

# 2016 RECREATIONAL BOATING STATISTICS

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U.S Department of Homeland Security  
U.S. Coast Guard  
Office of Auxiliary and Boating Safety



**U.S. Department of  
Homeland Security**

**United States  
Coast Guard**



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## FOREWORD

Under the authority of Title 46, United States Code, the Inspections & Compliance Directorate has been delegated the responsibility to collect, analyze, and annually publish statistical information obtained from recreational boat numbering and casualty reporting systems. Within the Directorate, the Office of Auxiliary and Boating Safety, Boating Safety Division has National Recreational Boating Safety Program responsibility.

Recreational Boating Statistics 2016, the 58th annual report, contains statistics on recreational boating accidents and state vessel registration. This publication is a result of the coordinated effort of the Coast Guard and those states and territories that have Federally-approved boat numbering and casualty reporting systems. These include all States, the District of Columbia, Puerto Rico, Guam, the Virgin Islands, American Samoa, and the Commonwealth of the Northern Mariana Islands.

Recreational Boating Statistics 2016 may be copied and distributed freely in the interest of boating safety. For questions and suggestions regarding content, use the address, telephone number, or email address at the top of this page. For an electronic copy, visit the Boating Safety Division website at [www.uscboating.org](http://www.uscboating.org).

JENNIFER WILLIAMS /s/  
Captain, U.S. Coast Guard  
Director of Inspections & Compliance

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## **2016 EXECUTIVE SUMMARY**

- In 2016, the Coast Guard counted 4,463 accidents that involved 701 deaths, 2,903 injuries and approximately \$49 million dollars of damage to property as a result of recreational boating accidents.
  - The fatality rate was 5.9 deaths per 100,000 registered recreational vessels. This rate represents a 11.3% increase from last year's fatality rate of 5.3 deaths per 100,000 registered recreational vessels.
  - Compared to 2015, the number of accidents increased 7.3%, the number of deaths increased 12%, and the number of injuries increased 11.1%.
- Where cause of death was known, 80% of fatal boating accident victims drowned. Of those drowning victims with reported life jacket usage, 83% were not wearing a life jacket.
- Eight out of every ten boaters who drowned were using vessels less than 21 feet in length.
- Alcohol use is the leading known contributing factor in fatal boating accidents; where the primary cause was known, it was listed as the leading factor in 15% of deaths.
- Where instruction was known, 77% of deaths occurred on boats where the operator did not receive boating safety instruction. Only 13% percent of deaths occurred on vessels where the operator had received a nationally-approved boating safety education certificate.
- There were 171 accidents in which at least one person was struck by a propeller. Collectively, these accidents resulted in 24 deaths and 175 injuries.
- Operator inattention, operator inexperience, improper lookout, excessive speed, and machinery failure rank as the top five primary contributing factors in accidents.
- Where data was known, the most common vessel types involved in reported accidents were open motorboats (47%), personal watercraft (18%), and cabin motorboats (15%).
- Where data was known, the vessel types with the highest percentage of deaths were open motorboats (47%), kayaks (13%), and canoes (9%).
- The 11,861,811 recreational vessels registered by the states in 2016 represent a 0.04% decrease from last year when 11,867,049 recreational vessels were registered.

**Table 1 • 2016 EXECUTIVE SUMMARY**

| <b>TOP FIVE PRIMARY ACCIDENT TYPES</b>                         |                                    |                     |                  |                    |                 |                  |
|--|------------------------------------|---------------------|------------------|--------------------|-----------------|------------------|
| Accident Rank  | Accident Type                      | Number of Accidents | Number of Deaths | Number of Injuries |                 |                  |
| 1  | Collision with recreational vessel | 1051                | 38               | 708                |                 |                  |
| 2  | Collision with fixed object        | 565                 | 63               | 432                |                 |                  |
| 3  | Flooding/swamping                  | 470                 | 90               | 156                |                 |                  |
| 4  | Grounding                          | 413                 | 13               | 246                |                 |                  |
| 5  | Capsizing                          | 305                 | 175              | 200                |                 |                  |
| <b>VESSEL TYPES WITH THE TOP CASUALTY NUMBERS</b>              |                                    |                     |                  |                    |                 |                  |
| Casualty Rank  | Type of Boat                       | Drownings           | Other Deaths     | Total Deaths       | Total Injuries  | Total Casualties |
| 1  | Open motorboat                     | 228                 | 95               | 323                | 1537            | 1860             |
| 2  | Personal watercraft                | 13                  | 33               | 46                 | 675             | 721              |
| 3  | Cabin motorboat                    | 28                  | 13               | 41                 | 263             | 304              |
| 4  | Canoe/kayak                        | 130                 | 22               | 152                | 124             | 276              |
| 5  | Pontoon                            | 38                  | 9                | 47                 | 120             | 167              |
| <b>LIFE JACKET WEAR BY TOP FIVE KNOWN CAUSES OF DEATH</b>      |                                    |                     |                  |                    |                 |                  |
| Known Cause of Death Rank                                      | Cause of Death                     | Number of Deaths    | Life Jacket      |                    |                 |                  |
|  |                                    |                     | Worn             | Not Worn           | Unknown if worn |                  |
| 1  | Drowning                           | 509                 | 82               | 404                | 23              |                  |
| 2  | Trauma                             | 99                  | 51               | 41                 | 7               |                  |
| 3  | Cardiac arrest                     | 12                  | 4                | 8                  | 0               |                  |
| 4  | Hypothermia                        | 7                   | 5                | 2                  | 0               |                  |
| 5  | Other                              | 6                   | 2                | 3                  | 1               |                  |
| <b>TOP TEN KNOWN PRIMARY CONTRIBUTING FACTORS OF ACCIDENTS</b> |                                    |                     |                  |                    |                 |                  |
| Accident Rank  | Contributing Factor                | Number of Accidents | Number of Deaths | Number of Injuries |                 |                  |
| 1  | Operator inattention               | 597                 | 45               | 373                |                 |                  |
| 2  | Operator inexperience              | 480                 | 62               | 301                |                 |                  |
| 3  | Improper lookout                   | 475                 | 20               | 380                |                 |                  |
| 4  | Excessive Speed                    | 360                 | 39               | 275                |                 |                  |
| 5  | Machinery failure                  | 323                 | 9                | 117                |                 |                  |
| 6  | Alcohol use                        | 282                 | 87               | 264                |                 |                  |
| 7  | Weather                            | 214                 | 41               | 103                |                 |                  |
| 8  | Navigation rules violation         | 213                 | 10               | 157                |                 |                  |
| 9  | Hazardous waters                   | 205                 | 80               | 97                 |                 |                  |
| 10   | Force of wave/wake                 | 160                 | 7                | 137                |                 |                  |

**Mission and Strategic Plan of the National Recreational Boating Safety Program**

The mission of the National Recreational Boating Safety (RBS) Program is “to ensure the public has a safe, secure, and enjoyable recreational boating experience by implementing programs that minimize the loss of life, personal injury, and property damage while cooperating with environmental and national security efforts”.

The Coast Guard has released the Strategic Plan of the National Recreational Boating Safety Program for 2017-2021 to address the following initiatives: 1) Improve and expand recreational boating education, training, and outreach; 2) Update, leverage, and enforce policies, regulations, and standards; and 3) Improve upon and expand recreational boating data collection and research.

To view the Strategic Plan of the Program, please visit the Office’s website at <http://www.uscboating.org/content/strategic-plan.php>.

**Overview of Statistics**

This report contains statistics on registered recreational vessels and boating accidents during calendar year 2016. Data used to compile the recreational boating accident statistics come from four main sources:

- 1) State marine agencies;
- 2) Federal agencies, including the Coast Guard, National Park Service, Army Corps of Engineers, and Forest Service;
- 3) The public, on a CG-3865 Recreational Boating Accident Report form; and
- 4) The news media.

The data in this publication reflects a collaboration of state and Coast Guard efforts. After reports are submitted, the Coast Guard reviews them and standardizes the data so that it can be used for national comparison. The data in this publication reflects Coast Guard standardized values, which may be different from the state’s original submission.

The following table reflects the number of accidents, deaths, injuries, and losses of vessels that were captured from federal and news media sources that met reporting requirements and are included in this report.

**Table 2 • NEWS MEDIA AND FEDERALLY-SOURCED ACCIDENTS AND CASUALTIES**

|        | Accidents | Deaths | Injuries | Vessel losses | Damages        | Notes                                      |
|--------|-----------|--------|----------|---------------|----------------|--|
| AK     | 7         | 3      | 8        | 2             | \$481,340.00   | 2 accidents on federal jurisdiction        |
| AL     | 6         | 2      | 4        | 4             | \$13,400.00    |  |
| AT     | 8         | 2      | 9        | 4             | \$974,302.00   | 8 accidents offshore in the Atlantic Ocean |
| CA     | 9         | 1      | 18       | 5             | \$930,755.00   |  |
| DC     | 1         | 0      | 0        | 0             | \$3,000.00     |  |
| FL     | 8         | 3      | 5        | 2             | \$0.00         | 1 accident on private waters               |
| GA     | 6         | 4      | 5        | 2             | \$4,795.00     |  |
| GM     | 8         | 1      | 4        | 3             | \$419,611.00   | 8 accidents offshore in the Gulf of Mexico |
| IA     | 1         | 1      | 0        | 0             | \$0.00         | 1 accident on private waters               |
| IN     | 1         | 0      | 1        | 0             | \$0.00         |  |
| LA     | 1         | 1      | 0        | 0             | \$0.00         | 1 accident on private waters               |
| MS     | 2         | 3      | 0        | 0             | \$0.00         | 2 accidents on private waters              |
| NC     | 1         | 0      | 1        | 0             | \$0.00         |  |
| NH     | 1         | 0      | 0        | 1             | \$129,684.00   |  |
| NJ     | 1         | 0      | 1        | 0             | \$0.00         |  |
| NV     | 3         | 1      | 2        | 0             | \$0.00         | 1 accident on private waters               |
| NY     | 1         | 0      | 6        | 0             | \$0.00         |  |
| OK     | 1         | 0      | 1        | 0             | \$0.00         |  |
| PC     | 6         | 0      | 0        | 4             | \$720,850.00   | 6 accidents offshore in the Pacific Ocean  |
| PR     | 1         | 0      | 1        | 0             | \$6,000.00     |  |
| TN     | 2         | 0      | 5        | 0             | \$0.00         |  |
| TX     | 21        | 14     | 5        | 2             | \$114,975.00   | 5 accidents on private waters              |
| VT     | 1         | 0      | 3        | 0             | \$3,895.00     |  |
| WA     | 1         | 1      | 1        | 0             | \$0.00         |  |
| WY     | 2         | 2      | 0        | 0             | \$0.00         | 2 accidents on federal jurisdiction        |
| Nation | 100       | 39     | 80       | 29            | \$3,802,607.00 |  |

**Major Changes to the Publication**

The glossary has been updated to reflect new definitions in the Code of Federal Regulations (CFR).

The sections “Overview of Statistics” and “Use of Statistics” have been updated to reflect additional detail.

Table 37 has been rearranged due to a change in data collection. On 1 January 2017, changes in regulation (33 CFR 174.19) necessitated revision to the Coast Guard’s data collection on registration, which took place in early 2017. Due to delays in transitioning to a new form, the Coast Guard accepted registration data on the previous registration collection form used and the proposed form. Since the forms did not cover the same information, the publication table was amended.

Four of the statistics in the Executive Summary were changed to remove the records where values were unknown. To find information on the number of “unknown” cases excluded, please reference Tables 35 (on page 66), 22 (on page 46), 5 (on page 20), and 7 (on page 25).

**Accident Reporting as Required by Federal Law**

Under federal regulations (33 CFR Part 173; Subpart C – Casualty and Accident Reporting) the operator of any numbered vessel that was not required to be inspected or a vessel that was operated for recreational purposes is required to file a BAR when, as a result of an occurrence that involves the vessel or its equipment:

1. A person dies; or
2. A person disappears from the vessel under circumstances that indicate death or injury; or
3. A person is injured and requires medical treatment beyond first aid; or
4. Damage to vessels and other property totals \$2,000 or more; or
5. There is a complete loss of any vessel.

If the above conditions are met, the federal regulations state that the operator or owner must report their accident to a state reporting authority, abbreviated in this publication as “state”. The reporting authority can be either the state where the accident occurred, the state in which the vessel was numbered, or, if the vessel does not have a number, the state where the vessel was principally used. The owner must submit the report if the operator is deceased or unable to make the report.

The regulations also state the acceptable length of time in which the accident report must be submitted to the reporting authority. Boat operators or owners must submit:

1. Accident reports within 48 hours of an occurrence if:
  - a. A person dies within 24 hours of the occurrence; or
  - b. A person requires medical treatment beyond first aid; or
  - c. A person disappears from the vessel.
2. Accident reports within 10 days of an occurrence if there is damage to the vessel/property only.

The minimum reporting requirements are set by Federal regulation, but states are allowed to have more stringent requirements. For example, some states have a lower threshold for reporting damage to vessels and other property.

Federal Regulations (33 CFR 174.121) require accident report data to be forwarded to Coast Guard Headquarters within 30 days of receipt by a state or its agent.

The statistics in this publication cover boating accidents reported on waters of joint federal and state jurisdiction and exclusive state jurisdiction. Most states use BAR forms that are similar to the Coast Guard form. A copy of the Coast Guard BAR form used for this report is on pages 73-78.

### **Casualty and Accident Reporting Guidelines**

Casualty and accident reporting applies to each “vessel” used by its operator for recreational purposes or vessels that are required to be numbered and are not subject to inspection.

This publication reflects watercraft that have been deemed a “vessel.” Terms used to describe the various types of watercraft are: airboat, auxiliary sailboat, cabin motorboat, canoe, houseboat, inflatable boat, kayak, open motorboat, personal watercraft, pontoon, raft, rowboat, sailboat, and standup paddleboard. Reports received involving watercraft that have not been determined to be “vessels” to date, such as single unmodified innertubes, have not been included in the statistics in the main body of this report.

### **“Reportable” Boating Accidents**

A vessel is considered to be involved in a “boating accident” whenever a death, missing person, personal injury, property damage, or total vessel loss results from the vessel’s operation, construction, seaworthiness, equipment, or machinery.

The following are examples of accident types that are used in this report:

- Grounding, capsizing, sinking, or flooding/swamping.
- Falls in or overboard a vessel.
- Persons ejected from a vessel.
- Fire or explosions that occur while underway and while anchored, moored or docked if the fire resulted from the vessel or vessel equipment.
- Water-skiing or other mishap involving a towable device.
- Collision with another vessel or object.
- Striking a submerged object.
- A person struck by a vessel, propeller, propulsion unit, or steering machinery.
- Carbon monoxide exposure.
- Electrocution due to stray current related to a vessel.

- Casualties while swimming from a vessel that is not anchored, moored or docked.
- Casualties where natural causes served as a contributing factor in the death of an individual but the determined cause of death was drowning.
- Casualties from natural phenomena such as interaction with marine life (i.e. carp causes casualty to person) and interaction with nature (i.e. mountain side falls onto vessel causing casualties).
- Casualties where a person falls off an anchored vessel.
- Casualties that result when a person departs an anchored, disabled vessel to make repairs, such as unfouling an anchor or cleaning out the intake of a jet-propelled vessel.

### **“Non-Reportable” Boating Accidents**

Not every occurrence involving a vessel is considered within the scope of the National Recreational Boating Safety Program. The following occurrences involving a vessel may be required to be reported to the state, but for statistical purposes are excluded from this report and are considered “non-reportable” boating accidents:

- A person dies, is injured, or is missing as a result of self-inflicted wounds, alcohol poisoning, gunshot wounds, or the ingestion of drugs, controlled substances or poison.
- A person dies, is injured, or is missing as a result of assault by another person or persons while aboard a vessel.
- A person dies or is injured from natural causes while aboard a vessel where the vessel did not contribute to the casualty.
- A person dies, is injured, or is missing as a result of jumping, diving, or swimming for pleasure from an anchored, moored or docked vessel.
- A person dies, is injured, or is missing as a result of swimming to retrieve an object or a vessel that is adrift from its mooring or dock, having departed from a place of inherent safety, such as the shore or pier.
- Property damage occurs or a person dies, is injured, or is missing while preparing a vessel for launching or retrieving and the vessel is not on the water and capable / ready for its intended use.
- Property damage occurs or a person dies, is injured, or is missing as a result of a fire on shore or a pier that spreads to a vessel or vessels.
- Property damage occurs to a docked or moored vessel or a person dies, is injured, or is missing from such a vessel as a result of storms, or unusual tidal or sea conditions; or when a vessel gets underway in those conditions in an attempt to rescue persons or vessels.
- Property damage occurs to a docked or moored vessel due to lack of maintenance on the vessel or the structure to which it was moored.
- Property damage occurs to a docked or moored vessel due to theft or vandalism.
- Property damage occurs to, a person dies or is injured on, or a person is missing from a non-propelled residential platform or other watercraft used primarily as a residence that is not underway.
- Casualties that result from falls from or on docked vessels or vessels that are moored to a permanent structure.
- Casualties that result from a person climbing aboard an anchored vessel from the water or swimming near an anchored vessel (unless the casualty was related to carbon monoxide exposure or stray electric current).
- Fire or explosions on anchored, docked or moored boats where the cause of the fire was not attributed to the vessel or vessel equipment.
- Casualty or damage that results when the vehicle used for trailering the vessel fails.
- Casualties or damage that occur during accidents that only involve watercraft that have not been deemed a vessel.
- Casualties or damage that occur when the only vessel(s) involved are being used solely for governmental, commercial or criminal activity.
- Casualties or damage that occur when the only vessel(s) involved are not required to be numbered and are being used exclusively for racing (exclusion in 33 CFR 173.13(a)).
- Casualties or damage that occur when the only vessel(s) involved are foreign vessels and thus not subject to U.S. federal reporting requirements.

A list of “non-reportable” scenarios and their associated casualty counts can be found in Table 3.

**Table 3 • NON-REPORTABLE SCENARIOS WITH THEIR CASUALTY COUNT**

| <b>Does not meet Coast Guard policy</b>  | Accidents | Deaths | Injuries | Vessels Losses | Damages        |
|--|-----------|--------|----------|----------------|----------------|
| A person dies or is injured from natural causes while aboard a vessel where the vessel did not contribute to the casualty.   | 5         | 5      | 0        | 0              | \$5,500.00     |
| A person dies, is injured, or is missing as a result of jumping, diving, or swimming for pleasure from an anchored, moored or docked vessel.   | 10        | 7      | 4        | 0              | \$0.00         |
| A person dies, is injured, or is missing as a result of self-inflicted wounds, alcohol poisoning, gunshot wounds, or the ingestion of drugs, controlled substances or poison.  | 2         | 2      | 0        | 0              | \$0.00         |
| A person dies, is injured, or is missing as a result of swimming to retrieve an object or a vessel that is adrift from its mooring or dock, having departed from a place of inherent safety, such as the shore or pier.  | 3         | 3      | 0        | 0              | \$0.00         |
| Casualties or damage that occur during accidents that only involve seaplanes.  | 1         | 0      | 1        | 1              | \$125,000.00   |
| Casualties or damage that occur during accidents that only involve unmodified inner tubes.   | 4         | 3      | 1        | 1              | \$25.00        |
| Casualties or damage that occur when the only vessel(s) involved are being used solely for governmental, commercial or criminal activity.  | 161       | 13     | 112      | 11             | \$1,037,274.74 |
| Casualties or damage that occur when the only vessel(s) involved are foreign vessels and thus not subject to U.S. federal reporting requirements.  | 2         | 0      | 1        | 0              | \$42,000.00    |
| Casualties or damage that occur when the only vessel(s) involved are not numbered and are being used exclusively for racing.   | 2         | 2      | 2        | 3              | \$15,000.00    |
| Casualties that result from a person climbing aboard an anchored vessel from the water or swimming near an anchored vessel.  | 1         | 0      | 1        | 0              | \$0.00         |
| Casualties that result from falls from or on docked vessels or vessels that are moored to a permanent structure.   | 7         | 2      | 5        | 0              | \$0.00         |
| Casualty or damage that results when the vehicle used for trailering the vessel fails.   | 1         | 0      | 0        | 0              | \$17,000.00    |
| Fire or explosions on anchored, docked or moored boats where the cause of the fire was not attributed to the vessel or vessel equipment.   | 4         | 0      | 1        | 1              | \$217,150.00   |
| Property damage occurs or a person dies, is injured, or is missing as a result of a fire on shore or a pier that spreads to a vessel or vessels.   | 1         | 0      | 0        | 0              | \$2,000.00     |
| Property damage occurs or a person dies, is injured, or is missing while preparing a vessel for launching or retrieving and the vessel is not on the water and capable/ready for its intended use.   | 6         | 0      | 1        | 2              | \$21,500.00    |
| Property damage occurs to a docked or moored vessel due to lack of maintenance on the vessel or the structure to which it was moored.  | 17        | 0      | 0        | 8              | \$361,970.00   |
| Property damage occurs to a docked or moored vessel due to theft or vandalism.   | 2         | 0      | 0        | 1              | \$52,451.86    |
| Property damage occurs to a docked or moored vessel or a person dies, is injured, or is missing from such a vessel as a result of storms, or unusual tidal or sea conditions; or when a vessel gets underway in those conditions in an attempt to rescue person. | 33        | 0      | 2        | 10             | \$284,988.99   |
| Property damage occurs to, a person dies or is injured on, or a person is missing from a non-propelled houseboat or other vessel used primarily as a residence when such a vessel is not underway.   | 2         | 0      | 1        | 1              | \$55,000.00    |
| <b>Does not meet federal reporting requirements</b>  | 499       | 0      | 50       | 0              | \$380,232.85   |
| <b>Total</b>   | 763       | 37     | 182      | 39             | \$2,617,093.44 |

## **Use of Statistics**

The following are notes on using data on recreational boating accidents.

### 1) Normalizing data.

When analyzing recreational boating accident data, it is recommended that any researcher normalize it with a denominator.

The Coast Guard frequently uses recreational vessel registration as a denominator because of the availability of the data. The Coast Guard calculates a fatality rate expressed as the number of deaths per 100,000 registered recreational vessels. This measure is representative of the entire program (motorized and non-motorized activity) but necessitates a caveat that not all States register the same types of vessels and some states have longer boating seasons than others. Further, when examining a state fatality rate, it is important to note that the state fatality rate may include deaths from vessels that were registered by another state.

The Coast Guard also calculates a motorized fatality rate expressed as the number of deaths on motorized vessels per 100,000 registered motorized recreational vessels. While this measure is sound, it doesn't reflect all of recreational boating because it does not represent non-motorized activity.

It is worthwhile to note that the Coast Guard is pursuing a denominator on exposure, which would reflect the level of boating activity. The proposed measure would be a fatality rate expressed as the number of deaths per 100,000,000 exposure hours. Exposure data was most recently collected by the Coast Guard as part of a survey from 2011-2012.

### 2) Limitations on collection.

It is recommended that any researcher focus on fatal data since the confidence of this data is very high. The Coast Guard works with state marine agencies, other federal agencies, and news media aggregating services to identify boating incidents. Despite best efforts to document incidents, the Coast Guard is only confident in its capture of deceased victims since fatal accidents undoubtedly involve state or government oversight, and garner more attention in the news media.

Data on non-fatal accidents have a much lower confidence level. Non-fatal accidents are severely under-reported because boaters are unaware of reporting requirements or are unwilling to report. A 2006 study "Recent Research on Recreational Boating Accidents and the Contribution of Boating Under the Influence" suggest that 20% of hospital-admitted injuries were not captured, and upwards of 93% of non-fatal, non-hospital admitted injuries were not captured in the data collection on boating accidents. The study is posted on the Coast Guard's website at [http://www.uscgboating.org/library/bui-study/BUI\\_Study\\_Final.pdf](http://www.uscgboating.org/library/bui-study/BUI_Study_Final.pdf).

There has been discussion about adjusting numbers to account for non-reporting, but attempts have not been undertaken yet.

### 3) Comparisons with other sources.

The data in this publication may differ from other sources due to a number of factors, including:

- a. Time period. The statistics in this publication are based on calendar year 2016 accident data submitted by states as of 6 March 2017 with subsequent updates as information is reviewed and standardized. This publication covers only accidents meeting the aforementioned reporting requirements.
- b. Geographic location. This publication reflects accidents that occurred on waters subject to the jurisdiction of the United States and on the high seas.

Although the reporting of accidents that occur on private waters (such as a pond on a private property) are not required to be reported since states do not have jurisdiction, the Coast Guard includes data on private waters if the accidents satisfy the other requirements for inclusion. The rationale for doing so is that the National Recreational Boating Safety program could still impact individuals who boat on private waters. For those accidents that occur on private waters, the Coast Guard attributes the data to a state. For instance, if an accident occurred on a private pond in Texas, the Coast Guard attributes the accident to Texas.

Similarly, although the reporting of accidents that occur on federal waters within the boundaries of a state (for instance, Aberdeen Proving Grounds in Maryland), are not required to be reported by the states since state officials do not have jurisdiction, the Coast Guard includes data on federal waters if the accidents satisfy the other requirements for inclusion. The rationale for doing so is the same; the National Recreational Boating Safety program could still impact individuals who boat on federal waters. For those accidents that occur on federal waters, the Coast Guard attributes the data to a state. For instance, if an accident occurred on Aberdeen Proving Grounds, the Coast Guard attributes the accident to Maryland.

- c. Different reporting requirements. Some states have more stringent reporting requirements than the federal government. For instance, some states may require a person to report an accident that involved at least \$500 damage, whereas the federal threshold for reporting damage is \$2,000 or more.

4) Fatal accidents are accidents that involve at least one death.

For example, a fatal accident could be a capsizing that resulted in three deaths. It was an accident that had at least one death.

# **ACCIDENT CAUSES & CONDITIONS**

### Explanation of Accident Causes and Conditions Section

The following eighteen tables and figures focus on the causes of accidents with a special focus on alcohol use, the operation and activity at the time of accident, weather and water conditions, vessel information, and the time of accidents.

#### **Percent of Accidents that are Fatal by Month (Figure 1 & Table 4, Page 18)**

This table provides information about total accidents, fatal accidents, non-fatal accidents, and deaths. The figure focuses on the percent of fatal accidents by month.

#### **Percent of Accidents that are Fatal by Time Period (Figure 2, Page 19)**

This table reflects the percentage of accidents that are fatal by time period. The category in which accidents are more frequently fatal span the hours between 2:31am and 4:30am.

#### **Primary Contributing Factor of Accidents & Casualties (Table 5, Page 20)**

The "contributing factors" of an accident are the causes of the accident. In the Coast Guard's national accident reporting database, there are allowances for up to four causes. This table reflects the first cause listed for all accidents, deaths, and injuries nationwide.

For the purposes of displaying information in a simplified manner, the Coast Guard divided the contributing factor categories into five larger categories: operation of vessel, loading of passengers or gear, failure of vessel or vessel equipment, environment, and miscellaneous. These five categories are situated in the leftmost column of the table and have the total number of accidents, deaths, and injuries associated with each category under the category name.

#### **Machinery & Equipment Primary Contributing Factor of Accidents & Casualties (Table 6, Page 21)**

This table reflects the number of accidents, deaths, and injuries where machinery or equipment failure was listed as a first cause of the accident. The table also delineates the different types of failure that were listed.

#### **Primary Contributing Factor of Accidents (Figure 3, Page 22)**

This figure reflects the first cause of accidents for all accidents nationwide.

#### **Primary Contributing Factor of Deaths (Figure 4, Page 23)**

This figure reflects the first cause listed for all deaths.

#### **Primary Contributing Factor of Injuries (Figure 5, Page 24)**

This figure reflects the first cause listed for all injuries.

#### **Number of Vessels in Accidents by Vessel Type & Primary Contributing Factor (Table 7, Page 25)**

This table looks at the number of vessels involved in accidents by vessel type and the primary cause of the accident.

#### **Alcohol Use as a Contributing Factor in Accidents & Casualties by State 2012-2016 (Table 8, Page 26)**

This table reflects a tally of all four causes of accidents listed for all national accidents, deaths, and injuries.

This table lists accidents where alcohol use by the vessel's occupants was listed as a direct or indirect cause of the accident. There are other cases in the national database where alcohol use is listed as being involved in the accident but it was not determined to be a cause of the accident.

**Vessel Operation at the Time of Accident (Table 9, Page 27)**

This table focuses on the vessel operation at the time of the accident. The table lists information about the number of vessels involved, the resulting number of deaths, and the resulting number of injuries.

**Vessel Activity at the Time of Accident (Table 10, Page 27)**

This table examines the vessel and victim activity at the time of the accident. The table provides information about the number of vessels involved, the resulting number of deaths, and the resulting number of injuries.

Please note that vessels used for commercial or government activity were included in this recreational boating statistics publication if they were involved in a multi-vessel accident that involved at least one recreational vessel.

Also note that racing was included as an activity because either the vessels involved in racing were not exempted from reporting requirements, or the vessels were involved in a multi-vessel accident that involved at least one recreational vessel.

**Weather & Water Conditions (Table 11, Page 28)**

This table documents some of the environmental characteristics of accidents. It focuses on accidents, deaths, and injuries by type of body of water, water conditions, wind level, visibility, and water temperature.

**Time Related Data (Table 12, Page 29)**

These three sections independently examine time-related information for accidents, deaths, and injuries. The top section documents the number of accidents, deaths, and injuries that occurred during a time frame. The middle section documents the number of accidents, deaths, and injuries that occurred during a given month. Finally, the bottom section documents the number of accidents, deaths, and injuries that occurred during a given day of the week.

Each section examines the national data separately and should not be combined to draw conclusions. For instance, one cannot use them to deduce that the majority of accidents occur from 2:31 pm-4:30 pm in July on the weekends. However, you could deduce that 2:31 pm-4:30 pm was the time frame during which the highest number of accidents occurred in calendar year 2016. Furthermore, the month with the highest number of accidents was July. Finally, the two days of the week with the greatest number of accidents were Saturday and Sunday.

**Vessel Information (Table 13, Page 30)**

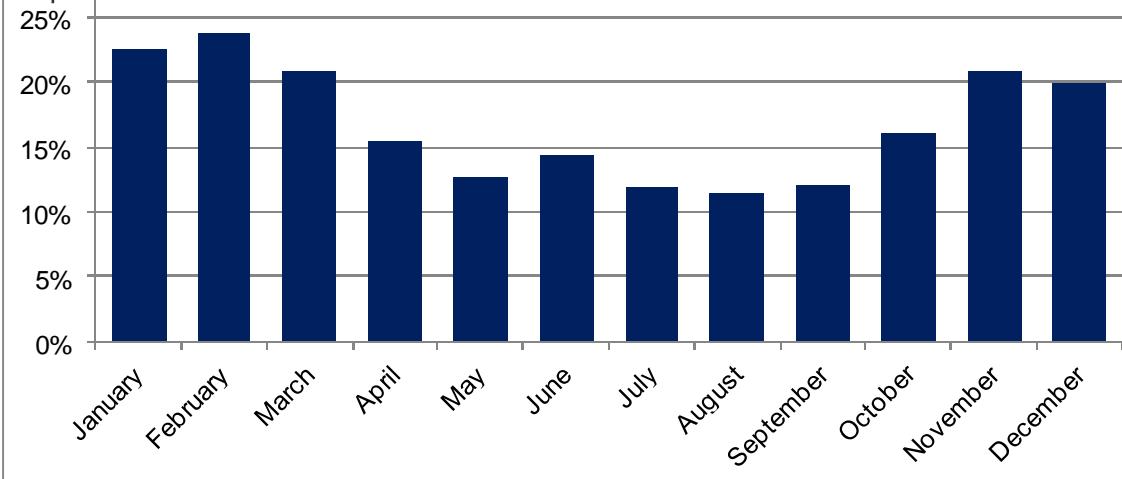
This table documents some of the characteristics of vessels involved in accidents. It provides information about the number of accidents, deaths, and injuries by horsepower, year built, length, and hull material.

**Rental Status of Vessels Involved in Accidents (Table 14, Page 31)**

This table examines whether a vessel involved in an accident was rented. It also provides information on whether deaths and injuries occurred on rented vessels.

