airflow behavior around impermeable film were also been investigated. Computational fluid dynamics techniques using Reynolds Averaged Navier-Stokes equations has been used to predict the wind force coefficient and thus wind forces on panels supporting permeable nets and impermeable film for turbulent wind flow. Elevated windbreak panels were analyzed for seven different permeable nets having various solidity ratio, specific permeability and aerodynamic resistant coefficients. The permeable nets were modelled as porous jump media obeying Forchheimer's law and an impermeable film modelled as rigid wall.

#### 148. [Katrina Exposes Our Schools' Shameful Inequality](#)

[ERIC Educational Resources Information Center](#)

Hardy, Lawrence

2006-01-01

In this article, the author talks about the disaster in the United States that reignited a debate about poverty and the responsibility of government—and government schools—that had never really gone away in the first place. Hurricane Katrina was one of the biggest natural disasters in the U.S. that swept through four states, killed more than

149. [Spatiotemporal dynamic transformations of soil lead and children's blood lead ten years after Hurricane Katrina: New grounds for primary prevention.](#)

[PubMed](#)

Mielke, Howard W; Gonzales, Christopher R; Powell, Eric T; Mielke, Paul W

2016-09-01

The contribution of lead contaminated soil to blood lead, especially as it is a large reservoir of lead dust, has been underestimated relative to lead-based paint. On 29 August 2005 Hurricane Katrina flooded and disrupted habitation in New Orleans. Soil and blood lead were mapped prior to Katrina. This unique study addresses soil and blood lead conditions pre- and ten years post-Katrina and considers the effectiveness of low lead soil for lead exposure intervention. Comparison of soil and blood lead levels pre- and ten years post-Katrina to evaluate and assess the impact of flooding on soil and blood lead at the scale of the city of New Orleans. Post-Katrina soil and blood lead data were stratified by the same census tracts (n=176) as pre-Katrina data. This unique city scale data-set includes soil lead (n=3314 and 3320, pre- vs. post-Katrina), blood lead (n=39,620 and 17,739, pre- vs. post-Katrina), distance, and changes in percent pre-1940 housing. Statistical analysis entailed permutation procedures and Fisher's Exact Tests. Pre- vs. ten years post-Katrina soil lead median decreased from 280 mg/kg to 132 mg/kg, median blood lead decreased from 5.1 µg/dL to 1.8 µg/dL, respectively. Percent pre-1940 housing did not change significantly (P-value=0.674). Soil and blood lead decrease with distance from the center of New Orleans. Except for age-of-housing results, P-values were extremely small (<10<sup>-12</sup>). Ten years after Katrina, profound changes in soil lead and children's blood lead occurred in New Orleans. Decreasing the lead on soil surfaces reduces children's interaction with lead dust, thus underscoring soil as a major source of exposure. Copyright © 2016 Elsevier Ltd. All rights reserved.

150. [Factors Influencing the Course of Posttraumatic Stress Following a Natural Disaster: Children's Reactions to Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Terranova, Andrew M.; Boxer, Paul; Morris, Amanda Sheffield

2009-01-01

This investigation examined psychosocial and behavioral factors involved in the course of post-traumatic stress disorder (PTSD) symptoms in youth affected by Hurricane Katrina. Participants (N = 152; 54% female; 61% Caucasian; mean age = 11.5 years) self-reported on hurricane exposure, PTSD symptoms, fear reactivity, regulatory abilities, social

151. [Hurricane Katrina's Impact on Tulane's Teaching Hospitals](#)

[PubMed Central](#)

Taylor, Ian L.

2007-01-01

On Monday, August 29, 2005 Hurricane Katrina passed east of New Orleans causing minimal damage to Tulane's Medical Center. Later that day, levees that protected the city failed and several feet of water entered the hospitals and school buildings. Emergency generators provided power for 36 hours before running out of fuel. Temperatures in the hospitals soared into the upper 90's and conditions were made intolerable by 100% humidity and backed-up sewage. For several days, faculty, residents, nurses and hospital personnel performed heroically, caring for patients in appalling conditions, hand-ventilating critically ill patients in shifts. Approximately 200 patients, and 1500 additional personnel would be evacuated on Wednesday and Thursday from a makeshift heliport on Tulane's parking garage. Current disaster plans may be inadequate should facilities be inaccessible for months because of damage or contamination. Contingency plans also need to be made should outside disaster relief be markedly delayed as was the case with Katrina. PMID:18528490

152. [Missed by the Mass Media: The Houma, Pointe-au-Chien, and Hurricanes Katrina and Rita](#)[ERIC Educational Resources Information Center](#)

Collins, Robert Keith

2008-01-01

This case study investigates the media discourse from Houma and Pointe-au-Chien tribal leaders in Louisiana on their experiences with Hurricanes Katrina and Rita. One section briefly engages the discourse as discernable from the reports found in Native American and non-Native American news media. Included is a brief yet close examination of these

153. [Tropical Cyclone Evolution and Water and Energy Fluxes: A Hurricane Katrina Case Study](#)[NASA Astrophysics Data System \(ADS\)](#)

Pinheiro, M. C.; Zhou, Y.

2015-12-01

Tropical cyclones are a highly destructive force of nature, characterized by extreme precipitation levels and wind speeds and heavy flooding. There are concerns that climate change will cause changes in the intensity and frequency of tropical cyclones. Therefore, the quantification of the water and energy fluxes that occur during a tropical cyclone's life cycle are important for anticipating the magnitude of damages that are likely to occur. This study used HURDAT2 storm track information and data from the satellite-derived SeaFlux and TRMM products to determine changes in precipitation,

wind, and latent and sensible heat throughout the life cycle of Hurricane Katrina. The variables were examined along and around the storm track, taking averages both at stationary 5x5 degree boxes and within the instantaneous hurricane domain. Analysis focused on contributions of convergence and latent heat to the storm evolution and examined how the total flux was related to the storm intensity. Certain features, such as the eye, were not resolved due to the data resolution, but the data captures the general trend of enhanced flux levels that are due to the storm's presence. Analysis also included examination of the water and energy budgets as related to convergence and the sensible and latent heat fluxes.

154. [Stages of drug market change during disaster: Hurricane Katrina and reformulation of the New Orleans drug market.](#)

[PubMed](#)

Dunlap, Eloise; Graves, Jennifer; Benoit, Ellen

2012-11-01

In recent years, numerous weather disasters have crippled many cities and towns across the United States of America. Such disasters present a unique opportunity for analyses of the disintegration and reformulation of drug markets. Disasters present new facts which cannot be "explained" by existing theories. Recent and continuing disasters present a radically different picture from that of police crack downs where market disruptions are carried out on a limited basis (both use and sales). Generally, users and sellers move to other locations and business continues as usual. The Katrina Disaster in 2005 offered a larger opportunity to understand the functioning and processes by which drug markets may or may not survive. Utilizing a variety of qualitative data including ethnographic field notes, in-depth interview transcripts, and focus group transcripts, we investigate the operation of the New Orleans drug market before, during, and after Hurricane Katrina. Our data clearly indicate that drug markets go through a series of stages in the wake of disaster in which they disintegrate and then reconstitute themselves. In the case of New Orleans, the post-Katrina drug market was radically different from the pre-Katrina drug market. Ultimately this manuscript presents a paradigm which uses stages as a testable concept to scientifically examine the disintegration and reformulation of drug markets during disaster or crisis situations. It describes the specific processes - referred to as stages - which drug markets must go through in order to function and survive during and after a natural disaster. Copyright © 2012 Elsevier B.V. All rights reserved.

155. [Hurricane Katrina Air Quality Sampling/Daily Monitoring \(AQSDM\)](#)

[EPA Pesticide Factsheets](#)

Hurricane Katrina made landfall in August 2005, causing widespread devastation along the Gulf Coast of the United States. EPA emergency response personnel worked with FEMA and state and local agencies to respond to the emergencies throughout the Gulf.

## 156. [Investigation of wind behaviour around high-rise buildings](#)

[NASA Astrophysics Data System \(ADS\)](#)

Mat Isa, Norasikin; Fitriah Nasir, Nurul; Sadikin, Azmahani; Ariff Hairul Bahara, Jamil

2017-09-01

A study on the investigation of wind behaviour around the high-rise buildings is done through an experiment using a wind tunnel and computational fluid dynamics. High-rise buildings refer to buildings or structures that have more than 12 floors. Wind is invisible to the naked eye; thus, it is hard to see and analyse its flow around and over buildings without the use of proper methods, such as the use of wind tunnel and computational fluid dynamics software. The study was conducted on buildings located in Presint 4, Putrajaya, Malaysia which is the Ministry of Rural and Regional Development, Ministry of Information Communications and Culture, Ministry of Urban Wellbeing, Housing and Local Government and the Ministry of Women, Family, and Community by making scaled models of the buildings. The parameters in which this study is conducted on are, four different wind velocities used based on the seasonal monsoons, and wind direction. ANSYS Fluent workbench software is used to compute the simulations in order to achieve the objectives of this study. The data from the computational fluid dynamics are validated with the experiment done through the wind tunnel. From the results obtained through the use of the computation fluid dynamics, this study can identify the characteristics of wind around buildings, including boundary layer of the buildings, separation flow, wake region and etc. Then analyses is conducted on the occurrence resulting from the wind that passes the buildings based on the velocity difference between before and after the wind passes the buildings.

## 157. [The geography of mortality from Hurricane Katrina in New Orleans](#)

[NASA Astrophysics Data System \(ADS\)](#)

Mutter, J. C.; Mara, V.; Jayaprakash, S.; None

2011-12-01

Hurricane Katrina was one of the highest mortality disasters in US history. Typical hurricanes of the same strength take very few lives. Katrina's mortality is exceeded only by the so-called Galveston Flood (a hurricane) of 1900 that occurred at a time when forecasting was poor and evacuation was possible only by train or horse. The levee failures in New Orleans were a major contributing factor unique to Katrina. An examination of the characteristics of mortality may give insight into the cause of the great scope of the tragedy and the special vulnerability of those who died. We examine the spatial aspects of mortality. The locations of deceased victims were matched with victim information including age, race and gender for approximately 800 victims (data from Louisiana Department of Health and Hospitals). From this we can analyze for spatial clustering of mortality. We know that

Katrina took a particularly heavy toll on the elderly so we can analyze, for instance, whether the elderly were more likely to die in some locations than in others. Similarly, we analyze for gender and race against age (dividing age into five groups this gives 20 categories) as a factor in the geographic distribution of mortality as a way to recover measures of vulnerability. We can also correlate the spatial characteristics of mortality with underlying causes that might contribute to vulnerability. Data is available at a census block level on household income, poverty rates, education, home ownership, car ownership and a variety of other factors that can be correlated with the spatial mortality data. This allows for a multi-parameter estimation of factors that govern mortality in this unusually high mortality event.

158. [Effect of Hurricane Katrina on chronobiology at onset of acute myocardial infarction during the subsequent three years.](#)

[PubMed](#)

Peters, Matthew N; Katz, Morgan J; Moscona, John C; Alkadri, Mohi E; Khazi Syed, Rashad H; Turnage, Thomas A; Nijjar, Vikram S; Bisharat, Mohannad B; Delafontaine, Patrice; Irimpen, Anand M

2013-03-15

The onset of acute myocardial infarction (AMI) has been shown to occur in a nonrandom pattern, with peaks in midmorning and on weekdays (especially Monday). The incidence of AMI has been shown to increase locally after natural disasters, but the effect of catastrophic events on AMI biorhythms is largely unknown. To assess the differences in the chronobiology of AMI in residents of New Orleans before and after Hurricane Katrina, the onset of AMI in patients at Tulane University Health Sciences Center in the 6 years before and the 3 years after Hurricane Katrina was retrospectively examined. Compared to the pre-Katrina group, the post-Katrina cohort demonstrated significant decreases in the onset of AMI during mornings ( $p = 0.002$ ), Mondays ( $p < 0.0001$ ), and weekdays ( $p < 0.0001$ ) and significant increases in onset during weekends ( $p < 0.0001$ ) and nights ( $p < 0.0001$ ). These changes persisted during all 3 years after the storm. In conclusion, the normal pattern of AMI onset was altered after Hurricane Katrina, and expected morning, weekday, and Monday peaks were eliminated. Copyright © 2013 Elsevier Inc. All rights reserved.

159. [Use of Electronic Health Records in Disaster Response: The Experience of Department of Veterans Affairs After Hurricane Katrina](#)

[PubMed Central](#)

Brown, Steven H.; Fischetti, Linda F.; Graham, Gail; Bates, Jack; Lancaster, Anne E.; McDaniel, David; Gillon, Joseph; Darbe, Melody; Kolodner, Robert M.

2007-01-01

**Objectives.** We describe electronic health data use by the Department of Veterans Affairs (VA) in the month after Katrina, including supporting technologies, the extent and nature of information accessed, and lessons learned. **Methods.** We conducted a retrospective study using cross-sectional panels of data collected sequentially over time. **Results.** By September 30, 2005, clinical data were accessed electronically for at least 38% (14941 of 39910) of patients cared for prior to Hurricane Katrina by New Orleans's area VA medical facilities. Approximately 1000 patients per day had data accessed during the month following Hurricane Katrina, a rate approximately two thirds of pre-Katrina values. Health care data were transmitted to more than 200 sites in 48 states and to at least 2300 users. **Conclusions.** The VA electronic health records supported continuity of care for evacuated veterans after Katrina. Our findings suggest that pharmacy and laboratory computerization alone will not be sufficient for future disaster support systems. PMID:17413082

## 160. [Community College Re-Enrollment after Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Lowe, Sarah R.; Rhodes, Jean E.

2013-01-01

In this study, we explored predictors of community college re-enrollment after Hurricane Katrina among a sample of low-income women (N = 221). It was predicted that participants' pre-hurricane educational optimism would predict community college re-enrollment a year after the hurricane. The influence of various demographic and additional resources

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## 161. [Examining offshore sediment-hosted contaminant transport from Hurricane Katrina: Chapter 7A in Science and the storms—the USGS response to the hurricanes of 2005](#)

[USGS Publications Warehouse](#)

Swarzenski, Peter W.; Campbell, Pamela L.; Poore, Richard Z.; Osterman, Lisa E.; Rosenbauer, Robert J.

2007-01-01

A rapid-response expedition was organized after the passage of Hurricane Katrina to investigate potential offshore environmental impacts and storm-induced sediment-transport processes. Both water-column and sediment samples were collected on the Louisiana shelf for a full complement of organic, inorganic, and geochronological tracers. Based on excess lead-210 (210Pb) inventories in cores collected before and after Katrina, the surface sediments and their associated geochemical signatures were considerably affected by the passage of this storm.

162. [The Dirty Dozen: Twelve Failures of the Hurricane Katrina Response and How Psychology Can Help](#)

[ERIC Educational Resources Information Center](#)

Gheyntanchi, Anahita; Joseph, Lisa; Gierlach, Elaine; Kimpara, Satoko; Housley, Jennifer; Franco, Zeno E.; Beutler, Larry E.

2007-01-01

This comprehensive analysis addresses the United States' alarming lack of preparedness to respond effectively to a massive disaster as evidenced by Hurricane Katrina. First, a timeline of problematic response events during and after Hurricane Katrina orients readers to some of the specific problems encountered at different levels of government.

163. [Serious Emotion Disturbance among Youth Exposed to Hurricane Katrina Two Years Post-Disaster](#)

[PubMed Central](#)

McLaughlin, Katie A.; Fairbank, John A.; Gruber, Michael J.; Jones, Russell T.; Lakoma, Matthew D.; Pfefferbaum, Betty; Sampson, Nancy A.; Kessler, Ronald C.

2014-01-01

**Objective** To estimate the prevalence of serious emotional disturbance (SED) among children and adolescents exposed to Hurricane Katrina along with the associations of SED with hurricane-related stressors, socio-demographics, and family factors 18–27 months following the hurricane. **Method** A probability sample of pre-hurricane residents of areas affected by Hurricane Katrina was administered a telephone survey. Respondents provided information on up to two of their children (n=797) aged 4–17. The survey assessed hurricane-related stressors and lifetime history of psychopathology in respondents, screened for 12-month SED in respondents' children using the Strengths and Difficulties Questionnaire (SDQ), and determined whether children's emotional and

behavioral problems were attributable to Hurricane Katrina. Results The estimated prevalence of SED was 14.9%, and 9.3% of youth were estimated to have SED that is directly attributable to Hurricane Katrina. Stress exposure was associated strongly with SED, and 20.3% of youth with high stress exposure had hurricane-attributable SED. Death of a loved one had the strongest association with SED among pre-hurricane residents of New Orleans, whereas exposure to physical adversity had the strongest association in the remainder of the sample. Among children with stress exposure, parental psychopathology and poverty were associated with SED. Conclusions The prevalence of SED among youth exposed to Hurricane Katrina remains high 18–27 months after the storm, suggesting a substantial need for mental health treatment resources in the hurricane-affected areas. Youth who were exposed to hurricane-related stressors, have a family history of psychopathology, and have lower family incomes are at greatest risk for long-term psychiatric impairment. PMID:19797983

164. [A comparison of HWRF, ARW and NMM models in Hurricane Katrina \(2005\) simulation.](#)

[PubMed](#)

Dodla, Venkata B; Desamsetti, Srinivas; Yerramilli, Anjaneyulu

2011-06-01

The life cycle of Hurricane Katrina (2005) was simulated using three different modeling systems of Weather Research and Forecasting (WRF) mesoscale model. These are, HWRF (Hurricane WRF) designed specifically for hurricane studies and WRF model with two different dynamic cores as the Advanced Research WRF (ARW) model and the Non-hydrostatic Mesoscale Model (NMM). The WRF model was developed and sourced from National Center for Atmospheric Research (NCAR), incorporating the advances in atmospheric simulation system suitable for a broad range of applications. The HWRF modeling system was developed at the National Centers for Environmental Prediction (NCEP) based on the NMM dynamic core and the physical parameterization schemes specially designed for tropics. A case study of Hurricane Katrina was chosen as it is one of the intense hurricanes that caused severe destruction along the Gulf Coast from central Florida to Texas. ARW, NMM and HWRF models were designed to have two-way interactive nested domains with 27 and 9 km resolutions. The three different models used in this study were integrated for three days starting from 0000 UTC of 27 August 2005 to capture the landfall of hurricane Katrina on 29 August. The initial and time varying lateral boundary conditions were taken from NCEP global FNL (final analysis) data available at 1 degree resolution for ARW and NMM models and from NCEP GFS data at 0.5 degree resolution for HWRF model. The results show that the models simulated the intensification of Hurricane Katrina and the landfall on 29 August 2005 agreeing with the observations. Results from these experiments highlight the superior performance of HWRF model over ARW and NMM models in predicting the track and intensification of Hurricane Katrina.

165. [Katrina in Historical Context: Environment and Migration in the U.S](#)

[PubMed Central](#)

Gutmann, Myron P.; Field, Vincenzo

2010-01-01

The massive publicity surrounding the exodus of residents from New Orleans spurred by Hurricane Katrina has encouraged interest in the ways that past migration in the U.S. has been shaped by environmental factors. So has Timothy Egan's exciting book, *The Worst Hard Time: The Untold Story of those who survived the Great American Dust Bowl*. This paper places those dramatic stories into a much less exciting context, demonstrating that the kinds of environmental factors exemplified by Katrina and the Dust Bowl are dwarfed in importance and frequency by the other ways that environment has both impeded and assisted the forces of migration. We accomplish this goal by enumerating four types of environmental influence on migration in the U.S.: 1) environmental calamities, including floods, hurricanes, earthquakes, and tornadoes, 2) environmental hardships and their obverse, short-term environmental benefits, including both drought and short periods of favorable weather, 3) environmental amenities, including warmth, sun, and proximity to water or mountains, and 4) environmental barriers and their management, including heat, air conditioning, flood control, drainage, and irrigation. In U.S. history, all four of these have driven migration flows in one direction or another. Placing Katrina into this historical context is an important task, both because the environmental calamities of which Katrina is an example are relatively rare and have not had a wide impact, and because focusing on them defers interest from the other kinds of environmental impacts, whose effect on migration may have been stronger and more persistent, though less dramatic. PMID:20436951

166. [Katrina in Historical Context: Environment and Migration in the U.S.](#)

[PubMed](#)

Gutmann, Myron P; Field, Vincenzo

2010-01-01

The massive publicity surrounding the exodus of residents from New Orleans spurred by Hurricane Katrina has encouraged interest in the ways that past migration in the U.S. has been shaped by environmental factors. So has Timothy Egan's exciting book, *The Worst Hard Time: The Untold Story of those who survived the Great American Dust Bowl*. This paper places those dramatic stories into a much less exciting context, demonstrating that the kinds of environmental factors exemplified by Katrina and the Dust Bowl are dwarfed in importance and frequency by the other ways that environment has both impeded and assisted the forces of migration. We accomplish this goal by enumerating four types of environmental influence on migration in the U.S.: 1) environmental calamities, including floods, hurricanes, earthquakes, and tornadoes, 2) environmental hardships and their obverse, short-term environmental benefits, including both drought and short periods of favorable weather, 3) environmental amenities, including warmth, sun, and proximity to water or mountains, and 4) environmental barriers and their management, including heat, air conditioning,

flood control, drainage, and irrigation. In U.S. history, all four of these have driven migration flows in one direction or another. Placing Katrina into this historical context is an important task, both because the environmental calamities of which Katrina is an example are relatively rare and have not had a wide impact, and because focusing on them defers interest from the other kinds of environmental impacts, whose effect on migration may have been stronger and more persistent, though less dramatic.

167. [Impact of exposure to community violence, Hurricane Katrina, and Hurricane Gustav on posttraumatic stress and depressive symptoms among school age children.](#)

[PubMed](#)

Salloum, Alison; Carter, Paulette; Burch, Berre; Garfinkel, Abbe; Overstreet, Stacy

2011-01-01

This study examined the relationship between exposure to Hurricane Gustav and distress among 122 children (ages 7-12) to determine whether that relationship was moderated by prior experiences with Hurricane Katrina and exposure to community violence (ECV). Measures of hurricane experiences, ECV, posttraumatic stress (PTS) symptoms, and depression were administered. Assessments occurred after the third anniversary of Katrina, which coincided with the landfall of Gustav. Results indicated that the relation between exposure to Gustav and PTS was moderated by prior experiences. There was a positive association between Gustav exposure and PTS for children who experienced high Katrina exposure and low ECV, with a similar trend for children with high ECV and low Katrina exposure. There was no relationship between Gustav exposure and PTS for children with low Katrina and low ECV or for children with high Katrina and high ECV. The relationship between exposure to Gustav and depression was not moderated by children's prior experience. However, there was a relationship between Katrina exposure and depression for children with high ECV. Results suggest that prior trauma may amplify the relationship between hurricane exposure and distress, but children with high cumulative trauma may remain highly symptomatic regardless of disaster exposure.

168. [Interaction of Environmental Moisture, Rainbands, and Inner-Core Dynamics in Hurricanes Katrina and Rita](#)

[NASA Astrophysics Data System \(ADS\)](#)

Ortt, D.; Chen, S. S.

2007-12-01

The interaction of the environmental water vapor distribution around a tropical cyclone (TC), rainbands, and inner-core dynamics can affect hurricane structure and intensity change, which is not well understood. Although previous studies have addressed various aspects of this problem, a full three way interaction and its implications for hurricane intensity change has not been documented.

Using data collected during the Hurricane Rainband and Intensity Experiment (RAINEX) in Hurricanes Katrina and Rita, the three way interaction of the environment moisture, rainbands, and inner-core dynamics can be evaluated. The TRMM TMI total precipitable water (PW) data with 1/4 degree horizontal resolution, TRMM TMI rainrate data with a 4 km horizontal resolution and the GPS dropsondes with a 1/2 second temporal resolution are used to characterize the environmental moisture. The high resolution model output from the real-time MM5 forecasts of Hurricanes Katrina and Rita are used to investigate the complex interactions in both storms. The model forecasts were made using a vortex-following nested grid with horizontal resolutions of 15, 5, and 1.67km, respectively. There were 28 vertical sigma levels. The Goddard microphysics scheme was used. The TRMM PW and the GPS dropsonde data show strong moisture gradients in the outer rainband region in Rita with a dry outer environment, which may contribute to the development of outer rainbands with a high circularity. It created a secondary ring of potential vorticity (PV). In addition, the vortex Rossby waves (VRW) propagating radially outward from the eyewall were unable to propagate beyond the secondary ring of PV. The combination of these VRW and the environmental water vapor distribution may play a role in enhancing the rainbands that developed into a secondary eyewall, which leads to a temporary weakening of the hurricane. In contrast, Katrina had a relative weak moisture gradient surrounding the storm. There were not persistent outer

169. [Increases in gonorrhoea among high school students following hurricane Katrina.](#)

[PubMed](#)

Nsuami, M J; Taylor, S N; Smith, B S; Martin, D H

2009-06-01

To determine the prevalence of *Neisseria gonorrhoeae* in a student population before hurricane Katrina and after their residential neighbourhoods were devastated in the wake of the hurricane. Students in a New Orleans public high school were offered urine screening for *N. gonorrhoeae* and *Chlamydia trachomatis* using nucleic acid amplification tests before ( $n = 346$ ) and after ( $n = 333$ ) hurricane Katrina. Based on studies showing gonorrhoea clustering in physically deteriorated neighbourhoods, it was hypothesised that the post-Katrina gonorrhoea prevalence would be higher among students whose neighbourhoods still showed signs of deterioration in the aftermath of the hurricane. Before and after hurricane Katrina, the prevalence of gonorrhoea increased from 2.3% ( $8/346$ , 95% CI 1.3% to 4.6%) to 5.1% ( $17/333$ , 95% CI 3.1% to 8.2%), respectively (one-sided  $p = 0.027$ ). In logistic regression of gonorrhoea controlling for gender, age, chlamydia infection and exposure to hurricane-affected residential neighbourhood conditions, gonorrhoea was significantly associated with female gender (odds ratio (OR) 2.6, 95% CI 1.0 to 6.3;  $p = 0.04$ ) and with chlamydia infection (OR 9.2, 95% CI 3.9 to 21.7;  $p < 0.001$ ). Although of weak statistical significance, there was a strong independent positive trend toward testing positive for gonorrhoea after the hurricane (OR 2.2, 95% CI 0.9 to 5.4;  $p = 0.09$ ). The analysis indicates that the odds of testing positive for gonorrhoea more than doubled among students after the hurricane, indicating that surveillance activities should be restored to monitor

sexually transmitted infections (STIs) among at-risk populations. Redoubled efforts should be put into STI screening programmes as soon as possible following natural disasters to prevent resurgent STI incidence rates.

#### 170. [Aeroelastic Stability Investigations for Large-scale Vertical Axis Wind Turbines](#)

##### [NASA Astrophysics Data System \(ADS\)](#)

Owens, B. C.; Griffith, D. T.

2014-06-01

The availability of offshore wind resources in coastal regions, along with a high concentration of load centers in these areas, makes offshore wind energy an attractive opportunity for clean renewable electricity production. High infrastructure costs such as the offshore support structure and operation and maintenance costs for offshore wind technology, however, are significant obstacles that need to be overcome to make offshore wind a more cost-effective option. A vertical-axis wind turbine (VAWT) rotor configuration offers a potential transformative technology solution that significantly lowers cost of energy for offshore wind due to its inherent advantages for the offshore market. However, several potential challenges exist for VAWTs and this paper addresses one of them with an initial investigation of dynamic aeroelastic stability for large-scale, multi-megawatt VAWTs. The aeroelastic formulation and solution method from the BLade Aeroelastic STability Tool (BLAST) for HAWT blades was employed to extend the analysis capability of a newly developed structural dynamics design tool for VAWTs. This investigation considers the effect of configuration geometry, material system choice, and number of blades on the aeroelastic stability of a VAWT, and provides an initial scoping for potential aeroelastic instabilities in large-scale VAWT designs.

#### 171. [Integrating disparate lidar datasets for a regional storm tide inundation analysis of Hurricane Katrina](#)

##### [USGS Publications Warehouse](#)

Stoker, Jason M.; Tyler, Dean J.; Turnipseed, D. Phil; Van Wilson, K.; Oimoen, Michael J.

2009-01-01

Hurricane Katrina was one of the largest natural disasters in U.S. history. Due to the sheer size of the affected areas, an unprecedented regional analysis at very high resolution and accuracy was needed to properly quantify and understand the effects of the hurricane and the storm tide. Many disparate sources of lidar data were acquired and processed for varying environmental reasons by pre- and post-Katrina projects. The datasets were in several formats and projections and were processed to varying phases of completion, and as a result the task of producing a seamless digital elevation dataset required a high level of coordination, research, and revision. To create a seamless digital elevation dataset, many technical issues had to be resolved before producing the desired 1/9-arc-second (3meter) grid needed as the map base for projecting the Katrina peak storm tide throughout

the affected coastal region. This report presents the methodology that was developed to construct seamless digital elevation datasets from multipurpose, multi-use, and disparate lidar datasets, and describes an easily accessible Web application for viewing the maximum storm tide caused by Hurricane Katrina in southeastern Louisiana, Mississippi, and Alabama.

## 172. [Genetics Experts Unite to I.D. Unknown Katrina Victims](#)

[MedlinePlus](#)

... News From NIH Genetics Experts Unite to I.D. Unknown Katrina Victims Past Issues / Summer 2006 Table ... and genetics," says team member Stephen Sherry, Ph.D., of NLM's National Center for Biotechnology Information, "is ...

## 173. [Spatial Analysis of Post-Hurricane Katrina Thermal Pattern and Intensity in Greater New Orleans: Implications for Urban Heat Island Phenomenon](#)

[NASA Astrophysics Data System \(ADS\)](#)

Lief, Aram Parrish

In 2005, Hurricane Katrina's diverse impacts on the Greater New Orleans area included damaged and destroyed trees, and other despoiled vegetation, which also increased the exposure of artificial and bare surfaces, known factors that contribute to the climatic phenomenon known as the urban heat island (UHI). This is an investigation of UHI in the aftermath of Hurricane Katrina, which entails the analysis of pre and post-hurricane Katrina thermal imagery of the study area, including changes to surface heat patterns and vegetative cover. Imagery from Landsat TM was used to show changes to the pattern and intensity of the UHI effect, caused by an extreme weather event. Using remote sensing visualization methods, in situ data, and local knowledge, the author found there was a measurable change in the pattern and intensity of the New Orleans UHI effect, as well as concomitant changes to vegetative land cover. This finding may be relevant for urban planners and citizens, especially in the context of recovery from a large-scale disaster of a coastal city, regarding future weather events, and other natural and human impacts.

## 174. [44 CFR 206.209 - Arbitration for Public Assistance determinations related to Hurricanes Katrina and Rita \(Major...](#)

[Code of Federal Regulations, 2012 CFR](#)

2012-10-01

... 44 Emergency Management and Assistance 1 2012-10-01 2011-10-01 true Arbitration for Public Assistance determinations related to Hurricanes Katrina and Rita (Major disaster declarations DR-1603, DR... determinations related to Hurricanes Katrina and Rita (Major disaster declarations DR-1603, DR-1604, DR-1605, DR...

175. [44 CFR 206.209 - Arbitration for Public Assistance determinations related to Hurricanes Katrina and Rita \(Major...](#)

[Code of Federal Regulations, 2014 CFR](#)

2014-10-01

... 44 Emergency Management and Assistance 1 2014-10-01 2014-10-01 false Arbitration for Public Assistance determinations related to Hurricanes Katrina and Rita (Major disaster declarations DR-1603, DR... determinations related to Hurricanes Katrina and Rita (Major disaster declarations DR-1603, DR-1604, DR-1605, DR...

176. [44 CFR 206.209 - Arbitration for Public Assistance determinations related to Hurricanes Katrina and Rita \(Major...](#)

[Code of Federal Regulations, 2013 CFR](#)

2013-10-01

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177. [44 CFR 206.209 - Arbitration for Public Assistance determinations related to Hurricanes Katrina and Rita \(Major...](#)

[Code of Federal Regulations, 2011 CFR](#)

2011-10-01

... 44 Emergency Management and Assistance 1 2011-10-01 2011-10-01 false Arbitration for Public Assistance determinations related to Hurricanes Katrina and Rita (Major disaster declarations DR-1603, DR... determinations related to Hurricanes Katrina and Rita (Major disaster declarations DR-1603, DR-1604, DR-1605, DR...

178. [Analyzing after-action reports from Hurricanes Andrew and Katrina: repeated, modified, and newly created recommendations.](#)

[PubMed](#)

Knox, Claire Connolly

2013-01-01

Thirteen years after Hurricane Andrew struck Homestead, FL, Hurricane Katrina devastated the Gulf Coast of Mississippi, Alabama, and southeastern Louisiana. Along with all its destruction, the term "catastrophic" was redefined. This article extends the literature on these hurricanes by providing a macrolevel analysis of The Governor's Disaster Planning and Response Review Committee Final Report from Hurricane Andrew and three federal after-action reports from Hurricane Katrina, as well as a cursory review of relevant literature. Results provide evidence that previous lessons have not been learned or institutionalized with many recommendations being repeated or modified. This article concludes with a discussion of these lessons, as well as new issues arising during Hurricane Katrina.

179. [Employment and Self-Employment in the Wake of Hurricane Katrina](#)

[PubMed Central](#)

ZISSIMOPOULOS, JULIE; KAROLY, LYNN A.

2010-01-01

We use data from the monthly Current Population Survey to examine the short- and longer-term effects of Hurricane Katrina on the labor market outcomes of prime-age individuals in the most affected states—Alabama, Florida, Louisiana, and Mississippi—and for evacuees in any state. We focus on rates of labor force participation, employment, and unemployment, and we extend prior research by also examining rates of self-employment. With the exception of Mississippi, employment and unemployment one year after the hurricane were at similar rates as the end of 2003. This aggregate pattern of labor market shock and recovery has been observed for other disasters but masks important differences among subgroups. Those evacuated from their residences, even temporarily, were a harder-hit group, and evacuees who had yet to return to their pre-Katrina state up to one year later were hit especially hard; these findings hold even after controlling for differences in observable characteristics. We also find evidence of an important role for self-employment as part of post-disaster labor market recovery, especially for evacuees who did not return. This may result from poor job prospects in the wage and salary sector or new opportunities for starting businesses in the wake of Katrina. PMID:20608101

180. [How Schools Responded to Student Mental Health Needs Following Hurricanes Katrina and Rita. Fact Sheet](#)

[ERIC Educational Resources Information Center](#)

RAND Corporation, 2007

2007-01-01

This fact sheet summarizes a study that examined how schools in the U.S. Gulf Coast region perceived the mental health needs of students after Hurricanes Katrina and Rita and how schools responded.

According to the report, despite strong initial efforts to support the mental health needs of students displaced by Hurricanes Katrina and Rita, many

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## 181. [A Comparison of HWRF, ARW and NMM Models in Hurricane Katrina \(2005\) Simulation](#)

[PubMed Central](#)

Dodla, Venkata B.; Desamsetti, Srinivas; Yerramilli, Anjaneyulu

2011-01-01

The life cycle of Hurricane Katrina (2005) was simulated using three different modeling systems of Weather Research and Forecasting (WRF) mesoscale model. These are, HWRF (Hurricane WRF) designed specifically for hurricane studies and WRF model with two different dynamic cores as the Advanced Research WRF (ARW) model and the Non-hydrostatic Mesoscale Model (NMM). The WRF model was developed and sourced from National Center for Atmospheric Research (NCAR), incorporating the advances in atmospheric simulation system suitable for a broad range of applications. The HWRF modeling system was developed at the National Centers for Environmental Prediction (NCEP) based on the NMM dynamic core and the physical parameterization schemes specially designed for tropics. A case study of Hurricane Katrina was chosen as it is one of the intense hurricanes that caused severe destruction along the Gulf Coast from central Florida to Texas. ARW, NMM and HWRF models were designed to have two-way interactive nested domains with 27 and 9 km resolutions. The three different models used in this study were integrated for three days starting from 0000 UTC of 27 August 2005 to capture the landfall of hurricane Katrina on 29 August. The initial and time varying lateral boundary conditions were taken from NCEP global FNL (final analysis) data available at 1 degree resolution for ARW and NMM models and from NCEP GFS data at 0.5 degree resolution for HWRF model. The results show that the models simulated the intensification of

Hurricane Katrina and the landfall on 29 August 2005 agreeing with the observations. Results from these experiments highlight the superior performance of HWRF model over ARW and NMM models in predicting the track and intensification of Hurricane Katrina. PMID:21776239

182. [Schooling the Forgotten Kids of Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Cook, Glenn

2006-01-01

In this article, the author talks about students being taking in public schools in Houston and Dallas, as well as other states, after evacuating from New Orleans which was struck by Hurricane Katrina and Hurricane Rita. For students displaced by the storm, mobility is as constant as stability is elusive. Already traumatized and faced with the loss

183. [Physical and mental health consequences of Katrina on Vietnamese immigrants in New Orleans: a pre- and post-disaster assessment.](#)

[PubMed](#)

Vu, Lung; Vanlandingham, Mark J

2012-06-01

We assessed the health impacts of a natural disaster upon a major immigrant community by comparing pre- and post-event measures for identical individuals. We collected standard health measures for a population-based sample of working-age Vietnamese-Americans living in New Orleans in 2005, just weeks before Katrina occurred. Near the first- and second-year anniversaries of the event, we located and re-assessed more than two-thirds of this original pre-Katrina cohort. We found statistically significant declines in health status for seven of the eight standard SF-36 subscales and for both the physical and mental health component summaries at the first anniversary of the disaster. By the second anniversary, recovery of the health dimensions assessed by these measures was substantial and significant. Most of the SF-36 mental and physical health subscales returned to their original pre-Katrina levels. Being in middle-age, being engaged in professional or self-employed occupations, being unmarried, being less acculturated, and having extensive post-Katrina property damage have statistically significant negative effects on post-Katrina health status, and several of these factors continued to impede recovery by the second anniversary. Hurricane Katrina had significant negative impacts on the mental and physical health of Vietnamese New Orleanians. Several factors present clear opportunities for targeted interventions.

184. [Children and Trauma: A Post-Katrina and Rita Response](#)

[ERIC Educational Resources Information Center](#)

Hebert, Barbara B.; Ballard, Mary B.

2007-01-01

Many children have struggled to cope with the traumatic experiences brought about by hurricanes Katrina and Rita. This article recounts how the authors intervened in the lives of children and families after the storms. (Contains 3 figures.)

185. [Respiratory health effects associated with restoration work in post-Hurricane Katrina New Orleans.](#)

[PubMed](#)

Rando, Roy J; Lefante, John J; Freyder, Laurie M; Jones, Robert N

2012-01-01

This study examines prevalence of respiratory conditions in New Orleans-area restoration workers after Hurricane Katrina. Between 2007 and 2010, spirometry and respiratory health and occupational questionnaire were administered to 791 New Orleans-area adults who mostly worked in the building construction and maintenance trades or custodial services. The associations between restoration work hours and lung function and prevalence of respiratory symptoms were examined by multiple linear regression,  $\chi^2$ , or multiple logistic regression. 74% of participants performed post-Katrina restoration work (median time: 620 hours). Symptoms reported include episodes of transient fever/cough (29%), sinus symptoms (48%), pneumonia (3.7%), and new onset asthma (4.5%). Prevalence rate ratios for post-Katrina sinus symptoms (PRR=1.3; CI: 1.1, 1.7) and fever and cough (PRR=1.7; CI: 1.3, 2.4) were significantly elevated overall for those who did restoration work and prevalence increased with restoration work hours. Prevalence rate ratios with restoration work were also elevated for new onset asthma (PRR=2.2; CI: 0.8, 6.2) and pneumonia (PRR=1.3; CI: 0.5, 3.2) but were not statistically significant. Overall, lung function was slightly depressed but was not significantly different between those with and without restoration work exposure. Post-Katrina restoration work is associated with moderate adverse effects on respiratory health, including sinusitis and toxic pneumonitis.

186. [Numerical simulation of a low-lying barrier island's morphological response to Hurricane Katrina](#)

[USGS Publications Warehouse](#)

Lindemer, C.A.; Plant, N.G.; Puleo, J.A.; Thompson, D.M.; Wamsley, T.V.

2010-01-01

Tropical cyclones that enter or form in the Gulf of Mexico generate storm surge and large waves that impact low-lying coastlines along the Gulf Coast. The Chandeleur Islands, located 161. km east of New

Orleans, Louisiana, have endured numerous hurricanes that have passed nearby. Hurricane Katrina (landfall near Waveland MS, 29 Aug 2005) caused dramatic changes to the island elevation and shape. In this paper the predictability of hurricane-induced barrier island erosion and accretion is evaluated using a coupled hydrodynamic and morphodynamic model known as XBeach. Pre- and post-storm island topography was surveyed with an airborne lidar system. Numerical simulations utilized realistic surge and wave conditions determined from larger-scale hydrodynamic models. Simulations included model sensitivity tests with varying grid size and temporal resolutions. Model-predicted bathymetry/topography and post-storm survey data both showed similar patterns of island erosion, such as increased dissection by channels. However, the model under predicted the magnitude of erosion. Potential causes for under prediction include (1) errors in the initial conditions (the initial bathymetry/topography was measured three years prior to Katrina), (2) errors in the forcing conditions (a result of our omission of storms prior to Katrina and/or errors in Katrina storm conditions), and/or (3) physical processes that were omitted from the model (e.g., inclusion of sediment variations and bio-physical processes). ?? 2010.

187. [Defining Pre-Katrina New Orleans: The Structural Transformation of Public Education in New Orleans and Historical Memory](#)

[ERIC Educational Resources Information Center](#)

Boselovic, Joseph L.

2014-01-01

Although considerable work has been done around the supposed successes and failures of education reform in post-Katrina New Orleans, concerns about the public/private qualities of new policies are often not discussed explicitly. In kind, this article serves to investigate theoretical conceptions of the public as they relate to education whileâ€¦

188. [EMERGENCY RESPONSE FOR PUBLIC WATER SUPPLIES AFTER HURRICANE KATRINA](#)

[EPA Science Inventory](#)

Hurricane Katrina resulted in damage and destruction to local water supplies in Mississippi and Louisiana affecting millions of people. Immediately following the devastation, a multidisciplinary team of 30 EPA emergency response, research, and water program personnel joined force...

189. [Birth outcomes in a disaster recovery environment: New Orleans women after Katrina](#)

[PubMed Central](#)

Harville, Emily W.; Giarratano, Gloria; Savage, Jane; de Mendoza, Veronica Barcelona; Zotkiewicz, TrezMarie

2015-01-01

**Objectives** To examine how the recovery following Hurricane Katrina affected pregnancy outcomes. **Methods** 308 New Orleans area pregnant women were interviewed 5-7 years after Hurricane Katrina about their exposure to the disaster (danger, damage, and injury); current disruption; and perceptions of recovery. Birthweight, gestational age, birth length, and head circumference were examined in linear models, and low birthweight (<2500 g) and preterm birth (<37 weeks) in logistic models, with adjustment for confounders. **Results** Associations were found between experiencing damage during Katrina and birthweight (adjusted beta for high exposure =  $\hat{\alpha}$ 158 g) and between injury and gestational age (adjusted beta =  $\hat{\alpha}$ 0.5 days). Of the indicators of recovery experience, most consistently associated with worsened birth outcomes was worry that another hurricane would hit the region (adjusted beta for birthweight:  $\hat{\alpha}$ 112 g,  $p=0.08$ ; gestational age:  $\hat{\alpha}$ 3.2 days,  $p=0.02$ ; birth length:  $\hat{\alpha}$ 0.65 cm,  $p=0.06$ ) **Conclusions** Natural disaster may have long-term effects on pregnancy outcomes. Alternately, women who are most vulnerable to disaster may be also vulnerable to poor pregnancy outcome. PMID:26122255

190. [Birth Outcomes in a Disaster Recovery Environment: New Orleans Women After Katrina.](#)[PubMed](#)

Harville, Emily W; Giarratano, Gloria; Savage, Jane; Barcelona de Mendoza, Veronica; Zotkiewicz, TrezMarie

2015-11-01

To examine how the recovery following Hurricane Katrina affected pregnancy outcomes. 308 New Orleans area pregnant women were interviewed 5-7 years after Hurricane Katrina about their exposure to the disaster (danger, damage, and injury); current disruption; and perceptions of recovery. Birthweight, gestational age, birth length, and head circumference were examined in linear models, and low birthweight (<2500 g) and preterm birth (<37 weeks) in logistic models, with adjustment for confounders. Associations were found between experiencing damage during Katrina and birthweight (adjusted beta for high exposure = -158 g) and between injury and gestational age (adjusted beta = -0.5 days). Of the indicators of recovery experience, most consistently associated with worsened birth outcomes was worry that another hurricane would hit the region (adjusted beta for birthweight: -112 g,  $p = 0.08$ ; gestational age: -3.2 days,  $p = 0.02$ ; birth length: -0.65 cm,  $p = 0.06$ ). Natural disaster may have long-term effects on pregnancy outcomes. Alternately, women who are most vulnerable to disaster may be also vulnerable to poor pregnancy outcome.

