

As Boating Season Begins, Help Raise Awareness of the “Killer in Our Rivers”

Submitted by the Indiana Silver Jackets and the Association of State Dam Safety Officials

Since 1960, roughly 400 fatalities have occurred at low-head dams, structures ranging from about one to fifteen feet in height. Among the victims: boaters, kayakers, swimmers, and emergency responders who became trapped in a powerful hydraulic roller created at the base of many of these dams.

Boaters are often unaware of the potentially extreme forces and vortices at low-head dams, as the surrounding waters may look calm and inviting.

Below the surface, however, turbulent conditions can create highly aerated, circulating currents that decrease the buoyancy of personal flotation devices, limiting their effectiveness, especially during high-flow conditions.

As both popularity of water recreation and populations near low-head dams have increased in recent years, so has the number of accidents at dams. Brigham Young University researcher Dr. Rollin Hotchkiss has documented at least 450 fatalities at 239 dams since the 1960s.¹ The late Dr. Bruce Tschantz, professor emeritus of the University of Tennessee, determined that from 1980 to 2015, accidents at dams claimed almost seven times as many lives (278) as those lost due to dam failures (40).² Altogether, Dr. Tschantz documented 377 fatalities at low-head dams from 1960 to August 2016, with the vast majority occurring April through August.

Most states do not regulate the design, operation or safety of low-head dams because of their small heights and/or impounding capacities and low hazard potential to downstream property or life in event of failure. States tend to focus primarily on design, construction and operation of safe structures; therefore, safety *at* dams has been largely unregulated. But the alarming rise in fatalities at low-head dams has prompted initiatives within several states, including Indiana.

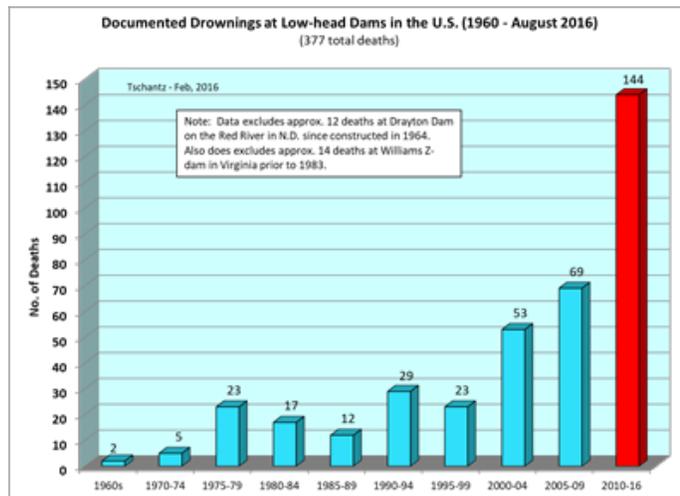


Figure 1. Research reveals an alarming increase in drownings at low-head dams. -Dr. Bruce Tschantz, 2016.

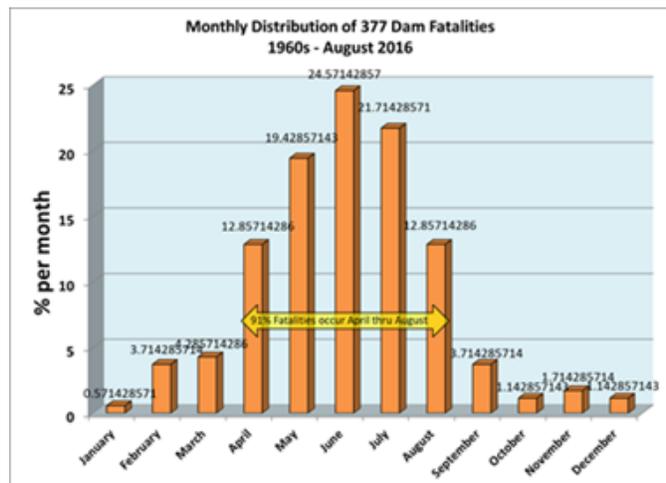


Figure 1. Most drownings at low-head dams have occurred from April through August. – Dr. Bruce Tschantz, 2016.

As a result of multiple deaths in Indiana in 2014 and 2015 at low-head dams, the Indiana Silver Jackets, a partnership of local, state, and federal agencies, undertook a voluntary initiative to promote recreational safety at dams. Assisted by a 5% Initiative Grant from the Indiana DHS Hazard Mitigation Program, the Silver Jackets partnered with Indianapolis PBS station WFYI to make a half-hour documentary illuminating the dangers of low-head dams and presenting various mitigation strategies through interviews with emergency personnel, state and local officials, and families and friends of victims. The documentary, "Over, Under, Gone: The Killer in Our Rivers," is freely available for public showings through the following link:

<http://www.pbs.org/video/over-under-gone-killer-our-rivers/>

The Silver Jackets and the Association of State Dam Safety Officials encourage NASBLA members to view "Over, Under, Gone" and share it widely to prevent deadly boating accidents at dams nationwide. For more information or to obtain the documentary in an alternative format, please contact Manuela Johnson, mjohnson@dhs.IN.gov, or the Association of State Dam Safety Officials, info@damsafety.org.

References

¹Brigham Young University. *Locations of Fatalities at Submerged Hydraulic Jumps*.
<http://krcproject.groups.et.byu.net/browse.php>

² Tschantz, Bruce A. *What We Know (and Don't Know) About Low-head Dams*. The Journal of Dam Safety, V12 n4 (2014).
https://damsafety.org/sites/default/files/dam_jourl_v12_issue_4_2014_final-what_we_know_frm_asdso.pdf