

2017 RECREATIONAL BOATING STATISTICS

COMDTPUB P16754.31
U.S. DEPARTMENT OF HOMELAND SECURITY
U.S. COAST GUARD
OFFICE OF AUXILIARY AND BOATING SAFETY





2017 EXECUTIVE SUMMARY

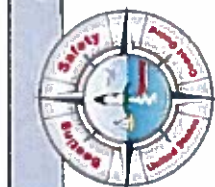
- In 2017, the Coast Guard counted 4,291 accidents that involved 658 deaths, 2,629 injuries and approximately \$46 million dollars of damage to property as a result of recreational boating accidents.
 - The fatality rate was 5.5 deaths per 100,000 registered recreational vessels. This rate represents a 6.8% decrease from the 2016 fatality rate of 5.9 deaths per 100,000 registered recreational vessels.
 - Compared to 2016, the number of accidents decreased 3.9%, the number of deaths decreased 6.1%, and the number of injuries decreased 9.4%.
- Where cause of death was known, 76% of fatal boating accident victims drowned. Of those drowning victims with reported life jacket usage, 84.5% were not wearing a life jacket.
- Where length was known, 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 19% of deaths.
- Where instruction was known, 81% of deaths occurred on boats where the operator did not receive boating safety instruction. Only 14% percent of deaths occurred on vessels where the operator had received a nationally-approved boating safety education certificate.
- There were 172 accidents in which at least one person was struck by a propeller. Collectively, these accidents resulted in 31 deaths and 162 injuries.
- Operator inattention, improper lookout, operator inexperience, machinery failure, and alcohol use 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 (46%), personal watercraft (18%), and cabin motorboats (16%).
- Where data was known, the vessel types with the highest percentage of deaths were open motorboats (47%), kayaks (15%), and personal watercraft (7%).
- The 11,961,568 recreational vessels registered by the states in 2017 represent a 0.84% increase from last year when 11,861,811 recreational vessels were registered.



Table 1 • 2017 EXECUTIVE SUMMARY

TOP FIVE PRIMARY ACCIDENT TYPES						
Accident Rank	Accident Type	Number of Accidents	Number of Deaths	Number of Injuries		
1	Collision with recreational vessel	1145	49	721		
2	Collision with fixed object	470	63	327		
3	Flooding/swamping	435	76	132		
4	Grounding	368	17	224		
5	Falls overboard	306	179	126		
VESSEL TYPES WITH THE TOP CASUALTY NUMBERS						
Casualty Rank	Type of Boat	Drownings	Other Deaths	Total Deaths	Total Injuries	Total Casualties
1	Open motorboat	198	107	305	1367	1672
2	Personal watercraft	17	29	46	624	670
3	Cabin motorboat	15	21	36	220	256
4	Canoe/kayak	122	16	138	107	245
5	Pontoon	28	5	33	133	166
LIFE JACKET WEAR BY TOP FIVE KNOWN CAUSES OF DEATH						
Known Cause of Death Rank	Cause of Death	Number of Deaths	Life Jacket			
			Worn	Not Worn	Unknown if worn	
1	Drowning	449	68	370	11	
2	Trauma	113	38	65	10	
3	Cardiac arrest	13	6	5	2	
4	Hypothermia	6	4	2	0	
5	Carbon monoxide	4	0	4	0	
TOP TEN KNOWN PRIMARY CONTRIBUTING FACTORS OF ACCIDENTS						
Accident Rank	Contributing Factor	Number of Accidents	Number of Deaths	Number of Injuries		
1	Operator inattention	620	45	381		
2	Improper lookout	471	23	337		
3	Operator inexperience	436	63	249		
4	Machinery failure	305	9	80		
5	Alcohol use	275	102	227		
6	Excessive speed	269	11	247		
7	Navigation rules violation	257	22	165		
8	Weather	198	40	60		
9	Hazardous waters	187	64	124		
10	Force of wave/wake	169	17	148		