191. [In their own words: displaced children's educational recovery needs after Hurricane Katrina.](#)[PubMed](#)

Peek, Lori; Richardson, Krista

2010-09-01

Children may experience psychological, physical, and educational vulnerability as the result of a disaster. Of these 3 vulnerability types, educational vulnerability has received the most limited scholarly attention. The 2 primary objectives of this research are to describe what forms of educational support displaced children said that they needed after Hurricane Katrina and to identify who or what facilitated children's educational recovery. This article draws on data gathered through participant observation and interviews with 40 African American children between the ages of 7 and 18 years who relocated to Colorado with their families after Hurricane Katrina. In the first year following Hurricane Katrina, more than 75% of the children in the sample experienced a decline in grades. In subsequent years, the children reported greater satisfaction with their schools in Colorado and their overall educational experience. The children identified their teachers, peers, and educational institutions as playing the most significant role in their recovery. Through offering a child-centric perspective, this study expands prior research on postdisaster educational recovery.

192. [Katrina's Children: Social Policy Considerations for Children in Disasters. Social Policy Report. Volume 21, Number 1](#)

[ERIC Educational Resources Information Center](#)

Osofsky, Joy D.; Osofsky, Howard J.; Harris, William W.

2007-01-01

Hurricane Katrina resulted in a disaster of proportions not previously known in the United States. The traumatic experiences of children and families during Hurricane Katrina, the flooding that resulted from the breach of the levees, the evacuation, and the aftermath are unprecedented. In responding to the enormous mental health needs of children

193. [From healthy start to hurricane Katrina: using GIS to eliminate disparities in perinatal health.](#)

[PubMed](#)

Curtis, Andrew

2008-09-10

This paper provides a summary of the invited talk at the 2007 CDC & ATSDR 11th Biennial Symposium on Statistical Methods conference in which a university-non-profit collaboration targeted the elimination of racial disparities in perinatal health with the use of a Geographic Information System (GIS). This program will be described in four temporal stages; the pre-program early years (1999–2001) where the health burden is defined, leading to the Healthy Start years (2001–2005), in which spatial analyses, methods to effectively disseminate GIS results, the creation of the Baton Rouge Healthy Start database, and a move toward a conceptual goal of creating a holistic neighborhood GIS-health

model are all described. The Katrina years (September 2005—early 2006) portrays the impact of the disaster and how the collaboration changed as resources from both were directed toward both response and recovery. The final section of the paper, the Post-Katrina years (early 2006 and ongoing) describes how the health landscape of Louisiana, including Baton Rouge as well as New Orleans, has worsened after the storms. An argument is made that the relationships and GIS structure developed during the collaboration's pre-Katrina years, even though stretched, provide the flexibility to analyze and cope with a Katrina-type shock to the system.

194. [Motivational Factors Underlying College Students' Decisions to Resume Their Educational Pursuits in the Aftermath of Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Phillips, Theresa M.; Herlihy, Barbara

2009-01-01

This study explored college student persistence at a historically Black university affected by Hurricane Katrina. Predictor variables including sex, residence status, Pell Grant status, campus housing status, college grade point average, attendance before Hurricane Katrina, and attendance at the university by parents or another close relative were

195. [Socioecological disparities in New Orleans following Hurricane Katrina](#)

[Treeseearch](#)

Joshua A. Lewis; Wayne C. Zipperer; Henrik Ernstson; Brittany Bernik; Rebecca Hazen; Thomas Elmqvist; Michael J. Blum

2017-01-01

Despite growing interest in urban resilience, remarkably little is known about vegetation dynamics in the aftermath of disasters. In this study, we examined the composition and structure of plant communities across New Orleans (Louisiana, USA) following catastrophic flooding triggered by levee failures during Hurricane Katrina in 2005. Focusing on eight...

196. [Petroleum and hazardous material releases from industrial facilities associated with Hurricane Katrina.](#)

[PubMed](#)

Santella, Nicholas; Steinberg, Laura J; Sengul, Hatice

2010-04-01

Hurricane Katrina struck an area dense with industry, causing numerous releases of petroleum and hazardous materials. This study integrates information from a number of sources to describe the frequency, causes, and effects of these releases in order to inform analysis of risk from future hurricanes. Over 200 onshore releases of hazardous chemicals, petroleum, or natural gas were reported. Storm surge was responsible for the majority of petroleum releases and failure of storage tanks was the most common mechanism of release. Of the smaller number of hazardous chemical releases reported, many were associated with flaring from plant startup, shutdown, or process upset. In areas impacted by storm surge, 10% of the facilities within the Risk Management Plan (RMP) and Toxic Release Inventory (TRI) databases and 28% of SIC 1311 facilities experienced accidental releases. In areas subject only to hurricane strength winds, a lower fraction (1% of RMP and TRI and 10% of SIC 1311 facilities) experienced a release while 1% of all facility types reported a release in areas that experienced tropical storm strength winds. Of industrial facilities surveyed, more experienced indirect disruptions such as displacement of workers, loss of electricity and communication systems, and difficulty acquiring supplies and contractors for operations or reconstruction (55%), than experienced releases. To reduce the risk of hazardous material releases and speed the return to normal operations under these difficult conditions, greater attention should be devoted to risk-based facility design and improved prevention and response planning.

#### 197. [Respiratory Health Effects Associated with Restoration Work in Post-Hurricane Katrina New Orleans](#)

[PubMed Central](#)

Rando, Roy J.; Lefante, John J.; Freyder, Laurie M.; Jones, Robert N.

2012-01-01

**Background.** This study examines prevalence of respiratory conditions in New Orleans-area restoration workers after Hurricane Katrina. **Methods.** Between 2007 and 2010, spirometry and respiratory health and occupational questionnaire were administered to 791 New Orleans-area adults who mostly worked in the building construction and maintenance trades or custodial services. The associations between restoration work hours and lung function and prevalence of respiratory symptoms were examined by multiple linear regression,  $\chi^2$ , or multiple logistic regression. **Results.** 74% of participants performed post-Katrina restoration work (median time: 620 hours). Symptoms reported include episodes of transient fever/cough (29%), sinus symptoms (48%), pneumonia (3.7%), and new onset asthma (4.5%). Prevalence rate ratios for post-Katrina sinus symptoms (PRR = 1.3; CI: 1.1, 1.7) and fever and cough (PRR = 1.7; CI: 1.3, 2.4) were significantly elevated overall for those who did restoration work and prevalence increased with restoration work hours. Prevalence rate ratios with restoration work were also elevated for new onset asthma (PRR = 2.2; CI: 0.8, 6.2) and pneumonia (PRR = 1.3; CI: 0.5, 3.2) but were not statistically significant. Overall, lung function was slightly depressed but was not significantly different between those with and without restoration work exposure. **Conclusions.** Post-Katrina restoration work is associated with moderate adverse effects on respiratory health, including sinusitis and toxic pneumonitis. PMID:23365586

198. [PTSD in Vietnamese Americans Following Hurricane Katrina: Prevalence, Patterns, and Predictors](#)

[PubMed Central](#)

Norris, Fran H.; VanLandingham, Mark J.; Vu, Lung

2010-01-01

One year after Hurricane Katrina devastated New Orleans, we assessed 82 adults from a population-based sample of the Vietnamese American community who had participated in a larger study of immigration weeks before the disaster. Although 21% met criteria for partial PTSD, only 5% of the sample met all PTSD criteria. Avoidance/numbing symptoms did not form a coherent cluster and were seldom confirmed, but intrusion, arousal, and interference were common. Severity of exposure to the flood waters, property loss, and subjective trauma were independently related to PTSD symptoms. Symptoms were highest among participants who were low in acculturation or who had high Katrina exposure in combination with prolonged stays in transition camps during emigration. PMID:19235888

199. [Vulnerable populations in an American Red Cross shelter after Hurricane Katrina.](#)

[PubMed](#)

Saunders, Judith M

2007-02-01

During Katrina, people suddenly encountered multiple losses, including homes, finances, medications, and death of loved ones. The Model of Vulnerable Populations illustrates how reduced resources placed individuals at greater risk for harm. Using vignettes and the Model of Vulnerable Populations, a psychiatric nurse discusses her experiences as an American Red Cross psychiatric/mental health nurse volunteer after the Katrina disaster at a Mississippi shelter. The role of the mental health nurse volunteer was demonstrated by assessment and interventions of advocacy, referral, crisis intervention, and general support and education. Using the Model of Vulnerable Populations, psychiatric nurses can improve mental health assessment and services by counseling, advocacy, triage, and teaching disease prevention strategies such as hand washing.

200. [Faith-based organizations and sustainable sheltering operations in Mississippi after Hurricane Katrina: implications for informal network utilization.](#)

[PubMed](#)

Pant, Anjali T; Kirsch, Thomas D; Subbarao, Italo R; Hsieh, Yu-Hsiang; Vu, Alexander

2008-01-01

In the aftermath of Hurricane Katrina, a significant number of faith-based organizations (FBOs) that were not a part of the formal National Response Plan (NRP) initiated and sustained sheltering operations. The objective of this study was to examine the sheltering operations of FBOs, understand the decision-making process of FBO shelters, and identify the advantages and disadvantages of FBO shelters. Verbal interviews were conducted with FBO shelter leaders. Inclusion criteria were: (1) opening in response to the Katrina disaster; (2) operating for more than three weeks; and (3) being a FBO. Enrolled shelters were examined using descriptive data methods. The majority of shelters operating in Mississippi up to three weeks post-Katrina were FBO-managed. All of the operating FBO shelters in Mississippi that met the inclusion criteria were contacted with a response rate of 94%. Decisions were made by individuals or small groups in most shelters regarding opening, operating procedures, and closing. Most FBOs provided at least one enabling service to evacuees, and all utilized informal networks for sheltering operations. Only 25% of FBOs had disaster plans in place prior to Hurricane Katrina. Faith-based organization shelters played a significant role in the acute phase of the Katrina disaster. Formal disaster training should be initiated for these organizations. Services provided by FBOs should be standardized. Informal networks should be incorporated into national disaster planning.

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## 201. [New Orleans Colleges Slog toward Recovery from Katrina](#)

[ERIC Educational Resources Information Center](#)

Mangan, Katherine

2008-01-01

Twenty-eight months after Hurricane Katrina forced the closures of more than a half-dozen New Orleans colleges and universities, many of them are still struggling to regain their enrollments and

restore buildings damaged by floodwater and mold. Over all, college enrollment in New Orleans increased slightly in the fall of 2007, reaching 74 percent

## 202. [Experimental Investigation of Very Large Model Wind Turbine Arrays](#)

[NASA Astrophysics Data System \(ADS\)](#)

Charmanski, Kyle; Wosnik, Martin

2013-11-01

The decrease in energy yield in large wind farms (array losses) and associated revenue losses can be significant. When arrays are sufficiently large they can reach what is known as a fully developed wind turbine array boundary layer, or fully developed wind farm condition. This occurs when the turbulence statistics and the structure of the turbulence, within and above a wind farm, as well as the performance of the turbines remain the same from one row to the next. The study of this condition and how it is affected by parameters such as turbine spacing, power extraction, tip speed ratio, etc. is important for the optimization of large wind farms. An experimental investigation of the fully developed wind farm condition was conducted using a large array of porous disks (upstream) and realistically scaled 3-bladed wind turbines with a diameter of 0.25m. The turbines and porous disks were placed inside a naturally grown turbulent boundary layer in the 6m  $\times$  2.5m  $\times$  72m test section of the UNH Flow Physics Facility which can achieve test section velocities of up to 14 m/s and Reynolds numbers  $Re = \rho u_{ref} L / \mu \sim 20,000$ . Power, rate of rotation and rotor thrust were measured for select turbines, and hot-wire anemometry was used for flow measurements.

## 203. [ENVIRONMENTAL SAMPLING AND ANALYSIS IN THE AFTERMATH OF HURRICANE KATRINA](#)

[EPA Science Inventory](#)

This presentation describes the environmental sampling completed by EPA in southeastern Louisiana after Hurricane Katrina caused major catastrophic damage. Presentation also describes EPA's Environmental Unit activities in Baton Rouge and New Orleans, LA, and Dallas, TX.

## 204. [Race, socioeconomic status, and return migration to New Orleans after Hurricane Katrina](#)

[PubMed Central](#)

Sastry, Narayan; VanLandingham, Mark

2010-01-01

Hurricane Katrina struck New Orleans on the 29th of August 2005 and displaced virtually the entire population of the city. Soon after, observers predicted the city would become whiter and wealthier as a result of selective return migration, although challenges related to sampling and data collection in a post-disaster environment have hampered evaluation of these hypotheses. In this article, we

investigate return to the city by displaced residents over a period of approximately 14 months following the storm, describing overall return rates and examining differences in return rates by race and socioeconomic status. We use unique data from a representative sample of pre-Katrina New Orleans residents collected in the Displaced New Orleans Residents Pilot Survey. We find that black residents returned to the city at a much slower pace than white residents even after controlling for socioeconomic status and demographic characteristics. However, the racial disparity disappears after controlling for housing damage. We conclude that blacks tended to live in areas that experienced greater flooding and hence suffered more severe housing damage which, in turn, led to their delayed return to the city. The full-scale survey of displaced residents being fielded in 2009â€”2010 will show whether the repopulation of the city was selective over a longer period. PMID:20440381

205. [Field investigation of a wake structure downwind of a VANT \(Vertical-Axis Wind Turbine\) in a wind farm array](#)

[NASA Astrophysics Data System \(ADS\)](#)

Liu, H. T.; Buck, J. W.; Germain, A. C.; Hinchee, M. E.; Solt, T. S.; Leroy, G. M.; Srnsky, R. A.

1988-09-01

The effects of upwind turbine wakes on the performance of a FloWind 17-m vertical-axis wind turbine (VAWT) were investigated through a series of field experiments conducted at the FloWind wind farm on Cameron Ridge, Tehachapi, California. From the field measurements, we derived the velocity and power/energy deficits under various turbine on/off configurations. Much information was provided to characterize the structure of VAWT wakes and to assess their effects on the performance of downwind turbines. A method to estimate the energy deficit was developed based on the measured power deficit and the wind speed distributions. This method may be adopted for other turbine types and sites. Recommendations are made for optimizing wind farm design and operations, as well as for wind energy management.

206. [Disrupted by disaster: shared experiences of student registered nurse anesthetists affected by hurricane Katrina.](#)

[PubMed](#)

Geisz-Everson, Marjorie A; Bennett, Marsha J; Dodd-McCue, Diane; Biddle, Chuck

2012-01-01

The purpose of this focused ethnography was to describe the shared experiences of student registered nurse anesthetists (SRNAs) whose senior year of education and training was disrupted by Hurricane Katrina, as well as to determine the storm's psychosocial impact on them. A convenience sample of 10 former SRNAs participated in focus groups that were audiorecorded, transcribed, and qualitatively analyzed. Three major themes emerged from the study: Seriousness of Urgency,

Managing Uncertainty, and Stability Equaled Relief. The themes represented how the SRNAs appraised and coped with the stressful events surrounding Hurricane Katrina. The psychosocial impact of Hurricane Katrina on the SRNAs resulted mainly in temporary increased alcohol consumption and short-term anxiety. One person started smoking. The results of this study should serve as a guide to formulate policies regarding the education of SRNAs during and immediately after a disaster and to provide a framework for future disaster studies regarding SRNAs. Copyright 2012, SLACK Incorporated.

207. [Change in Chaos: Seven Lessons Learned from Katrina](#)

[ERIC Educational Resources Information Center](#)

Carr-Chellman, Alison A.; Beabout, Brian; Alkandari, Khaled A.; Almeida, Luis C.; Gursoy, Husra T.; Ma, Ziyang; Modak, Rucha S.; Pastore, Raymond S.

2008-01-01

This article discusses seven lessons learned from Katrina, suggesting that after chaos: (1) there is hope; (2) there is a strong atmosphere of indeterminacy; (3) things tend to break apart and reform in somewhat similar ways but with different values; (4) there is a desire for organization, leadership, and familiarity; (5) there is a sense of

208. [Clinical Research After Catastrophic Disasters: Lessons Learned From Hurricane Katrina](#)

[PubMed Central](#)

Flory, Kate; Kloos, Bret; Hankin, Benjamin L.; Cheely, Catherine A.

2008-01-01

When catastrophic disasters such as Hurricane Katrina strike, psychologists and other mental health professionals often wonder how to use resources and fill needed roles. We argue that conducting clinical research in response to disasters is 1 important way that these professionals can contribute. However, we recognize that designing and implementing a clinical research study can be a daunting task, particularly in the context of the personal and system-wide chaos that follows most disasters. Thus, we offer a detailed description of our own experiences with conducting clinical research as part of our response to Hurricane Katrina. We describe our study design, recruitment and data collection efforts, and summarize and synthesize the lessons we have learned from this endeavor. Our hope is that others who may wish to conduct disaster-related research will learn from our mistakes and successes. PMID:19177173

209. [Children Displaced by Hurricane Katrina: A Focus Group Study](#)

[ERIC Educational Resources Information Center](#)

Pfefferbaum, Betty; Houston, J. Brian; Wyche, Karen Fraser; Van Horn, Richard L.; Reyes, Gilbert; Jeon-Slaughter, Haekyung; North, Carol S.

2008-01-01

Focus groups were conducted with 23 children and adolescents, aged 9 to 17 years, who relocated from Louisiana to Texas following Hurricane Katrina to explore their disaster, evacuation, and resettlement experiences. The resilience described by some was remarkable and, despite evidence of cultural disparity and stigma, many identified positive

## 210. [Resilience of Professional Counselors Following Hurricanes Katrina and Rita](#)

[ERIC Educational Resources Information Center](#)

Lambert, Simone F.; Lawson, Gerard

2013-01-01

Professional counselors who provided services to those affected by Hurricanes Katrina and Rita completed the K6+ (screen for severe mental illness), the Posttraumatic Growth Inventory, and the Professional Quality of Life Scale. Results indicated that participants who survived the hurricanes had higher levels of posttraumatic growth than

## 211. [Coping with a Man-Made Crisis: Lessons from Katrina](#)

[ERIC Educational Resources Information Center](#)

Cowen, Scott S.

2009-01-01

In the fall of 2005, Tulane University responded to Katrina's devastation by undertaking a significant re-envisioning of the university's mission and strategy. Tulane needed to survive financially without sacrificing the core academic strengths that have drawn so many students to them: a holistic undergraduate experience that leverages the

## 212. [Effects of Hurricane Katrina and Other Adverse Life Events on Adolescent Female Offenders: A Test of General Strain Theory](#)

[PubMed Central](#)

Robertson, Angela R.; Stein, Judith A.; Schaefer-Rohleder, Lacey

2011-01-01

This study tested Agnew's General Strain Theory (GST) by examining the roles of anger, anxiety, and maladaptive coping in mediating the relationship between strain and three outcomes (serious delinquency, minor delinquency, and continued involvement in the juvenile justice system) among adolescent female offenders (N = 261). Strains consisted of adverse life events and exposure to Hurricane Katrina. Greater exposure to Hurricane Katrina was directly related to serious delinquency and maladaptive coping. Hurricane Katrina also had an indirect effect on minor delinquency and Post-Katrina juvenile justice involvement mediated through maladaptive coping. Adverse life events were associated with increased anger, anxiety, and maladaptive coping. Anger mediated the relationship between adverse life events and serious delinquency. Anxiety mediated the relationship between adverse life events and minor delinquency. Maladaptive coping strategies were associated with minor delinquency and juvenile justice involvement. Findings lend support to GST. PMID:21572904

### 213. [Investigations and Experiments in the Guidonia Wind Tunnel](#)

[NASA Technical Reports Server \(NTRS\)](#)

Ferri, Antonio

1939-01-01

This paper is a presentation of the experiments and equipment used in investigations at the Guidonia wind tunnel. The equipment consisted of: a number of subsonic and supersonic cones, an aerodynamic balance, and optical instruments operating on the Schlieren and interferometer principle.

### 214. [Vortex Rossby Waves in Hurricanes Katrina and Rita \(2005\)](#)

[NASA Astrophysics Data System \(ADS\)](#)

Judt, F.; Chen, S. S.

2007-12-01

Radar observations in hurricanes reveal inner spiraling rainbands emanating from the eyewall and propagating outward. Theoretical analysis indicated that these inner bands are azimuthally and radially propagating vortex Rossby waves (VRW). The outward propagating waves convey PV from the inner core to outer regions and thus lead to PV redistribution within a hurricane. It has been hypothesized that the outward propagating VRWs may play a role in interacting with an existing secondary PV ring in the outer region of a hurricane, which could lead to a development of concentric eyewalls. However, the lack of simultaneous observations over the inner-core and rainband regions is a major difficulty in our understanding of the complex interaction. The importance of VRWs in hurricane intensity change remains to be a question. This study aims to address the question using high-resolution model (MM5) forecasts of Hurricanes Katrina and Rita during the Hurricane Rainbands and Intensity Change Experiment (RAINEX) in 2005. The two major hurricanes went through a similar

rapid intensification over the Gulf of Mexico. Both RAINEX observations and model forecast fields showed that Rita developed a secondary eyewall and went through an eyewall replacement before landfall, whereas Katrina did not. We analyze the model output at 1.67 km grid-resolution with 12-min time intervals. Azimuthally and radially propagating VRWs were found in the PV, rainrate, and vertical velocity fields in both storms. In the case of Katrina, no secondary PV maximum exists due to the lack of highly circular rainbands. Thus the VRWs propagate outward smoothly over a relatively long distance. No VRW activity has been found beyond 80-100 km radius in Katrina. This result indicates that interaction between the VRWs and outer PV disturbance must take place within this region, otherwise no effect concerning the importance of VRW would occur. The stagnation radius depends on the background PV- gradient which

215. [Traumatic Loss and Natural Disaster: A Case Study of a School-Based Response to Hurricanes Katrina and Rita](#)

[ERIC Educational Resources Information Center](#)

Clettenberg, Stacey; Gentry, Judy; Held, Matthew; Mock, Lou Ann

2011-01-01

This article tracks the trajectory and impact of Hurricanes Katrina and Rita on the communities of Houston/Harris County, Texas, USA, the schools, children, and families; along with the community partnerships that addressed the trauma and upheaval. Following the influx of individuals and families who were displaced by Hurricanes Katrina and Rita

216. [Experience of Hurricane Katrina and Reported Intimate Partner Violence](#)

[ERIC Educational Resources Information Center](#)

Harville, Emily W.; Taylor, Catherine A.; Tesfai, Helen; Xiong, Xu; Buekens, Pierre

2011-01-01

Intimate partner violence (IPV) has been associated with stress, but few studies have examined the effect of natural disaster on IPV. In this study, the authors examine the relationship between experience of Hurricane Katrina and reported relationship aggression and violence in a cohort of 123 postpartum women. Hurricane experience is measured

217. [Rebuilding New Orleans after Katrina, part 2.](#)

[PubMed](#)

Soltau, Eleanor

2006-01-01

Hurricane Katrina occurred on August 29, 2005, followed by Hurricane Rita on September 24, with destruction extending along the Gulf Coast to Beaumont, Texas. Reentry into New Orleans began in mid to late September last year and occurred in stages, with the least devastated areas being gradually reopened first. People began trickling back in until the city was finally fully opened in December except for the Ninth Ward and East New Orleans.

218. [SIMULATING LAKE PONTCHARTRAIN AND MISSISSIPPI RIVER OUTFLOW AFTER HURRICANE KATRINA](#)

[EPA Science Inventory](#)

Hurricane Katrina was the direct cause of the flooding of New Orleans in September 2005. Between its passage and the pumping of flood waters back into Lake Pontchartrain and the Mississippi River, the flood waters acquired considerable amounts of contaminants, notably silver, but...

219. [Assessing Hurricane Katrina Damage to the Mississippi Gulf Coast Using IKONOS Imagery](#)

[NASA Technical Reports Server \(NTRS\)](#)

Spruce, Joseph; McKellip, Rodney

2006-01-01

Hurricane Katrina hit southeastern Louisiana and the Mississippi Gulf Coast as a Category 3 hurricane with storm surges as high as 9 m. Katrina devastated several coastal towns by destroying or severely damaging hundreds of homes. Several Federal agencies are assessing storm impacts and assisting recovery using high-spatial-resolution remotely sensed data from satellite and airborne platforms. High-quality IKONOS satellite imagery was collected on September 2, 2005, over southwestern Mississippi. Pan-sharpened IKONOS multispectral data and ERDAS IMAGINE software were used to classify post-storm land cover for coastal Hancock and Harrison Counties. This classification included a storm debris category of interest to FEMA for disaster mitigation. The classification resulted from combining traditional unsupervised and supervised classification techniques. Higher spatial resolution aerial and handheld photography were used as reference data. Results suggest that traditional classification techniques and IKONOS data can map wood-dominated storm debris in open areas if relevant training areas are used to develop the unsupervised classification signatures. IKONOS data also enabled other hurricane damage assessment, such as flood-deposited mud on lawns and vegetation foliage loss from the storm. IKONOS data has also aided regional Katrina vegetation damage surveys from multirate Land Remote Sensing Satellite and Moderate Resolution Imaging Spectroradiometer data.

220. [Katrina's Lessons in California: Social and Political Trajectories of Flood Management in the Sacramento River Watershed since 2005](#)

[NASA Astrophysics Data System \(ADS\)](#)

Comby, E.; Le Lay, Y. F.; Piegay, H.

2017-12-01

Over the last decade, major changes have occurred in the way that environments are managed. They can be linked with external or internal events which may shape public perception. An external event can reveal a forgotten risk and create a social problem (Hilgartner et Bosk 1988). Following the Advocacy Coalition Framework (Sabatier 1988), we studied the role of Hurricane Katrina in flood management in California from 2005 to 2013. How do policies intend to increase the city's resilience? We compared different flood policies of the Sacramento River from 2005 to 2013, by combining field observations with a principal dataset of 340 regional newspaper items (Sacramento Bee). Media coverage was analyzed using content, quotation, and textometry as well as GIS. We underlined temporal variability in public perceptions towards floods. Some planning choices (such as levees) became controversial, while journalists praised weirs, bypasses, and dams. However, Katrina does not seem to have a real impact on urban sprawl strategies in three Sacramento neighborhoods (Fig.1). We analyzed also the limits of the comparison between New Orleans and Sacramento. Dialog between stakeholders existed in space and time between here (California) and elsewhere (Louisiana), present (post-2005) and past (Katrina catastrophe), and risk and disaster. Katrina was a national scandal with political announcements. However, flood policy was developed first at a regional and then local scales. After Katrina awareness, conflicts appear: some California residents refuse to have a policy linked to Katrina applied to them. We underlined that different stakeholders became prominent: it may be useless to tackle with only one institution. Some institutions had an integrated river management, while others kept a traditional risk management. We assessed the changes in river management while using discourse to understand the (potential) shift in human-river relationships from risk management to integrated river

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## 221. [Experimental investigation on performance of crossflow wind turbine as effect of blades number](#)

[NASA Astrophysics Data System \(ADS\)](#)

Kurniawati, Diniar Mungil; Tjahjana, Dominicus Danardono Dwi Prija; Santoso, Budi

2018-02-01

Urban living is one of the areas with large electrical power consumption that requires a power supply that is more than rural areas. The number of multi-storey buildings such as offices, hotels and several other buildings that caused electricity power consumption in urban living is very high. Therefore, energy alternative is needed to replace the electricity power consumption from government. One of the utilization of renewable energy in accordance with these conditions is the installation of wind turbines. One type of wind turbine that is now widely studied is a crossflow wind turbines. Crossflow wind turbine is one of vertical axis wind turbine which has good self starting at low wind speed condition. Therefore, the turbine design parameter is necessary to know in order to improve turbine performance. One of wind turbine performance parameter is blades number. The main purpose of this research to investigate the effect of blades number on crossflow wind turbine performance. The design of turbine was  $0.4 \text{ m} \times 0.4 \text{ m}^2$  tested by experimental method with configuration on three kinds of blades number were 8, 16 and 20. The turbine investigated at low wind speed on 2 - 5 m/s. The result showed that best performance on 16 blade number.

## 222. [Effects of Hurricane Katrina on nursing facility resident mortality, hospitalization, and functional decline.](#)

[PubMed](#)

Dosa, David; Feng, Zhanlian; Hyer, Kathy; Brown, Lisa M; Thomas, Kali; Mor, Vincent

2010-09-01

The study was designed to examine the 30- and 90-day mortality and hospitalization rates among nursing facility (NF) residents in the affected areas of Louisiana and Mississippi following Hurricane Katrina and to assess the rate of significant posthurricane functional decline. A secondary data analysis was conducted using Medicare claims merged with NF resident data from the Minimum Data Set. Thirty- and 90-day mortality and hospitalization rates for long-stay (>90 days) residents residing in 141 at-risk NFs during Hurricane Katrina were compared to rates for residents residing at the same facilities during the same time period in prior nonhurricane years (2003 and 2004). Functional decline was assessed as a 4+ drop in function using a 28-point Minimum Data Set Activities of Daily Living Scale. There were statistically significant differences (all  $P < .0001$ ) in mortality, hospitalization, and functional decline among residents exposed to Hurricane Katrina. At 30 days, the mortality rate was 3.88% among the exposed cohort compared with 2.10% and 2.28% for residents in 2003 and 2004, respectively. The 90-day mortality rate was 9.27% compared with 6.71% and 6.31%, respectively.

These mortality differences translated into an additional 148 deaths at 30 days and 230 deaths at 90 days. The 30-day hospitalization rate was 9.87% compared with 7.21% and 7.53%, respectively. The 90-day hospitalization rate was 20.39% compared with 18.61% and 17.82%, respectively. Finally, the rate of significant functional decline among survivors was 6.77% compared with 5.81% in 2003 and 5.10% in 2004. NF residents experienced a significant increase in mortality, hospitalization, and functional decline during Hurricane Katrina.

### 223. [Stress and Support in Family Relationships after Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Reid, Megan; Reczek, Corinne

2011-01-01

In this article, the authors merge the study of support, strain, and ambivalence in family relationships with the study of stress to explore the ways family members provide support or contribute to strain in the disaster recovery process. The authors analyze interviews with 71 displaced Hurricane Katrina survivors, and identify three familyâ€¦

### 224. [Modeling Hurricane Katrina's merchantable timber and wood damage in south Mississippi using remotely sensed and field-measured data](#)

[NASA Astrophysics Data System \(ADS\)](#)

Collins, Curtis Andrew

Ordinary and weighted least squares multiple linear regression techniques were used to derive 720 models predicting Katrina-induced storm damage in cubic foot volume (outside bark) and green weight tons (outside bark). The large number of models was dictated by the use of three damage classes, three product types, and four forest type model strata. These 36 models were then fit and reported across 10 variable sets and variable set combinations for volume and ton units. Along with large model counts, potential independent variables were created using power transforms and interactions. The basis of these variables was field measured plot data, satellite (Landsat TM and ETM+) imagery, and NOAA HWIND wind data variable types. As part of the modeling process, lone variable types as well as two-type and three-type combinations were examined. By deriving models with these varying inputs, model utility is flexible as all independent variable data are not needed in future applications. The large number of potential variables led to the use of forward, sequential, and exhaustive independent variable selection techniques. After variable selection, weighted least squares techniques were often employed using weights of one over the square root of the pre-storm volume or weight of interest. This was generally successful in improving residual variance homogeneity. Finished model fits, as represented by coefficient of determination ( $R^2$ ), surpassed 0.5 in numerous models with values over 0.6 noted in a few cases. Given these models, an analyst is

provided with a toolset to aid in risk assessment and disaster recovery should Katrina-like weather events reoccur.

## 225. [Engineering education in the wake of hurricane Katrina](#)

[PubMed Central](#)

Lima, Marybeth

2007-01-01

Living through hurricane Katrina and its aftermath and reflecting on these experiences from technical and non-technical standpoints has led me to reconsider my thoughts and philosophy on engineering education. I present three ideas regarding engineering education pedagogy that I believe will prepare future engineers for problem-solving in an increasingly complex world. They are (1) we must practice radical (to the root) engineering, (2) we must illustrate connections between engineering and public policy, and (3) we will join the charge to find sustainable solutions to problems. Ideas for bringing each of these concepts into engineering curricula through methods such as case study, practicing broad information gathering and data interpretation, and other methods inside and outside the classroom, are discussed. I believe that the consequences of not considering the root issues of problems to be solved, and of not including policy and sustainability considerations when problems to be solved are framed will lead our profession toward well meaning but insufficient utility. Hurricane Katrina convinced me that we must do better as educators to prepare our students for engineering for a sustainable world. PMID:18271988

## 226. [Shared experiences of CRNAs who were on duty in New Orleans during Hurricane Katrina.](#)

[PubMed](#)

Geisz-Everson, Marjorie A; Dodd-McCue, Dianne; Bennett, Marsha

2012-06-01

The purpose of this focused ethnography was to describe the shared experiences of certified registered nurse anesthetists (CRNAs) who were on duty in New Orleans, Louisiana, during Hurricane Katrina as well as to elucidate the psychosocial impact the storm had on them. Ten CRNAs participated in 1 of 3 focus groups that were audio recorded. The audio recordings were transcribed and analyzed using qualitative data analysis computer software (NVivo 8, QSR International, Melbourne, Australia). Six major themes emerged from the study: caught off guard; sense of duty; uncertainty/powerlessness/frustration; group identity and cohesiveness; anger; and life-changing event. The themes represented how the CRNAs appraised and coped with the stressful events surrounding Hurricane Katrina. The psychosocial impact of Hurricane Katrina on the CRNAs resulted mainly in short-term sleep disturbances and increased drinking. Only 2 CRNAs expressed long-term psychosocial effects from the storm. The results of this study should be used to guide policies

regarding disaster activation of CRNAs, to educate CRNAs on preparing for disaster duty, and to provide a framework for future disaster studies regarding CRNAs.

## 227. [Katrina Kids! Helping Kids Exposed to Population-Wide Trauma](#)

[ERIC Educational Resources Information Center](#)

Bender, William N.; Sims, Rebecca

2007-01-01

Although schools have implemented school safety plans as a result of the violence witnessed on rare occasions in schools today, schools are less likely to be prepared for emergencies such as Katrina or 9/11; this is true even for schools in locations prone to hurricanes, tornadoes, or earthquakes. Whereas disaster plans typically involve school

## 228. [Needs Assessment of Hurricane Katrina Evacuees Residing Temporarily in Dallas.](#)

[PubMed](#)

King, Richard V; Polatin, Peter B; Hogan, David; Downs, Dana L; North, Carol S

2016-01-01

This study assessed the psychosocial needs of Hurricane Katrina evacuees temporarily residing in Dallas, TX, after sheltering but prior to their permanent resettlement. Common trauma exposures were physical exposure to flood water, seeing corpses, witnessing death, and loss of family, friends, or home. Fewer than 10% met symptom criteria for disaster-related posttraumatic stress disorder (PTSD). More than one-fourth met major depressive disorder (MDD) symptom criteria post-disaster but only 15% had a new (incident) MDD episode after the disaster. Specific trauma exposures and some hurricane-related stressors contributed to risk for both Katrina-related PTSD symptom criteria and incident MDD, but other hurricane-related stressors were uniquely associated with incident MDD. Referral to mental health services was associated with meeting symptom criteria for PTSD and with incident MDD, but only about one-third of these individuals received a referral. Understanding the needs of disaster-exposed population requires assessing trauma exposures and identifying pre-disaster and post-disaster psychopathology.

## 229. [Telling Katrina Stories: Problems and Opportunities in Engaging Disaster](#)

[ERIC Educational Resources Information Center](#)

Bowman, Michael S.; Bowman, Ruth Laurion

2010-01-01

As the fifth anniversary of life-changing events like Hurricanes Katrina and Rita approaches, the authors talk about the problems those who reside at the site of the disaster face in keeping those events alive in public memory and in making them an ongoing issue for deliberation in the public sphere. In short, then, the authors address the

### 230. [A Wind-Tunnel Investigation of Tilt-Rotor Gust Alleviation Systems](#)

[NASA Technical Reports Server \(NTRS\)](#)

Ham, N. D.; Whitaker, H. P.

1978-01-01

The alleviation of the effects of gusts on tilt rotor aircraft by means of active control systems was investigated. The gust generator, the derivation of the equations of motion of the rotor wing combination, the correlation of these equations with the results of wind tunnel model tests, the use of the equations to design various gust alleviating active control systems, and the testing and evaluation of these control systems by means of wind tunnel model tests were developed.

### 231. [Wind tunnel investigation of a 14 foot vertical axis windmill](#)

[NASA Technical Reports Server \(NTRS\)](#)

Muraca, R. J.; Guillotte, R. J.

1976-01-01

A full scale wind tunnel investigation was made to determine the performance characteristics of a 14 ft diameter vertical axis windmill. The parameters measured were wind velocity, shaft torque, shaft rotation rate, along with the drag and yawing moment. A velocity survey of the flow field downstream of the windmill was also made. The results of these tests along with some analytically predicted data are presented in the form of generalized data as a function of tip speed ratio.

### 232. [An investigation of the effect of wind cooling on photovoltaic arrays](#)

[NASA Technical Reports Server \(NTRS\)](#)

Wen, L.

1982-01-01

Convective cooling of photovoltaic modules for different wind conditions, including steady state controlled testing in a solar simulator and natural test environments in a field was investigated. Analytical thermal models of different module designs were used to correlate experimental data. The

applicability of existing heat transfer correlations is confirmed. Reasonable agreement is obtained by applying a power law wind profile.

### 233. [The location of displaced New Orleans residents in the year after Hurricane Katrina.](#)

[PubMed](#)

Sastry, Narayan; Gregory, Jesse

2014-06-01

Using individual data from the restricted version of the American Community Survey, we examined the displacement locations of pre-Hurricane Katrina adult residents of New Orleans in the year after the hurricane. More than one-half (53 %) of adults had returned to-or remained in-the New Orleans metropolitan area, with just under one-third of the total returning to the dwelling in which they resided prior to Hurricane Katrina. Among the remainder, Texas was the leading location of displaced residents, with almost 40 % of those living away from the metropolitan area (18 % of the total), followed by other locations in Louisiana (12 %), the South region of the United States other than Louisiana and Texas (12 %), and elsewhere in the United States (5 %). Black adults were considerably more likely than nonblack adults to be living elsewhere in Louisiana, in Texas, and elsewhere in the South. The observed race disparity was not accounted for by any of the demographic or socioeconomic covariates in the multinomial logistic regression models. Consistent with hypothesized effects, we found that following Hurricane Katrina, young adults (aged 25-39) were more likely to move further away from New Orleans and that adults born outside Louisiana were substantially more likely to have relocated away from the state.

### 234. [The Location of Displaced New Orleans Residents in the Year After Hurricane Katrina](#)

[PubMed Central](#)

Sastry, Narayan; Gregory, Jesse

2014-01-01

Using individual data from the restricted version of the American Community Survey, we examined the displacement locations of pre-Hurricane Katrina adult residents of New Orleans in the year after the hurricane. More than one-half (53 %) of adults had returned to-or remained in-the New Orleans metropolitan area, with just under one-third of the total returning to the dwelling in which they resided prior to Hurricane Katrina. Among the remainder, Texas was the leading location of displaced residents, with almost 40 % of those living away from the metropolitan area (18 % of the total), followed by other locations in Louisiana (12 %), the South region of the United States other than Louisiana and Texas (12 %), and elsewhere in the United States (5 %). Black adults were considerably more likely than nonblack adults to be living elsewhere in Louisiana, in Texas, and elsewhere in the South. The observed race disparity was not accounted for by any of the demographic or

socioeconomic covariates in the multinomial logistic regression models. Consistent with hypothesized effects, we found that following Hurricane Katrina, young adults (aged 25–39) were more likely to move further away from New Orleans and that adults born outside Louisiana were substantially more likely to have relocated away from the state. PMID:24599750

235. [An Examination of Hurricane Emergency Preparedness Planning at Institutions of Higher Learning of the Gulf South Region Post Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Ventura, Caterina Gulli

2010-01-01

The purpose of the study was to examine hurricane emergency preparedness planning at institutions of higher learning of the Gulf South region following Hurricane Katrina. The problem addressed the impact of Hurricane Katrina on decision-making and policy planning processes. The focus was on individuals that administer the hurricane emergency

236. [Effects of Disasters on Smoking and Relapse: An Exploratory Study of Hurricane Katrina Victims.](#)

[PubMed](#)

Lanctot, Jennifer Q; Stockton, Michelle B; Mzayek, Fawaz; Read, Mary; McDevitt-Murphy, Meghan; Ward, Kenneth

2008-01-01

Psychosocial stress maintains cigarette use and precipitates relapse, but little is known about how natural disasters in particular affect smoking. To determine the feasibility of recruiting victims soon after a natural disaster for a survey study, and to assess the types and determinants of changes in smoking behavior resulting from exposure to the disaster. A convenience sample of 35 Hurricane Katrina refugees who had smoked more than 100 cigarettes in their lifetime were surveyed one month after the storm to evaluate changes in smoking behavior. Among a small sample of former smokers, more than half relapsed after Katrina, citing stress, urge, and sadness. Among current smokers, 52% increased their smoking after Katrina by more than half a pack per day on average. Most individuals who increased their smoking or relapsed expressed interest in receiving cessation assistance within the next month. Stress-related increases in smoking and relapse may be common after a natural disaster. Health education professionals have an important role to play in responding to changes in tobacco use in the aftermath of disasters. Educational interventions to discourage tobacco use as a coping strategy may be especially warranted given the high level of interest expressed in smoking cessation.

## 237. [Laboratory investigation of spray generation mechanism in wind-wave interaction under strong wind conditions](#)

[NASA Astrophysics Data System \(ADS\)](#)

Kandaurov, Alexander; Troitskaya, Yuliya; Sergeev, Daniil; Ermakova, Olga; Kazakov, Vassily

2015-04-01

The sea spray is considered as a possible mechanism of the reduction of sea surface aerodynamic drag coefficient at hurricane conditions [1]. In this paper the mechanism of generation of spray in the near-surface layer of the atmosphere in a strong wind through the mechanism of «bag-breakup instability» was investigated in laboratory conditions with the help of high-speed video shooting. The laboratory experiments were performed on the Thermostratified Wind-Wave Channel of the IAP RAS (length 10 m, cross section of air channel 0.4 x 0.4 m, wind velocity up to 24 m/s)[2]. Experiments were carried out for the wind speeds from 14 to 22 m/s. In this range spray generation characteristics change dramatically from almost no spray generation to so called catastrophic regime with multiple cascade breakups on each crest. Shooting was performed with High-speed digital camera NAC Memrecam HX-3 in two different setups to obtain both statistical data and detailed spray generation mechanism overview. In first setup bright LED spotlight with mate screen the side of a channel was used for horizontal shadow-method shooting. Camera was placed in semi-submerged box on the opposite side of the channel. Shooting was performed at the distance of 7.5 m from the beginning of the working section. Series of short records of the surface evolution were made at 10 000 fps with 55 to 119  $\mu\text{m}/\text{px}$  scale revealed the dominant mechanism of spray generation - bag-breakup instability. Sequences of high resolution images allowed investigating the details of this "bags" evolution. Shadow method provided better image quality for such conditions than side illumination and fluorescence methods. To obtain statistical data on "bags" sizes and densities vertical shadow method was used. Submerged light box was created with two 300 W underwater lamps and mate screen places at the fetch of 6.5 m. Long records (up to 8 seconds) were made with 4500 fps at 124-256  $\mu\text{m}/\text{px}$  scales. Specially developed software

## 238. [The Long Term Recovery of New Orleans' Population after Hurricane Katrina.](#)

[PubMed](#)

Fussell, Elizabeth

2015-09-01

Hurricane Katrina created a catastrophe in the city of New Orleans when the storm surge caused the levee system to fail on August 29, 2005. The destruction of housing displaced hundreds of thousands of residents for varying lengths of time, often permanently. It also revealed gaps in our knowledge of how population is recovered after a disaster causes widespread destruction of urban infrastructure,

housing and workplaces, and how mechanisms driving housing recovery often produce unequal social, spatial and temporal population recovery. In this article, I assemble social, spatial and temporal explanatory frameworks for housing and population recovery and then review research on mobility - both evacuation and migration - after Hurricane Katrina. The review reveals a need for a comprehensive social, spatial and temporal framework for explaining inequality in population recovery and displacement. It also shows how little is known about in-migrants and permanent out-migrants after a disaster.

