



Evidence-Based Measures to Reduce Boating Fatalities

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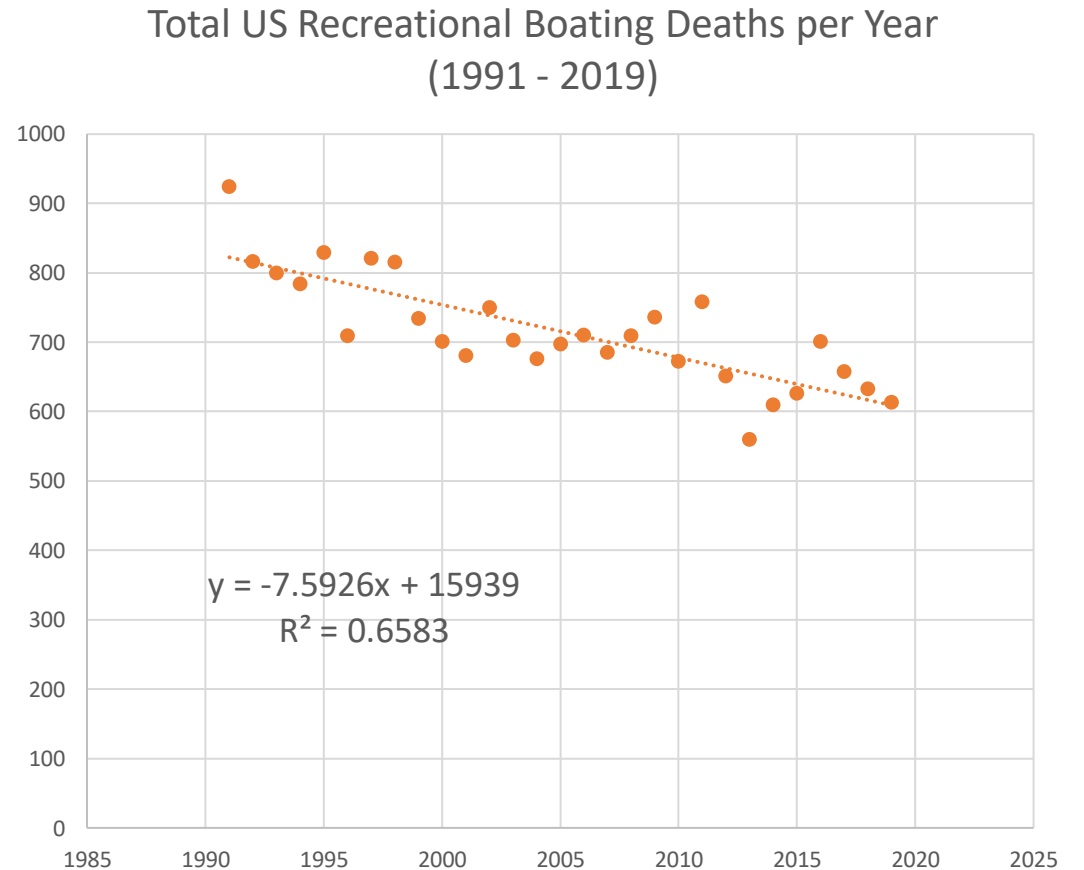
Overview

- Scope of the Problem
- Patterns in Boating Accidents and Fatalities
- Evidence-Based Interventions to Reduce Fatalities

- All data comes from Recreational Boating Statistics published by USCG's Office of Boating Safety (https://www.uscgboating.org/statistics/accident_statistics.php); please see RBS data for definitions for contributing factors and accident types