Table 7 - NUMBER OF VESSELS IN ACCIDENTS BY VESSEL TYPE & PRIMARY CONTRIBUTING FACTOR 2017



All vessels	5876	366	3	41	15	12	63	425	33	193	208	57	67	35	38	762	22	436	28	453	926	621	40	36	68	56	6	23	245	312	286		
Airboat	37	0	0	0	0	0	5	0	0	0	0	1	0	0	0	3	0	4	0	2	4	5	0	0	4	3	0	00	4		2		
Auxiliary sailboat	275	8	0	0	0	7	5	0	2	13	2	3	8	0	38	1	40	0	27	52	24	0	0	1	1	0	1	0	1	25	4	13	
Cabin motorboat	918	43	1	12	0	4	18	66	11	17	17	8	23	1	100	0	170	5	32	172	82	1	0	11	0	0	1	0	1	49	32	41	
Canoe	74	13	0	0	0	2	0	0	1	10	0	0	0	11	2	0	0	0	3	4	12	0	0	0	0	0	0	0	42	1	9		
Houseboat	71	2	1	0	0	3	2	1	1	3	2	1	0	0	6	0	7	0	2	10	13	0	0	1	0	0	0	50	2		9		
Inflatable	27	3	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0	1	1	3	0	0	0	0	0	0	00	1		3		
Kayak	182	9	0	0	8	1	0	1	0	39	1	0	2	3	7	0	0	0	5	8	44	3	0	3	0	0	0	0	1	15	2	30	
Open motorboat	2620	191	1	17	5	4	24	181	17	123	85	30	32	23	17	361	16	154	20	166	412	178	32	26	35	29	6	12	120	210	93		
Personal watercraft	1028	47	0	3	0	0	1	136	4	29	7	4	7	0	2	176	0	19	0	151	181	197	1	0	7	22	0	1	0	21	12		
Pontoon	343	39	0	2	1	1	3	19	0	13	4	5	1	1	0	43	4	24	1	25	49	44	0	8	4	1	0	2	12	32	5		
Rowboat	38	1	0	0	1	1	1	0	0	2	7	1	0	0	3	4	0	0	0	0	6	1	2	1	0	0	0	12	1		3		
Sail (only)	57	1	0	2	0	0	3	0	0	1	1	1	0	0	6	0	4	1	4	11	7	0	0	0	0	0	0	1	9	0	5		
Sail (unknown)	11	0	0	0	0	0	1	0	0	2	0	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	0	1	0	4		
Standup paddleboard	16	1	0	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	0	2	4	0	0	0	0	0	0	0	0	1	0	5	
Other	28	2	0	1	0	0	0	4	0	1	2	1	0	0	1	2	1	2	0	2	5	2	0	0	0	0	0	0	0	0	1		
Unknown	161		0	4	0	0	51	30			2	1	0	0	0	13	0	11	1	92		4	1	1	2	0	0	20	2		51		



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	5876	577	4138	1161	658	49	455	154	2629	294	1906	429
Airboat	37	0	36	1	4	0	3	1	28	0	27	1
Auxiliary sailboat	275	6	223	46	6	0	6	0	40	0	30	10
Cabin motorboat	918	7	752	159	36	0	27	9	220	1	181	38
Canoe	74	7	52	15	44	8	31	5	42	2	32	8
Houseboat	71	15	36	20	8	3	3	2	34	5	29	0
Inflatable	27	3	14	10	21	1	12	8	7	2	3	2
Kayak	182	8	118	56	94	5	58	31	65	2	37	26
Open motorboat	2620	114	2056	450	305	9	232	64	1367	69	1093	205
Personal watercraft	1028	323	546	159	46	6	34	6	624	180	354	90
Pontoon	343	83	187	73	33	11	15	7	133	29	87	17
Rowboat	38	2	27	9	20	1	16	3	11	1	10	0
Sailboat (only)	57	2	47	8	11	1	7	3	18	0	17	1
Sailboat (unknown)	11	0	0	11	1	0	0	1	5	0	0	5
Standup paddleboard	16	5	7	4	11	3	5	3	4	2	1	1
Other	28	2	19	7	6	1	5	0	3	1	1	1
Unknown	151	0	18	133	12	0	1	11	28	0	4	24