239. [Numerical investigation of interactions between marine atmospheric boundary layer and offshore wind farm](#)

[NASA Astrophysics Data System \(ADS\)](#)

Lyu, Pin; Chen, Wenli; Li, Hui; Shen, Lian

2017-11-01

In recent studies, Yang, Meneveau & Shen (Physics of Fluids, 2014; Renewable Energy, 2014) developed a hybrid numerical framework for simulation of offshore wind farm. The framework consists of simulation of nonlinear surface waves using a high-order spectral method, large-eddy simulation of wind turbulence on a wave-surface-fitted curvilinear grid, and an actuator disk model for wind turbines. In the present study, several more precise wind turbine models, including the actuator line model, actuator disk model with rotation, and nacelle model, are introduced into the computation. Besides offshore wind turbines on fixed piles, the new computational framework has the capability to investigate the interaction among wind, waves, and floating wind turbines. In this study, onshore, offshore fixed pile, and offshore floating wind farms are compared in terms of flow field statistics and wind turbine power extraction rate. The authors gratefully acknowledge financial support from China Scholarship Council (No. 201606120186) and the Institute on the Environment of University of Minnesota.

240. [Numerical investigations of wake interactions of two wind turbines in tandem](#)

[NASA Astrophysics Data System \(ADS\)](#)

Qian, Yaoru; Wang, Tongguang

2018-05-01

Aerodynamic performance and wake interactions between two wind turbine models under different layouts are investigated numerically using large eddy simulation in conjunction with actuator line method based on the "Blind Test" series wind tunnel experiments from Norwegian University of Science and Technology. Numerical results of the power and thrust coefficients of the two rotors and wake characteristics are in good agreement with the experimental measurements. Extended investigations emphasizing the influence of different layout arrangements on the downstream rotor

performance and wake development are conducted. Results show that layout arrangements have great influence on the power and thrust prediction of the downstream turbine.

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241. [When the Saints Come Marching In. Effects of Hurricanes Katrina and Rita on Student Evacuees.](#)  
NBER Working Paper No. 14385

[ERIC Educational Resources Information Center](#)

Sacerdote, Bruce

2008-01-01

I examine academic performance and college going for public school students affected by Hurricanes Katrina and Rita. Students who are forced to switch schools due to the hurricanes experience sharp declines in test scores in the first year following the hurricane. However, by the second and third years after the disaster, Katrina evacueesâ€¦

242. [Wind Turbine Acoustic Investigation: Infrasound and Low-Frequency Noise—A Case Study](#)

[ERIC Educational Resources Information Center](#)

Ambrose, Stephen E.; Rand, Robert W.; Krogh, Carmen M. E.

2012-01-01

Wind turbines produce sound that is capable of disturbing local residents and is reported to cause annoyance, sleep disturbance, and other health-related impacts. An acoustical study was conducted

to investigate the presence of infrasonic and low-frequency noise emissions from wind turbines located in Falmouth, Massachusetts, USA. During the

243. [Mosquito fauna and arbovirus surveillance in a coastal Mississippi community after Hurricane Katrina.](#)

[PubMed](#)

Foppa, Ivo M; Evans, Christopher L; Wozniak, Arthur; Wills, William

2007-06-01

Hurricane Katrina caused massive destruction and flooding along the Gulf Coast in August 2005. We collected mosquitoes and tested them for arboviral infection in a severely hurricane-damaged community to determine species composition and to assess the risk of a mosquito-borne epidemic disease in that community about 6 wk after the landfall of Hurricane Katrina. Light-trap collections yielded 8,215 mosquitoes representing 19 species, while limited gravid-trap collections were not productive. The most abundant mosquito species was *Culex nigripalpus*, which constituted 73.6% of all specimens. No arboviruses were detected in any of the mosquitoes collected in this survey, which did not support the assertion that human risk for arboviral infection was increased in the coastal community 6 wk after the hurricane.

244. [Classroom-Community Consultation \(C<sup>3</sup>\) 10 Years after Hurricane Katrina: A Retrospective Look at a Collaborative, School-Based Referral Model](#)

[ERIC Educational Resources Information Center](#)

Lee, Madeline Y.; Danna, Laura; Walker, Douglas W.

2017-01-01

The long-term nature of mental health needs after disasters, such as Hurricane Katrina, continues to require attention. Research that emerged during the anniversaries of the storm has shown Katrina and its aftermath to be associated with posttraumatic stress, depression, anxiety, disruptive behavior, and somatic complaints in children and

245. [The Impact of Parental Posttraumatic Stress Disorder Symptom Trajectories on the Long-Term Outcomes of Youth Following Hurricane Katrina](#)

[PubMed Central](#)

Self-Brown, Shannon; Lai, Betty; Harbin, Shannon; Kelley, Mary Lou

2014-01-01

**Objectives** This study examined trajectories of posttraumatic stress disorder symptoms in impoverished mothers impacted by Hurricane Katrina, as well as how predictive the maternal trajectories were for youth posttraumatic stress symptoms 2 years post-Katrina. **Method** 360 mother participants displaced by Hurricane Katrina completed self-report measures across 4 time-points related to Hurricane exposure, trauma history, and posttraumatic stress symptoms. Additionally, the youth offspring completed a self-report measure of posttraumatic stress symptoms. **Results** Latent Class Growth Analysis demonstrated three primary trajectories emerged among females impacted by Katrina, namely, 1) Chronic (4%), 2) Recovering (30%), and 3) Resilient (66%), respectively. These trajectories were significantly impacted by prior trauma history, but not hurricane exposure. Additionally, data indicated that children whose parents fell into the Chronic PTS trajectory also reported high levels of PTS symptoms. **Conclusions** This study identified 3 main trajectories typical of female PTS symptoms following disaster and was the first known study to document associations between PTS outcomes among adults and their offspring impacted by a large natural disaster. Future research is warranted and should explore additional risk and protective factors that impact both the parental and child outcomes. PMID:25255912

246. [Did Harvey Learn from Katrina? Initial Observations of the Response to Companion Animals during Hurricane Harvey.](#)

[PubMed](#)

Glassey, Steve

2018-03-30

The aftermath of Hurricane Katrina in 2005 became the genesis of animal emergency management and created significant reforms in the US particularly the passage of the Pets Emergency and Transportation Standards Act in 2006 that required state and local emergency management arrangements to be pet- and service animal-inclusive. More than a decade later Hurricane Harvey struck the Gulf states with all 68 directly related deaths occurring in the state of Texas. In this study, six key officials involved in the response underwent a semi-structured interview to investigate the impact of the PETS Act on preparedness and response. Though the results have limitations due to the low sample size, it was found that the PETS Act and the lessons of Hurricane Katrina had contributed to a positive cultural shift to including pets (companion animals) in emergency response. However, there was a general theme that plans required under the PETS Act were under-developed and many of the animal response lessons from previous emergencies remain unresolved. The study also observed the first empirical case of disaster hoarding which highlights the need for animal law enforcement agencies to be active in emergency response.

247. [Swamp tours in Louisiana post Hurricane Katrina and Hurricane Rita](#)

[Treesearch](#)

Dawn J. Schaffer; Craig A. Miller

2007-01-01

Hurricanes Katrina and Rita made landfall in southern Louisiana during August and September 2005. Prior to these storms, swamp tours were a growing sector of nature-based tourism that entertained visitors while teaching about local flora, fauna, and culture. This study determined post-hurricane operating status of tours, damage sustained, and repairs made. Differences...

248. [Resiliency and Recovery: Lessons from the Asian Tsunami and Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Fernando, Delini M.; Hebert, Barbara B.

2011-01-01

Separated by continents and cultures, survivors of the Asian tsunami and Hurricane Katrina share a common bond in their extreme trauma and ensuing struggles. The authors discuss and illustrate core ideas based on the commonalities derived from the experiences of women survivors of these two disasters.

249. [Working through disaster: re-establishing mental health care after Hurricane Katrina.](#)

[PubMed](#)

Baker, Natalie D; Feldman, Martha S; Lowerson, Victoria

2013-06-01

Our research explored how mental health care providers continued to work during and after Hurricane Katrina. We interviewed 32 practitioners working in the New Orleans mental health care community during and after Hurricane Katrina. Through qualitative data analysis, we developed three temporal periods of disruption: the evacuation period, the surreal period, and the new normal period. We analyzed the actions informants took during these time periods. The mental health care providers adapted to disruption by displaying two forms of flexibility: doing different tasks and doing tasks differently. How much and how they engaged in these forms of flexibility varied during the three periods. Informants' actions helped to create system resilience by adjusting the extent to which they were doing different tasks and the ways in which they were doing tasks differently during the three time periods. Their flexibility allowed them to provide basic care and adapt to changed circumstances. Their flexibility also contributed to maintaining a skilled workforce in the affected region.

250. [Working through disaster: re-establishing mental health care after Hurricane Katrina.](#)

[PubMed](#)

Baker, Natalie D; Feldman, Martha S; Lowerson, Victoria

2012-10-01

Our research explored how mental health care providers continued to work during and after Hurricane Katrina. We interviewed 32 practitioners working in the New Orleans mental health care community during and after Hurricane Katrina. Through qualitative data analysis, we developed three temporal periods of disruption: the evacuation period, the surreal period, and the new normal period. We analyzed the actions informants took during these time periods. The mental health care providers adapted to disruption by displaying two forms of flexibility: doing different tasks and doing tasks differently. How much and how they engaged in these forms of flexibility varied during the three periods. Informants' actions helped to create system resilience by adjusting the extent to which they were doing different tasks and the ways in which they were doing tasks differently during the three time periods. Their flexibility allowed them to provide basic care and adapt to changed circumstances. Their flexibility also contributed to maintaining a skilled workforce in the affected region.

251. [The Long Term Recovery of New Orleans's™ Population after Hurricane Katrina](#)

[PubMed Central](#)

Fussell, Elizabeth

2015-01-01

Hurricane Katrina created a catastrophe in the city of New Orleans when the storm surge caused the levee system to fail on August 29, 2005. The destruction of housing displaced hundreds of thousands of residents for varying lengths of time, often permanently. It also revealed gaps in our knowledge of how population is recovered after a disaster causes widespread destruction of urban infrastructure, housing and workplaces, and how mechanisms driving housing recovery often produce unequal social, spatial and temporal population recovery. In this article, I assemble social, spatial and temporal explanatory frameworks for housing and population recovery and then review research on mobility “ both evacuation and migration ” after Hurricane Katrina. The review reveals a need for a comprehensive social, spatial and temporal framework for explaining inequality in population recovery and displacement. It also shows how little is known about in-migrants and permanent out-migrants after a disaster. PMID:26880853

252. [Application of a Theoretical Model Toward Understanding Continued Food Insecurity Post Hurricane Katrina.](#)

[PubMed](#)

Clay, Lauren A; Papas, Mia A; Gill, Kimberly; Abramson, David M

2018-02-01

Disaster recovery efforts focus on restoring basic needs to survivors, such as food, water, and shelter. However, long after the immediate recovery phase is over, some individuals will continue to experience unmet needs. Ongoing food insecurity has been identified as a post-disaster problem. There is a paucity of information regarding the factors that might place an individual at risk for continued food insecurity post disaster. Using data from a sample (n=737) of households severely impacted by Hurricane Katrina, we estimated the associations between food insecurity and structural, physical and mental health, and psychosocial factors 5 years after Hurricane Katrina. Logistic regression models were fit and odds ratios (OR) and 95% CI estimated. Nearly one-quarter of respondents (23%) reported food insecurity 5 years post Katrina. Marital/partner status (OR: 0.7, CI: 0.42, 0.99), self-efficacy (OR: 0.56, CI: 0.37, 0.84), sense of community (OR: 0.7, CI: 0.44, 0.98), and social support (OR: 0.59, CI: 0.39, 0.89) lowered the odds of food insecurity and explained most of the effects of mental health distress on food insecurity. Social support, self-efficacy, and being partnered were protective against food insecurity. Recovery efforts should focus on fostering social-support networks and increased self-efficacy to improve food insecurity post disaster. (Disaster Med Public Health Preparedness. 2018;12:47-56).

253. [Distribution of toxic trace elements in soil/sediment in post-Katrina New Orleans and the Louisiana Delta](#)

[USGS Publications Warehouse](#)

Su, T.; Shu, S.; Shi, Honglan; Wang, Jingyuan; Adams, Craig; Witt, Emitt C.

2008-01-01

This study provided a comprehensive assessment of seven toxic trace elements (As, Pb, V, Cr, Cd, Cu, and Hg) in the soil/sediment of Katrina affected greater New Orleans region 1 month after the recession of flood water. Results indicated significant contamination of As and V and non-significant contamination of Cd, Cr, Cu, Hg and Pb at most sampling sites. Compared to the reported EPA Region 6 soil background inorganic levels, except As, the concentrations of other six elements had greatly increased throughout the studied area; St. Bernard Parish and Plaquemines Parish showed greater contamination than other regions. Comparison between pre- and post-Katrina data in similar areas, and data for surface, shallow, and deep samples indicated that the trace element distribution in post-Katrina New Orleans was not obviously attributed to the flooding. This study suggests that more detailed study of As and V contamination at identified locations is needed. ?? 2008 Elsevier Ltd.

254. [Investigation of Response Amplitude Operators for Floating Offshore Wind Turbines: Preprint](#)

[DOE Office of Scientific and Technical Information \(OSTI.GOV\)](#)

Ramachandran, G. K. V.; Robertson, A.; Jonkman, J. M.

This paper examines the consistency between response amplitude operators (RAOs) computed from WAMIT, a linear frequency-domain tool, to RAOs derived from time-domain computations based on white-noise wave excitation using FAST, a nonlinear aero-hydro-servo-elastic tool. The RAO comparison is first made for a rigid floating wind turbine without wind excitation. The investigation is further extended to examine how these RAOs change for a flexible and operational wind turbine. The RAOs are computed for below-rated, rated, and above-rated wind conditions. The method is applied to a floating wind system composed of the OC3-Hywind spar buoy and NREL 5-MW wind turbine. The responses more are compared between FAST and WAMIT to verify the FAST model and to understand the influence of structural flexibility, aerodynamic damping, control actions, and waves on the system responses. The results show that based on the RAO computation procedure implemented, the WAMIT- and FAST-computed RAOs are similar (as expected) for a rigid turbine subjected to waves only. However, WAMIT is unable to model the excitation from a flexible turbine. Further, the presence of aerodynamic damping decreased the platform surge and pitch responses, as computed by both WAMIT and FAST when wind was included. Additionally, the influence of gyroscopic excitation increased the yaw response, which was captured by both WAMIT and FAST. less

255. [Investigating the influences of two position \(non-staggered and staggered\) of wind turbine arrays to produce power in a wind farm](#)

[NASA Astrophysics Data System \(ADS\)](#)

Ismail, Kamal, Samsul; Purnomo, Sarjiya

2016-06-01

This investigation was conducted to identify the influences of the two positions (non-staggered and staggered) of wind turbine arrays. Identification on down-scaled size wind turbine arrays was carried out in an open circuit, suction-type wind tunnel. Based on the results of the experiment, empirical relations for the centreline velocity deficit, tipline velocity deficit and wake radius are proposed. The non-staggered position results are larger power generated than that of the staggered position, this influenced by the trend deficit in velocity that makes wind turbine generated power difference between staggered position and non-stagger position. The area used non-staggered position larger than staggered position. Result staggered position has become one of the solutions to harness wind farms confined areas.

256. [Rapid mapping of hurricane damage to forests](#)

[Treesearch](#)

Erik M. Nielsen

2009-01-01

The prospects for producing rapid, accurate delineations of the spatial extent of forest wind damage were evaluated using Hurricane Katrina as a test case. A damage map covering the full spatial extent of Katrina's impact was produced from Moderate Resolution Imaging Spectroradiometer (MODIS) satellite imagery using higher resolution training data. Forest damage...

257. [The effect of long-term relocation on child and adolescent survivors of Hurricane Katrina.](#)

[PubMed](#)

Hansel, Tonya C; Osofsky, Joy D; Osofsky, Howard J; Friedrich, Patricia

2013-10-01

The current study is designed to increase knowledge of the effects of relocation and its association with longer-term psychological symptoms following disaster. Following clinical observations and in discussions held with school officials expressing concerns about relocated students, it was hypothesized that students who relocated to a different city following Hurricane Katrina in 2005 would have more symptoms of posttraumatic stress compared to students who returned to New Orleans. The effect of Hurricane Katrina relocation was assessed on a sample of child and adolescent survivors in 5th through 12th grades (N = 795). Students with Orleans Parish zip codes prior to Hurricane Katrina were categorized into relocation groupings: (a) relocated to Baton Rouge, (b) returned to prior zip code, and (c) moved to a different zip code within Orleans Parish. Overall results revealed more trauma symptoms for relocated students. Results also revealed that younger relocated students had fewer symptoms compared to older students. The opposite was found for students who returned to their same zip code, with older students having fewer symptoms. This study supports the need for school-based services not only in disaster areas, but also in schools where survivors tend to migrate. Copyright © 2013 International Society for Traumatic Stress Studies.

258. [Effects of Disasters on Smoking and Relapse: An Exploratory Study of Hurricane Katrina Victims](#)

[PubMed Central](#)

Lanctot, Jennifer Q.; Stockton, Michelle B.; Mzayek, Fawaz; Read, Mary; McDevitt-Murphy, Meghan; Ward, Kenneth

2016-01-01

Background Psychosocial stress maintains cigarette use and precipitates relapse, but little is known about how natural disasters in particular affect smoking. Purpose To determine the feasibility of recruiting victims soon after a natural disaster for a survey study, and to assess the types and determinants of changes in smoking behavior resulting from exposure to the disaster. Methods A convenience sample of 35 Hurricane Katrina refugees who had smoked more than 100 cigarettes in their lifetime were surveyed one month after the storm to evaluate changes in smoking behavior. Results Among a small sample of former smokers, more than half relapsed after Katrina, citing stress,

urge, and sadness. Among current smokers, 52% increased their smoking after Katrina by more than half a pack per day on average. Most individuals who increased their smoking or relapsed expressed interest in receiving cessation assistance within the next month. Discussion Stress-related increases in smoking and relapse may be common after a natural disaster. Translation to Health Education Practice Health education professionals have an important role to play in responding to changes in tobacco use in the aftermath of disasters. Educational interventions to discourage tobacco use as a coping strategy may be especially warranted given the high level of interest expressed in smoking cessation. PMID:28496561

259. [All Source Solution Decision Support Products Created for Stennis Space Center in Response to Hurricane Katrina](#)

[NASA Technical Reports Server \(NTRS\)](#)

Ross, Kenton W.; Graham, William D.

2007-01-01

In the aftermath of Hurricane Katrina and in response to the needs of SSC (Stennis Space Center), NASA required the generation of decision support products with a broad range of geospatial inputs. Applying a systems engineering approach, the NASA ARTPO (Applied Research and Technology Project Office) at SSC evaluated the Center's requirements and source data quality. ARTPO identified data and information products that had the potential to meet decision-making requirements; included were remotely sensed data ranging from high-spatial-resolution aerial images through high-temporal-resolution MODIS (Moderate Resolution Imaging Spectroradiometer) products. Geospatial products, such as FEMA's (Federal Emergency Management Agency's) Advisory Base Flood Elevations, were also relevant. Where possible, ARTPO applied SSC calibration/validation expertise to both clarify the quality of various data source options and to validate that the inputs that were finally chosen met SSC requirements. ARTPO integrated various information sources into multiple decision support products, including two maps: Hurricane Katrina Inundation Effects at Stennis Space Center (highlighting surge risk posture) and Vegetation Change In and Around Stennis Space Center: Katrina and Beyond (highlighting fire risk posture).

260. [Trends in Serious Emotional Disturbance among Youths Exposed to Hurricane Katrina](#)

[PubMed Central](#)

McLaughlin, Katie A.; Fairbank, John A.; Gruber, Michael J.; Jones, Russell T.; Osofsky, Joy D.; Pfefferbaum, Betty; Sampson, Nancy A.; Kessler, Ronald C.

2011-01-01

Objective To examine patterns and predictors of trends in DSM-IV serious emotional disturbance (SED) among youths exposed to Hurricane Katrina. Method A probability sample of adult pre-hurricane

residents of the areas affected by Katrina completed baseline and follow-up telephone surveys 18–27 months post-hurricane and 12–18 months later. Baseline adult respondents residing with children (ages 4–17) provided informant reports about the emotional functioning of these youths ( $n = 576$ ) with the Strengths and Difficulties Questionnaire (SDQ). The surveys also assessed hurricane-related stressors and ongoing stressors experienced by respondent families. Results SED prevalence decreased significantly across survey waves from 15.1% to 11.5%, although even the latter prevalence was considerably higher than the pre-hurricane prevalence of 4.2% estimated in the US National Health Interview Survey. Trends in hurricane-related SED were predicted by both stressors experienced in the hurricane and ongoing stressors, with SED prevalence decreasing significantly only among youths with moderate stress exposure (16.8% vs. 6.5%). SED prevalence did not change significantly between waves among youths with either high stress exposure (30.0% vs. 41.9%) or low stress exposure (3.5% vs. 3.4%). Pre-hurricane functioning did not predict SED persistence among youths with high stress exposure, but did predict SED persistence among youth with low-moderate stress exposure. Conclusions The prevalence of SED among youths exposed to Hurricane Katrina remains significantly elevated several years after the storm despite meaningful decrease since baseline. Youths with high stress exposure have the highest risk of long-term hurricane-related SED and consequently represent an important target for mental health intervention. PMID:20855044

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261. [The effect of Hurricane Katrina: births in the U.S. Gulf Coast region, before and after the storm.](#)

[PubMed](#)

Hamilton, Brady E; Sutton, Paul D; Mathews, T J; Martin, Joyce A; Ventura, Stephanie J

2009-08-28

This report presents birth data for the region affected by Hurricane Katrina, which made landfall along the Gulf Coast of the United States on August 29, 2005, comparing the 12-month periods before and after the storm according to a wide variety of characteristics. Data are presented for maternal demographic characteristics including age, race, Hispanic origin, marital status, and educational attainment; medical care utilization by pregnant women (prenatal care and method of delivery); and infant characteristics or birth outcomes (period of gestation and birthweight). Descriptive tabulations of data reported on the birth certificates of residents of the 91 Federal Emergency Management Agency (FEMA)-designated counties and parishes of Alabama, Louisiana, and Mississippi are presented for the 12-month periods before and after Hurricane Katrina struck, from August 29, 2004, through August 28, 2006. Detailed data are shown separately for 14 selected, FEMA-designated coastal counties and parishes within a 100-mile radius of the Hurricane Katrina storm path, the area hit very hard by the storm and subsequent flooding. These 14 selected coastal counties and parishes are a subset of the 91 FEMA-designated counties and parishes. The total number of births in the 14 selected FEMA-designated counties and parishes decreased 19 percent in the 12 months after Hurricane Katrina compared with the 12 months before, with births declining in the selected counties and parishes of Louisiana and Mississippi and rising in the counties of Alabama. The number of births to non-Hispanic black women in the selected parishes of Louisiana fell substantially after Hurricane Katrina; births declined for non-Hispanic white, Hispanic, and Asian or Pacific Islander women in these selected parishes as well. The percentage of births to women under age 20 years for the selected counties and parishes after the storm was essentially unchanged in Alabama and Mississippi, but decreased in Louisiana. The

## 262. [Generation of Wind Waves in the Persian Gulf: A Numerical Investigation](#)

### [NASA Astrophysics Data System \(ADS\)](#)

Liao, Y.; Kaihatu, J. M.

2010-12-01

The Persian Gulf is a long shallow basin located between the Arabian Peninsula and Iran. Wind-wave generation processes in the region are often affected by the shamal, a strong wind caused by the passage of cold fronts over the mountains of Turkey and Kurdistan. This can set up sudden energetic wind seas, hampering marine traffic. It is not immediately clear whether present wind-wave models can predict this intense, short-term growth and evolution under these conditions. Furthermore, few wave measurements or models studies have been performed in this area. In advance of a wind-wave generation experiment to be conducted off the Qatar coast, we performed a climatological study of the wind wave environment in the Persian Gulf. Using the SWAN wave model as a baseline of the state of the art, five years (2004-2008) of wind field model hindcasts from COAMPS are used as forcing. To investigate the sensitivity of the results to bathymetry, the climatological analysis was run twice more, with refraction or wave breaking deactivated, in turn. The results do not show significant differences with and without refraction, which implies the wind-wave process in Persian Gulf is less dominated by

the variation of bathymetry. However the results show that a large amount of wave is dissipated by wave breaking. Wide, flat and shallow bathymetry in Persian Gulf results in a long-fetch scenario, particularly for waves arriving from the northwest. It implies that long period wind-generated waves can be fully generated in this region. Wave height is therefore fully grown by the long-fetch condition, so as to lead in higher possibility of wave breaking and energy dissipation.

### 263. [Numerical investigation of the optimum wind turbine sitting for domestic flat roofs](#)

[NASA Astrophysics Data System \(ADS\)](#)

Ishfaq, Salman Muhammad; Chaudhry, Hassam Nasarullah

2018-05-01

The power capacity of roof mounted wind turbines is dependent on several factors which influence its energy yield. In this paper, an investigation has been carried out using Computational Fluid Dynamics (CFD) to determine flow distribution and establish an optimum mounting location for a small wind turbine on a domestic flat roof. The realisable  $k-\epsilon$  and SST  $k-\omega$  turbulence models were compared to establish their consistency with one another with respect to the physical domain. Nine mounting locations were considered for a pole mounted wind turbine. Three windward positions on the upwind side of the flat surfaced building were considered as viable locations for mounting the small wind turbine. Out of the three windward locations, the central upwind (1,0) mounting position was seen to be producing the highest velocity of 5.3 m/s from the available ambient velocity which was 4 m/s. Therefore, this mounting location provided the highest extractable power for the wind turbine. Conclusively, wind properties along with the mounting locations can play a significant role in either enhancing or diminishing the small wind turbine's performance on a domestic flat roof.

### 264. [Alcohol and Cigarette Use and Misuse among Hurricane Katrina Survivors: Psychosocial Risk and Protective Factors](#)

[PubMed Central](#)

Flory, Kate; Hankin, Benjamin L.; Kloos, Bret; Cheely, Catherine; Turecki, Gustavo

2008-01-01

The present study examined survivors' use and misuse of cigarettes and alcohol following Hurricane Katrina. We also examined several psychosocial factors that we expected would be associated with higher or lower rates of substance use following the Hurricane. Participants were 209 adult survivors of Hurricane Katrina interviewed in Columbia, SC or New Orleans, LA between October 31, 2005 and May 13, 2006. Results revealed that survivors were smoking cigarettes, consuming alcohol, and experiencing alcohol-related problems at a substantially higher rate than expected based on pre-Hurricane prevalence data. Results also suggested that certain psychosocial factors were associated with participants' substance use and misuse following the Hurricane. PMID:19895302

265. [The impact of hurricane Katrina on the mental and physical health of low-income parents in New Orleans.](#)

[PubMed](#)

Rhodes, Jean; Chan, Christian; Paxson, Christina; Rouse, Cecilia Elena; Waters, Mary; Fussell, Elizabeth

2010-04-01

The purpose of this study was to document changes in mental and physical health among 392 low-income parents exposed to Hurricane Katrina and to explore how hurricane-related stressors and loss relate to post-Katrina well-being. The prevalence of probable serious mental illness doubled, and nearly half of the respondents exhibited probable posttraumatic stress disorder. Higher levels of hurricane-related loss and stressors were generally associated with worse health outcomes, controlling for baseline sociodemographic and health measures. Higher baseline resources predicted fewer hurricane-associated stressors, but the consequences of stressors and loss were similar regardless of baseline resources. Adverse health consequences of Hurricane Katrina persisted for a year or more and were most severe for those experiencing the most stressors and loss. Long-term health and mental health services are needed for low-income disaster survivors, especially those who experience disaster-related stressors and loss.

266. [The Impact of Hurricane Katrina on the Mental and Physical Health of Low-Income Parents in New Orleans](#)

[PubMed Central](#)

Rhodes, Jean; Chan, Christian; Paxson, Christina; Rouse, Cecilia Elena; Waters, Mary; Fussell, Elizabeth

2012-01-01

The purpose of this study was to document changes in mental and physical health among 392 low-income parents exposed to Hurricane Katrina and to explore how hurricane-related stressors and loss relate to post-Katrina well being. The prevalence of probable serious mental illness doubled, and nearly half of the respondents exhibited probable PTSD. Higher levels of hurricane-related loss and stressors were generally associated with worse health outcomes, controlling for baseline socio-demographic and health measures. Higher baseline resources predicted fewer hurricane-associated stressors, but the consequences of stressors and loss were similar regardless of baseline resources. Adverse health consequences of Hurricane Katrina persisted for a year or more, and were most severe for those experiencing the most stressors and loss. Long-term health and mental health services are needed for low-income disaster survivors, especially those who experience disaster-related stressors and loss. PMID:20553517

267. [Finding holism in disaster: a story of Katrina's aftermath.](#)

[PubMed](#)

Zahourek, Rothlyn

2007-03-01

How do we find holism in the aftermath of disasters? This is the author's personal account of being deployed as a psychiatric clinical nurse specialist by the Substance Abuse and Mental Health Services Administration and meeting two survivors in the Lower 9th Ward of New Orleans after Hurricane Katrina. This article tells how she learned from survivors' stories and music about healing and holism in the aftermath of disaster.

268. [Catholic Schools in New Orleans in the Aftermath of Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

MacGregor, Carol Ann; Fitzpatrick, Brian

2014-01-01

Changes in the education system following Hurricane Katrina have received considerable attention from scholars in recent years. However, the role of Catholic schools is often overlooked in such discussions of school reform, which most often concentrate on the dramatic changes in the public school sector. This oversight is significant given that

269. [Children of Katrina: Lessons Learned about Postdisaster Symptoms and Recovery Patterns](#)

[ERIC Educational Resources Information Center](#)

Kronenberg, Mindy E.; Hansel, Tonya Cross; Brennan, Adrienne M.; Osofsky, Howard J.; Osofsky, Joy D.; Lawrason, Beverly

2010-01-01

Trauma symptoms, recovery patterns, and life stressors of children between the ages of 9 and 18 (n = 387) following Hurricane Katrina were assessed using an adapted version of the National Child Traumatic Stress Network Hurricane Assessment and Referral Tool for Children and Adolescents (National Child Traumatic Stress Network, 2005). Based on

270. [Trace element concentrations in surface estuarine and marine sediments along the Mississippi Gulf Coast following Hurricane Katrina.](#)

[PubMed](#)

Warren, Crystal; Duzgoren-Aydin, Nurdan S; Weston, James; Willett, Kristine L

2012-01-01

Hurricanes are relatively frequent ecological disturbances that may cause potentially long-term impacts to the coastal environment. Hurricane Katrina hit the Mississippi Gulf Coast in August 2005, and caused a storm surge with the potential to change the trace element content of coastal surface sediments. In this study, surface estuarine and marine sediments were collected monthly following the storm from ten sites along the Mississippi Gulf Coast (Mobile Bay, Grand Bay Bayous Heron and Cumbest, Pascagoula, Ocean Springs, Biloxi Gulf, Back Biloxi Bay, Gulfport Gulf, Gulfport Courthouse Rd, and Gulfport Marina). Concentrations of V, Cr, Mn, Fe, Co, Ni, Zn, As, Cd, and Pb were measured by inductively coupled plasma-mass spectrometry to evaluate their temporal and spatial variations in the year following Hurricane Katrina. Sediments were characterized by pH, particle size distribution and total carbon and nitrogen content. Trace element contents of the sediments were determined in both <2 mm and <63 µm grain size fractions. Results revealed no significant temporal and spatial variability in trace element concentrations, in either size fraction. Potential ecological risk of the sediments was assessed by using NOAA SQuiRTs' guideline values; most concentrations remained below probable adverse effects guidelines to marine organisms suggesting that trace elements redistributed by Hurricane Katrina would not cause an adverse impact on resident organisms. Instead, the concentrations of trace elements were site-dependent, with specific contaminants relating to the use of the area prior to Hurricane Katrina.

271. [Surviving Katrina and Keeping Our Eyes on the Prize: The Strength of Legacy and Tradition in New Orleans's HBCU Teacher Preparation Programs](#)

[ERIC Educational Resources Information Center](#)

Akbar, Renee; Sims, Michele Jean

2008-01-01

Given the physical, social, cultural, and financial devastation of New Orleans, all aspects of life after Katrina irrevocably changed, as did the institutions that once served the legendary Crescent City. Yet scant reports provide an ethnographic-like view that documents the effects of Katrina on historically Black colleges and universities.

272. [Posttraumatic Stress and Posttraumatic Growth Among Low-Income Mothers who Survived Hurricane Katrina](#)

[PubMed Central](#)

Lowe, Sarah R.; Manove, Emily E.; Rhodes, Jean E.

2013-01-01

**Objective** The purpose of the study was to explore the relationship between posttraumatic stress (PTS) and posttraumatic growth (PTG) after Hurricane Katrina, and the role of demographics, pre-disaster psychological distress, hurricane-related stressors, and psychological resources (optimism and purpose) in predicting each. **Method** Participants were 334 low-income mothers (82.0% non-Hispanic Black) living in the New Orleans area prior to Hurricane Katrina, who completed surveys in the year prior to the hurricane (T1), and one and three years thereafter (T2 and T3). **Results** Higher T2 and T3 PTS full-scale and symptom cluster subscales (intrusion, avoidance, and hyperarousal) were significantly associated with higher T3 PTG, and participants who surpassed the clinical cut-off for probable PTSD at both T2 and T3 had significantly higher PTG than those who never surpassed the clinical cut-off. Older and non-Hispanic Black participants, as well as those who experienced a greater number of hurricane-related stressors and bereavement, reported significantly greater T3 PTS and PTG. Participants with lower T2 optimism reported significantly greater T3 intrusive symptoms, whereas those with higher T1 and T2 purpose reported significantly greater T3 PTG. **Conclusions** Based on the results, we suggest practices and policies that identify disaster survivors at greater risk for PTS, as well as longitudinal investigations of reciprocal and mediational relationships between psychological resources, PTS, and PTG. PMID:23750467

273. [Posttraumatic stress and posttraumatic growth among low-income mothers who survived Hurricane Katrina.](#)

[PubMed](#)

Lowe, Sarah R; Manove, Emily E; Rhodes, Jean E

2013-10-01

The purpose of the study was to explore the relationship between posttraumatic stress (PTS) and posttraumatic growth (PTG) after Hurricane Katrina, and the role of demographics, pre-disaster psychological distress, hurricane-related stressors, and psychological resources (optimism and purpose) in predicting each. Participants were 334 low-income mothers (82.0% non-Hispanic Black) living in the New Orleans area prior to Hurricane Katrina, who completed surveys in the year prior to the hurricane (T1 [Time 1]) and 1 and 3 years thereafter (T2 and T3). Higher T2 and T3 PTS full-scale and symptom cluster subscales (Intrusion, Avoidance, and Hyperarousal) were significantly associated with higher T3 PTG, and participants who surpassed the clinical cutoff for probable posttraumatic stress disorder at both T2 and T3 had significantly higher PTG than those who never surpassed the clinical cutoff. Older and non-Hispanic Black participants, as well as those who experienced a greater number of hurricane-related stressors and bereavement, reported significantly greater T3 PTS and PTG. Participants with lower T2 optimism reported significantly greater T3 intrusive symptoms, whereas those with higher T1 and T2 purpose reported significantly greater T3 PTG. Based on the results, we suggest practices and policies with which to identify disaster survivors at greater risk for PTS, as well as longitudinal investigations of reciprocal and mediational relationships between psychological resources, PTS, and PTG. (c) 2013 APA, all rights reserved.

## 274. [Complicated grief associated with hurricane Katrina.](#)

[PubMed](#)

Shear, M Katherine; McLaughlin, Katie A; Ghesquiere, Angela; Gruber, Michael J; Sampson, Nancy A; Kessler, Ronald C

2011-08-01

Although losses are important consequences of disasters, few epidemiological studies of disasters have assessed complicated grief (CG) and none assessed CG associated with losses other than death of loved one. Data come from the baseline survey of the Hurricane Katrina Community Advisory Group, a representative sample of 3,088 residents of the areas directly affected by Hurricane Katrina. A brief screen for CG was included containing four items consistent with the proposed DSM-V criteria for a diagnosis of bereavement-related adjustment disorder. Fifty-eight and half percent of respondents reported a significant hurricane-related loss: Most-severe losses were 29.0% tangible, 9.5% interpersonal, 8.1% intangible, 4.2% work/financial, and 3.7% death of loved one. Twenty-six point one percent respondents with significant loss had possible CG and 7.0% moderate-to-severe CG. Death of loved one was associated with the highest conditional probability of moderate-to-severe CG (18.5%, compared to 1.1-10.5% conditional probabilities for other losses), but accounted for only 16.5% of moderate-to-severe CG due to its comparatively low prevalence. Most moderate-to-severe CG was due to tangible (52.9%) or interpersonal (24.0%) losses. Significant predictors of CG were mostly unique to either bereavement (racial-ethnic minority status, social support) or other losses (prehurricane history of psychopathology, social competence.). Nonbereavement losses accounted for the vast majority of hurricane-related possible CG despite risk of CG being much higher in response to bereavement than to other losses. This result argues for expansion of research on CG beyond bereavement and alerts clinicians to the need to address postdisaster grief associated with a wide range of losses. © 2011 Wiley-Liss, Inc.

## 275. [Complicated grief associated with Hurricane Katrina](#)

[PubMed Central](#)

Shear, M. Katherine; McLaughlin, Katie A.; Ghesquiere, Angela; Gruber, Michael J.; Sampson, Nancy A.; Kessler, Ronald C.

2011-01-01

Background Although losses are important consequences of disasters, few epidemiological studies of disasters have assessed complicated grief (CG) and none assessed CG associated with losses other than death of loved one. Methods Data come from the baseline survey of the Hurricane Katrina Community Advisory Group (CAG), a representative sample of 3,088 residents of the areas directly affected by Hurricane Katrina. A brief screen for CG was included containing four items consistent

with the proposed DSM 5 criteria for a diagnosis of bereavement-related adjustment disorder. Results 58.5% of respondents reported a significant hurricane-related loss: Most-severe losses were 29.0% tangible, 9.5% interpersonal, 8.1% intangible, 4.2% work-financial, and 3.7% death of loved one. 26.1% of respondents with significant loss had possible CG and 7.0% moderate-severe CG. Death of loved one was associated with the highest conditional probability of moderate-severe CG (18.5%, compared to 1.1–10.5% conditional probabilities for other losses) but accounted for only 16.5% of moderate-severe CG due to its comparatively low prevalence. Most moderate-severe CG was due to tangible (52.9%) or interpersonal (24.0%) losses. Significant predictors of CG were mostly unique to either bereavement (racial-ethnic minority status, social support) or other losses (pre-hurricane history of psychopathology, social competence.). Conclusions Non-bereavement losses accounted for the vast majority of hurricane-related possible CG despite risk of CG being much higher in response to bereavement than to other losses. This result argues for expansion of research on CG beyond bereavement and alerts clinicians to the need to address post-disaster grief associated with a wide range of losses. PMID:21796740

276. [Plugging the leak: barrier island restoration following Hurricane Katrina enhances larval retention and improves salinity regime for oysters in Mobile Bay, Alabama.](#)

[PubMed](#)

Park, Kyeong; Powers, Sean P; Bosarge, George S; Jung, Hoon-Shin

2014-03-01

Changes in geomorphology of estuaries are common following major perturbations such as hurricanes and may have profound impacts on biological systems. Hurricane Katrina in 2005 created a new pass, called Katrina Cut, halving Dauphin Island in Mobile Bay, Alabama. Significant decline in oyster population at Cedar Point Reef, the primary oyster harvest grounds in Mobile Bay, had persisted since then until the Cut was artificially closed in 2010. A bio-physical model for hydrodynamics and oyster larval transport was used to evaluate two potential mechanisms responsible for oyster population declines: salinity changes in the context of oyster habitat suitability and retention of oyster larvae. The model results revealed that when open Katrina Cut increased salinity at Cedar Point Reef. During high freshwater discharge, in particular, water exchange through Katrina Cut increased the bottom salinity from  $<5$  psu to well over 15 (sometimes  $>20$ ) psu during the tropic tides. Elevated salinities are associated with greater predation on oysters and higher disease incidence. The presence of the Katrina Cut also reduced larval retention in the spawning area regardless of tidal or river discharge conditions. We conclude that closing the Cut likely improved conditions for oysters within Mobile Bay and eastern Mississippi Sound and that these improved conditions have contributed to increased oyster landings. Copyright © 2013 Elsevier Ltd. All rights reserved.

277. [An analytical investigation: Effect of solar wind on lunar photoelectron sheath](#)

[NASA Astrophysics Data System \(ADS\)](#)

Mishra, S. K.; Misra, Shikha

2018-02-01

The formation of a photoelectron sheath over the lunar surface and subsequent dust levitation, under the influence of solar wind plasma and continuous solar radiation, has been analytically investigated. The photoelectron sheath characteristics have been evaluated using the Poisson equation configured with population density contributions from half Fermi-Dirac distribution of the photoemitted electrons and simplified Maxwellian statistics of solar wind plasma; as a consequence, altitude profiles for electric potential, electric field, and population density within the photoelectron sheath have been derived. The expression for the accretion rate of sheath electrons over the levitated spherical particles using anisotropic photoelectron flux has been derived, which has been further utilized to characterize the charging of levitating fine particles in the lunar sheath along with other constituent photoemission and solar wind fluxes. This estimate of particle charge has been further manifested with lunar sheath characteristics to evaluate the altitude profile of the particle size exhibiting levitation. The inclusion of solar wind flux into analysis is noticed to reduce the sheath span and altitude of the particle levitation; the dependence of the sheath structure and particle levitation on the solar wind plasma parameters has been discussed and graphically presented.

278. [A Qualitative Case Study of Hurricane Katrina and University Presidential Leadership](#)

[ERIC Educational Resources Information Center](#)

McNeely, Stanton Francis, III

2013-01-01

Leaders of many institutions of higher education are not equipped to manage a major crisis or disaster, and presidential leadership during a disaster is essential, as university presidents are ultimately accountable for the well-being of their institutions. Hurricane Katrina devastated New Orleans in 2005, flooding 80% of the city for many weeks

279. [Stochastic investigation of wind process for climatic variability identification](#)

[NASA Astrophysics Data System \(ADS\)](#)

Deligiannis, Ilias; Tyrogiannis, Vassilis; Daskalou, Olympia; Dimitriadis, Panayiotis; Markonis, Yannis; Iliopoulou, Theano; Koutsoyiannis, Demetris

2016-04-01

The wind process is considered one of the hydrometeorological processes that generates and drives the climate dynamics. We use a dataset comprising hourly wind records to identify statistical variability with emphasis on the last period. Specifically, we investigate the occurrence of mean,

maximum and minimum values and we estimate statistical properties such as marginal probability distribution function and the type of decay of the climacogram (i.e., mean process variance vs. scale) for various time periods. Acknowledgement: This research is conducted within the frame of the undergraduate course "Stochastic Methods in Water Resources" of the National Technical University of Athens (NTUA). The School of Civil Engineering of NTUA provided moral support for the participation of the students in the Assembly.

## 280. [Experimental and numerical investigations of wire bending by linear winding of rectangular tooth coils](#)

[NASA Astrophysics Data System \(ADS\)](#)

Komodromos, A.; Tekkaya, A. E.; Hofmann, J.; Fleischer, J.

2018-05-01

Since electric motors are gaining in importance in many fields of application, e.g. hybrid electric vehicles, optimization of the linear coil winding process greatly contributes to an increase in productivity and flexibility. For the investigation of the forming behavior of the winding wire the material behavior is characterized in different experimental setups. Numerical examinations of the linear winding process are carried out in a case study for a rectangular bobbin in order to analyze the influence of forming parameters on the resulting properties of the wound coil. Besides the numerical investigation of the linear winding method by using the finite element method (FEM), a multi-body dynamics (MBD) simulation is carried out. The multi-body dynamics simulation is necessary to represent the movement of the bodies as well as the connection of the components during winding. The finite element method is used to represent the material behavior of the copper wire and the plastic strain distribution within the wire. It becomes clear that the MBD simulation is not sufficient for analyzing the process and the wire behavior in its entirety. Important parameters that define the final coil properties cannot be analyzed in the manner of a precise manifestation, e.g. the clearance between coil bobbin and wire as well as the wire deformation behavior in form of a diameter reduction which negatively affects the ohmic resistance. Finally, the numerical investigations are validated experimentally by linear winding tests.

