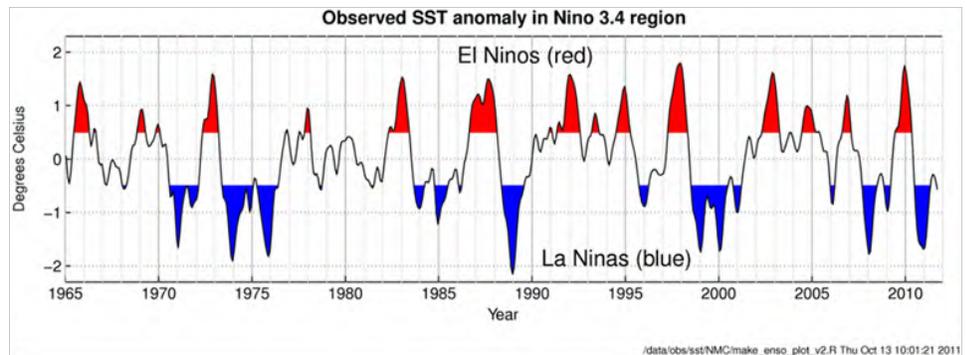




What is El Niño and How Will it Affect Us?

El Nino, El Nino, El Nino seems to be on the lips of every weather man and woman on television these days. What is El Nino and why is it important for water districts and authorities in Texas? There are basic answers to these question and more complex answers. This article will try to give a more in depth look at the El Nino phenomenon and its ramifications for Texas water.

The El Nino name was first given to this cyclical event by fishermen off the Peruvian coast of South America. They noticed a warming current of Pacific Ocean waters just after Christmas in some years and gave it the Spanish nickname for the Christ child. The El Nino event occurs every two to seven years and is part of the Southern Oscillation in the Pacific. The pattern is driven by the trade winds which generally blow from east to west. However, when they weaken, the warm water piled up by the trade winds in the western Pacific begins to migrate back to the east. This warming of the sea surface temperature of up to 4 degrees Celsius has a climatic effect over wide areas of the globe, including North America.



University of California San Diego

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One of El Nino’s principal effects is to change the path of the jet stream that courses over the United States by moving it farther south. This changes the path of storms as they move from west to east across the continent and often results in cooler and wetter winters for the southern United States. El Nino also increases wind shear over the Caribbean basin during the period of maximum tropical storm development. Wind shear is the enemy of tropical storms because it displaces the tops of thunderstorms in the system and reduces storm intensification. This strong wind shear during the 2015 Hurricane season was one reason there were fewer hurricanes and tropical storms that had any impact in the Gulf of Mexico. Conversely, the warmer waters in the eastern Pacific contributed to a record hurricane season with devastating impacts in Mexico. The 2015 season saw the most intense hurricane ever recorded in the eastern Pacific, Hurricane Patricia with winds over 215 miles per hour. The current

see El Nino on page 5

Loss Control Briefs

Gun Sign Update

Many districts have had questions about the new gun laws that went into effect in Texas in 2016. The article in the Fall 2015 Risk Advisor had basic information about the signage requirements of the law. Since then some districts and authorities have been approached by members of the public about their signage. Simple removal of the signs is all that is required by the law unless there is a refusal and the matter is referred to the Texas Attorney General. That's when failure to remove a sign could get very expensive. To date, there are no known instances of a member referral to the Attorney General.

OSHA Update

Although OSHA does not have authority to regulate public entities, it does set standards that are useful in implementing and measuring safety at districts and authorities. One of the standards they have been working on is a new silica rule that would apply to sandblasting, fracking and sawing, grinding and cutting stone, tile and masonry. Workers at foundries would also be covered by the new rule that cuts the current exposure limit in half and requires medical monitoring and frequent air testing.

OSHA has also recently withdrawn from consideration new rules related to slips, trips and falls. The review of the final rule may go forward later this year as the agency is "committed to finalizing the rule during this term." Key provisions in the rule would revise standards for training and inspection of ladders, ropes, guardrails, personal fall protection systems and surfaces. The Department of Labor and the Department of Justice announced an agreement to more forcefully "holding managers and supervisors criminally accountable for willful violations of OSHA and environmental laws. Enforcement action would apply not only to frontline managers and supervisors but to "decision makers in the corporate offices." The agreement was announced in December 2015. Although this agreement may not have a direct impact on Fund members, it could harden up the approach to criminal negligence by local law enforcement and prosecutors who respond to on the job fatalities and serious accidents.

