



# Mandatory Life Jacket Study/Test

U.S. ARMY CORPS OF ENGINEERS

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## SUMMARY

In April 2007, MG Don Riley, then Director of Civil Works, tasked the HQUSACE National Operations Center for Water Safety to conduct a study on the benefits and impacts of establishing a policy which would require visitors to wear life jackets while recreating on Corps-managed waters. Under further direction from MG Riley in March 2008, Vicksburg and Pittsburgh Districts were selected to conduct a three-year mandatory life jacket study/test. Test implementation and data tracking for the first two test sites were initiated with the 2009 recreation season. Further test expansion in 2010 brought Sacramento District into the study as well. Studies in all three test regions will wrap up at the end of 2011 recreation season.

## BACKGROUND

The Corps established the National Operations Center for Water Safety (NOC) in 1995 to develop strategies, programs and products to help reduce the number of water-related fatalities at Corps projects. The NOC implemented an aggressive public water safety campaign with education products and effective partnerships which has contributed to an overall reduction in fatalities from over 450/year in the early 1970s to an average of about 150 per year.

In an effort to further reduce the number of fatalities, the DCW directed the Corps to conduct a study to determine the feasibility of establishing a federal regulation (modify Title 36) to require the public to wear life jackets while on the water.



Vicksburg (MVD) and Pittsburg (LRD) Districts volunteered to conduct the three-year test beginning in 2009. Sacramento (SPD) District volunteered one lake for further testing in 2011 in response to MG Riley's request for test expansion.

The US Coast Guard agreed to conduct a wear rate study at all test lakes located within both test districts throughout the entire test period. However, USCG did not continue wear rate observations in Pittsburgh District in 2010 or 2011; instead they shifted manpower for their wear rate study to Pine Flat Lake in Sacramento District once it was announced they had joined the USACE study.



## USACE Study Lakes

Region	Test Lakes	Control Lakes
<b>Pittsburgh Test</b>	<b>Youghiogheny River Lake Shenango River Lake (All Western PA)</b>	<b>Berlin Lake (OH) Tygart Lake (WV)</b>
<b>Vicksburg Test</b>	<b>Grenada Lake Enid Lake Arkabutla Lake Sardis Lake (Mississippi)</b>	<b>Ross R. Barnett Reservoir Bay Springs Lake (Mississippi)</b>
<b>Sacramento Test</b>	<b>Pine Flat Lake (Central CA)</b>	<b>Millerton Lake (Central CA)</b>

## Policies by USACE Test Region

Site	Non-motorized	Boats Less than 16 feet	Boats 16-26 feet	Boats greater than 26 feet	Swimming	Enforcement period
Pittsburgh District	Less than 16 feet	At all times	No policy	No policy	Non-swimmers	Permanently adopted in 1990
Vicksburg District	At all times regardless of size	At all times	When under main propulsion	No policy	When outside designated area	May 2009 – 31 Oct 2011
Sacramento District (Pine Flat Lake)	At all times regardless of size	At all times	When under main propulsion (with exception)	When under main propulsion (with exception)	When 100' from shore (Ca law)	April 2011– 31 Oct 2011