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## 281. [EOS Laser Atmosphere Wind Sounder \(LAWS\) investigation](#)

[NASA Technical Reports Server \(NTRS\)](#)

Emmitt, George D.

1991-01-01

The related activities of the contract are outlined for the first year. These include: (1) attend team member meetings; (2) support EOS Project with science related activities; (3) prepare and Execution Phase plan; and (4) support LAWS and EOSDIS related work. Attached to the report is an appendix, 'LAWS Algorithm Development and Evaluation Laboratory (LADEL)'. Also attached is a copy of a proposal to the NASA EOS for 'LAWS Sampling Strategies and Wind Computation Algorithms – Storm-Top Divergence Studies. Volume I: Investigation and Technical Plan, Data Plan, Computer Facilities Plan, Management Plan.'

## 282. [A Case Study on the Need for and Availability of Patient Tracking Systems](#)

[DTIC Science & Technology](#)

2007-06-01

Information Carrier RFID Radio Frequency Infrared Device TacMedCS The Tactical Medical Coordination System TATRC Army's Telemedicine and Advanced...mph near Buras-Triumph, Louisiana.4 At landfall, hurricane-force winds extended outward 120 miles from the center of the storm. Katrina maintained...hurricane force winds to Meridian, Mississippi more than 150 miles inland. Katrina was downgraded to a tropical depression near Clarksville

## 283. [Trends in serious emotional disturbance among youths exposed to Hurricane Katrina.](#)

[PubMed](#)

McLaughlin, Katie A; Fairbank, John A; Gruber, Michael J; Jones, Russell T; Osofsky, Joy D; Pfefferbaum, Betty; Sampson, Nancy A; Kessler, Ronald C

2010-10-01

To examine patterns and predictors of trends in DSM-IV serious emotional disturbance (SED) among youths exposed to Hurricane Katrina. A probability sample of adult pre-hurricane residents of the areas affected by Katrina completed baseline and follow-up telephone surveys 18 to 27 months post-

hurricane and 12 to 18 months later. Baseline adult respondents residing with children and adolescents (4-17 years of age) provided informant reports about the emotional functioning of these youths (n = 576) with the Strengths and Difficulties Questionnaire (SDQ). The surveys also assessed hurricane-related stressors and ongoing stressors experienced by respondent families. SED prevalence decreased significantly across survey waves from 15.1% to 11.5%, although even the latter prevalence was considerably higher than the pre-hurricane prevalence of 4.2% estimated in the US National Health Interview Survey. Trends in hurricane-related SED were predicted by both stressors experienced in the hurricane and ongoing stressors, with SED prevalence decreasing significantly only among youths with moderate stress exposure (16.8% versus 6.5%). SED prevalence did not change significantly between waves among youths with either high stress exposure (30.0% versus 41.9%) or low stress exposure (3.5% versus 3.4%). Pre-hurricane functioning did not predict SED persistence among youths with high stress exposure, but did predict SED persistence among youth with low-moderate stress exposure. The prevalence of SED among youths exposed to Hurricane Katrina remains significantly elevated several years after the storm despite meaningful decrease since baseline. Youths with high stress exposure have the highest risk of long-term hurricane-related SED and consequently represent an important target for mental health intervention. Copyright © 2010 American Academy of Child and Adolescent Psychiatry. Published by Elsevier Inc. All rights reserved.

284. [Business return in New Orleans: decision making amid post-Katrina uncertainty.](#)

[PubMed](#)

Lam, Nina S N; Pace, Kelley; Campanella, Richard; Lesage, James; Arenas, Helbert

2009-08-26

Empirical observations on how businesses respond after a major catastrophe are rare, especially for a catastrophe as great as Hurricane Katrina, which hit New Orleans, Louisiana on August 29, 2005. We analyzed repeated telephone surveys of New Orleans businesses conducted in December 2005, June 2006, and October 2007 to understand factors that influenced decisions to re-open amid post-disaster uncertainty. Businesses in the group of professional, scientific, and technical services reopened the fastest in the near term, but differences in the rate of reopening for businesses stratified by type became indistinguishable in the longer term (around two years later). A reopening rate of 65% was found for all businesses by October 2007. Discriminant analysis showed significant differences in responses reflecting their attitudes about important factors between businesses that reopened and those that did not. Businesses that remained closed at the time of our third survey (two years after Katrina) ranked levee protection as the top concern immediately after Katrina, but damage to their premises and financing became major concerns in subsequent months reflected in the later surveys. For businesses that had opened (at the time of our third survey), infrastructure protection including levee, utility, and communications were the main concerns mentioned in surveys up to the third survey, when the issue of crime became their top concern. These findings underscore the need to have public policy and emergency plans in place prior to the actual disaster, such as infrastructure

protection, so that the policy can be applied in a timely manner before business decisions to return or close are made. Our survey results, which include responses from both open and closed businesses, overcome the "survivorship bias" problem and provide empirical observations that should be useful to improve micro-level spatial economic modeling of factors that influence business return decisions.

285. [Business Return in New Orleans: Decision Making Amid Post-Katrina Uncertainty](#)

[PubMed Central](#)

Lam, Nina S. N.; Pace, Kelley; Campanella, Richard; LeSage, James; Arenas, Helbert

2009-01-01

Background Empirical observations on how businesses respond after a major catastrophe are rare, especially for a catastrophe as great as Hurricane Katrina, which hit New Orleans, Louisiana on August 29, 2005. We analyzed repeated telephone surveys of New Orleans businesses conducted in December 2005, June 2006, and October 2007 to understand factors that influenced decisions to re-open amid post-disaster uncertainty. Methodology/Principal Findings Businesses in the group of professional, scientific, and technical services reopened the fastest in the near term, but differences in the rate of reopening for businesses stratified by type became indistinguishable in the longer term (around two years later). A reopening rate of 65% was found for all businesses by October 2007. Discriminant analysis showed significant differences in responses reflecting their attitudes about important factors between businesses that reopened and those that did not. Businesses that remained closed at the time of our third survey (two years after Katrina) ranked levee protection as the top concern immediately after Katrina, but damage to their premises and financing became major concerns in subsequent months reflected in the later surveys. For businesses that had opened (at the time of our third survey), infrastructure protection including levee, utility, and communications were the main concerns mentioned in surveys up to the third survey, when the issue of crime became their top concern. Conclusions/Significance These findings underscore the need to have public policy and emergency plans in place prior to the actual disaster, such as infrastructure protection, so that the policy can be applied in a timely manner before business decisions to return or close are made. Our survey results, which include responses from both open and closed businesses, overcome the "survivorship bias" problem and provide empirical observations that should be useful to improve micro-level spatial economic

286. [The Visible Hand: Markets, Politics, and Regulation in Post-Katrina New Orleans](#)

[ERIC Educational Resources Information Center](#)

Jabbar, Huriya

2016-01-01

In this article Huriya Jabbar examines how the regulatory environment in post-Hurricane Katrina New Orleans has influenced choice, incentives, and competition among schools. While previous research has highlighted the mechanisms of competition and individual choice—the "invisible hand"—and the creation of markets in education, Jabbarâ€¦

287. [A comparative evaluation of semen parameters in pre- and post-Hurricane Katrina human population.](#)

[PubMed](#)

Baran, Caner; Hellstrom, Wayne J; Sikka, Suresh C

2015-01-01

A natural disaster leading to accumulation of environmental contaminants may have substantial effects on the male reproductive system. Our aim was to compare and assess semen parameters in a normospermic population residing in the Southern Louisiana, USA area pre- and post-Hurricane Katrina. We retrospectively evaluated semen analyses data (n = 3452) of 1855 patients who attended the Tulane University Andrology/Fertility Clinic between 1999 and 2013. The study inclusion criteria were men whose semen analyses showed  $\geq 1.5$  ml volume;  $\geq 15$  million/ml sperm concentration;  $\geq 39$  million total sperm count;  $\geq 40\%$  motility;  $>30\%$  morphology, with an abstinence interval of 2-7 days. After the inclusion criteria applied to the population, 367 normospermic patients were included in the study. Descriptive statistics and group-based analyses were performed to interpret the differences between the pre-Katrina (Group 1, 1999-2005) and the post-Katrina (Group 2, 2006-2013) populations. There were significant differences in motility, morphology, number of white blood cell, immature germ cell count, pH and presence of sperm agglutination, but surprisingly there were no significant differences in sperm count between the two populations. This long-term comparative analysis further documents that a major natural disaster with its accompanied environmental issues can influence certain semen parameters (e.g., motility and morphology) and, by extension, fertility potential of the population of such areas.

288. [Metal concentrations in schoolyard soils from New Orleans, Louisiana before and after Hurricanes Katrina and Rita.](#)

[PubMed](#)

Presley, Steven M; Abel, Michael T; Austin, Galen P; Rainwater, Thomas R; Brown, Ray W; McDaniel, Les N; Marsland, Eric J; Fornerette, Ashley M; Dillard, Melvin L; Rigdon, Richard W; Kendall, Ronald J; Cobb, George P

2010-06-01

The long-term environmental impact and potential human health hazards resulting from Hurricanes Katrina and Rita throughout much of the United States Gulf Coast, particularly in the New Orleans, Louisiana, USA area are still being assessed and realized after more than four years. Numerous

government agencies and private entities have collected environmental samples from throughout New Orleans and found concentrations of contaminants exceeding human health screening values as established by the United States Environmental Protection Agency (USEPA) for air, soil, and water. To further assess risks of exposure to toxic concentrations of soil contaminants for citizens, particularly children, returning to live in New Orleans following the storms, soils collected from schoolyards prior to Hurricane Katrina and after Hurricane Rita were screened for 26 metals. Concentrations exceeding USEPA Regional Screening Levels (USEPA-RSL), total exposure, non-cancer endpoints, for residential soils for arsenic (As), iron (Fe), lead (Pb), and thallium (Tl) were detected in soil samples collected from schoolyards both prior to Hurricane Katrina and after Hurricane Rita. Approximately 43% (9/21) of schoolyard soils collected prior to Hurricane Katrina contained Pb concentrations greater than 400mgkg<sup>-1</sup>, and samples from four schoolyards collected after Hurricane Rita contained detectable Pb concentrations, with two exceeding 1700mgkg<sup>-1</sup>. Thallium concentrations exceeded USEPA-RSL in samples collected from five schoolyards after Hurricane Rita. Based upon these findings and the known increased susceptibility of children to the effects of Pb exposure, a more extensive assessment of the soils in schoolyards, public parks and other residential areas of New Orleans for metal contaminants is warranted. 2010 Elsevier Ltd. All rights reserved.

289. [Secondary eyewall formation in WRF simulations of Hurricanes Rita and Katrina \(2005\)](#)

[NASA Astrophysics Data System \(ADS\)](#)

Abarca, Sergio F.; Corbosiero, Kristen L.

2011-04-01

An analysis is presented of two high-resolution hurricane simulations of Katrina and Rita (2005) that exhibited secondary eyewall formation (SEF). The results support the notion of vortex Rossby waves (VRWs) having an important role in SEF and suggest that VRW activity is a defining aspect of the moat. SEF occurs at a radius of  $\approx 65$  (80) km in Katrina (Rita), close to the hypothesized stagnation radius of VRWs. VRW activity appears to be the result of eye-eyewall mixing events, themselves a product of the release of barotropic instability. The convection in the radial region that becomes the moat is mainly in the form of VRWs propagating radially outward from the primary eyewall until the negative radial gradient of potential vorticity is no longer conducive for their propagation. These convectively coupled waves, originating and being expelled from the eyewall, are rotation dominated and have the coherency necessary to survive their passage through the strain-dominated region outside the eyewall.

290. [Quantities of Arsenic-Treated Wood in Demolition Debris Generated by Hurricane Katrina](#)

[PubMed Central](#)

Dubey, Brajesh; Solo-Gabriele, Helena M.; Townsend, Timothy G.

2008-01-01

The disaster debris from Hurricane Katrina is one of the largest in terms of volume and economic loss in American history. One of the major components of the demolition debris is wood waste of which a significant proportion is treated with preservatives, including preservatives containing arsenic. As a result of the large scale destruction of treated wood structures such as electrical poles, fences, decks, and homes a considerable amount of treated wood and consequently arsenic will be disposed as disaster debris. In this study an effort was made to estimate the quantity of arsenic disposed through demolition debris generated in the Louisiana and Mississippi area through Hurricane Katrina. Of the 72 million cubic meters of disaster debris generated, roughly 12 million cubic meters were in the form of construction and demolition wood resulting in an estimated 1740 metric tons of arsenic disposed. Management of disaster debris should consider the relatively large quantities of arsenic associated with pressure-treated wood. PMID:17396637

## 291. [Investigation of thermospheric winds relative to space station orbital altitudes](#)

[NASA Technical Reports Server \(NTRS\)](#)

Susko, M.

1984-01-01

An investigation of thermospheric winds, relative to the space station orbital altitudes, was made in order to provide information that is useful in an environmental disturbance assessment. Current plans are for this low Earth orbiting facility to orbit at an inclination of 28.5 deg. The orbital altitudes were not yet defined due to the evolutionary configuration of the Space Station. The upper and lower bounds of the orbital altitudes will be based on constraints set by the drag and expected orbital decay and delivery altitude capability of the Shuttle. The orbital altitude will be estimated on the order of 500 km. Neutral winds in the region from about 80 to 600 km which were derived from satellite drag data, Fabry-Perot interferometers, sounding rockets, ground-based optical Doppler techniques, incoherent scatter radar measurements from Millstone Hill combined with the mass spectrometer and lithium trail neutral wind measurements are examined. The equations of motion of the low Earth orbiting facility are also discussed.

## 292. [Identification of wind turbine testing practices and investigation of the performance benefits of closely-spaced lateral wind farm configurations](#)

[NASA Astrophysics Data System \(ADS\)](#)

McTavish, Sean

The current thesis investigates the development of guidelines for testing small-scale wind turbines and identifies a method that can be used to increase the performance of wind farms. The research was conducted using two scaled wind turbine designs. The first design was a three-bladed wind

turbine designed in the Department of Mechanical and Aerospace Engineering (MAAE) to operate in a low Reynolds number regime and to generate a thrust coefficient representative of commercial-scale wind turbines. An Eppler E387 airfoil was selected for the wind turbine due to its behaviour at low Reynolds numbers and the chord of the turbine was increased relative to full-scale designs in order to increase the range of Reynolds numbers that could be attained. The second design was a geometrically-scaled version of an existing two-bladed wind turbine with a NACA 0012 airfoil that was originally designed at the Delft University of Technology. Experiments were conducted in a 0.61 m x 0.81 m water channel in order to independently evaluate the effects of increasing blockage and Reynolds number on the development of the wind turbine wake. Quantitative dye visualisation was used to identify the position of tip vortex cores relative to the blade tip in order to assess how blockage and Reynolds number effects modified the initial expansion in the near wake. Blockage effects on the wake development were assessed using five wind turbines with diameters ranging from 20 cm to 40 cm, corresponding to blockage of 6.3% to 25.4%. The rotors were all operated at a similar tip speed ratio of 6 and a Reynolds number of 23,000 based on the blade tip speed and tip chord. One Outcome of the research was the identification of a limit beyond which blockage narrowed the expansion in the near wake of a wind turbine. It was observed that blockage should be maintained at less than 10% in order to prevent the wake from narrowing artificially due to the flow acceleration around the turbine caused by excessive

293. [The Transformation of a School System: Principal, Teacher, and Parent Perceptions of Charter and Traditional Schools in Post-Katrina New Orleans. Technical Report](#)

[ERIC Educational Resources Information Center](#)

Steele, Jennifer L.; Vernez, Georges; Gottfried, Michael A.; Schwam-Baird, Michael

2011-01-01

Hurricane Katrina set the stage for a transformation of public education in New Orleans, replacing the city's existing school system with a decentralized choice-based system of both charter and district-run schools. Using principal, teacher, and parent surveys administered three years after Katrina, this study examined schools' governance and

294. [The Impact of Hurricanes Katrina and Rita on Louisiana School Nurses](#)

[ERIC Educational Resources Information Center](#)

Broussard, Lisa; Myers, Rachel; Meaux, Julie

2008-01-01

In the fall of 2005, the coast of Louisiana was devastated by two hurricanes, Katrina and Rita. Not only did these natural disasters have detrimental effects for those directly in their path, the storms had an

impact on the lives of everyone in Louisiana. The professional practice of many Louisiana school nurses was affected by several factors,â€¦

295. [Assessment of Hurricane Katrina Damage to New Orleans Public School Facilities](#)

[ERIC Educational Resources Information Center](#)

Council of the Great City Schools, 2005

2005-01-01

Hurricane Katrina hit the Gulf Coast of the United States on August 29, 2005, and triggered one of the most devastating natural disasters in the history of the nation. New Orleans, in particular, and the schools that served the community's children, suffered severe storm damage and massive flooding. Central to the city's strategy of getting backâ€¦

296. [Negotiating the Practitioner-Faculty Dialectic: How Counselor Educators Responded to Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Reybold, L. Earle; Konopasky, Abigail; Trepal, Heather; Haberstroh, Shane

2015-01-01

As Hurricane Katrina forced thousands of Gulf Coast residents to evacuate, U.S. communities established shelters for emergency intake. Faculty members across the country, especially those trained in counseling, volunteered immediately for crisis work. This study examined the experiences of a faculty response team from one counselor educationâ€¦

297. [Serious Emotional Disturbance among Youths Exposed to Hurricane Katrina 2 Years Postdisaster](#)

[ERIC Educational Resources Information Center](#)

McLaughlin, Katie A.; Fairbank, John A.; Gruber, Michael J.; Jones, Russell T.; Lakoma, Matthew D.; Pfefferbaum, Betty; Sampson, Nancy A.; Kessler, Ronald C.

2009-01-01

Objective: To estimate the prevalence of serious emotional disturbance (SED) among children and adolescents exposed to Hurricane Katrina along with the associations of SED with hurricane-related stressors, sociodemographics, and family factors 18 to 27 months after the hurricane. Method: A probability sample of prehurricane residents of areasâ€¦

298. [The Weather family's Hurricane Katrina saga: Leonard Weather Jr., MD of New Orleans. Interview by George Dawson.](#)

[PubMed Central](#)

Weather, Leonard

2006-01-01

This interview of Leonard Weather Jr., MD was conducted so as to give our members and the medical community at large a version of what a New Orleans, LA physician of African-American descent experienced during Hurricane Katrina and its devastating aftermath. Emile Riley, MD, Meharry Medical School graduate, general surgeon, role model, and New Orleans Civic Leader who helped to blaze the trail for other local African-American physicians, died January 31, 2006 at the St. Luke's Episcopal Hospital in Houston, TX at the age of 71. He evacuated to Houston prior to Hurricane Katrina.

PMID:16749655

299. [The Weather family's Hurricane Katrina saga: Leonard Weather Jr., MD of New Orleans. Interview by George Dawson.](#)

[PubMed](#)

Weather, Leonard

2006-05-01

This interview of Leonard Weather Jr., MD was conducted so as to give our members and the medical community at large a version of what a New Orleans, LA physician of African-American descent experienced during Hurricane Katrina and its devastating aftermath. Emile Riley, MD, Meharry Medical School graduate, general surgeon, role model, and New Orleans Civic Leader who helped to blaze the trail for other local African-American physicians, died January 31, 2006 at the St. Luke's Episcopal Hospital in Houston, TX at the age of 71. He evacuated to Houston prior to Hurricane Katrina.

300. [Investigating the 3D Structure of the Winds of Hot Supergiants](#)

[NASA Astrophysics Data System \(ADS\)](#)

Klement, Robert

2018-04-01

An observational effort targeting supergiant stars of spectral classes B and A has been started using the VEGA high spectral resolution visible beam combiner at the CHARA array. The H-alpha emission from the structured stellar winds was resolved with respect to the surrounding continuum, showing signs of inhomogeneities in the circumstellar environments as well as temporal variability on different time scales. We have begun a radiative transfer modelling effort to investigate the clumpy structure of the stellar winds and the origin of the inhomogeneities, probably linked to the stellar photosphere features.

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### 301. [Numerical investigations on the aerodynamic performance of wind turbine: Downwind versus upwind configuration](#)

[NASA Astrophysics Data System \(ADS\)](#)

Zhou, Hu; Wan, Decheng

2015-03-01

Although the upwind configuration is more popular in the field of wind energy, the downwind one is a promising type for the offshore wind energy due to its special advantages. Different configurations have different aerodynamic performance and it is important to predict the performance of both downwind and upwind configurations accurately for designing and developing more reliable wind turbines. In this paper, a numerical investigation on the aerodynamic performance of National Renewable Energy Laboratory (NREL) phase VI wind turbine in downwind and upwind configurations is presented. The open source toolbox OpenFOAM coupled with arbitrary mesh interface (AMI) method is applied to tackle rotating problems of wind turbines. Two 3D numerical models of NREL phase VI wind turbine with downwind and upwind configurations under four typical working conditions of incoming wind velocities are set up for the study of different unsteady characteristics of the downwind and upwind configurations, respectively. Numerical results of wake vortex structure, time histories of thrust, pressure distribution on the blade and limiting streamlines which can be used to identify points of separation in a 3D flow are presented. It can be concluded that thrust reduction due to blade-tower interaction is small for upwind wind turbines but relatively large for downwind wind turbines and attention should be paid to the vibration at a certain frequency induced by the cyclic reduction for both configurations. The results and conclusions are helpful to analyze the different aerodynamic

performance of wind turbines between downwind and upwind configurations, providing useful references for practical design of wind turbine.

302. [Investigation of turbine ventilator performance after added wind cup for room exhaust air applications](#)

[NASA Astrophysics Data System \(ADS\)](#)

Harun, D.; Zulfadhli; Akhyar, H.

2018-05-01

The turbine ventilator is a wind turbine with a vertical axis that has a combined function of the wind turbine and a suction fan. In this study, the turbine ventilator modified by adding a wind cup on the top (cap) turbine ventilator. The purpose of this experiment is to investigate the effect of the addition of wind cup on the turbine ventilator. Turbine ventilator used is type v30 and wind cup with diameter 77 mm. The experiment was conducted using a triangular pentagon model space chamber which was cut off to place the ventilator turbine ventilation cup with a volume of 0.983 m<sup>3</sup> (equivalent to 1 mm<sup>3</sup>). The results of this study indicate that at an average wind speed of 1.8 m/s, the rotation of the turbine produced without a wind cup is 60.6 rpm while with the addition of a wind cup in the turbine ventilator is 69 rpm. The average increase of rotation turbine after added wind cup is 8.4 rpm and the efficiency improvement of turbine ventilator is 1.7 %.

303. [Impact of Hurricane Katrina on roadways in the New Orleans Area : technical assistance report.](#)

[DOT National Transportation Integrated Search](#)

2007-03-01

On August 29, 2005, Hurricane Katrina devastated New Orleans and southeastern Louisiana, leaving hundreds of thousands either displaced or homeless. Nearly four weeks later, Hurricane Rita made landfall in the southwestern portion of the state, further...

304. [Predicting Mothers' Reports of Children's Mental Health Three Years after Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Lowe, Sarah R.; Godoy, Leandra; Rhodes, Jean E.; Carter, Alice S.

2013-01-01

This study explored pathways through which hurricane-related stressors affected the psychological functioning of elementary school aged children who survived Hurricane Katrina. Participants included 184 mothers from the New Orleans area who completed assessments one year pre-disaster (Time 1), and one and three years post-disaster (Time 2 and Time 3).

305. [Enrollment Management Issue Analysis: Operating in a Post-Katrina Higher Education Environment](#)

[ERIC Educational Resources Information Center](#)

Jones, Jacqueline; Das, Nabakrishna; Huggins, Desiree'; McNeely, Stanton, III

2008-01-01

A definition and brief history of enrollment management are presented. The challenges represented by Hurricane Katrina for enrollment management at one community technical college and a private 4-year college are identified along with three cases that illuminate the challenges. The need for rapid response planning is articulated. (Contains 1â€¦

306. [Evaluation of the Fun with Books Program: An Interview with Katrina Bledsoe](#)

[ERIC Educational Resources Information Center](#)

Fitzpatrick, Jody L.; Christie, Christina A., Ed.

2007-01-01

This article presents an interview with Katrina Bledsoe, a senior research associate with Planning, Research & Evaluation Services (PRES) Associates in Washington, D.C. Dr. Bledsoe was a faculty member in the Psychology Department at The College of New Jersey. She was trained under Stewart Donaldson at Claremont Graduate University (CGU) andâ€¦

307. [Wetland Sedimentation from Hurricanes Katrina and Rita](#)

[NASA Astrophysics Data System \(ADS\)](#)

Turner, R. Eugene; Baustian, Joseph J.; Swenson, Erick M.; Spicer, Jennifer S.

2006-10-01

More than 131 Ã— 10<sup>6</sup> metric tons (MT) of inorganic sediments accumulated in coastal wetlands when Hurricanes Katrina and Rita crossed the Louisiana coast in 2005, plus another 281 Ã— 10<sup>6</sup> MT when accumulation was prorated for open water area. The annualized combined amount of inorganic sediments per hurricane equals (i) 12% of the Mississippi River's suspended load, (ii) 5.5 times the inorganic load delivered by overbank flooding before flood protection levees were constructed, and (iii) 227 times the amount introduced by a river diversion built for wetland restoration. The accumulation from hurricanes is sufficient to account for all the inorganic sediments in healthy saltmarsh wetlands.

308. [Child and Adolescent Mental Health Research in the Context of Hurricane Katrina: An Ecological Needs-Based Perspective and Introduction to the Special Section](#)

[ERIC Educational Resources Information Center](#)

Weems, Carl F.; Overstreet, Stacy

2008-01-01

This article introduces the special section on child and adolescent mental health research in the context of Hurricane Katrina. We outline the purpose and intent of the special section and present an integrative perspective based on broad contextual theories of human development with which to think about the impact of disasters like Katrina. The

309. [Illicit Drug Markets Among New Orleans Evacuees Before and Soon After Hurricane Katrina.](#)[PubMed](#)

Dunlap, Eloise; Johnson, Bruce D; Morse, Edward

2007-09-01

This paper analyzes illicit drug markets in New Orleans before and after Hurricane Katrina and access to drug markets following evacuation at many locations and in Houston. Among New Orleans arrestees pre-Katrina, rates of crack and heroin use and market participation was comparable to New York and higher than in other southern cities. Both cities have vigorous outdoor drug markets. Over 100 New Orleans evacuees provide rich accounts describing the illicit markets in New Orleans and elsewhere. The flooding of New Orleans disrupted the city's flourishing drug markets, both during and immediately after the storm. Drug supplies, though limited, were never completely unavailable. Subjects reported that alcohol or drugs were not being used in the Houston Astrodome, and it was a supportive environment. Outside the Astrodome, they were often approached by or could easily locate middlemen and drug sellers. Evacuees could typically access illegal drug markets wherever they went. This paper analyzes the impact of a major disaster upon users of illegal drugs and the illegal drug markets in New Orleans and among the diaspora of New Orleans evacuees following Hurricane Katrina. This analysis includes data from criminal justice sources that specify what the drug markets were like before this disaster occurred. This analysis also includes some comparison cities where no disaster occurred, but which help inform the similarities and differences in drug markets in other cities. The data presented also include an initial analysis of ethnographic interview data from over 100 New Orleans Evacuees recruited in New Orleans and Houston.

310. [An investigation of solar wind effects on the evolution of the Martian atmosphere](#)[NASA Technical Reports Server \(NTRS\)](#)

Luhmann, Janet G.

1994-01-01

This investigation concentrated on the question of how atmosphere escape, related to both photochemistry and the Mars solar wind interaction, may have affected the evolution of Mars' atmosphere over time. The principal investigator and postdoctoral researcher adopted the premise that contemporary escape processes have dominated the losses to space over the past 3.5 billion years, but that the associated loss rates have been modified by solar evolution. A model was constructed for the contemporary escape scenario based on knowledge gained from both Venus in-situ measurements from Pioneer Venus Orbiter and Mars measurements from Phobos-2. Venus provided a valuable second example of a weakly magnetized planet having a similar solar wind interaction where we have more knowledge from observations. The model included photochemical losses from recombining ionospheric molecular ions, scavenging Martian upper atmosphere ('pickup') ions by the solar wind, and sputtering of the atmosphere by reentering pickup ions. The existence of the latter mechanism was realized during the course of the supported investigation, and is now thought by Jakosky and Pepin to explain some of the Martian noble gas isotope ratios.

### 311. [Numerical investigation of air flow in a supersonic wind tunnel](#)

[NASA Astrophysics Data System \(ADS\)](#)

Drozhdov, S. M.; Rtishcheva, A. S.

2017-11-01

In the framework of TsAGI's supersonic wind tunnel modernization program aimed at improving flow quality and extending the range of test regimes it was required to design and numerically validate a new test section and a set of shaped nozzles: two flat nozzles with flow Mach number at nozzle exit  $M=4$  and  $M=5$  and two axisymmetric nozzles with  $M=5$  and  $M=6$ . Geometric configuration of the nozzles, the test section (an Eiffel chamber) and the diffuser was chosen according to the results of preliminary calculations of two-dimensional air flow in the wind tunnel circuit. The most important part of the work are three-dimensional flow simulation results obtained using ANSYS Fluent software. The following flow properties were investigated: Mach number, total and static pressure, total and static temperature and turbulent viscosity ratio distribution, heat flux density at wind tunnel walls (for high-temperature flow regimes). It is demonstrated that flow perturbations emerging from the junction of the nozzle with the test section and spreading down the test section behind the boundaries of characteristic rhomb's reverse wedge are nearly impossible to eliminate. Therefore, in order to perform tests under most uniform flow conditions, the model's center of rotation and optical window axis should be placed as close to the center of the characteristic rhomb as possible. The obtained results became part of scientific and technical basis of supersonic wind tunnel design process and were applied to a generalized class of similar wind tunnels.

### 312. [Sensitivity of storm wave modeling to wind stress evaluation methods](#)

[NASA Astrophysics Data System \(ADS\)](#)

Chen, Yingjian; Yu, Xiping

2017-06-01

The application of the wave boundary layer model (WBLM) for wind stress evaluation to storm wave modeling is studied using Hurricane Katrina (2005) as an example, which is chosen due to its great intensity and good availability of field data. The WBLM is based on the momentum and energy conservation equations and takes into account the physical details of air-sea interaction processes as well as energy dissipation due to the presence of sea spray. Four widely-used bulk-type formulas are also used for comparison. Simulated significant wave heights with WBLM are shown to agree well with the observed data over deep water. The WBLM yields a smaller wind stress coefficient on the left hand side of the hurricane track, which is reasonable considering the effect of the sea state on momentum transfer. Quantitative results show that large differences of the significant wave height are observed in the hurricane core among five wind stress evaluation methods and the differences are up to 12 m, which is in agreement with the general knowledge that the ocean dynamic processes under storm conditions are very sensitive to the amount of momentum exchange at the air-sea interface. However, it is the depth-induced energy dissipation, rather than the wind energy input, that dominates the wave height in the shallow water region. A larger value of depth-induced breaking parameter in the wave model results in better agreement with the measurements over shallow water.

313. [Did Harvey Learn from Katrina? Initial Observations of the Response to Companion Animals during Hurricane Harvey](#)

[PubMed Central](#)

2018-01-01

Simple Summary When Hurricane Harvey struck the Gulf states in 2017, a large-scale rescue effort was launched by officials and citizens to rescue both people and animals. Over a decade since Hurricane Katrina (2005), this study explores whether the reforms to afford better protection to companion animals such as the Pet Emergency and Transportation Standards Act 2006 have made a difference. Key officials from various organizations within the state of Texas were interviewed and it was found that though there has been a cultural shift to better protect animals in a disaster, formal coordination and planning mechanisms need further attention. This study also uncovered the first empirical observation of disaster hoarding where such persons used the disaster to replenish their animal stocks. This study will be of interest to those involved in emergency management and animal welfare. Abstract The aftermath of Hurricane Katrina in 2005 became the genesis of animal emergency management and created significant reforms in the US particularly the passage of the Pets Emergency and Transportation Standards Act in 2006 that required state and local emergency management arrangements to be pet- and service animal-inclusive. More than a decade later Hurricane Harvey struck the Gulf states with all 68 directly related deaths occurring in the state of Texas. In this study, six key officials involved in the response underwent a semi-structured interview

to investigate the impact of the PETS Act on preparedness and response. Though the results have limitations due to the low sample size, it was found that the PETS Act and the lessons of Hurricane Katrina had contributed to a positive cultural shift to including pets (companion animals) in emergency response. However, there was a general theme that plans required under the PETS Act were underdeveloped and many of the animal response lessons from previous emergencies remain unresolved. The study also observed the first empirical case of

#### 314. [Wind Energy Modeling and Simulation | Wind | NREL](#)

##### [Science.gov Websites](#)

*Wind* Energy Modeling and Simulation *Wind Turbine* Modeling and Simulation *Wind* turbines are unique *wind* turbines. It enables the analysis of a range of *wind turbine* configurations, including: Two- or (SOWFA) employs computational fluid dynamics to allow users to investigate *wind turbine* and *wind* power

#### 315. [Addressing anniversary reactions of trauma through group process: the Hurricane Katrina anniversary wellness workshops.](#)

##### [PubMed](#)

Nemeth, Darlyne G; Kuriansky, Judy; Reeder, Kenneth P; Lewis, Amity; Marceaux, Kristin; Whittington, Taighlor; Olivier, Traci W; May, Natasha E; Safier, Jessica A

2012-01-01

Natural disasters such as Hurricane Katrina, which devastated the Gulf Coast of the United States in the summer of 2005, have highlighted the need to develop effective post-trauma psychotherapeutic intervention strategies, not only to deal with the immediate psychological aftermath of trauma, but also the long-term effects of anniversary reactions. Governmental responses to Hurricane Katrina relief were greatly criticized for disorganization and delay. Both immediately afterwards and in ensuing months, people's life needs often were not addressed. People-to-people individual and group grassroots efforts, including those provided by mental health professionals, however, did reach local communities to service immediate needs and long-term emotional reactions. The present paper describes one such effort designed to help survivors cope on the occasion of the first anniversary of Hurricane Katrina. Specifically, anniversary reaction group workshops were held to address unresolved emotional issues and to promote healing by encouraging belonging, comfort, security, and resilience. The ultimate goal of these wellness workshops was to assist participants in understanding and resolving their anniversary reactions. Preliminary quantitative and qualitative findings suggested that this workshop format helped participants face their anniversary reactions, address their related psychological sequelae, and deal with their physical displacement. Participants were then able to find the emotional strength to reattach, form new communities, and begin problem solving. These

methods, with appropriate cultural modifications, were subsequently used in China, to assist Chinese mental health professionals prepare for the first anniversary of the Sichuan earthquake.

316. [Principles of Leading Change: An Inductive Analysis from Post-Katrina New Orleans](#)

[ERIC Educational Resources Information Center](#)

Beabout, Brian R.

2014-01-01

Despite over forty years of research on theories of educational change, little is known of the change theories-in-use of school-based administrators, often tasked with implementing externally imposed reform mandates. Capitalizing on the unique case of post-Katrina schooling, this qualitative study examines the ways in which ten principals spokeâ€¦

317. [Visual methodologies and participatory action research: Performing women's community-based health promotion in post-Katrina New Orleans.](#)

[PubMed](#)

Lykes, M Brinton; Scheib, Holly

2016-01-01

Recovery from disaster and displacement involves multiple challenges including accompanying survivors, documenting effects, and rethreading community. This paper demonstrates how African-American and Latina community health promoters and white university-based researchers engaged visual methodologies and participatory action research (photoPAR) as resources in cross-community praxis in the wake of Hurricane Katrina and the flooding of New Orleans. Visual techniques, including but not limited to photonarratives, facilitated the health promoters': (1) care for themselves and each other as survivors of and responders to the post-disaster context; (2) critical interrogation of New Orleans' entrenched pre- and post-Katrina structural racism as contributing to the racialised effects of and responses to Katrina; and (3) meaning-making and performances of women's community-based, cross-community health promotion within this post-disaster context. This feminist antiracist participatory action research project demonstrates how visual methodologies contributed to the co-researchers' cross-community self- and other caring, critical bifocality, and collaborative construction of a contextually and culturally responsive model for women's community-based health promotion post 'unnatural disaster'. Selected limitations as well as the potential for future cross-community antiracist feminist photoPAR in post-disaster contexts are discussed.

318. [Trend Analysis of Substance Abuse Treatment Admissions in New Orleans From 2000-2012: A Population-Based Comparison Pre- and Post-Hurricane Katrina.](#)

[PubMed](#)

Shuler, Monique N; Wallington, Sherrie F; Qualls-Hampton, Raquel Y; Podesta, Arwen E; Suzuki, Sumihiro

2016-10-14

Substance abuse treatment following a natural disaster is often met with challenges. If treatment is available, facilities may be unequipped to service an influx of patients or provide specialized care for unique populations. This paper seeks to evaluate trends in substance abuse treatment over time and assess changes pre- and post-Hurricane Katrina. Substance abuse treatment admission data (N = 42,678) from New Orleans, Louisiana, for years 2000 through 2012 were obtained from the Treatment Episode Data Set. Admissions were examined to evaluate demographic, socioeconomic, psychiatric, and criminality trends in substance abuse treatment and assess changes following Hurricane Katrina. Treatment admissions have decreased from 2000 to 2012. About one in five admissions had a psychiatric illness in addition to a substance abuse problem. A staggering 76% of admissions with a psychiatric illness were referred by the criminal justice system post-Katrina as compared to pre-Katrina. Rates of alcohol and marijuana admissions have remained stable from 2000 to 2012. Cocaine/crack admissions have declined and admissions who abused heroin have increased over time. Treatment admissions stabilized following Hurricane Katrina; however, since 2009, they have begun to decline. Targeted exploration of factors affecting admission to treatment in New Orleans with populations such as the homeless, those with a psychiatric illness in addition to a substance abuse problem, and those referred by the criminal justice system is essential. The results of this study assist in identifying variations in substance abuse treatment characteristics for those admitted to treatment in New Orleans.

319. [Wind-tunnel investigation of a full-scale canard-configured general aviation aircraft](#)

[NASA Technical Reports Server \(NTRS\)](#)

Yip, L. P.; Coy, P. F.

1982-01-01

As part of a broad research program to provide a data base on advanced airplane configurations, a wind-tunnel investigation was conducted in the Langley 30-by 60-Foot Wind Tunnel to determine the aerodynamic characteristics of an advanced canard-configured general aviation airplane. The investigation included measurements of forces and moments of the complete configuration, isolated canard loads, and pressure distributions on the wing, winglet, and canard. Flow visualization was obtained by using surface tufts to determine regions of flow separation and by using a chemical sublimation technique to determine boundary-layer transition locations. Additionally, other tests were conducted to determine simulated rain effects on boundary layer transition. Investigation of

configuration effects included variations of canard locations, canard airfoil section, winglet size, and use of a leading-edge droop on the out-board section of the wing.

### 320. [Church attendee help seeking priorities after Hurricane Katrina in Mississippi and Louisiana: a brief report.](#)

[PubMed](#)

Aten, Jamie D; Gonzalez, Rose A; Boan, David M; Topping, Sharon; Livingston, William V; Hosey, John M

2012-01-01

After a disaster, survivors find themselves seeking many types of help from others in their communities. The purpose of this exploratory study was to assist in mental health service planning by determining the type and priority of support services sought by church attendees after Hurricane Katrina. Surveys were given to church attendees from two Mississippi coast and four New Orleans area churches that were directly affected by Hurricane Katrina participants were asked to review a list of 12 potential sources of help and were asked to rank the items chronologically from whom they had sought help first after Hurricane Katrina. Overall, participants sought out assistance from informal social networks such as family and friends first, followed by governmental and clergy support. This study also showed there may be differences in help-seeking behaviors between church attendees in more urban areas versus church attendees in more rural areas. Moreover, findings highlighted that very few church attendees seek out mental health services during the initial impact phase of a disaster. Since timely engagement with mental health services is important for resolving trauma, strategies that link professional mental health services with clergy and government resources following a disaster could improve the engagement with mental health professionals and improve mental health outcomes. Disaster mental health clinical implications and recommendations are offered for psychologists based on these findings.

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### 321. [Displaced Older Adults' Reactions to and Coping with the Aftermath of Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Kamo, Yoshinori; Henderson, Tammy L.; Roberto, Karen A.

2011-01-01

Guided by an ecological perspective, the authors examined event, individual, structural/cultural, and family/community factors that shaped the psychological well-being of older adults displaced from New Orleans by Hurricane Katrina. The authors first established the negative effects of displacement on psychological well-being by comparing

### 322. [Crime in post-Katrina Houston: the effects of moral panic on emergency planning.](#)

[PubMed](#)

Settles, Tanya; Lindsay, Bruce R

2011-01-01

This study used a mixed methods approach to estimate whether a moral panic occurred after Hurricane Katrina forced the evacuations of more than 250,000 people to Houston, Texas. The study viewed data from the Houston Police Department combined with a qualitative review of references of criminal activity in local print media. In total, over 8,500 lines of text were analysed to discern themes associated with media representations of the influence of evacuees on the city of Houston. There was little evidence of statistically significant increases in crime over the months following the evacuations. There was, however, evidence that evacuees, principally from New Orleans, were blamed for perceived increases in violent crime and lawlessness. There are also significant policy implications for state, local and federal governments. In particular, the policies of the Federal Emergency Management Agency were blamed for at least some of the perceived crime attributed to Katrina evacuees. © 2011 The Author(s). Disasters © Overseas Development Institute, 2011.

### 323. [Post-Disaster Fertility: Hurricane Katrina and the Changing Racial Composition of New Orleans](#)

[PubMed Central](#)

Seltzer, Nathan; Nobles, Jenna

2017-01-01

Large-scale climate events can have enduring effects on population size and composition. Natural disasters affect population fertility through multiple mechanisms, including displacement, demand for children, and reproductive care access. Fertility effects, in turn, influence the size and composition of new birth cohorts, extending the reach of climate events across generations. We study these processes in New Orleans during the decade spanning Hurricane Katrina. We combine census data, ACS data, and vital statistics data to describe fertility in New Orleans and seven comparison cities. Following Katrina, displacement contributed to a 30% decline in birth cohort size. Black fertility fell, and remained 4% below expected values through 2010. By contrast, white fertility increased by 5%. The largest share of births now occurs to white women. These fertility differences—beyond migration-driven population change—generate additional pressure on the renewal of New Orleans as a city in which the black population is substantially smaller in the disaster's wake. PMID:29200546

324. [Post-Disaster Fertility: Hurricane Katrina and the Changing Racial Composition of New Orleans.](#)

[PubMed](#)

Seltzer, Nathan; Nobles, Jenna

2017-06-01

Large-scale climate events can have enduring effects on population size and composition. Natural disasters affect population fertility through multiple mechanisms, including displacement, demand for children, and reproductive care access. Fertility effects, in turn, influence the size and composition of new birth cohorts, extending the reach of climate events across generations. We study these processes in New Orleans during the decade spanning Hurricane Katrina. We combine census data, ACS data, and vital statistics data to describe fertility in New Orleans and seven comparison cities. Following Katrina, displacement contributed to a 30% decline in birth cohort size. Black fertility fell, and remained 4% below expected values through 2010. By contrast, white fertility increased by 5%. The largest share of births now occurs to white women. These fertility differences—beyond migration-driven population change—generate additional pressure on the renewal of New Orleans as a city in which the black population is substantially smaller in the disaster's wake.

325. [Satellite optical and radar data used to track wetland forest impact and short-term recovery from Hurricane Katrina](#)

[USGS Publications Warehouse](#)

Ramsey, Elijah W.; Rangoonwala, A.; Middleton, B.; Lu, Z.

2009-01-01

Satellite Landsat Thematic Mapper (TM) and RADARSAT-1 (radar) satellite image data collected before and after the landfall of Hurricane Katrina in the Pearl River Wildlife Management Area on the Louisiana-Mississippi border, USA, were applied to the study of forested wetland impact and recovery.

We documented the overall similarity in the radar and optical satellite mapping of impact and recovery patterns and highlighted some unique differences that could be used to provide consistent and relevant ecological monitoring. Satellite optical data transformed to a canopy foliage index (CFI) indicated a dramatic decrease in canopy cover immediately after the storm, which then recovered rapidly in the *Taxodium distichum* (baldcypress) and *Nyssa aquatica* (water tupelo) forest. Although CFI levels in early October indicated rapid foliage recovery, the abnormally high radar responses associated with the cypress forest suggested a persistent poststorm difference in canopy structure. Impact and recovery mapping results showed that even though cypress forests experienced very high wind speeds, damage was largely limited to foliage loss. Bottomland hardwoods, experiencing progressively lower wind speeds further inland, suffered impacts ranging from increased occurrences of downed trees in the south to partial foliage loss in the north. In addition, bottomland hardwood impact and recovery patterns suggested that impact severity was associated with a difference in stand structure possibly related to environmental conditions that were not revealed in the prehurricane 25-m optical and radar image analyses.