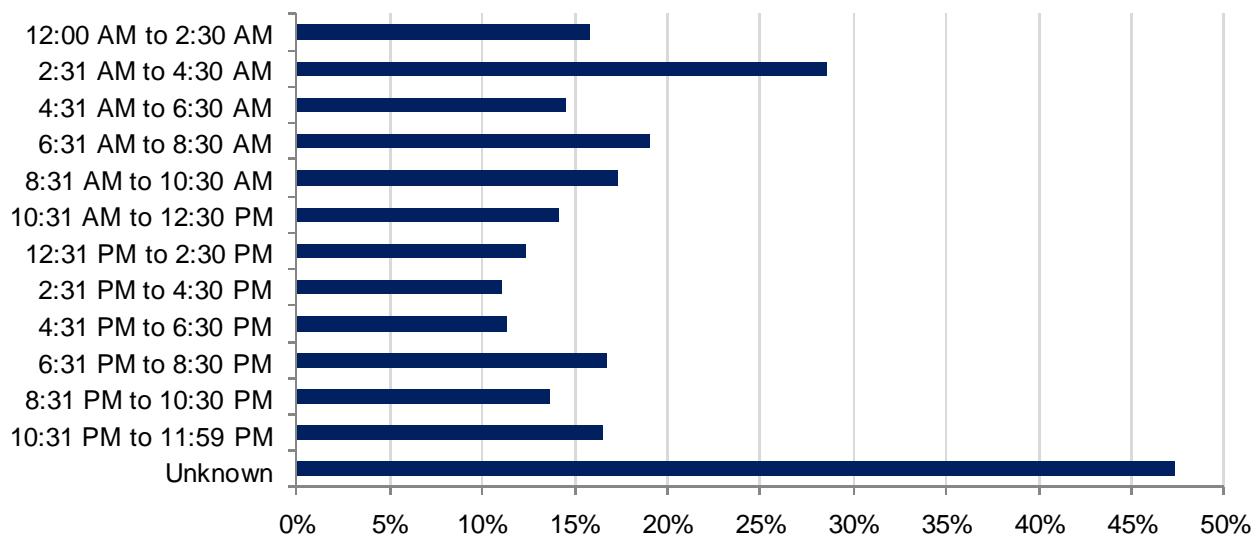
**Number & Percent of Deaths by Vessel Length (Figure 6 & Table 15, Page 32)**

This table focuses on the number of deaths by vessel length. Deaths are categorized into drownings and non-drownings. The table also provides a percentage of all deaths that were caused by drowning.

**Figure 1 PERCENT OF ACCIDENTS THAT ARE FATAL BY MONTH****Table 4 • PERCENT OF ACCIDENTS THAT ARE FATAL BY MONTH**

| Month     | Fatal Accidents | Non-Fatal Accidents | Total Accidents | Accidents Resulting in Deaths | Total Deaths |
|-----------|-----------------|---------------------|-----------------|-------------------------------|--------------|
| January   | 19              | 65                  | 84              | 23%                           | 25           |
| February  | 21              | 67                  | 88              | 24%                           | 28           |
| March     | 35              | 133                 | 168             | 21%                           | 39           |
| April     | 40              | 219                 | 259             | 15%                           | 48           |
| May       | 66              | 451                 | 517             | 13%                           | 70           |
| June      | 105             | 623                 | 728             | 14%                           | 111          |
| July      | 129             | 952                 | 1081            | 12%                           | 143          |
| August    | 79              | 612                 | 691             | 11%                           | 84           |
| September | 50              | 361                 | 411             | 12%                           | 59           |
| October   | 35              | 182                 | 217             | 16%                           | 40           |
| November  | 30              | 114                 | 144             | 21%                           | 36           |
| December  | 15              | 60                  | 75              | 20%                           | 18           |
| Total     | 624             | 3839                | 4463            | 14%                           | 701          |

**Figure 2 PERCENT OF ACCIDENTS THAT ARE FATAL BY TIME PERIOD**



**Table 5 • PRIMARY CONTRIBUTING FACTOR OF ACCIDENTS & CASUALTIES 2016**

|   |                                      | Accidents | Deaths | Injuries |
|---|--------------------------------------|-----------|--------|----------|
| <b>Operation of Vessel<br/>2600 Accidents<br/>285 Deaths<br/>1908 Injuries</b>            | Alcohol use                          | 282       | 87     | 264      |
|   | Drug use                             | 10        | 9      | 2        |
|   | Excessive speed                      | 360       | 39     | 275      |
|   | Failure to vent                      | 33        | 0      | 38       |
|   | Improper lookout                     | 475       | 20     | 380      |
|   | Inadequate onboard navigation lights | 17        | 1      | 7        |
|   | Navigation rules violation           | 213       | 10     | 157      |
|   | Operator inattention                 | 597       | 45     | 373      |
|   | Operator inexperience                | 480       | 62     | 301      |
|   | Restricted vision                    | 71        | 5      | 54       |
|   | Sharp turn                           | 59        | 7      | 54       |
| <b>Loading of Passengers or Gear<br/>145 Accidents<br/>60 Deaths<br/>94 Injuries</b>      | Starting in gear                     | 3         | 0      | 3        |
|   | Improper anchoring                   | 30        | 2      | 13       |
|   | Improper loading                     | 51        | 17     | 25       |
|   | Overloading                          | 37        | 27     | 42       |
| <b>Failure of Boat or Boat Equipment<br/>419 Accidents<br/>20 Deaths<br/>149 Injuries</b> | People on gunwale, bow or transom    | 27        | 14     | 14       |
|   | Equipment failure                    | 52        | 9      | 27       |
|   | Hull failure                         | 44        | 2      | 5        |
| <b>Environment<br/>660 Accidents<br/>139 Deaths<br/>381 Injuries</b>                      | Machinery failure                    | 323       | 9      | 117      |
|   | Congested waters                     | 38        | 0      | 31       |
|   | Dam/lock                             | 9         | 8      | 4        |
|   | Force of wave/wake                   | 160       | 7      | 137      |
|   | Hazardous waters                     | 205       | 80     | 97       |
|   | Missing/inadequate navigation aid    | 34        | 3      | 9        |
| <b>Miscellaneous<br/>639 Accidents<br/>197 Deaths<br/>371 Injuries</b>                    | Weather                              | 214       | 41     | 103      |
|   | Carbon monoxide exposure             | 2         | 2      | 5        |
|   | Ignition of fuel or vapor            | 56        | 1      | 56       |
|   | Sudden medical condition             | 27        | 19     | 9        |
|   | Other                                | 352       | 54     | 248      |
| <b>All categories combined</b>  |                                      | 4463      | 701    | 2903     |



**Table 6 • MACHINERY & EQUIPMENT PRIMARY CONTRIBUTING FACTOR OF ACCIDENTS & CASUALTIES 2016**

|                   |                             | Accidents | Deaths | Injuries |
|-------------------|-----------------------------|-----------|--------|----------|
| Machinery Failure | Electrical system failure   | 52        | 0      | 6        |
|                   | Engine failure              | 153       | 4      | 48       |
|                   | Exhaust system failure      | 3         | 0      | 0        |
|                   | Fuel system failure         | 30        | 1      | 24       |
|                   | Shift failure               | 27        | 0      | 9        |
|                   | Steering system failure     | 39        | 4      | 25       |
|                   | Throttle failure            | 9         | 0      | 2        |
|                   | Ventilation system failure  | 3         | 0      | 3        |
|                   | Not specified               | 7         | 0      | 0        |
| Equipment Failure | Auxiliary equipment failure | 30        | 5      | 12       |
|                   | Onboard navigation aid      | 0         | 0      | 0        |
|                   | Sail dismasting             | 1         | 0      | 0        |
|                   | Seat broke loose            | 8         | 2      | 9        |
|                   | Other                       | 11        | 2      | 6        |
|                   | Not specified               | 2         | 0      | 0        |



Figure 3 PRIMARY CONTRIBUTING FACTOR OF ACCIDENTS 2016

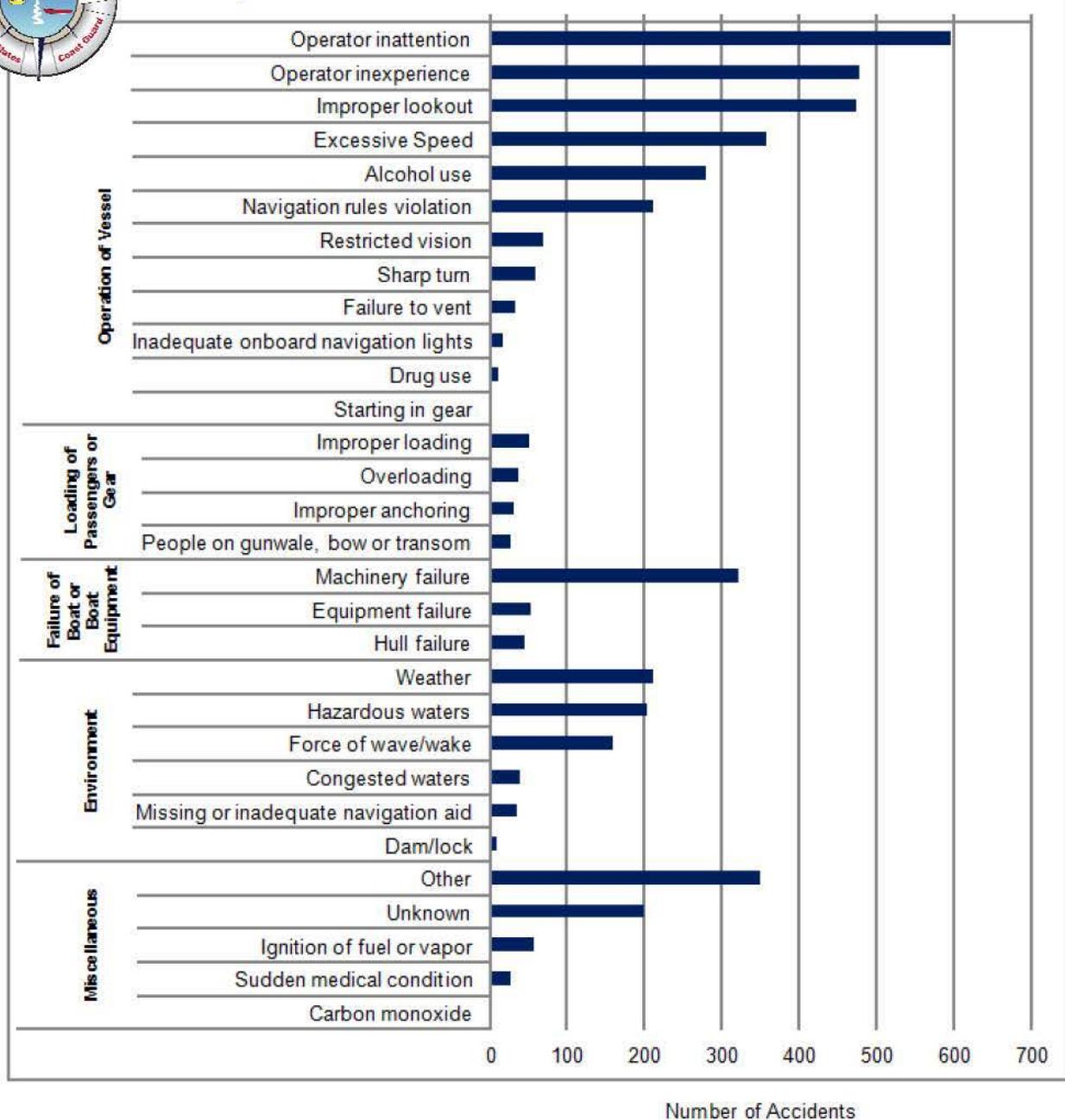




Figure 4 PRIMARY CONTRIBUTING FACTOR OF DEATHS 2016

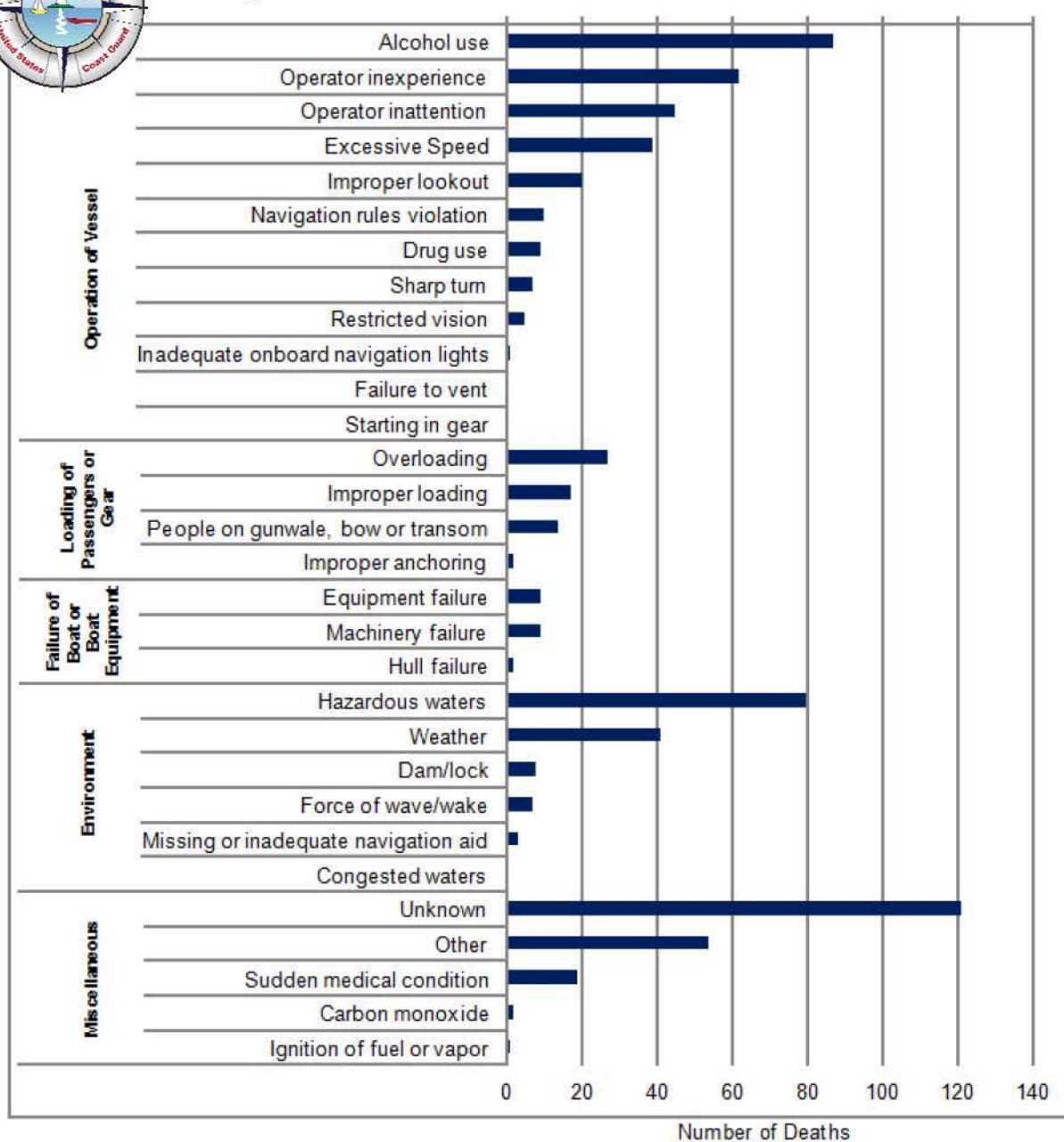
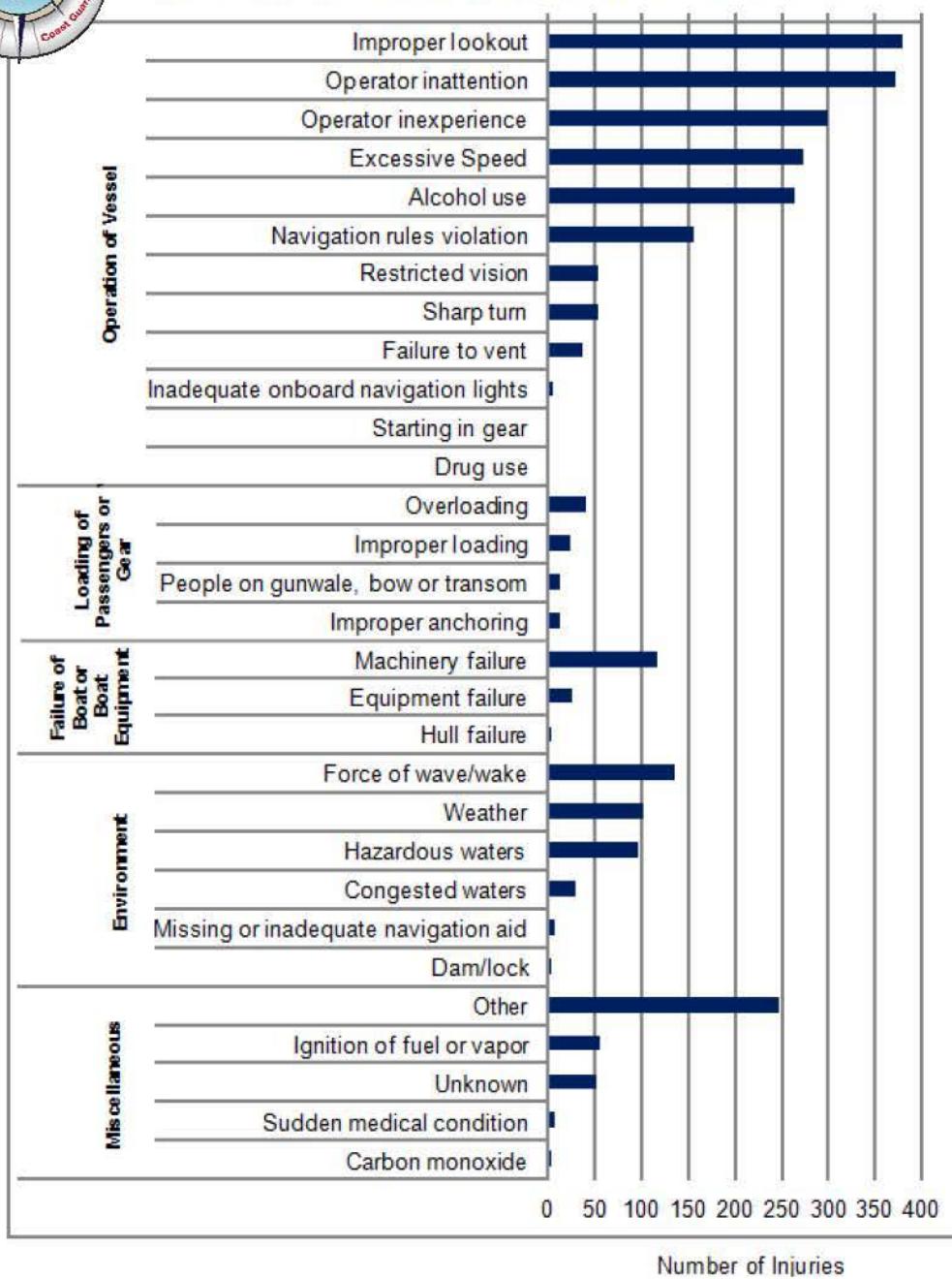




Figure 5 PRIMARY CONTRIBUTING FACTOR OF INJURIES 2016



**Table 7 • NUMBER OF VESSELS IN ACCIDENTS BY VESSEL TYPE & PRIMARY CONTRIBUTING FACTOR 2016**

|                     |      |     |   |    |     |    |     |     |     |     |    |    |    |    |     |     |     |     |     |     |     |     |    |     |    |     |     |     |     |     |    |
|---------------------|------|-----|---|----|-----|----|-----|-----|-----|-----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|----|-----|-----|-----|-----|-----|----|
| All vessels         | 5967 | 375 | 2 | 54 | 912 | 66 | 569 | 35  | 176 | 212 | 45 | 67 | 37 | 51 | 748 | 34  | 403 | 35  | 368 | 857 | 680 | 37  | 27 | 100 | 74 | 429 | 279 | 359 | 223 |     |    |
| Airboat             | 34   | 2   | 0 | 1  | 0   | 0  | 5   | 0   | 1   | 0   | 0  | 0  | 1  | 2  | 0   | 3   | 0   | 1   | 5   | 0   | 0   | 1   | 1  | 0   | 0  | 3   | 2   | 1   |     |     |    |
| Auxiliary sailboat  | 274  | 13  | 0 | 4  | 0   | 0  | 4   | 11  | 0   | 1   | 9  | 2  | 1  | 5  | 0   | 35  | 1   | 22  | 1   | 34  | 50  | 17  | 0  | 0   | 3  | 4   | 0   | 0   | 32  | 12  | 13 |
| Cabin motorboat     | 890  | 40  | 2 | 5  | 1   | 1  | 15  | 81  | 13  | 15  | 12 | 8  | 22 | 10 | 1   | 93  | 2   | 167 | 11  | 36  | 146 | 79  | 1  | 2   | 10 | 1   | 2   | 2   | 35  | 33  | 44 |
| Canoe               | 93   | 12  | 0 | 0  | 1   | 0  | 2   | 0   | 3   | 14  | 0  | 0  | 0  | 10 | 1   | 0   | 0   | 0   | 1   | 5   | 17  | 4   | 1  | 0   | 0  | 0   | 0   | 7   | 5   | 10  |    |
| Houseboat           | 87   | 3   | 0 | 0  | 0   | 6  | 2   | 0   | 0   | 1   | 0  | 0  | 1  | 1  | 12  | 0   | 3   | 14  | 13  | 0   | 1   | 1   | 0  | 0   | 0  | 0   | 0   | 21  | 5   | 3   |    |
| Inflatable          | 30   | 0   | 0 | 0  | 0   | 0  | 0   | 1   | 18  | 0   | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 1   | 0   | 2   | 2   | 0  | 0   | 0  | 0   | 0   | 1   | 1   | 2   | 2  |
| Kayak               | 182  | 7   | 0 | 2  | 3   | 0  | 0   | 0   | 2   | 45  | 0  | 0  | 0  | 3  | 6   | 0   | 0   | 0   | 5   | 18  | 33  | 4   | 0  | 1   | 0  | 0   | 5   | 16  | 2   | 30  |    |
| Open motorboat      | 2719 | 199 | 0 | 25 | 6   | 6  | 32  | 267 | 14  | 108 | 95 | 25 | 30 | 21 | 30  | 388 | 29  | 148 | 19  | 126 | 360 | 209 | 25 | 16  | 63 | 34  | 2   | 14  | 119 | 237 | 72 |
| Personal watercraft | 1072 | 41  | 0 | 13 | 0   | 0  | 5   | 157 | 5   | 30  | 4  | 2  | 9  | 0  | 1   | 162 | 0   | 24  | 2   | 117 | 176 | 252 | 0  | 0   | 10 | 28  | 0   | 3   | 6   | 18  | 7  |
| Pontoon             | 300  | 47  | 0 | 4  | 0   | 0  | 3   | 24  | 0   | 9   | 6  | 4  | 0  | 0  | 1   | 40  | 0   | 17  | 0   | 14  | 38  | 33  | 1  | 7   | 6  | 2   | 0   | 2   | 8   | 31  | 3  |
| Rowboat             | 43   | 2   | 0 | 0  | 0   | 1  | 1   | 0   | 1   | 3   | 1  | 0  | 1  | 3  | 8   | 0   | 0   | 0   | 1   | 6   | 1   | 1   | 0  | 1   | 0  | 0   | 1   | 3   | 2   | 6   |    |
| Sail (only)         | 64   | 4   | 0 | 1  | 0   | 0  | 0   | 1   | 0   | 0   | 2  | 0  | 5  | 0  | 0   | 4   | 0   | 4   | 0   | 2   | 14  | 6   | 0  | 0   | 1  | 4   | 0   | 0   | 13  | 0   | 3  |
| Sail (unknown)      | 6    | 0   | 0 | 0  | 0   | 0  | 0   | 3   | 0   | 0   | 0  | 0  | 0  | 0  | 0   | 0   | 0   | 0   | 0   | 0   | 1   | 0   | 0  | 0   | 0  | 0   | 1   | 1   | 0   | 0   |    |
| Standup paddleboard | 20   | 2   | 0 | 0  | 0   | 0  | 0   | 0   | 0   | 0   | 1  | 0  | 0  | 0  | 1   | 0   | 0   | 0   | 0   | 2   | 0   | 0   | 0  | 0   | 0  | 0   | 1   | 2   | 1   | 8   |    |
| Other               | 28   | 3   | 0 | 0  | 0   | 0  | 1   | 0   | 0   | 2   | 0  | 0  | 0  | 0  | 4   | 0   | 2   | 1   | 0   | 5   | 6   | 1   | 0  | 1   | 0  | 0   | 0   | 1   | 1   | 1   |    |
| Unknown             | 125  | 0   | 0 | 1  | 0   | 0  | 14  | 3   | 5   | 1   | 2  | 0  | 0  | 4  | 1   | 4   | 0   | 28  | 15  | 5   | 0   | 0   | 2  | 0   | 0  | 0   | 12  | 7   | 20  |     |    |



**Table 8 • ALCOHOL USE AS A CONTRIBUTING FACTOR IN  
ACCIDENTS & CASUALTIES BY STATE 2012-2016**

|      | Accidents |      |      |      |      | Deaths |      |      |      |      | Injuries |      |      |      |      |
|------|-----------|------|------|------|------|--------|------|------|------|------|----------|------|------|------|------|
|      | 2012      | 2013 | 2014 | 2015 | 2016 | 2012   | 2013 | 2014 | 2015 | 2016 | 2012     | 2013 | 2014 | 2015 | 2016 |
| USA  | 368       | 305  | 345  | 306  | 350  | 139    | 94   | 137  | 122  | 133  | 313      | 251  | 302  | 258  | 335  |
| AK   | 2         | 2    | 3    | 3    | 1    | 2      | 4    | 3    | 3    | 1    | 0        | 0    | 0    | 0    | 0    |
| AL   | 11        | 7    | 7    | 9    | 7    | 1      | 4    | 5    | 5    | 6    | 13       | 5    | 9    | 4    | 5    |
| AR   | 8         | 5    | 7    | 4    | 2    | 2      | 2    | 2    | 2    | 2    | 10       | 3    | 6    | 5    | 0    |
| AZ   | 7         | 7    | 7    | 8    | 11   | 3      | 2    | 1    | 2    | 3    | 7        | 9    | 8    | 9    | 12   |
| CA   | 14        | 17   | 14   | 16   | 11   | 6      | 2    | 5    | 3    | 3    | 13       | 15   | 11   | 13   | 20   |
| CO   | 10        | 4    | 2    | 2    | 3    | 4      | 0    | 0    | 1    | 1    | 8        | 5    | 2    | 2    | 1    |
| CT   | 6         | 2    | 2    | 3    | 3    | 4      | 0    | 1    | 0    | 1    | 4        | 1    | 3    | 4    | 5    |
| DE   | 2         | 1    | 2    | 0    | 1    | 1      | 0    | 0    | 0    | 0    | 1        | 2    | 2    | 0    | 0    |
| DC   | 0         | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0    |
| FL   | 30        | 32   | 30   | 30   | 31   | 9      | 10   | 12   | 11   | 14   | 30       | 22   | 29   | 21   | 25   |
| GA   | 8         | 11   | 7    | 8    | 12   | 4      | 4    | 2    | 4    | 7    | 8        | 7    | 7    | 3    | 7    |
| HI   | 0         | 2    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0        | 2    | 0    | 0    | 0    |
| IA   | 7         | 4    | 6    | 2    | 7    | 7      | 2    | 2    | 1    | 2    | 7        | 0    | 3    | 1    | 4    |
| ID   | 10        | 8    | 4    | 4    | 3    | 2      | 2    | 2    | 2    | 3    | 12       | 8    | 0    | 5    | 5    |
| IL   | 13        | 6    | 17   | 9    | 10   | 5      | 1    | 8    | 5    | 1    | 10       | 3    | 15   | 8    | 4    |
| IN   | 4         | 2    | 10   | 4    | 4    | 0      | 0    | 5    | 1    | 2    | 3        | 2    | 2    | 2    | 3    |
| KS   | 3         | 2    | 1    | 2    | 6    | 1      | 1    | 0    | 1    | 2    | 0        | 1    | 3    | 3    | 5    |
| KY   | 6         | 5    | 11   | 7    | 6    | 2      | 0    | 5    | 2    | 2    | 2        | 6    | 16   | 5    | 6    |
| LA   | 16        | 9    | 20   | 12   | 7    | 6      | 3    | 6    | 4    | 3    | 11       | 12   | 28   | 10   | 6    |
| MA   | 10        | 8    | 5    | 6    | 7    | 5      | 3    | 0    | 3    | 2    | 8        | 6    | 9    | 4    | 2    |
| MD   | 11        | 10   | 7    | 17   | 12   | 4      | 1    | 1    | 8    | 3    | 16       | 5    | 5    | 22   | 13   |
| ME   | 3         | 3    | 5    | 1    | 6    | 1      | 0    | 2    | 1    | 2    | 3        | 2    | 1    | 0    | 7    |
| MI   | 8         | 6    | 8    | 6    | 10   | 1      | 1    | 4    | 4    | 7    | 4        | 4    | 4    | 8    | 6    |
| MN   | 9         | 8    | 8    | 10   | 18   | 3      | 3    | 4    | 7    | 8    | 7        | 5    | 11   | 7    | 11   |
| MO   | 12        | 15   | 16   | 6    | 14   | 2      | 6    | 5    | 2    | 3    | 8        | 20   | 16   | 11   | 15   |
| MS   | 4         | 7    | 2    | 1    | 8    | 1      | 3    | 2    | 0    | 3    | 5        | 5    | 1    | 1    | 6    |
| MT   | 0         | 1    | 3    | 2    | 3    | 0      | 0    | 2    | 2    | 1    | 0        | 0    | 1    | 0    | 6    |
| NC   | 11        | 12   | 13   | 20   | 12   | 3      | 4    | 5    | 4    | 1    | 10       | 8    | 11   | 14   | 13   |
| ND   | 2         | 2    | 5    | 2    | 0    | 1      | 1    | 3    | 1    | 0    | 0        | 1    | 3    | 4    | 0    |
| NE   | 4         | 1    | 1    | 1    | 1    | 1      | 0    | 0    | 0    | 0    | 14       | 2    | 1    | 1    | 0    |
| NH   | 3         | 1    | 2    | 1    | 2    | 2      | 0    | 0    | 1    | 0    | 0        | 4    | 4    | 0    | 2    |
| NJ   | 6         | 6    | 2    | 3    | 4    | 2      | 0    | 0    | 0    | 0    | 6        | 3    | 3    | 3    | 6    |
| NM   | 3         | 2    | 1    | 0    | 0    | 1      | 0    | 0    | 0    | 0    | 1        | 3    | 1    | 0    | 0    |
| NV   | 3         | 2    | 6    | 3    | 3    | 0      | 1    | 2    | 2    | 0    | 7        | 1    | 6    | 1    | 3    |
| NY   | 16        | 14   | 13   | 14   | 18   | 11     | 6    | 7    | 3    | 6    | 9        | 12   | 7    | 7    | 24   |
| OH   | 10        | 7    | 7    | 8    | 9    | 4      | 1    | 6    | 4    | 4    | 12       | 3    | 0    | 6    | 11   |
| OK   | 8         | 3    | 5    | 7    | 4    | 3      | 3    | 2    | 3    | 0    | 8        | 4    | 5    | 3    | 6    |
| OR   | 1         | 3    | 4    | 7    | 3    | 1      | 3    | 1    | 4    | 1    | 0        | 2    | 5    | 3    | 6    |
| PA   | 9         | 4    | 10   | 3    | 7    | 5      | 1    | 6    | 1    | 5    | 4        | 3    | 9    | 2    | 8    |
| RI   | 1         | 1    | 2    | 3    | 3    | 1      | 0    | 1    | 0    | 0    | 0        | 6    | 0    | 6    | 1    |
| SC   | 14        | 6    | 7    | 7    | 9    | 5      | 4    | 3    | 3    | 4    | 12       | 4    | 5    | 6    | 9    |
| SD   | 1         | 3    | 3    | 4    | 3    | 1      | 0    | 1    | 3    | 2    | 0        | 3    | 1    | 2    | 1    |
| TN   | 6         | 7    | 6    | 10   | 11   | 1      | 3    | 2    | 3    | 5    | 3        | 5    | 7    | 3    | 10   |
| TX   | 21        | 19   | 17   | 7    | 21   | 6      | 5    | 5    | 1    | 6    | 16       | 17   | 12   | 6    | 28   |
| UT   | 1         | 2    | 2    | 2    | 5    | 0      | 1    | 1    | 0    | 1    | 0        | 0    | 1    | 5    | 10   |
| VA   | 3         | 3    | 6    | 4    | 5    | 1      | 0    | 3    | 1    | 4    | 0        | 3    | 3    | 4    | 2    |
| VT   | 0         | 0    | 1    | 1    | 0    | 0      | 0    | 1    | 0    | 0    | 0        | 0    | 0    | 1    | 0    |
| WA   | 14        | 14   | 9    | 11   | 10   | 6      | 5    | 4    | 5    | 3    | 7        | 8    | 7    | 12   | 8    |
| WI   | 14        | 9    | 12   | 11   | 9    | 8      | 2    | 3    | 8    | 8    | 9        | 9    | 12   | 5    | 7    |
| WV   | 1         | 0    | 5    | 4    | 6    | 0      | 0    | 1    | 0    | 0    | 1        | 0    | 5    | 14   | 5    |
| WY   | 2         | 0    | 2    | 0    | 1    | 0      | 0    | 1    | 0    | 1    | 4        | 0    | 2    | 0    | 0    |
| AS   | 0         | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0    |
| CNMI | 0         | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0    |
| GU   | 0         | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0    |
| PR   | 0         | 0    | 0    | 1    | 1    | 0      | 0    | 0    | 1    | 0    | 0        | 0    | 0    | 2    | 1    |
| VI   | 0         | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0    |
| AT   | 0         | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0    |
| GM   | 0         | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0    |
| PC   | 0         | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0        | 0    | 0    | 0    | 0    |