Table 24 • NUMBER OF DEATHS BY VESSEL TYPE 2017

Vessel type	Drownings	Deaths by Causes other than Drowning	Total Deaths	Percentage of Deaths from Drowning
Airboat	3	1	4	75%
Auxiliary Sailboat	4	2	6	67%
Cabin Motorboat	15	21	36	42%
Canoe	41	3	44	93%
Houseboat	2	6	8	25%
Inflatable	17	4	21	81%
Kayak	81	13	94	86%
Open Motorboat	198	107	305	65%
Personal Watercraft	17	29	46	37%
Pontoon	28	5	33	85%
Rowboat	19	1	20	95%
Sailboat (only)	5	6	11	45%
Sailboat (unknown)	0	1	1	0%
Standup paddleboard	10	1	11	91%
Other	6	0	6	100%
Unknown	3	9	12	25%
Total	449	209	658	68%

Figure 8 NUMBER OF DEATHS BY VESSEL TYPE 2017

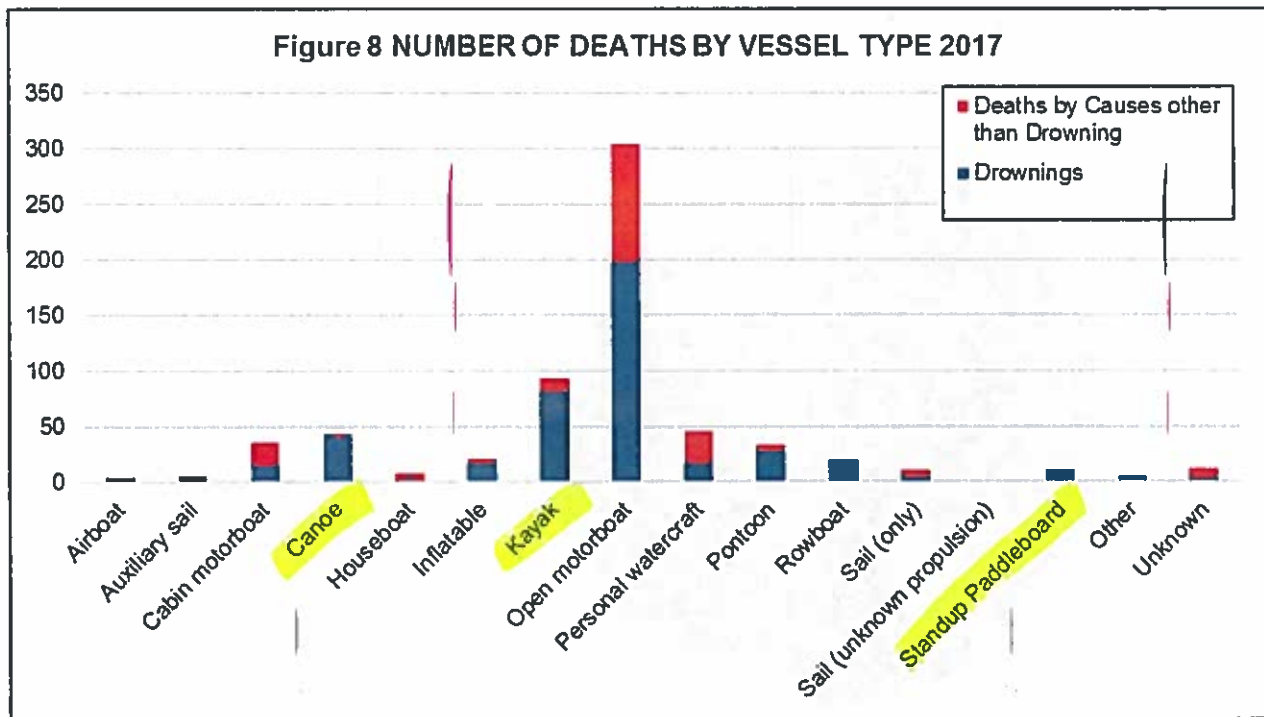


Figure 9 PERCENT OF DEATHS BY VESSEL TYPE, 2004-2017

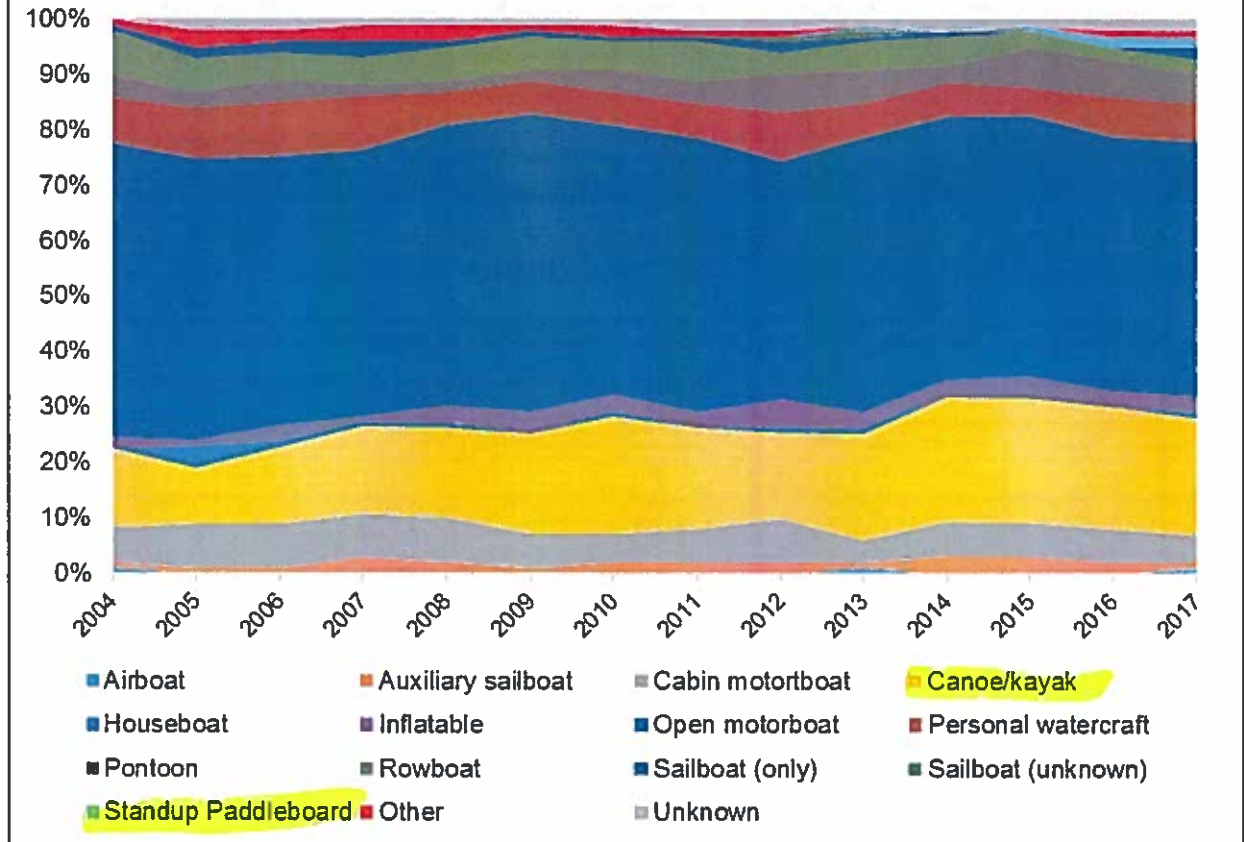


Table 25 - PERCENT OF DEATHS BY VESSEL TYPE, 2004-2017

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Airboat	1%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%	1%
Auxiliary sailboat	1%	1%	1%	3%	2%	1%	2%	2%	2%	1%	3%	3%	2%	1%
Cabin motorboat	6%	8%	8%	8%	8%	6%	5%	6%	8%	4%	6%	6%	6%	5%
Canoe/kayak	14%	10%	14%	16%	16%	18%	21%	18%	16%	19%	22%	22%	22%	21%