326. [Disaster Hits Home: A Model of Displaced Family Adjustment after Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Peek, Lori; Morrissey, Bridget; Marlatt, Holly

2011-01-01

The authors explored individual and family adjustment processes among parents ( $n = 30$ ) and children ( $n = 55$ ) who were displaced to Colorado after Hurricane Katrina. Drawing on in-depth interviews with 23 families, this article offers an inductive model of displaced family adjustment. Four stages of family adjustment are presented in the model: (a)â€¦

327. [Initial estimates of hurricane Katrina impacts of Mississippi gulf coast forest resources](#)

[Treesearch](#)

Patrick A. Glass; Sonja N. Oswalt

2007-01-01

Hurricane Katrina pummeled the Gulf Coast of Mississippi on August 29, 2005. The eye wall of the storm passed directly over Hancock and Pearl River Counties. Harrison, Jackson, Stone, and George Counties on the windward side of the hurricane's path sustained severe damage before the storm's strength dissipated as it moved farther inland (fig. 1).

328. [Archiving Disaster: A Comparative Study of September 11, 2001 and Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Rivard, Courtney J.

2012-01-01

The first decade of the 21st Century in the United States witnessed two major events that have come to be understood as national disasters: September 11, 2001 and Hurricane Katrina. Numerous historical institutions quickly mobilized to collect material relating to the two events, prompting the creation of what is now referred to as "disasterâ€¦

329. [REMOTE SENSING DAMAGE ASSESSMENT OF CHEMICAL PLANTS AND REFINERIES FOLLOWING HURRICANES KATRINA AND RITA](#)

[EPA Science Inventory](#)

The massive destruction brought by Hurricanes Katrina and Rita also impacted the many chemical plants and refineries in the region. The achievement of this rapid analysis capability highlights the advancement of this technology for air quality assessment and monitoring. Case st...

330. [Differences in emotional well-being of hurricane survivors: a secondary analysis of the ABC News Hurricane Katrina Anniversary Poll.](#)

[PubMed](#)

Rateau, Margaret R

2009-06-01

Literature suggests that survivors of catastrophic loss may suffer long-term emotional damage. This paper presents a secondary data analysis from the ABC News Hurricane Katrina Poll conducted in August, 2006. Following analyses, a significantly higher percentage of women (44%) and those who experienced residential damage (66.7%) reported long-term negative impact on emotional well-being. Overall, 70.3% of Katrina survivors reported a strengthening in fellow man following the disaster. These results may serve as beginning evidence for appropriate identification and implementation of mental health support for those most in need following disaster.

331. [Air quality during demolition and recovery activities in post-Katrina New Orleans.](#)

[PubMed](#)

Ravikrishna, Raghunathan; Lee, Han-Woong; Mbuligwe, Stephen; Valsaraj, K T; Pardue, John H

2010-07-01

Air samples were collected during demolition and cleanup operations in the Lakeview district of New Orleans, Louisiana, USA, in late 2005 during the period immediately after Hurricane Katrina. Three

different high-volume air samples were collected around waste collection areas that were created to temporarily hold the debris from the cleanup of residential properties in the area. Particulate concentrations were elevated and included crystalline fibers associated with asbestos. Metal concentrations on particulate matter resembled those measured in sediments deposited by floodwaters with the exception of Ba, which was elevated at all three locations. The highest organic contaminant concentration measured on particulates was the pesticide Ziram (Zinc, bis[diethylcarbamoate-S,S']-, [T-4]-) at 2,200 microg/g of particulate matter during sampling period 2. Ziram is used in latex paint, adhesives, caulking, and wallboard as a preservative. Fungal isolates developed from particulate air samples included species associated with disease including *Aspergillus* and *Penicillium* species. These data represent the most comprehensive assessment of demolition activities during the period immediately after Hurricane Katrina. Copyright (c) 2010 SETAC.

### 332. [Computer investigations of the turbulent flow around a NACA2415 airfoil wind turbine](#)

[NASA Astrophysics Data System \(ADS\)](#)

Driss, Zied; Chelbi, Tarek; Abid, Mohamed Salah

2015-12-01

In this work, computer investigations are carried out to study the flow field developing around a NACA2415 airfoil wind turbine. The Navier-Stokes equations in conjunction with the standard  $k-\epsilon$  turbulence model are considered. These equations are solved numerically to determine the local characteristics of the flow. The models tested are implemented in the software "SolidWorks Flow Simulation" which uses a finite volume scheme. The numerical results are compared with experiments conducted on an open wind tunnel to validate the numerical results. This will help improving the aerodynamic efficiency in the design of packaged installations of the NACA2415 airfoil type wind turbine.

### 333. [School Choice, Student Mobility, and School Quality: Evidence from Post-Katrina New Orleans](#)

[ERIC Educational Resources Information Center](#)

Welsh, Richard O.; Duque, Matthew; McEachin, Andrew

2016-01-01

In recent decades, school choice policies predicated on student mobility have gained prominence as urban districts address chronically low-performing schools. However, scholars have highlighted equity concerns related to choice policies. The case of post-Hurricane Katrina New Orleans provides an opportunity to examine student mobility patterns in

### 334. [Floating Foundations: "Kairos," Community, and a Composition Program in Post-Katrina New Orleans](#)

[ERIC Educational Resources Information Center](#)

Johnson, T. R.; Letter, Joe; Livingston, Judith Kemerait

2009-01-01

The authors describe their individual and collective experiences reconstructing their New Orleans-based university composition program in the aftermath of Hurricane Katrina. They emphasize how the concept of "floating foundations" helps account for changes in their students' interests, and they suggest that this idea is applicable to the

335. [Sex Differences in Salivary Cortisol, Alpha-Amylase, and Psychological Functioning Following Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Vigil, Jacob M.; Geary, David C.; Granger, Douglas A.; Flinn, Mark V.

2010-01-01

The study examines group and individual differences in psychological functioning and hypothalamic-pituitary-adrenal and sympathetic nervous system (SNS) activity among adolescents displaced by Hurricane Katrina and living in a U.S. government relocation camp (n = 62, ages 12-19 years) 2 months postdisaster. Levels of salivary cortisol, salivary

336. [Leadership for Change in the Educational Wild West of Post-Katrina New Orleans](#)

[ERIC Educational Resources Information Center](#)

Beabout, Brian R.

2010-01-01

This study examines the perceptions of public school principals in New Orleans, Louisiana during the period of extensive decentralization in the aftermath of Hurricane Katrina. Using the frameworks of systems theory and chaos/complexity theories, iterative interviews with 10 school principals form the core data which examines leaders' experiences

337. [Campaign contributions, lobbying and post-Katrina contracts.](#)

[PubMed](#)

Hogan, Michael J; Long, Michael A; Stretesky, Paul B

2010-07-01

This research explores the relationship between political campaign contributions, lobbying and post-Hurricane Katrina cleanup and reconstruction contracts. Specifically, a case-control study design is used to determine whether campaign contributions to national candidates in the 2000-04 election cycles and/or the employment of lobbyists and lobbying firms increased a company's probability of receiving a post-hurricane contract. Results indicate that both a campaign contribution dichotomous variable and the dollar amount of contributions are significantly related to whether a company received a contract, but that lobbying activity was not. These findings are discussed in the context of previous research on the politics of natural disasters, government contracting and governmental and corporate deviance.

### 338. [COMMUNITY COLLEGE RE-ENROLLMENT AFTER HURRICANE KATRINA](#)

[PubMed Central](#)

LOWE, SARAH R.; RHODES, JEAN E.

2013-01-01

In this study, we explored predictors of community college re-enrollment after Hurricane Katrina among a sample of low-income women (N = 221). It was predicted that participants' pre-hurricane educational optimism would predict community college re-enrollment a year after the hurricane. The influence of various demographic and additional resources (e.g., social support, childcare, hours of employment, psychological well-being) was also explored. High levels of pre- and post-hurricane educational optimism were significant predictors of re-enrollment, as were lower post-hurricane psychological distress and fewer post-hurricane hours employed. In addition, experiencing a greater number of moves since the hurricane was a marginally significant predictor of post-hurricane re-enrollment. PMID:23457425

### 339. [Persistence of mental health needs among children affected by Hurricane Katrina in New Orleans.](#)

[PubMed](#)

Olteanu, Alina; Arnberger, Ruth; Grant, Roy; Davis, Caroline; Abramson, David; Asola, Jaya

2011-02-01

Hurricane Katrina made landfall in August 2005 and destroyed the infrastructure of New Orleans. Mass evacuation ensued. The immediate and long-lasting impact of these events on the mental health of children have been reported in survey research. This study was done to describe the nature of mental health need of children during the four years after Hurricane Katrina using clinical data from a comprehensive healthcare program. Medical and mental health services were delivered on mobile clinics that traveled to medically underserved communities on a regular schedule beginning immediately after the hurricane. Patients were self-selected residents of New Orleans. Most had incomes below the federal poverty level and were severely affected by the hurricane. Paper charts of

pediatric mental health patients were reviewed for visits beginning with the establishment of the mental health program from 01 July 2007 through 30 June 2009 (n = 296). Demographics, referral sources, presenting problems, diagnoses, and qualitative data describing Katrina-related traumatic exposures were abstracted. Psychosocial data were abstracted from medical charts. Data were coded and processed for demographic, referral, and diagnostic trends. Mental health service needs continued unabated throughout this period (two to nearly four years post-event). In 2008, 29% of pediatric primary care patients presented with mental health or developmental/learning problems, including the need for intensive case management. The typical presentation of pediatric mental health patients was a disruptive behavior disorder with an underlying mood or anxiety disorder. Qualitative descriptive data are presented to illustrate the traumatic post-disaster experience of many children. School referrals for mental health evaluation and services were overwhelmingly made for disruptive behavior disorders. Pediatric referrals were more nuanced, reflecting underlying mood and anxiety disorders. Histories indicated that many

#### 340. [The Potential for PTSD, Substance Use, and HIV Risk Behavior among Adolescents Exposed to Hurricane Katrina](#)

[PubMed Central](#)

WAGNER, KARLA D.; BRIEF, DEBORAH J.; VIELHAUER, MELANIE J.; SUSSMAN, STEVE; KEANE, TERENCE M.; MALOW, ROBERT

2014-01-01

Adverse psychosocial outcomes can be anticipated among youth exposed to Hurricane Katrina. Adolescents are particularly vulnerable to the consequences of this natural disaster and may suffer lasting consequences in the form of psychological morbidity and the development of negative health behaviors due to their exposure. We review existing literature on the effects of exposure to natural disasters and similar traumas on youth and, where data on youth are unavailable, on adults. The effect of natural disasters is discussed in terms of risk for three negative health outcomes that are of particular concern due to their potential to cause long-term morbidity: post-traumatic stress disorder, substance use disorder, and HIV-risk behavior. Where available, data from studies of the effects of Hurricane Katrina are included. PMID:19895305

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### 341. [The Economic Impact of Hurricane Katrina on Its Victims: Evidence from Individual Tax Returns](#)

[NASA Astrophysics Data System \(ADS\)](#)

Deryugina, T.; Kawano, L.; Levitt, S.

2014-12-01

Hurricane Katrina destroyed more than 200,000 homes and led to massive economic and physical dislocation. Using a panel of tax return data, we provide one of the first comprehensive analyses of the hurricane's long-term economic impact on its victims. We find small and mostly transitory impacts of the disaster on wages, employment, and total income, even among the worst affected. Remarkably, within a few years, Katrina victims have higher incomes than controls from similar cities that were unaffected by the storm. Withdrawals from retirement accounts offset some of the temporary fall in wages. Finally, there is a short-run spike in marriage and little impact on either divorce or child bearing. These findings suggest that, at least in developed countries like the United States, dislocation is unlikely to be an important component of the social or economic costs of dramatic negative events, such as natural disasters or climate change.

### 342. [Investigating Wind-Driven Rain Intrusion in Walls with the CARWASH](#)

[Treesearch](#)

C.R. Boardman; Samuel V. Glass

2013-01-01

Wind-driven rain provides the primary external moisture load for exterior walls. Water absorption by the cladding, runoff, and penetration through the cladding or at details determine how a wall system performs. In this paper we describe a new laboratory facility that can create controlled outdoor and indoor conditions and use it to investigate the water...

### 343. [The Children Hurricane Katrina Left Behind: Schooling Context, Professional Preparation, and Community Politics](#)

[ERIC Educational Resources Information Center](#)

Robinson, Sharon P., Ed.; Brown, M. Christopher, II, Ed.

2007-01-01

Even before the 2005 "Disaster in the Delta"—as the devastation and loss wrought by the category-three hurricane known as Katrina came to be known—statistics emerged about the aggressive educational neglect of Louisiana's African American schoolchildren. The harrowing data about the inadequacies being as racialized as the distributionâ€¦

344. [Geospatial relationships of tree species damage caused by Hurricane Katrina in south Mississippi](#)

[Treesearch](#)

Mark W. Garrigues; Zhaofei Fan; David L. Evans; Scott D. Roberts; William H. Cooke III

2012-01-01

Hurricane Katrina generated substantial impacts on the forests and biological resources of the affected area in Mississippi. This study seeks to use classification tree analysis (CTA) to determine which variables are significant in predicting hurricane damage (shear or windthrow) in the Southeast Mississippi Institute for Forest Inventory District. Logistic regressions...

345. [Lessons learned from the deadly sisters: drug and alcohol treatment disruption, and consequences from Hurricanes Katrina and Rita.](#)

[PubMed](#)

Maxwell, Jane Carlisle; Podus, Deborah; Walsh, David

2009-01-01

This paper reports on the effects of Hurricanes Katrina and Rita on drug and alcohol treatment in Texas in 2005–2006. Findings are based on a secondary analysis of administrative data on 567 hurricane-related admissions and on interview data from a sample of 20 staff in 11 treatment programs. Katrina evacuees differed from Rita clients in terms of demographics and primary problem substances and treatment needs, while the experiences of program staff and needed changes to improve disaster readiness were more similar. Additional systematic research is needed to document the intermediate and long-term impacts of the storms in these and other affected areas.

346. [Combined effects of Hurricane Katrina and Hurricane Gustav on the mental health of mothers of small children.](#)

[PubMed](#)

Harville, E W; Xiong, X; Smith, B W; Pridjian, G; Elkind-Hirsch, K; Buekens, P

2011-05-01

Few studies have assessed the results of multiple exposures to disaster. Our objective was to examine the effect of experiencing Hurricane Gustav on mental health of women previously exposed to Hurricane Katrina. A total of 102 women from Southern Louisiana were interviewed by telephone. Experience of the hurricanes was assessed with questions about injury, danger and damage, while depression was assessed with the Edinburgh Depression Scale and post-traumatic stress disorder using the Post-Traumatic Checklist. Minor stressors, social support, trait resilience and perceived benefit had been measured previously. Mental health was examined with linear and log-linear models. Women who had a severe experience of both Gustav and Katrina scored higher on the mental health scales, but finding new ways to cope after Katrina or feeling more prepared was not protective. About half the population had better mental health scores after Gustav than at previous measures. Improvement was more likely among those who reported high social support or low levels of minor stressors, or were younger. Trait resilience mitigated the effect of hurricane exposure. Multiple disaster experiences are associated with worse mental health overall, although many women are resilient. Perceiving benefit after the first disaster was not protective. © 2010 Blackwell Publishing.

347. [Posttraumatic stress disorder symptom trajectories in Hurricane Katrina affected youth.](#)

[PubMed](#)

Self-Brown, Shannon; Lai, Betty S; Thompson, Julia E; McGill, Tia; Kelley, Mary Lou

2013-05-01

This study examined trajectories of posttraumatic stress disorder symptoms in Hurricane Katrina affected youth. A total of 426 youth (51% female; 8-16 years old; mean age=11 years; 75% minorities) completed assessments at 4 time points post-disaster. Measures included Hurricane impact variables (initial loss/disruption and perceived life threat); history of family and community violence exposure, parent and peer social support, and post-disaster posttraumatic stress symptoms. Latent class growth analysis demonstrated that there were three distinct trajectories of posttraumatic stress disorder symptoms identified for this sample of youth (resilient, recovering, and chronic, respectively). Youth trajectories were associated with Hurricane-related initial loss/disruption, community violence, and peer social support. The results suggest that youth exposed to Hurricane Katrina have variable posttraumatic stress disorder symptom trajectories. Significant risk and protective factors were identified. Specifically, youth Hurricane and community violence exposure increased risk for a more problematic posttraumatic stress disorder symptom trajectory, while peer social support served as a protective factor for these youth. Identification of these factors suggests directions for future research as well as potential target areas for screening and intervention with disaster exposed youth. The convenience sample limits the external validity of the findings to other disaster exposed youth, and the self-report data is susceptible to response bias. Copyright © 2012 Elsevier B.V. All rights reserved.

348. [Correlates of Long-Term Posttraumatic Stress Symptoms in Children Following Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Moore, Kathryn W.; Varela, R. Enrique

2010-01-01

The present study examined the roles of loss and disruption, major life events, and social support in the relationship between exposure and PTSD symptoms in a group of children 33 months after Hurricane Katrina. One hundred fifty-six 4th, 5th, and 6th graders were surveyed in the New Orleans area. Results indicated that 46% of the children

349. [Hazardous substances releases associated with Hurricanes Katrina and Rita in industrial settings, Louisiana and Texas.](#)

[PubMed](#)

Ruckart, Perri Zeitz; Orr, Maureen F; Lanier, Kenneth; Koehler, Allison

2008-11-15

The scientific literature concerning the public health response to the unprecedented hurricanes striking the Gulf Coast in August and September 2005 has focused mainly on assessing health-related needs and surveillance of injuries, infectious diseases, and other illnesses. However, the hurricanes also resulted in unintended hazardous substances releases in the affected states. Data from two states (Louisiana and Texas) participating in the Hazardous Substances Emergency Events Surveillance (HSEES) system were analyzed to describe the characteristics of hazardous substances releases in industrial settings associated with Hurricanes Katrina and Rita. HSEES is an active multi-state Web-based surveillance system maintained by the Agency for Toxic Substances and Disease Registry (ATSDR). In 2005, 166 hurricane-related hazardous substances events in industrial settings in Louisiana and Texas were reported. Most (72.3%) releases were due to emergency shut downs in preparation for the hurricanes and start-ups after the hurricanes. Emphasis is given to the contributing causal factors, hazardous substances released, and event scenarios. Recommendations are made to prevent or minimize acute releases of hazardous substances during future hurricanes, including installing backup power generation, securing equipment and piping to withstand high winds, establishing procedures to shutdown process operations safely, following established and up-to-date start-up procedures and checklists, and carefully performing pre-start-up safety reviews.

350. [Experimental Investigation of Wind-Tunnel Interference on the Downwash Behind an Airfoil](#)

[NASA Technical Reports Server \(NTRS\)](#)

Silverstein, Abe; Katzoff, S

1937-01-01

The interference of the wind-tunnel boundaries on the downwash behind an airfoil has been experimentally investigated and the results have been compared with the available theoretical results for open-throat wind tunnels. As in previous studies, the simplified theoretical treatment that assumes the test section to be an infinite free jet has been shown to be satisfactory at the lifting line. The experimental results, however, show that this assumption may lead to erroneous conclusions regarding the corrections to be applied to the downwash in the region behind the airfoil where the tail surfaces are normally located. The results of a theory based on the more accurate concept of the open-jet wind tunnel as a finite length of free jet provided with a closed exit passage are in good qualitative agreement with the experimental results.

351. [African American Women's Reports of Racism during Hurricane Katrina: Variation by Interviewer Race](#)

[PubMed Central](#)

Lowe, Sarah R.; Lustig, Kara; Marrow, Helen B.

2013-01-01

This study investigated the effects of interviewer race on low-income African American female hurricane survivors's reports of racism during Hurricane Katrina and its aftermath (N = 41). Respondents were asked directly about the role of racism during the storm and evacuation by one of three interviewers (two White females and one African American female). Contrary to expectations, respondents were not significantly more likely to agree that racism played a role during the hurricane and its aftermath when with an African American interviewer compared to a White interviewer. However, when speaking to the White interviewers versus the African American interviewer, respondents were significantly more likely to use qualifying and contradictory statements and to make references to other races also being victims of the hurricane. PMID:23459229

352. [Dynamic Performance Investigation of A Spar-Type Floating Wind Turbine Under Different Sea Conditions](#)

[NASA Astrophysics Data System \(ADS\)](#)

Wang, Han; Hu, Zhi-qiang; Meng, Xiang-yin

2018-06-01

Both numerical calculation and model test are important techniques to study and forecast the dynamic responses of the floating offshore wind turbine (FOWT). However, both the methods have their own limitations at present. In this study, the dynamic responses of a 5 MW OC3 spar-type floating wind turbine designed for a water depth of 200 m are numerically investigated and validated by a 1:50 scaled model test. Moreover, the discrepancies between the numerical calculations and model tests are obtained and discussed. According to the discussions, it is found that the surge and pitch are

coupled with the mooring tensions, but the heave is independent of them. Surge and pitch are mainly induced by wave under wind wave conditions. Wind and current will induce the low-frequency average responses, while wave will induce the fluctuation ranges of the responses. In addition, wave will induce the wavefrequency responses but wind and current will restrain the ranges of the responses.

353. [Skin disorders among construction workers following Hurricane Katrina and Hurricane Rita: an outbreak investigation in New Orleans, Louisiana.](#)

[PubMed](#)

Noe, Rebecca; Cohen, Adam L; Lederman, Edith; Gould, L Hannah; Alsdurf, Hannah; Vranken, Peter; Ratard, Rauol; Morgan, Juliette; Norton, Scott A; Mott, Joshua

2007-11-01

To determine the extent and scope of the outbreak of skin eruptions, to identify the causes of the acute skin diseases, to identify risk factors for the conditions, and to reduce the dermatologic morbidity among workers repairing buildings damaged by Hurricane Katrina and Hurricane Rita. Retrospective cohort study. Military base in New Orleans, Louisiana. Civilian construction workers living and working at a New Orleans military base between August 30, 2005, and October 3, 2005. Living conditions were mainly wooden huts and tents with limited sanitation facilities. Survey of risk factors, physical examination, skin biopsy specimens, and environmental investigation of the occupational and domiciliary exposures. Of 136 workers, 58 reported rash, yielding an attack rate of 42.6%. The following 4 clinical entities were diagnosed among 41 workers who had a physical examination (some had >1 diagnosis): 27 (65.9%) having papular urticaria, 8 (19.5%) having bacterial folliculitis, 6 (14.6%) having fiberglass dermatitis, and 2 (4.9%) having brachioradial photodermatitis. All diagnoses except brachioradial photodermatitis were confirmed by histopathologic examination. After adjusting for race/ethnicity and occupation, sleeping in previously flooded huts was statistically significantly (adjusted odds ratio, 20.4; 95% confidence interval, 5.9-70.2) associated with developing papular urticaria, the most common cause of rash in this cluster. We identified 4 distinct clinical entities, although most workers were diagnosed as having papular urticaria. Huts previously flooded as a result of the hurricanes and used for sleeping may have harbored mites, a likely source of papular urticaria. To reduce the morbidity of hurricane-related skin diseases, we suggest avoiding flooded areas, fumigating with an acaricide, and wearing protective clothing.

354. [Modeling Wave Overtopping on the Chandeleur Islands during Hurricane Katrina using XBeach](#)

[NASA Astrophysics Data System \(ADS\)](#)

Lindemer, C. A.; Plant, N.; Puleo, J.; Thompson, D.

2008-12-01

Tropical cyclones that enter or form in the Gulf of Mexico generate storm surge and large waves that impact low-lying coastlines of along the Gulf Coast. Much of the Gulf Coast is ringed with barrier islands that provide inland marshes and the mainland some protection from storm events. The Chandeleur Islands, are located 161 km east of New Orleans, Louisiana and are oriented from north to south, and act to dissipate some of this energy. After a series of major storm events between 2001 and 2005, Hurricane Katrina's devastation in the fall of 2005 was particularly violent, destroying two-thirds of the area associated with the island chain. We would like to evaluate the predictability of hurricane-induced barrier island erosion and accretion. We test the ability of a time-dependent hydrodynamic and morphodynamic model, XBeach, to predict the impact of Hurricane Katrina on portions of Chandeleur Islands. Pre-storm LIDAR-derived bathymetry/topography and surge and wave data were used to drive a number of XBeach simulations. Model-predicted morphology was compared to post-storm LIDAR data. The accuracy of these predictions, including model sensitivity tests with varying grid size and temporal resolutions, are presented.

355. [When the Levee Breaks: Treating Adolescents and Families in the Aftermath of Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Rowe, Cynthia L.; Liddle, Howard A.

2008-01-01

Hurricane Katrina brought to the surface serious questions about the capacity of the public health system to respond to community-wide disaster. The storm and its aftermath severed developmentally protective family and community ties; thus its consequences are expected to be particularly acute for vulnerable adolescents. Research confirms that

356. [In the Wake of Hurricane Katrina: Delivering Crisis Mental Health Services to Host Communities](#)

[ERIC Educational Resources Information Center](#)

Marbley, Aretha Faye

2007-01-01

Throughout the country and especially in Texas, local communities opened their arms to hurricane Katrina evacuees. Like the federal government, emergency health and mental health entities were unprepared for the massive numbers of people needing assistance. Mental health professionals, though armed with a wealth of crisis intervention information,

357. [Exposures to thoracic particulate matter, endotoxin, and glucan during post-Hurricane Katrina restoration work, New Orleans 2005-2012.](#)

[PubMed](#)

Rando, Roy J; Kwon, Cheol-Woong; Lefante, John J

2014-01-01

In the aftermath of Hurricane Katrina, which devastated the city of New Orleans in August 2005, restoration workers were at risk for respiratory illness from exposure to airborne particles and microbial agents. In support of an epidemiologic investigation of this risk, an exposure assessment for restoration work activities (demolition, trash & debris management, landscape restoration, sewer/waterline repair, and mold remediation) was performed from 2005 to 2012. For 2005 and 2006, Occupational Safety and Health Administration (OSHA) data (n = 730) for personal and area monitoring of total and respirable dust exposures of restoration workers were accessed and analyzed. The most significant exposures were for demolition work, with average respirable dust exposures in 2005 above the action level of 2.5 mg/m<sup>3</sup> and 17.6% of exposures exceeding the permissible exposure limit (PEL) (5 mg/m<sup>3</sup>). Additional personal and area monitoring for thoracic particulate matter was performed from 2007 to 2012 (n = 774) and samples were assayed for endotoxin and (1 $\alpha$ -3, 1 $\alpha$ -6)- $\beta$ -D-glucan (n = 202). In order to integrate the OSHA data with the later monitoring data, three independent predictive models were developed to convert total and respirable dust measures into the equivalent thoracic dust. The three models were not statistically different and the modeling results were in good agreement with an overall coefficient of variation of 16% for the thoracic dust means across work activities estimated by each of the three models. Overall, thoracic dust exposure levels decreased by about an order of magnitude within the first year after Katrina and then more gradually declined and stabilized through 2012. Estimated average exposures to endotoxin and microbial glucan in 2005 were as high as 256 EU/m<sup>3</sup> and 118  $\mu$ g/m<sup>3</sup>, respectively, and likewise were seen to decrease dramatically and stabilize after 2005. The results of this exposure assessment support previously published reports of

358. [Impacts of Hurricane Katrina on floodplain forests of the Pearl River: Chapter 6A in Science and the storms—the USGS response to the hurricanes of 2005](#)

[USGS Publications Warehouse](#)

Faulkner, Stephen; Barrow, Wylie; Couvillion, Brady R.; Conner, William; Randall, Lori; Baldwin, Michael

2007-01-01

Floodplain forests are an important habitat for Neotropical migratory birds. Hurricane Katrina passed through the Pearl River flood plain shortly after making landfall. Field measurements on historical plots and remotely sensed data were used to assess the impact of Hurricane Katrina on the structure of floodplain forests of the Pearl River.

359. [EFFECTS OF HURRICANE KATRINA ON BENTHIC MACROINVERTEBRATE COMMUNITIES ALONG THE NORTHERN GULF OF MEXICO COAST](#)

## [EPA Science Inventory](#)

A study was initiated in fall 2005 to assess potential effects on benthic fauna and habitat quality in coastal waters of Louisiana, Mississippi, and Alabama following Hurricane Katrina, which struck the coast of Louisiana, between New Orleans and Bioloxi, Mississippi on August 29...

### 360. [Sediment Quality in Near Coastal Waters of the Gulf of Mexico: Influence of Hurricane Katrina](#)

## [EPA Science Inventory](#)

The results from this study represent a synoptic analysis of sediment quality in coastal waters of Lake Pontchartrain and Mississippi Sound two months after the landfall of Hurricane Katrina. Post-hurricane conditions were compared to pre-hurricane (2000-2004) conditions, for se...

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### 361. [Connecting the Disconnected: Scholar Activists and Education Reform in Post-Katrina New Orleans](#)

## [ERIC Educational Resources Information Center](#)

Cook, Daniella Ann

2014-01-01

When Hurricane Katrina slammed into New Orleans on August 29, 2005, the failure of the levees resulted in the largest single human-made disaster in the United States. In addition to the physical devastation of the city, the landscape of public schools in New Orleans was permanently altered, as was the national dialogue about school reform in the

### 362. [Ordinary and Extraordinary Trauma: Race, Indigeneity, and Hurricane Katrina in Tunica-Biloxi History](#)

[ERIC Educational Resources Information Center](#)

Klopotek, Brian; Lintinger, Brenda; Barbry, John

2008-01-01

Hurricane Katrina traumatized the city of New Orleans and the Gulf South. It filled most Americans and global citizens with grief and rage in the late summer of 2005. As the world watched, feeling powerless to help the many thousands of suffering people, at first stunned and then furious over the ineptitude of government response to this

363. ["I Had to Teach Hard": Traumatic Conditions and Teachers in Post-Katrina Classrooms](#)

[ERIC Educational Resources Information Center](#)

High School Journal, 2011

2011-01-01

Before Hurricane Katrina hit New Orleans on August 29, 2005, one hundred and twenty one schools in the New Orleans Public Schools (NOPS) system were in the process of being transferred to the newly created, state run Recovery School District (RSD). On September 29, 2005, the New Orleans Parish School Board fired all 7500 employees, including every

364. [Factors affecting access to head and neck cancer care after a natural disaster: a post-Hurricane Katrina survey.](#)

[PubMed](#)

Loehn, Bridget; Pou, Anna M; Nuss, Daniel W; Tenney, Justin; McWhorter, Andrew; DiLeo, Michael; Kakade, Anagha C; Walvekar, Rohan R

2011-01-01

Our aim was to survey the factors affecting access to cancer care in patients with head and neck cancer after Hurricane Katrina. In this cross-sectional survey, 207 patients with head and neck cancer were identified post-Hurricane Katrina, but only 83 patients completed the questionnaires and were analyzed. Clinical, demographic, and socioeconomic data were recorded. Chi-square test and t test were used for comparisons. Patients who felt that there was a lack of access to cancer care would have sought treatment earlier had they had better access to cancer care (chi-square[1] = 32;  $p < .0001$ ). Patients who felt that there was a lack of access to cancer care also had difficulty receiving treatment (chi-square[1] = 48;  $p < .0001$ ). Availability of transportation affected access to cancer care in patients with early-stage cancers (chi-square[1] = 4;  $p < .035$ ). In the postdisaster environment, patients who felt the lack of access to cancer care post-Hurricane Katrina would have sought treatment earlier with better access to cancer care. These patients also reported difficulty obtaining

cancer treatment. Availability of transportation affected access to cancer care in patients with early-stage cancers. Clinical, demographic, and socioeconomic factors did not influence access to cancer care. © 2010 Wiley Periodicals, Inc. Head Neck, 2011.

365. [Uncertainty and feasibility of dynamical downscaling for modeling tropical cyclones for storm surge simulation](#)

[DOE Office of Scientific and Technical Information \(OSTI.GOV\)](#)

Yang, Zhaoqing; Taraphdar, Sourav; Wang, Taiping

This paper presents a modeling study conducted to evaluate the uncertainty of a regional model in simulating hurricane wind and pressure fields, and the feasibility of driving coastal storm surge simulation using an ensemble of region model outputs produced by 18 combinations of three convection schemes and six microphysics parameterizations, using Hurricane Katrina as a test case. Simulated wind and pressure fields were compared to observed H\*Wind data for Hurricane Katrina and simulated storm surge was compared to observed high-water marks on the northern coast of the Gulf of Mexico. The ensemble modeling analysis demonstrated that the regional model was more able to reproduce the characteristics of Hurricane Katrina with reasonable accuracy and can be used to drive the coastal ocean model for simulating coastal storm surge. Results indicated that the regional model is sensitive to both convection and microphysics parameterizations that simulate moist processes closely linked to the tropical cyclone dynamics that influence hurricane development and intensification. The Zhang and McFarlane (ZM) convection scheme and the Lim and Hong (WDM6) microphysics parameterization are the most skillful in simulating Hurricane Katrina maximum wind speed and central pressure, among the three convection and the six microphysics parameterizations. Error statistics of simulated maximum water levels were calculated for a baseline simulation with H\*Wind forcing and the 18 ensemble simulations driven by the regional model outputs. The storm surge model produced the overall best results in simulating the maximum water levels using wind and pressure fields generated with the ZM convection scheme and the WDM6 microphysics parameterization. less

366. [Termiticide testing in full swing USDA-FS's Mississippi site hit hard by hurricane katrina](#)

[Treesearch](#)

Terry Wagner; Joe Mulrooney; Thomas Shelton

2006-01-01

The USDA-FS wrote and administered 44 termiticide testing agreements with industry; Hurricane Katrina hit hard the oldest U.S. Forest Service test site and the Termiticide Standards Committee of the Association of Structural Pest Control Regulatory Officials proposed a revision of the EPA's Product Performance Test Guideline, OPPTS 810.3600.

367. [Hospitalizations for Substance Abuse Disorders Before and After Hurricane Katrina: Spatial Clustering and Area-Level Predictors, New Orleans, 2004 and 2008.](#)

[PubMed](#)

Moise, Imelda K; Ruiz, Marilyn O

2016-10-13

Identifying at-risk groups is a challenge in post-disaster psychosocial response. Geospatial techniques can support the design and deployment of targeted and tailored interventions. This study compared spatial patterns in the distribution of hospitalizations for substance abuse disorders and associated area-level predictors before and after Hurricane Katrina in New Orleans, Louisiana. We used hospital data from the Louisiana Department of Health and Hospitals for 2004 (pre-Katrina) and 2008 (post-Katrina). Data were assessed by using descriptive statistics, multivariable Poisson regression, and geospatial analysis. We assessed hospitalizations by US Census block group in relation to the presence of blighted properties (ie, buildings declared an imminent health threat, in danger of collapse, or a public nuisance), race of residents (white or nonwhite), presence of nondisplaced residents (measured by the number of households receiving mail in 2008), and depth of water levels. The hospitalization rate for substance abuse disorders was 7.13 per 1,000 population for 2004 and 9.65 per 1,000 for 2008. The concentration of hospitalizations shifted geographically from block groups exposed to floods (levee breaches) in 2004 to the center of the city in 2008. Post Katrina, predictors for hospitalizations were presence of blighted properties, nonwhite populations, and presence of nondisplaced residents. Distance from flooded areas (high water depth) and levee breaches was negatively associated with hospitalizations. Men were more likely than women to be hospitalized during both periods (78%, 2004; 63%, 2008), and the percentage of the hospitalized white population increased from 2004 (28.8%) to 2008 (44.9%). Geographic patterns of hospitalizations for substance abuse disorders shifted in post-Katrina New Orleans from flood-exposed areas to less exposed areas in the center of the city; however, poverty was a main predictor for hospitalizations during both periods. Approaches

368. [Hospitalizations for Substance Abuse Disorders Before and After Hurricane Katrina: Spatial Clustering and Area-Level Predictors, New Orleans, 2004 and 2008](#)

[PubMed Central](#)

Ruiz, Marilyn O.

2016-01-01

Introduction Identifying at-risk groups is a challenge in post-disaster psychosocial response. Geospatial techniques can support the design and deployment of targeted and tailored interventions. This study compared spatial patterns in the distribution of hospitalizations for substance abuse

disorders and associated area-level predictors before and after Hurricane Katrina in New Orleans, Louisiana. **Methods** We used hospital data from the Louisiana Department of Health and Hospitals for 2004 (pre-Katrina) and 2008 (post-Katrina). Data were assessed by using descriptive statistics, multivariable Poisson regression, and geospatial analysis. We assessed hospitalizations by US Census block group in relation to the presence of blighted properties (ie, buildings declared an imminent health threat, in danger of collapse, or a public nuisance), race of residents (white or nonwhite), presence of nondisplaced residents (measured by the number of households receiving mail in 2008), and depth of water levels. **Results** The hospitalization rate for substance abuse disorders was 7.13 per 1,000 population for 2004 and 9.65 per 1,000 for 2008. The concentration of hospitalizations shifted geographically from block groups exposed to floods (levee breaches) in 2004 to the center of the city in 2008. Post Katrina, predictors for hospitalizations were presence of blighted properties, nonwhite populations, and presence of nondisplaced residents. Distance from flooded areas (high water depth) and levee breaches was negatively associated with hospitalizations. Men were more likely than women to be hospitalized during both periods (78%, 2004; 63%, 2008), and the percentage of the hospitalized white population increased from 2004 (28.8%) to 2008 (44.9%). **Conclusion** Geographic patterns of hospitalizations for substance abuse disorders shifted in post-Katrina New Orleans from flood-exposed areas to less exposed areas in the center of the city; however, poverty was a main predictor for

### 369. [Investigating Effects of Monsoon Winds on Hydrodynamics in the South China Sea](#)

[NASA Astrophysics Data System \(ADS\)](#)

Chua, V. P.

2013-12-01

The South China Sea is a large marginal sea surrounded by land masses and island chains, and characterized by complex bathymetry and irregular coastlines. The circulation in South China Sea is subjected to seasonal and inter-annual variations of tidal and meteorological conditions. The effects of monsoon winds on hydrodynamics is investigated by applying spectral and harmonic analysis on surface elevation and wind data at stations located in the South China Sea. The analysis indicates varying responses to the seasonal monsoon depending on the location of the station. At Kaohsiung (located in northern South China Sea off Taiwan coast), tides from the Pacific Ocean and the southwest monsoon winds are found to be dominant mechanisms. The Kota Kinabalu and Bintulu stations, located to the east of South China Sea off Borneo coast, are influenced by low energy complex winds, and the shallow bottom bathymetry at these locations leads to tidal energy damping compared to other stations. The tidal dynamics at Tioman, located in southern South China Sea off Malaysia coast, are most responsive to the effects of the northeast monsoon. The complexity of our problem together with the limited amount of available data in the region presents a challenging research topic. An unstructured-grid SUNTANS model is employed to perform three-dimensional simulations of the circulation in South China Sea. Skill assessment of the model is performed by

comparing model predictions of the surface elevations and currents with observations. The results suggest that the quality of the model prediction is highly dependent on horizontal grid resolution and coastline accuracy. The model may be used in future applications to investigate seasonal and inter-annual variations in hydrodynamics.

370. [The effect of Hurricane Katrina on the prevalence of health impairments and disability among adults in New Orleans: Differences by age, race, and sex](#)

[PubMed Central](#)

Sastry, Narayan; Gregory, Jesse

2012-01-01

We examined the effects of Hurricane Katrina on disability-related measures of health among adults from New Orleans, U.S.A., in the year after the hurricane, with a focus on differences by age, race, and sex. Our analysis used data from the American Community Survey to compare disability rates between the pre-Katrina population of New Orleans with the same population in the year after Katrina (individuals were interviewed for the study even if they relocated away from the city). The comparability between the pre- and post-Katrina samples was enhanced by using propensity weights. We found a significant decline in health for the adult population from New Orleans in the year after the hurricane, with the disability rate rising from 20.6% to 24.6%. This increase in disability reflected a large rise in mental impairments and, to a lesser extent, in physical impairments. These increases were, in turn, concentrated among young and middle-aged black females. Stress-related factors likely explain why young and middle-aged black women experienced worse health outcomes, including living in dwellings and communities that suffered the most damage from the hurricane, household breakup, adverse outcomes for their children, and higher susceptibility. PMID:23321678

371. [The effect of Hurricane Katrina on the prevalence of health impairments and disability among adults in New Orleans: differences by age, race, and sex.](#)

[PubMed](#)

Sastry, Narayan; Gregory, Jesse

2013-03-01

We examined the effects of Hurricane Katrina on disability-related measures of health among adults from New Orleans, U.S.A., in the year after the hurricane, with a focus on differences by age, race, and sex. Our analysis used data from the American Community Survey to compare disability rates between the pre-Katrina population of New Orleans with the same population in the year after Katrina (individuals were interviewed for the study even if they relocated away from the city). The comparability between the pre- and post-Katrina samples was enhanced by using propensity weights. We found a significant decline in health for the adult population from New Orleans in the year after the

hurricane, with the disability rate rising from 20.6% to 24.6%. This increase in disability reflected a large rise in mental impairments and, to a lesser extent, in physical impairments. These increases were, in turn, concentrated among young and middle-aged black females. Stress-related factors likely explain why young and middle-aged black women experienced worse health outcomes, including living in dwellings and communities that suffered the most damage from the hurricane, household breakup, adverse outcomes for their children, and higher susceptibility. Copyright © 2012 Elsevier Ltd. All rights reserved.

372. [Report: EPA Provided Quality and Timely Information on Hurricane Katrina Hazardous Material Releases and Debris Management](#)

[EPA Pesticide Factsheets](#)

Report #2006-P-00023, May 2, 2006. After Hurricane Katrina, EPA was the agency with lead responsibility to prevent, minimize, or mitigate threats to public health and the environment caused by hazardous materials and oil spills in inland zones.

373. [Missed Opportunities: Examining the Literacy Experiences of African American Students Displaced by Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Pollard, Tamica McClarty

2011-01-01

The purpose of this study was to examine how five African American middle school students, who were displaced by Hurricane Katrina represent their literacy experiences before, during, and after their displacement. Specifically, the two research questions were: (a) What are the stories that these middle school students tell about their lives, and

374. [Investigation of water vapor motion winds from geostationary satellites](#)

[NASA Technical Reports Server \(NTRS\)](#)

Velden, Christopher

1993-01-01

Motions deduced in animated water vapor imagery from geostationary satellites can be used to infer wind fields in cloudless regimes. For the past several years, CIMSS has been exploring this potentially important source of global-scale wind information. Recently, METEOSAT-3 data has become routinely available to both the U.S. operational and research community. Compared with the current GOES satellite, the METEOSAT has a superior resolution (5 km vs. 16 km) in its water vapor channel. Preliminary work: at CIMSS has demonstrated that wind sets derived from METEOSAT water vapor

imagery can provide important upper-tropospheric wind information in data void areas, and can positively impact numerical model guidance in meteorological applications. Specifically, hurricane track forecasts can be improved. Currently, we are exploring methods to further improve the derivation and quality of the water vapor wind sets.

375. [Examining the Aftereffects of Hurricane Katrina in New Orleans: A Qualitative Study of Faculty and Staff Perceptions](#)

[PubMed Central](#)

Burnham, Joy J.; Hooper, Lisa M.

2012-01-01

Researchers have reported how Hurricane Katrina has affected teachers who work with Kindergarten to Grade 12 (K-12), yet little is known about how the natural disaster has affected other important K-12 faculty and staff (e.g., coaches, librarians, school counselors, and cafeteria workers). Missing from the literature is the impact that this natural disaster has had on these formal (school counselors) and informal (coaches, librarians) helpers of K-12 students. Using a focus group methodology, the authors examined the aftereffects of Hurricane Katrina on 12 school employees in New Orleans, Louisiana, 18 months after the hurricane. Informed by qualitative content analysis, three emergent themes were identified: emotion-focused aftereffects, positive coping, and worry and fear. The implications for future research and promoting hope in mental health counseling are discussed. PMID:22629217

376. [Examining the aftereffects of Hurricane Katrina in New Orleans: a qualitative study of faculty and staff perceptions.](#)

[PubMed](#)

Burnham, Joy J; Hooper, Lisa M

2012-01-01

Researchers have reported how Hurricane Katrina has affected teachers who work with Kindergarten to Grade 12 (K-12), yet little is known about how the natural disaster has affected other important K-12 faculty and staff (e.g., coaches, librarians, school counselors, and cafeteria workers). Missing from the literature is the impact that this natural disaster has had on these formal (school counselors) and informal (coaches, librarians) helpers of K-12 students. Using a focus group methodology, the authors examined the aftereffects of Hurricane Katrina on 12 school employees in New Orleans, Louisiana, 18 months after the hurricane. Informed by qualitative content analysis, three emergent themes were identified: emotion-focused aftereffects, positive coping, and worry and fear. The implications for future research and promoting hope in mental health counseling are discussed.