**Table 9 • VESSEL OPERATION AT THE TIME OF ACCIDENT 2016**

|                     | <b>Vessels Involved</b> | <b>Deaths</b> | <b>Injuries</b> |
|---------------------|-------------------------|---------------|-----------------|
| <b>Totals</b>       | 5967                    | 701           | 2903            |
| At anchor           | 239                     | 40            | 85              |
| Being towed         | 40                      | 0             | 12              |
| Changing direction  | 519                     | 43            | 289             |
| Changing speed      | 588                     | 20            | 342             |
| Cruising            | 2565                    | 207           | 1554            |
| Docking/undocking   | 144                     | 5             | 30              |
| Drifting            | 556                     | 155           | 275             |
| Idling              | 42                      | 6             | 17              |
| Launching/loading   | 30                      | 0             | 9               |
| Rowing/paddling     | 236                     | 122           | 112             |
| Sailing             | 108                     | 6             | 46              |
| Tied to dock/moored | 626                     | 2             | 61              |
| Towing              | 24                      | 3             | 8               |
| Trolling            | 23                      | 7             | 12              |
| Other               | 26                      | 1             | 2               |
| Unknown             | 201                     | 84            | 49              |

**Table 10 • VESSEL ACTIVITY AT THE TIME OF ACCIDENT 2016**

|                        | <b>Vessels Involved</b> | <b>Deaths</b> | <b>Injuries</b> |
|------------------------|-------------------------|---------------|-----------------|
| <b>Totals</b>          | 5967                    | 701           | 2903            |
| Boating/relaxation     | 3751                    | 382           | 1953            |
| Commercial             | 58                      | 0             | 8               |
| Fishing                | 709                     | 197           | 320             |
| Fueling                | 28                      | 1             | 26              |
| Government             | 8                       | 0             | 2               |
| Hunting                | 39                      | 17            | 19              |
| Racing                 | 33                      | 4             | 9               |
| Repairs                | 38                      | 6             | 23              |
| Starting engine        | 54                      | 4             | 41              |
| Swimming/snorkeling    | 102                     | 39            | 53              |
| Towed watersports      | 416                     | 17            | 383             |
| Towing                 | 70                      | 1             | 13              |
| Whitewater             | 25                      | 11            | 12              |
| Other                  | 20                      | 3             | 6               |
| None; not in operation | 564                     | 13            | 23              |
| Unknown                | 52                      | 6             | 12              |



Table 11 • WEATHER AND WATER CONDITIONS 2016

|                       |  | Accidents | Deaths | Injuries |
|-----------------------|--|-----------|--------|----------|
|                       |  | 4463      | 701    | 2903     |
| TYPE OF BODY OF WATER | Lakes, Ponds, Reservoirs, Dams, Gravel Pits                              | 2017      | 351    | 1360     |
|                       | Rivers, Streams, Creeks, Swamps, Bayous                                  | 993       | 189    | 645      |
|                       | Bays, Inlets, Marinas, Sounds, Harbors, Channels, Canals, Sloughs, Coves | 970       | 91     | 610      |
|                       | Ocean/Gulf   | 371       | 47     | 242      |
|                       | Great Lakes (not tributaries)  | 112       | 23     | 46       |
| WATER CONDITIONS      | Calm (waves less than 6")  | 2528      | 312    | 1736     |
|                       | Choppy (waves 6" to 2')  | 1196      | 183    | 775      |
|                       | Rough (waves 2' to 6')   | 425       | 84     | 219      |
|                       | Very Rough (waves larger than 6')  | 83        | 29     | 50       |
|                       | Unknown  | 231       | 93     | 123      |
| WIND                  | None   | 380       | 49     | 267      |
|                       | Light (0 - 6 mph)  | 2474      | 354    | 1761     |
|                       | Moderate (7 - 14 mph)  | 1045      | 148    | 587      |
|                       | Strong (15 - 25 mph)   | 344       | 74     | 193      |
|                       | Storm (over 25 mph)  | 62        | 15     | 17       |
|                       | Unknown  | 158       | 61     | 78       |
| VISIBILITY            | Poor - Day   | 52        | 12     | 18       |
|                       | Poor - Night   | 118       | 24     | 108      |
|                       | Poor - Unknown if day or night   | 0         | 0      | 0        |
|                       | Fair - Day   | 173       | 37     | 88       |
|                       | Fair - Night   | 158       | 31     | 126      |
|                       | Fair- Unknown if day or night  | 2         | 0      | 3        |
|                       | Good - Day   | 3366      | 455    | 2219     |
|                       | Good - Night   | 387       | 78     | 235      |
|                       | Good- Unknown if day or night  | 4         | 2      | 0        |
|                       | Unknown - Day  | 148       | 37     | 76       |
|                       | Unknown - Night  | 40        | 15     | 27       |
|                       | Unknown - Unknown if day or night  | 15        | 10     | 3        |
| WATER TEMPERATURE     | 39 degrees F and below   | 28        | 24     | 13       |
|                       | 40 - 49 degrees F  | 116       | 35     | 76       |
|                       | 50 - 59 degrees F  | 339       | 81     | 207      |
|                       | 60 - 69 degrees F  | 699       | 93     | 470      |
|                       | 70 - 79 degrees F  | 1374      | 171    | 835      |
|                       | 80 - 89 degrees F  | 1091      | 140    | 763      |
|                       | 90 degrees F and above   | 44        | 8      | 25       |
|                       | Unknown  | 772       | 149    | 514      |

**Table 12 • TIME RELATED DATA 2016**

|                      |                      | <b>Accidents</b> | <b>Deaths</b> | <b>Injuries</b> |
|----------------------|----------------------|------------------|---------------|-----------------|
|                      |                      | 4463             | 701           | 2903            |
| <b>Time of Day</b>   | 12:00 am to 2:30 am  | 121              | 24            | 99              |
|                      | 2:31 am to 4:30 am   | 42               | 14            | 16              |
|                      | 4:31 am to 6:30 am   | 69               | 11            | 46              |
|                      | 6:31 am to 8:30 am   | 137              | 31            | 73              |
|                      | 8:31 am to 10:30 am  | 278              | 54            | 143             |
|                      | 10:31 am to 12:30 pm | 497              | 80            | 299             |
|                      | 12:31 pm to 2:30 pm  | 745              | 97            | 479             |
|                      | 2:31 pm to 4:30 pm   | 873              | 104           | 576             |
|                      | 4:31 pm to 6:30 pm   | 768              | 102           | 535             |
|                      | 6:31 pm to 8:30 pm   | 490              | 86            | 327             |
|                      | 8:31 pm to 10:30 pm  | 273              | 46            | 208             |
|                      | 10:31 pm to 11:59 pm | 115              | 24            | 89              |
|                      | Unknown              | 55               | 28            | 13              |
| <b>Month of Year</b> | January              | 84               | 25            | 39              |
|                      | February             | 88               | 28            | 48              |
|                      | March                | 168              | 39            | 98              |
|                      | April                | 259              | 48            | 182             |
|                      | May                  | 517              | 70            | 335             |
|                      | June                 | 728              | 111           | 440             |
|                      | July                 | 1081             | 143           | 764             |
|                      | August               | 691              | 84            | 440             |
|                      | September            | 411              | 59            | 288             |
|                      | October              | 217              | 40            | 139             |
|                      | November             | 144              | 36            | 106             |
|                      | December             | 75               | 18            | 24              |
| <b>Day of Week</b>   | Sunday               | 1169             | 158           | 828             |
|                      | Monday               | 450              | 70            | 257             |
|                      | Tuesday              | 341              | 75            | 180             |
|                      | Wednesday            | 317              | 63            | 178             |
|                      | Thursday             | 352              | 54            | 204             |
|                      | Friday               | 549              | 89            | 362             |
|                      | Saturday             | 1285             | 192           | 894             |

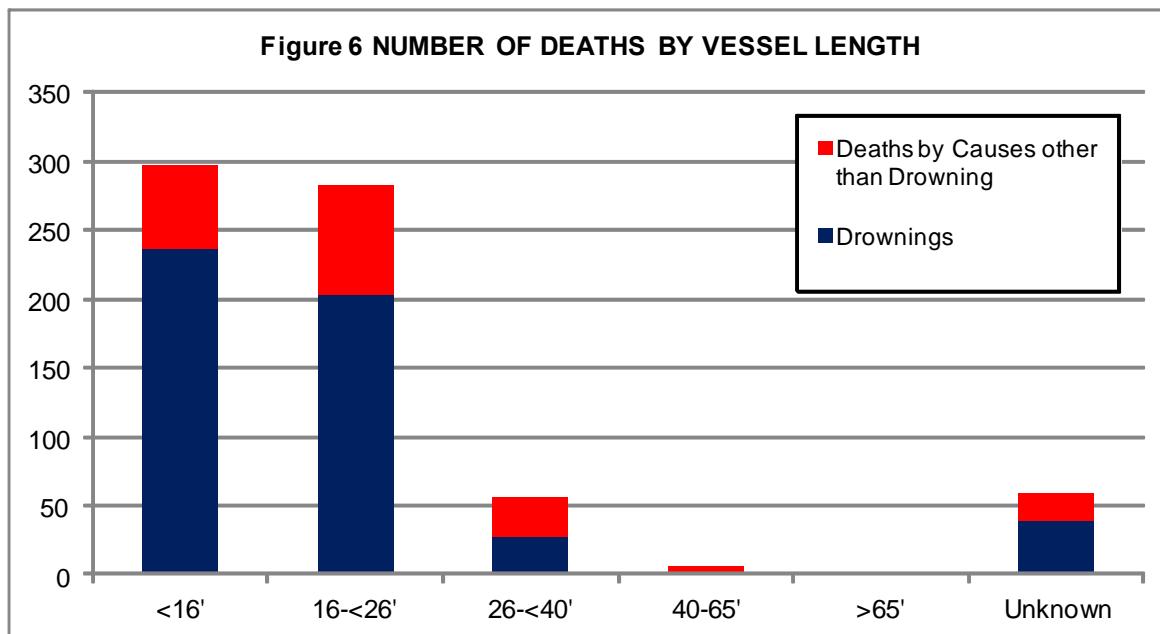
**Table 13 • VESSEL INFORMATION 2016**

|                      | Vessels Involved    | Deaths | Injuries |
|----------------------|---------------------|--------|----------|
|                      | 5967                | 701    | 2903     |
| <b>Hull Material</b> | Aluminum            | 918    | 191      |
|                      | Fiberglass          | 4486   | 339      |
|                      | Plastic             | 160    | 90       |
|                      | Rubber/Vinyl/Canvas | 54     | 27       |
|                      | Steel               | 55     | 3        |
|                      | Wood                | 68     | 3        |
|                      | Other               | 21     | 4        |
|                      | Unknown             | 205    | 44       |
| <b>Horsepower</b>    | No Engine           | 428    | 202      |
|                      | 10 hp or less       | 122    | 29       |
|                      | 11 - 25 hp          | 161    | 35       |
|                      | 26 - 75 hp          | 508    | 71       |
|                      | 76 - 150 hp         | 1224   | 100      |
|                      | 151 - 250 hp        | 807    | 51       |
|                      | Over 250 hp         | 1124   | 63       |
|                      | Unknown             | 1593   | 150      |
| <b>Year Built</b>    | 2016                | 314    | 38       |
|                      | 2015                | 322    | 26       |
|                      | 2013 - 2014         | 363    | 36       |
|                      | 2011 - 2012         | 241    | 17       |
|                      | 2009 - 2010         | 187    | 16       |
|                      | 2003 - 2008         | 1073   | 93       |
|                      | Prior to 2003       | 2790   | 280      |
|                      | Unknown             | 677    | 195      |
| <b>Length</b>        | Less than 16 feet   | 1641   | 297      |
|                      | 16 feet to <26 feet | 2711   | 283      |
|                      | 26 feet to <40 feet | 849    | 56       |
|                      | 40 feet to 65 feet  | 374    | 6        |
|                      | More than 65 feet   | 87     | 0        |
|                      | Unknown             | 305    | 59       |



Table 14 • RENTAL STATUS OF VESSELS INVOLVED IN ACCIDENTS

|                     | Vessels      |        |            |                   | Deaths      |        |            |                   | Injuries      |        |            |                   |
|---------------------|--------------|--------|------------|-------------------|-------------|--------|------------|-------------------|---------------|--------|------------|-------------------|
|                     | # of Vessels | Rented | Not Rented | Unknown if rented | # of Deaths | Rented | Not rented | Unknown if rented | # of Injuries | Rented | Not rented | Unknown if rented |
| All Vessels         | 5967         | 583    | 4862       | 522               | 701         | 67     | 549        | 85                | 2903          | 329    | 2362       | 212               |
| Airboat             | 34           | 0      | 32         | 2                 | 3           | 0      | 3          | 0                 | 32            | 0      | 29         | 3                 |
| Auxiliary sailboat  | 274          | 4      | 244        | 26                | 11          | 0      | 11         | 0                 | 39            | 1      | 33         | 5                 |
| Cabin motorboat     | 890          | 9      | 800        | 81                | 41          | 1      | 34         | 6                 | 263           | 2      | 240        | 21                |
| Canoe               | 93           | 13     | 68         | 12                | 63          | 8      | 45         | 10                | 45            | 7      | 33         | 5                 |
| Houseboat           | 87           | 13     | 70         | 4                 | 2           | 1      | 1          | 0                 | 5             | 2      | 3          | 0                 |
| Inflatable          | 30           | 4      | 16         | 10                | 18          | 3      | 9          | 6                 | 16            | 2      | 9          | 5                 |
| Kayak               | 182          | 15     | 133        | 34                | 89          | 5      | 69         | 15                | 79            | 10     | 55         | 14                |
| Open motorboat      | 2719         | 150    | 2430       | 139               | 323         | 15     | 288        | 20                | 1537          | 93     | 1346       | 98                |
| Personal watercraft | 1072         | 282    | 733        | 57                | 46          | 10     | 35         | 1                 | 675           | 182    | 463        | 30                |
| Pontoon             | 300          | 80     | 199        | 21                | 47          | 16     | 27         | 4                 | 120           | 26     | 90         | 4                 |
| Rowboat             | 43           | 2      | 36         | 5                 | 17          | 2      | 15         | 0                 | 27            | 0      | 24         | 3                 |
| Sailboat (only)     | 64           | 2      | 53         | 9                 | 3           | 0      | 2          | 1                 | 36            | 2      | 31         | 3                 |
| Sailboat (unknown)  | 6            | 0      | 0          | 6                 | 1           | 0      | 0          | 1                 | 1             | 0      | 0          | 1                 |
| Standup paddleboard | 20           | 5      | 11         | 4                 | 15          | 4      | 8          | 3                 | 5             | 1      | 3          | 1                 |
| Other               | 28           | 3      | 21         | 4                 | 6           | 1      | 2          | 3                 | 4             | 1      | 2          | 1                 |
| Unknown             | 125          | 1      | 16         | 108               | 16          | 1      | 0          | 15                | 19            | 0      | 1          | 18                |

**Table 15 • NUMBER & PERCENT OF DEATHS BY VESSEL LENGTH**

| Length       | Drownings  | Deaths by Causes other than Drowning | Total Deaths | Percent of Deaths from Drowning |
|--------------|------------|--------------------------------------|--------------|---------------------------------|
| <16'         | 236        | 61                                   | 297          | 79%                             |
| 16-<26'      | 204        | 79                                   | 283          | 72%                             |
| 26-<40'      | 28         | 28                                   | 56           | 50%                             |
| 40-65'       | 2          | 4                                    | 6            | 33%                             |
| >65'         | 0          | 0                                    | 0            | 0%                              |
| Unknown      | 39         | 20                                   | 59           | 66%                             |
| <b>Total</b> | <b>509</b> | <b>192</b>                           | <b>701</b>   | <b>73%</b>                      |

# **ACCIDENT TYPES**

### Explanation of Accident Types Section

The following section contains six tables that examine data related to the events in accidents (termed "accident types"). The tables focus on these events and breaks down information by state, vessel type, vessel length, engine type, and propulsion.

In the Coast Guard's national database, there are four fields that can be used to define the series of events in an accident. By events, we mean the series of occurrences during an accident. If a wave broke over a vessel causing it to take on water, capsize, and eject its occupant, the Coast Guard would categorize this accident by three events. First, there was a flooding/swamping. Second, there was a capsizing. Third, there was an ejection.

With the exception of one table, the tables and figures in this report focus only on the first event in the sequence. The rationale for providing only the first accident type is to keep the tables simplistic; if we added the second, third, and fourth events in the boating sequence, our accident, casualty, and damage totals would not match up because they would be double-counting the accidents, casualties, and damages for cases that had more than one event.

#### **Accident, Vessel & Casualty Numbers by Primary Accident Type (Table 16, Page 36)**

This table focuses on the first event in a boating accident and provides information on the number of accidents, vessels, and casualties attributed to that first event. The deaths section is also separated by the categories drownings and non-drownings.

#### **Five-year Summary of Frequency of Events in Accidents & Casualties Nationwide (Table 17, Pages 37-40)**

As mentioned in the second paragraph, there are four fields that can be used to define the series of events in an accident. This table focuses on the first three events in an accident and the number of casualties associated with each event. The Coast Guard leaves out the fourth because it is not a standardized field.

Using the example in the opening paragraphs, the flooding/swamping would fall under the intersection of the column "First Event in an Accident" and the row "Flooding/swamping". The capsizing would be marked under the column "Second Event in an Accident" and the row "Capsizing". Finally, the ejection would be marked under the column "Third Event in an Accident" and the row "Ejected from Vessel".

This table focuses on the frequency that these events occurred nationally and the total number of deaths that were associated with each accident type. If we turn back to our example and focus on deaths as a result of flooding/swamping, we see that there were 470 accidents where flooding/swamping was the first event in the boating accident. There were 90 deaths associated with this first event type. However, there were other accidents that involved a flooding/swamping as a second or third occurrence. There were 258 accidents and 13 deaths associated with flooding/swamping as a second event and 82 accidents and 8 deaths associated with flooding/swamping as a third event. All combined, you get the sixth column of the table that looks at how many deaths were associated with an event that occurred either as the first, second, or third occurrence in an accident. Please note that in this table deaths are not separated by first, second and third event. In the example, there were 810 accidents and 111 deaths associated with flooding/swamping as a first, second, or third event.

This table can be difficult to understand, especially when the reader is under the expectation that the tallies of the casualty columns will equal the numbers published at the front of this report that reference the number of reportable accidents and deaths.

#### **Number of Vessels in Accidents by Vessel Length & Primary Accident Type (Table 18, Page 41)**

This table displays the types of accidents by the length of vessel. The table lists vessel length by foot for vessels of lengths 4 ft-39 ft. After 39 ft, information is categorized in ranges. This table also provides information about the number of casualties and vessels associated by length of vessel.

## *Accident Types*

### **Number of Vessels in Accidents by Vessel Type & Primary Accident Type (Table 19, Page 42)**

This table examines the first event of a boating accident for all vessels involved in an accident. It also provides information about the casualties associated with each vessel type.

### **Number of Vessels in Accidents by Primary Accident Type & Propulsion Type (Table 20, Page 43)**

This table provides information about the number of vessels involved in accidents by primary accident type, propulsion, and engine type.

### **Number of Vessels in Accidents by Primary Accident Type & Engine Type (Table 21, Page 43)**

This table provides information about the number of casualties and vessels associated by propulsion, engine, and primary accident type.



Table 16 • ACCIDENT, VESSEL &amp; CASUALTY NUMBERS BY PRIMARY ACCIDENT TYPE 2016

|                                    | Accidents | Vessels Involved | Drowning Deaths | Other Deaths | Total Deaths | Total Injuries | Damages         |
|------------------------------------|-----------|------------------|-----------------|--------------|--------------|----------------|-----------------|
| <b>All Accident Types</b>          | 4463      | 5967             | 509             | 192          | 701          | 2903           | \$49,124,633.91 |
| Capsizing                          | 305       | 317              | 146             | 29           | 175          | 200            | \$2,073,321.00  |
| Carbon monoxide poisoning          | 8         | 8                | 1               | 3            | 4            | 11             | \$5,000.00      |
| Collision with fixed object        | 565       | 677              | 25              | 38           | 63           | 432            | \$6,333,757.25  |
| Collision with floating object     | 53        | 53               | 5               | 0            | 5            | 18             | \$474,363.83    |
| Collision with commercial vessel   | 31        | 69               | 2               | 2            | 4            | 22             | \$648,784.58    |
| Collision with governmental vessel | 4         | 8                | 0               | 0            | 0            | 3              | \$12,300.00     |
| Collision with recreational vessel | 1051      | 2195             | 7               | 31           | 38           | 708            | \$7,999,877.42  |
| Collision with submerged object    | 143       | 149              | 8               | 0            | 8            | 52             | \$2,576,612.20  |
| Departed vessel                    | 121       | 124              | 72              | 7            | 79           | 48             | \$27,500.00     |
| Ejected from vessel                | 160       | 176              | 26              | 4            | 30           | 145            | \$224,882.00    |
| Electrocution                      | 2         | 2                | 0               | 2            | 2            | 1              | \$0.00          |
| Fall in vessel                     | 170       | 184              | 0               | 1            | 1            | 178            | \$71,803.30     |
| Falls overboard                    | 284       | 309              | 126             | 35           | 161          | 125            | \$103,495.00    |
| Fire/explosion (fuel)              | 158       | 172              | 1               | 1            | 2            | 133            | \$2,937,056.00  |
| Fire/explosion (non-fuel)          | 81        | 112              | 0               | 0            | 0            | 8              | \$7,204,495.00  |
| Fire/explosion (unknown origin)    | 34        | 48               | 0               | 1            | 1            | 10             | \$5,198,480.00  |
| Flooding/swamping                  | 470       | 502              | 72              | 18           | 90           | 156            | \$6,550,448.70  |
| Grounding                          | 413       | 427              | 9               | 4            | 13           | 246            | \$5,954,587.54  |
| Person struck by propeller         | 42        | 45               | 0               | 0            | 0            | 43             | \$690.00        |
| Person struck by vessel            | 32        | 45               | 1               | 1            | 2            | 35             | \$16,000.00     |
| Sinking                            | 0         | 0                | 0               | 0            | 0            | 0              | \$0.00          |
| Skier mishap                       | 278       | 285              | 4               | 7            | 11           | 289            | \$13,250.00     |
| Sudden medical condition           | 10        | 10               | 3               | 6            | 9            | 1              | \$200.00        |
| Other                              | 48        | 50               | 1               | 2            | 3            | 39             | \$697,730.09    |

**Table 17 ▪ FREQUENCY OF EVENTS IN ACCIDENTS & CASUALTIES NATIONWIDE****2016**

|                                    | First Event in an Accident | Total Times Event Occurred in all Accidents |                            |                             | Deaths Associated with Event in all Accidents | Injuries Associated with Event in all Accidents | Damages Associated with Event in all Accidents |
|------------------------------------|----------------------------|---|----------------------------|-----------------------------|---|---|--|
|                                    |                            | Second Event in an Accident                 | Third Event in an Accident | Fourth Event in an Accident |   |   |  |
| Capsizing                          | 305                        | 262   | 60                         | 627                         | 263   | 356   | \$4,262,346.53                                 |
| Carbon monoxide poisoning          | 8                          | 2   | 1                          | 11                          | 6   | 13  | \$5,000.00                                     |
| Collision with fixed object        | 565                        | 82  | 9                          | 656                         | 74  | 475   | \$8,189,699.35                                 |
| Collision with floating object     | 53                         | 4   | 0                          | 57                          | 5   | 19  | \$489,063.83                                   |
| Collision with commercial vessel   | 31                         | 3   | 0                          | 34                          | 5   | 23  | \$696,484.58                                   |
| Collision with governmental vessel | 4                          | 0   | 1                          | 5                           | 0   | 3   | \$15,100.00                                    |
| Collision with recreational vessel | 1051                       | 67  | 9                          | 1127                        | 42  | 747   | \$9,587,374.22                                 |
| Collision with submerged object    | 143                        | 5   | 0                          | 148                         | 9   | 56  | \$2,772,112.20                                 |
| Departed vessel                    | 121                        | 58  | 16                         | 195                         | 96  | 88  | \$1,018,112.00                                 |
| Ejected from vessel                | 160                        | 609   | 311                        | 1080                        | 319   | 969   | \$7,122,482.55                                 |
| Electrocution                      | 2                          | 0   | 0                          | 2                           | 2   | 1   | \$0.00   |
| Fall in vessel                     | 170                        | 284   | 52                         | 506                         | 25  | 693   | \$3,956,127.78                                 |
| Falls overboard                    | 284                        | 58  | 9                          | 351                         | 183   | 177   | \$227,195.00                                   |
| Fire/explosion (fuel)              | 158                        | 10  | 2                          | 170                         | 2   | 138   | \$3,054,056.00                                 |
| Fire/explosion (non-fuel)          | 81                         | 2   | 1                          | 84                          | 0   | 8   | \$7,265,495.00                                 |
| Fire/explosion (unknown origin)    | 34                         | 0   | 0                          | 34                          | 1   | 10  | \$5,198,480.00                                 |
| Flooding/swamping                  | 470                        | 258   | 82                         | 810                         | 111   | 285   | \$15,154,400.50                                |
| Grounding                          | 413                        | 55  | 23                         | 491                         | 16  | 299   | \$7,128,476.37                                 |
| Person struck by propeller         | 42                         | 101   | 28                         | 171                         | 24  | 175   | \$124,740.00                                   |
| Person struck by vessel            | 32                         | 220   | 31                         | 283                         | 24  | 367   | \$889,104.49                                   |
| Sinking                            | 0                          | 119   | 83                         | 202                         | 23  | 46  | \$8,122,022.00                                 |
| Skier mishap                       | 278                        | 19  | 3                          | 300                         | 11  | 316   | \$47,490.00                                    |
| Sudden medical condition           | 10                         | 1   | 0                          | 11                          | 9   | 2   | \$700.00                                       |
| Other                              | 48                         | 28  | 5                          | 81                          | 6   | 66  | \$759,150.09                                   |
| Unknown                            | 0                          | 0   | 0                          | 0                           | 0   | 0   | \$0.00   |

**2015**

|                                    |     |     |    |      |     |     |             |
|------------------------------------|-----|-----|----|------|-----|-----|-------------|
| Capsizing                          | 299 | 241 | 56 | 596  | 226 | 293 | \$3,078,884 |
| Carbon monoxide poisoning          | 12  | 0   | 1  | 13   | 8   | 14  | \$21,500    |
| Collision with fixed object        | 470 | 73  | 10 | 553  | 62  | 385 | \$5,195,040 |
| Collision with floating object     | 61  | 5   | 1  | 67   | 11  | 29  | \$578,821   |
| Collision with commercial vessel   | 29  | 4   | 0  | 33   | 4   | 13  | \$954,100   |
| Collision with governmental vessel | 4   | 0   | 0  | 4    | 0   | 1   | \$47,000    |
| Collision with recreational vessel | 990 | 59  | 6  | 1055 | 37  | 650 | \$6,575,775 |
| Collision with submerged object    | 127 | 2   | 0  | 129  | 8   | 56  | \$1,973,274 |

**Table 17 Continued • FREQUENCY OF EVENTS IN ACCIDENTS & CASUALTIES NATIONWIDE****2015 continued**

|                                 |     |     |     | Total Times Event<br>Occurred in all Accidents | Injuries Associated with Event<br>in all Accidents | Deaths Associated with Event<br>in all Accidents | Damages Associated with<br>Event in all Accidents |
|---------------------------------|-----|-----|-----|--|--|--|---|
| Departed vessel                 | 86  | 39  | 13  | 138  | 70   | 57   | \$308,765   |
| Ejected from vessel             | 172 | 576 | 369 | 1117   | 316  | 931  | \$5,696,172                                       |
| Electrocution                   | 1   | 1   | 0   | 2  | 0  | 3  | \$44,000  |
| Fall in vessel                  | 146 | 268 | 43  | 457  | 22   | 682  | \$3,837,367                                       |
| Falls overboard                 | 259 | 33  | 4   | 296  | 169  | 125  | \$234,191   |
| Fire/explosion (fuel)           | 174 | 4   | 0   | 178  | 3  | 136  | \$3,878,941                                       |
| Fire/explosion (non-fuel)       | 67  | 4   | 0   | 71   | 0  | 7  | \$6,007,411                                       |
| Fire/explosion (unknown origin) | 24  | 1   | 0   | 25   | 0  | 6  | \$5,875,925                                       |
| Flooding/swamping               | 449 | 231 | 56  | 736  | 82   | 216  | \$13,574,146                                      |
| Grounding                       | 350 | 56  | 32  | 438  | 30   | 312  | \$5,706,612                                       |
| Person struck by propeller      | 42  | 94  | 22  | 158  | 27   | 150  | \$106,485   |
| Person struck by vessel         | 36  | 228 | 16  | 280  | 35   | 347  | \$780,330   |
| Sinking                         | 0   | 109 | 75  | 184  | 27   | 35   | \$5,798,853                                       |
| Skier mishap                    | 301 | 12  | 2   | 315  | 13   | 338  | \$13,590  |
| Sudden medical condition        | 2   | 0   | 0   | 2  | 0  | 2  | \$0   |
| Other                           | 57  | 10  | 0   | 67   | 3  | 56   | \$83,443  |
| Unknown                         | 0   | 0   | 0   | 0  | 0  | 0  | \$0   |

**2014**

|                                    |     |     |     |      |     |     |              |
|------------------------------------|-----|-----|-----|------|-----|-----|--------------|
| Capsizing                          | 280 | 223 | 47  | 550  | 209 | 287 | \$3,438,083  |
| Carbon monoxide poisoning          | 6   | 0   | 0   | 6    | 0   | 8   | \$0          |
| Collision with fixed object        | 452 | 59  | 10  | 521  | 53  | 402 | \$4,570,680  |
| Collision with floating object     | 54  | 4   | 1   | 59   | 4   | 37  | \$882,413    |
| Collision with commercial vessel   | 18  | 1   | 0   | 19   | 7   | 9   | \$357,130    |
| Collision with governmental vessel | 5   | 0   | 0   | 5    | 0   | 0   | \$28,700     |
| Collision with recreational vessel | 937 | 45  | 6   | 988  | 42  | 677 | \$7,779,435  |
| Collision with submerged object    | 118 | 0   | 0   | 118  | 10  | 55  | \$1,549,583  |
| Departed vessel                    | 99  | 77  | 17  | 193  | 90  | 102 | \$893,380    |
| Ejected from vessel                | 151 | 565 | 298 | 1014 | 279 | 936 | \$6,455,578  |
| Electrocution                      | 1   | 1   | 0   | 2    | 1   | 1   | \$6,300      |
| Fall in vessel                     | 147 | 251 | 63  | 461  | 25  | 668 | \$3,392,811  |
| Falls overboard                    | 281 | 29  | 1   | 311  | 168 | 159 | \$97,302     |
| Fire/explosion (fuel)              | 152 | 6   | 2   | 160  | 3   | 117 | \$4,333,956  |
| Fire/explosion (non-fuel)          | 75  | 5   | 1   | 81   | 2   | 10  | \$5,187,286  |
| Fire/explosion (unknown origin)    | 36  | 0   | 0   | 36   | 0   | 8   | \$3,277,185  |
| Flooding/swamping                  | 463 | 223 | 56  | 742  | 104 | 259 | \$15,724,140 |

**Table 17 Continued ▪ FREQUENCY OF EVENTS IN ACCIDENTS & CASUALTIES NATIONWIDE****2014 continued**

|                            | Total | Times Event<br>Occurred in all Accidents | Total Times Event<br>Occurred in all Accidents | Deaths Associated with Event<br>in all Accidents | Injuries Associated with Event<br>in all Accidents | Damages Associated with<br>Event in all Accidents |
|----------------------------|-------|--|--|--|--|---|
| Grounding                  | 359   | 57                                       | 20   | 436  | 20   | \$6,267,509                                       |
| Person struck by propeller | 47    | 83                                       | 23   | 153  | 22   | \$112,345   |
| Person struck by vessel    | 31    | 192                                      | 22   | 245  | 23   | \$891,727   |
| Sinking                    | 0     | 100                                      | 59   | 159  | 25   | \$4,993,021                                       |
| Skier mishap               | 292   | 21                                       | 0  | 313  | 8  | \$11,280  |
| Sudden medical condition   | 1     | 3  | 0  | 4  | 3  | \$10,000  |
| Other                      | 55    | 14                                       | 4  | 73   | 2  | \$1,167,171                                       |
| Unknown                    | 4     | 0  | 0  | 4  | 8  | \$17,500  |