Houseboat	0%	4%	1%	1%	1%	0%	1%	0%	1%	1%	0%	0%	0%	1%
Inflatable	2%	1%	3%	1%	3%	4%	3%	3%	5%	3%	3%	4%	3%	3%
Open motorboat	52%	51%	49%	49%	50%	53%	48%	49%	44%	49%	46%	46%	46%	46%
Personal watercraft	8%	9%	10%	10%	6%	6%	6%	6%	9%	6%	6%	5%	7%	7%
Pontoon	4%	3%	4%	2%	2%	2%	4%	4%	7%	6%	3%	7%	7%	5%
Rowboat	8%	6%	5%	5%	6%	6%	5%	7%	4%	5%	5%	3%	2%	3%
Sailboat (only)	1%	2%	2%	3%	1%	1%	1%	1%	2%	1%	1%	0%	0%	2%
Sailboat (unknown)	0%	0%	0%	0%	0%	0%	0%	0%	1%	1%	0%	0%	0%	0%
Standup paddleboard	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	1%	2%	2%
Other	1%	3%	2%	3%	3%	1%	2%	1%	1%	0%	0%	0%	1%	1%
Unknown	0%	2%	2%	1%	1%	1%	1%	2%	2%	1%	2%	1%	2%	2%



Table 26 • NUMBER OF DECEASED VICTIMS BY AGE AND VESSEL TYPE
2017

Age of Deceased Victim	Type of Vessel														Drownings	Other deaths	Total deaths		
	Airboat	Auxiliary sailboat	Cabin motorboat	Canoe	Houseboat	Inflatable	Kayak	Open motorboat	Personal watercraft	Pontoon	Rowboat	Sailboat (only)	Sailboat (unknown)	Standup paddleboard				Other	Unknown
Total	4	6	36	44	8	21	94	305	46	33	20	11	1	11	6	12	449	209	658
1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2	0	2
4	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
5	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	2	0	2
6	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
7	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	1	2
8	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	2	3
9	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	1
10	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
11	0	0	0	0	0	0	1	0	2	0	0	1	0	0	0	0	2	2	4
12	0	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0	0	4	4
0-12	0	0	1	1	3	0	2	11	3	0	0	1	0	0	0	1	11	12	23
13 - 19	0	0	2	3	0	0	4	12	7	1	3	2	0	0	1	1	18	18	36
20 - 29	0	0	3	10	0	5	25	27	14	3	1	0	0	3	2	2	66	29	95
30 - 39	0	0	7	8	3	4	15	36	9	3	2	0	0	3	0	3	64	29	93
40 - 49	0	0	4	3	1	4	16	54	7	9	6	3	0	3	1	2	82	31	113
50 - 59	1	1	7	6	1	3	10	74	3	8	3	1	1	0	0	1	86	34	120
60 - 69	1	3	8	10	0	5	14	47	3	6	2	4	0	1	1	1	73	33	106
70 - 79	1	1	3	2	0	0	8	33	0	3	3	0	0	1	1	1	40	17	57
80 and Over	1	1	1	1	0	0	0	10	0	0	0	0	0	0	0	0	9	5	14
Unknown	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1