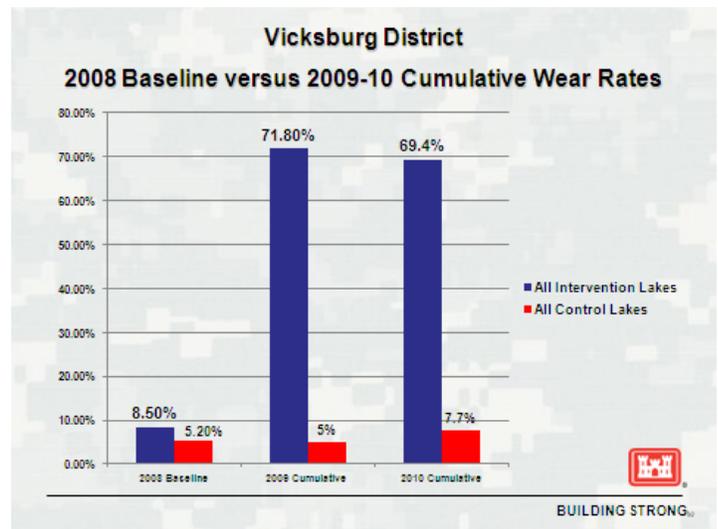
### Validation Study

University of Mississippi has conducted wear rate observations on the Vicksburg District test lakes as validation to the JSI information being reliable. Observation totals from both observation groups have shown consistency throughout the 2009 and 2010 test years.

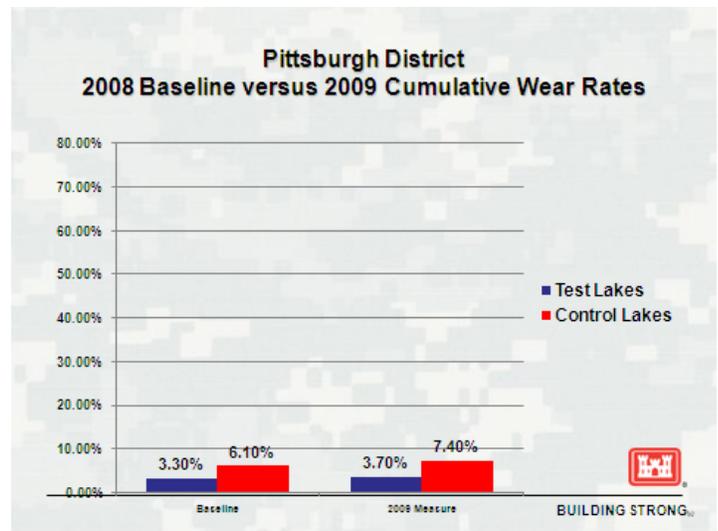
Slippery Rock University has been requested to conduct wear rate observations for the Pittsburgh District test lakes during 2011 recreation season; however, no commitment is in place at the time of this writing.

## CURRENT STATUS

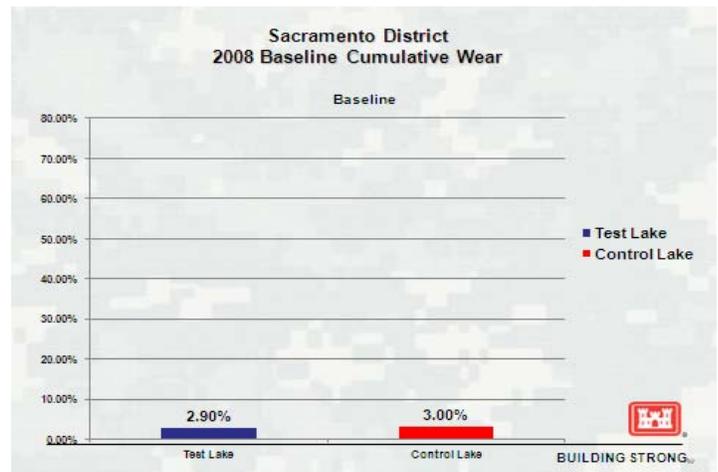
**Vicksburg District** - During both of the test years (2009 and 2010) conducted to date in the Vicksburg District, life jacket wear rates have increased from less than 10% (baseline data gathered in 2008) to over 70% at all four Mississippi test lakes. The nearby control lakes, where no policy was applied, continued to show wear rates of less than 10% during those same test years.



**Pittsburg District** – In that the district had adopted their life jacket policy in 1990, it was surprising to discover that wear rates on the test lakes were only about 3.3% during the 2008 recreation season. Wear rates in the first test year, 2009, showed very little change; final results showed that only 3.7% of visitors on the test lakes wore life jackets. Nearby control lakes, where no policy was applied, showed more significant increase. Based on perceived lack of engagement by the Pittsburgh District ranger and/or state water patrols, USCG opted to discontinue wear rate observations in that region. The policy, without being actively worked, had gone stale in the regions and there was apparent complacency on the part of both Corps and state patrol staffs.