**2013**

|                                    | Total | Times Event<br>Occurred in all Accidents | Total Times Event<br>Occurred in all Accidents | Deaths Associated with Event<br>in all Accidents | Injuries Associated with Event<br>in all Accidents | Damages Associated with<br>Event in all Accidents |
|------------------------------------|-------|--|--|--|--|---|
| Capsizing                          | 256   | 262                                      | 41   | 559  | 175  | \$4,568,312                                       |
| Carbon monoxide poisoning          | 11    | 0  | 0  | 11   | 4  | \$0   |
| Collision with fixed object        | 427   | 64                                       | 4  | 495  | 60   | \$4,778,809                                       |
| Collision with floating object     | 43    | 2  | 0  | 45   | 2  | \$455,023   |
| Collision with commercial vessel   | 19    | 1  | 0  | 20   | 5  | \$270,470   |
| Collision with governmental vessel | 9     | 1  | 0  | 10   | 0  | \$86,128  |
| Collision with recreational vessel | 947   | 52                                       | 3  | 1002   | 37   | \$6,495,709                                       |
| Collision with submerged object    | 145   | 1  | 0  | 146  | 10   | \$3,022,991                                       |
| Departed vessel                    | 85    | 34                                       | 11   | 130  | 66   | \$326,635   |
| Ejected from vessel                | 167   | 541                                      | 319  | 1027   | 268  | \$6,463,758                                       |
| Electrocution                      | 4     | 0  | 0  | 4  | 2  | \$5,000   |
| Fall in vessel                     | 136   | 286                                      | 48   | 470  | 22   | \$4,069,745                                       |
| Falls overboard                    | 281   | 31                                       | 1  | 313  | 156  | \$89,135  |
| Fire/explosion (fuel)              | 137   | 6  | 0  | 143  | 0  | \$6,309,934                                       |
| Fire/explosion (non-fuel)          | 73    | 1  | 0  | 74   | 0  | \$5,905,767                                       |
| Fire/explosion (unknown origin)    | 9     | 0  | 0  | 9  | 0  | \$370,900   |
| Flooding/swamping                  | 430   | 228                                      | 54   | 712  | 94   | \$12,762,290                                      |
| Grounding                          | 399   | 50                                       | 12   | 461  | 21   | \$5,771,281                                       |
| Person struck by propeller         | 58    | 85                                       | 31   | 174  | 23   | \$160,560   |
| Person struck by vessel            | 26    | 207                                      | 18   | 251  | 24   | \$653,828   |
| Sinking                            | 0     | 90                                       | 56   | 146  | 20   | \$5,077,352                                       |
| Skier mishap                       | 332   | 9  | 0  | 341  | 12   | \$1,110   |
| Sudden medical condition           | 4     | 3  | 1  | 8  | 5  | \$0   |
| Other                              | 57    | 9  | 0  | 66   | 1  | \$436,500   |
| Unknown                            | 7     | 0  | 0  | 7  | 1  | \$3,000   |

**Table 17 Continued ▪ FREQUENCY OF EVENTS IN ACCIDENTS & CASUALTIES NATIONWIDE****2012**

|                                    |                            |                             | Total Times Event<br>Occurred in all Accidents |      | Damages Associated with Event<br>in all Accidents  |  |              |
|------------------------------------|----------------------------|-----------------------------|--|------|--|--|--------------|
|                                    | First Event in an Accident | Second Event in an Accident | Third Event in an Accident                     |      | Injuries Associated with Event in<br>all Accidents | Deaths Associated with Event in<br>all Accidents |              |
| Capsizing                          | 289                        | 295                         | 38   | 622  | 194  | 385  | \$3,587,942  |
| Carbon monoxide poisoning          | 13                         | 0                           | 0  | 13   | 3  | 25   | \$0          |
| Collision with fixed object        | 475                        | 53                          | 3  | 531  | 51   | 367  | \$4,110,405  |
| Collision with floating object     | 33                         | 0                           | 0  | 33   | 2  | 19   | \$182,267    |
| Collision with commercial vessel   | 20                         | 2                           | 0  | 22   | 1  | 16   | \$296,968    |
| Collision with governmental vessel | 7                          | 1                           | 0  | 8    | 0  | 7  | \$26,900     |
| Collision with recreational vessel | 1010                       | 33                          | 5  | 1048 | 47   | 727  | \$6,787,720  |
| Collision with submerged object    | 161                        | 1                           | 1  | 163  | 12   | 56   | \$1,019,215  |
| Departed vessel                    | 104                        | 40                          | 5  | 149  | 96   | 77   | \$113,749    |
| Ejected from vessel                | 151                        | 618                         | 316  | 1085 | 269  | 1018   | \$5,120,544  |
| Electrocution                      | 1                          | 0                           | 0  | 1    | 2  | 6  | \$0          |
| Fall in vessel                     | 190                        | 295                         | 61   | 546  | 34   | 776  | \$2,588,780  |
| Falls overboard                    | 331                        | 28                          | 1  | 360  | 210  | 183  | \$201,491    |
| Fire/explosion (fuel)              | 157                        | 9                           | 1  | 167  | 5  | 99   | \$2,979,827  |
| Fire/explosion (non-fuel)          | 96                         | 3                           | 0  | 99   | 0  | 7  | \$9,929,520  |
| Fire/explosion (unknown origin)    | 11                         | 0                           | 0  | 11   | 2  | 0  | \$940,500    |
| Flooding/swamping                  | 509                        | 220                         | 50   | 779  | 101  | 301  | \$11,888,553 |
| Grounding                          | 422                        | 58                          | 16   | 496  | 26   | 286  | \$7,811,552  |
| Person struck by propeller         | 55                         | 99                          | 27   | 181  | 19   | 187  | \$125,099    |
| Person struck by vessel            | 37                         | 215                         | 18   | 270  | 30   | 319  | \$741,967    |
| Sinking                            | 0                          | 130                         | 61   | 191  | 28   | 64   | \$5,622,918  |
| Skier mishap                       | 387                        | 19                          | 0  | 406  | 20   | 414  | \$6,773      |
| Sudden medical condition           | 2                          | 0                           | 0  | 2    | 1  | 1  | \$0          |
| Other                              | 53                         | 4                           | 0  | 57   | 4  | 48   | \$71,775     |
| Unknown                            | 1                          | 0                           | 0  | 1    | 1  | 0  | \$0          |



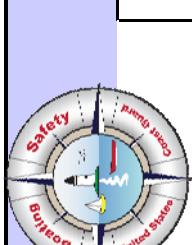
**Table 18 • NUMBER OF VESSELS IN ACCIDENTS BY VESSEL LENGTH & PRIMARY ACCIDENT TYPE**

|                                    | Injuries |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
|------------------------------------|----------|-----|---|-----|----|----|---|------|-----|-----|-----|---|-----|-----|-----|-----|----|-----|-----|----|----|---|-----|----|----|----|-----|-----|-----|------|---|----|
| Total Deaths                       |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Other Deaths                       |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Drownings                          |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Unknown                            |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Other                              |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Sudden medical condition           |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Skier mishap                       |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Sinking                            |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Person struck by vessel            |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Person struck by propeller         |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Grounding                          |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Flooding/ swamping                 |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Fire/explosion (unknown)           |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Fire/explosion (non-fuel)          |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Fire/explosion (fuel)              |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Falls overboard                    |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Fall in vessel                     |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Electrocution                      |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Ejected from vessel                |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Departed vessel                    |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Collision with submerged object    |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Collision with recreational vessel |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Collision with governmental vessel |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Collision with commercial vessel   |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Collision with floating object     |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Collision with fixed object        |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Carbon monoxide poisoning          |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Capsizing                          |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| Total vessels involved             |          |     |   |     |    |    |   |      |     |     |     |   |     |     |     |     |    |     |     |    |    |   |     |    |    |    |     |     |     |      |   |    |
| All lengths                        | 5967     | 317 | 8 | 677 | 53 | 69 | 8 | 2195 | 149 | 124 | 176 | 2 | 184 | 309 | 172 | 112 | 48 | 502 | 427 | 45 | 45 | 0 | 285 | 10 | 50 | 0  | 509 | 192 | 701 | 2903 |   |    |
| 3 feet                             | 1        | 0   | 0 | 0   | 0  | 0  | 0 | 0    | 0   | 0   | 0   | 0 | 0   | 0   | 1   | 0   | 0  | 0   | 0   | 0  | 0  | 0 | 0   | 0  | 0  | 0  | 0   | 1   | 0   | 1    | 0 |    |
| 4 feet                             | 1        | 0   | 0 | 0   | 0  | 0  | 0 | 1    | 0   | 0   | 0   | 0 | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 0  | 0  | 0 | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0    | 0 | 1  |
| 5 feet                             | 1        | 0   | 0 | 0   | 0  | 0  | 0 | 0    | 0   | 0   | 0   | 0 | 0   | 0   | 0   | 0   | 0  | 0   | 0   | 1  | 0  | 0 | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0    | 0 | 1  |
| 6 feet                             | 14       | 2   | 0 | 1   | 0  | 0  | 0 | 0    | 0   | 2   | 2   | 0 | 2   | 2   | 0   | 0   | 0  | 0   | 2   | 0  | 0  | 0 | 0   | 0  | 0  | 0  | 1   | 0   | 5   | 0    | 5 | 11 |
| 7 feet                             | 22       | 2   | 0 | 0   | 0  | 0  | 0 | 9    | 0   | 2   | 2   | 0 | 0   | 4   | 0   | 1   | 0  | 1   | 1   | 0  | 0  | 0 | 0   | 0  | 0  | 0  | 3   | 0   | 3   | 14   |   |    |
| 8 feet                             | 94       | 16  | 0 | 7   | 0  | 0  | 0 | 39   | 0   | 1   | 7   | 0 | 2   | 13  | 1   | 1   | 0  | 3   | 1   | 0  | 3  | 0 | 0   | 0  | 0  | 0  | 20  | 4   | 24  | 56   |   |    |
| 9 feet                             | 164      | 10  | 0 | 16  | 1  | 0  | 0 | 90   | 1   | 1   | 8   | 0 | 8   | 5   | 2   | 0   | 0  | 8   | 3   | 0  | 6  | 0 | 3   | 1  | 1  | 0  | 13  | 6   | 19  | 97   |   |    |
| 10 feet                            | 565      | 41  | 0 | 46  | 2  | 2  | 0 | 308  | 3   | 3   | 31  | 1 | 15  | 44  | 16  | 2   | 0  | 18  | 14  | 0  | 5  | 0 | 10  | 2  | 2  | 0  | 53  | 20  | 73  | 326  |   |    |
| 11 feet                            | 297      | 7   | 0 | 23  | 1  | 1  | 1 | 158  | 1   | 2   | 31  | 1 | 15  | 22  | 1   | 1   | 0  | 6   | 8   | 0  | 4  | 0 | 9   | 1  | 4  | 0  | 17  | 7   | 24  | 180  |   |    |
| 12 feet                            | 124      | 24  | 0 | 10  | 0  | 0  | 0 | 34   | 3   | 1   | 10  | 0 | 3   | 15  | 1   | 1   | 0  | 17  | 1   | 0  | 1  | 1 | 0   | 36 | 7  | 43 | 82  |     |     |      |   |    |
| 13 feet                            | 52       | 8   | 0 | 5   | 0  | 0  | 0 | 9    | 2   | 1   | 5   | 0 | 2   | 5   | 0   | 2   | 0  | 8   | 3   | 0  | 1  | 0 | 1   | 0  | 0  | 0  | 8   | 0   | 8   | 36   |   |    |
| 14 feet                            | 164      | 34  | 0 | 10  | 0  | 0  | 0 | 26   | 8   | 2   | 12  | 0 | 3   | 22  | 1   | 0   | 0  | 35  | 5   | 0  | 3  | 0 | 1   | 1  | 0  | 54 | 10  | 64  | 92  |      |   |    |
| 15 feet                            | 142      | 24  | 0 | 16  | 2  | 1  | 0 | 29   | 9   | 2   | 5   | 0 | 2   | 6   | 1   | 0   | 0  | 30  | 10  | 0  | 0  | 0 | 4   | 0  | 1  | 0  | 26  | 7   | 33  | 87   |   |    |
| Under 16 ft                        | 1641     | 168 | 0 | 134 | 6  | 4  | 1 | 703  | 27  | 17  | 113 | 2 | 52  | 139 | 23  | 8   | 0  | 128 | 47  | 0  | 23 | 0 | 29  | 6  | 11 | 0  | 236 | 61  | 297 | 983  |   |    |
| 16 feet                            | 255      | 27  | 0 | 44  | 8  | 2  | 0 | 58   | 11  | 3   | 7   | 0 | 5   | 16  | 3   | 0   | 0  | 49  | 13  | 2  | 0  | 0 | 4   | 0  | 3  | 0  | 46  | 11  | 57  | 145  |   |    |
| 17 feet                            | 258      | 17  | 0 | 24  | 6  | 3  | 0 | 65   | 11  | 6   | 5   | 0 | 7   | 23  | 5   | 0   | 1  | 38  | 19  | 2  | 2  | 0 | 21  | 0  | 3  | 0  | 42  | 8   | 50  | 150  |   |    |
| 18 feet                            | 360      | 13  | 0 | 49  | 3  | 2  | 0 | 111  | 9   | 6   | 9   | 0 | 21  | 12  | 7   | 2   | 0  | 45  | 35  | 5  | 1  | 0 | 26  | 2  | 2  | 0  | 22  | 11  | 33  | 227  |   |    |
| 19 feet                            | 253      | 9   | 0 | 25  | 5  | 1  | 0 | 65   | 7   | 10  | 9   | 0 | 2   | 13  | 12  | 4   | 2  | 16  | 28  | 5  | 2  | 0 | 34  | 1  | 3  | 0  | 16  | 8   | 24  | 148  |   |    |
| 20 feet                            | 413      | 7   | 1 | 56  | 6  | 4  | 0 | 130  | 22  | 12  | 7   | 0 | 5   | 15  | 15  | 2   | 2  | 42  | 27  | 6  | 4  | 0 | 46  | 0  | 4  | 0  | 21  | 13  | 34  | 238  |   |    |
| 21 feet                            | 345      | 12  | 1 | 43  | 1  | 1  | 3 | 111  | 9   | 8   | 6   | 0 | 12  | 12  | 19  | 2   | 1  | 31  | 34  | 5  | 2  | 0 | 31  | 0  | 1  | 0  | 19  | 7   | 26  | 187  |   |    |
| 22 feet                            | 231      | 2   | 0 | 22  | 0  | 3  | 0 | 96   | 8   | 5   | 3   | 0 | 11  | 7   | 7   | 2   | 1  | 16  | 23  | 1  | 0  | 0 | 24  | 0  | 0  | 0  | 12  | 7   | 19  | 104  |   |    |
| 23 feet                            | 197      | 1   | 0 | 28  | 1  | 2  | 0 | 66   | 3   | 9   | 0   | 0 | 8   | 4   | 12  | 2   | 0  | 14  | 21  | 2  | 1  | 0 | 22  | 0  | 1  | 0  | 6   | 7   | 13  | 109  |   |    |
| 24 feet                            | 238      | 0   | 0 | 25  | 3  | 7  | 0 | 84   | 4   | 10  | 0   | 0 | 9   | 14  | 13  | 2   | 1  | 16  | 21  | 5  | 0  | 0 | 22  | 0  | 2  | 0  | 17  | 3   | 20  | 122  |   |    |
| 25 feet                            | 161      | 2   | 1 | 16  | 4  | 1  | 2 | 68   | 4   | 5   | 0   | 0 | 6   | 5   | 10  | 4   | 3  | 3   | 18  | 2  | 1  | 0 | 5   | 0  | 1  | 0  | 3   | 4   | 7   | 76   |   |    |
| 16 ft to less than 26 ft           | 2711     | 90  | 3 | 332 | 37 | 26 | 5 | 854  | 88  | 74  | 46  | 0 | 86  | 121 | 103 | 20  | 11 | 270 | 239 | 35 | 13 | 0 | 235 | 3  | 20 | 0  | 204 | 79  | 283 | 1506 |   |    |
| 26 feet                            | 131      | 1   | 1 | 15  | 1  | 1  | 0 | 48   | 5   | 6   | 0   | 0 | 11  | 2   | 4   | 7   | 0  | 8   | 11  | 3  | 0  | 0 | 6   | 0  | 1  | 0  | 4   | 2   | 6   | 44   |   |    |
| 27 feet                            | 70       | 3   | 0 | 8   | 0  | 0  | 0 | 27   | 4   | 1   | 0   | 0 | 3   | 2   | 3   | 6   | 1  | 6   | 4   | 0  | 0  | 0 | 2   | 0  | 0  | 5  | 2   | 7   | 20  |      |   |    |
| 28 feet                            | 93       | 2   | 0 | 19  | 1  | 1  | 0 | 26   | 2   | 3   | 0   | 0 | 5   | 0   | 7   | 6   | 0  | 7   | 11  | 0  | 0  | 0 | 1   | 0  | 2  | 0  | 4   | 3   | 7   | 38   |   |    |
| 29 feet                            | 54       | 1   | 0 | 6   | 1  | 0  | 0 | 23   | 3   | 0   | 0   | 0 | 2   | 0   | 1   | 4   | 1  | 3   | 6   | 0  | 0  | 0 | 2   | 0  | 1  |    |     |     |     |      |   |    |

Accident Types

**Table 19 • NUMBER OF VESSELS IN ACCIDENTS BY VESSEL TYPE & PRIMARY ACCIDENT TYPE WITH NUMBER OF CASUALTIES BY CASUALTY TYPE & VESSEL TYPE 2016**

|                            |  | Injuries                             |     |   |     |    |    |   |      |     |     |     |   |                             |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|----------------------------|--|--------------------------------------|-----|---|-----|----|----|---|------|-----|-----|-----|---|-----------------------------|-----|-----|-----|----|-----|-----|----|----|-----|-----|----|----|--------|---------|----|---------|-----|----|---|
|                            |  | Total deaths                         |     |   |     |    |    |   |      |     |     |     |   | 0 509192 7012903            |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Deaths by causes other than drowning |     |   |     |    |    |   |      |     |     |     |   | 0 0 1 0 2 1 3 32            |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Drownings                            |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 5 6 11 39       |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Unknown                              |     |   |     |    |    |   |      |     |     |     |   |                             |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Other                                |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 56 7 63 45      |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Sudden medical condition             |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Skier mishap                         |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Sinking                              |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Person struck by vessel              |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Person struck by propeller           |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Grounding                            |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Flooding/swamping                    |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Fire/explosion (unknown origin)      |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Fire/explosion (non-fuel)            |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Fire/explosion (fuel)                |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Falls overboard                      |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Fall in vessel                       |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Electrocution                        |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Ejected from vessel                  |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Departed vessel                      |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Collision with submerged object      |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Collision with recreational vessel   |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Collision with governmental vessel   |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Collision with commercial vessel     |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Collision with floating object       |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Collision with fixed object          |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Carbon monoxide exposure             |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | Capsizing                            |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
|                            |  | All accident types                   |     |   |     |    |    |   |      |     |     |     |   | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 |     |     |     |    |     |     |    |    |     |     |    |    |        |         |    |         |     |    |   |
| <b>All vessels</b>         |  | 5967                                 | 317 | 8 | 677 | 53 | 69 | 8 | 2195 | 149 | 124 | 176 | 2 | 184                         | 309 | 172 | 112 | 48 | 502 | 427 | 45 | 0  | 285 | 10  | 50 | 0  | 509192 | 7012903 |    |         |     |    |   |
| <b>Airboat</b>             |  | 34                                   | 1   | 0 | 10  | 0  | 1  | 0 | 8    | 1   | 0   | 0   | 1 | 0                           | 0   | 0   | 0   | 0  | 0   | 0   | 0  | 0  | 0   | 0   | 0  | 0  | 0      | 0       | 0  |         |     |    |   |
| <b>Auxiliary sailboat</b>  |  | 274                                  | 6   | 0 | 28  | 0  | 5  | 2 | 155  | 3   | 2   | 1   | 0 | 6                           | 7   | 1   | 4   | 5  | 5   | 31  | 0  | 0  | 0   | 0   | 0  | 0  | 0      | 0       | 0  |         |     |    |   |
| <b>Cabin motorboat</b>     |  | 890                                  | 8   | 5 | 131 | 10 | 15 | 1 | 290  | 26  | 16  | 2   | 0 | 18                          | 11  | 59  | 69  | 33 | 65  | 113 | 2  | 4  | 0   | 8   | 1  | 3  | 0      | 0       | 0  |         |     |    |   |
| <b>Canoe</b>               |  | 93                                   | 57  | 0 | 5   | 0  | 0  | 0 | 6    | 2   | 1   | 0   | 1 | 0                           | 8   | 0   | 0   | 0  | 10  | 2   | 0  | 0  | 0   | 0   | 0  | 0  | 0      | 0       | 0  |         |     |    |   |
| <b>Houseboat</b>           |  | 87                                   | 0   | 1 | 9   | 0  | 0  | 0 | 45   | 1   | 2   | 0   | 0 | 0                           | 1   | 1   | 7   | 3  | 11  | 5   | 0  | 1  | 0   | 0   | 0  | 0  | 0      | 0       | 0  |         |     |    |   |
| <b>Inflatable</b>          |  | 30                                   | 5   | 0 | 9   | 1  | 0  | 0 | 0    | 2   | 4   | 3   | 0 | 0                           | 6   | 0   | 0   | 0  | 0   | 0   | 0  | 0  | 0   | 0   | 0  | 0  | 0      | 0       | 0  |         |     |    |   |
| <b>Kayak</b>               |  | 182                                  | 92  | 0 | 8   | 1  | 5  | 0 | 13   | 0   | 4   | 6   | 0 | 0                           | 27  | 0   | 0   | 0  | 22  | 1   | 0  | 0  | 0   | 0   | 0  | 0  | 0      | 0       | 0  |         |     |    |   |
| <b>Open motorboat</b>      |  | 2719                                 | 96  | 2 | 353 | 34 | 22 | 4 | 805  | 103 | 46  | 68  | 0 | 102                         | 120 | 77  | 24  | 5  | 328 | 223 | 33 | 13 | 0   | 232 | 4  | 25 | 0      | 228     | 95 | 3231537 |     |    |   |
| <b>Personal watercraft</b> |  | 1072                                 | 17  | 0 | 82  | 4  | 2  | 1 | 647  | 5   | 3   | 89  | 2 | 43                          | 56  | 23  | 3   | 0  | 13  | 25  | 1  | 22 | 0   | 25  | 2  | 7  | 0      | 13      | 33 | 46      | 675 |    |   |
| <b>Pontoon</b>             |  | 300                                  | 3   | 0 | 29  | 3  | 2  | 0 | 131  | 4   | 36  | 2   | 0 | 6                           | 33  | 3   | 2   | 0  | 9   | 16  | 4  | 2  | 0   | 15  | 0  | 0  | 0      | 0       | 0  | 0       | 0   |    |   |
| <b>Rowboat</b>             |  | 43                                   | 11  | 0 | 3   | 0  | 0  | 0 | 9    | 2   | 2   | 0   | 0 | 2                           | 5   | 0   | 0   | 0  | 8   | 0   | 0  | 0  | 0   | 1   | 0  | 0  | 0      | 0       | 0  | 0       |     |    |   |
| <b>Sailboat (only)</b>     |  | 64                                   | 14  | 0 | 1   | 0  | 0  | 0 | 22   | 0   | 0   | 0   | 0 | 0                           | 7   | 5   | 2   | 1  | 6   | 4   | 0  | 1  | 0   | 0   | 0  | 1  | 0      | 0       | 0  | 0       | 3   | 36 |   |
| <b>Sailboat (unknown)</b>  |  | 6                                    | 0   | 0 | 0   | 0  | 0  | 0 | 3    | 0   | 0   | 0   | 0 | 1                           | 1   | 0   | 0   | 0  | 1   | 0   | 0  | 0  | 0   | 0   | 0  | 0  | 0      | 0       | 0  | 0       | 1   | 1  |   |
| <b>Standup paddleboard</b> |  | 20                                   | 0   | 0 | 0   | 0  | 0  | 0 | 0    | 0   | 0   | 0   | 0 | 2                           | 1   | 0   | 0   | 17 | 0   | 0   | 0  | 0  | 0   | 0   | 0  | 0  | 0      | 0       | 0  | 0       | 0   | 5  | 5 |
| <b>Other</b>               |  | 28                                   | 1   | 0 | 1   | 0  | 14 | 0 | 3    | 0   | 2   | 0   | 0 | 0                           | 1   | 0   | 0   | 0  | 5   | 0   | 0  | 1  | 0   | 0   | 0  | 0  | 0      | 0       | 0  | 0       | 6   | 4  |   |
| <b>Unknown</b>             |  | 125                                  | 6   | 0 | 8   | 0  | 3  | 0 | 58   | 0   | 4   | 3   | 0 | 4                           | 9   | 3   | 1   | 13 | 2   | 5   | 1  | 0  | 4   | 0   | 0  | 0  | 13     | 3       | 16 | 19      |     |    |   |



## Accident Types

**Table 20 - NUMBER OF VESSELS IN ACCIDENTS BY PRIMARY ACCIDENT TYPE & PROPULSION TYPE**

| Injuries                           | All Types  | 317  | 8   | 677 | 53  | 69 | 8  | 2195 | 149  | 124 | 176 | 2184 | 309 | 172 | 112 | 48  | 502 | 427 | 45  | 45  | 0  | 285 | 10 | 50  | 0 | 509 | 192   | 701 | 2903 |     |      |
|------------------------------------|------------|------|-----|-----|-----|----|----|------|------|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|----|-----|---|-----|-------|-----|------|-----|------|
| Total deaths                       | Air Thrust | 34   | 1   | 0   | 10  | 0  | 0  | 8    | 1    | 0   | 0   | 0    | 1   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 1   | 0  | 2   | 1 | 3   | 32    |     |      |     |      |
| Other deaths                       | Manual     | 360  | 157 | 0   | 25  | 2  | 6  | 0    | 29   | 6   | 15  | 10   | 0   | 3   | 59  | 0   | 0   | 40  | 3   | 0   | 0  | 1   | 3  | 0   | 0 | 171 | 28199 | 164 |      |     |      |
| Drownings                          | Propeller  | 4145 | 116 | 8   | 537 | 44 | 53 | 7    | 1381 | 130 | 101 | 68   | 0   | 122 | 174 | 137 | 104 | 41  | 402 | 370 | 44 | 19  | 0  | 242 | 5 | 40  | 0     | 303 | 120  | 423 | 1871 |
| Unknown                            | Sail       | 64   | 14  | 0   | 1   | 0  | 0  | 0    | 22   | 0   | 0   | 0    | 0   | 0   | 7   | 5   | 2   | 1   | 6   | 4   | 0  | 1   | 0  | 0   | 1 | 0   | 0     | 3   | 0    | 3   | 36   |
| Other                              | Water Jet  | 1184 | 19  | 0   | 95  | 7  | 3  | 1    | 677  | 9   | 3   | 93   | 2   | 50  | 58  | 25  | 5   | 1   | 30  | 38  | 1  | 23  | 0  | 35  | 2 | 7   | 0     | 15  | 37   | 52  | 750  |
| Skier mishap                       | Other      | 3    | 0   | 0   | 0   | 2  | 0  | 0    | 1    | 0   | 0   | 0    | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0  | 0   | 0  | 0   | 0 | 0   | 0     | 0   | 0    | 0   | 2    |
| Sinking                            | Unknown    | 177  | 10  | 0   | 9   | 0  | 4  | 0    | 77   | 3   | 5   | 5    | 0   | 8   | 11  | 5   | 1   | 5   | 18  | 7   | 0  | 1   | 0  | 7   | 0 | 1   | 0     | 15  | 6    | 21  | 48   |
| Person struck by vessel            |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Person struck by propeller         |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Grounding                          |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Flooding/swamping                  |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Fire/explosion (unknown origin)    |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Fire/explosion (non-fuel)          |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Fire/explosion (fuel)              |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Falls overboard                    |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Fall in vessel                     |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Electrocution                      |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Ejected from vessel                |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Departed vessel                    |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Collision with submerged object    |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Collision with recreational vessel |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Collision with governmental vessel |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Collision with commercial vessel   |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Collision with floating object     |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Collision with fixed object        |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Carbon monoxide                    |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Capsizing                          |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |
| Total vessels involved             |            |      |     |     |     |    |    |      |      |     |     |      |     |     |     |     |     |     |     |     |    |     |    |     |   |     |       |     |      |     |      |



| Injuries     | Engine Type | Inboard | 1214 | 12 | 4   | 161 | 8  | 24 | 2   | 422 | 26 | 13 | 6 | 0  | 25  | 19 | 56 | 67   | 30  | 73 | 142 | 6 | 8  | 0  | 94 | 0 | 16  | 0  | 24  | 18   | 42  | 411 |
|--------------|-------------|---------|------|----|-----|-----|----|----|-----|-----|----|----|---|----|-----|----|----|------|-----|----|-----|---|----|----|----|---|-----|----|-----|------|-----|-----|
| Total deaths | Outboard    | 2074    | 96   | 0  | 296 | 29  | 26 | 4  | 670 | 74  | 61 | 59 | 0 | 57 | 140 | 22 | 17 | 3282 | 129 | 16 | 7   | 0 | 69 | 4  | 13 | 0 | 245 | 73 | 318 | 1069 |     |     |
| Other deaths | Sterndrive  | 805     | 7    | 4  | 77  | 7   | 2  | 1  | 271 | 29  | 25 | 3  | 0 | 38 | 13  | 59 | 20 | 6    | 42  | 94 | 17  | 4 | 0  | 79 | 1  | 6 | 0   | 34 | 28  | 62   | 378 |     |
| Drownings    | Other       | 0       | 0    | 0  | 0   | 0   | 0  | 0  | 0   | 0   | 0  | 0  | 0 | 0  | 0   | 0  | 0  | 0    | 0   | 0  | 0   | 0 | 0  | 0  | 0  | 0 | 0   | 0  | 0   | 0    | 0   |     |
| Unknown      | Unknown     | 52      | 1    | 0  | 3   | 0   | 1  | 0  | 18  | 1   | 2  | 0  | 0 | 2  | 0   | 0  | 2  | 0    | 0   | 2  | 5   | 5 | 0  | 0  | 0  | 5 | 0   | 0  | 1   | 1    | 13  |     |

**Table 21 • NUMBER OF VESSELS IN ACCIDENTS BY PRIMARY ACCIDENT TYPE & ENGINE TYPE**



# **OPERATOR & PASSENGER INFORMATION**

### **Explanation of Operator/Passenger Information Section**

The following section contains eleven tables and figures that examine data relating to the operators and passengers in accidents. Information is displayed by age, boating safety instruction, type of injury, and cause of death.

#### **Operator Information (Table 22, Page 46)**

This table provides information about the operator. Information covers a variety of topics including age, operator's experience, number of people onboard the vessel, and the boating safety instruction level of the operator.

Examples of "other" boating safety instruction include licenses issued by the Coast Guard, military training, police academy training, rental operator training, commercially-available courses, and camp training. Informal training signifies that the operator did not receive formal instruction, but rather learned from experience.

#### **Number of Deaths by Type of Operator Boating Instruction (Table 23 & Figure 7, Page 47)**

This table and accompanying figure focus on boating safety instruction for those operators who had a person die on their vessel. The table and figure both focus on instruction provided by the U.S. Coast Guard Auxiliary, U.S. Power Squadrons, American Red Cross, and State sources. The figure examines only deaths where the operator instruction was known.

#### **Number of Deaths by Vessel Type (Table 24 & Figure 8, Page 48)**

This table documents deaths by vessel type with a focus on drownings. It also provides the percentage of deaths by drowning by type of vessel.

#### **Percentage of Deaths by Vessel Type, 2004-2016 (Figure 9 & Table 25, Page 49)**

This table and accompanying figure focus on the percentage of deaths that occurred on each vessel type for the past ten years. The figure may be interpreted by measuring the upper and lower bounds of the color-coded vessel type to obtain the percentage of deaths attributed to that vessel type within the year.

Please note that the percentages in the table have been rounded up.

#### **Number of Deceased Victims by Age & Vessel Type (Table 26, Page 50)**

This table documents the age of fatal accident victims by vessel type. It also delineates the number of drownings, non-drownings, and total deaths by age.

#### **Number of Injured Victims by Age & Vessel Type (Table 27, Page 51)**

This table documents the age of injured victims by vessel type.

#### **Nature of Primary Injury Type by Area of Injury 2016 (Table 28, Page 52)**

This table focuses on the nature and area of the primary injury of injured victims.

#### **Number of Injured Victims under Age 18 by Age Group and Injury Type on Personal Watercraft, 2016 (Figure 10, Page 52)**

This table focuses on the number of injured victims from personal watercraft for specific age groups and by type of injury.