Occupational Safety and Health Administration website

What are Comorbidities and How do they affect Workers' Compensation Claims?

Comorbidities are disease processes that are already present when an employee is injured on the job or that develop during medical treatment for an injury. The individual may already be experiencing symptoms of the disease as they go about their duties and daily life. When they are injured on the job they are affected not only by the job related injury, but the underlying condition.

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Recent Cyber Attacks on Utility Infrastructure

The Voice of America reported in early January 2016 that a concerted cyber attack on one of the major electric utilities in the Ukraine on December 23, 2015 had been successful in disrupting power to over 80,000 people in the country. The attack started with a massive denial of service component when the utility was swamped with thousands of contacts to its system for customer reporting of outages. This prevented the utility from knowing immediately that outages had occurred. Another phase of the attack included introduction of malware called “BlackEnergy” through a “phishing” campaign that included the malware in an e-mail attachment. This virus had the ability to take over sensors that automatically reported disruptions and override the notification to system operators and instead report that everything was normal. It also remotely switched breakers to disrupt the flow of power. Most knowledgeable observers suspect that a Russian group known as “Sandworm” instigated the attack, possibly with government approval and support.

Several weeks later on January 26, 2016 the Israeli Public Utility Authority was attacked. The utility successfully fended off the attack. The attack occurred during a period of very cold weather and ironically, during the Cyber Tech 2016 Conference attended by hundreds of delegates from around the world. One alarming aspect of both of these attacks is that industrial control systems were targeted. Many of the attacks utilities and other entities have experienced in the United States recently have been denial of service attacks that go after phone and e-mail systems or internal accounting programs. In particular, the Ukrainian attack targeted systems that controlled and operated the electrical grid.

One observer writing in the SANS ICS blog expressed concern that malware could target a “Windows operating

system to host applications such as human machine interface and data historians.” These systems are used in SCADA (supervisory control and data acquisition) and industrial control system applications that manage water and wastewater infrastructure as well as electrical distribution and other manufacturing and industrial systems.



System operators for municipal water supply systems, irrigation systems, dams and any other application with remote sensing or control of pumps and gates should make sure their system is protected or even isolated from the internet or other outside communication channels. Any introduction of programming from vendors or others with thumb drives or attachments to e-mail should be checked for the presence of viruses or malware. Basic computer usage protocols should prohibit anyone from opening software or attachments from an unknown source. Remote access to SCADA from cell phones or home computers should carry extra measures to insure against hacking or breaching of district or authority systems. A serious disruption of utility services to the community could also pose hazards to district staff and impair the ability to react to a disruption and restore service.

Finally, some in the cyber community fear that the BlackEnergy malware is already installed in systems across the United States and could be awakened as part of a concerted cyber warfare attack.

SANS ICS Blog, February 2016, Voice of America, January 5, 2016 & February 1, 2016, Jerusalem Post, January 28, 2016



The Zika Virus

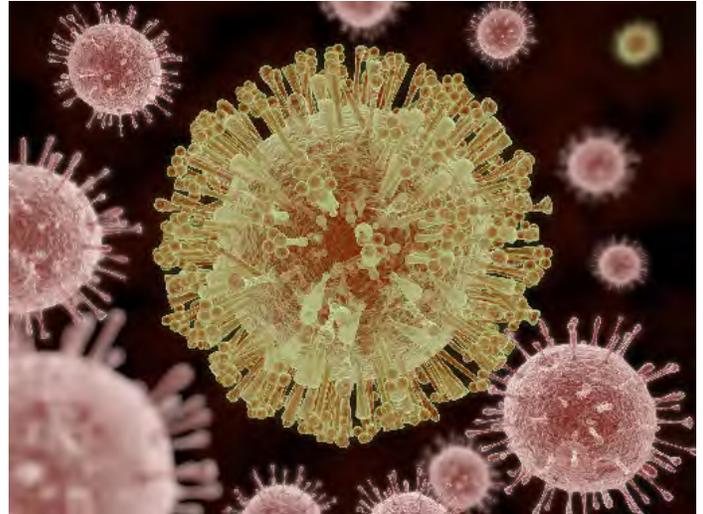
The World Health Organization has declared a Health Emergency in response to the rapid spread of the Zika Virus. The virus was first discovered in equatorial Africa in 1947 while researchers were exploring the jungle canopy for yellow fever in Rhesus monkeys. The first human case detected was in Uganda in 1952. Large recent outbreaks have occurred in French Polynesia in 2013 and Brazil in 2015 (and ongoing). The disease has spread throughout South and Central America and is being introduced into the United States by infected travelers from those areas.