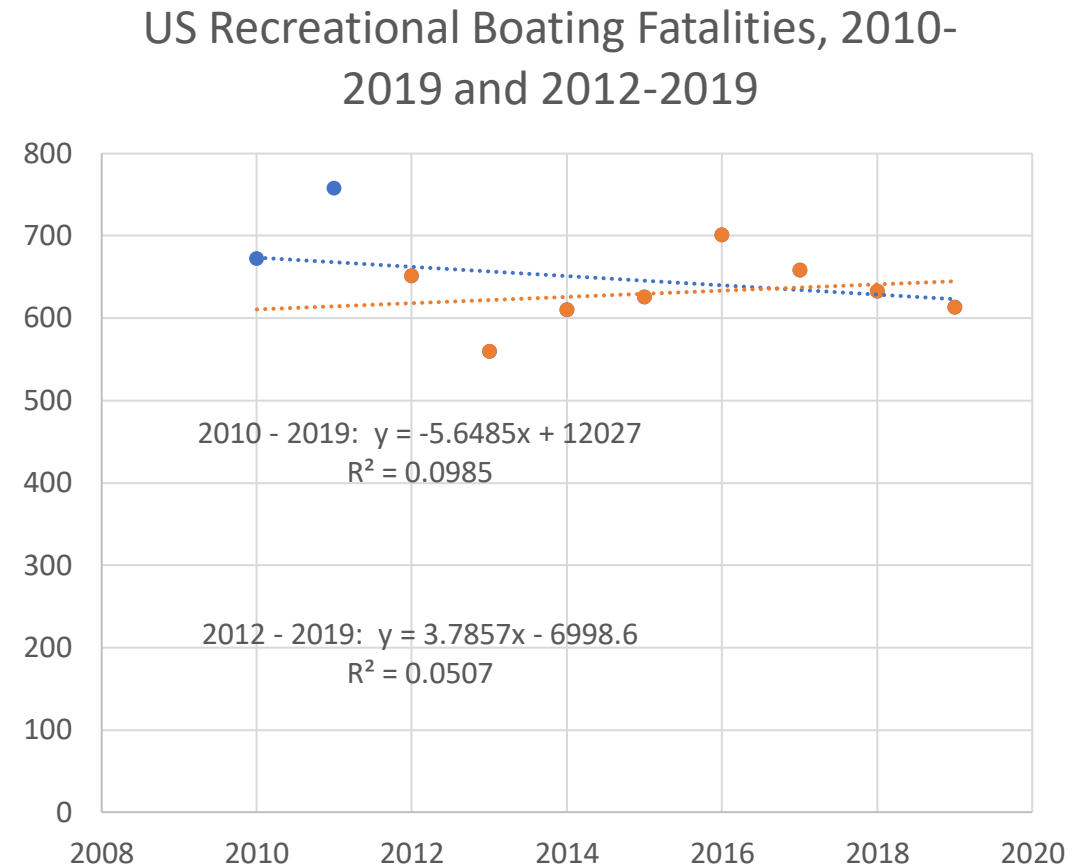
Scope of the Problem

- Boating fatalities have decreased slowly since 1991 (an average reduction of 8 deaths per year).



Scope of the Problem

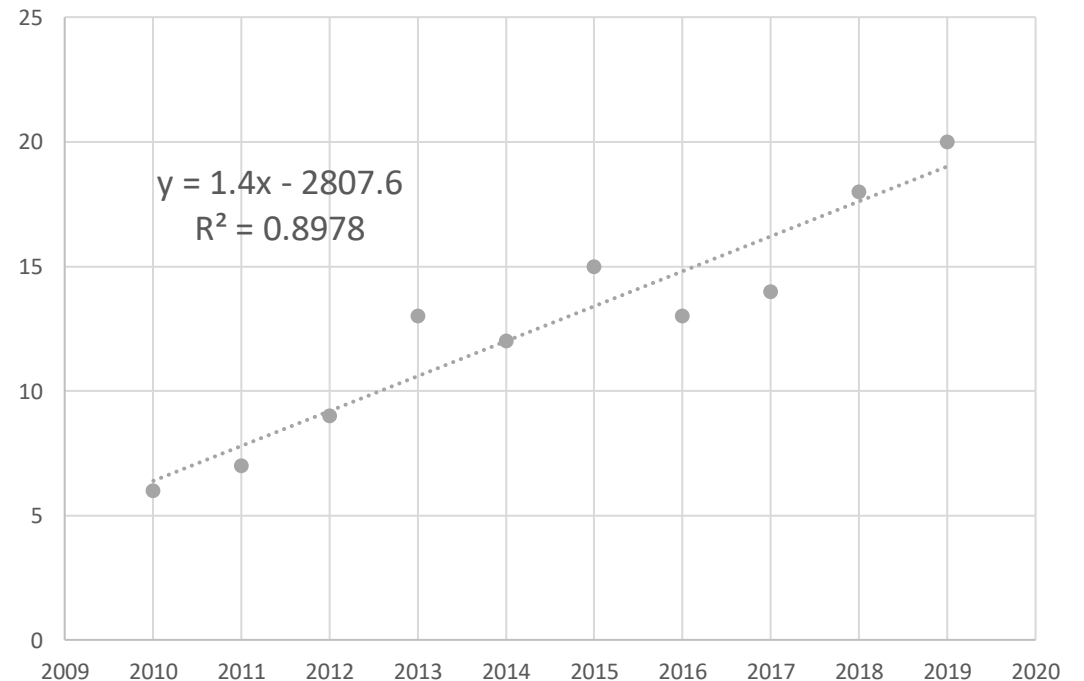
- The rate of decline in boating fatalities has slowed or stalled over the past decade.