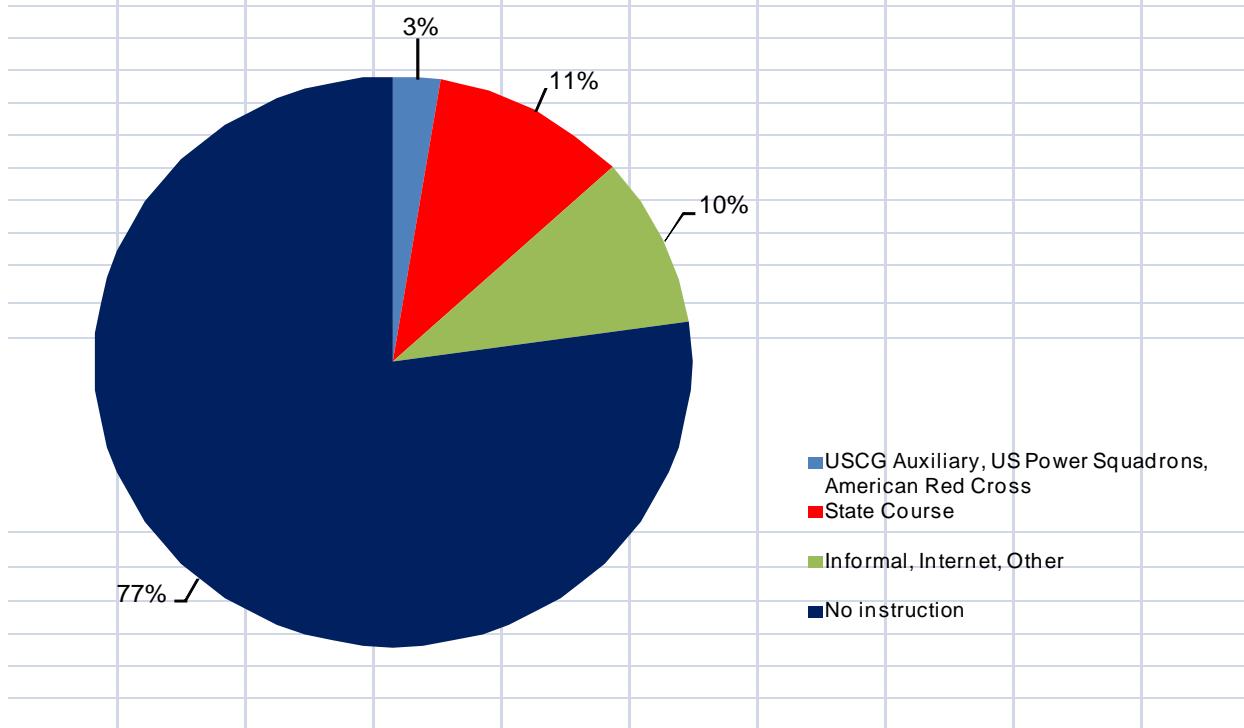
|                                   |                    | Vessels Involved | Deaths | Injuries |
|-----------------------------------|--------------------|------------------|--------|----------|
|                                   |                    | 5967             | 701    | 2903     |
| <b>Age of Operator</b>            | 12 years and under | 26               | 4      | 19       |
|                                   | 13 to 18 years     | 296              | 16     | 217      |
|                                   | 19 to 25 years     | 581              | 66     | 340      |
|                                   | 26 to 35 years     | 850              | 105    | 516      |
|                                   | 36 to 55 years     | 1853             | 245    | 1055     |
|                                   | Over 55 years      | 1236             | 207    | 588      |
|                                   | Unknown            | 405              | 49     | 124      |
|                                   | No operator        | 720              | 9      | 44       |
| <b>Operator's Experience</b>      | No Experience      | 43               | 6      | 44       |
|                                   | Under 10 hours     | 506              | 59     | 283      |
|                                   | 10 to 100 hours    | 1017             | 94     | 651      |
|                                   | 101 to 500 hours   | 1653             | 154    | 907      |
|                                   | Over 500 Hours     | 631              | 44     | 306      |
|                                   | Unknown            | 1397             | 335    | 668      |
|                                   | No Operator        | 720              | 9      | 44       |
| <b>Number of Persons on Board</b> | None               | 308              | 0      | 2        |
|                                   | One                | 1666             | 244    | 592      |
|                                   | Two                | 1620             | 219    | 840      |
|                                   | Three              | 618              | 87     | 375      |
|                                   | Four               | 499              | 66     | 373      |
|                                   | Five               | 270              | 18     | 205      |
|                                   | Six                | 206              | 20     | 165      |
|                                   | Seven              | 124              | 11     | 79       |
|                                   | Eight              | 105              | 8      | 86       |
|                                   | Nine               | 44               | 4      | 26       |
|                                   | Ten                | 36               | 3      | 21       |
|                                   | More than 10       | 71               | 9      | 75       |
| <b>Education of Operator</b>      | Unknown            | 400              | 12     | 64       |
|                                   | American Red Cross | 6                | 0      | 1        |
|                                   | Informal           | 160              | 16     | 97       |
|                                   | Internet Course    | 86               | 5      | 52       |
|                                   | State Course       | 790              | 37     | 444      |
|                                   | US Power Squadrons | 59               | 0      | 23       |
|                                   | USCG Auxiliary     | 154              | 9      | 82       |
|                                   | Other              | 280              | 13     | 124      |
|                                   | No Education       | 2242             | 271    | 1300     |
|                                   | Unknown            | 1470             | 341    | 736      |
|                                   |                    | 720              | 9      | 44       |

## BOATING SAFETY INSTRUCTION



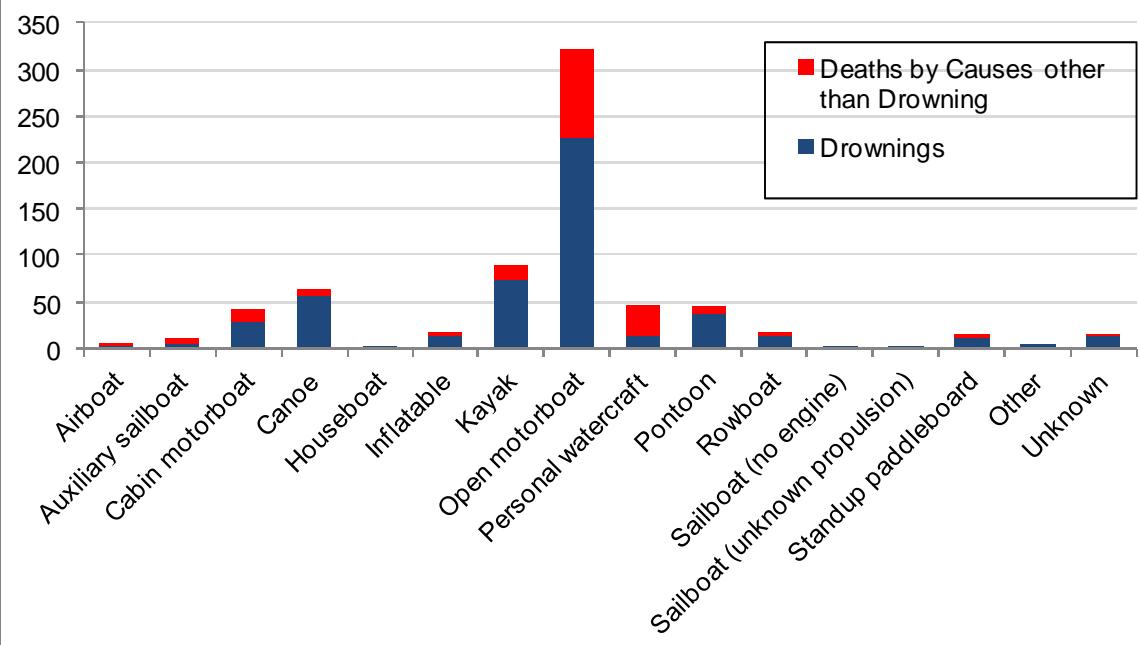
| Table 23 • NUMBER OF DEATHS BY TYPE OF OPERATOR BOATING INSTRUCTION 2016 |        |
|--|--------|
| Type of Boating Instruction  | Deaths |
| American Red Cross   | 0      |
| Informal   | 16     |
| Internet Course  | 5      |
| State Course   | 37     |
| USCG Auxiliary   | 0      |
| US Power Squadrons   | 9      |
| Other  | 13     |
| No Education   | 271    |
| Total Deaths - Known Operator Instruction                                | 351    |
| Total Deaths - Unknown Operator Instruction                              | 341    |
| Total Deaths - No Operator   | 9      |
| Total Deaths - Known & Unknown Operator Instruction                      | 701    |

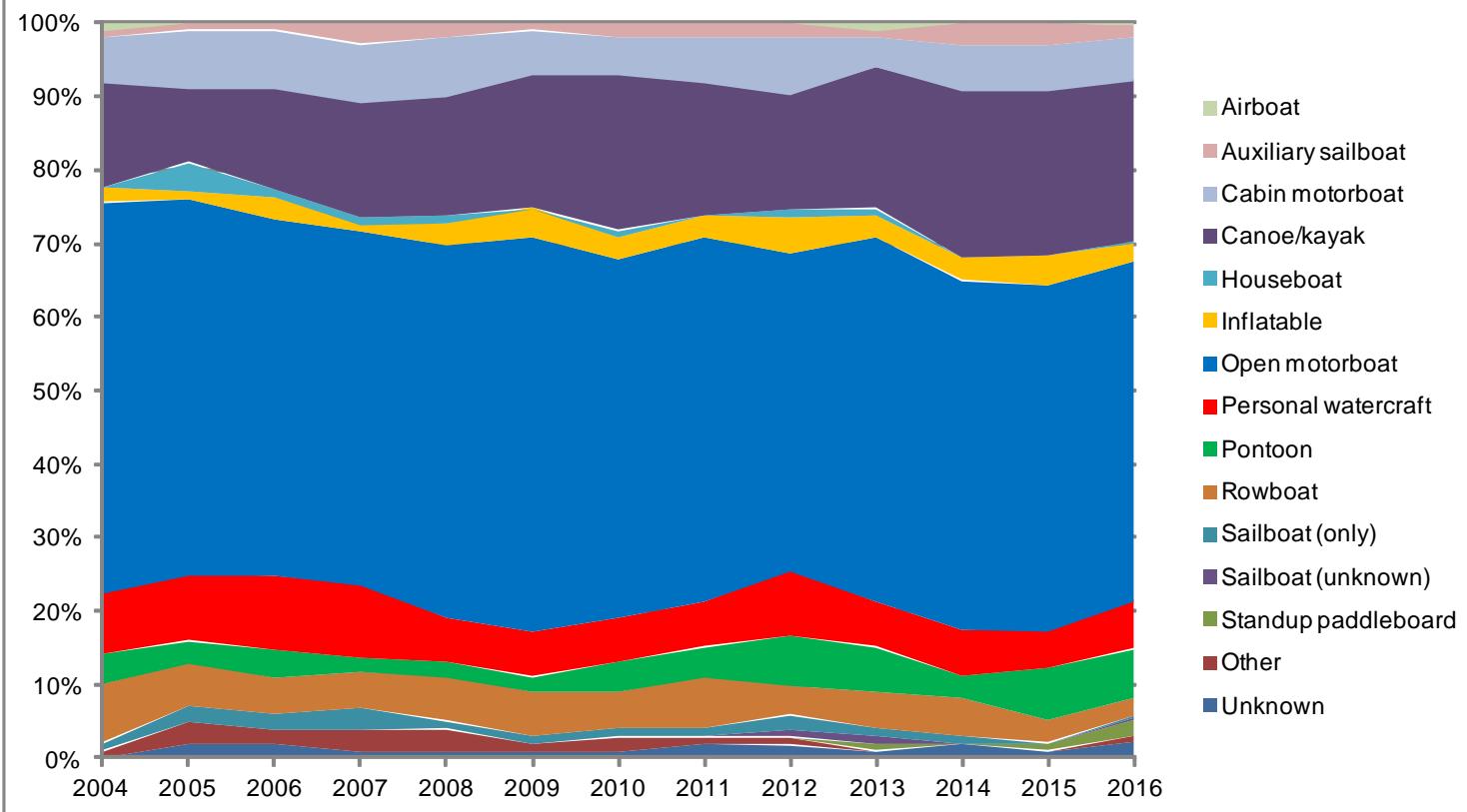
Figure 7 PERCENT OF DEATHS BY KNOWN OPERATOR INSTRUCTION, 2016



**Table 24 • NUMBER OF DEATHS BY VESSEL TYPE 2016**

| Vessel type         | Drownings | Deaths by Causes other than Drowning | Total Deaths | Percentage of Deaths from Drowning |
|---------------------|-----------|--------------------------------------|--------------|------------------------------------|
| Airboat             | 2         | 1                                    | 3            | 67%                                |
| Auxiliary Sailboat  | 5         | 6                                    | 11           | 45%                                |
| Cabin Motorboat     | 28        | 13                                   | 41           | 68%                                |
| Canoe               | 56        | 7                                    | 63           | 89%                                |
| Houseboat           | 2         | 0                                    | 2            | 100%                               |
| Inflatable          | 14        | 4                                    | 18           | 78%                                |
| Kayak               | 74        | 15                                   | 89           | 83%                                |
| Open Motorboat      | 228       | 95                                   | 323          | 71%                                |
| Personal Watercraft | 13        | 33                                   | 46           | 28%                                |
| Pontoon             | 38        | 9                                    | 47           | 81%                                |
| Rowboat             | 14        | 3                                    | 17           | 82%                                |
| Sailboat (only)     | 3         | 0                                    | 3            | 100%                               |
| Sailboat (unknown)  | 1         | 0                                    | 1            | 100%                               |
| Standup paddleboard | 12        | 3                                    | 15           | 80%                                |
| Other               | 6         | 0                                    | 6            | 100%                               |
| Unknown             | 13        | 3                                    | 16           | 81%                                |
| Total               | 509       | 192                                  | 701          | 73%                                |

**Figure 8 NUMBER OF DEATHS BY VESSEL TYPE 2016**

**Figure 9 PERCENT OF DEATHS BY VESSEL TYPE, 2004-2016****Table 25 - PERCENT OF DEATHS BY VESSEL TYPE, 2004-2016**

|                     | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Airboat             | 1%   | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 1%   | 0%   | 0%   | 0%   |
| Auxiliary sailboat  | 1%   | 1%   | 1%   | 3%   | 2%   | 1%   | 2%   | 2%   | 2%   | 1%   | 3%   | 3%   | 2%   |
| Cabin motorboat     | 6%   | 8%   | 8%   | 8%   | 8%   | 6%   | 5%   | 6%   | 8%   | 4%   | 6%   | 6%   | 6%   |
| Canoe/kayak         | 14%  | 10%  | 14%  | 16%  | 16%  | 18%  | 21%  | 18%  | 16%  | 19%  | 22%  | 22%  | 22%  |
| Houseboat           | 0%   | 4%   | 1%   | 1%   | 1%   | 0%   | 1%   | 0%   | 1%   | 1%   | 0%   | 0%   | 0%   |
| Inflatable          | 2%   | 1%   | 3%   | 1%   | 3%   | 4%   | 3%   | 3%   | 5%   | 3%   | 3%   | 4%   | 3%   |
| Open motorboat      | 52%  | 51%  | 49%  | 49%  | 50%  | 53%  | 48%  | 49%  | 44%  | 49%  | 46%  | 46%  | 46%  |
| Personal watercraft | 8%   | 9%   | 10%  | 10%  | 6%   | 6%   | 6%   | 6%   | 9%   | 6%   | 6%   | 5%   | 7%   |
| Pontoon             | 4%   | 3%   | 4%   | 2%   | 2%   | 2%   | 4%   | 4%   | 7%   | 6%   | 3%   | 7%   | 7%   |
| Rowboat             | 8%   | 6%   | 5%   | 5%   | 6%   | 6%   | 5%   | 7%   | 4%   | 5%   | 5%   | 3%   | 2%   |
| Sailboat (only)     | 1%   | 2%   | 2%   | 3%   | 1%   | 1%   | 1%   | 1%   | 2%   | 1%   | 1%   | 0%   | 0%   |
| Sailboat (unknown)  | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 1%   | 1%   | 0%   | 0%   | 0%   |
| Standup paddleboard | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 0%   | 1%   | 0%   | 1%   | 2%   |
| Other               | 1%   | 3%   | 2%   | 3%   | 3%   | 1%   | 2%   | 1%   | 1%   | 0%   | 0%   | 0%   | 1%   |
| Unknown             | 0%   | 2%   | 2%   | 1%   | 1%   | 1%   | 1%   | 2%   | 2%   | 1%   | 2%   | 1%   | 2%   |



**Table 26 • NUMBER OF DECEASED VICTIMS BY AGE AND VESSEL TYPE  
2016**

| Age of Deceased Victim | Type of Vessel |    |    |    |   |    |    |     |    |    |    |    |    |         |         | Total deaths |         |         |         |         |             |         |
|------------------------|----------------|----|----|----|---|----|----|-----|----|----|----|----|----|---------|---------|--------------|---------|---------|---------|---------|-------------|---------|
|                        | Total          | 1  | 2  | 3  | 4 | 5  | 6  | 7   | 8  | 9  | 10 | 11 | 12 | 13 - 19 | 20 - 29 | 30 - 39      | 40 - 49 | 50 - 59 | 60 - 69 | 70 - 79 | 80 and Over | Unknown |
| Total                  | 3              | 11 | 41 | 63 | 2 | 18 | 89 | 323 | 46 | 47 | 17 | 3  | 1  | 15      | 6       | 16           | 509     | 192     | 701     |         |             |         |
| 0                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 0       | 0       | 0       | 0           |         |
| 1                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 0       | 0       | 0       | 0           |         |
| 2                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 0       | 0       | 0       | 0           |         |
| 3                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 0       | 0       | 0       | 0           |         |
| 4                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 2   | 0  | 0  | 1  | 0  | 0  | 0       | 0       | 1            | 3       | 1       | 4       |         |             |         |
| 5                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 1   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 1       | 0       | 1       |             |         |
| 6                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 0       | 0       | 0       | 0           |         |
| 7                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 2   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 0       | 0       | 2       | 2           |         |
| 8                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 1   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 0       | 0       | 1       | 1           |         |
| 9                      | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 3   | 0  | 2  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 3       | 2       | 5       |             |         |
| 10                     | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 0   | 0  | 2  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 0       | 0       | 2       | 2           |         |
| 11                     | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 1            | 0       | 1       | 0       | 1       |             |         |
| 12                     | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 0            | 0       | 0       | 0       | 0       | 0           |         |
| 0-12                   | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 9   | 2  | 2  | 1  | 0  | 0  | 0       | 1       | 1            | 8       | 8       | 16      |         |             |         |
| 13 - 19                | 0              | 3  | 2  | 5  | 0 | 1  | 5  | 21  | 6  | 5  | 0  | 0  | 0  | 0       | 0       | 0            | 1       | 32      | 17      | 49      |             |         |
| 20 - 29                | 0              | 0  | 8  | 18 | 0 | 2  | 23 | 41  | 10 | 6  | 0  | 0  | 0  | 3       | 3       | 6            | 92      | 28      | 120     |         |             |         |
| 30 - 39                | 0              | 0  | 10 | 14 | 1 | 0  | 16 | 38  | 7  | 9  | 2  | 0  | 0  | 3       | 0       | 3            | 77      | 26      | 103     |         |             |         |
| 40 - 49                | 1              | 2  | 4  | 8  | 0 | 6  | 17 | 61  | 9  | 3  | 1  | 1  | 1  | 3       | 0       | 2            | 77      | 42      | 119     |         |             |         |
| 50 - 59                | 0              | 3  | 6  | 10 | 1 | 5  | 12 | 68  | 9  | 8  | 3  | 0  | 0  | 4       | 1       | 1            | 100     | 31      | 131     |         |             |         |
| 60 - 69                | 1              | 0  | 11 | 6  | 0 | 4  | 12 | 47  | 1  | 9  | 5  | 0  | 0  | 2       | 1       | 0            | 74      | 25      | 99      |         |             |         |
| 70 - 79                | 1              | 3  | 0  | 2  | 0 | 0  | 2  | 32  | 2  | 5  | 3  | 2  | 0  | 0       | 0       | 1            | 40      | 13      | 53      |         |             |         |
| 80 and Over            | 0              | 0  | 0  | 0  | 0 | 0  | 2  | 6   | 0  | 0  | 2  | 0  | 0  | 0       | 0       | 0            | 9       | 1       | 10      |         |             |         |
| Unknown                | 0              | 0  | 0  | 0  | 0 | 0  | 0  | 0   | 0  | 0  | 0  | 0  | 0  | 0       | 0       | 1            | 0       | 1       | 1       |         |             |         |

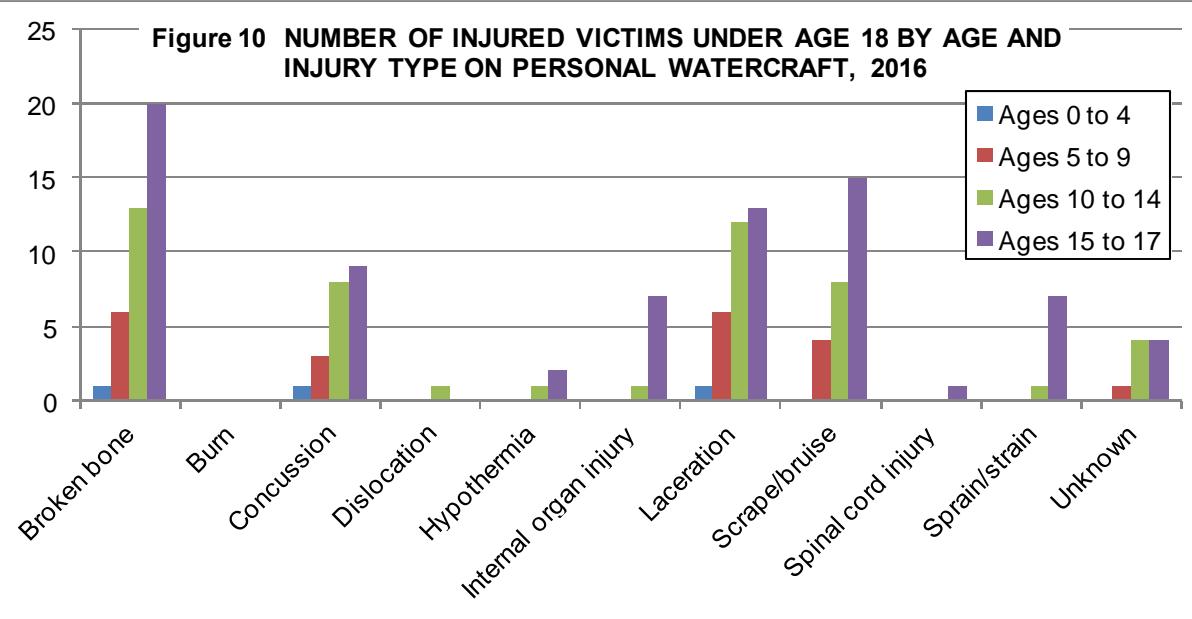


**Table 27 • NUMBER OF INJURED VICTIMS BY AGE AND VESSEL TYPE 2016**

| Age of Injured Victim | Total | 32 | 39 | 263 | 45 | 5 | 16 | 79 | 1537 | 675 | 120 | 27 | 36 | 1 | 5 | 4 | 19 |
|-----------------------|-------|----|----|-----|----|---|----|----|------|-----|-----|----|----|---|---|---|----|
| 0                     | 3     | 0  | 0  | 1   | 1  | 0 | 0  | 0  | 1    | 0   | 0   | 0  | 0  | 0 | 0 | 0 | 0  |
| 1                     | 4     | 0  | 0  | 0   | 0  | 0 | 0  | 0  | 4    | 0   | 0   | 0  | 0  | 0 | 0 | 0 | 0  |
| 2                     | 6     | 0  | 0  | 0   | 1  | 1 | 0  | 0  | 2    | 0   | 1   | 0  | 0  | 0 | 0 | 0 | 1  |
| 3                     | 5     | 0  | 0  | 0   | 0  | 0 | 0  | 1  | 2    | 1   | 1   | 0  | 0  | 0 | 0 | 0 | 0  |
| 4                     | 12    | 0  | 0  | 3   | 0  | 0 | 0  | 0  | 6    | 2   | 1   | 0  | 0  | 0 | 0 | 0 | 0  |
| 5                     | 8     | 0  | 0  | 0   | 1  | 0 | 0  | 0  | 5    | 1   | 1   | 0  | 0  | 0 | 0 | 0 | 0  |
| 6                     | 9     | 0  | 0  | 3   | 0  | 0 | 0  | 0  | 3    | 2   | 1   | 0  | 0  | 0 | 0 | 0 | 0  |
| 7                     | 24    | 0  | 0  | 1   | 2  | 0 | 0  | 0  | 16   | 4   | 0   | 0  | 1  | 0 | 0 | 0 | 0  |
| 8                     | 20    | 0  | 0  | 0   | 0  | 0 | 1  | 1  | 9    | 9   | 0   | 0  | 0  | 0 | 0 | 0 | 0  |
| 9                     | 20    | 0  | 1  | 4   | 0  | 1 | 0  | 0  | 7    | 4   | 2   | 0  | 0  | 0 | 0 | 0 | 1  |
| 10                    | 18    | 0  | 0  | 1   | 0  | 0 | 1  | 0  | 12   | 4   | 0   | 0  | 0  | 0 | 0 | 0 | 0  |
| 11                    | 24    | 0  | 1  | 0   | 0  | 0 | 0  | 0  | 16   | 7   | 0   | 0  | 0  | 0 | 0 | 0 | 0  |
| 12                    | 37    | 0  | 0  | 1   | 1  | 1 | 0  | 1  | 22   | 8   | 2   | 0  | 1  | 0 | 0 | 0 | 0  |
| 0 - 12                | 190   | 0  | 2  | 14  | 6  | 3 | 2  | 3  | 105  | 42  | 9   | 0  | 2  | 0 | 0 | 0 | 2  |
| 13 - 19               | 421   | 2  | 0  | 16  | 3  | 0 | 0  | 7  | 193  | 157 | 12  | 9  | 18 | 0 | 2 | 0 | 2  |
| 20 - 29               | 572   | 3  | 3  | 38  | 6  | 0 | 5  | 21 | 277  | 193 | 21  | 1  | 2  | 0 | 0 | 0 | 2  |
| 30 - 39               | 419   | 13 | 2  | 37  | 12 | 1 | 2  | 14 | 214  | 101 | 19  | 1  | 1  | 0 | 0 | 2 | 0  |
| 40 - 49               | 366   | 7  | 3  | 46  | 3  | 1 | 4  | 9  | 194  | 74  | 19  | 1  | 1  | 1 | 0 | 1 | 2  |
| 50 - 59               | 428   | 3  | 8  | 43  | 6  | 0 | 1  | 13 | 266  | 61  | 17  | 2  | 5  | 0 | 2 | 0 | 1  |
| 60 - 69               | 202   | 1  | 10 | 25  | 5  | 0 | 1  | 1  | 110  | 19  | 14  | 8  | 4  | 0 | 1 | 1 | 2  |
| 70 - 79               | 103   | 0  | 4  | 16  | 1  | 0 | 0  | 2  | 69   | 3   | 3   | 4  | 1  | 0 | 0 | 0 | 0  |
| 80 and Over           | 11    | 0  | 0  | 0   | 0  | 0 | 1  | 0  | 9    | 0   | 1   | 0  | 0  | 0 | 0 | 0 | 0  |
| Unknown               | 191   | 3  | 7  | 28  | 3  | 0 | 0  | 9  | 100  | 25  | 5   | 1  | 2  | 0 | 0 | 0 | 8  |
| Total injuries        |       |    |    |     |    |   |    |    |      |     |     |    |    |   |   |   |    |

**Table 28 • NATURE OF PRIMARY INJURY TYPE BY AREA OF INJURY 2016**

|                                 | All Areas | Arm | Body | Foot | Hand | Head | Leg | Neck | Trunk | Other | Unknown |
|---------------------------------|-----------|-----|------|------|------|------|-----|------|-------|-------|---------|
| <b>All primary injury types</b> | 2903      | 276 | 345  | 117  | 100  | 681  | 527 | 75   | 528   | 1     | 253     |
| Amputation                      | 31        | 5   | 0    | 4    | 14   | 0    | 7   | 0    | 0     | 1     | 0       |
| Broken bone                     | 552       | 62  | 0    | 38   | 34   | 94   | 163 | 9    | 125   | 0     | 27      |
| Burn                            | 127       | 14  | 11   | 2    | 8    | 11   | 26  | 1    | 12    | 0     | 42      |
| Carbon monoxide                 | 13        | 0   | 13   | 0    | 0    | 0    | 0   | 0    | 0     | 0     | 0       |
| Concussion                      | 256       | 0   | 0    | 0    | 0    | 256  | 0   | 0    | 0     | 0     | 0       |
| Dislocation                     | 49        | 31  | 0    | 0    | 0    | 0    | 17  | 0    | 0     | 0     | 1       |
| Electric shock                  | 1         | 0   | 1    | 0    | 0    | 0    | 0   | 0    | 0     | 0     | 0       |
| Hypothermia                     | 249       | 0   | 249  | 0    | 0    | 0    | 0   | 0    | 0     | 0     | 0       |
| Internal organ injury           | 150       | 0   | 11   | 0    | 0    | 8    | 0   | 0    | 119   | 0     | 12      |
| Laceration                      | 626       | 73  | 8    | 35   | 26   | 228  | 176 | 3    | 27    | 0     | 50      |
| Scrape/bruise                   | 364       | 53  | 19   | 12   | 10   | 51   | 77  | 7    | 81    | 0     | 54      |
| Shock                           | 13        | 0   | 13   | 0    | 0    | 0    | 0   | 0    | 0     | 0     | 0       |
| Spinal cord Injury              | 59        | 0   | 0    | 0    | 0    | 0    | 0   | 11   | 48    | 0     | 0       |
| Sprain/strain                   | 212       | 26  | 17   | 18   | 5    | 1    | 42  | 36   | 54    | 0     | 13      |
| Other                           | 5         | 0   | 2    | 1    | 0    | 0    | 0   | 0    | 0     | 0     | 2       |
| Unknown                         | 196       | 12  | 1    | 7    | 3    | 32   | 19  | 8    | 62    | 0     | 52      |



# **CASUALTY DATA**

## Explanation of Casualty Data Section

This section contains fifteen tables and figures that examine data relating to the victims in boating accidents. The following pages focus on historical casualty information, casualty-vessel information, and state-specific casualty information.

### Deaths, Injuries & Accidents by Year, 1997-2016 (Figure 11 & Table 29, Page 55)

This figure and table document the number of accidents and casualties from 1997-2016.

### Accident, Casualty & Damage Data by State (Table 30, Page 56)

This table provides accident, casualty, and damage information by state for the year 2016. Accidents are broken down into three levels of severity— fatal accidents, non-fatal injury accidents, and property damage only accidents. This table also provides the number of casualties and property damage by state.

### Distribution of Recreational Boating Deaths by State (Figure 12, Page 57)

This figure provides the percentage that each state contributed to the national death count. So, for instance, Michigan had 38 deaths. Out of the total national death count of 701, Michigan contributed 5.4% ( $(38/701) \times 100$ ) of deaths to the national count. Please note that percentages have been rounded.

### Fatal Accidents by Location (Figures 12a-d, Pages 58-60)

These figures plot the location of fatal accidents in four different regions. 12a represents the continental United States. 12b represents Alaska. 12c represents Hawaii. 12d represents Puerto Rico. In many cases, the location was plotted using coordinates. When coordinates were not available, other fields such as the name of body of water, nearest city or town, county, and the narrative were used to approximate the location. Plots are color-coded whereby red dots indicate a single-fatality accident and yellow dots indicate an accident in which more than one person died

### Annual Recreational Boating Fatality Rates, 1997-2016 (Figure 13 & Table 31, Page 61)

This table and accompanying figure provide two fatality rates for years 1997-2016. The fatality rate is calculated by dividing the number of fatalities by the total national vessel registration. The Coast Guard then multiplied by a factor of 100,000 to arrive at the number of deaths per 100,000 registered vessels. The fatality rate takes into account all fatalities and all recreational registration data collected. The motorized fatality rate takes into account only fatalities that occurred on motorized vessels and only motorized recreational vessels registered.

### States Coded by their 2016 Fatality Rate (Figure 14, Page 62)

This figure displays states that are color-coded depending on their fatality rate which is expressed as the number of deaths that occurred in that state per 100,000 vessels that that state registered. It is important to note that not all states register the same types of vessels which could skew the fatality rates provided. Please see Table 38, Recreational Registration Data by State 2015-2016 to view the scope of each state's registration system. Further, when examining a state fatality rate, it is important to note that the state fatality rate may include deaths from vessels that were registered in another state.

### Five-year Summary of Selected Accident Data by State, 2012-2016 (Table 32, Page 63)

This table examines the number of accidents, fatal accidents, and fatalities by state for years 2012-2016.

### Number of Accidents by Primary Accident Type & State (Table 33, Page 64-65)

This table documents the first accident event by state. It also provides information about the total number of accidents and casualties by state.

### Number of Injured Victims by Primary Injury & Vessel Type (Table 34, Page 66)

This table displays the number of injured victims by primary injury and vessel type.

### Number of Fatal Victims by Life Jacket Wear, Cause of Death, & Vessel Type (Table 35, Page 66)

This table displays the number of fatal victims by vessel type and cause of death. The table also provides information on whether the deceased victim was wearing a life jacket.