377. [The psychosocial impact of Hurricane Katrina: contextual differences in psychological symptoms, social support, and discrimination.](#)

[PubMed](#)

Weems, Carl F; Watts, Sarah E; Marsee, Monica A; Taylor, Leslie K; Costa, Natalie M; Cannon, Melinda F; Carrion, Victor G; Pina, Armando A

2007-10-01

This study tested a contextual model of disaster reaction by examining regional differences in the psychosocial impact of Hurricane Katrina. A total of 386 individuals participated in this study. All were recruited in the primary areas affected by Hurricane Katrina and included residents of metropolitan New Orleans (Orleans Parish, Louisiana), Greater New Orleans (i.e., Metairie, Kenner, Gretna), and the Mississippi Gulf Coast (i.e., cities along the coast from Waveland to Ocean Springs, Mississippi). Participants were assessed for posttraumatic stress disorder (PTSD) symptoms, other psychological symptoms, perceptions of discrimination, perceptions of social support, evacuation distance, and the extent to which they experienced hurricane-related stressful events. Results were consistent with previous research on the impact of disasters on mental health symptoms. Findings extended research on individual differences in the response to trauma and indicated that regional context predicted unique variance in the experience of discrimination, social support, and emotional symptoms consistent with the theoretical model presented.

378. [A wind-tunnel investigation of wind-turbine wakes in different yawed and loading conditions](#)

[NASA Astrophysics Data System \(ADS\)](#)

Bastankhah, Majid; Porté-Agel, Fernando

2015-04-01

Wind-turbine wakes have negative effects on wind-farm performance. They are associated with: (a) the velocity deficit, which reduces the generated power of downwind turbines; and (b) the turbulence level, which increases the fatigue loads on downwind turbines. Controlling the yaw angle of turbines can potentially improve the performance of wind farms by deflecting the wake away from downwind turbines. However, except for few studies, wakes of yawed turbines still suffer from the lack of systematic research. To fill this research gap, we performed wind-tunnel experiments in the recirculating boundary-layer wind tunnel at the WIRE Laboratory of EPFL to better understand the wakes of yawed turbines. High-resolution stereoscopic particle image-velocimetry (S-PIV) was used to measure three velocity components in a horizontal plane located downwind of a horizontal-axis, three-blade model turbine. A servo-controller was connected to the DC generator of the turbine, which allowed us to apply different loadings. The power and thrust coefficients of the turbine were also measured for each case. These power and thrust measurements together with the highly-

resolved flow measurements enabled us to study different wake characteristics such as the energy entrainment from the outer flow into the wake, the wake deflection and the helicoidal tip vortices for yawed turbines.

379. [Maternal posttraumatic stress disorder symptom trajectories following Hurricane Katrina: An initial examination of the impact of maternal trajectories on the well-being of disaster-exposed youth.](#)

[PubMed](#)

Self-Brown, Shannon; Lai, Betty S; Harbin, Shannon; Kelley, Mary Lou

2014-12-01

This study examined trajectories of posttraumatic stress disorder symptoms in impoverished mothers impacted by Hurricane Katrina, as well as how predictive the maternal trajectories were for youth posttraumatic stress symptoms 2 years post-Katrina. 360 mother participants displaced by Hurricane Katrina completed self-report measures across four time points related to Hurricane exposure, trauma history, and posttraumatic stress symptoms. Additionally, the youth offspring completed a self-report measure of posttraumatic stress symptoms. Latent Class Growth Analysis demonstrated three primary trajectories emerged among females impacted by Katrina, namely, (1) chronic (4 %), (2) recovering (30 %), and (3) resilient (66 %), respectively. These trajectories were significantly impacted by prior trauma history, but not hurricane exposure. Additionally, data indicated that children whose parents fell into the chronic PTS trajectory also reported high levels of PTS symptoms. This study identified three main trajectories typical of female PTS symptoms following disaster and was the first known study to document associations between PTS outcomes among adults and their offspring impacted by a large natural disaster. Future research is warranted and should explore additional risk and protective factors that impact both the parental and child outcomes.

380. [Hurricane Season 2005: Katrina](#)

[NASA Technical Reports Server \(NTRS\)](#)

2005-01-01

Seventeen days after Hurricane Katrina flooded New Orleans, much of the city is still under water. In this pair of images from the Advanced Spaceborne Thermal Emission and Reflection Radiometer on NASA's Terra satellite, the affected areas can clearly be seen. The top image mosaic was acquired in April and September 2000, and the bottom image was acquired September 13, 2005. The flooded parts of the city appear dark blue, such as the golf course in the northeast corner, where there is standing water. Areas that have dried out appear light blue gray, such as the city park in the left middle. On the left side of the image, the failed 17th street canal marks a sharp boundary between flooded city to the east, and dry land to the west.

The U.S. science team is located at NASA's Jet Propulsion Laboratory, Pasadena, Calif. The Terra mission is part of NASA's Science Mission Directorate.

Size: 10.4 by 7.1 kilometers Location: 30 degrees North latitude, 90.1 degrees West longitude

Orientation: North at top Image Data: ASTER bands 1, 2, and 3 Original Data Resolution: 15 meters (49.2 feet) Dates Acquired: September 13, 2005

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381. [Post-traumatic stress disorder in an emergency department population one year after Hurricane Katrina.](#)

[PubMed](#)

Mills, Lisa D; Mills, Trevor J; Macht, Marlow; Levitan, Rachel; De Wulf, Annelies; Afonso, Natasha S

2012-07-01

Hurricane Katrina resulted in a significant amount of injury, death, and destruction. To determine the prevalence of, and risk factors for, symptoms of post-traumatic stress disorder (PTSD) in an emergency department (ED) population, 1 year after hurricane Katrina. Survey data including the Primary Care PTSD (PC-PTSD) screening instrument, demographic data, and questions regarding health care needs and personal loss were collected and analyzed. Seven hundred forty-seven subjects completed the survey. The PC-PTSD screen was positive in 38%. In the single variate analysis, there was a correlation with a positive PC-PTSD screen and the following: staying in New Orleans during the storm (odds ratio [OR] 1.73, 95% confidence interval [CI] 1.28-2.34), having material losses (OR 1.64, 95% CI 1.03-2.60), experiencing the death of a loved one (OR 1.96, 95% CI 1.35-1.87), needing health care during the storm (OR 2.01, 95% CI 1.48-2.73), and not having health care needs met during the storm (OR 2.00, 95% CI 1.26-3.18) or after returning to New Orleans (OR 2.29, 95% CI 1.40-3.73). In the

multivariate analysis, the death of a loved one (OR 1.87, 95% CI 1.26-2.78), being in New Orleans during the storm (OR 1.69, 95% CI 1.22-2.33), and seeking health care during the storm (OR 1.69, 95% CI 1.22-2.35) were associated with positive PC-PTSD screens. There was a high prevalence of PTSD in this ED population surveyed 1 year after hurricane Katrina. By targeting high-risk patients, disaster relief teams may be able to reduce the impact of PTSD in similar populations. Published by Elsevier Inc.

### 382. [Investigation of water vapor motion winds from geostationary satellites](#)

#### [NASA Technical Reports Server \(NTRS\)](#)

Velden, Christopher S.; Nieman, Steven J.; Wanzong, Steven

1994-01-01

Water vapor imagery from geostationary satellites has been available for over a decade. These data are used extensively by operational analysts and forecasters, mainly in a qualitative mode (Weldon and Holmes 1991). In addition to qualitative applications, motions deduced in animated water vapor imagery can be used to infer wind fields in cloudless regimes, thereby augmenting the information provided by cloud-drift wind vectors. Early attempts at quantifying the data by tracking features in water vapor imagery met with modest success (Stewart et al. 1985; Hayden and Stewart 1987). More recently, automated techniques have been developed and refined, and have resulted in upper-level wind observations comparable in quality to current operational cloud-tracked winds (Laurent 1993). In a recent study by Velden et al. (1993) it was demonstrated that wind sets derived from Meteosat-3 (M-3) water vapor imagery can provide important environmental wind information in data void areas surrounding tropical cyclones, and can positively impact objective track forecasts. M-3 was repositioned to 75W by the European Space Agency in 1992 in order to provide complete coverage of the Atlantic Ocean. Data from this satellite are being transmitted to the U.S. for operational use. Compared with the current GOES-7 (G-7) satellite (positioned near 112W), the M-3 water vapor channel contains a superior horizontal resolution (5 km vs. 16 km). In this paper, we examine wind sets derived using automated procedures from both GOES-7 and Meteosat-3 full disk water vapor imagery in order to assess this data as a potentially important source of large-scale wind information. As part of a product demonstration wind sets were produced twice a day at CIMSS during a six-week period in March and April (1994). These data sets are assessed in terms of geographic coverage, statistical accuracy, and meteorological impact through preliminary results of numerical model forecast studies.

### 383. ["Making Lemonade from Lemons:" Early Childhood Teacher Educators' Programmatic Responses to Hurricanes Katrina and Rita](#)

#### [ERIC Educational Resources Information Center](#)

DiCarlo, Cynthia F.; Burts, Diane C.; Buchanan, Teresa K.; Aghayan, Carol; Benedict, Joan

2007-01-01

This article describes how early childhood teacher education faculty at one university responded in the aftermath of hurricanes Katrina and Rita and used the disaster to enhance their undergraduate and graduate programs. They explain how they modeled developmentally appropriate practices while responding to community needs. Four companion articles

384. [Spatiotemporal exposome dynamics of soil lead and children's blood lead pre- and ten years post-Hurricane Katrina: Lead and other metals on public and private properties in the city of New Orleans, Louisiana, U.S.A.](#)

[PubMed](#)

Mielke, Howard W; Gonzales, Christopher R; Powell, Eric T; Mielke, Paul W

2017-05-01

Anthropogenic re-distribution of lead (Pb) principally through its use in gasoline additives and lead-based paints have transformed the urban exposome. This unique study tracks urban-scale soil Pb (SPb) and blood Pb (BPb) responses of children living in public and private communities in New Orleans before and ten years after Hurricane Katrina (29 August 2005). To compare and evaluate associations of pre- and ten years post-Katrina SPb and children's BPb on public and private residential census tracts in the core and outer areas of New Orleans, and to examine correlations between SPb and nine other soil metals. The Louisiana Healthy Housing and Childhood Lead Poisoning Prevention Program BPb ( $\mu\text{g}/\text{dL}$ ) data from pre- (2000-2005) and post-Katrina (2010-2015) for 6-year-old children. Data from public and adjacent private residential census tracts within core and outer areas are stratified from a database that includes 916 and 922 SPb and 13,379 and 4830 BPb results, respectively, from pre- and post-Katrina New Orleans. Statistical analyses utilize Multi-Response Permutation Procedure and Spearman's Rho Correlation. Pre- to Post-Katrina median SPb decreases in public and private core census tracts were from 285 to 55mg/kg and 710-291mg/kg, respectively. In public and private outer census tracts the median SPb decreased from 109 to 56mg/kg and 88-55mg/kg. Children's BPb percent  $\geq 5\mu\text{g}/\text{dL}$  on public and private core areas pre-Katrina was 63.2% and 67.5%, and declined post-Katrina to 7.6% and 20.2%, respectively. BPb decreases also occurred in outer areas. Soil Pb is strongly correlated with other metals. Post-Katrina re-building of public housing plus landscaping amends the exposome and reduces children's BPb. Most importantly, Hurricane Katrina revealed that decreasing the toxicants in the soil exposome is an effective intervention for decreasing children's BPb. Copyright © 2017 Elsevier Inc. All rights reserved.

385. [Changes in microbial community structure in the wake of Hurricanes Katrina and Rita](#)

[PubMed Central](#)

Amaral-Zettler, Linda A.; Rocca, Jennifer D.; LaMontagne, Michael G.; Dennett, Mark R.; Gast, Rebecca J.

2009-01-01

Hurricanes have the potential to alter the structures of coastal ecosystems and generate pathogen-laden floodwaters that threaten public health. To examine the impact of hurricanes on urban systems, we compared microbial community structures in samples collected after Hurricane Katrina and before and after Hurricane Rita. We extracted environmental DNA and sequenced small-subunit ribosomal RNA (SSU rRNA) gene clone libraries to survey microbial communities in floodwater, water and sediment samples collected from Lake Charles, Lake Pontchartrain, the 17th Street and Industrial Canals in New Orleans and raw sewage. Correspondence Analysis showed that microbial communities associated with sediments formed one cluster while communities associated with lake and Industrial Canal water formed a second. Communities associated with water from the 17th Street Canal and floodwaters collected in New Orleans showed similarity to communities in raw sewage and contained a number of sequences associated with possible pathogenic microbes. This suggests that a distinct microbial community developed in floodwaters following Hurricane Katrina and that microbial community structures as a whole might be sensitive indicators of ecosystem health and serve as "sentinels" of water quality in the environment. PMID:19174873

386. [Changes in microbial community structure in the wake of Hurricanes Katrina and Rita.](#)

[PubMed](#)

Amaral-Zettler, Linda A; Rocca, Jennifer D; Lamontagne, Michael G; Dennett, Mark R; Gast, Rebecca J

2008-12-15

Hurricanes have the potential to alter the structures of coastal ecosystems and generate pathogen-laden floodwaters that threaten public health. To examine the impact of hurricanes on urban systems, we compared microbial community structures in samples collected after Hurricane Katrina and before and after Hurricane Rita. We extracted environmental DNA and sequenced small-subunit rRNA (SSU rRNA) gene clone libraries to survey microbial communities in floodwater, water, and sediment samples collected from Lake Charles, Lake Pontchartrain, the 17th Street and Industrial Canals in New Orleans, and raw sewage. Correspondence analysis showed that microbial communities associated with sediments formed one cluster while communities associated with lake and Industrial Canal water formed a second. Communities associated with water from the 17th Street Canal and floodwaters collected in New Orleans showed similarity to communities in raw sewage and contained a number of sequences associated with possible pathogenic microbes. This suggests that a distinct microbial community developed in floodwaters following Hurricane Katrina and that microbial community structures as a whole might be sensitive indicators of ecosystem health and serve as "sentinels" of water quality in the environment.

387. [Performance Investigation of A Mix Wind Turbine Using A Clutch Mechanism At Low Wind Speed Condition](#)

[NASA Astrophysics Data System \(ADS\)](#)

Jamanun, M. J.; Misaran, M. S.; Rahman, M.; Muzammil, W. K.

2017-07-01

Wind energy is one of the methods that generates energy from sustainable resources. This technology has gained prominence in this era because it produces no harmful product to the society. There is two fundamental type of wind turbine are generally used this day which is Horizontal axis wind turbine (HAWT) and Vertical axis wind turbine (VAWT). The VAWT technology is more preferable compare to HAWT because it gives better efficiency and cost effectiveness as a whole. However, VAWT is known to have distinct disadvantage compared to HAWT; self-start ability and efficiency at low wind speed condition. Different solution has been proposed to solve these issues which includes custom design blades, variable angle of attack mechanism and mix wind turbine. A new type of clutch device was successfully developed in UMS to be used in a mix Savonius-Darrieus wind turbine configuration. The clutch system which barely audible when in operation compared to a ratchet clutch system interconnects the Savonius and Darrieus rotor; allowing the turbine to self-start at low wind speed condition as opposed to a standalone Darrieus turbine. The Savonius height were varied at three different size in order to understand the effect of the Savonius rotor to the mix wind turbine performance. The experimental result shows that the fabricated Savonius rotor show that the height of the Savonius rotor affecting the RPM for the turbine. The swept area (SA), aspect ratio (AR) and tip speed ratio (TSR) also calculated in this paper. The highest RPM recorded in this study is 90 RPM for Savonius rotor 0.22-meter height at 2.75 m/s. The Savonius rotor 0.22-meter also give the highest TSR for each range of speed from 0.75 m/s, 1.75 m/s and 2.75 m/s where it gives 1.03 TSR, 0.76 TSR, and 0.55 TSR.

388. [Schools Get Katrina Aid, Uncertainty: \\$645 Million May Not Cover Costs of Displaced Students](#)

[ERIC Educational Resources Information Center](#)

Klein, Alyson

2006-01-01

As federal aid for students uprooted by Hurricanes Katrina and Rita begins making its way to cash-strapped school districts, many educators are worried that the money Congress allocated will fall well short of their costs. Since the hurricanes damaged hundreds of schools in the Gulf Coast region and initially dispersed nearly 375,000 students,â€¦

389. [The effect of proximity to hurricanes Katrina and Rita on subsequent hurricane outlook and optimistic bias.](#)

[PubMed](#)

Trumbo, Craig; Lueck, Michelle; Marlatt, Holly; Peek, Lori

2011-12-01

This study evaluated how individuals living on the Gulf Coast perceived hurricane risk after Hurricanes Katrina and Rita. It was hypothesized that hurricane outlook and optimistic bias for hurricane risk would be associated positively with distance from the Katrina-Rita landfall (more optimism at greater distance), controlling for historically based hurricane risk and county population density, demographics, individual hurricane experience, and dispositional optimism. Data were collected in January 2006 through a mail survey sent to 1,375 households in 41 counties on the coast ( $n = 824$ , 60% response). The analysis used hierarchical regression to test hypotheses. Hurricane history and population density had no effect on outlook; individuals who were male, older, and with higher household incomes were associated with lower risk perception; individual hurricane experience and personal impacts from Katrina and Rita predicted greater risk perception; greater dispositional optimism predicted more optimistic outlook; distance had a small effect but predicted less optimistic outlook at greater distance (model  $R^2 = 0.21$ ). The model for optimistic bias had fewer effects: age and community tenure were significant; dispositional optimism had a positive effect on optimistic bias; distance variables were not significant (model  $R^2 = 0.05$ ). The study shows that an existing measure of hurricane outlook has utility, hurricane outlook appears to be a unique concept from hurricane optimistic bias, and proximity has at most small effects. Future extension of this research will include improved conceptualization and measurement of hurricane risk perception and will bring to focus several concepts involving risk communication. © 2011 Society for Risk Analysis.

### 390. [Katrina and Rita were lit up with lightning](#)

[NASA Astrophysics Data System \(ADS\)](#)

Shao, X.-M.; Harlin, J.; Stock, M.; Stanley, M.; Regan, A.; Wiens, K.; Hamlin, T.; Pongratz, M.; Suszcynsky, D.; Light, T.

Hurricanes generally produce very little lightning activity compared to other noncyclonic storms, and lightning is especially sparse in the eye wall and inner regions within tens of kilometers surrounding the eye [Molinari et al., 1994, 1999]. (The eye wall is the wall of clouds that encircles the eye of the hurricane.) Lightning can sometimes be detected in the outer, spiral rainbands, but the lightning occurrence rate varies significantly from hurricane to hurricane as well as within an individual hurricane's lifetime. Hurricanes Katrina and Rita hit the U.S. Gulf coasts of Louisiana, Mississippi, and Texas, and their distinctions were not just limited to their tremendous intensity and damage caused. They also differed from typical hurricanes in their lightning production rate.

### 391. [Investigation of Solar Wind Correlations and Solar Wind Modifications Near Earth by Multi-Spacecraft Observations: IMP 8, WIND and INTERBALL-1](#)

[NASA Technical Reports Server \(NTRS\)](#)

Paularena, Karolen I.; Richardson, John D.; Zastenker, Georgy N.

2002-01-01

The foundation of this Project is use of the opportunity available during the ISTP (International Solar-Terrestrial Physics) era to compare solar wind measurements obtained simultaneously by three spacecraft - IMP 8, WIND and INTERBALL-1 at wide-separated points. Using these data allows us to study three important topics: (1) the size and dynamics of near-Earth mid-scale (with dimension about 1-10 million km) and small-scale (with dimension about 10-100 thousand km) solar wind structures; (2) the reliability of the common assumption that solar wind conditions at the upstream Lagrangian (L1) point accurately predict the conditions affecting Earth's magnetosphere; (3) modification of the solar wind plasma and magnetic field in the regions near the Earth magnetosphere, the foreshock and the magnetosheath. Our Project was dedicated to these problems. Our research has made substantial contributions to the field and has lead others to undertake similar work.

392. [Guess Who's Coming to Dinner: The Importance of Multiculturalism in the Aftermath of Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Moore, Alicia L.

2007-01-01

The importance of multiculturalism in the aftermath of Hurricane Katrina can be illustrated through a comparative view of the 1967 controversial, seminal, and Academy Award winning film, "Guess Who's Coming to Dinner". In the film, a multicultural cast starred in a groundbreaking tale of interracial marriage—then still illegal in some United States.

393. [Religious Coping and Psychological and Behavioral Adjustment After Hurricane Katrina.](#)

[PubMed](#)

Henslee, Amber M; Coffey, Scott F; Schumacher, Julie A; Tracy, Melissa; Norris, Fran H; Galea, Sandro

2015-01-01

Positive and negative religious coping are related to positive and negative psychological adjustment, respectively. The current study examined the relation between religious coping and PTSD, major depression, quality of life, and substance use among residents residing in Mississippi at the time of Hurricane Katrina. Results indicated that negative religious coping was positively associated with major depression and poorer quality of life and positive religious coping was negatively associated with PTSD, depression, poorer quality of life, and increased alcohol use. These results suggest that

mental health providers should be mindful of the role of religious coping after traumatic events such as natural disasters.

394. [Positive Traits versus Previous Trauma: Racially Different Correlates with PTSD Symptoms among Hurricane Katrina-Rita Volunteers](#)

[ERIC Educational Resources Information Center](#)

Ai, Amy L.; Plummer, Carol; Kanno, Hanae; Heo, Grace; Appel, Hoa B.; Simon, Cassandra E.; Spigner, Clarence

2011-01-01

This study compared risks and protective factors for acquiring symptoms of posttraumatic stress disorder (PTSD) between African-American (n = 299) and European-American (n = 206) student volunteers 3 months after Hurricanes Katrina and Rita (H-KR). Respondents retrospectively provided information on peritraumatic emotional reactions and previous

395. [Impediments to recovery in New Orleans' Upper and Lower Ninth Ward: one year after Hurricane Katrina.](#)

[PubMed](#)

Green, Rebekah; Bates, Lisa K; Smyth, Andrew

2007-12-01

In the aftermath of Hurricane Katrina, a rapid succession of plans put forward a host of recovery options for the Upper and Lower Ninth Ward in New Orleans. Much of the debate focused on catastrophic damage to residential structures and discussions of the capacity of low-income residents to repair their neighbourhoods. This article examines impediments to the current recovery process of the Upper and Lower Ninth Ward, reporting results of an October 2006 survey of 3,211 plots for structural damage, flood damage and post-storm recovery. By examining recovery one year after Hurricane Katrina, and by doing so in the light of flood and structural damage, it is possible to identify impediments to recovery that may disproportionately affect these neighbourhoods. This paper concludes with a discussion of how pre- and post-disaster inequalities have slowed recovery in the Lower Ninth Ward and of the implications this has for post-disaster recovery planning there and elsewhere.

396. [Preparing for the Worst: Psychological Excellence of First Responders - A Katrina Lessons Learned Study](#)

[DTIC Science & Technology](#)

2008-01-01

cases on human cognition and performance. For instance, when you learn to fly an airplane, you will be instructed to use a simple rule to avoid...Existing Training Technologies; First Responders; Katrina; Lesson Learned 16. SECURITY CLASSIFICATION OF: 17. LIMITATION OF ABSTRACT 18. NUMBER... student . Based in Maryland, the training institute prepares first responders using online learning courses or training exercises. Such topics

397. [Earthshots: Satellite images of environmental change after Hurricane Katrina, New Orleans, Louisiana, USA](#)

[USGS Publications Warehouse](#)

Adamson, Thomas

2016-01-01

Landsat recorded the devastation and continues to monitor the region's wetlands. New Orleans, Louisiana, is near the bottom of the images along the Mississippi River. The city lies just south of Lake Pontchartrain. Hundreds of square miles of wetlands were lost after Katrina. Some marshlands became permanent water bodies. Some projects now aim to bring back marshlands because of their value in defending the coastline from storms.

398. [Performance of two oak species and three planting stocks on lands damaged by hurricane Katrina](#)

[Treesearch](#)

John A. Conrad III; Andrew W. Ezell; Emily B. Schultz; John D. Hodges

2015-01-01

Hurricane Katrina had a devastating impact on bottomland hardwood forests in 2005. Artificial regeneration was considered the most appropriate method for reforesting these areas, but few studies have evaluated methods for artificially regenerating oaks on clear cut sites in the southern United States. First-year survival and growth of two oak species, live oak (*Quercus...*

399. [Lessons from Hurricane Katrina: The Employment Effects of The Mass Dismissal of New Orleans Teachers](#)

[ERIC Educational Resources Information Center](#)

Lincove, Jane Arnold; Barrett, Nathan; Strunk, Katharine O.

2018-01-01

In the aftermath of Hurricane Katrina, the Orleans Parish school district fired over 4,000 public school teachers as the city underwent a transition to a market-based system of charter schools. Using

administrative data, we examine whether and how these teachers returned to public school employment and teaching. We estimate that school reform and

#### 400. [Katrina and the Privilege of Despair: Welch's Model of Connection in Teaching for Social Justice](#)

[ERIC Educational Resources Information Center](#)

Brown, Alicia D.; Brooks, Julia G.; Gunzenhauser, Michael G.

2008-01-01

In this essay, the authors note a particular air of apathy in relation to the post-Katrina era expressed in teacher education classes. They are concerned with what the cultural levees mean for justice-oriented educators. How might they find ways to foster in their students connections of empathy and solidarity with those experiencing these

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#### 401. [Longitudinal Impact of Attachment-Related Risk and Exposure to Trauma among Young Children after Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Osofsky, Joy; Kronenberg, Mindy; Bocknek, Erika; Hansel, Tonya Cross

2015-01-01

Background: Research suggests that young childhood is a dynamic developmental phase during which risks to attachment figures as well as traumatic events may be particularly important. The loss and

disruption associated with Hurricane Katrina highlighted the vulnerabilities and special needs of young children exposed to natural disaster. Objective:â€¦

402. [Collaborative Research in a Post-Katrina Environment: The Facilitation, Communication, and Ethical Considerations of University Researchers](#)

[ERIC Educational Resources Information Center](#)

Peters, Gary; McNeese, Rose M.

2008-01-01

The aftermath of Hurricane Katrina brought devastation and confusion to the Mississippi Gulf Coast region on August 29, 2005. A desperate need for leadership, collaboration, and coordination of relief and recovery efforts was revealed during a March 2007 strategic planning session involving 96 organizations, groups, agencies, and researchersâ€¦

403. [The Hancock County Katrina Relief Initiative: Focusing Collaborative Leadership to Facilitate Recovery after a Natural Disaster](#)

[ERIC Educational Resources Information Center](#)

McNeese, Rose M.; Peters, Gary

2009-01-01

Eighteen months after Hurricane Katrina devastated the Mississippi coastal community of Hancock County on August 29, 2005, volunteers and organizations assisting with recovery in the area found chaos, confusion, and a desperate need for leadership. This qualitative study reflects the efforts of two University of Southern Mississippi professors asâ€¦

404. [Wind vs Water in Hurricanes: The Challenge of Multi-peril Hazard Modeling](#)

[NASA Astrophysics Data System \(ADS\)](#)

Powell, M. D.

2017-12-01

With the advancing threat of Sea Level Rise much of the U. S. is in danger of falling into the "protection gap". Residential property flood risk is not yet covered by the insurance market. Many coastal properties are not paying into the National Flood Insurance Program (NFIP) at premiums commensurate with the risk. This is exasperated by the program being deep in debt, despite only covering a fraction of the potential loss, while windstorm insurance covers up to replacement value. This results in a battle that benefits nobody. Any significant hurricane will include both wind and storm

surge perils at the same time and any coastal property has to contend with the risk of damage by both. If you have extensive flood damage your wind storm policy might deny your claim and your flood policy (if you even have one) will in most cases be constrained to a \$250,000 limit. Bring on the litigators! Some homeowners will claim that the wind destroyed the home first and then it was carried away by flood waters or pulverized by waves. Insurers might respond that the storm surge did all the damage and deny the claim. We've seen this already following Hurricane Katrina in 2005, and Hurricane Ike in 2008, with thousands of litigation claims and a cottage industry of scientists serving as expert witnesses on both sides of the aisle. Congress responded in 2012 with the Coastal Act, which provided an "unfunded mandate" directing NOAA to provide wind and water level data to FEMA for input to their "Coastal Formula" for attributing loss to wind and water. The results of the formula would then limit the amount paid by the NFIP by subtracting out the wind loss portion. The Texas Windstorm Insurance Association (TWIA) went further by assembling a panel of experts to recommend guidelines for how the state should respond to future hurricane impacting properties on the Texas coast. The expert panel report was released in April of 2016, and TWIA is currently developing a comprehensive

405. [Transformative experiences for Hurricanes Katrina and Rita disaster volunteers.](#)

[PubMed](#)

Clukey, Lory

2010-07-01

The massive destruction caused by Hurricanes Katrina and Rita in 2005 provided an opportunity for many volunteers to be involved with disaster relief work. Exposure to devastation and personal trauma can have long-lasting and sometimes detrimental effects on people providing help. This qualitative study explored the experience of volunteer relief workers who provided disaster relief services after the hurricanes. Three major themes emerged: emotional reactions that included feelings of shock, fatigue, anger and grief as well as sleep disturbances; frustration with leadership; and life-changing personal transformation. Stress reactions were noted but appeared to be mitigated by feelings of compassion for the victims and personal satisfaction in being able to provide assistance. Suggestions are provided for further research.

406. [Indoor environmental exposures for children with asthma enrolled in the HEAL study, post-Katrina New Orleans.](#)

[PubMed](#)

Grimsley, L Faye; Chulada, Patricia C; Kennedy, Suzanne; White, LuAnn; Wildfire, Jeremy; Cohn, Richard D; Mitchell, Herman; Thornton, Eleanor; El-Dahr, Jane; Mvula, Mosanda M; Sterling, Yvonne; Martin, William J; Stephens, Kevin U; Lichtveld, Maureen

2012-11-01

Rain and flooding from Hurricane Katrina resulted in widespread growth of mold and bacteria and production of allergens in New Orleans, Louisiana, which may have led to increased exposures and morbidity in children with asthma. The goal of the Head-off Environmental Asthma in Louisiana (HEAL) study was to characterize post-Katrina exposures to mold and allergens in children with asthma. The homes of 182 children with asthma in New Orleans and surrounding parishes were evaluated by visual inspection, temperature and moisture measurements, and air and dust sampling. Air was collected using vacuum-pump spore traps and analyzed for > 30 mold taxa using bright field microscopy. Dust was collected from the children's beds and bedroom floors and analyzed for mouse (*Mus m 1*), dust mite (*Der p 1*), cockroach (*Bla g 1*), and mold (*Alternaria mix*) allergens using ELISA. More than half (62%) of the children were living in homes that had been damaged by rain, flooding, or both. Geometric mean indoor and outdoor airborne mold levels were 501 and 3,958 spores/m<sup>3</sup>, respectively. *Alternaria* antigen was detected in dust from 98% of homes, with 58% having concentrations > 10  $\mu\text{g/g}$ . *Mus m 1*, *Der p 1*, and *Bla g 1* were detected in 60%, 35%, and 20% of homes, respectively, at low mean concentrations. Except for *Alternaria* antigen in dust, concentrations of airborne mold (ratio of indoor to outdoor mold) and dust allergens in the homes of HEAL children were lower than measurements found in other studies, possibly because of extensive post-Katrina mold remediation and renovations, or because children moved into cleaner homes upon returning to New Orleans.

#### 407. [Past, Present, and Future Sea Level Change Assessments of Storm Surge: A Case Study Using Hurricane Katrina](#)

[NASA Astrophysics Data System \(ADS\)](#)

Bilskie, M. V.; Medeiros, S. C.; Hagen, S. C.

2012-12-01

Major Gulf hurricanes have a high probability of impacting the northern Gulf of Mexico, especially coastal Mississippi (Resio, 2007). Due to the wide and flat continental shelf, this area provides near-perfect geometry for high water levels under tropical cyclonic conditions. Further, it is generally agreed that global sea levels due to climate change will rise anywhere from 18 to 100 cm by the year 2100 (Donoghue, 2011, IPCC, 2007) with some projecting even higher. Further, it is recognized that coastal Mississippi is highly susceptible to a retreating shoreline from sea level rise coupled with predictions for less frequent, more intense tropical storms from an increase in sea surface temperature (SST) (Trenberth, 2005, Webster, et al., 2005). A fully-validated, state-of-the-art ADCIRC+UnSWAN hydrodynamic model of coastal Mississippi was utilized to simulate Hurricane Katrina with present day sea level conditions. Using present day as a base scenario, past and future sea level changes were simulated. A regression was performed at local tide gauges to estimate past and project future sea levels. Also, surface roughness (i.e. Manning's n and wind reduction factors) was adjusted to reflect past landcover conditions as well as estimate future landcover change. Here, past, present and future sea level scenarios are modeled using a dynamic approach, along with Hurricane Katrina, and compared to present dynamic responses to sea level rise. The dynamic results will be

compared and contrasted with a simpler bathtub model (static) approach. It will be demonstrated that water levels do not change linearly with modeled sea level cases (i.e. a 50 cm rise in sea level will not result in an additional 50 cm of water level at a given location) and are highly variable to changes in local conditions (e.g. topography, bathymetry, and surface roughness). Further, nearshore wind-wave conditions are affected by changes in local sea level due to the changes in momentum transfer from the

#### 408. [Wake characteristics of wind turbines in utility-scale wind farms](#)

[NASA Astrophysics Data System \(ADS\)](#)

Yang, Xiaolei; Foti, Daniel; Sotiropoulos, Fotis

2017-11-01

The dynamics of turbine wakes is affected by turbine operating conditions, ambient atmospheric turbulent flows, and wakes from upwind turbines. Investigations of the wake from a single turbine have been extensively carried out in the literature. Studies on the wake dynamics in utility-scale wind farms are relatively limited. In this work, we employ large-eddy simulation with an actuator surface or actuator line model for turbine blades to investigate the wake dynamics in utility-scale wind farms. Simulations of three wind farms, i.e., the Horns Rev wind farm in Denmark, Pleasant Valley wind farm in Minnesota, and the Vantage wind farm in Washington are carried out. The computed power shows a good agreement with measurements. Analysis of the wake dynamics in the three wind farms is underway and will be presented in the conference. This work was supported by Xcel Energy (RD4-13). The computational resources were provided by National Renewable Energy Laboratory.

#### 409. [Measuring exposure in Hurricane Katrina: a meta-analysis and an integrative data analysis.](#)

[PubMed](#)

Chan, Christian S; Rhodes, Jean E

2014-01-01

To date there is no consensus on the operationalization of exposure severity in the study of the impact of natural disasters. This is problematic because incomplete and inconsistent measurement of exposure limits the internal and external validity of disaster studies. The current paper examined the predictive validity of severity measures in two interrelated studies of Hurricane Katrina survivors. First, in a meta-analysis of eight studies that measured both exposure severity and posttraumatic stress, the effect size was estimated to be  $d = .266$ . The moderating effects of sample and study characteristics were examined and we found that minority status and number of stressors assessed were significant moderators. Second, in an integrative data analysis of five independent samples of Hurricane Katrina survivors, the impact of specific disaster-related stressors on mental health was compared. Threat to physical integrity of self and others were found to have the strongest

association with posttraumatic stress (PTS) and general psychological distress (GPD). The lack of basic necessities, such as food, water, and medical care, and loss of pet were also found to be strongly associated with both PTS and GPD. The results from the two studies are integrated and their implication for disaster research and relief are discussed.

#### 410. [Measuring Exposure in Hurricane Katrina: A Meta-Analysis and an Integrative Data Analysis](#)

[PubMed Central](#)

Chan, Christian S.; Rhodes, Jean E.

2014-01-01

To date there is no consensus on the operationalization of exposure severity in the study of the impact of natural disasters. This is problematic because incomplete and inconsistent measurement of exposure limits the internal and external validity of disaster studies. The current paper examined the predictive validity of severity measures in two interrelated studies of Hurricane Katrina survivors. First, in a meta-analysis of eight studies that measured both exposure severity and posttraumatic stress, the effect size was estimated to be  $r = .266$ . The moderating effects of sample and study characteristics were examined and we found that minority status and number of stressors assessed were significant moderators. Second, in an integrative data analysis of five independent samples of Hurricane Katrina survivors, the impact of specific disaster-related stressors on mental health was compared. Threat to physical integrity of self and others were found to have the strongest association with posttraumatic stress (PTS) and general psychological distress (GPD). The lack of basic necessities, such as food, water, and medical care, and loss of pet were also found to be strongly associated with both PTS and GPD. The results from the two studies are integrated and their implication for disaster research and relief are discussed. PMID:24713851

#### 411. [The Looting of the American Dream: The Post-Katrina Rubble of Public Education in Louisiana](#)

[ERIC Educational Resources Information Center](#)

Fischetti, John C.; Kirylo, James D.

2014-01-01

The mishandling of pre- and post-Hurricane Katrina rescue and recovery is stunningly similar to the mishandling by those who have been in charge of Louisiana public education over the past seven years. This includes the devaluing of the teaching profession, the rise of the marketization of education, and the minimizing of the common good. In this

#### 412. [The Psychological Impact from Hurricane Katrina: Effects of Displacement and Trauma Exposure on University Students](#)

[ERIC Educational Resources Information Center](#)

Davis, Thompson E., III; Grills-Taquechel, Amie E.; Ollendick, Thomas H.

2010-01-01

The following study examined the reactions of university students to Hurricane Katrina. A group of 68 New Orleans area students who were displaced from their home universities as a result of the hurricane were matched on race, gender, and age to a sample of 68 students who had been enrolled at Louisiana State University (LSU) prior to the hurricane.

413. [Catholic Schools Reopening after Katrina: Officials Are Pleased by Turnout in Archdiocese of New Orleans](#)

[ERIC Educational Resources Information Center](#)

Zehr, Mary Ann

2005-01-01

Last week, in the Archdiocese of New Orleans students returned to class in 37 Roman Catholic schools that opened for the first time since Hurricane Katrina blasted the region six weeks ago. School officials were surprised to see families returning much sooner and in greater numbers than expected. With the reopening of six high schools and 30 elementary schools,

414. [PTSD Symptoms and Somatic Complaints Following Hurricane Katrina: The Roles of Trait Anxiety and Anxiety Sensitivity](#)

[ERIC Educational Resources Information Center](#)

Hensley, Lauren; Varela, R. Enrique

2008-01-01

This study examined the relationships between trait anxiety and anxiety sensitivity and the outcome variables posttraumatic stress disorder (PTSD) symptoms and somatic complaints following a major hurricane. Sixth and seventh graders in the New Orleans area (N=302) were surveyed 5 to 8 months following Hurricane Katrina. As expected, hurricane-related PTSD symptoms were associated with anxiety sensitivity.

415. [Restoration of medical oncology services at LSU Interim Public Hospital in New Orleans after Hurricane Katrina: a two-year experience of LSUHSC.](#)

[PubMed](#)

Harmon, Rachael E; Boulmay, Brian C

2011-01-01

Oncology services at Charity Hospital were discontinued following Hurricane Katrina in August 2005. Medical oncology and chemotherapy services resumed at the Louisiana State University Interim Public Hospital in 2007. Demographic, clinical, and displacement data of the re-established patient cohort were reviewed. Patients evaluated in the Louisiana State University Health Sciences Center (LSUHSC) Oncology Clinics from September 1, 2007, to August 31, 2009, were identified and data collected included time from diagnosis of malignancy to initial oncology evaluation, insurance status, percentage displaced for six months or more due to Hurricane Katrina, ethnicity, referrals for radiation oncology, and the number of outpatient clinical encounters (OCE). 464 patients were evaluated in the study time period. Sixty-five percent of the patients had new cancer diagnoses and 35% re-established cancer care in the Charity System and a substantial proportion were either unfunded or had Medicaid coverage. Thirty-four percent were confirmed to be displaced from New Orleans for greater than six months and the majority of patients were black. The majority of new cancer diagnoses were breast, lung, and colon cancer. Human immunodeficiency virus (HIV) positive patients made up 7.5% of the patient cohort. There was a 70% decline in patient volumes following Hurricane Katrina. Oncology services for a minority-based, underinsured patient population were severely impacted by Hurricane Katrina. Following the storm, persistent systemwide resource limitations led to suboptimal timeliness of medical oncology evaluations. Health care systems serving underinsured patients require a disaster plan to minimize interruption of oncology care. Our experience illustrates the need for resources to ensure rapid re-establishment of care for economically disadvantaged patients following natural disasters.

416. [HURRICANE CHANGES: EXAMINING ENHANCED MOTIVATION TO CHANGE DRUG USING BEHAVIORS AMONG KATRINA EVACUEES.](#)

[PubMed](#)

Tiburcio, Nelson Jose; Twiggs, Robert; Dunlap, Eloise E

2009-12-01

Substance use disorders are credited with greater amounts of death and illness than all other preventable health problems. Billions of dollars are spent on efforts to control drug supplies and fund various treatment approaches, but relatively little resources have been directed towards investigating how environmental conditions can contribute to or detract from substance user's individual motivation to change behavior. Hurricane Katrina caused untold property damage and upheaval, in addition to the vast numbers of people whose lives it drastically affected. This article examines how surviving this ordeal, subsequent evacuation, and eventual resettlement in New Orleans or re-location to a different city (in this case, Houston) impacted individuals' motivation to change their substance use patterns and behaviors. This article's approach is grounded in the values of the social work profession and examines: 1) the role of life events in motivating change of substance using behaviors

in the absence of formal treatment interventions; and 2) participant resilience in overcoming the adversities inherent to this disaster.

417. [Analysis of media agenda setting during and after Hurricane Katrina: implications for emergency preparedness, disaster response, and disaster policy.](#)

[PubMed](#)

Barnes, Michael D; Hanson, Carl L; Novilla, Len M B; Meacham, Aaron T; McIntyre, Emily; Erickson, Brittany C

2008-04-01

Media agenda setting refers to the deliberate coverage of topics or events with the goal of influencing public opinion and public policy. We conducted a quantitative content analysis of 4 prominent newspapers to examine how the media gathered and distributed news to shape public policy priorities during Hurricane Katrina. The media framed most Hurricane Katrina stories by emphasizing government response and less often addressing individuals' and communities' level of preparedness or responsibility. Hence, more articles covered response and recovery than mitigation and preparation. The newspapers studied focused significantly more on government response than on key public health roles in disaster management. We discuss specific implications for public health professionals, policymakers, and mass media so that, in the future, coordination can be enhanced among these entities before, during, and after disasters occur.