Scope of the Problem

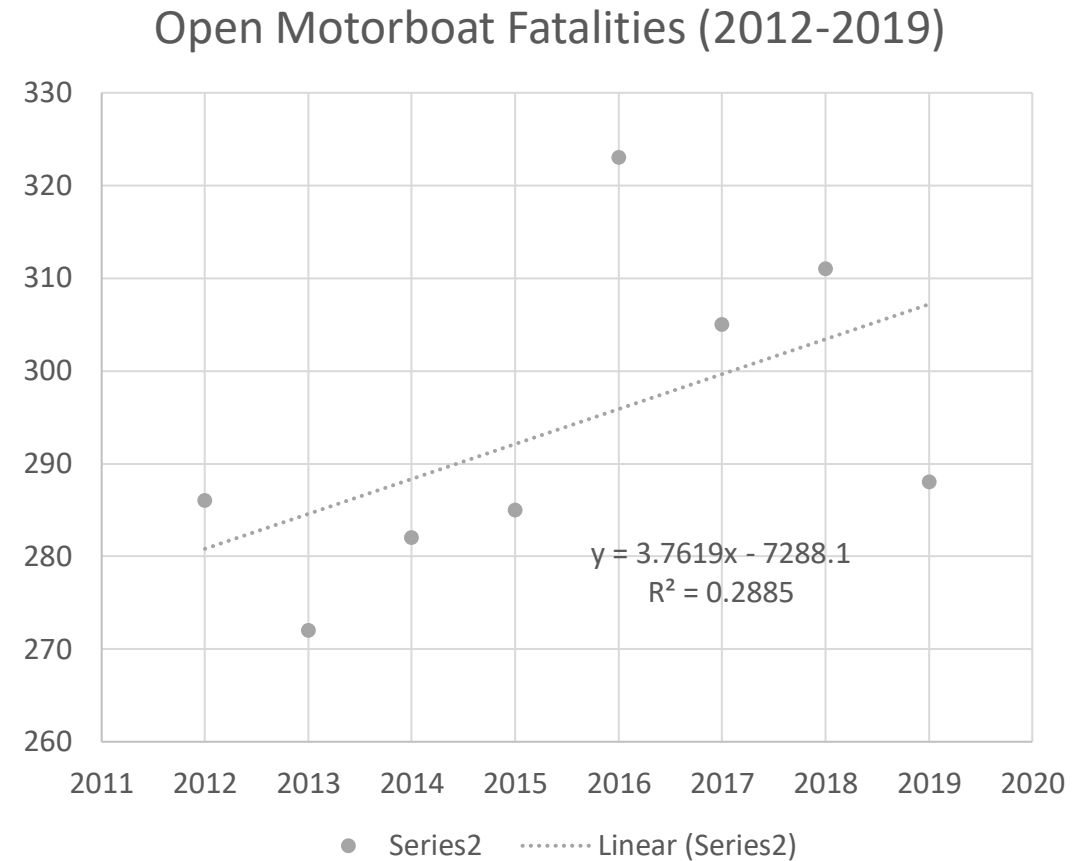
- Roughly 4 out of every 5 boaters who die received no formal boating education
- But, the fraction of boaters who have received education and are involved with a fatality has increased significantly over the past decade; the number who have completed NASBLA training has increased 3 fold.