Media reports as of February 2, 2016 indicate that the mosquito borne infection caused by the Zika virus may be sexually transmitted. A person in Texas has been infected with the Zika virus after having sex with an ill person who had returned from Venezuela according to the Dallas County Health Department. The virus appears to be moving into the United States from Latin and South America. Cases have been reported as far north as New York City in persons who have recently traveled to South America.

The virus is carried by the most common mosquito species that inhabits the southern United States, the *Aedes aegypti*. The Zika virus has gained much notoriety because it appears to cause a very damaging birth defect known as microcephaly, abnormally small skull development in newborns. The frequency of microcephaly went from fewer than 400 cases reported in Brazil in 2014 to over 4,000 reported in the first four months of 2015. There is some recent reporting that this epidemic started before the Zika virus became so prevalent in Brazil. The disease has also been associated with the potentially paralyzing Guillian-Barre syndrome. This association was also noted during the 2013 outbreak of Zika in French Polynesia. Both of these associations are strongly



circumstantial but scientifically unproven at this time. The usual symptoms of infection include relatively mild flu-like symptoms such as mild fever and headache, joint and muscle pain, a rash and red eyes



(conjunctivitis). The symptoms usually last from two to seven days. The disease has been reported in 34 countries worldwide and in 26 in the Americas. The World Health Organization has noted that it is “spreading explosively” with over 1.5 million cases reported in Brazil. The Texas Department of State Health Services recommends that people should protect themselves from mosquito bites by:

- ◆ Wearing long-sleeved shirts and long pants
- ◆ Using EPA-registered insect repellents
- ◆ Using permethrin-treated clothing
- ◆ Staying and sleeping in screened-in or air-conditioned rooms
- ◆ Avoiding or limiting outdoor activities during peak mosquito times
- ◆ Protecting young children and the elderly who cannot take measures to protect themselves

The mosquito responsible for spreading the virus is active during the day and a couple of hours before and after sunset. The Centers for Disease Control has recommended that pregnant women should avoid travel to affected areas as well as taking the precautions mentioned above. At present there is no vaccine.



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Loss Control Brief, continued from page 2

Common comorbidities include:

- ◆ obesity
- ◆ diabetes
- ◆ heart disease
- ◆ depression
- ◆ chronic obstructive pulmonary disease
- ◆ high blood pressure
- ◆ drug abuse

Any of these conditions complicate the treatment of an injury by reducing the body's ability to heal, posing potential drug interactions and restricting mobility and preventing an early return to work. For instance, obesity can restrict an injured employee's ability to engage in the movements required by physical therapy to help them recover from a sprain or strain injury. Diabetes can reduce circulation in extremities and impede recovery from wounds or surgery. Drug use can complicate pain management and a worker's ability to continue effective treatment. Opioid addiction can be pre-existing or arise as comorbidity because of pain treatment during a workers' compensation claim. Depression is also a very common condition that can affect the progress of recovery from an on the job injury. It is also a condition that can occur as a result of some of the negative impacts of separation from the workplace, financial instability and loss of productivity during the time away from work.

According to the National Council on Compensation Insurance, the

number of injured employees with a diagnosis of a comorbidity increased from 2.4% in 2000 to 6.6% in 2009. Their study also revealed that the medical costs associated with a workers compensation claim involving comorbidity were twice as high as comparable claims.

One important key to a successful recovery from an on the job injury by a person with a co-morbid condition is the physician's awareness of the condition from the outset of a claim. Injured workers should be willing to inform their physicians of any pre-existing conditions and the physician should ask the question. Nurse case managers can also assist in this process by communicating with the employee and physician about the comorbidities and how they can affect recovery. An evaluation of drugs a worker is taking should also be done at the outset to avoid drug interactions and alert the physician to underlying conditions. HIPAA regulations prevent employers from disclosing confidential health information about a workers' compensation claimant, but the claims adjuster will request medical information from the claimant and see any bills for medications that may not relate to the injury. If warranted by complications or seriousness of an injury the case might be referred to a nurse case manager who can help manage the claim. All of the efforts of Fund claim adjusters work toward effective medical treatment and an early return to productive employment for the injured worker.

National Council on Compensation Insurance, "Research Briefs", 2012; Healthcare Solutions, "Comorbidity in Workers' Compensation: Preventing and Identifying Comorbidity to Reduce the Impact on Workers' Compensation Claims," 2015