418. [Providing Housing, Food and Medical Support for 25,000 Katrina Evacuees with 12 Hours Notice: The Harris County Medical Support of the Superdome Evacuees](#)

[NASA Technical Reports Server \(NTRS\)](#)

Hamilton, Douglas; Smart, Kieran; Gavagan, Tom

2006-01-01

Hurricane Katrina was responsible for trapping 25,000 people in the New Orleans Superdome and isolating many others throughout Louisiana and Mississippi. The transport of these evacuees to the Reliant Park (Houston, Texas) used 500 buses each containing about 55 people. Processing the arriving evacuees included addressing their health status and medical needs as follows: an initial triage at disembarkation, a secondary triage in the Reliant Astrodome and Center, and definitive clinical care in the Reliant Arena "Katrina" Clinic. Baylor College of Medicine (BCM) physicians boarded buses and identified the sickest for emergency transport to Harris County Hospital District (HCHD) hospitals. BCM departments represented included pediatrics, family and community medicine, internal medicine, radiology, obstetrics and gynecology, orthopedics, surgery, and psychiatry. Astrodome and Center triage was managed by BCM physicians and staffed by HCHD Nurses and volunteers from Texas and beyond. The Reliant Astrodome, Center and Arena reached peak

headcounts of 15,000, 4500, and 2500, respectively. Most evacuees visiting the triage sites in the Astrodome and Center were treated using "over-the-counter" medications with the remaining being transported to the "Katrina" clinic. The clinic was equipped with a lab, pharmacy, digital X-ray, and ultrasound machines in addition to electronic patient records created using 80 computer terminals. The Katrina clinic saw more than 15,000 patients during 15 days of operations (2,000 on the first full day), administered 10,000 tetanus shots, and filled thousands of prescriptions. At the peak of operations, the clinic saw 150 patients/hour with 25 physicians scheduled for each 12-hour shift. Approximately 900 people were transported to hospital emergency rooms. Within 3 weeks of arriving at the Reliant Park facilities, more than 90% of the families found permanent housing, enrolled children in schools, and found work. Using data obtained from

419. [Terrestrial Lidar Datasets of New Orleans, Louisiana, Levee Failures from Hurricane Katrina, August 29, 2005](#)

[USGS Publications Warehouse](#)

Collins, Brian D.; Kayen, Robert; Minasian, Diane L.; Reiss, Thomas

2009-01-01

Hurricane Katrina made landfall with the northern Gulf Coast on August 29, 2005, as one of the strongest hurricanes on record. The storm damage incurred in Louisiana included a number of levee failures that led to the inundation of approximately 85 percent of the metropolitan New Orleans area. Whereas extreme levels of storm damage were expected from such an event, the catastrophic failure of the New Orleans levees prompted a quick mobilization of engineering experts to assess why and how particular levees failed. As part of this mobilization, civil engineering members of the United States Geological Survey (USGS) performed terrestrial lidar topographic surveys at major levee failures in the New Orleans area. The focus of the terrestrial lidar effort was to obtain precise measurements of the ground surface to map soil displacements at each levee site, the nonuniformity of levee height freeboard, depth of erosion where scour occurred, and distress in structures at incipient failure. In total, we investigated eight sites in the New Orleans region, including both earth and concrete floodwall levee breaks. The datasets extend from the 17th Street Canal in the Orleans East Bank area to the intersection of the Gulf Intracoastal Waterway (GIWW) with the Mississippi River Gulf Outlet (MRGO) in the New Orleans East area. The lidar scan data consists of electronic files containing millions of surveyed points. These points characterize the topography of each levee's postfailure or incipient condition and are available for download through online hyperlinks. The data serve as a permanent archive of the catastrophic damage of Hurricane Katrina on the levee systems of New Orleans. Complete details of the data collection, processing, and georeferencing methodologies are provided in this report to assist in the visualization and analysis of the data by future users.

420. [Religious Coping and Psychological and Behavioral Adjustment after Hurricane Katrina](#)

[PubMed Central](#)

Henslee, Amber M.; Coffey, Scott F.; Schumacher, Julie A.; Tracy, Melissa; Norris, Fran; Galea, Sandro

2016-01-01

Positive and negative religious coping are related to positive and negative psychological adjustment, respectively. The current study examined the relation between religious coping and PTSD, major depression, quality of life, and substance use among residents residing in Mississippi at the time of Hurricane Katrina. Results indicated that negative religious coping was positively associated with major depression and poorer quality of life and positive religious coping was negatively associated with PTSD, depression, poorer quality of life, and increased alcohol use. These results suggest that mental health providers should be mindful of the role of religious coping after traumatic events such as natural disasters. PMID:25275223

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421. [Relationships between common forest metrics and realized impacts of Hurricane Katrina on forest resources in Mississippi](#)

[Treesearch](#)

Sonja N. Oswald; Christopher M. Oswald

2008-01-01

This paper compares and contrasts hurricane-related damage recorded across the Mississippi landscape in the 2 years following Katrina with initial damage assessments based on modeled parameters by the USDA Forest Service. Logistic and multiple regressions are used to evaluate the influence of stand characteristics on tree damage probability. Specifically, this paper...

422. [Children's Reactions to Katrina and Rita: A Ph.D. Student's Reflection after Observing His Own Children](#)

[ERIC Educational Resources Information Center](#)

Durham, R. Sean

2007-01-01

A graduate student in early childhood education discusses observations of his children during and after Hurricanes Rita and Katrina struck the Gulf Coast. He relates his use of responsive parenting and provides examples of his children's learning and play that emerged after the storms. He reflects upon how aspects of developmentally appropriate

423. [23S rRNA gene-based enterococci community signatures in Lake Pontchartrain, Louisiana, USA, following urban runoff inputs after Hurricane Katrina.](#)

[PubMed](#)

Bae, Hee-Sung; Hou, Aixin

2013-02-01

Little is known about the impacts of fecal polluted urban runoff inputs on the structure of enterococci communities in estuarine waters. This study employed a 23S rRNA gene-based polymerase chain reaction (PCR) assay with newly designed genus-specific primers, Ent127F-Ent907R, to determine the possible impacts of Hurricane Katrina floodwaters via the 17th Street Canal discharge on the community structure of enterococci in Lake Pontchartrain. A total of 94 phlotypes were identified through the restriction fragment length polymorphism (RFLP) screening of 494 clones while only 8 phlotypes occurred among 88 cultivated isolates. Sequence analyses of representative phlotypes and their temporal and spatial distribution in the lake and the canal indicated the Katrina floodwater input introduced a large portion of *Enterococcus flavescens*, *Enterococcus casseliflavus*, and *Enterococcus dispar* into the lake; typical fecal groups *Enterococcus faecium*, *Enterococcus durans*, *Enterococcus hirae*, and *Enterococcus mundtii* were detected primarily in the floodwater-impacted waters. This study provides a global picture of enterococci in estuarine waters impacted by Hurricane Katrina-derived urban runoff. It also demonstrates the culture-independent PCR approach using 23S rRNA gene as a molecular marker could be a good alternative in ecological studies of enterococci in natural environments to overcome the limitation of conventional cultivation methods.

424. [Unique and related predictors of major depressive disorder, posttraumatic stress disorder, and their comorbidity after Hurricane Katrina.](#)

[PubMed](#)

Nillni, Yael I; Nosen, Elizabeth; Williams, Patrick A; Tracy, Melissa; Coffey, Scott F; Galea, Sandro

2013-10-01

The current study examined demographic and psychosocial factors that predict major depressive disorder (MDD) and comorbid MDD/posttraumatic stress disorder (MDD/PTSD) diagnostic status after Hurricane Katrina, one of the deadliest and costliest hurricanes in the history of the United States. This study expanded on the findings published in the article by Galea, Tracy, Norris, and Coffey (*J Trauma Stress* 21:357-368, 2008), which examined the same predictors for PTSD, to better understand related and unique predictors of MDD, PTSD, and MDD/PTSD comorbidity. A total of 810 individuals representative of adult residents living in the 23 southernmost counties of Mississippi before Hurricane Katrina were interviewed. Ongoing hurricane-related stressors, low social support, and hurricane-related financial loss were common predictors of MDD, PTSD, and MDD/PTSD, whereas educational and marital status emerged as unique predictors of MDD. Implications for postdisaster relief efforts that address the risk for both MDD and PTSD are discussed.

425. [Effects of hurricanes Katrina and Rita on the chemistry of bottom sediments in Lake Pontchartrain, Louisiana, USA](#)

[USGS Publications Warehouse](#)

Van Metre, P.C.; Horowitz, A.J.; Mahler, B.J.; Foreman, W.T.; Fuller, C.C.; Burkhardt, M.R.; Elrick, K.A.; Furlong, E.T.; Skrobialowski, S.C.; Smith, J.J.; Wilson, J.T.; Zaugg, S.D.

2006-01-01

The effects of Hurricanes Katrina and Rita and the subsequent unwatering of New Orleans, Louisiana, on the sediment chemistry of Lake Pontchartrain were evaluated by chemical analysis of samples of street mud and suspended and bottom sediments. The highest concentrations of urban-related elements and compounds (e.g., Pb, Zn, polycyclic aromatic hydrocarbons, and chlordane) in bottom sediments exceeded median concentrations in U.S. urban lakes and sediment-quality guidelines. The extent of the elevated concentrations was limited, however, to within a few hundred meters of the mouth of the 17th Street Canal, similar to results of historical assessments. Chemical and radionuclide analysis of pre- and post-Hurricane Rita samples indicates that remobilization of near-shore sediment by lake currents and storms is an ongoing process. The effects of Hurricanes Katrina and Rita on the sediment chemistry of Lake Pontchartrain are limited spatially and are most likely transitory. ?? 2006 American Chemical Society.

426. [Broad-scale response of landbird migration to the immediate effects of Hurricane Katrina: Chapter 6B in Science and the storms-the USGS response to the hurricanes of 2005](#)

[USGS Publications Warehouse](#)

Barrow, Wylie; Buler, J.; Couvillion, Brady R.; Diehl, Robb; Faulkner, Stephen; Moore, F.; Randall, Lori

2007-01-01

It was the midst of songbird migration season when Hurricane Katrina hit the Louisiana coast in 2005. Typically these birds fatten up in Gulf Coast river bottomland forest for the long flight to Central and South America. After Katrina stripped plants of leaves, fruits, and insects in the fertile bottomlands of the Pearl River, weather radar indicated that migrant birds increased their use of adjacent pine woodlands.

#### 427. [A View of Hurricane Katrina with Early 21st Century Technology](#)

##### [NASA Technical Reports Server \(NTRS\)](#)

Lin, Xin; Li, J.-L.; Suarez, M. J.; Tompkins, A. M.; Waliser, D. E.; Rienecker, M. M.; Bacmeister, J.; Jiang, J.; Wu, H.-T.; Tassone, C. M.

2006-01-01

Recent advances in space-borne observations and numerical weather prediction models provide new opportunities for improving hurricane forecasts. In this study, state-of-the-art satellite observations are used to document the evolution of one of the most devastating tropical cyclones ever to hit the United States: Hurricane Katrina. The ECMWF and NASA global high-resolution forecasts, the latter being run in experimental mode, are compared with satellite observations, with a focus on precipitation and cloud processes. Future directions on modeling and observations are briefly discussed.

#### 428. [Trajectories of psychological distress among low-income, female survivors of Hurricane Katrina.](#)

##### [PubMed](#)

Lowe, Sarah R; Rhodes, Jean E

2013-01-01

The purpose of this study was to investigate trajectories of psychological distress among low-income, primarily unmarried and African American women who survived Hurricane Katrina ( $N = 386$ ). Data were collected in the year prior to the hurricane as well as approximately 1 and 3 years thereafter. Using Latent Class Growth Analysis (LCGA), we detected 6 distinct trajectory groups. Over half of the participants fit into a trajectory consistent with resilience; that is, they maintained low levels of psychological distress over the course of the study, but experienced an elevation in symptoms at the first predisaster time point followed by a return to predisaster levels. The other trajectories reflected a range of psychological responses to disasters and indicated that predisaster functioning had a major influence on postdisaster psychological outcomes. Degree of exposure to hurricane-related stressors, experiences of human and pet bereavement, perceived social support, and socioeconomic status were significant predictors of trajectory group membership. Implications for research and policy are discussed. © 2013 American Orthopsychiatric Association.

429. [Indoor Environmental Exposures for Children with Asthma Enrolled in the HEAL Study, Post-Katrina New Orleans](#)

[PubMed Central](#)

Chulada, Patricia C.; Kennedy, Suzanne; White, LuAnn; Wildfire, Jeremy; Cohn, Richard D.; Mitchell, Herman; Thornton, Eleanor; El-Dahr, Jane; Mvula, Mosanda M.; Sterling, Yvonne; Martin, William J.; Stephens, Kevin U.; Lichtveld, Maureen

2012-01-01

Background: Rain and flooding from Hurricane Katrina resulted in widespread growth of mold and bacteria and production of allergens in New Orleans, Louisiana, which may have led to increased exposures and morbidity in children with asthma. Objectives: The goal of the Head-off Environmental Asthma in Louisiana (HEAL) study was to characterize post-Katrina exposures to mold and allergens in children with asthma. Methods: The homes of 182 children with asthma in New Orleans and surrounding parishes were evaluated by visual inspection, temperature and moisture measurements, and air and dust sampling. Air was collected using vacuum-pump spore traps and analyzed for > 30 mold taxa using bright field microscopy. Dust was collected from the children's beds and bedroom floors and analyzed for mouse (*Mus m 1*), dust mite (*Der p 1*), cockroach (*Bla g 1*), and mold (*Alternaria mix*) allergens using ELISA. Results: More than half (62%) of the children were living in homes that had been damaged by rain, flooding, or both. Geometric mean indoor and outdoor airborne mold levels were 501 and 3,958 spores/m<sup>3</sup>, respectively. *Alternaria* antigen was detected in dust from 98% of homes, with 58% having concentrations > 10 µg/g. *Mus m 1*, *Der p 1*, and *Bla g 1* were detected in 60%, 35%, and 20% of homes, respectively, at low mean concentrations. Conclusions: Except for *Alternaria* antigen in dust, concentrations of airborne mold (ratio of indoor to outdoor mold) and dust allergens in the homes of HEAL children were lower than measurements found in other studies, possibly because of extensive post-Katrina mold remediation and renovations, or because children moved into cleaner homes upon returning to New Orleans. PMID:22894816

430. [Measurement equivalence of seven selected items of posttraumatic growth between black and white adult survivors of Hurricane Katrina.](#)

[PubMed](#)

Rhodes, Alison M; Tran, Thanh V

2013-02-01

This study examined the equivalence or comparability of the measurement properties of seven selected items measuring posttraumatic growth among self-identified Black (n = 270) and White (n = 707) adult survivors of Hurricane Katrina, using data from the Baseline Survey of the Hurricane Katrina Community Advisory Group Study. Internal consistency reliability was equally good for both groups

(Cronbach's alphas = .79), as were correlations between individual scale items and their respective overall scale. Confirmatory factor analysis of a congeneric measurement model of seven selected items of posttraumatic growth showed adequate measures of fit for both groups. The results showed only small variation in magnitude of factor loadings and measurement errors between the two samples. Tests of measurement invariance showed mixed results, but overall indicated that factor loading, error variance, and factor variance were similar between the two samples. These seven selected items can be useful for future large-scale surveys of posttraumatic growth.

431. [A school of nursing's experience with providing health care for Hurricane Katrina evacuees.](#)

[PubMed](#)

Rami, Janet S; Singleton, Enrica K; Spurlock, Wanda; Eaglin, Angela R

2008-01-01

This article describes how Southern University School of Nursing (SUSON) participated in meeting the immediate health care needs of evacuees from New Orleans and environs that were victims of Hurricane Katrina. It describes how SUSON's advanced practice nurses use a mobile health unit (the Jag Mobile) to continue to serve evacuees that now live in Renaissance Village, a transitional housing trailer park. Ideas are presented that can help schools of nursing create a disaster response plan.

432. [Exploring Posttraumatic Growth in Children Impacted by Hurricane Katrina: Correlates of the Phenomenon and Developmental Considerations](#)

[ERIC Educational Resources Information Center](#)

Kilmer, Ryan P.; Gil-Rivas, Virginia

2010-01-01

This study explored posttraumatic growth (PTG), positive change resulting from struggling with trauma, among 7- to 10-year-olds impacted by Hurricane Katrina. Analyses focused on child self-system functioning and cognitive processes, and the caregiving context, in predicting PTG at 2 time points (Time 1n = 66, Time 2n = 51). Findings suggest that

433. [Effect of a School-Based Test Anxiety Intervention in Ethnic Minority Youth Exposed to Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Weems, Carl F.; Taylor, Leslie K.; Costa, Natalie M.; Marks, Allison B.; Romano, Dawn M.; Verrett, Shannon L.; Brown, Darlene M.

2009-01-01

This study tested the effects of a school-based test anxiety intervention among ethnic minority youth. The study used a prospective intervention design with a sample of (N = 94) ninth graders from New Orleans exposed to Hurricane Katrina and its aftermath. Thirty youth with elevated test anxiety completed a primarily behavioral (e.g., relaxation)

434. [One Year Later: Mental Illness Prevalence and Disparities Among New Orleans Residents Displaced by Hurricane Katrina](#)

[PubMed Central](#)

VanLandingham, Mark

2009-01-01

**Objectives.** We examined whether there were high levels of mental illness among displaced New Orleans, LA, residents in the fall of 2006, 1 year after Hurricane Katrina. **Methods.** We used data from the Displaced New Orleans Residents Pilot Study, which measured the prevalence of probable mild or moderate and serious mental illness among a representative sample of people who resided in New Orleans at the time of the hurricane, including people who evacuated the city and did not return. We also analyzed disparities in mental illness by race, education, and income. **Results.** We found high rates of mental illness in our sample and major disparities in mental illness by race, education, and income. Severe damage to or destruction of an individual's home was a major covariate of mental illness. **Conclusions.** The prevalence of mental illness remained high in the year following Hurricane Katrina, in contrast to the pattern found after other disasters. Economic losses and displacement may account for this finding as well as the disparity in mental illness between Blacks and Whites. PMID:19890178

435. [The Minimization of Public Health Risks in Newspapers after Hurricane Katrina](#)

[PubMed Central](#)

Cohen, Elisia L.; Vijaykumar, Santosh; Wray, Ricardo; Karamehic, Ajlina

2009-01-01

During natural disasters, mass media facilitate the timely provision of accurate information about health risks to the public. This study informs our understanding of such public health discourse utilizing content-analysis of 235 newspaper articles in four major metropolitan newspapers published in the five weeks after Hurricane Katrina hit the Gulf coast in August 2005. These data reveal a small and diminishing number of articles included public health information over time, detailed the hurricane impact on affected communities, and used reliable health sources. The implications for future research from a public health and media relations perspective are discussed. PMID:20011666

436. [Restoration of the Mississippi Delta: Lessons from Hurricanes Katrina and Rita](#)

[NASA Astrophysics Data System \(ADS\)](#)

Day, John W.; Boesch, Donald F.; Clairain, Ellis J.; Kemp, G. Paul; Laska, Shirley B.; Mitsch, William J.; Orth, Kenneth; Mashriqui, Hassan; Reed, Denise J.; Shabman, Leonard; Simenstad, Charles A.; Streever, Bill J.; Twilley, Robert R.; Watson, Chester C.; Wells, John T.; Whigham, Dennis F.

2007-03-01

Hurricanes Katrina and Rita showed the vulnerability of coastal communities and how human activities that caused deterioration of the Mississippi Deltaic Plain (MDP) exacerbated this vulnerability. The MDP formed by dynamic interactions between river and coast at various temporal and spatial scales, and human activity has reduced these interactions at all scales. Restoration efforts aim to re-establish this dynamic interaction, with emphasis on reconnecting the river to the deltaic plain. Science must guide MDP restoration, which will provide insights into delta restoration elsewhere and generally into coasts facing climate change in times of resource scarcity.

437. [An Investigation of Ionic Wind Propulsion](#)

[NASA Technical Reports Server \(NTRS\)](#)

Wilson, Jack; Perkins, Hugh D.; Thompson, William K.

2009-01-01

A corona discharge device generates an ionic wind and thrust, when a high voltage corona discharge is struck between sharply pointed electrodes and larger radius ground electrodes. The objective of this study was to examine whether this thrust could be scaled to values of interest for aircraft propulsion. An initial experiment showed that the thrust observed did equal the thrust of the ionic wind. Different types of high voltage electrodes were tried, including wires, knife-edges, and arrays of pins. A pin array was found to be optimum. Parametric experiments, and theory, showed that the thrust per unit power could be raised from early values of 5 N/kW to values approaching 50 N/kW, but only by lowering the thrust produced, and raising the voltage applied. In addition to using DC voltage, pulsed excitation, with and without a DC bias, was examined. The results were inconclusive as to whether this was advantageous. It was concluded that the use of a corona discharge for aircraft propulsion did not seem very practical.

438. [Experimental investigation of a newly designed supersonic wind tunnel](#)

[NASA Astrophysics Data System \(ADS\)](#)

Wu, J.; Radespiel, R.

2015-06-01

The flow characteristics of the tandem nozzle supersonic wind tunnel at the Institute of Fluid Mechanics, Technische Universität Braunschweig, are investigated. Conventional measurement techniques were utilized. The flow development is examined by pressure sensors installed at various streamwise positions. The temperature is measured in the storage tube and the settling chamber. The influence of flow treatment in the settling chamber on the flow quality is also studied. The flow quality of test section is evaluated by a 6-probe Pitot rake. The pressure fluctuations in the test section are studied by a sharp cone model. Eventually, good agreement between the measurements and numerical simulation of the tunnel design is achieved.

439. [Investigation of the Impact of the Upstream Induction Zone on LIDAR Measurement Accuracy for Wind Turbine Control Applications using Large-Eddy Simulation](#)

[NASA Astrophysics Data System \(ADS\)](#)

Simley, Eric; Y Pao, Lucy; Gebraad, Pieter; Churchfield, Matthew

2014-06-01

Several sources of error exist in lidar measurements for feedforward control of wind turbines including the ability to detect only radial velocities, spatial averaging, and wind evolution. This paper investigates another potential source of error: the upstream induction zone. The induction zone can directly affect lidar measurements and presents an opportunity for further decorrelation between upstream wind and the wind that interacts with the rotor. The impact of the induction zone is investigated using the combined CFD and aeroelastic code SOWFA. Lidar measurements are simulated upstream of a 5 MW turbine rotor and the true wind disturbances are found using a wind speed estimator and turbine outputs. Lidar performance in the absence of an induction zone is determined by simulating lidar measurements and the turbine response using the aeroelastic code FAST with wind inputs taken far upstream of the original turbine location in the SOWFA wind field. Results indicate that while measurement quality strongly depends on the amount of wind evolution, the induction zone has little effect. However, the optimal lidar preview distance and circular scan radius change slightly due to the presence of the induction zone.

440. [Investigation of Condensation/Clustering Effects on Rayleigh Scattering Measurements in a Hypersonic Wind Tunnel](#)

[NASA Technical Reports Server \(NTRS\)](#)

Tyler, Charles

1996-01-01

Rayleigh scattering, a nonintrusive measurement technique for the measurement of density in a hypersonic wind tunnel, is under investigation at Wright Laboratory's Mach 6 wind tunnel. Several adverse effects, i.e., extraneous scatter off walls and windows, hinder Rayleigh scattering

measurements. Condensation and clustering of flow constituents also present formidable obstacles. Overcoming some of these difficulties, measurements have been achieved while the Mach 6 test section was pumped down to a vacuum, as well as for actual tunnel operation for various stagnation pressures at fixed stagnation temperatures. Stagnation pressures ranged from 0.69 MPa to 6.9 MPa at fixed stagnation temperatures of 511, 556, and 611 K. Rayleigh scatter results show signal levels much higher than expected for molecular scattering in the wind tunnel. Even with higher than expected signals, scattering measurements have been made in the flowfield of an 8-degree half-angle blunt nose cone with a nose radius of 1.5 cm.

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#### 441. [Assessment of a media campaign and related crisis help line following Hurricane Katrina.](#)

[PubMed](#)

Beaudoin, Christopher E

2008-01-01

We evaluated the impact of a media campaign targeting stress and depression following Hurricane Katrina. We specifically examined public response to the campaign's recommendation that people could contact a telephone help line for further assistance if needed. Call data from Via Link allowed us to track trends in 800-number Crisis Line call volume ( $n = 29,659$ ), which is the number recommended in the media campaign, and 2-1-1 Information and Referral Line call volume ( $n = 8,035$ ), which is employed in a control-like manner. With data from April 1, 2006, through November 30, 2006, multivariate analysis was used to assess trends and differences among and within pre-intervention, intervention, and post-intervention. Information and Referral Line call volume, which was unrelated to the campaign, did not change over time. In contrast, Crisis Line call volume, which was related to the campaign, increased significantly from pre-intervention to intervention, but not from intervention to

post-intervention. Furthermore, the daily rate of Crisis Line call volume was constant during pre-intervention, increased during intervention, but decreased during post-intervention. There is support for the media campaign's influence on public behavior to contact Via Link in regard to stress and depression following Hurricane Katrina. Analysis helps undermine alternative explanations, including general trends in help line call volume and those specific to Crisis Line call volume.

442. [Katrina's Children: Evidence on the Structure of Peer Effects from Hurricane Evacuees. NBER Working Paper No. 15291](#)

[ERIC Educational Resources Information Center](#)

Imberman, Scott; Kugler, Adriana D.; Sacerdote, Bruce

2009-01-01

In 2005, hurricanes Katrina and Rita forced many children to relocate across the Southeast. While schools quickly enrolled evacuees, receiving families worried about the impact of evacuees on non-evacuee students. Data from Houston and Louisiana show that, on average, the influx of evacuees moderately reduced elementary math test scores in

443. [3D WindScanner lidar measurements of wind and turbulence around wind turbines, buildings and bridges](#)

[NASA Astrophysics Data System \(ADS\)](#)

Mikkelsen, T.; Sjöholm, M.; Angelou, N.; Mann, J.

2017-12-01

WindScanner is a distributed research infrastructure developed at DTU with the participation of a number of European countries. The research infrastructure consists of a mobile technically advanced facility for remote measurement of wind and turbulence in 3D. The WindScanners provide coordinated measurements of the entire wind and turbulence fields, of all three wind components scanned in 3D space. Although primarily developed for research related to on- and offshore wind turbines and wind farms, the facility is also well suited for scanning turbulent wind fields around buildings, bridges, aviation structures and of flow in urban environments. The mobile WindScanner facility enables 3D scanning of wind and turbulence fields in full scale within the atmospheric boundary layer at ranges from 10 meters to 5 (10) kilometers. Measurements of turbulent coherent structures are applied for investigation of flow pattern and dynamical loads from turbines, building structures and bridges and in relation to optimization of the location of, for example, wind farms and suspension bridges. This paper presents our achievements to date and reviews briefly the state-of-the-art of the WindScanner measurement technology with examples of uses for wind engineering applications.

444. [Near real time wind energy forecasting incorporating wind tunnel modeling](#)

[NASA Astrophysics Data System \(ADS\)](#)

Lubitz, William David

A series of experiments and investigations were carried out to inform the development of a day-ahead wind power forecasting system. An experimental near-real time wind power forecasting system was designed and constructed that operates on a desktop PC and forecasts 12–48 hours in advance. The system uses model output of the Eta regional scale forecast (RSF) to forecast the power production of a wind farm in the Altamont Pass, California, USA from 12 to 48 hours in advance. It is of modular construction and designed to also allow diagnostic forecasting using archived RSF data, thereby allowing different methods of completing each forecasting step to be tested and compared using the same input data. Wind-tunnel investigations of the effect of wind direction and hill geometry on wind speed-up above a hill were conducted. Field data from an Altamont Pass, California site was used to evaluate several speed-up prediction algorithms, both with and without wind direction adjustment. These algorithms were found to be of limited usefulness for the complex terrain case evaluated. Wind-tunnel and numerical simulation-based methods were developed for determining a wind farm power curve (the relation between meteorological conditions at a point in the wind farm and the power production of the wind farm). Both methods, as well as two methods based on fits to historical data, ultimately showed similar levels of accuracy: mean absolute errors predicting power production of 5 to 7 percent of the wind farm power capacity. The downscaling of RSF forecast data to the wind farm was found to be complicated by the presence of complex terrain. Poor results using the geostrophic drag law and regression methods motivated the development of a database search method that is capable of forecasting not only wind speeds but also power production with accuracy better than persistence.

445. [Engaging non-Majors: Teaching From the Eye of Hurricane Katrina and the Pacific Ocean](#)[NASA Astrophysics Data System \(ADS\)](#)

Sarmiento, S. E.

2007-12-01

Engaging non-majors to become interested in the geosciences college courses they take for a science requirement represents a challenge. These courses are most likely the only exposure they will ever have to a formal earth science curriculum. Experience shows a general lack of motivation and the need to find effective teaching methods to raise their interest. In the beginning of the fall 2005 semester, I participated in a research project to measure water vapor contents on the ground of the eye of hurricane Katrina in Slidell, Louisiana. Sharing this experience with my physical and environmental geology students made a significant difference (25 percentage final grade improvement) on their interest and course performance over previous semesters. Class presentations with data collected in Katrina contributed to build a general trust in the instructor and in the way, students viewed the role of geosciences in the mitigation of natural hazardous processes. The use of

travel blogs and internet enhanced courses allows teaching real time from almost anywhere as it was recently done from the east pacific (360 miles NW from Guam). An interactive portfolio of the faculty field experiences presented at the beginning of the semester has the potential to build student interest and their trust on the faculty experience and passion for the subject.

#### 446. [The Effects of Hurricane Katrina on Food Access Disparities in New Orleans](#)

[PubMed Central](#)

Bodor, J. Nicholas; Rice, Janet C.; Swalm, Chris M.; Hutchinson, Paul L.

2011-01-01

Disparities in neighborhood food access are well documented, but little research exists on how shocks influence such disparities. We examined neighborhood food access in New Orleans at 3 time points: before Hurricane Katrina (2004–2005), in 2007, and in 2009. We combined existing directories with on-the-ground verification and geographic information system mapping to assess supermarket counts in the entire city. Existing disparities for African American neighborhoods worsened after the storm. Although improvements have been made, by 2009 disparities were no better than prestorm levels. PMID:21233432

#### 447. [Hurricane Katrina: Influence on the Male-to-Female Birth Ratio.](#)

[PubMed](#)

Grech, Victor; Scherb, Hagen

2015-01-01

This study was carried out in order to ascertain whether or not Hurricane Katrina and related factors (i.e. the amount of rainfall) influenced the male-to-female birth ratio (M/F). Monthly births by gender for the affected states (Alabama, Florida, Louisiana and Mississippi) for January 2003 to December 2012 were obtained from the Centers for Disease Control and Prevention (CDC Wonder, Atlanta, Ga., USA). Precipitation data was obtained from the US National Weather Service. Ordinary linear logistic regression was used for trend analysis. A  $p$  value  $\leq 0.05$  was taken to represent a statistically significant result. Of the total of 3,903,660 live births, 1,996,966 (51.16%) were male and 1,906,694 (48.84%) were female. Significant seasonal variation was noted (the maximum M/F in May was 1.055, the minimum M/F in September was 1.041,  $p = 0.0073$ ). There was also a separate and significant rise in M/F 8-10 months after the storm (April to June 2006, peak M/F 1.078,  $p = 0.0074$ ), which translated to an approximate deficit of 800 girls compared to 46,072 girls born in that period if the M/F increase was theoretically only due to a girls' deficit in the denominator of the ratio. This spike was only present in Alabama, Louisiana and Mississippi, all of which received heavy rainfall. Florida did not receive heavy rainfall and experienced no such M/F spike. In this study there was a dose-response relation between the amount of rainfall after Hurricane Katrina and the monthly sex ratio of live births in the US states

of Alabama, Louisiana and Mississippi 8-10 months later. The well-known yet unexplained distinct sex ratio seasonality may be due to natural or man-made radiation contained in the rain. © 2015 S. Karger AG, Basel.

448. [Predictors of business return in New Orleans after Hurricane Katrina.](#)

[PubMed](#)

Lam, Nina S N; Arenas, Helbert; Pace, Kelley; LeSage, James; Campanella, Richard

2012-01-01

We analyzed the business reopening process in New Orleans after Hurricane Katrina, which hit the region on August 29, 2005, to better understand what the major predictors were and how their impacts changed through time. A telephone survey of businesses in New Orleans was conducted in October 2007, 26 months after Hurricane Katrina. The data were analyzed using a modified spatial probit regression model to evaluate the importance of each predictor variable through time. The results suggest that the two most important reopening predictors throughout all time periods were the flood depth at the business location and business size as represented by its wages in a logarithmic form. Flood depth was a significant negative predictor and had the largest marginal effects on the reopening probabilities. Smaller businesses had lower reopening probabilities than larger ones. However, the nonlinear response of business size to the reopening probability suggests that recovery aid would be most effective for smaller businesses than for larger ones. The spatial spillovers effect was a significant positive predictor but only for the first nine months. The findings show clearly that flood protection is the overarching issue for New Orleans. A flood protection plan that reduces the vulnerability and length of flooding would be the first and foremost step to mitigate the negative effects from climate-related hazards and enable speedy recovery. The findings cast doubt on the current coastal protection efforts and add to the current debate of whether coastal Louisiana will be sustainable or too costly to protect from further land loss and flooding given the threat of sea-level rise. Finally, a plan to help small businesses to return would also be an effective strategy for recovery, and the temporal window of opportunity that generates the greatest impacts would be the first 6¼ months after the disaster.

449. [Impact of hurricanes katrina and rita on the anesthesiology workforce.](#)

[PubMed](#)

Hutson, Larry R; Vega, Jorge; Schubert, Armin

2011-01-01

Hurricanes Katrina and Rita impacted a large portion of the medical community in Louisiana. We attempt to determine their impact on the anesthesiology workforce in Louisiana. In May 2006, a survey was mailed to 368 Louisiana anesthesiologists, collecting demographic data, retirement plans,

impact of Hurricanes Katrina and Rita, position vacancies, practice conditions, and the general state of healthcare in their area. All 3 anesthesiology residency programs in the state were contacted regarding their recent graduates. The 2010 RAND survey of the anesthesiology workforce was reviewed with respect to findings relevant to the state and region. One hundred seventy surveys were returned, yielding a 46.2% response rate. Among the respondents, 13.9% intended to retire within 5 years and another 24% in 5 to 10 years. Since 2005, 63.9% had seen an increase in their daily caseload, 46.9% saw an increase in work hours, and 36.8% stated that their practices were trying to hire new anesthesiologists and were having difficulty filling these positions. Since 2005, the number of anesthesiology residents in Louisiana had declined by almost 50%, and the number of graduates remaining to practice in Louisiana had decreased by 43% from 7 to 4 annually. Our 2006 survey provided qualitative evidence for a shortage of anesthesiologists in the state of Louisiana after the natural disasters in 2005 that was likely to worsen as residency output plummeted, fewer residents stayed in the state, and projected retirement increased. The regional data from the RAND survey a year later confirmed the impressions from our survey, with an estimate of an anesthesiologist shortage as high as 39% of the workforce. State membership surveys may serve as accurate barometers in the wake of major environmental upheavals affecting regional anesthesiology workforce conditions.

#### 450. [Predictors of Business Return in New Orleans after Hurricane Katrina](#)

[PubMed Central](#)

Lam, Nina S. N.; Arenas, Helbert; Pace, Kelley; LeSage, James; Campanella, Richard

2012-01-01

We analyzed the business reopening process in New Orleans after Hurricane Katrina, which hit the region on August 29, 2005, to better understand what the major predictors were and how their impacts changed through time. A telephone survey of businesses in New Orleans was conducted in October 2007, 26 months after Hurricane Katrina. The data were analyzed using a modified spatial probit regression model to evaluate the importance of each predictor variable through time. The results suggest that the two most important reopening predictors throughout all time periods were the flood depth at the business location and business size as represented by its wages in a logarithmic form. Flood depth was a significant negative predictor and had the largest marginal effects on the reopening probabilities. Smaller businesses had lower reopening probabilities than larger ones. However, the nonlinear response of business size to the reopening probability suggests that recovery aid would be most effective for smaller businesses than for larger ones. The spatial spillovers effect was a significant positive predictor but only for the first nine months. The findings show clearly that flood protection is the overarching issue for New Orleans. A flood protection plan that reduces the vulnerability and length of flooding would be the first and foremost step to mitigate the negative effects from climate-related hazards and enable speedy recovery. The findings cast doubt on the current coastal protection efforts and add to the current debate of whether coastal Louisiana will be

sustainable or too costly to protect from further land loss and flooding given the threat of sea-level rise. Finally, a plan to help small businesses to return would also be an effective strategy for recovery, and the temporal window of opportunity that generates the greatest impacts would be the first 6<sup>1</sup>/<sub>4</sub> months after the disaster. PMID:23133530

451. [Investigation of the Large Scale Evolution and Topology of Coronal Mass Ejections in the Solar Wind](#)

[NASA Technical Reports Server \(NTRS\)](#)

Riley, Pete

2001-01-01

This investigation is concerned with the large-scale evolution and topology of coronal mass ejections (CMEs) in the solar wind. During the course of this three-year investigation, we have undertaken a number of studies that are discussed in more detail in this report. For example, we conducted an analysis of all CMEs observed by the Ulysses spacecraft during its in-ecliptic phase between 1 and 5 AU. In addition to studying the properties of the ejecta, we also analyzed the shocks that could be unambiguously associated with the fast CMEs. We also analyzed a series of 'density holes' observed in the solar wind that bear many similarities with CMEs. To complement this analysis, we conducted a series of 1-D and 2 1/2-D fluid, MHD, and hybrid simulations to address a number of specific issues related to CME evolution in the solar wind. For example, we used fluid simulations to address the interpretation of negative electron temperature-density relationships often observed within CME/cloud intervals. As part of this investigation, a number of fruitful international collaborations were forged. Finally, the results of this work were presented at nine scientific meetings and communicated in eight scientific, refereed papers.

452. [Wind Tunnel Investigation of the Near-wake Flow Dynamics of a Horizontal Axis Wind Turbine](#)

[NASA Astrophysics Data System \(ADS\)](#)

Hashemi-Tari, P.; Siddiqui, K.; Refan, M.; Hangan, H.

2014-06-01

Experiments conducted in a large wind tunnel set-up investigate the 3D flow dynamics within the near-wake region of a horizontal axis wind turbine. Particle Image Velocimetry (PIV) measurements quantify the mean and turbulent components of the flow field. Measurements are performed in multiple adjacent horizontal planes in order to cover the area behind the rotor in a large radial interval, at several locations downstream of the rotor. The measurements were phase-locked in order to facilitate the re-construction of the threedimensional flow field. The mean velocity and turbulence characteristics clearly correlate with the near-wake vortex dynamics and in particular with the helical structure of the flow, formed immediately behind the turbine rotor. Due to the tip and root vortices, the mean and turbulent characteristics of the flow are highly dependent on the azimuth angle in

regions close to the rotor and close to the blade tip and root. Further from the rotor, the characteristics of the flow become phase independent. This can be attributed to the breakdown of the vortical structure of the flow, resulting from the turbulent diffusion. In general, the highest levels of turbulence are observed in shear layer around the tip of the blades, which decrease rapidly downstream. The shear zone grows in the radial direction as the wake moves axially, resulting in velocity recovery toward the centre of the rotor due to momentum transport.

453. [Investigation of sonar transponders for offshore wind farms: modeling approach, experimental setup, and results.](#)

[PubMed](#)

Fricke, Moritz B; Rolfes, Raimund

2013-11-01

The installation of offshore wind farms in the German Exclusive Economic Zone requires the deployment of sonar transponders to prevent collisions with submarines. The general requirements for these systems have been previously worked out by the Research Department for Underwater Acoustics and Marine Geophysics of the Bundeswehr. In this article, the major results of the research project "Investigation of Sonar Transponders for Offshore Wind Farms" are presented. For theoretical investigations a hybrid approach was implemented using the boundary element method to calculate the source directivity and a three-dimensional ray-tracing algorithm to estimate the transmission loss. The angle-dependence of the sound field as well as the weather-dependence of the transmission loss are compared to experimental results gathered at the offshore wind farm alpha ventus, located 45 km north of the island Borkum. While theoretical and experimental results are in general agreement, the implemented model slightly underestimates scattering at the rough sea surface. It is found that the source level of 200 dB re 1 Pa at 1 m is adequate to satisfy the detectability of the warning sequence at distances up to 2 NM (3.7 km) within a horizontal sector of  $\hat{A}\pm 60\hat{A}^\circ$  if realistic assumptions about signal-processing and noise are made. An arrangement to enlarge the angular coverage is discussed.

454. [An Investigation of the Large Scale Evolution and Topology of Coronal Mass Ejections in the Solar Wind](#)

[NASA Technical Reports Server \(NTRS\)](#)

Riley, Peter

2000-01-01

This investigation is concerned with the large-scale evolution and topology of coronal mass ejections (CMEs) in the solar wind. During this reporting period we have focused on several aspects of CME properties, their identification and their evolution in the solar wind. The work included both analysis of

Ulysses and ACE observations as well as fluid and magnetohydrodynamic simulations. In addition, we analyzed a series of "density holes" observed in the solar wind, that bear many similarities with CMEs. Finally, this work was communicated to the scientific community at three meetings and has led to three scientific papers that are in various stages of review.

455. [Non-thermal Processes in Colliding-wind Massive Binaries: the Contribution of Simbol-X to a Multiwavelength Investigation](#)

[NASA Astrophysics Data System \(ADS\)](#)

De Becker, Michaël; Blomme, Ronny; Micela, Giusi; Pittard, Julian M.; Rauw, Gregor; Romero, Gustavo E.; Sana, Hugues; Stevens, Ian R.

2009-05-01

Several colliding-wind massive binaries are known to be non-thermal emitters in the radio domain. This constitutes strong evidence for the fact that an efficient particle acceleration process is at work in these objects. The acceleration mechanism is most probably the Diffusive Shock Acceleration (DSA) process in the presence of strong hydrodynamic shocks due to the colliding-winds. In order to investigate the physics of this particle acceleration, we initiated a multiwavelength campaign covering a large part of the electromagnetic spectrum. In this context, the detailed study of the hard X-ray emission from these sources in the SIMBOL-X bandpass constitutes a crucial element in order to probe this still poorly known topic of astrophysics. It should be noted that colliding-wind massive binaries should be considered as very valuable targets for the investigation of particle acceleration in a similar way as supernova remnants, but in a different region of the parameter space.

456. [Pioneering Russian wind tunnels and first experimental investigations, 1871-1915](#)

[NASA Astrophysics Data System \(ADS\)](#)

Gorbushin, A. R.

2017-11-01

A review of foreign and Russian sources is given mentioning the pioneering wind tunnels built in Russia at the turn of 19th and 20th centuries. The first wind tunnel in Russia was constructed by V.A. Pashkevich at the Mikhailovsky Artillery Academy in St. Petersburg in 1871. In total from 1871 through 1915, 18 wind tunnels were constructed in Russia: 11 in Moscow, 5 in St. Petersburg and 2 in Kaluga. An overview of the pioneering Russian wind tunnels built by V.A. Pashkevich, K.E. Tsiolkovsky, prof. N.E. Zhukovsky, D.P. Ryabushinsky and prof. K.P. Boklevsky is given. Schemes, photographs, formulas, description of the research and test results taken from the original papers published by the wind tunnel designers are given. Photographs from the N.E. Zhukovsky Scientific and Memorial Museum and the Archive of the Russian Academy of Sciences are used in the article. Methods of flow visualization and results of their application are presented. The Russian scientists and researchers'

contribution to the development of techniques and methods of aerodynamic experiment is shown, including one of the most important aspects - the wall interference problem.

457. [An investigation of the environment surrounding supercell thunderstorms using wind profiler data](#)

[NASA Astrophysics Data System \(ADS\)](#)

Thornhill, Kenneth Lee, II

1998-12-01

One of the cornerstones of severe thunderstorm research has been quantifying the relationship between the ambient vertical wind profile and the environment of a supercell thunderstorm. Continual refinement of that understanding will lead to the ability to distinguish between tornadic and non-tornadic supercells. Recently, studies have begun to show the importance of the mid-level winds (about 3-6 km), in addition to the normally analyzed 0-3 km inflow layer winds. The 32 wind profilers of the NOAA Profiler Network provide a new source of wind field data that is of higher temporal and spatial resolution than the normally used radiosonde soundings. Continuous raw wind field data (u, v, and w) is now available every 6 minutes, with a quality controlled hourly averaged wind field data set also available. In this work, a 6-minute quality control algorithm is presented and utilized. This 6-minute quality controlled wind data can be used to calculate predictive parameters such as storm relative environmental helicity, Bulk Richardson Number shear, and positive mean shear, indices that are normally calculated only for the inflow layer. In addition, the time series evolution of the mean midlevel winds and the mean vertical winds can also be examined. This present work concentrates on the 1994 and 1995 spring tornado seasons in the central plains of the United States. Combining the data from the NOAA Profiler Network with the data collected from the Verification of the Origins of Rotation in Tornadoes Experiment, the time series evolution of the several indices mentioned above are examined for the winds above the inflow layer in an attempt to add to the current understanding of the relationship between the vertical wind profile and the environment of tornadic and non-tornadic supercell thunderstorms.

458. [A wind-tunnel investigation of parameters affecting helicopter directional control at low speeds in ground effect](#)

[NASA Technical Reports Server \(NTRS\)](#)

Yeager, W. T., Jr.; Young, W. H., Jr.; Mantay, W. R.

1974-01-01

An investigation was conducted in the Langley full-scale tunnel to measure the performance of several helicopter tail-rotor/fin configurations with regard to directional control problems encountered at low speeds in ground effect. Tests were conducted at wind azimuths of 0 deg to 360 deg in increments of 30 deg and 60 deg and at wind speeds from 0 to 35 knots. The results indicate

that at certain combinations of wind speed and wind azimuth, large increases in adverse fin force require correspondingly large increases in the tail-rotor thrust, collective pitch, and power required to maintain yaw trim. Changing the tail-rotor direction of rotation to top blade aft for either a pusher tail rotor (tail-rotor wake blowing away from fin) or a tractor tail rotor (tail-rotor wake blowing against fin) will alleviate this problem. For a pusher tail rotor at 180 deg wind azimuth, increases in the fin/tail-rotor gap were not found to have any significant influence on the overall vehicle directional control capability. Changing the tail rotor to a higher position was found to improve tail-rotor performance for a fin-off configuration at a wind azimuth of 180 deg. A V-tail configuration with a pusher tail rotor with top blade aft direction of rotation was found to be the best configuration with regard to overall directional control capability.