Percentage of Boating Fatalities Who Received NASBLA Approved Training (2010-2019) Where Education Status Was Known



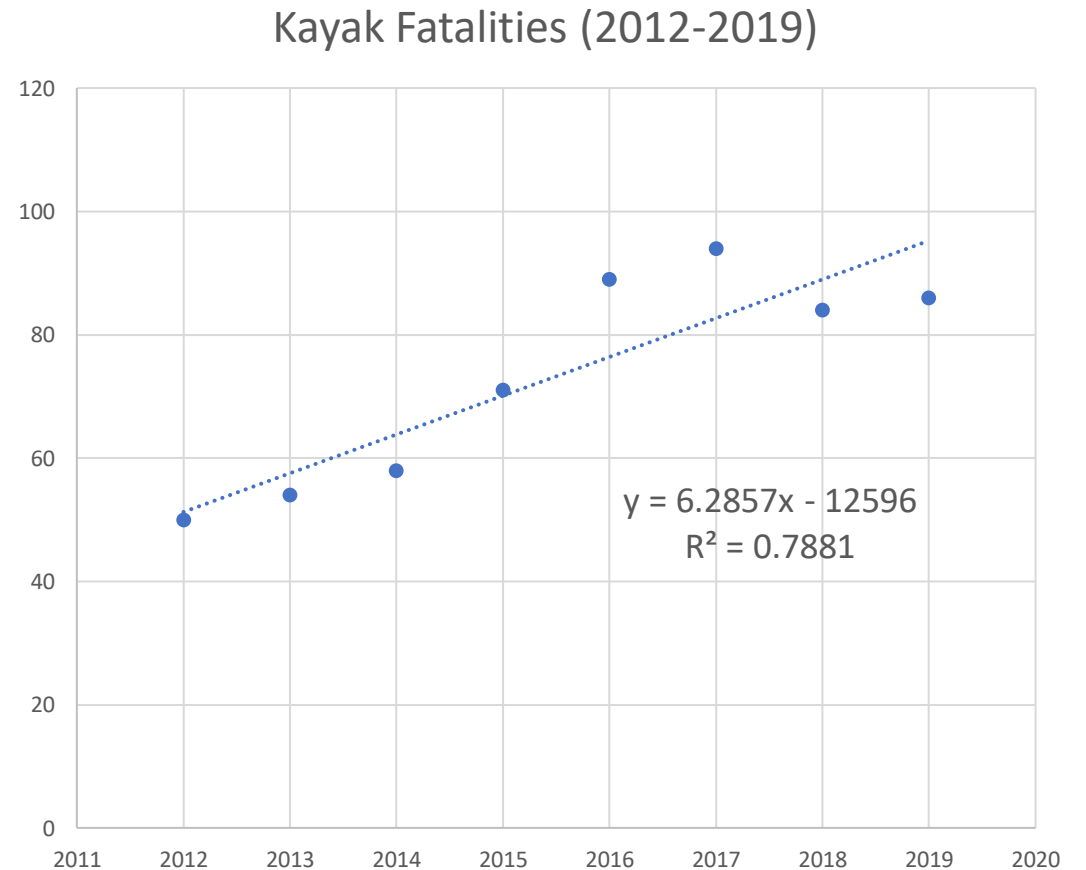
Scope of the Problem

- Open motorboat account for nearly half of all boating fatalities
- Annual fatality numbers are increasing