Figure 11 DEATHS, INJURIES, &amp; ACCIDENTS BY YEAR, 1997-2016

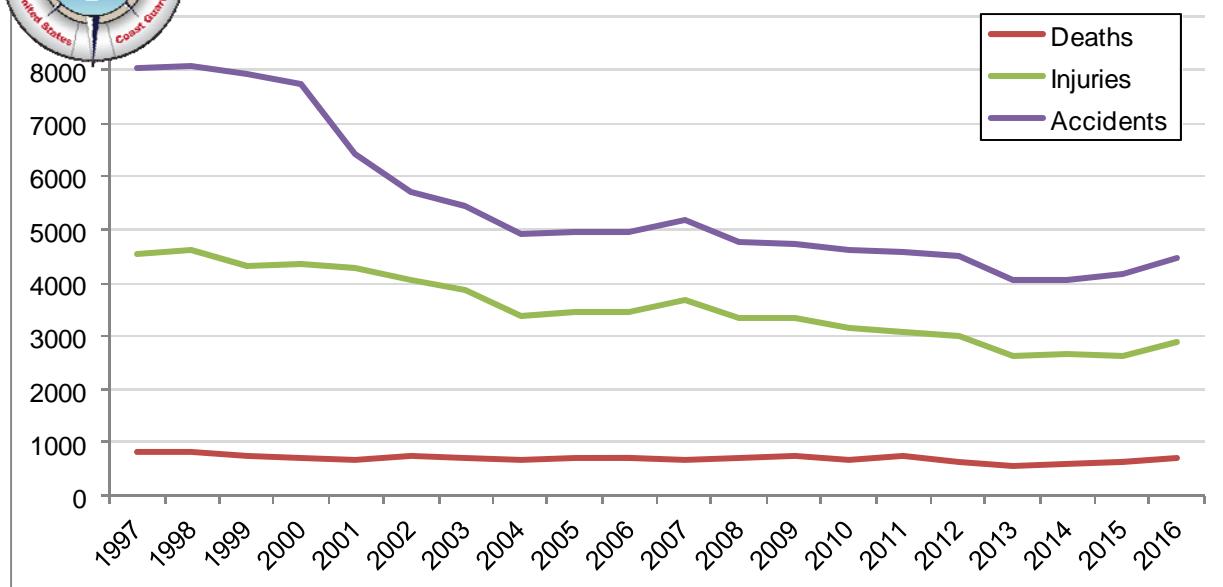


Table 29 • DEATHS, INJURIES, &amp; ACCIDENTS BY YEAR, 1997-2016

| Year  | Deaths | Injuries | Accidents |
|-------|--------|----------|-----------|
| 1997  | 821    | 4555     | 8047      |
| 1998  | 815    | 4612     | 8061      |
| 1999  | 734    | 4315     | 7931      |
| 2000  | 701    | 4355     | 7740      |
| 2001* | 681    | 4274     | 6419      |
| 2002  | 750    | 4062     | 5705      |
| 2003  | 703    | 3888     | 5438      |
| 2004  | 676    | 3363     | 4904      |
| 2005  | 697    | 3451     | 4969      |
| 2006  | 710    | 3474     | 4967      |
| 2007  | 685    | 3673     | 5191      |
| 2008  | 709    | 3331     | 4789      |
| 2009  | 736    | 3358     | 4730      |
| 2010  | 672    | 3153     | 4604      |
| 2011  | 758    | 3081     | 4588      |
| 2012  | 651    | 3000     | 4515      |
| 2013  | 560    | 2620     | 4062      |
| 2014  | 610    | 2678     | 4064      |
| 2015  | 626    | 2613     | 4158      |
| 2016  | 701    | 2903     | 4463      |

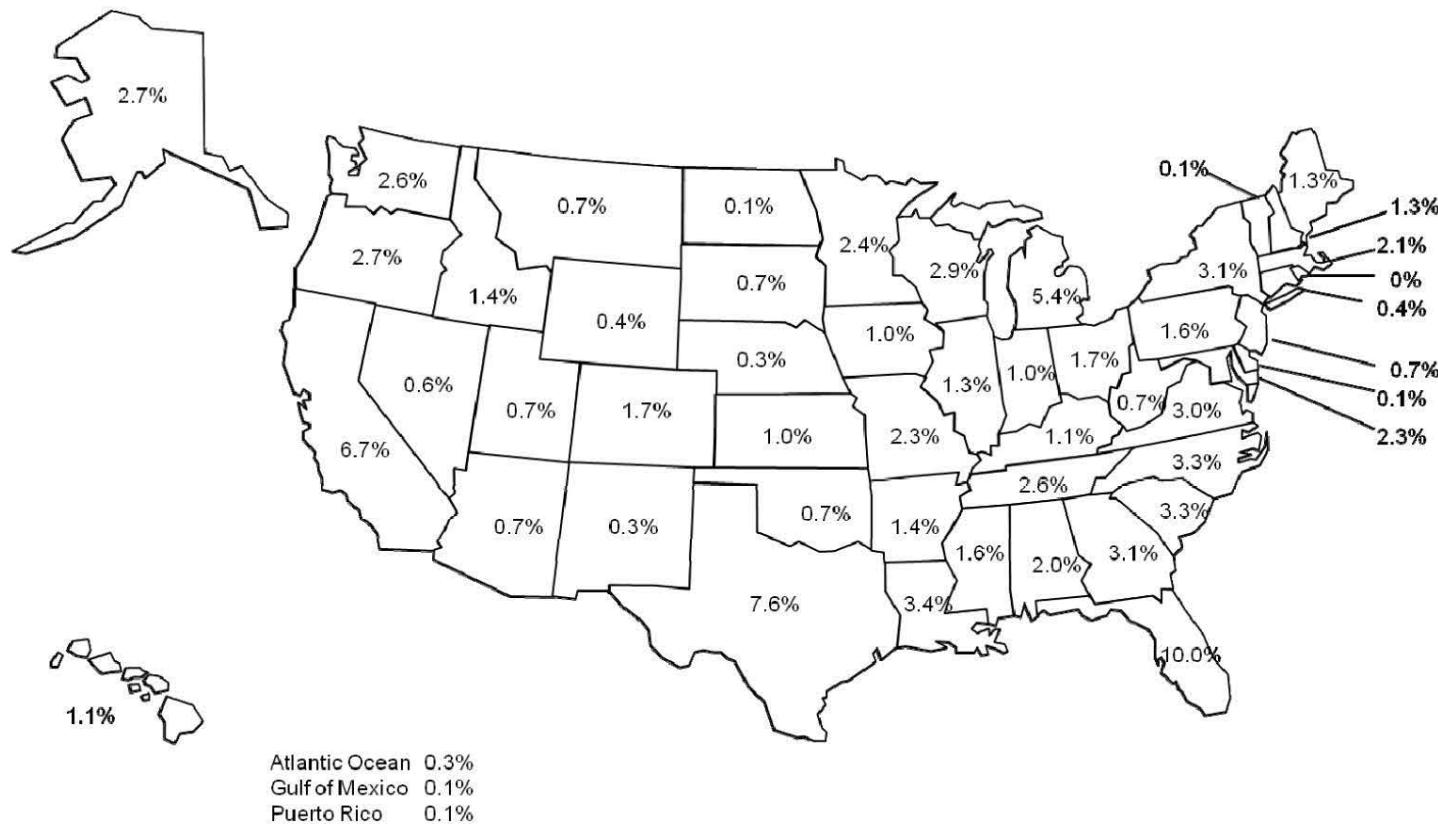
\* On July 2, 2001, the Federal threshold of property damage for reports of accidents involving recreational vessels changed from \$500 to \$2000.

Casualty Data

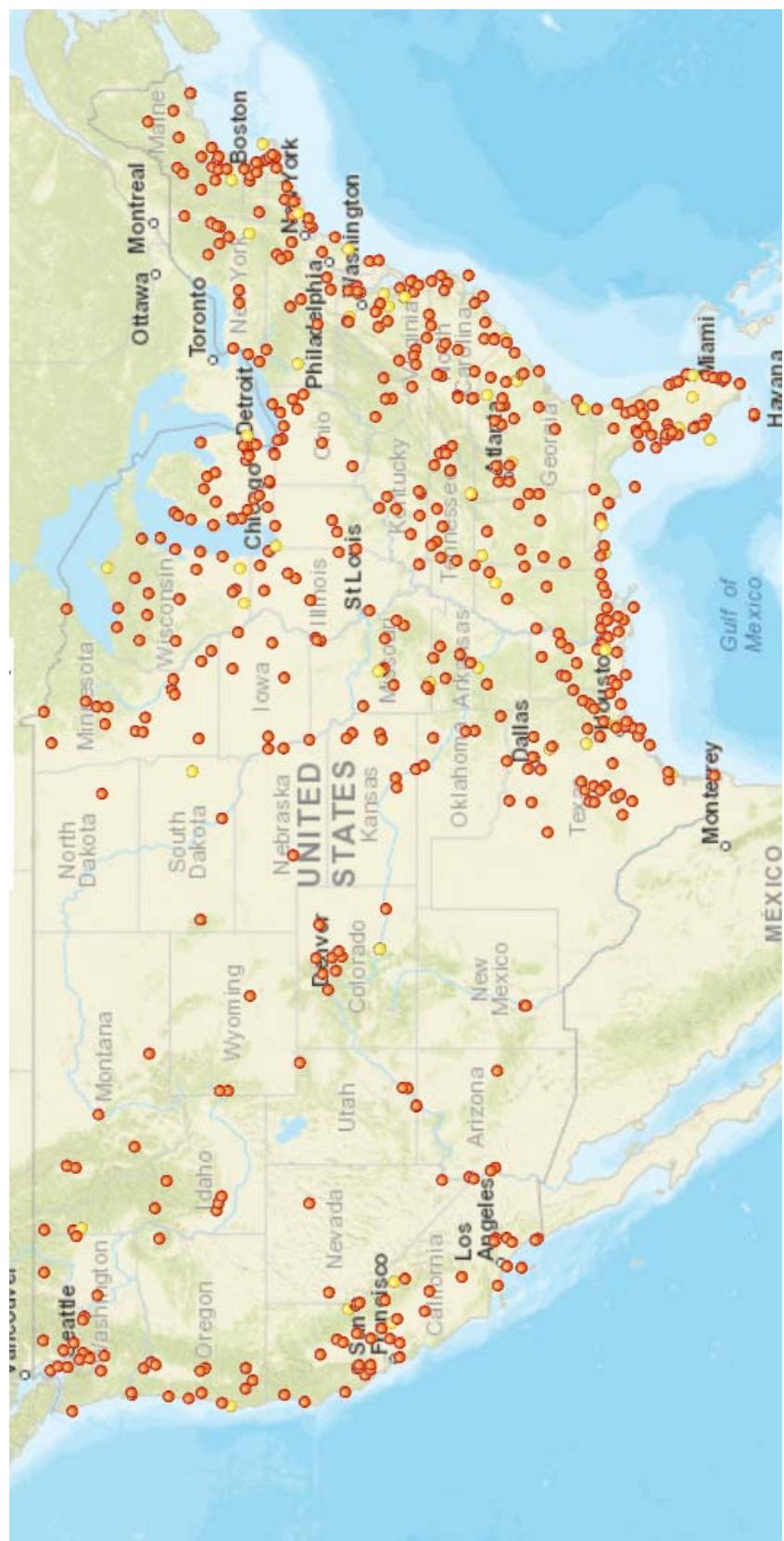
Table 30 ▪ ACCIDENT, CASUALTY & DAMAGE DATA BY STATE 2016

|                 | Number of Accidents |       |                  |                 | Persons Involved |         | Damages         |
|-----------------|---------------------|-------|------------------|-----------------|------------------|---------|-----------------|
|                 | Total               | Fatal | Non-Fatal Injury | Property Damage | Deaths           | Injured |                 |
| <b>Totals</b>   | 4463                | 624   | 2015             | 1824            | 701              | 2903    | \$49,124,633.91 |
| AK              | 26                  | 14    | 8                | 4               | 19               | 19      | \$774,245.00    |
| AL              | 46                  | 12    | 17               | 17              | 14               | 30      | \$560,610.00    |
| AR              | 47                  | 9     | 15               | 23              | 10               | 23      | \$344,300.00    |
| AZ              | 90                  | 5     | 46               | 39              | 5                | 66      | \$506,661.00    |
| CA              | 386                 | 43    | 173              | 170             | 47               | 277     | \$4,409,065.01  |
| CO              | 43                  | 11    | 19               | 13              | 12               | 21      | \$173,080.00    |
| CT              | 47                  | 3     | 27               | 17              | 3                | 42      | \$1,177,728.79  |
| DC              | 2                   | 0     | 1                | 1               | 0                | 1       | \$15,000.00     |
| DE              | 23                  | 1     | 5                | 17              | 1                | 9       | \$708,864.00    |
| FL              | 684                 | 59    | 287              | 338             | 70               | 411     | \$9,655,738.00  |
| GA              | 112                 | 15    | 61               | 36              | 22               | 80      | \$652,228.63    |
| HI              | 14                  | 6     | 3                | 5               | 8                | 4       | \$150,435.00    |
| IA              | 37                  | 7     | 17               | 13              | 7                | 20      | \$79,154.19     |
| ID              | 50                  | 8     | 25               | 17              | 10               | 36      | \$275,200.00    |
| IL              | 74                  | 9     | 28               | 37              | 9                | 40      | \$351,091.00    |
| IN              | 40                  | 6     | 21               | 13              | 7                | 27      | \$152,698.13    |
| KS              | 32                  | 7     | 17               | 8               | 7                | 21      | \$130,000.00    |
| KY              | 46                  | 8     | 27               | 11              | 8                | 37      | \$137,065.00    |
| LA              | 112                 | 23    | 53               | 36              | 24               | 92      | \$1,597,799.10  |
| MA              | 92                  | 13    | 31               | 48              | 15               | 38      | \$1,395,402.00  |
| MD              | 150                 | 11    | 97               | 42              | 16               | 116     | \$3,738,326.74  |
| ME              | 49                  | 9     | 17               | 23              | 9                | 23      | \$737,222.58    |
| MI              | 125                 | 33    | 55               | 37              | 38               | 65      | \$550,170.74    |
| MN              | 96                  | 17    | 50               | 29              | 17               | 72      | \$228,474.47    |
| MO              | 137                 | 14    | 89               | 34              | 16               | 107     | \$1,178,494.09  |
| MS              | 43                  | 10    | 15               | 18              | 11               | 21      | \$257,750.00    |
| MT              | 23                  | 5     | 12               | 6               | 5                | 26      | \$131,050.00    |
| NC              | 143                 | 22    | 63               | 58              | 23               | 84      | \$3,347,940.00  |
| ND              | 15                  | 1     | 9                | 5               | 1                | 12      | \$88,500.00     |
| NE              | 22                  | 2     | 10               | 10              | 2                | 15      | \$121,601.00    |
| NH              | 76                  | 8     | 31               | 37              | 9                | 44      | \$664,937.92    |
| NJ              | 109                 | 4     | 42               | 63              | 5                | 70      | \$136,000.00    |
| NM              | 16                  | 2     | 9                | 5               | 2                | 11      | \$21,200.00     |
| NV              | 48                  | 4     | 26               | 18              | 4                | 36      | \$168,307.00    |
| NY              | 188                 | 20    | 86               | 82              | 22               | 149     | \$1,308,095.34  |
| OH              | 113                 | 12    | 41               | 60              | 12               | 55      | \$893,172.46    |
| OK              | 44                  | 5     | 24               | 15              | 5                | 39      | \$1,350,020.00  |
| OR              | 82                  | 17    | 32               | 33              | 19               | 59      | \$672,131.00    |
| PA              | 55                  | 9     | 22               | 24              | 11               | 33      | \$204,479.54    |
| RI              | 36                  | 0     | 10               | 26              | 0                | 14      | \$875,688.00    |
| SC              | 136                 | 20    | 50               | 66              | 23               | 84      | \$985,859.00    |
| SD              | 20                  | 4     | 10               | 6               | 5                | 15      | \$114,100.00    |
| TN              | 116                 | 17    | 49               | 50              | 18               | 66      | \$1,188,740.00  |
| TX              | 176                 | 48    | 83               | 45              | 53               | 124     | \$985,087.00    |
| UT              | 94                  | 5     | 41               | 48              | 5                | 58      | \$407,987.99    |
| VA              | 83                  | 19    | 39               | 25              | 21               | 48      | \$488,747.00    |
| VT              | 4                   | 1     | 1                | 2               | 1                | 3       | \$35,995.00     |
| WA              | 98                  | 18    | 42               | 38              | 18               | 53      | \$1,761,740.75  |
| WI              | 103                 | 16    | 57               | 30              | 20               | 72      | \$871,790.90    |
| WV              | 24                  | 5     | 11               | 8               | 5                | 14      | \$211,097.54    |
| WY              | 8                   | 3     | 2                | 3               | 3                | 3       | \$15,500.00     |
| AS              | 0                   | 0     | 0                | 0               | 0                | 0       | \$0.00          |
| CNMI            | 0                   | 0     | 0                | 0               | 0                | 0       | \$0.00          |
| GU              | 0                   | 0     | 0                | 0               | 0                | 0       | \$0.00          |
| PR              | 6                   | 1     | 2                | 3               | 1                | 5       | \$23,300.00     |
| VI              | 0                   | 0     | 0                | 0               | 0                | 0       | \$0.00          |
| Atlantic Ocean* | 8                   | 2     | 5                | 1               | 2                | 9       | \$974,302.00    |
| Gulf of Mexico* | 8                   | 1     | 2                | 5               | 1                | 4       | \$419,611.00    |
| Pacific Ocean*  | 6                   | 0     | 0                | 6               | 0                | 0       | \$720,850.00    |

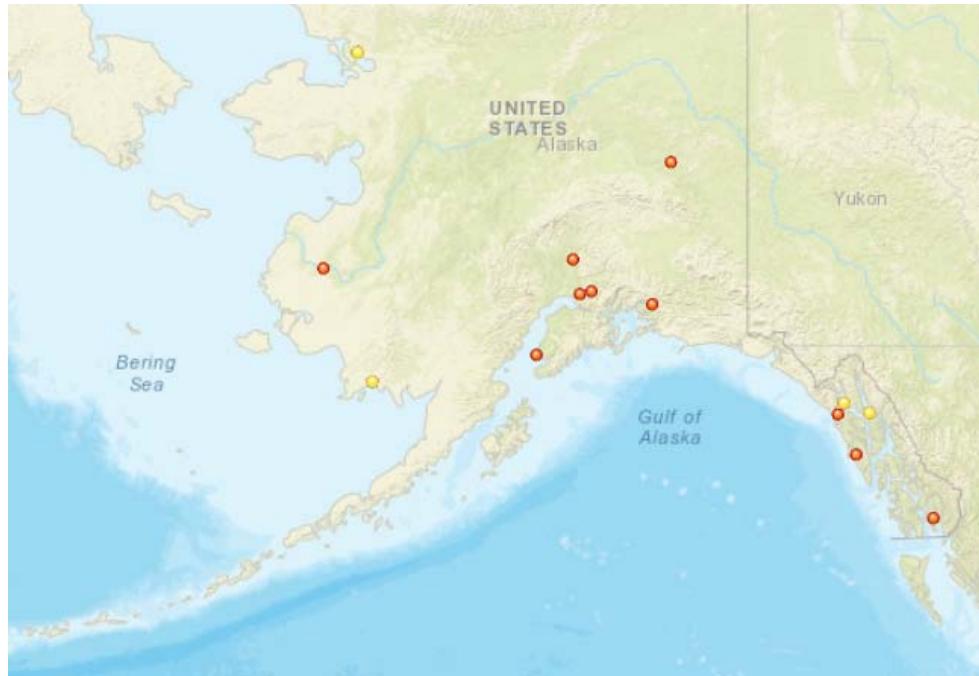
\*1997 was the first year statistics were compiled for accidents that occurred three or more miles offshore in the Atlantic Ocean and Pacific Ocean and nine or more miles in the Gulf of Mexico. NJ did not submit property damage estimates to boats. However, NJ noted that accidents submitted to the Coast Guard that did not have an injury or death were considered to have \$2000 or more in damages. The Coast Guard adjusted NJ's property damages to boats such that each accident without an injury or death had \$2000 damages.



**Figure 12a • FATAL ACCIDENTS BY LOCATION—CONTINENTAL U.S.**



**Figure 12b • FATAL ACCIDENTS BY LOCATION– ALASKA**



**Figure 12c • FATAL ACCIDENTS BY LOCATION– HAWAII**



**Figure 12d • FATAL ACCIDENTS BY LOCATION– PUERTO RICO**





Figure 13 ANNUAL RECREATIONAL BOATING FATALITY RATES, 1997-2016

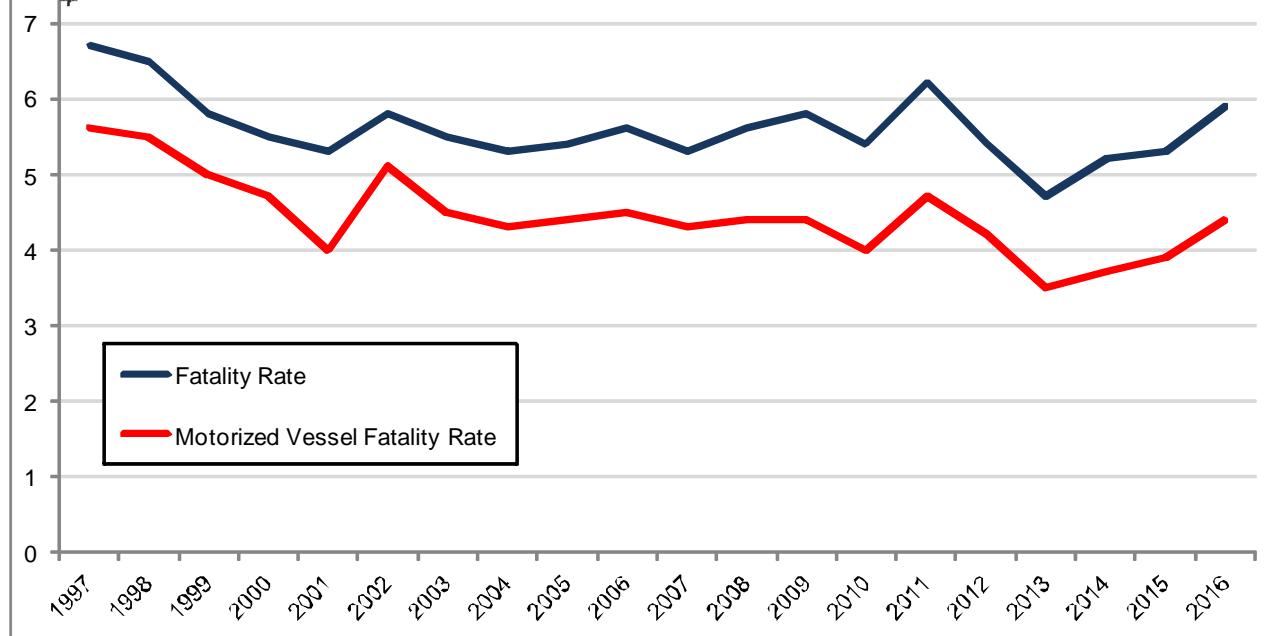
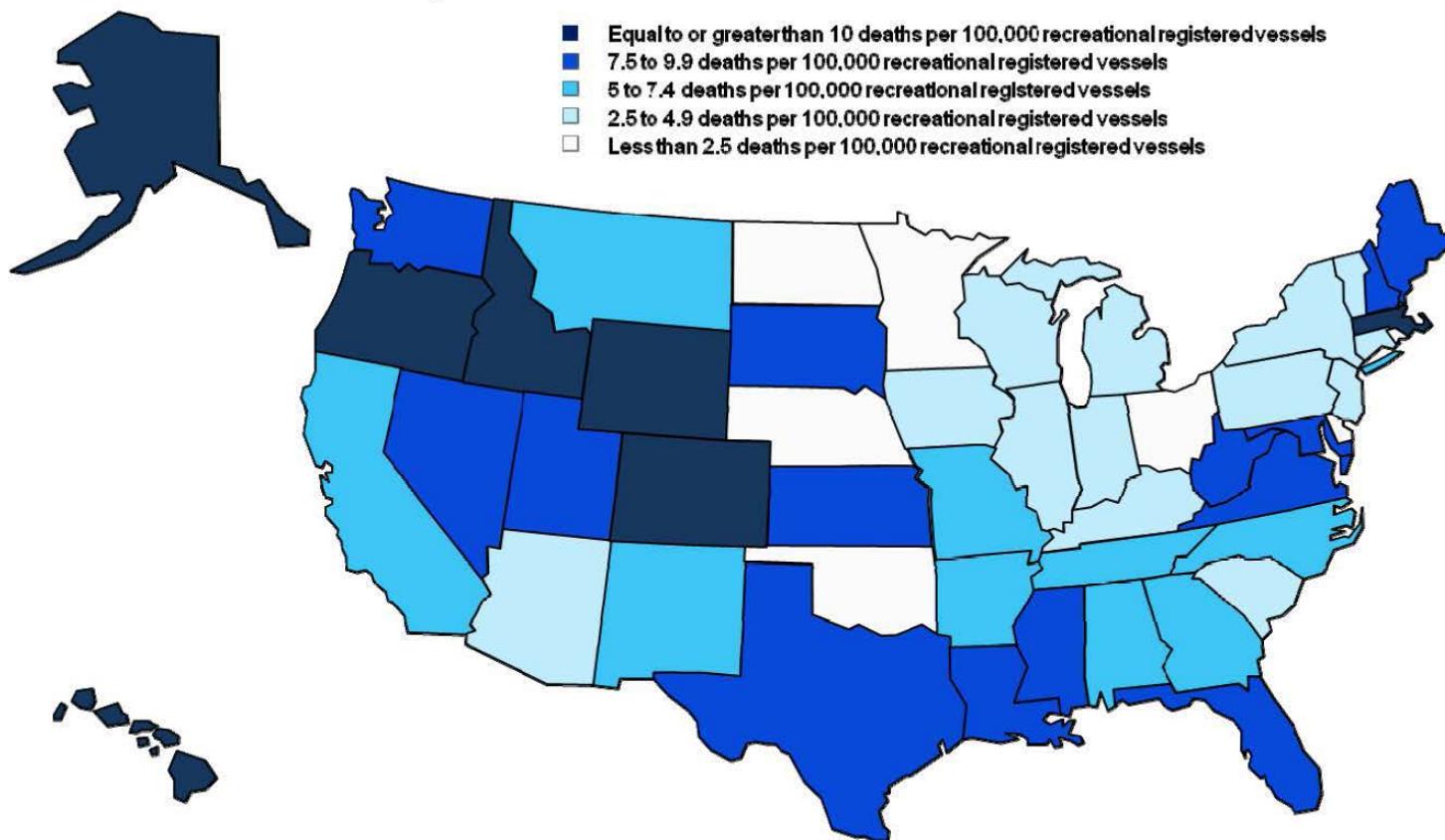


Table 31 • ANNUAL RECREATIONAL BOATING FATALITY RATES 1997-2016

|      | All Deaths | All Registered Vessels | Fatality Rate | Motorized Vessel Deaths | Registered Motorized Vessels | Motorized Vessel Fatality Rate |
|------|------------|------------------------|---------------|-------------------------|------------------------------|--------------------------------|
| 1997 | 821        | 12,312,982             | 6.7           | 645                     | 11,591,194                   | 5.6                            |
| 1998 | 815        | 12,565,930             | 6.5           | 637                     | 11,637,361                   | 5.5                            |
| 1999 | 734        | 12,738,271             | 5.8           | 586                     | 11,811,562                   | 5.0                            |
| 2000 | 701        | 12,782,143             | 5.5           | 543                     | 11,648,769                   | 4.7                            |
| 2001 | 681        | 12,876,346             | 5.3           | 484                     | 12,100,439                   | 4.0                            |
| 2002 | 750        | 12,854,054             | 5.8           | 612                     | 11,918,688                   | 5.1                            |
| 2003 | 703        | 12,794,616             | 5.5           | 536                     | 11,946,576                   | 4.5                            |
| 2004 | 676        | 12,781,476             | 5.3           | 515                     | 11,878,783                   | 4.3                            |
| 2005 | 697        | 12,942,414             | 5.4           | 528                     | 11,998,728                   | 4.4                            |
| 2006 | 710        | 12,746,126             | 5.6           | 535                     | 11,802,419                   | 4.5                            |
| 2007 | 685        | 12,875,568             | 5.3           | 515                     | 11,966,627                   | 4.3                            |
| 2008 | 709        | 12,692,892             | 5.6           | 518                     | 11,841,281                   | 4.4                            |
| 2009 | 736        | 12,721,541             | 5.8           | 522                     | 11,834,872                   | 4.4                            |
| 2010 | 672        | 12,438,926             | 5.4           | 469                     | 11,597,326                   | 4.0                            |
| 2011 | 758        | 12,173,935             | 6.2           | 527                     | 11,326,848                   | 4.7                            |
| 2012 | 651        | 12,101,936             | 5.4           | 476                     | 11,226,268                   | 4.2                            |
| 2013 | 560        | 12,013,496             | 4.7           | 391                     | 11,128,052                   | 3.5                            |
| 2014 | 610        | 11,804,002             | 5.2           | 411                     | 10,960,861                   | 3.7                            |
| 2015 | 626        | 11,867,049             | 5.3           | 434                     | 11,034,479                   | 3.9                            |
| 2016 | 701        | 11,861,811             | 5.9           | 481                     | 11,005,841                   | 4.4                            |

**Figure 14 STATES CODED BY THEIR 2016 FATALITY RATE**

Note: The fatality rate is calculated using the number of deaths in each state and the number of recreational registered vessels in each state. Please be aware that, for some states, the fatality rate includes deaths that occurred on vessels that were not registered. Further, it is important to note that the state fatality rate may include deaths from vessels that were registered in another state. Only the contiguous jurisdictions, Hawaii, and Alaska are represented on this map.