459. [Racial Differences in Posttraumatic Stress Disorder Vulnerability Following Hurricane Katrina Among a Sample of Adult Cigarette Smokers from New Orleans.](#)

[PubMed](#)

Alexander, Adam C; Ali, Jeanelle; McDevitt-Murphy, Meghan E; Forde, David R; Stockton, Michelle; Read, Mary; Ward, Kenneth D

2017-02-01

Although blacks are more likely than whites to experience posttraumatic stress disorder (PTSD) after a natural disaster, the reasons for this disparity are unclear. This study explores whether race is associated with PTSD after adjusting for differences in preexisting vulnerabilities, exposure to stressors, and loss of social support due to Hurricane Katrina using a representative sample of 279 black and white adult current and past smokers who were present when Hurricane Katrina struck, and identified it as the most traumatic event in their lifetime. Multiple logistic regression models evaluated whether differential vulnerability (pre-hurricane physical and mental health functioning, and education level), differential exposure to hurricane-related stressors, and loss of social support deterioration reduced the association of race with PTSD. Blacks were more likely than whites to screen positive for PTSD (49 vs. 39%, respectively,  $p = 0.030$ ). Although blacks reported greater pre-hurricane vulnerability (worse mental health functioning and lower educational attainment) and hurricane-related stressor exposure and had less social support after the hurricane, only pre-hurricane mental health functioning attenuated the association of race with screening positive for PTSD. Thus, racial differences in pre-hurricane functioning, particularly poorer mental health, may partially explain racial disparities in PTSD after natural disasters, such as Hurricane Katrina. Future studies should examine these associations prospectively using representative cohorts of black and whites and include measures of residential segregation and discrimination, which may further our understanding of racial disparities in PTSD after a natural disaster.

460. [Racial Differences in Posttraumatic Stress Disorder Vulnerability Following Hurricane Katrina Among a Sample of Adult Ever Smokers from New Orleans](#)

[PubMed Central](#)

Alexander, Adam C.; Ali, Jeanelle; McDevitt-Murphy, Meghan E.; Forde, David R.; Stockton, Michelle; Read, Mary; Ward, Kenneth D.

2016-01-01

Although blacks are more likely than whites to experience posttraumatic stress disorder (PTSD) after a natural disaster, the reasons for this disparity are unclear. This study explores whether race is associated with PTSD after adjusting for differences in preexisting vulnerabilities, exposure to stressors, and loss of social support due to Hurricane Katrina using a representative sample of 279 black and white adult ever smokers who were present when Hurricane Katrina struck, and identified it as the most traumatic event in their lifetime. Multiple logistic regression models evaluated whether differential vulnerability (pre-hurricane physical and mental health functioning, and education level), differential exposure to hurricane-related stressors, and loss of social support deterioration reduced the association of race with PTSD. Blacks were more likely than whites to screen positive for PTSD (49% vs. 39% respectively,  $p=0.030$ ). Although blacks reported greater pre-hurricane vulnerability (worse mental health functioning and lower educational attainment) and hurricane-related stressor exposure, and had less social support after the hurricane, only pre-hurricane mental health functioning attenuated the association of race with screening positive for PTSD. Thus, racial differences in pre-hurricane functioning, particularly poorer mental health, may partially explain racial disparities in PTSD after natural disasters, such as Hurricane Katrina. Future studies should examine these associations prospectively using representative cohorts of black and whites, and include measures of residential segregation and discrimination, which may further our understanding of racial disparities in PTSD after a natural disaster. PMID:26823065

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461. [Investigations of attitudes towards offshore wind farm development in Ireland: their implications towards future development of the industry](#)

[NASA Astrophysics Data System \(ADS\)](#)

Melia, Aidan

This current research investigates what the attitudes of Irish people are towards the development of offshore wind farms in Ireland. Using a qualitative approach, a questionnaire is carefully designed and distributed among a sample population from three coastal communities. One is located on the west coast and two on the east coast. The two locations on the east coast have an involvement in offshore wind farms. One of the locations plays host to Ireland's only offshore wind farm, while there are plans in place for an offshore wind farm at the other location. The results from the questionnaires are analyzed with regard to the respondent's proximity to the coast, their age, their gender and their educational levels. This analysis results in a number of conclusions being generated. Overall, it is found that there is a strong support among the respondents for the development of offshore wind farms in Ireland.

462. [Mother and Child Reports of Hurricane Related Stressors: Data from a Sample of Families Exposed to Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Lai, Betty S.; Beaulieu, Brooke; Ogokeh, Constance E.; Self-Brown, Shannon; Kelley, Mary Lou

2015-01-01

Background: Families exposed to disasters such as Hurricane Katrina are at risk for numerous adverse outcomes. While previous literature suggests that the degree of disaster exposure corresponds with experiencing negative outcomes, it is unclear if parents and children report similar levels of disaster exposure. Objective: The purpose of this study is to explore the experiences of parents and children exposed to Hurricane Katrina and to determine if there are differences in the way that parents and children report disaster exposure.

463. [New Orleans Educational System in Public Schools Pre/Post Hurricane Katrina as Perceived by Special Education Teachers](#)

[ERIC Educational Resources Information Center](#)

Alzahrani, Sultan

2018-01-01

This modified narrative study is an exploration of the perceptions of two special educators who experienced the dramatic changes in the New Orleans public school system as a result of Hurricane Katrina. The participants in this study will consist of two special education professionals (See Table 1). From their perspectives, the reader shall gain insight into the challenges and opportunities of the New Orleans educational system in the aftermath of Hurricane Katrina.

464. [The Impact of Child-Related Stressors on the Psychological Functioning of Lower-Income Mothers after Hurricane Katrina](#)

[ERIC Educational Resources Information Center](#)

Lowe, Sarah R.; Chan, Christian S.; Rhodes, Jean E.

2011-01-01

In the present study, the authors examined the role of child-related stressors in the psychological adjustment of lower-income, primarily unmarried and African American, mothers (N = 386). All participants lived in areas affected by Hurricane Katrina, and about a third were also exposed to Hurricane Rita (30.3%, n = 117). Lacking knowledge of a€œ

465. [After Katrina, Dismay and Recovery: Libraries Report the Extent of Damage as Library Community Continues to Mobilize](#)

[ERIC Educational Resources Information Center](#)

Oder, Norman; Rogers, Michael

2005-01-01

The New Orleans Public Library (NOPL) is coming back from Hurricane Katrina—thanks to the State Library of Louisiana, NOPL in mid-September set up a temporary web site (nutrias.org). Unfortunately like many libraries in the Gulf region, it sustained significant damage and retained hope for renewal. This article reports the extent of damage a€œ

466. [WindPACT Reference Wind Turbines](#)

[DOE Office of Scientific and Technical Information \(OSTI.GOV\)](#)

Dykes, Katherine L; Rinker, Jennifer

To fully understand how loads and turbine cost scale with turbine size, it is necessary to have identical turbine models that have been scaled to different rated powers. The report presents the WindPACT baseline models, which are a series of four baseline models that were designed to facilitate investigations into the scalings of loads and turbine cost with size. The models have four different rated powers (750 kW, 1.5 MW, 3.0 MW, and 5.0 MW), and each model was designed to its specified rated power using the same design methodology. The models were originally implemented in FAST\_AD, the predecessor to NREL's open-source wind turbine simulator FAST, but have yet to be implemented in FAST. This report contains the specifications for all four WindPACT baseline models - including structural, aerodynamic, and control specifications - along with the inherent assumptions and equations that were used to calculate the model parameters. It is hoped that these

baseline models will serve as extremely useful resources for investigations into the scalings of costs, loads, or optimization routines.Â«Â less

467. [Predicting posttraumatic stress symptoms in children following Hurricane Katrina: a prospective analysis of the effect of parental distress and parenting practices.](#)

[PubMed](#)

Kelley, Mary Lou; Self-Brown, Shannon; Le, Brenda; Bosson, Julia Vigna; Hernandez, Brittany C; Gordon, Arlene T

2010-10-01

Research exhibits a robust relation between child hurricane exposure, parent distress, and child posttraumatic stress disorder (PTSD). This study explored parenting practices that could further explicate this association. Participants were 381 mothers and their children exposed to Hurricane Katrina. It was hypothesized that 3-7 months (T1) and 14-17 months (T2) post-Katrina: (a) hurricane exposure would predict child PTSD symptoms after controlling for history of violence exposure and (b) hurricane exposure would predict parent distress and negative parenting practices, which, in turn, would predict increased child PTSD symptoms. Hypotheses were partially supported. Hurricane exposure directly predicted child PTSD at T1 and indirectly at T2. Additionally, several significant paths emerged from hurricane exposure to parent distress and parenting practices, which were predictive of child PTSD.

468. [Examining the long-term racial disparities in health and economic conditions among Hurricane Katrina survivors: policy implications for Gulf Coast recovery.](#)

[PubMed](#)

Toldson, Ivory A; Ray, Kilynda; Hatcher, Schnavia Smith; Louis, Laura Straughn

2011-01-01

This study examines disparities in the long-term health, emotional well-being, and economic consequences of the 2005 Gulf Coast hurricanes. Researchers analyzed the responses of 216 Black and 508 White Hurricane Katrina survivors who participated in the ABC News Hurricane Katrina Anniversary Poll in 2006. Self-reported data of the long-term negative impact of the hurricane on personal health, emotional well-being, and finances were regressed on race, income, and measures of loss, injury, family mortality, anxiety, and confidence in the government. Descriptive analyses, stepwise logistic regression, and analyses of variance revealed that Black hurricane survivors more frequently reported hurricane-related problems with personal health, emotional well-being, and finances. In addition, Blacks were more likely than Whites to report the loss of friends, relatives, and personal property.

469. [Innovations in disaster mental health services and evaluation: national, state, and local responses to Hurricane Katrina \(introduction to the special issue\).](#)

[PubMed](#)

Norris, Fran H; Rosen, Craig S

2009-05-01

The severe consequences of Hurricane Katrina on mental health have sparked tremendous interest in improving the quality of mental health care for disaster victims. In this special issue, we seek to illustrate the breadth of work emerging in this area. The five empirical examples each reflect innovation, either in the nature of the services being provided or in the evaluation approach. Most importantly, they portray the variability of post-Katrina mental health programs, which ranged from national to state to local in scope and from educational to clinical in intensity. As a set, these papers address the fundamental question of whether it is useful and feasible to provide different intensities of mental health care to different populations according to presumed need. The issue concludes with recommendations for future disaster mental health service delivery and evaluation.

470. [The psychosocial impact of Hurricane Katrina on persons with disabilities and independent living center staff living on the American Gulf Coast.](#)

[PubMed](#)

Fox, Michael H; White, Glen W; Rooney, Catherine; Cahill, Anthony

2010-08-01

To determine the impact of Hurricane Katrina on the psychosocial health of people with disabilities and on the ability of people with disabilities in the affected area to live independently. Transcribed conversations were analyzed for 56 survivors of Hurricane Katrina on the American Gulf Coast, all of whom were persons with disabilities or persons working with them. Semi-structured interviews were conducted either individually or in focus groups with participants. Qualitative analysis was undertaken using hermeneutic techniques. Six major themes emerged: faith, incredulousness, blaming others or oneself, family adaptation and resiliency, and work and professional responsibility. The resiliency of persons with disabilities to adapt to disasters can be better understood through factors such as these, providing an effective barometer of social capital that can help societies prepare for future disasters among those most vulnerable.

471. [Numerical investigation of wind loads on an operating heliostat](#)

[NASA Astrophysics Data System \(ADS\)](#)

Ghanadi, Farzin; Yu, Jeremy; Emes, Matthew; Arjomandi, Maziar; Kelso, Richard

2017-06-01

The velocity fluctuations within the atmospheric boundary layer (ABL) and the wind direction are two important parameters which affect the resulting loads on the heliostats. In this study, the drag force on a square heliostat within the ABL at different turbulence intensities is simulated. To this end, numerical analysis of the wind loads have been conducted by implementing the three-dimensional Embedded Large Eddy Simulation (ELES). The results prove that in contrast with other models which are too dissipative for highly turbulent flow, the present model can accurately predict boundary effects and calculate the peak loads on heliostat at different elevation angles and turbulence intensities. Therefore, it is recommended that the model is used as a tool to provide new information about the relationship between wind loads and turbulence structures within ABL such as vortex length scale.

#### 472. [Investigation of cloud/water vapor motion winds from geostationary satellite](#)

[NASA Technical Reports Server \(NTRS\)](#)

Nieman, Steve; Velden, Chris; Hayden, Kit; Menzel, Paul

1993-01-01

Work has been primarily focussed on three tasks: (1) comparison of wind fields produced at MSFC with the CO2 autowind/autoeditor system newly installed in NESDIS operations; (2) evaluation of techniques for improved tracer selection through use of cloud classification predictors; and (3) development of height assignment algorithm with water vapor channel radiances. The contract goal is to improve the CIMSS wind system by developing new techniques and assimilating better existing techniques. The work reported here was done in collaboration with the NESDIS scientists working on the operational winds software, so that NASA funded research can benefit NESDIS operational algorithms.

#### 473. [Conducting experimental investigations of wind influence on high-rise constructions](#)

[NASA Astrophysics Data System \(ADS\)](#)

Poddaeva, Olga I.; Fedosova, Anastasia N.; Churin, Pavel S.; Gribach, Julia S.

2018-03-01

The design of buildings with a height of more than 100 meters is accompanied by strict control in determining the external loads and the subsequent calculation of building structures, which is due to the uniqueness of these facilities. An important factor, the impact of which must be carefully studied at the stage of development of project documentation, is the wind. This work is devoted to the problem of studying the wind impact on buildings above 100 meters. In the article the technique of carrying out of experimental researches of wind influence on high-rise buildings and constructions,

developed in the Educational-research-and-production laboratory on aerodynamic and aeroacoustic tests of building designs of NRU MGSU is presented. The publication contains a description of the main stages of the implementation of wind tunnel tests. The article presents the approbation of the methodology, based on the presented algorithm, on the example of a high-rise building under construction. This paper reflects the key requirements that are established at different stages of performing wind impact studies, as well as the results obtained, including the average values of the aerodynamic pressure coefficients, total forces and aerodynamic drag coefficients. Based on the results of the work, conclusions are presented.

474. [Post Traumatic Stress, Context, and the Lingering Effects of the Hurricane Katrina Disaster among Ethnic Minority Youth](#)

[ERIC Educational Resources Information Center](#)

Weems, Carl F.; Taylor, Leslie K.; Cannon, Melinda F.; Marino, Reshelle C.; Romano, Dawn M.; Scott, Brandon G.; Perry, Andre M.; Triplett, Vera

2010-01-01

This study examined the stability of post traumatic stress disorder (PTSD) symptoms in a predominantly ethnic minority sample of youth exposed to Hurricane Katrina. Youth (n = 191 grades 4th thru 8th) were screened for exposure to traumatic experiences and PTSD symptoms at 24 months (Time 1) and then again at 30 months (Time 2) post-disaster. PTSDâ€¦

475. [Using remotely sensed data and elementary analytical techniques in post-katrina mississippi to examine storm damage modeling](#)

[Treesearch](#)

Curtis A. Collins; David L. Evans; Keith L. Belli; Patrick A. Glass

2010-01-01

Hurricane Katrina's passage through south Mississippi on August 29, 2005, which damaged or destroyed thousands of hectares of forest land, was followed by massive salvage, cleanup, and assessment efforts. An initial assessment by the Mississippi Forestry Commission estimated that over \$1 billion in raw wood material was downed by the storm, with county-level damage...

476. [Environmental Modeling, Technology, and Communication for Land Falling Tropical Cyclone/Hurricane Prediction](#)

[PubMed Central](#)

Tuluri, Francis; Reddy, R. Suseela; Anjaneyulu, Y.; Colonias, John; Tchounwou, Paul

2010-01-01

Katrina (a tropical cyclone/hurricane) began to strengthen reaching a Category 5 storm on 28th August, 2005 and its winds reached peak intensity of 175 mph and pressure levels as low as 902 mb. Katrina eventually weakened to a category 3 storm and made a landfall in Plaquemines Parish, Louisiana, Gulf of Mexico, south of Buras on 29th August 2005. We investigate the time series intensity change of the hurricane Katrina using environmental modeling and technology tools to develop an early and advanced warning and prediction system. Environmental Mesoscale Model (Weather Research Forecast, WRF) simulations are used for prediction of intensity change and track of the hurricane Katrina. The model is run on a doubly nested domain centered over the central Gulf of Mexico, with grid spacing of 90 km and 30 km for 6 h periods, from August 28th to August 30th. The model results are in good agreement with the observations suggesting that the model is capable of simulating the surface features, intensity change and track and precipitation associated with hurricane Katrina. We computed the maximum vertical velocities ( $W_{max}$ ) using Convective Available Kinetic Energy (CAPE) obtained at the equilibrium level (EL), from atmospheric soundings over the Gulf Coast stations during the hurricane land falling for the period August 21–30, 2005. The large vertical atmospheric motions associated with the land falling hurricane Katrina produced severe weather including thunderstorms and tornadoes 2–3 days before landfall. The environmental modeling simulations in combination with sounding data show that the tools may be used as an advanced prediction and communication system (APCS) for land falling tropical cyclones/hurricanes.

PMID:20623002

477. [Kinematic structure of convective-scale elements in the rainbands of Hurricanes Katrina and Rita \(2005\)](#)

[NASA Astrophysics Data System \(ADS\)](#)

Hence, Deanna A.; Houze, Robert A.

2008-08-01

Airborne Doppler radar data collected during the Hurricane Rainband and Intensity Change Experiment (RAINEX) show the convective-scale air motions embedded in the principal rainbands of hurricanes Katrina and Rita. These embedded convective cells have overturning updrafts and low-level downdrafts (originating at 2–4 km) that enter the rainband on its radially outward side and cross over each other within the rainband as well as a strong downdraft emanating from upper levels (6+ km) on the radially inward side. These vertical motion structures repeat from one convective cell to another along each rainband. The resulting net vertical mass transport is upward in the upwind portion of the band and greatest in the middle sector of the principal rainband, where the updraft motions contribute generally to an increase of potential vorticity below the 3–4 km level. Because the convective cells in the middle sector are systematically located radially just inside the secondary horizontal wind maximum (SHWM), the local increase in vorticity implied by the convective mass

transport is manifest locally as an increase in the strength of the SHWM at midlevels (≈4 km). The overturning updrafts of the convective cells tilt, stretch, and vertically transport vorticity such that the convergence of the vertical flux of vorticity strengthens the vorticity anomaly associated with the SHWM. This process could strengthen the SHWM by several meters per second per hour, and may explain how high wave number convective-scale features can influence a low wave number feature such as the principal rainband, and subsequently influence the primary vortex.

#### 478. [Mapping and Visualization of Storm-Surge Dynamics for Hurricane Katrina and Hurricane Rita](#)

[USGS Publications Warehouse](#)

Gesch, Dean B.

2009-01-01

The damages caused by the storm surges from Hurricane Katrina and Hurricane Rita were significant and occurred over broad areas. Storm-surge maps are among the most useful geospatial datasets for hurricane recovery, impact assessments, and mitigation planning for future storms. Surveyed high-water marks were used to generate a maximum storm-surge surface for Hurricane Katrina extending from eastern Louisiana to Mobile Bay, Alabama. The interpolated surface was intersected with high-resolution lidar elevation data covering the study area to produce a highly detailed digital storm-surge inundation map. The storm-surge dataset and related data are available for display and query in a Web-based viewer application. A unique water-level dataset from a network of portable pressure sensors deployed in the days just prior to Hurricane Rita's landfall captured the hurricane's storm surge. The recorded sensor data provided water-level measurements with a very high temporal resolution at surveyed point locations. The resulting dataset was used to generate a time series of storm-surge surfaces that documents the surge dynamics in a new, spatially explicit way. The temporal information contained in the multiple storm-surge surfaces can be visualized in a number of ways to portray how the surge interacted with and was affected by land surface features. Spatially explicit storm-surge products can be useful for a variety of hurricane impact assessments, especially studies of wetland and land changes where knowledge of the extent and magnitude of storm-surge flooding is critical.

#### 479. [Investigation of the Large Scale Evolution and Topology of Coronal Mass Ejections in the Solar Wind](#)

[NASA Technical Reports Server \(NTRS\)](#)

Riley, Peter

1999-01-01

This investigation is concerned with the large-scale evolution and topology of Coronal Mass Ejections (CMEs) in the solar wind. During this reporting period we have analyzed a series of low density intervals in the ACE (Advanced Composition Explorer) plasma data set that bear many similarities to CMEs. We

have begun a series of 3D, MHD (Magnetohydrodynamics) coronal models to probe potential causes of these events. We also edited two manuscripts concerning the properties of CMEs in the solar wind. One was re-submitted to the Journal of Geophysical Research.

#### 480. [Mapping Pollution Plumes in Areas Impacted by Hurricane Katrina With Imaging Spectroscopy](#)

[NASA Astrophysics Data System \(ADS\)](#)

Swayze, G. A.; Furlong, E. T.; Livo, K. E.

2007-12-01

New Orleans endured flooding on a massive scale subsequent to Hurricane Katrina in August of 2005. Contaminant plumes were noticeable in satellite images of the city in the days following flooding. Many of these plumes were caused by oil, gasoline, and diesel that leaked from inundated vehicles, gas stations, and refineries. News reports also suggested that the flood waters were contaminated with sewage from breached pipes. Effluent plumes such as these pose a potential health hazard to humans and wildlife in the aftermath of hurricanes and potentially from other catastrophic events (e.g., earthquakes, shipping accidents, chemical spills, and terrorist attacks). While the extent of effluent plumes can be gauged with synthetic aperture radar and broad-band visible-infrared images (Rykhus, 2005)(e.g., Radarsat and Landsat ETM+) the composition of the plumes could not be determined. These instruments lack the spectral resolution necessary to do chemical identification. Imaging spectroscopy may help solve this problem. Over 60 flight lines of NASA Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) data were collected over New Orleans, the Mississippi Delta, and the Gulf Coast from one to two weeks after Katrina while the contaminated water was being pumped out of flooded areas. These data provide a unique opportunity to test if imaging spectrometer data can be used to identify the chemistry of these flood-related plumes. Many chemicals have unique spectral signatures in the ultraviolet to near-infrared range (0.2 - 2.5 microns) that can be used as fingerprints for their identification. We are particularly interested in detecting thin films of oil, gasoline, diesel, and raw sewage suspended on or in water. If these materials can be successfully differentiated in the lab then we will use spectral-shape matching algorithms to look for their spectral signatures in the AVIRIS data collected over New Orleans and other areas impacted by Katrina. If imaging spectroscopy

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#### 481. [Wind fence enclosures for infrasonic wind noise reduction.](#)

[PubMed](#)

Abbott, JohnPaul; Raspet, Richard; Webster, Jeremy

2015-03-01

A large porous wind fence enclosure has been built and tested to optimize wind noise reduction at infrasonic frequencies between 0.01 and 10 Hz to develop a technology that is simple and cost effective and improves upon the limitations of spatial filter arrays for detecting nuclear explosions, wind turbine infrasound, and other sources of infrasound. Wind noise is reduced by minimizing the sum of the wind noise generated by the turbulence and velocity gradients inside the fence and by the area-averaging the decorrelated pressure fluctuations generated at the surface of the fence. The effects of varying the enclosure porosity, top condition, bottom gap, height, and diameter and adding a secondary windscreen were investigated. The wind fence enclosure achieved best reductions when the surface porosity was between 40% and 55% and was supplemented by a secondary windscreen. The most effective wind fence enclosure tested in this study achieved wind noise reductions of 20-27 dB over the 2-4 Hz frequency band, a minimum of 5 dB noise reduction for frequencies from 0.1 to 20 Hz, constant 3-6 dB noise reduction for frequencies with turbulence wavelengths larger than the fence, and sufficient wind noise reduction at high wind speeds (3-6 m/s) to detect microbaroms.

#### 482. [Wind tunnel investigations of glider fuselages with different waistings and wing arrangements](#)

[NASA Technical Reports Server \(NTRS\)](#)

Radespiel, R.

1983-01-01

The parameters fuselage pinch glider wing arrangement and fuselage leading edge radius of nine glider configurations were investigated in wind tunnel tests. Laminar separation bubbles were found on strongly recessed fuselages. These separations in the juncture between fuselage and wing are essential in the prevention of harmful aerodynamic drag. Drag reduction was measured with increasing pinch and the wing arrangement in the rear. These results are only valid for laminar flow on the fuselage leading edge.

#### 483. [Coastal-change impacts during hurricane katrina: an overview](#)

[USGS Publications Warehouse](#)

Sallenger, Asbury; Wright, C. Wayne; Lillycrop, Jeff

2007-01-01

As part of an ongoing cooperative effort between USGS, NASA and USACE, the barrier islands within the right-front quadrant of Hurricane Katrina were surveyed with airborne lidar both before and after landfall. Dauphin Island, AL was located the farthest from landfall and wave runup intermittently overtopped its central and western sections. The Gulf-side of the island experienced severe erosion, leaving the first row of houses in the sea, while the bayside accreted. In contrast, the Chandeleur Islands, LA did not experience, this classic 'rollover'. Rather, the island chain was completely stripped of sand, transforming a 40-km-long sandy island chain into a discontinuous series of muddy marsh islets. Models indicate that storm surge likely submerged the entire Chandeleur Island chain, at least during the latter part of the storm. The net result was destructive coastal change for the Chandeleur Islands, while Dauphin Island tended to maintain its form through landward migration.

#### 484. [First-year growth for two oak species and three planting stocks planted on areas disturbed by Hurricane Katrina](#)

[Treesearch](#)

Andrew Dowdy; Andrew W. Ezell; Emily B. Schultz; John D. Hodges; Andrew B. Self

2014-01-01

Bottomland hardwood forests were damaged by Hurricane Katrina in 2005 when it made landfall along the Gulf Coast. Regenerating these areas, which can be difficult without planning and artificial regeneration, has often been problematic when using 1-0 bare-root seedlings because of inconsistencies with the seedling quality. Some growers have begun producing...

#### 485. [Children as bellwethers of recovery: dysfunctional systems and the effects of parents, households, and neighborhoods on serious emotional disturbance in children after Hurricane Katrina.](#)

[PubMed](#)

Abramson, David M; Park, Yoon Soo; Stehling-Ariza, Tasha; Redlener, Irwin

2010-09-01

Over 160,000 children were displaced from their homes after Hurricane Katrina. Tens of thousands of these children experienced the ongoing chaos and uncertainty of displacement and transiency, as well as significant social disruptions in their lives. The objectives of this study were to estimate the long-

term mental health effects of such exposure among children, and to elucidate the systemic pathways through which the disaster effect operates. The prevalence of serious emotional disturbance was assessed among 283 school-aged children in Louisiana and Mississippi. These children are part of the Gulf Coast Child & Family Health Study, involving a longitudinal cohort of 1079 randomly sampled households in the two states, encompassing a total of 427 children, who have been interviewed in 4 annual waves of data collection since January 2006. The majority of data for this analysis was drawn from the fourth round of data. Although access to medical care for children has expanded considerably since 2005 in the region affected by Hurricane Katrina, more than 37% of children have received a clinical mental health diagnosis of depression, anxiety, or behavior disorder, according to parent reports. Children exposed to Hurricane Katrina were nearly 5 times as likely as a pre-Katrina cohort to exhibit serious emotional disturbance. Path analyses confirm the roles played by neighborhood social disorder, household stressors, and parental limitations on children's emotional and behavioral functioning. Children and youth are particularly vulnerable to the effects of disasters. They have limited capacity to independently mobilize resources to help them adapt to stressful postdisaster circumstances, and are instead dependent upon others to make choices that will influence their household, neighborhood, school, and larger social environment. Children's mental health recovery in a postdisaster setting can serve as a bellwether indicator of successful recovery or as a lagging indicator

486. [WATER QUALITY IN THE NEAR COASTAL WATERS OF THE GULF OF MEXICO AFFECTED BY HURRICANE KATRINA: BEFORE AND AFTER THE STORM](#)

[EPA Science Inventory](#)

Water quality was assessed following Hurricane Katrina in the affected waters of Alabama, Mississippi and Louisiana. Post-landfall water quality was compared to pre-hurricane conditions using indicators assessed by EPA's National Coastal Assessment program and additional indicat...

487. [Satellite Images and Aerial Photographs of the Effects of Hurricanes Katrina and Rita on Coastal Louisiana](#)

[USGS Publications Warehouse](#)

Barras, John A.

2007-01-01

Introduction Hurricane Katrina made landfall on the eastern coastline of Louisiana on August 29, 2005; Hurricane Rita made landfall on the western coastline of Louisiana on September 24, 2005. Comparison of Landsat Thematic Mapper (TM) satellite imagery acquired before and after the landfalls of Katrina and Rita and classified to identify land and water demonstrated that water area increased by 217 mi<sup>2</sup> (562 km<sup>2</sup>) in coastal Louisiana as a result of the storms. Approximately 82 mi<sup>2</sup> (212 km<sup>2</sup>) of new water areas were in areas primarily impacted by Hurricane Katrina (Mississippi River Delta basin,

Breton Sound basin, Pontchartrain basin, and Pearl River basin), whereas 99 mi<sup>2</sup> (256 km<sup>2</sup>) were in areas primarily impacted by Hurricane Rita (Calcasieu/Sabine basin, Mermentau basin, Teche/Vermilion basin, Atchafalaya basin, and Terrebonne basin). Barataria basin contained new water areas caused by both hurricanes, resulting in some 18 mi<sup>2</sup> (46.6 km<sup>2</sup>) of new water areas. The fresh marsh and intermediate marsh communities' land areas decreased by 122 mi<sup>2</sup> (316 km<sup>2</sup>) and 90 mi<sup>2</sup> (233.1 km<sup>2</sup>), respectively, and the brackish marsh and saline marsh communities' land areas decreased by 33 mi<sup>2</sup> (85.5 km<sup>2</sup>) and 28 mi<sup>2</sup> (72.5 km<sup>2</sup>), respectively. These new water areas represent land losses caused by direct removal of wetlands. They also indicate transitory changes in water area caused by remnant flooding, removal of aquatic vegetation, scouring of marsh vegetation, and water-level variation attributed to normal tidal and meteorological variation between satellite images. Permanent losses cannot be estimated until several growing seasons have passed and the transitory impacts of the hurricanes are minimized. The purpose of this study was to provide preliminary information on water area changes in coastal Louisiana acquired shortly after the landfalls of both hurricanes (detectable with Landsat TM imagery) and to serve as a regional baseline for monitoring posthurricane wetland recovery. The land

488. [The Tempering Effect of Schools on Students Experiencing a Life-Changing Event: Teenagers and the Hurricane Katrina Evacuation](#)

[ERIC Educational Resources Information Center](#)

Barrett, Edith J.; Ausbrooks, Carrie Y. Barron; Martinez-Cosio, Maria

2012-01-01

Focusing specifically on adolescents forced to relocate after Hurricane Katrina, the study looks closely at the role of schools in helping adolescents adapt after a natural disaster. Data collected from 46 middle and high school students across a 6-month period demonstrate that those who showed the greatest improvements in their well-being were

489. [Wind tunnel investigation of simulated helicopter engine exhaust interacting with windstream](#)

[NASA Technical Reports Server \(NTRS\)](#)

Shaw, C. S.; Wilson, J. C.

1974-01-01

A wind tunnel investigation of the windstream-engine exhaust flow interaction on a light observation helicopter model has been conducted in the Langley V/STOL tunnel. The investigation utilized flow visualization techniques to determine the cause of exhaust shield overheating during cruise and to find a means of eliminating the problem. Exhaust flow attachment to the exhaust shield during cruise was found to cause the overheating. Several flow-altering devices were evaluated to find a suitable way to correct the problem. A flow deflector located on the model cowling upstream

of the exhaust in addition to aerodynamic shield fairings provided the best solution. Also evaluated was heat transfer concept employing pin fins to cool future exhaust hardware. The primary flow visualization technique used in the investigation was a newly developed system employing neutrally buoyant helium-filled bubbles. The resultant flow patterns were recorded on motion picture film and on television magnetic tape.

#### 490. [WIND TUNNEL INVESTIGATION OF THE RESPONSE OF A SONIC ANEMOMETER](#)

##### [EPA Science Inventory](#)

An Applied Technology Inc. (ATI) sonic of the type used by J. C. Kaimal at the Boulder Tower was tested in the large wind tunnel at the U.S. EPA Fluid Modeling Facility. The wind tunnel is approximately 6 ft high, 10 ft wide with a test section bed 60 ft long. The air speed in th...

#### 491. [Hosting a Katrina Evacuee.](#)

##### [NASA Astrophysics Data System \(ADS\)](#)

Hoagland, David

2008-03-01

No individual or institution anticipated the impact on the academic research community of hurricane Katrina. When Tulane physicist Wayne Reed asked me to host his research group just a day or two after the disaster, with no authorization or understanding of the commitment, I agreed immediately and then pondered implications. Fortunately, colleagues helped in making the commitment real, only the bureaucracy of my public university posing small hindrances. Industry was remarkably generous in providing Reed with significant "loaner" equipment, and amazingly, a suite of custom Reed experiments was running within weeks. At the end, the most productive collaborations for Reed seemed not to have been with my group, with its similar research, but to other groups at my institution, particularly the synthetic chemists, who gained access to methods previously unique to Tulane while offering samples previously unique to UMass. Quickly designed projects exploiting this match turned out remarkably productive. Although begun with trepidation, hosting of Reed had huge positive benefits to me and UMass, and I believe, also to Reed and Tulane. Some key lessons for the future: (i) industry has capacity and willingness to help academic research during disruption (ii) commitment of a host institution must be immediate, without a wait for formal approvals or arrangement of special funding – delay leads only to discouragement, (iii) continuing academic progress of displaced students must come first, and (iv) intellectual synergy rather than overlap should be the basis for seeking a host. Lastly, NSF or other funding agency should consider a program directly addressing the research needs of unexpectedly disrupted academic scientists, and most particularly, graduate students who face greatly extended studies.

## 492. [Integrated Approach Using Condition Monitoring and Modeling to Investigate Wind Turbine Gearbox Design: Preprint](#)

[DOE Office of Scientific and Technical Information \(OSTI.GOV\)](#)

Sheng, S.; Guo, Y.

2015-03-01

Vibration-based condition monitoring (CM) of geared utility-scale turbine drivetrains has been used by the wind industry to help improve operation and maintenance (O&M) practices, increase turbine availability, and reduce O&M cost. This study is a new endeavor that integrates the vibration-based CM technique with wind turbine gearbox modeling to investigate various gearbox design options. A team of researchers performed vibration-based CM measurements on a damaged wind turbine gearbox with a classic configuration, (i.e., one planetary stage and two parallel stages). We observed that the acceleration amplitudes around the first-order sidebands of the intermediate stage gear set meshing frequency were much lower than that measured at the high-speed gear set, and similar difference was also observed in a healthy gearbox. One factor for a reduction at the intermediate stage gear set is hypothesized to be the soft sun-spline configuration in the test gearbox. To evaluate this hypothesis, a multibody dynamic model of the healthy test gearbox was first developed and validated. Relative percent difference of the first-order sidebands—of the high-speed and intermediate stage gear-meshing frequencies—in the soft and the rigid sun spline configurations were compared. The results verified that the soft sun-spline configuration can reduce the sidebands of the intermediate stage gear set and also the locating bearing loads. The study demonstrates that combining vibration-based CM with appropriate modeling can provide insights for evaluating different wind turbine gearbox design options.

## 493. [One and two fluid numerical investigations of solar wind gas releases](#)

[NASA Astrophysics Data System \(ADS\)](#)

Harold, James Benedict

1993-01-01

The dynamics of gas releases into high Mach number flowing plasmas are investigated. Emphasis is placed on systems of intermediate magnetization for which the scale size of the release lies between the ion and electron Larmor radii. The study is motivated by the December 1984 AMPTE (Active Magnetospheric Particle Tracer Explorer) solar wind barium release in which, contrary to the predictions of MHD theory, the barium cloud shifted transverse to the solar wind (in the  $u \times B_0$  direction) before eventually turning downstream. Particular emphasis is given to identifying mechanisms responsible for this lateral motion. A modified MHD cold fluid approach that takes advantage of the supersonic nature of the problem forms the basis of this work. Two specific models

are developed which incorporate large effective ion Larmor radius effects. The first is for a single ion species, the second for two ion species. Two physical effects are identified which are not present in the conventional MHD system: the Hall effect, based on a Hall magnetic drift wave, and a hybrid electrostatic ion cyclotron mode. Linear analysis shows that the effect of the Hall term is to propagate the upwind magnetic field compression azimuthally to the downwind side of the cloud, leading to a quasi-steady state field compression on the -upwind  $\times$   $B_0$  side of the cloud. The cyclotron mode can lead to a similar compression through deflection of the solar wind ions into the upwind  $\times$   $B_0$  direction. In each case the resulting compression leads to a transverse acceleration of the cloud. The relative importance of these two mechanisms is shown to depend on  $\delta_{ac} / r_c$ , the ratio of the collisionless skin depth to the cloud size. Nonlinear, two-dimensional simulations are performed for each model. These simulations produce the expected field compressions and the resultant lateral acceleration, in general qualitative agreement with the AMPTE experiment. The dependence of these mechanisms on the ratio  $\delta_{ac} / r_c$  is

#### 494. [Operating wind turbines in strong wind conditions by using feedforward-feedback control](#)

[NASA Astrophysics Data System \(ADS\)](#)

Feng, Ju; Sheng, Wen Zhong

2014-12-01

Due to the increasing penetration of wind energy into power systems, it becomes critical to reduce the impact of wind energy on the stability and reliability of the overall power system. In precedent works, Shen and his co-workers developed a re-designed operation schema to run wind turbines in strong wind conditions based on optimization method and standard PI feedback control, which can prevent the typical shutdowns of wind turbines when reaching the cut-out wind speed. In this paper, a new control strategy combining the standard PI feedback control with feedforward controls using the optimization results is investigated for the operation of variable-speed pitch-regulated wind turbines in strong wind conditions. It is shown that the developed control strategy is capable of smoothing the power output of wind turbine and avoiding its sudden shutdown at high wind speeds without worsening the loads on rotor and blades.

#### 495. [An Examination of the Effectiveness of Public Management Networks \(PMNs\): Evidence from the Case of the Hurricane Katrina Disaster](#)

[ERIC Educational Resources Information Center](#)

Davis, Girtle Leah

2012-01-01

This dissertation examined the performance outcomes of public management networks (PMNs) in the disaster management context. The effectiveness of three disaster response sub-networks in the area

of evacuation were examined and compared using the case of the Hurricane Katrina disaster in New Orleans, Louisiana in August 2005: Citizen Protection:â€¦

496. [Hurricane Katrina: Influence on the Male-to-Female Birth Ratio](#)

[PubMed Central](#)

Grech, Victor; Scherb, Hagen

2015-01-01

**Objective** This study was carried out in order to ascertain whether or not Hurricane Katrina and related factors (i.e. the amount of rainfall) influenced the male-to-female birth ratio (M/F). **Materials and Methods** Monthly births by gender for the affected states (Alabama, Florida, Louisiana and Mississippi) for January 2003 to December 2012 were obtained from the Centers for Disease Control and Prevention (CDC Wonder, Atlanta, Ga., USA). Precipitation data was obtained from the US National Weather Service. Ordinary linear logistic regression was used for trend analysis. A p value  $\leq 0.05$  was taken to represent a statistically significant result. **Results** Of the total of 3,903,660 live births, 1,996,966 (51.16%) were male and 1,906,694 (48.84%) were female. Significant seasonal variation was noted (the maximum M/F in May was 1.055, the minimum M/F in September was 1.041,  $p = 0.0073$ ). There was also a separate and significant rise in M/F 8â€“10 months after the storm (April to June 2006, peak M/F 1.078,  $p = 0.0074$ ), which translated to an approximate deficit of 800 girls compared to 46,072 girls born in that period if the M/F increase was theoretically only due to a girls' deficit in the denominator of the ratio. This spike was only present in Alabama, Louisiana and Mississippi, all of which received heavy rainfall. Florida did not receive heavy rainfall and experienced no such M/F spike. **Conclusion** In this study there was a dose-response relation between the amount of rainfall after Hurricane Katrina and the monthly sex ratio of live births in the US states of Alabama, Louisiana and Mississippi 8â€“10 months later. The well-known yet unexplained distinct sex ratio seasonality may be due to natural or man-made radiation contained in the rain. PMID:26139554

497. [Wind-tunnel investigation of the powered low-speed longitudinal aerodynamics of the Vectored-Engine-Over \(VEO\) wing fighter configuration](#)

[NASA Technical Reports Server \(NTRS\)](#)

Paulson, J. W.; Whitten, P. D.; Stumpfl, S. C.

1982-01-01

A wind-tunnel investigation incorporating both static and wind-on testing was conducted in the Langley 4- by 7-Meter Tunnel to determine the effects of vectored thrust along with spanwise blowing on the low-speed aerodynamics of an advanced fighter configuration. Data were obtained over a large range of thrust coefficients corresponding to takeoff and landing thrust settings for many nozzle configurations. The complete set of static thrust data and the complete set of longitudinal

aerodynamic data obtained in the investigation are presented. These data are intended for reference purposes and, therefore, are presented without analysis or comment. The analysis of the thrust-induced effects found in the investigation are not discussed.

498. [Wind Tunnel Tests for Wind Pressure Distribution on Gable Roof Buildings](#)

[PubMed Central](#)

2013-01-01

Gable roof buildings are widely used in industrial buildings. Based on wind tunnel tests with rigid models, wind pressure distributions on gable roof buildings with different aspect ratios were measured simultaneously. Some characteristics of the measured wind pressure field on the surfaces of the models were analyzed, including mean wind pressure, fluctuating wind pressure, peak negative wind pressure, and characteristics of proper orthogonal decomposition results of the measured wind pressure field. The results show that extremely high local suctions often occur in the leading edges of longitudinal wall and windward roof, roof corner, and roof ridge which are the severe damaged locations under strong wind. The aspect ratio of building has a certain effect on the mean wind pressure coefficients, and the effect relates to wind attack angle. Compared with experimental results, the region division of roof corner and roof ridge from AIJ2004 is more reasonable than those from CECS102:2002 and MBMA2006. The contributions of the first several eigenvectors to the overall wind pressure distributions become much bigger. The investigation can offer some basic understanding for estimating wind load distribution on gable roof buildings and facilitate wind-resistant design of cladding components and their connections considering wind load path.

PMID:24082851

499. [Wind tunnel tests for wind pressure distribution on gable roof buildings.](#)

[PubMed](#)

Jing, Xiao-kun; Li, Yuan-qi

2013-01-01

Gable roof buildings are widely used in industrial buildings. Based on wind tunnel tests with rigid models, wind pressure distributions on gable roof buildings with different aspect ratios were measured simultaneously. Some characteristics of the measured wind pressure field on the surfaces of the models were analyzed, including mean wind pressure, fluctuating wind pressure, peak negative wind pressure, and characteristics of proper orthogonal decomposition results of the measured wind pressure field. The results show that extremely high local suctions often occur in the leading edges of longitudinal wall and windward roof, roof corner, and roof ridge which are the severe damaged locations under strong wind. The aspect ratio of building has a certain effect on the mean wind pressure coefficients, and the effect relates to wind attack angle. Compared with experimental

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500. [Selected chemical composition of deposited sediments in the flooded areas of New Orleans following Hurricane Katrina: Chapter 7B in Science and the storms-the USGS response to the hurricanes of 2005](#)

[USGS Publications Warehouse](#)

Witt, Emitt C.; Adams, Craig; Wang, Jianmin; Shaver, David K.; Filali-Meknassi, Youssef

2007-01-01

Nearly 4 weeks after Hurricane Katrina passed through St. Bernard Parish, the U.S. Geological Survey's (USGS) Mid-Continent Geographic Science Center and the University of Missouri-Rolla's (UMR) Natural Hazard Mitigation Institute deployed a team of scientists to the region to collect perishable environmental and engineering data. The team collected 149 samples throughout the affected area to chemically characterize the Katrina depositional sediments. Preliminary results of this effort are presented here.

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