**Sacramento District** – Pine Flat Lake, located in the central valley of California, was volunteered for the test based on an active recreational base and location near a fairly large metropolitan area, Fresno. Baseline observations were gathered during the 2010 recreation season for comparative data to the 2011 policy test. Voluntary wear rates at the lake and nearby control lake were about 3%, less than the national average. Enforcement activities will begin 1 April 2011.



## **KEY POINTS:**

- HQUSACE recognizes its public safety responsibility. The majority of visitors who come to Corps facilities come to be on, in, or near the water, a fact that has focused our recreational safety attention to boating and water safety education since the mid-1970's. USACE has literally invested millions of dollars in this effort. While earliest annual campaigns showed dramatic effect on reducing the number of recreational fatalities, that downward trend has leveled off over the past decade, despite vigilance by our park rangers and aggressive efforts in educational outreach.
- Nearly 2,000 boaters and swimmers have died in recreational accidents on US Army Corps of Engineers (USACE) managed waters since 1998. Greater than 90% of those victims were not wearing a life jacket. Incidents involving boating and swimming in non-designated areas account for the majority of the fatalities.
- The US Army Corps of Engineers opted to conduct a life jacket policy test to measure the feasibility of the agency adopting a life jacket wear requirement for recreation occurring on Corps-managed waters. The policy is being enforced on limited test lakes included in the study under CFR Title 36 Section 327.12(a), posted restrictions.
- Study measurements include, but are not limited to: wear rates pre-and-post policy test; recreation effects; budget and staffing implications; public, stakeholders and Congressional reactions/actions; and agency costs of not having policy.
- Comments from public, stakeholders and other agencies are being encouraged for the study group's consideration. All input will be compiled and included in the final review. A partner/stakeholders meeting is planned for final discussions prior to the final report being completed. That meeting will likely be scheduled in Washington, DC at USACE Headquarters sometime in November 2011.
- Decision briefing with study team's recommendations to the Commander is tentatively planned for December 2011 or later.



# U.S. Army Corps of Engineers Life Jacket Policy Test

*More wear? More lives saved.*

by Ms. LYNDA NUTT  
*U.S. Army Corps of Engineers  
 Manager, National Operations Center for Water Safety*

The U.S. Army Corps of Engineers (USACE) is the nation's largest federal provider of outdoor recreation, hosting more than 370 million visitors per year at its 4,200 recreation areas. In particular, its 422 lake and river projects in 43 states are very popular with the recreating public.

### With Popularity Comes Water Safety Challenges

Despite the national reductions in recreational boating-related casualties that resulted from the passage of the Federal Boating Safety Act of 1971, USACE recreation managers struggled to minimize the high numbers of serious injuries and fatalities occurring on their waters throughout the 1970s and 1980s.

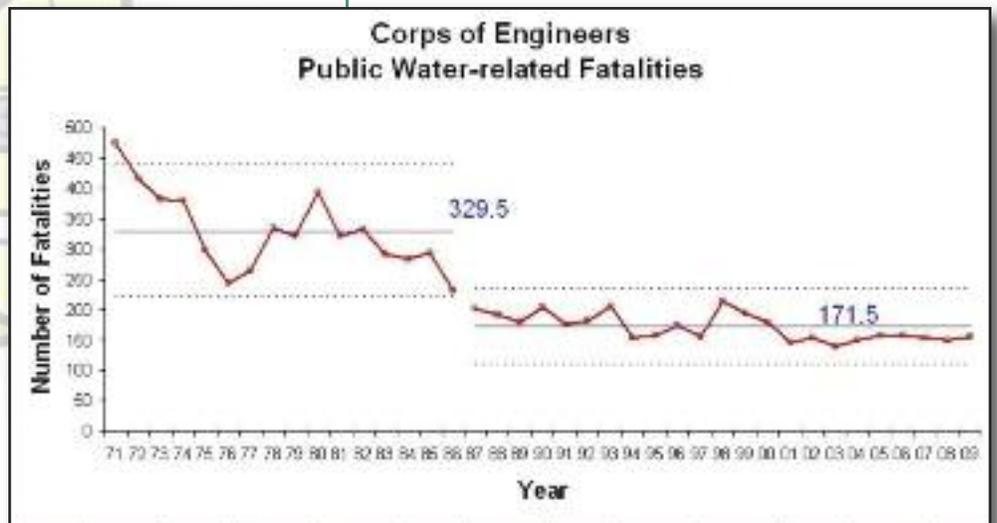
By 1985, the corps was using aggressive water safety educational campaigns and key visitor assistance initiatives led by park rangers in local communities, parks, and on the water to warn the public of open water recreation risks and encourage safer behaviors. While all these efforts had a dramatic effect on reducing the numbers of fa-