Scope of the Problem

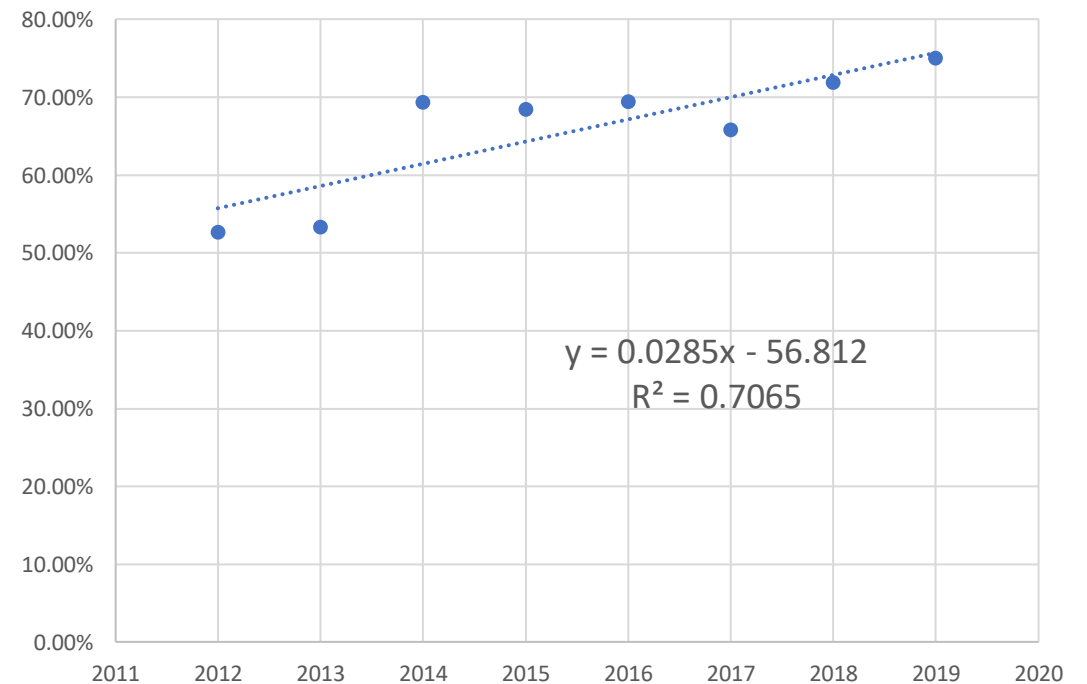
- Kayaks are second to open motorboats in number of fatalities
- Kayak participation increased nearly 300% from 2006 to 2018
- Fatalities have nearly doubled since 2012



Scope of the Problem

- Life jacket wear rates for kayak fatalities are decreasing
- The percentage of drowning subjects not wearing a lifejacket has increased significantly since 2012

Percentage of Kayak Drowning Subjects Not Wearing a Life Jacket (2012-2019), Where Life Jacket Wear Was Known



Scope of the Problem

- Open motorboats and kayaks account for nearly 60% of all boating fatalities
- Annual fatalities for each craft are increasing
- Kayaking fatalities show a decrease in life jacket wear rates
- The number of subjects involved in boating fatalities and who have received boating education is increasing
- Given all this, it's time to re-examine what we teach, with a focus on the two craft accounting for nearly 60% of all boating deaths

Boating accidents(all boats) 2012-2019

- **Collision with another recreational vessel** is the most common type of accident (23.1%); accounts for 24.8% of injuries but only 6.6% of deaths
- **Falling overboard** accounts for 6.4% of accidents and only 4.8% of injuries – but 26.7% of fatalities
- **Capsizing** accounts for 6.1% of accidents and 6.0% of injuries – but 22.5% of fatalities

Boating accidents(all boats) 2012-2019

- 70% of all boating fatalities are drownings
- 85% of drowning subjects were not wearing a life jacket
- 60% of all boating fatalities (70% x 85%) were drowning victims who were not wearing a life jacket