**Table 32 • FIVE YEAR SUMMARY OF SELECTED ACCIDENT DATA BY STATE 2012-2016**

|                | Total Number of Accidents |      |      |      |      | Fatal Accidents |      |      |      |      | Deaths |      |      |      |      |
|----------------|---------------------------|------|------|------|------|-----------------|------|------|------|------|--------|------|------|------|------|
|                | 2012                      | 2013 | 2014 | 2015 | 2016 | 2012            | 2013 | 2014 | 2015 | 2016 | 2012   | 2013 | 2014 | 2015 | 2016 |
| <b>Totals</b>  | 4515                      | 4062 | 4064 | 4158 | 4463 | 578             | 510  | 548  | 569  | 624  | 651    | 560  | 610  | 626  | 701  |
| Alabama        | 71                        | 62   | 71   | 79   | 46   | 16              | 10   | 12   | 17   | 12   | 17     | 10   | 13   | 21   | 14   |
| Alaska         | 23                        | 18   | 18   | 25   | 26   | 15              | 7    | 10   | 7    | 14   | 22     | 10   | 11   | 7    | 19   |
| Arizona        | 99                        | 95   | 87   | 97   | 90   | 3               | 9    | 7    | 6    | 5    | 4      | 9    | 7    | 6    | 5    |
| Arkansas       | 68                        | 56   | 54   | 49   | 47   | 8               | 13   | 7    | 9    | 9    | 8      | 15   | 8    | 9    | 10   |
| California     | 365                       | 426  | 379  | 369  | 386  | 37              | 34   | 29   | 41   | 43   | 49     | 37   | 38   | 48   | 47   |
| Colorado       | 46                        | 32   | 57   | 36   | 43   | 8               | 2    | 12   | 8    | 11   | 9      | 2    | 12   | 8    | 12   |
| Connecticut    | 49                        | 35   | 40   | 58   | 47   | 6               | 1    | 5    | 6    | 3    | 6      | 1    | 5    | 6    | 3    |
| Delaware       | 13                        | 8    | 15   | 13   | 23   | 2               | 0    | 1    | 0    | 1    | 2      | 0    | 1    | 0    | 1    |
| DC             | 2                         | 5    | 2    | 0    | 2    | 0               | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    |
| Florida        | 662                       | 685  | 581  | 671  | 684  | 48              | 51   | 62   | 49   | 59   | 50     | 58   | 70   | 52   | 70   |
| Georgia        | 111                       | 92   | 92   | 85   | 112  | 11              | 15   | 12   | 19   | 15   | 13     | 16   | 13   | 22   | 22   |
| Hawaii         | 28                        | 14   | 9    | 12   | 14   | 5               | 4    | 3    | 5    | 6    | 5      | 4    | 3    | 5    | 8    |
| Idaho          | 66                        | 42   | 43   | 39   | 50   | 11              | 5    | 10   | 9    | 8    | 11     | 5    | 10   | 13   | 10   |
| Illinois       | 101                       | 59   | 84   | 66   | 74   | 15              | 8    | 17   | 11   | 9    | 17     | 9    | 22   | 11   | 9    |
| Indiana        | 43                        | 44   | 40   | 43   | 40   | 2               | 4    | 9    | 5    | 6    | 2      | 5    | 9    | 5    | 7    |
| Iowa           | 33                        | 24   | 33   | 36   | 37   | 8               | 3    | 6    | 3    | 7    | 11     | 3    | 7    | 3    | 7    |
| Kansas         | 27                        | 24   | 17   | 25   | 32   | 2               | 5    | 6    | 2    | 7    | 2      | 5    | 6    | 2    | 7    |
| Kentucky       | 47                        | 31   | 46   | 41   | 46   | 7               | 4    | 8    | 12   | 8    | 8      | 5    | 9    | 20   | 8    |
| Louisiana      | 116                       | 96   | 113  | 87   | 112  | 23              | 15   | 18   | 20   | 23   | 25     | 15   | 18   | 22   | 24   |
| Maine          | 48                        | 54   | 35   | 32   | 49   | 6               | 3    | 5    | 7    | 9    | 6      | 4    | 5    | 8    | 9    |
| Maryland       | 145                       | 110  | 130  | 146  | 150  | 11              | 13   | 10   | 20   | 11   | 11     | 14   | 12   | 21   | 16   |
| Massachusetts  | 68                        | 83   | 82   | 89   | 92   | 16              | 12   | 5    | 5    | 13   | 17     | 12   | 6    | 5    | 15   |
| Michigan       | 103                       | 92   | 97   | 90   | 125  | 14              | 19   | 18   | 22   | 33   | 16     | 21   | 19   | 24   | 38   |
| Minnesota      | 84                        | 75   | 50   | 87   | 96   | 12              | 10   | 14   | 16   | 17   | 15     | 12   | 14   | 18   | 17   |
| Mississippi    | 57                        | 41   | 25   | 30   | 43   | 11              | 12   | 2    | 7    | 10   | 12     | 13   | 3    | 10   | 11   |
| Missouri       | 141                       | 111  | 142  | 109  | 137  | 10              | 16   | 13   | 17   | 14   | 12     | 16   | 14   | 17   | 16   |
| Montana        | 17                        | 16   | 14   | 14   | 23   | 9               | 6    | 3    | 6    | 5    | 10     | 6    | 3    | 6    | 5    |
| Nebraska       | 45                        | 25   | 26   | 32   | 22   | 8               | 0    | 1    | 4    | 2    | 8      | 0    | 1    | 4    | 2    |
| Nevada         | 57                        | 48   | 47   | 38   | 48   | 3               | 5    | 7    | 5    | 4    | 4      | 5    | 11   | 5    | 4    |
| New Hampshire  | 40                        | 40   | 44   | 53   | 76   | 4               | 1    | 1    | 4    | 8    | 4      | 1    | 1    | 4    | 9    |
| New Jersey     | 115                       | 123  | 111  | 122  | 109  | 7               | 8    | 3    | 7    | 4    | 7      | 8    | 3    | 8    | 5    |
| New Mexico     | 18                        | 16   | 13   | 10   | 16   | 1               | 2    | 0    | 0    | 2    | 1      | 2    | 0    | 0    | 2    |
| New York       | 197                       | 180  | 175  | 174  | 188  | 21              | 15   | 27   | 15   | 20   | 27     | 18   | 27   | 16   | 22   |
| North Carolina | 145                       | 139  | 124  | 162  | 143  | 22              | 14   | 22   | 18   | 22   | 23     | 16   | 26   | 20   | 23   |
| North Dakota   | 10                        | 5    | 11   | 11   | 15   | 1               | 2    | 4    | 2    | 1    | 1      | 2    | 5    | 2    | 1    |
| Ohio           | 136                       | 108  | 100  | 100  | 113  | 11              | 13   | 15   | 13   | 12   | 11     | 13   | 22   | 13   | 12   |
| Oklahoma       | 71                        | 42   | 50   | 58   | 44   | 12              | 8    | 6    | 11   | 5    | 15     | 9    | 6    | 13   | 5    |
| Oregon         | 70                        | 59   | 61   | 65   | 82   | 17              | 12   | 7    | 15   | 17   | 19     | 12   | 7    | 15   | 19   |
| Pennsylvania   | 59                        | 71   | 66   | 52   | 55   | 9               | 16   | 20   | 4    | 9    | 11     | 17   | 21   | 4    | 11   |
| Rhode Island   | 31                        | 42   | 40   | 37   | 36   | 3               | 1    | 3    | 1    | 0    | 3      | 1    | 3    | 1    | 0    |
| South Carolina | 108                       | 104  | 124  | 123  | 136  | 13              | 26   | 13   | 15   | 20   | 14     | 27   | 14   | 17   | 23   |
| South Dakota   | 18                        | 10   | 8    | 15   | 20   | 3               | 1    | 1    | 4    | 4    | 4      | 1    | 1    | 4    | 5    |
| Tennessee      | 147                       | 119  | 111  | 107  | 116  | 16              | 17   | 13   | 13   | 17   | 21     | 20   | 14   | 13   | 18   |
| Texas          | 162                       | 146  | 167  | 154  | 176  | 32              | 28   | 34   | 39   | 48   | 32     | 31   | 39   | 44   | 53   |
| Utah           | 99                        | 76   | 80   | 79   | 94   | 6               | 10   | 5    | 5    | 5    | 8      | 12   | 5    | 5    | 5    |
| Vermont        | 3                         | 2    | 5    | 4    | 4    | 0               | 1    | 1    | 0    | 1    | 0      | 1    | 1    | 0    | 1    |
| Virginia       | 89                        | 64   | 60   | 70   | 83   | 13              | 10   | 15   | 9    | 19   | 15     | 11   | 17   | 9    | 21   |
| Washington     | 105                       | 94   | 122  | 107  | 98   | 28              | 17   | 22   | 28   | 18   | 30     | 17   | 22   | 29   | 18   |
| West Virginia  | 19                        | 16   | 24   | 11   | 24   | 4               | 3    | 3    | 2    | 5    | 4      | 3    | 3    | 2    | 5    |
| Wisconsin      | 110                       | 79   | 102  | 103  | 103  | 23              | 12   | 9    | 19   | 16   | 23     | 12   | 9    | 20   | 20   |
| Wyoming        | 9                         | 6    | 11   | 8    | 8    | 1               | 0    | 4    | 0    | 3    | 1      | 0    | 4    | 0    | 3    |
| AS             | 0                         | 0    | 0    | 0    | 0    | 0               | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    |
| CNMI           | 1                         | 0    | 0    | 0    | 0    | 0               | 0    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    |
| Guam           | 1                         | 1    | 2    | 4    | 0    | 0               | 1    | 2    | 0    | 0    | 0      | 1    | 3    | 0    | 0    |
| Puerto Rico    | 1                         | 2    | 3    | 5    | 6    | 1               | 2    | 2    | 4    | 1    | 2      | 2    | 2    | 5    | 1    |
| Virgin Islands | 2                         | 0    | 2    | 2    | 0    | 1               | 0    | 0    | 1    | 0    | 1      | 0    | 0    | 2    | 0    |
| *AT            | 4                         | 10   | 10   | 16   | 8    | 0               | 3    | 1    | 0    | 2    | 0      | 4    | 1    | 0    | 2    |
| *GM            | 6                         | 3    | 4    | 5    | 8    | 1               | 0    | 0    | 2    | 1    | 1      | 0    | 0    | 2    | 1    |
| *PC            | 4                         | 2    | 5    | 3    | 6    | 1               | 1    | 3    | 0    | 0    | 1      | 7    | 4    | 0    | 0    |

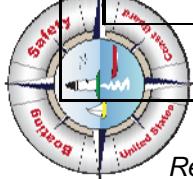
\*1997 was the first year statistics were compiled for accidents that occurred three or more miles offshore in the Atlantic Ocean and Pacific Ocean and nine or more miles in the Gulf of Mexico.

**Table 33 • NUMBER OF ACCIDENTS BY PRIMARY ACCIDENT TYPE & STATE 2016****Casualty Data**

| Injuries | Totals | 4463 | 305 | 8   | 565 | 53 | 31 | 4   | 1051 | 143 | 121 | 160 | 2170 | 284 | 158 | 81 | 34 | 470 | 413 | 42 | 32 | 0  | 278 | 10 | 48 | 0  | 509 | 192 | 701 | 2903 |    |    |
|----------|--------|------|-----|-----|-----|----|----|-----|------|-----|-----|-----|------|-----|-----|----|----|-----|-----|----|----|----|-----|----|----|----|-----|-----|-----|------|----|----|
| AK       | 26     | 8    | 0   | 4   | 1   | 0  | 0  | 0   | 4    | 1   | 0   | 0   | 0    | 2   | 0   | 0  | 0  | 3   | 3   | 0  | 0  | 0  | 0   | 0  | 0  | 0  | 0   | 15  | 4   | 19   | 19 |    |
| AL       | 46     | 1    | 0   | 14  | 0   | 0  | 0  | 9   | 1    | 1   | 2   | 0   | 1    | 6   | 5   | 0  | 2  | 2   | 2   | 0  | 0  | 0  | 0   | 0  | 0  | 0  | 0   | 11  | 3   | 14   | 30 |    |
| AR       | 47     | 2    | 0   | 10  | 1   | 0  | 0  | 13  | 0    | 3   | 0   | 0   | 1    | 0   | 0   | 0  | 4  | 8   | 0   | 0  | 2  | 0  | 0   | 0  | 0  | 0  | 8   | 2   | 10  | 23   |    |    |
| AZ       | 90     | 0    | 1   | 4   | 0   | 0  | 0  | 36  | 0    | 2   | 4   | 0   | 2    | 0   | 3   | 0  | 0  | 12  | 8   | 1  | 3  | 0  | 12  | 1  | 1  | 0  | 2   | 3   | 5   | 6    | 66 |    |
| CA       | 386    | 32   | 1   | 27  | 7   | 1  | 0  | 115 | 8    | 4   | 9   | 0   | 14   | 22  | 12  | 2  | 10 | 42  | 42  | 2  | 2  | 0  | 32  | 0  | 2  | 0  | 33  | 14  | 47  | 277  |    |    |
| CO       | 43     | 5    | 0   | 2   | 0   | 0  | 0  | 8   | 0    | 1   | 2   | 0   | 2    | 2   | 1   | 0  | 0  | 11  | 1   | 1  | 2  | 0  | 0   | 5  | 0  | 1  | 0   | 7   | 5   | 12   | 21 |    |
| CT       | 47     | 4    | 0   | 4   | 0   | 0  | 0  | 4   | 3    | 2   | 0   | 0   | 5    | 4   | 0   | 2  | 1  | 5   | 9   | 0  | 0  | 0  | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0    | 1  |    |
| DC       | 2      | 0    | 0   | 1   | 0   | 0  | 0  | 0   | 0    | 0   | 0   | 0   | 0    | 0   | 0   | 0  | 0  | 0   | 0   | 0  | 0  | 0  | 0   | 0  | 0  | 0  | 0   | 0   | 0   | 0    | 0  |    |
| DE       | 23     | 3    | 0   | 3   | 0   | 0  | 0  | 6   | 0    | 0   | 2   | 0   | 0    | 0   | 1   | 0  | 0  | 0   | 7   | 0  | 0  | 0  | 0   | 0  | 0  | 0  | 1   | 0   | 0   | 1    | 1  |    |
| FL       | 684    | 25   | 1   | 176 | 8   | 6  | 0  | 167 | 13   | 12  | 26  | 1   | 26   | 37  | 16  | 19 | 5  | 72  | 47  | 8  | 3  | 0  | 12  | 0  | 4  | 0  | 40  | 30  | 70  | 411  |    |    |
| GA       | 112    | 5    | 0   | 8   | 1   | 0  | 0  | 31  | 0    | 7   | 3   | 0   | 3    | 7   | 6   | 0  | 0  | 13  | 13  | 1  | 1  | 0  | 12  | 0  | 1  | 0  | 13  | 9   | 22  | 80   |    |    |
| HI       | 14     | 5    | 0   | 0   | 0   | 0  | 0  | 0   | 0    | 1   | 0   | 0   | 0    | 0   | 0   | 0  | 0  | 4   | 3   | 0  | 1  | 0  | 0   | 0  | 0  | 0  | 0   | 4   | 4   | 8    | 4  |    |
| IA       | 37     | 5    | 0   | 4   | 0   | 1  | 0  | 9   | 0    | 1   | 2   | 0   | 2    | 4   | 0   | 0  | 4  | 1   | 1   | 0  | 0  | 3  | 0   | 0  | 0  | 0  | 0   | 0   | 5   | 2    | 7  | 20 |
| ID       | 50     | 2    | 0   | 6   | 1   | 0  | 0  | 15  | 2    | 2   | 2   | 0   | 1    | 1   | 0   | 0  | 0  | 4   | 4   | 0  | 0  | 0  | 9   | 0  | 1  | 0  | 7   | 3   | 10  | 36   |    |    |
| IL       | 74     | 2    | 0   | 12  | 2   | 0  | 1  | 21  | 9    | 2   | 3   | 0   | 0    | 4   | 1   | 2  | 0  | 6   | 2   | 1  | 2  | 0  | 3   | 0  | 1  | 0  | 5   | 4   | 9   | 40   |    |    |
| IN       | 40     | 2    | 0   | 6   | 0   | 0  | 0  | 10  | 0    | 1   | 0   | 0   | 3    | 5   | 0   | 0  | 5  | 1   | 1   | 0  | 0  | 6  | 0   | 0  | 0  | 0  | 0   | 5   | 2   | 7    | 27 |    |
| KS       | 32     | 5    | 0   | 3   | 0   | 0  | 0  | 6   | 1    | 0   | 1   | 0   | 0    | 2   | 0   | 0  | 0  | 6   | 3   | 0  | 1  | 0  | 2   | 0  | 0  | 0  | 7   | 0   | 7   | 21   |    |    |
| KY       | 46     | 3    | 1   | 1   | 1   | 0  | 0  | 18  | 0    | 1   | 0   | 0   | 1    | 6   | 2   | 0  | 0  | 4   | 4   | 0  | 1  | 0  | 3   | 0  | 0  | 0  | 6   | 2   | 8   | 37   |    |    |
| LA       | 112    | 1    | 0   | 25  | 3   | 6  | 0  | 16  | 1    | 6   | 0   | 1   | 8    | 0   | 0   | 2  | 10 | 12  | 1   | 0  | 0  | 3  | 0   | 1  | 0  | 17 | 7   | 24  | 92  |      |    |    |
| MA       | 92     | 9    | 0   | 7   | 2   | 2  | 0  | 27  | 1    | 8   | 1   | 0   | 4    | 4   | 0   | 5  | 0  | 9   | 11  | 0  | 0  | 0  | 2   | 0  | 0  | 0  | 11  | 4   | 15  | 38   |    |    |
| MD       | 150    | 8    | 1   | 14  | 2   | 2  | 0  | 27  | 2    | 3   | 7   | 0   | 18   | 10  | 9   | 3  | 3  | 11  | 3   | 1  | 0  | 5  | 5   | 1  | 1  | 0  | 11  | 5   | 16  | 116  |    |    |
| ME       | 49     | 6    | 0   | 2   | 1   | 2  | 0  | 6   | 0    | 4   | 0   | 0   | 7    | 3   | 1   | 1  | 2  | 0   | 0   | 0  | 0  | 0  | 0   | 0  | 0  | 0  | 6   | 3   | 9   | 23   |    |    |
| MI       | 125    | 19   | 0   | 9   | 1   | 0  | 0  | 28  | 1    | 9   | 5   | 0   | 3    | 7   | 8   | 6  | 1  | 8   | 5   | 2  | 4  | 0  | 7   | 1  | 1  | 0  | 31  | 7   | 38  | 65   |    |    |
| MN       | 96     | 11   | 0   | 4   | 3   | 0  | 0  | 28  | 2    | 3   | 4   | 0   | 3    | 4   | 0   | 0  | 5  | 5   | 1   | 1  | 0  | 11 | 0   | 0  | 0  | 15 | 2   | 17  | 72  |      |    |    |
| MO       | 137    | 2    | 0   | 21  | 1   | 0  | 0  | 23  | 6    | 2   | 7   | 0   | 22   | 12  | 4   | 3  | 2  | 4   | 7   | 1  | 0  | 0  | 20  | 0  | 0  | 0  | 13  | 3   | 16  | 107  |    |    |
| MS       | 43     | 5    | 0   | 9   | 0   | 0  | 0  | 7   | 2    | 0   | 2   | 0   | 1    | 5   | 3   | 1  | 1  | 5   | 1   | 0  | 0  | 0  | 0   | 1  | 0  | 0  | 7   | 4   | 11  | 21   |    |    |
| MT       | 23     | 3    | 0   | 2   | 0   | 0  | 0  | 6   | 0    | 2   | 0   | 0   | 2    | 1   | 0   | 0  | 2  | 2   | 0   | 0  | 0  | 0  | 1   | 0  | 0  | 5  | 0   | 5   | 26  |      |    |    |
| NC       | 143    | 6    | 1   | 23  | 1   | 0  | 1  | 41  | 6    | 7   | 8   | 0   | 3    | 15  | 3   | 2  | 0  | 6   | 10  | 0  | 0  | 8  | 0   | 2  | 0  | 0  | 17  | 6   | 23  |      |    |    |
| ND       | 15     | 1    | 0   | 0   | 0   | 0  | 0  | 6   | 0    | 1   | 0   | 0   | 3    | 0   | 0   | 0  | 2  | 1   | 0   | 0  | 0  | 0  | 1   | 0  | 0  | 0  | 0   | 1   | 1   | 12   |    |    |



Table 33 Continued • NUMBER OF ACCIDENTS BY PRIMARY ACCIDENT TYPE & STATE 2016





**Table 34 - NUMBER OF INJURED VICTIMS BY PRIMARY INJURY & VESSEL TYPE**



**Table 35 • NUMBER OF FATAL VICTIMS BY LIFE JACKET WEAR,  
CAUSE OF DEATH & VESSEL TYPE 2016**

# **REGISTRATION DATA**

### **Explanation of Registration Data Section**

The following section contains five tables and figures that examine boat registration information. Registered vessels are those vessels that are required to be recorded by a state, which includes numbered vessels and other forms of registration. Not all states have the same registration requirements. While some states may only register vessels with a motor, others may register sailboats, canoes, kayaks, and rowboats in addition to those vessels with a motor.

#### **Recreational Vessel Registration by Year, 1980-2016 (Table 36 & Figure 15, Page 69)**

This table provides information about recreational vessel registration for each year from 1980-2016. The accompanying figure displays a trend line from 1980-2016.

#### **Recreational Vessel Registration by Length & Means of Propulsion (Table 37, Page 70)**

The top section of the table provides tallies for the number of mechanically-propelled vessels, the number of manually-propelled vessels, and a summation of these two categories. The middle section of the table documents mechanically-propelled vessel registration by length category. The bottom section of the table focuses on manually-propelled vessels.

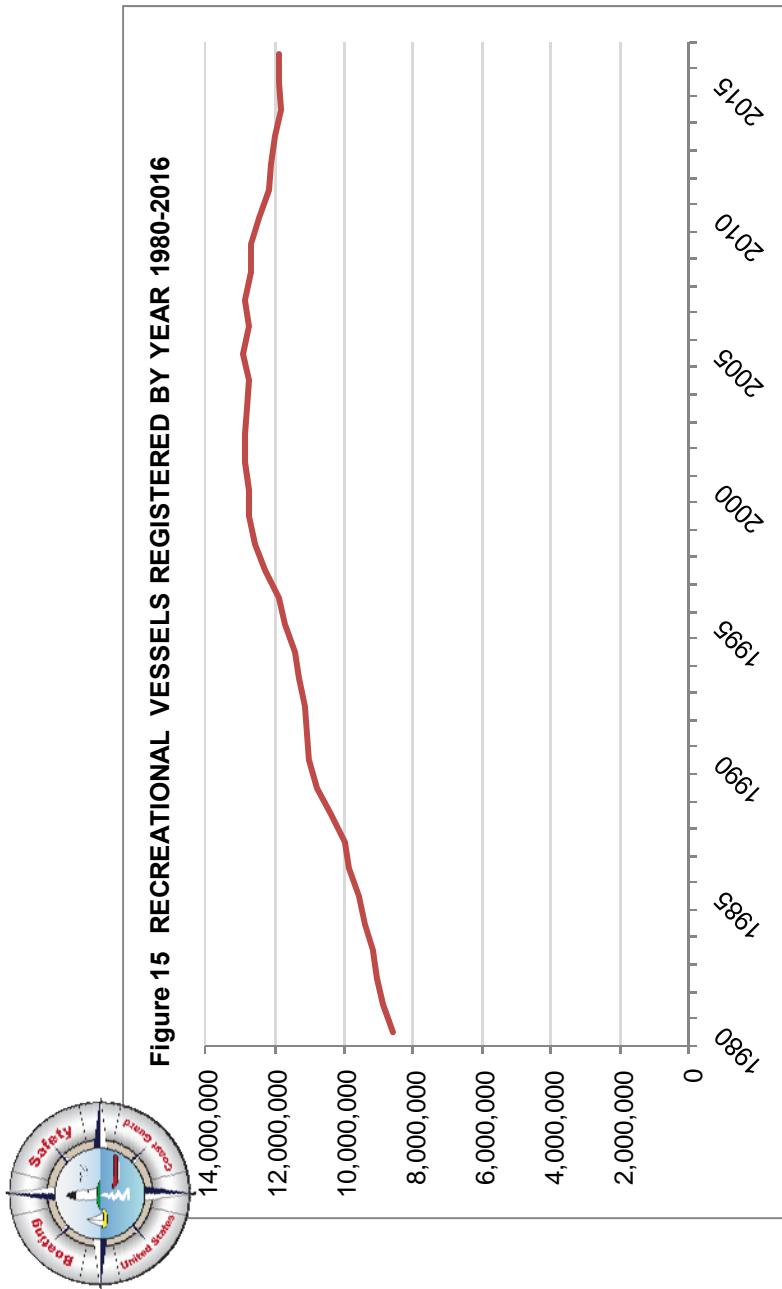
#### **Registration Data by State (Table 38, Page 71)**

This table examines recreational vessel registration, deaths, and fatality rates by state for years 2015 and 2016. The fatality rate is calculated by dividing the number of fatalities by the total vessel registration. The Coast Guard then multiplied by a factor of 100,000 to arrive at the number of deaths per 100,000 registered vessels. When examining a state fatality rate, it is important to note that the state fatality rate may include deaths from vessels that were registered in another state. This table also specifies the scope of the state's registration program.

#### **Distribution of 2016 Recreational Vessel Registration by State (Figure 16, Page 72)**

This figure provides the percentage that each state contributed to national registration figures. So, for instance, California registered 697,412 vessels. Out of the total national registration of 11,861,811 California contributed 5.9% ( $(697,412/11,861,811) \times 100$ ) of registered vessels. Please note that percentages have been rounded.

| Table 36 • RECREATIONAL VESSELS REGISTERED BY YEAR, 1980-2016 |                    |
|---|--------------------|
| Year  | Registered Vessels |
| 1980  | 8,577,857          |
| 1981  | 8,905,097          |
| 1982  | 9,073,972          |
| 1983  | 9,165,094          |
| 1984  | 9,420,011          |
| 1985  | 9,589,483          |
| 1986  | 9,876,197          |
| 1987  | 9,963,696          |
| 1988  | 10,362,613         |
| 1989  | 10,777,370         |
| 1990  | 10,996,253         |
| 1991  | 11,068,440         |
| 1992  | 11,132,386         |
| 1993  | 11,282,736         |
| 1994  | 11,429,585         |
| 1995  | 11,734,710         |
| 1996  | 11,877,938         |
| 1997  | 12,312,982         |
| 1998  | 12,565,930         |
| 1999  | 12,738,271         |
| 2000  | 12,782,143         |
| 2001  | 12,876,346         |
| 2002  | 12,854,054         |
| 2003  | 12,794,616         |
| 2004  | 12,781,476         |
| 2005  | 12,942,414         |
| 2006  | 12,746,126         |
| 2007  | 12,875,568         |
| 2008  | 12,692,892         |
| 2009  | 12,721,541         |
| 2010  | 12,438,926         |
| 2011  | 12,173,935         |
| 2012  | 12,101,936         |
| 2013  | 12,013,496         |
| 2014  | 11,804,002         |
| 2015  | 11,867,049         |
| 2016  | 11,861,811         |





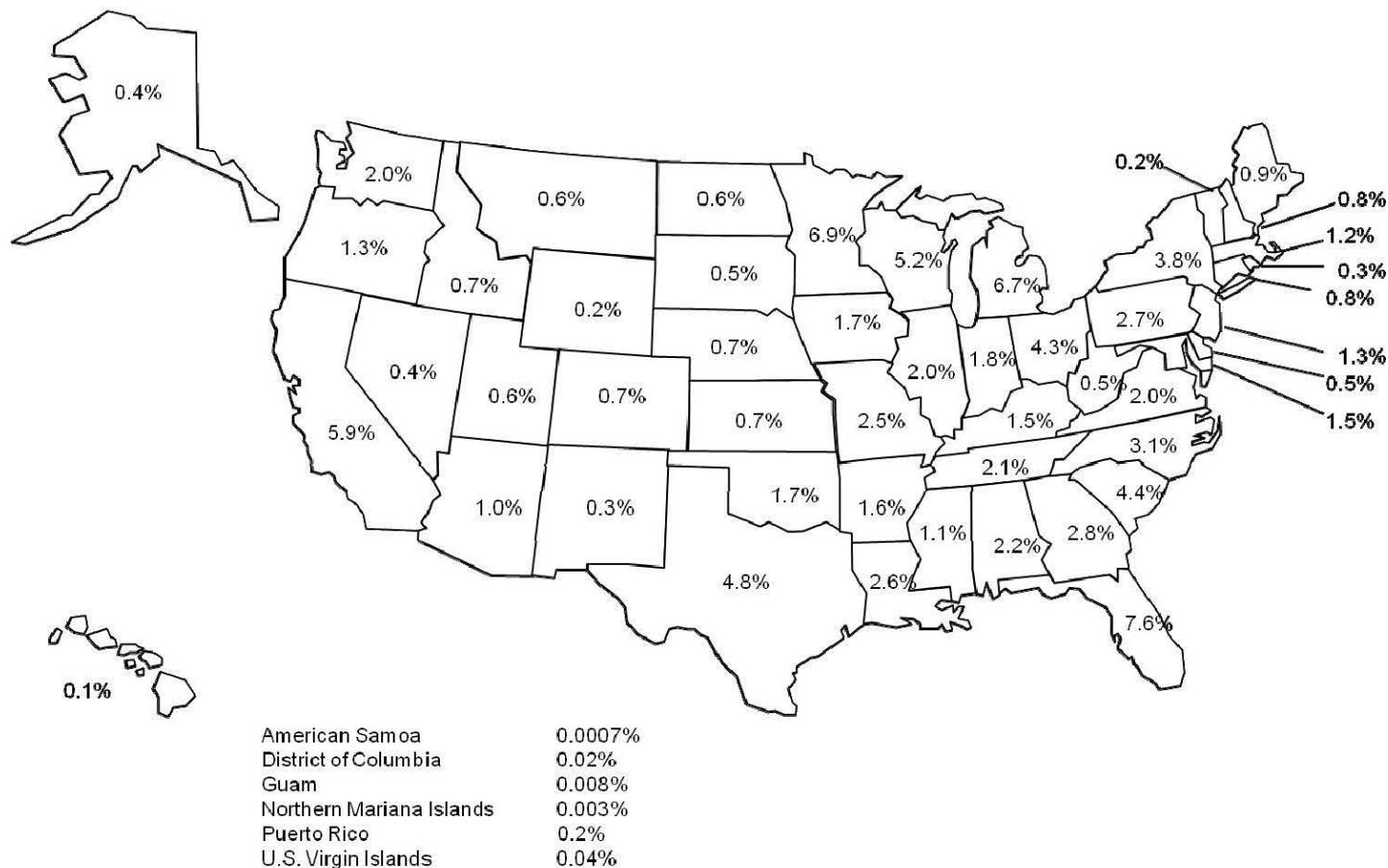
**Table 37 • RECREATIONAL VESSEL REGISTRATION BY LENGTH AND MEANS OF PROPULSION 2016**

|                                   |                   |
|-----------------------------------|-------------------|
| <b>MECHANICALLY PROPELLED</b>     | <b>11,005,841</b> |
| Under 16 feet                     | 4,182,114         |
| 16 to less than 26 feet           | 6,244,590         |
| 26 to less than 40 feet           | 492,564           |
| 40 to 65 feet                     | 75,311            |
| Over 65 feet                      | 11,262            |
| <b> </b>                          |                   |
| <b>NOT MECHANICALLY PROPELLED</b> | <b>855,970</b>    |
| Rowboats                          | 96,696            |
| Sailboats                         | 107,807           |
| Paddlecraft                       | 449,279           |
| Other                             | 202,188           |
| <b> </b>                          |                   |
| <b>TOTAL</b>                      | <b>11,861,811</b> |

**Table 38 • RECREATIONAL VESSEL REGISTRATION DATA BY STATE 2015-2016**

|          | 2016         |        |               | 2015         |        |               | Scope of Current Boat Registration System                         |
|----------|--------------|--------|---------------|--------------|--------|---------------|---|
|          | Registration | Deaths | Fatality Rate | Registration | Deaths | Fatality Rate |   |
|          | 11,861,811   | 701    | 5.9           | 11,867,049   | 626    | 5.3           |   |
| AK       | 51,144       | 19     | 37.2          | 50,781       | 7      | 13.8          | All undocumented powerboats                                       |
| AL       | 261,741      | 14     | 5.3           | 261,183      | 21     | 8.0           | All motorboats, sailboats and rental boats                        |
| AR       | 189,514      | 10     | 5.3           | 171,268      | 9      | 5.3           | All watercraft  |
| AZ       | 123,263      | 5      | 4.1           | 124,076      | 6      | 4.8           | All motorized watercraft  |
| CA       | 697,412      | 47     | 6.7           | 772,542      | 48     | 6.2           | All motorboats; sailboats over 8 feet in length                   |
| CO       | 84,676       | 12     | 14.2          | 84,111       | 8      | 9.5           | All watercraft powered by motor or sail - sailboards exempt       |
| CT       | 93,364       | 3      | 3.2           | 95,527       | 6      | 6.3           | All motorboats; sailboats 19.5 feet or more in length             |
| DC       | 2,115        | 0      | 0.0           | 2,120        | 0      | 0             | All watercraft  |
| DE       | 61,901       | 1      | 1.6           | 59,467       | 0      | 0             | All motorboats  |
| FL       | 905,298      | 70     | 7.7           | 889,350      | 52     | 5.8           | All motorboats  |
| GA       | 335,723      | 22     | 6.6           | 327,657      | 22     | 6.7           | All motorboats; sailboats 12 feet or more in length               |
| HI       | 11,238       | 8      | 71.2          | 10,807       | 5      | 46.3          | All motorboats; sailboats over 8 feet in length                   |
| IA       | 205,145      | 7      | 3.4           | 236,466      | 3      | 1.3           | All watercraft with exceptions (a)                                |
| ID       | 87,211       | 10     | 11.5          | 86,969       | 13     | 14.9          | All motorboats and sailboats                                      |
| IL       | 242,275      | 9      | 3.7           | 236,513      | 11     | 4.7           | All watercraft, except non-powered vessels on private waters      |
| IN       | 209,622      | 7      | 3.3           | 209,867      | 5      | 2.4           | All motorboats on public waterways                                |
| KS       | 81,243       | 7      | 8.6           | 80,979       | 2      | 2.5           | All motorboats and sailboats                                      |
| KY       | 173,881      | 8      | 4.6           | 172,315      | 20     | 11.6          | All motorboats, except electric motors 1 hp or less               |
| LA       | 306,689      | 24     | 7.8           | 306,731      | 22     | 7.2           | All motorboats; sailboats more than 12 feet in length             |
| MA       | 140,008      | 15     | 10.7          | 134,678      | 5      | 3.7           | All motorboats  |
| MD       | 176,207      | 16     | 9.1           | 178,798      | 21     | 11.7          | All motorboats  |
| ME       | 111,116      | 9      | 8.1           | 107,475      | 8      | 7.4           | All motorboats  |
| MI       | 794,137      | 38     | 4.8           | 787,637      | 24     | 3.0           | All watercraft with exceptions (b)                                |
| MN       | 817,560      | 17     | 2.1           | 808,627      | 18     | 2.2           | All watercraft with exceptions (c)                                |
| MO       | 293,185      | 16     | 5.5           | 293,660      | 17     | 5.8           | All motorboats; sailboats over 12 feet in length                  |
| MS       | 132,441      | 11     | 8.3           | 134,991      | 10     | 7.4           | All motorboats and sailboats                                      |
| MT       | 68,229       | 5      | 7.3           | 60,087       | 6      | 10.0          | All motorboats; sailboats 12 feet or more in length               |
| NC       | 367,225      | 23     | 6.3           | 374,823      | 20     | 5.3           | All motorboats; sailboats more than 14 feet in length             |
| ND       | 67,022       | 1      | 1.5           | 69,581       | 2      | 2.9           | All watercraft  |
| NE       | 87,596       | 2      | 2.3           | 86,853       | 4      | 4.6           | All motorboats  |
| NH       | 94,806       | 9      | 9.5           | 92,979       | 4      | 4.3           | All motorboats; sailboats 12 feet or more in length               |
| NJ       | 150,968      | 5      | 3.3           | 151,450      | 8      | 5.3           | All watercraft with exceptions (d)                                |
| NM       | 33,780       | 2      | 5.9           | 33,933       | 0      | 0             | All motorboats and sailboats                                      |
| NV       | 42,426       | 4      | 9.4           | 41,794       | 5      | 12.0          | All motorboats  |
| NY       | 448,480      | 22     | 4.9           | 446,582      | 16     | 3.6           | All motorboats  |
| OH       | 505,082      | 12     | 2.4           | 474,185      | 13     | 2.7           | All watercraft  |
| OK       | 202,388      | 5      | 2.5           | 203,829      | 13     | 6.4           | All watercraft  |
| OR       | 156,168      | 19     | 12.2          | 168,175      | 15     | 8.9           | All motorboats; sailboats 12 feet or more in length               |
| PA       | 315,503      | 11     | 3.5           | 318,873      | 4      | 1.3           | All motorboats and certain non-powered craft (e)                  |
| RI       | 40,178       | 0      | 0.0           | 40,075       | 1      | 2.5           | All motorboats and rowboats over 12 feet                          |
| SC       | 518,269      | 23     | 4.4           | 502,210      | 17     | 3.4           | All watercraft  |
| SD       | 59,485       | 5      | 8.4           | 58,972       | 4      | 6.8           | All motorboats; all other boats over 12 feet in length            |
| TN       | 254,091      | 18     | 7.1           | 257,172      | 13     | 5.1           | All motorboats and sailboats                                      |
| TX       | 573,425      | 53     | 9.2           | 572,666      | 44     | 7.7           | All motorboats and sailboats 14 feet or more in length            |
| UT       | 65,873       | 5      | 7.6           | 66,497       | 5      | 7.5           | All motorboats and sailboats                                      |
| VA       | 233,236      | 21     | 9.0           | 234,052      | 9      | 3.8           | All motorboats  |
| VT       | 29,353       | 1      | 3.4           | 28,179       | 0      | 0             | All motorboats  |
| WA       | 234,035      | 18     | 7.7           | 228,528      | 29     | 12.7          | All motorboats with exceptions (f); sailboats >16 ft in length    |
| WI       | 611,240      | 20     | 3.3           | 623,217      | 20     | 3.2           | All motorboats; sailboats over 12 feet in length                  |
| WV       | 57,305       | 5      | 8.7           | 50,324       | 2      | 4.0           | All motorboats  |
| WY       | 27,288       | 3      | 11.0          | 27,711       | 0      | 0             | All motorboats and sailboats                                      |
| AS       | 82           | 0      | 0.0           | 91           | 0      | 0             | All watercraft  |
| CNMI     | 392          | 0      | 0.0           | 310          | 0      | 0             | All motorboats  |
| GU       | 998          | 0      | 0.0           | 948          | 0      | 0             | All motorboats 7 feet or more, personal watercraft, and sailboats |
| PR       | 24,224       | 1      | 4.1           | 23,746       | 5      | 21.1          | All motorboats; vessels adapted to hold a motor                   |
| VI       | 4,555        | 0      | 0.0           | 4,612        | 2      | 43.4          | All watercraft  |
| Offshore |              | 3      |               |              | 2      |               |   |

(a) IA excludes inflatables under 7 feet in length and canoes/kayaks under 13 feet in length. (b) MI excludes manually propelled boats 16 feet or less in length, and privately-owned non-motorized rafts, canoes, and kayaks. (c) MN excludes non-motorized boats ten feet or less in length, duckboats during duckhunting season, and riceboats during harvest season and seaplanes. (d) NJ excludes non-motorized boats less than 12 feet in length and canoes, kayaks, racing shells and rowing sculls. (e) PA registers non-powered craft using lakes or access areas owned by the State Fish & Boat Commission. (f) WA excludes motorboats < 16 feet with motors 10 horsepower or less used solely on exclusive state waters. Due to an invalid CY16 submission, WA's data reflects their CY15 submission.