talities over the next 25 years, fatalities still averaged 170 each year.

### Statistical Analysis

The USACE began to evaluate trends and found that of the 1,948 fatalities that occurred between 1997 and 2009, 91 percent of the victims were not wearing a life jacket. Further, it was determined that in the majority of the incidents, a life jacket would have likely kept the victim from drowning.

To enhance the corps' analysis of life jacket wear trends, the U.S. Coast Guard's Office of Auxiliary and Boating Safety provided some data that illuminated the current



life jacket wear situation. The Coast Guard has been observing and measuring life jacket wear rates through a grant funded by the Sport Fish Restoration and Boating Trust Fund since 1998. After measuring life jacket wear for nearly a decade at that point, the Coast Guard's data indicated voluntary wear rates remained extremely low for the at-risk population, but high for those groups who were mandated to wear a life jacket, such as personal watercraft operators and children.

These facts did not go unnoticed by senior USACE leaders, specifically Maj. Gen. Donald T. Riley, former deputy commanding general of Civil and Emergency Operations. In 2007, Maj. Gen. Riley tasked the USACE National Operations Center for Water Safety to conduct a study on the feasibility of implementing a life jacket policy on all corps waters. In February 2008, Maj. Gen. Riley embraced the recommendation that USACE conduct a policy test to measure the effect of adopting such a policy command-wide.

The policy test took on greater value when the U.S. Coast Guard's Office of Auxiliary and Boating Safety agreed to support the effort by conducting life jacket wear observations at the lakes participating in the test. They would use the same observation techniques employed during the office's 10-year voluntary wear assessment.

### **The Policy Test**

By March 2008, USACE was ready to move out with its policy test. The Pittsburgh and Vicksburg Districts were selected to participate. Pittsburgh District was included because although managers adopted a limited life jacket policy on its western Pennsylvania lakes in 1990, staff reductions and budget constraints resulted in limited documentation on the policy's effect on wear rates among boaters.

Since 1990, Pittsburgh District policy mandates that life jackets be worn by all non-swimmers and occupants of vessels under 16 feet. Results of the Pittsburgh policy to date have found that the lakes in this region experience greater numbers of boats outside the policy, which skews the overall wear rate average of the region. USACE managers are reviewing the existing policy and will consider whether changes need to be applied to increase the wear rates among all boaters in that region.

**USACE officials have documented four lives saved on the Mississippi lakes specifically tied to the policies implemented during the first test season.**

**"These victims stated that they would not have worn a life jacket if it hadn't been for the corps' policy," said Michael Ensich, chief of the USACE Operations Division. "In each case, the situations were challenging enough that survival without the life jacket was questionable. This truly is about saving lives."**

The Vicksburg District opted to closely evaluate accident and fatality statistics and set policy to address some of the greatest risks. While not required by the test, the district opted to include a swimming-related policy, as well as model its boating-related policy after bass tournament regulations, which were already well understood in the region. Vicksburg District "test" policies are as follows:

- Life jackets are required to be worn at all times by all occupants of powered vessels under 16 feet and all non-powered vessels, regardless of size.
- Life jackets are required to be worn by all occupants of vessels 16 feet to 26 feet while under main propulsion. Life jackets are not required while vessel is trolling or standing still.
- Life jackets are required to be worn by swimmers in non-designated swimming areas.
- Life jackets are required to be worn while skiing or being pulled by a vessel, regardless of vessel length.