Boating accidents(all boats) 2012-2019

- Leading contributing factors for boating accidents include:
 - **Inattention** (14.7%)
 - **Improper lookout** (12.5%)
 - **Inexperience** (10.7%)
- Leading contributing factors for fatal boating accidents include:
 - **Alcohol** (15.6%)
 - **Hazardous waters** (9.8%)
 - **Inattention** (7.5%)
 - **Inexperience** (7.3%)

- How does data for all boats compare with specific types of boats?
- Direct comparison is challenging as not all data is available for all types of craft
- What is available creates clear pictures

Open motorboat accidents

- Nearly half of all fatal accidents - slowly increasing in number since 2012
- **Collision with recreational vessels (29.5%)** is the most common type of reported accident
- **Capsizing** and **falling overboard** are rare
- Most common contributing factors
 - **Inattention (13.8%)**
 - **Improper lookout (13%)**
- Annual average of 1391 reported injuries and 294 reported deaths

Kayaking accidents

- Average of 11.7% of all fatal accidents (2012-2019)
- Increasing from less than 7.7% in 2012 to 14% in 2019
- Most common contributing factors
 - **Hazardous waters** (25.1%)
 - **Inexperience** (19.8%)
- Most common accident types
 - **Capsizing** (53.5%)
 - **Falling overboard** (15.3%)
- **Collision with a recreational vessel** accounted for only 6.4% of accidents

Kayaking accidents

- Average of 55 reported injuries and 79 reported fatalities each year
 - Accidents that would cause significant damage to powered vessels (collisions, groundings) rarely damage kayaks or kayak paddlers
 - Therefore, most “accidents” are not reported – only fatal accidents or those involving significant injury

Implications for Boating Educators

- The importance of life jacket wear cannot be overstated
 - Capsizing and falling overboard are the most common fatal accidents and both can occur without warning.
 - The majority of boaters who die are not wearing life jackets.
 - Educators and regulators should apply even stronger emphasis on life jacket wear than is currently done.
 - They further should seek new ways to emphasize and instruct on life jacket wear.

Implications for Boating Educators

- **Inattention** and **improper lookout** are the most common contributing factors to boating accidents, consistent with collision being the most common type of boating accident.
- Boating educators should strengthen their emphasis on the importance of proper lookout and give specific examples of how to perform a proper lookout to reduce accident rates.

Implications for Boating Educators

- **Capsizing** and **falling overboard** are rare accident types but the most common types of fatal accidents.
- Boating educators should increase emphasis on boating skills to avoid and manage capsizing and falling overboard.

Implications for Boating Educators

- **Alcohol** consumption and exposure to **hazardous waters** are rare contributing factors to overall accidents, but the leading contributing factors to fatal boating accidents.
- Boating educators should increase emphasis on abstinence from alcohol while boating, on recognizing and avoiding hazardous waters, and on boat handling skills needed to manage hazardous waters.

Implications for Boating Educators

- **Inexperience** is a common contributing factor for both boating accidents and boating fatalities.
- Boating educators should strive to create mentored, hands-on, on-water learning experiences and to provide mentoring to new boaters, allowing them to gain experience in controlled settings. There's only so much that can be learned in a classroom or in front of a computer.

Implications for Boating Educators

- Open motorboats and kayaks are the craft most associated with boating fatalities. However, they have different contributing factors to accidents, and different types of common accidents. Boating educators should recognize this and tailor instruction to specific craft.

Implications for Boating Educators

- Education for open motorboats should have added emphasis on proper lookout, to reduce risk of collision.
- Education for kayaks should have added emphasis on recognizing and managing hazardous waters, and managing capsizes or falling overboard.

Take Home Message for Boaters

- Recreational boating is supposed to be fun
- Getting hurt isn't fun, so take steps to stay safe
- Wear your lifejacket, learn to handle your boat and learn how to avoid and manage common problems so you do have fun!
- Collisions are the most common problem for open motorboats – keep a sharp lookout
- Unexpected entry to the water is the most common problem for paddlers – dress to swim and know what to do when you do swim
- All boaters will benefit from improving their boat handling skills

Resources

- https://www.uscgboating.org/statistics/accident_statistics.php
- <https://www.americancanoe.org/page/Resources>