**Figure 16 DISTRIBUTION OF 2016 RECREATIONAL VESSEL REGISTRATION BY STATE**

DEPARTMENT OF HOMELAND SECURITY  
U.S. Coast Guard  
**RECREATIONAL BOATING ACCIDENT REPORT**

OMB Control Number: 1625-0003

Expires: 03/31/2019

**INSTRUCTIONS:** Use "Report required because" section below to determine if a report is required for your accident. If required, please have each vessel owner or operator involved in the accident submit a report to their state reporting authority. Each boat operator/owner involved in an accident should submit a separate report. For each question below, please provide answers if applicable and if known; otherwise leave blank. Privacy Act Notice: Authority- 46 U.S.C. 6102 and 33 CFR 173 & 174 authorize the collection of information on boating accidents. Purpose-The Coast Guard uses this information for statistical purposes, chiefly to inform the public, to measure the Program's efforts, and to regulate issues relating to boating safety. Routine Uses-The Coast Guard shares this information within the agency, and if state and federal law permit it, to the public.

**REPORT SUBMISSION****Report required because (select all that apply):**

- At least one person in this accident died: If so, how many? \_\_\_\_\_
- At least one injured person in this accident required or was in need of treatment beyond first aid: If so, how many? \_\_\_\_\_
- At least one person in this accident disappeared and has not yet been recovered: If so, how many? \_\_\_\_\_
- All boat and other property damage (e.g., fishing/hunting gear) caused by this accident totaled (or likely totaled) \$2,000 or more:

Approximate value of damage to your boat: \$ \_\_\_\_\_

Approximate value of damage to your other property: \$ \_\_\_\_\_

- Your or another boat in this accident was (or likely was) a total loss

**Report submitted by (select all that apply):**

- Boat Operator (required if possible)
- Boat Owner (if operator unable, or same as operator)
- Other (describe): \_\_\_\_\_

**To be submitted within:**

48 hours (if injury, disappearance or death)  
10 days (if boat/property damage only)

**To be submitted to: (Local State Reporting Authority)****Phone:**

You may submit any comments concerning the accuracy of the burden estimate or any suggestions for reducing the burden to: Commandant (CG-BSX-21), U.S. Coast Guard, Washington, DC 20593-0001 or Office of Management and Budget, Paperwork Reduction Project (1625-0003), Washington, DC 20503. Questions relating to the collection of this data should be sent to the Coast Guard.

**For State Agency Use Only**

|            |           |
|------------|-----------|
| First Name | Last Name |
|------------|-----------|

**Phone:**

|            |           |       |
|------------|-----------|-------|
| First Name | Last Name | Phone |
|------------|-----------|-------|

**Primary Cause of Accident****ACCIDENT SUMMARY****WHEN**

Date: \_\_\_\_\_ Time: \_\_\_\_\_ am  pm   
(mm/dd/yyyy) (select one)

**ACCIDENT DESCRIPTION:** Briefly describe this accident  
(attach extra pages if necessary)

**WHERE**

Body of Water Name

Location (on water) description

**DAMAGE TO YOUR BOAT:** Briefly summarize any damage to your boat

Nearest city/town

County: \_\_\_\_\_ State: \_\_\_\_\_

**YOUR BOAT – PEOPLE**

# people on board (including operator): \_\_\_\_\_

# people being towed (e.g., on tubes, skis): \_\_\_\_\_

# people wearing lifejackets (on board or towed): \_\_\_\_\_

**OTHER BOATS INVOLVED IN ACCIDENT**

# of other boats involved: \_\_\_\_\_

**DAMAGE TO YOUR OTHER PROPERTY: (NOT BOAT)**  
Briefly summarize any damage to your other property (not boat)

USCG Boating Accident Report Form

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

### YOUR BOAT

#### BOAT IDENTIFICATION

|                                |                          |                          |                          |                          |                          |                          |                          |                          |  |
|--------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
| Your Boat Name:                | Manufacturer:            |                          |                          |                          |                          |                          |                          |                          |  |
| Model Name:                    | Model Year:              |                          |                          |                          |                          |                          |                          |                          |  |
| Registration #:                | Documentation #:         |                          |                          |                          |                          |                          |                          |                          |  |
| Hull Identification #<br>(HIN) | <input type="checkbox"/> | Rented: <input type="checkbox"/> Yes <input type="checkbox"/> No |

#### SIZE ESTIMATES

|             |   |     |     |                                 |
|-------------|---|-----|-----|---------------------------------|
| Length: ft. | Depth from transom (stem) to keel (bottommost point): | ft. | in. | Beam width at widest point: ft. |
|-------------|---|-----|-----|---------------------------------|

#### HULL MATERIAL

##### Type of Hull Material (select one)

|            |       |                     |                   |
|------------|-------|---------------------|-------------------|
| Fiberglass | Wood  | Rubber/vinyl/canvas | Other (describe): |
| Aluminum   | Steel | Plastic             |                   |

#### BOAT TYPE

| Boat Type (select one) |             |          |   |           | Available Propulsion (select all that apply) |  |  |  |
|------------------------|-------------|----------|---|-----------|--|--|--|--|
| Cabin motorboat        | Inflatable  | Canoe    | Personal watercraft (PWC)<br>(e.g., Wave Runner™, Jet Ski™, Sea-Doo™) | Propeller | Air thrust                                   |  |  |  |
| Open motorboat         | Houseboat   | Rowboat  |   | Sail      | Other (describe):                            |  |  |  |
| Auxiliary sail         | Sail (only) | Air boat |   | Manual    |  |  |  |  |
| Pontoon boat           | Kayak       |          |   | Water jet |  |  |  |  |

#### ENGINE

| # Engines            | Engine type and horsepower (select one) |                  |         |      |          | Fuel type (select all that apply) |          |  |  |
|----------------------|---|------------------|---------|------|----------|-----------------------------------|----------|--|--|
| Manufacturer         | Outboard                                | Sterndrive (I/O) | Inboard | None | Gasoline | Diesel                            | Electric |  |  |
| Total horsepower: hp |   |                  |         |      |          |                                   |          |  |  |

#### SAFETY MEASURES

Organizations that have conducted a vessel safety check (VSC) on board your boat within the past year (*including carriage of safety equipment, e.g., lifejackets, anchor and line, fire extinguishers*):

|                                      |  |   |  |
|--------------------------------------|--|---|--|
| US Coast Guard Auxiliary: VSC Decal? | <input type="checkbox"/> Yes <input type="checkbox"/> No | Federal Agency (Name)                   |  |
| US Power Squadrons: VSC Decal?       | <input type="checkbox"/> Yes <input type="checkbox"/> No | State Agency (Name)                     |  |
|                                      |  | Other Agency (Name)                     |  |
| # Life jackets on board:             | # Fire extinguishers on board:                           | Type of fire extinguishers (e.g., ABC): |  |
|                                      | # Fire extinguishers used:                               | Amount of fire extinguishers used:      |  |

#### ACCIDENT DETAILS – EXTERNAL CONDITIONS

#### WEATHER

| Overall weather was (select one) |         | It was (select one)          | Visibility was (select one) | Wind was (select one)            |
|----------------------------------|---------|------------------------------|-----------------------------|----------------------------------|
| Clear                            | Raining | Day                          | Good                        | 0 mph (none)                     |
| Cloudy                           | Snowing | Night                        | Fair                        | Over 0, up to 12 mph (light)     |
| Foggy                            | Hazy    |                              | Poor                        | Over 12, up to 25 mph (moderate) |
| Other (describe):                |         | Approximate air temperature: | °F                          | Over 25, up to 55 mph (strong)   |
|                                  |         |                              |                             | Over 55 mph (stormy)             |

#### WATER

| Overall water conditions (select one): | Other water conditions:                              |  |  |     |    |
|--|--|--|--|-----|----|
| Up to 6 in. waves (calm)               | Approximate water temperature:                       |  |  | °F  |    |
| Over 6 in., up to 2 ft. waves (choppy) | Strong current?                                      |  |  | Yes | No |
| Over 2 ft., up to 6 ft. waves (rough)  | Hazardous waters? (e.g., rapid tidal flow, currents) |  |  | Yes | No |
| Over 6 ft. waves (very rough)          | Congested waters?                                    |  |  | Yes | No |

USCG Boating Accident Report Form

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

### ACCIDENT DETAILS – ACTIVITIES AND OPERATIONS ON YOUR BOAT

#### OPERATOR/PASSENGER ACTIVITIES

Operator/pasenger activities on your boat at time of accident:

Activities were (select one)

Operator/Passenger activities (select all that apply)

|              |                                      |              |                 |
|--------------|--------------------------------------|--------------|-----------------|
| Recreational | Fishing                              | Tubing       | Starting engine |
| Commercial   | Hunting                              | Water Skiing | Making repairs  |
|              | White water activity (e.g., rafting) | Relaxing     | Other (list):   |

#### BOAT OPERATIONS

Your boat operations at time of accident (select all that apply)

|                                 |              |                   |                       |
|---------------------------------|--------------|-------------------|-----------------------|
| Cruising (underway under power) | Drifting     | Racing            | Towing another vessel |
| Changing direction              | At anchor    | Rowing/paddling   | Launching             |
| Changing speed                  | Being towed  | Docking/undocking | Tied to dock/mooring  |
| Sailing                         | Other (list) |                   |                       |

### ACCIDENT DETAILS – CONTRIBUTING FACTORS ON YOUR BOAT

#### CONTRIBUTING FACTORS

Indicate factors on your boat which may have contributed to this accident (select all that apply)

|                    |                            |                           |   |
|--------------------|----------------------------|---------------------------|---|
| Alcohol use        | Improper lookout           | Dam/lock                  | Starting in gear  |
| Drug use           | Operator inattention       | Force of wake/wave        | Sharp turn  |
| Excessive speed    | Operator inexperience      | Hazardous waters          | Restricted vision (e.g., fog)                                 |
| Improper anchoring | Language barrier           | Heavy weather             | Mission/inadequate aids to navigation (e.g., buoy, daymarker) |
| Improper loading   | Navigation rules violation | Ignition of fuel or vapor | Inadequate on-board navigation lights                         |
| Overloading        | Failure to vent            | Hull failure              | People on gunwale, bow or transom                             |
| Other (describe):  |                            |                           |   |

### ACCIDENT DETAILS – YOUR BOAT

#### MACHINERY/EQUIPMENT FAILURE

Failure of the following machinery/equipment on your boat contributed to this accident (select all that apply)

|                                     |                |                   |                                       |
|-------------------------------------|----------------|-------------------|---------------------------------------|
| Engine                              | Onboard lights | Shift             | Sound equipment (e.g., horn, whistle) |
| Electrical system                   | Seats          | Radio             | Auxiliary equipment                   |
| Fuel system                         | Steering       | Fire extinguisher | Other (list):                         |
| Sail/mast                           | Throttle       | Ventilation       |                                       |
| Onboard navigation aids (e.g., GPS) |                |                   |                                       |

### ACCIDENT DETAILS – EVENTS ON YOUR BOAT

#### ACCIDENT EVENTS

Types of events occurring to/on your boat during accident (select all that apply)

|  |  |   |
|--|--|---|
| Collision with recreational boat                     | Flooding/swamping  | Person fell overboard                         |
| Collision with commercial boat (e.g., tug, barge)    | Fire/explosion – fuel                                      | Person fell on/within boat                    |
| Collision with fixed object (e.g., dock, bridge)     | Fire/explosion – non-fuel                                  | Sudden medical condition                      |
| Collision with submerged object (e.g., stump, cable) | Carbon monoxide exposure                                   | Person struck by boat                         |
| Collision with floating object (e.g., log, buoy)     | Mishap of skier, tuber, wake boarder, etc.                 | Person struck by propeller or propulsion unit |
| Capsizing  | Person left boat voluntarily                               | Person electrocuted                           |
| Grounding  | Person ejected from boat (caused by collision or maneuver) |   |
| Sinking  | Other (describe)   |   |

*USCG Boating Accident Report Form*

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

**ACCIDENT DETAILS – YOUR BOAT-**  
**INJURED PEOPLE RECEIVING OR IN NEED OF TREATMENT BEYOND FIRST AID**

*Report only injured people on, struck by, or being towed by your boat, receiving or in need of treatment beyond first aid. Do not report injured people on, struck by, or being towed by another boat or no boat (e.g., swimmers, people on a dock). If more than one injured person to report, attach additional copies of this page. If none, SKIP INJURED PEOPLE section.*

**INJURED PERSON**

|            |                               |           |
|------------|-------------------------------|-----------|
| First Name | MI                            | Last Name |
| Street     |                               |           |
| City       | State                         | Zip       |
| Phone      | Date of Birth<br>(mm/dd/yyyy) | Age       |

**INJURY DETAILS**

| Injury caused when person (select all that apply) |     |    | Nature of most serious injury (select one)                 |                       |
|---|-----|----|--|-----------------------|
| Struck the (e.g., boat, water):                   |     |    | Scrape/bruise  | Dislocation           |
| Was struck by a (e.g., boat, propeller):          |     |    | Cut  | Internal organ injury |
| Was exposed to carbon monoxide poisoning          |     |    | Sprain/strain  | Amputation            |
| Received an electric shock                        |     |    | Concussion/brain injury                                    | Burn                  |
| Other (describe):                                 |     |    | Spinal cord injury   | Other (describe):     |
|   |     |    | Broken/fractured bone                                      |                       |
| Person was wearing lifejacket?                    | Yes | No | Body part of most serious injury (e.g., head, trunk, leg): |                       |
| Person received treatment beyond first aid?       | Yes | No |  |                       |
| Person was admitted to a hospital?                | Yes | No |  |                       |

**ACCIDENT DETAILS – YOUR BOAT – DEATHS/DISAPPEARANCES**

*Only report deaths/disappearances of people on, struck by, or being towed by your boat.*

*If more than one death/disappearance to report, attach additional copies of this page.*

*If none, SKIP DEATHS/DISAPPEARANCES section.*

**PERSON WHO DIED/DISAPPEARED**

|            |                               |           |
|------------|-------------------------------|-----------|
| First Name | MI                            | Last Name |
| Street     |                               |           |
| City       | State                         | Zip       |
| Phone      | Date of Birth<br>(mm/dd/yyyy) | Age       |

**DETAILS OF DEATH/DISAPPEARANCE**

| Injury caused when person (select all that apply) |  |  | Nature of death/disappearance (select one) |  |     |    |
|---|--|--|--|--|-----|----|
| Struck the (e.g., boat, water):                   |  |  | Death – by drowning                        |  |     |    |
| Was struck by a (e.g., boat, propeller):          |  |  | Death – other likely cause (describe)      |  |     |    |
| Was exposed to carbon monoxide poisoning          |  |  |  |  |     |    |
| Received an electric shock                        |  |  | Disappeared and not yet recovered          |  |     |    |
| Other (describe):                                 |  |  | Person was wearing lifejacket?             |  | Yes | No |

*USCG Boating Accident Report Form*

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

**ACCIDENT DETAILS – YOUR BOAT OPERATOR**

| <b>OPERATOR INSTRUCTION</b>   |  | <b>OPERATOR SAFETY MEASURES</b>   |     |    |  |
|---|--|---|-----|----|--|
| <b>Boating safety instruction completed (select all that apply)</b> |  | <b>On board, prior to accident, was operator wearing:</b>                   |     |    |  |
| None  |  | A lifejacket?   | Yes | No |  |
| State course  |  | An engine cut-off switch ( <i>Lanyard or wireless device</i> ) if equipped? | Yes | No |  |
| USCG Auxiliary course   |  | On board, prior to accident, was operator using:<br>Alcohol?                | Yes | No |  |
| US Power Squadrons course   |  |   |     |    |  |
| Internet ( <i>name of sponsoring organization</i> )                 |  | Drugs?  | Yes | No |  |
| Other ( <i>describe</i> )   |  | Operator arrested for Boating Under the Influence?                          | Yes | No |  |
|   |  | Weather reports consulted prior to accident?                                | Yes | No |  |

**OPERATOR EXPERIENCE**

**Experience operating this type of boat (select one)**

|               |                          |                           |                |
|---------------|--------------------------|---------------------------|----------------|
| 0 to 10 hours | Over 10, up to 100 hours | Over 100, up to 500 hours | Over 500 hours |
|---------------|--------------------------|---------------------------|----------------|

**ACCIDENT DETAILS – OTHER KEY PEOPLE**

*Only report other key people not already documented as injured, died, disappeared or operator/owner of your boat.*

If more than two other key people to report, attach additional copies of this page.

**NAME/ADDRESS**

**This other key person was a(n) (select all that apply)**

Other boat operator     Other boat owner     Owner of other damaged property     Passenger on your boat     Witness

|            |    |           |
|------------|----|-----------|
| First Name | MI | Last Name |
|------------|----|-----------|

Street

|      |       |     |       |
|------|-------|-----|-------|
| City | State | Zip | Phone |
|------|-------|-----|-------|

Other boat name (*if any*)                      Other boat registration # (*if any*)

**NAME/ADDRESS**

**This other key person was a(n) (select all that apply)**

Other boat operator     Other boat owner     Owner of other damaged property     Passenger on your boat     Witness

|            |    |           |
|------------|----|-----------|
| First Name | MI | Last Name |
|------------|----|-----------|

Street

|      |       |     |       |
|------|-------|-----|-------|
| City | State | Zip | Phone |
|------|-------|-----|-------|

Other boat name (*if any*)                      Other boat registration # (*if any*)

*USCG Boating Accident Report Form*

For each question below, please provide answers IF APPLICABLE AND IF KNOWN, otherwise leave blank.

**YOUR BOAT OPERATOR**

**NAME/ADDRESS**

|            |    |           |
|------------|----|-----------|
| First Name | MI | Last Name |
|------------|----|-----------|

Street

|      |       |     |
|------|-------|-----|
| City | State | Zip |
|------|-------|-----|

**AGE/GENDER/PHONE**

|                               |     |        |      |        |       |
|-------------------------------|-----|--------|------|--------|-------|
| Date of Birth<br>(mm/dd/yyyy) | Age | Gender | Male | Female | Phone |
|-------------------------------|-----|--------|------|--------|-------|

**YOUR BOAT OWNER**

If same as *your boat operator* SKIP rest of YOUR BOAT OWNER section.

**NAME/ADDRESS/PHONE**

|            |    |           |
|------------|----|-----------|
| First Name | MI | Last Name |
|------------|----|-----------|

Street

|      |       |     |       |
|------|-------|-----|-------|
| City | State | Zip | Phone |
|------|-------|-----|-------|

**PERSON SUBMITTING THIS REPORT**

If same as *your boat operator OR owner*, SKIP rest of PERSON SUBMITTING THIS REPORT section.

**NAME/ADDRESS/PHONE/ROLE**

|            |    |           |
|------------|----|-----------|
| First Name | MI | Last Name |
|------------|----|-----------|

Street

|      |       |     |       |
|------|-------|-----|-------|
| City | State | Zip | Phone |
|------|-------|-----|-------|

**I was a(n) (select one)**

Other person on board *this* boat

Accident witness *not* on board *this* boat

Other (*describe*):  
  
\_\_\_\_\_

**SIGNATURE OF PERSON SUBMITTING THIS REPORT**

|                |                   |
|----------------|-------------------|
| Your signature | Date (mm/dd/yyyy) |
|----------------|-------------------|

An Agency may not conduct or sponsor and a person is not required to respond to an information collection, unless it displays a currently valid OMB Control Number.

The Coast Guard estimated that the average burden for this report form is 30 minutes. You may submit any comments concerning the accuracy of this burden estimate or any suggestions for reducing the burden to: Commandant (CG-BSX-21), U.S. Coast Guard, Washington, DC 20593-0001 or Office of Management and Budget, Paperwork Reduction Project (1625-0003), Washington, DC 20503.

## Glossary

**Airboat** - A vessel that is typically flat-bottomed and propelled by an aircraft-type propeller powered by an engine.

**At Anchor** - Held in place in the water by an anchor; includes "moored" to a buoy or anchored vessel and "dragging anchor".

**Auxiliary Sail** - A vessel with sail as its primary method of propulsion and mechanical propulsion as its secondary method.

**Cabin Motorboat** - A vessel propelled by propulsion machinery and providing enclosed spaces inside its structure.

**Canoe** - A small narrow boat, propelled by paddles. Canoes usually are pointed at both bow and stern and are normally open on top, but can be covered.

**Capsizing** - Overturning of a vessel.

**Carbon Monoxide Poisoning** - Death or injury resulting from an odorless, colorless gas generated from auxiliary boat equipment (stoves, heaters, refrigerators, generators, hot water heaters, etc.), another boat's exhaust, or the exhaust of the vessel on which persons were either aboard or in close proximity.

**Collision with Fixed Object** - The striking of any fixed object, above or below the surface of the water.

**Collision with Floating Object** - Collision with any waterborne object above or below the surface that is free to move with the tide, current, or wind, except another vessel.

**Collision with Commercial/Governmental/Recreational Vessel** - Any striking together of two or more vessels, regardless of operation at the time of the accident, is a collision.

**Collision with Submerged Object** - A boat's collision with any waterborne or fixed object that is below the surface of the water.

**Congested Waters** - Where the body of water is either too small or narrow to safely accommodate the number of boats on it.

**Cruising** - Proceeding normally, unrestricted, with an absence of drastic rudder or engine changes.

**Documented Vessel** - A vessel of five or more net tons owned by a citizen of the United States and used exclusively for pleasure with a valid marine document issued by the Coast Guard. Documented vessels are not numbered.

**Drifting** - Underway, but proceeding over the bottom without use of engines, oars or sails; being carried along only by the tide, current, or wind.

**Electrocution** - Death or injury resulting from an electrical current that comes in contact with water causing electrocution of the victim.

**Excessive Speed** - Speed above that which a reasonable and prudent person would have operated under the conditions that existed. It is not necessarily a speed in excess of a posted limit.

**Failure to Vent** - Prior to starting the engine, failure to turn on the powered ventilation system that brings in "fresh air" and expels gasoline vapors from the engine compartment.

**Fall in Vessel** - Any operator or passenger who slips, trips, or falls on board or within the vessel.

**Falls Overboard** - Any operator or passenger who falls off of the vessel.

**Fiberglass (plastic) hull** - Hulls of fiber-reinforced plastic. The laminate consists of two basic components, the reinforcing material (glass filaments) and the plastic or resin in which it is embedded.

**Fire/Explosion (fuel)** - Accidental combustion of vessel fuel, liquids, including their vapors, or other substances such as wood.

**Fire/Explosion (other)** - Accidental burning or explosion of any material onboard except vessel fuels or their vapors.

**Flooding/Swamping** - Filling with water, regardless of method of ingress, but retaining sufficient buoyancy to remain on the surface.

**Force of Wave/Wake** - The track in the water of a moving boat; commonly used for the disturbance of the water (waves) resulting from the passage of the boat's hull.

**Fueling** - Any stage of the fueling operation; primarily concerned with introduction of explosive or combustible vapors or liquids on board.

**Grounding** - Running aground of a vessel, striking or pounding on rocks, reefs, or shoals; stranding.

**Hazardous Waters** - Rapid tidal flows (the vertical movement of water) and/or currents (the horizontal flow of water) resulting in hazardous conditions in which to operate a boat.

**Houseboat** - A motorized vessel that is usually non-planing and designed primarily for multi-purpose accommodation spaces with low freeboard and little or no foredeck or cockpit.

**Hull Failure** - Defect or failure of the structural body of a vessel (i.e., hull material, design, or construction) not including superstructure, masts, or rigging.

**Ignition of Spilled Fuel or Vapor** - Accidental combustion of vessel fuel, liquids, and/or their vapors.

**Improper Anchoring** - Where a boat is either in the process of being anchored incorrectly or incorrectly held in place in the water by an anchor.

**Improper Loading** - Loading, including weight shifting, of the vessel causing instability, limited maneuverability, or dangerously reduced freeboard.

**Improper Lookout** - No proper watch; the failure of the operator to perceive danger because no one was serving as lookout, or the person so serving failed in that regard. Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.

**Inboard** - An engine mounted inside the confines of a vessel which powers a drive shaft that turns a water jet impeller or that runs through the bottom of the hull and is attached to a propeller at the other end.

**Inflatable** - A vessel that uses air-filled flexible fabric for buoyancy.

**Kayak** - A small boat with a cockpit that is propelled by a double-bladed paddle by a sitting paddler.

**Inadequate On-board Navigation Lights** - Insufficient and/or improper lights shown by a boat that indicate course, position, and occupation, such as fishing or towing.

**Machinery Failure** - Defect and/or failure in the machinery or material, design or construction, or components installed by the manufacturer involved in the mechanical propulsion of the boat (e.g., engine, transmission, fuel system, electric system, and steering system).

**Missing or Inadequate Navigation Aids** - The absence of or ineffective presence of navigation aids.

**Motorboat** - Any vessel equipped with propulsion machinery.

**Navigation Rules Violation** - Violation of the statutory and regulatory rules governing the navigation of vessels.

**Numbered vessel** - An undocumented vessel numbered by a state with an approved numbering system under Chapter 123 of title 46, U.S.C.

**Open Motorboat** - A vessel equipped with propulsion machinery and having an open load carrying area that does not have a continuous deck to protect it from the entry of water.

**Operator Inattention** - Failure on the part of the operator to pay attention to the vessel, its occupants, or the environment in which the vessel is operating.

**Operator Inexperience** - Lack of practical experience or knowledge in operating a vessel or, more particularly, the vessel involved in the accident.

**Outboard** - An engine with propeller or water jet integrally attached, which is usually mounted at the stern of a vessel.

**Overloading** - Excessive loading of the vessel causing instability, limited maneuverability, dangerously reduced freeboard, etc.

**People on Gunwale, Bow or Transom** - Standing/Sitting on the upper edge of the side of a boat, usually on a small projection above the deck; and/or standing/sitting on the most forward part of the boat; and/or standing/sitting on the back of the boat.

**Person Struck by Vessel** - A person is struck by a boat.

**Person Struck by Propeller** - A person is struck by the propeller, propulsion unit, or steering machinery.

**Personal Watercraft** - A vessel propelled by a water-jet pump or other machinery as its primary source of motive power and designed to be operated by a person sitting, standing, or kneeling on the vessel, rather than sitting or standing within the vessel's hull.

**Pontoon Boat** - A vessel with a broad, flat deck that is affixed on top of closed cylinders which are used for buoyancy, the basic design of which is usually implemented with two rows of floats as a catamaran or with three rows of floats as a trimaran.

**Restricted Vision** - A vessel operator's vision is said to be restricted when it is limited by a vessel's bow high trim, or by glare, sunlight, bright lights, a dirty windshield, spray, a canopy top, etc.

**Rowboat** - An open vessel manually propelled by oars.

**Sail (only)** - A vessel propelled only by sails.

**Sharp Turn** - An immediate or abrupt change in the boat's course of direction.

**Sinking** - Losing enough buoyancy to settle below the surface of the water.

**Skier Mishap** - Skier mishap is defined by persons (1) falling off their water-skis, (2) striking a fixed or submerged object, or by (3) becoming entangled or struck by the tow line. Also includes mishaps involving inner-tubes and other devices on which a person can be towed behind a boat.

**Standup Paddleboard** - A vessel, typically 7' – 15' in length with enough width and flotation to stay afloat without momentum while boarded, that is propelled by a standing operator with the use of a single or double-bladed paddle.

**Starting in Gear** - The boat's engine is started with the transmission in forward or reverse.

**Steel hull** - Hulls of sheet steel or steel alloy, not those with steel ribs and wood, canvas, or plastic hull coverings.

**Sterndrive** - An engine, powering a propeller through a series of shafts and gears, mounted in front of the transom of a vessel and attached through the transom to a drive unit that is similar to the lower unit of an outboard; and may also be known as an inboard-outdrive or an inboard-outboard.

**Sudden Medical Condition** - An incident where a person on a vessel experiences an unexpected medical condition.

**Towing** - Engaged in towing any vessel or object, other than a person.

**Weather** - As a contributing factor of an accident, "Weather" is supposed to signify a stormy or windy condition, usually connoting rough or high seas and dangerous operating conditions.

**Wood Hull** - Hulls of plywood, molded plywood, wood planking, or any other wood fiber in its natural consistency, including those of wooden construction that have been "sheathed" with fiberglass or sheet metal.

### Glossary of State Codes

|    |                      |      |                          |
|----|----------------------|------|--------------------------|
| AL | Alabama              | NJ   | New Jersey               |
| AK | Alaska               | NM   | New Mexico               |
| AZ | Arizona              | NY   | New York                 |
| AR | Arkansas             | NC   | North Carolina           |
| CA | California           | ND   | North Dakota             |
| CO | Colorado             | OH   | Ohio                     |
| CT | Connecticut          | OK   | Oklahoma                 |
| DE | Delaware             | OR   | Oregon                   |
| DC | District of Columbia | PA   | Pennsylvania             |
| FL | Florida              | RI   | Rhode Island             |
| GA | Georgia              | SC   | South Carolina           |
| HI | Hawaii               | SD   | South Dakota             |
| ID | Idaho                | TN   | Tennessee                |
| IL | Illinois             | TX   | Texas                    |
| IN | Indiana              | UT   | Utah                     |
| IA | Iowa                 | VT   | Vermont                  |
| KS | Kansas               | VA   | Virginia                 |
| KY | Kentucky             | WA   | Washington               |
| LA | Louisiana            | WV   | West Virginia            |
| ME | Maine                | WI   | Wisconsin                |
| MD | Maryland             | WY   | Wyoming                  |
| MA | Massachusetts        | GU   | Guam                     |
| MI | Michigan             | PR   | Puerto Rico              |
| MN | Minnesota            | VI   | Virgin Islands           |
| MS | Mississippi          | AS   | American Samoa           |
| MO | Missouri             | CNMI | Northern Mariana Islands |
| MT | Montana              | AT   | Atlantic Ocean           |
| NE | Nebraska             | GM   | Gulf of Mexico           |
| NV | Nevada               | PC   | Pacific Ocean            |
| NH | New Hampshire        |      |                          |