Pittsburgh District staff had little to do to prepare, since this policy had been in place for the past 18 years. Vicksburg District staff began a carefully managed process of congressional notifications, followed by coordination with regional stakeholders, media, and members of the public, bringing attention to the policy and explaining enforcement intentions.

After a full year of advance preparation, Vicksburg District initiated enforcement of the life jacket wear requirements on May 22, 2009.

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**A U.S. Army Corps of Engineers park ranger discusses the benefits of wearing a life jacket with a boater. Photo courtesy of the U.S. Army Corps of Engineers.**

## Mandatory Use of Life Jackets

- When swimming outside of designated swim areas
- When Skiing or being towed by any vessel
- At all times on powered vessels less than 16 feet in length and all non-powered vessels, regardless of length
- On vessels 16-26 feet in length when under power by main propulsion unit. (Not required when trolling)

**This sign alerts boaters to new (2009) life jacket wear requirements. USCG photo by Mr. Jeff Ludwig.**

### Vicksburg Findings Impressive

Vicksburg officials reported that the initial public reaction to the life jacket policy was mixed. However, rangers were able to gain significant compliance without having to issue even one citation over the course of the recreational summer.

By Labor Day weekend, the Vicksburg recreation managers proudly declared the first test season a success. Observation data supported that a cumulative wear rate of nearly 71 percent was found on the Vicksburg test waters. Comparatively, nearby "control" lakes, where policy wasn't introduced, were still showing only six percent wear rates overall. By the end of the first test year, which included the fall season, the overall cumulative wear rate average for the Mississippi test lakes climbed to more than 78.5 percent.

### Pittsburgh Results Disappoint

In Pittsburgh District, however, the findings were quite different. By the end of the recreation season, it had achieved only a 3.7 percent cumulative wear rate on the test lakes in this region, while nearby control lakes in Ohio showed wear rates of more than seven percent.

Clearly, the policy had become stale after nearly two decades with no new emphasis on promotion or enforcement. The policy was also limited in scope, applying only to craft less than 16 feet, while the majority of boats on these test lakes were greater in size. It was also noted that Ohio boating safety officials were engaged to a much greater degree in the National Safe Boating Council's "Wear It!" campaign to encourage voluntary life jacket wear.

### Future Efforts

The USACE will continue the tests in the Pittsburgh and Vicksburg Districts for an additional two years. During this time, officials will continue to evaluate data collection in monitoring wear rates. In addition, impact on recreation (losses or gains); staffing/budget requirements and capabilities; and public, stakeholder, and congressional reactions will also be monitored and evaluated.

All findings will be studied and serve as the basis of the National Operations Center for Water Safety's final recommendation to USACE leadership at the end of the 2011 recreation season.

### About the author:

*As manager of the U.S. Army Corps of Engineers National Operations Center for Water Safety, Lynda Nutt serves as her agency's key subject matter expert on recreational safety. She currently serves on the National Safe Boating Council Board, U.S. Coast Guard Tiger Team, and Federal Interagency Working Group for Public Safety.*

### Endnote:

All statistics available at the USACE Natural Resources Management website, <http://corpslakes.usace.army.mil/employees/watersafety/ljms.html>.

### FOR MORE INFORMATION:

For more information on the Coast Guard's National Life Jacket Wear Rate Observational Study, visit <http://www.uscgboating.org/statistics/pfd.aspx>.

For more information on the National Safe Boating Council's "Wear It!" voluntary life jacket wear campaign, visit <http://www.safeboatingcampaign.com/>.