Table 27 - NUMBER OF INJURED VICTIMS BY AGE AND VESSEL TYPE 2017

Age of Injured Victim	Total injuries	Airboat	Auxiliary sailboat	Cabin motorboat	Canoe	Houseboat	Inflatable	Kayak	Open motorboat	Personal watercraft	Pontoon	Rowboat	Sailboat (only)	Sailboat (unknown)	Standup paddleboard	Other	Unknown
Total	2629	28	40	220	42	34	7	65	1367	624	133	11	18	5	4	3	28
0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
1	4	0	0	1	0	0	0	0	0	2	1	0	0	0	0	0	0
2	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
3	6	1	0	0	0	1	0	0	1	1	2	0	0	0	0	0	0
4	12	0	0	0	0	1	0	0	6	4	1	0	0	0	0	0	0
5	8	0	0	1	0	0	0	1	2	3	1	0	0	0	0	0	0
6	9	0	0	1	0	0	0	0	7	1	0	0	0	0	0	0	0
7	7	0	0	0	0	1	0	0	2	3	1	0	0	0	0	0	0
8	13	0	0	1	0	0	0	0	5	4	3	0	0	0	0	0	0
9	22	0	0	1	1	0	0	0	12	3	3	0	1	0	1	0	0
10	31	0	0	2	0	1	0	1	14	10	3	0	0	0	0	0	0
11	30	0	0	3	0	0	0	0	16	7	4	0	0	0	0	0	0
12	41	0	0	0	1	0	0	1	25	12	2	0	0	0	0	0	0
0 - 12	186	1	0	10	2	4	0	3	91	51	22	0	1	0	1	0	0
13 - 19	404	0	1	14	4	0	1	8	210	143	14	2	3	0	1	0	3
20 - 29	491	5	4	31	8	0	1	13	232	168	19	2	4	0	0	1	3
30 - 39	377	5	5	31	5	1	2	7	203	94	18	3	0	0	0	1	2
40 - 49	365	9	7	37	8	2	1	8	205	71	13	1	0	1	1	0	1
50 - 59	342	4	7	46	4	1	1	10	181	63	21	0	2	0	1	1	0
60 - 69	193	1	5	20	3	2	0	7	112	19	16	2	5	0	0	0	1
70 - 79	79	2	4	11	2	0	0	3	46	4	2	1	2	0	0	0	2
80 and Over	17	0	1	2	2	0	0	0	11	1	0	0	0	0	0	0	0
Unknown	175	1	6	18	4	24	1	6	76	10	8	0	1	4	0	0	16



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

Primary Injury	Number of Injuries	Airboat	Auxiliary sailboat	Cabin motorboat	Canoe	Houseboat	Inflatable	Kayak	Open motorboat	Personal watercraft	Pontoon	Rowboat	Sailboat (only)	Sailboat	Standup	Other	Unknown
Amputation	29	0	2	4	0	1	0	0	18	2	1	0	0	0	1	0	0
Broken bone	479	7	4	30	2	0	0	2	215	192	18	1	6	0	2	0	0
Burns	93	1	3	31	0	6	0	0	47	5	0	0	0	0	0	0	0
Carbon monoxide	14	0	0	9	0	2	0	0	3	0	0	0	0	0	0	0	0
Concussion	251	0	2	23	1	3	2	3	132	68	9	1	4	0	0	0	3
Dislocation	52	2	2	3	0	0	1	2	28	12	2	0	0	0	0	0	0
Electric shock	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hypothermia	237	0	5	14	29	0	3	36	116	11	2	4	8	3	0	0	6
Internal organ injury	111	1	6	6	1	0	0	4	42	43	4	0	0	0	0	0	4
Laceration	569	7	6	41	2	4	0	2	344	110	48	1	0	0	0	1	3
Scrape/bruise	371	7	4	28	1	16	0	5	191	98	19	1	0	0	0	1	0
Shock	4	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0	0
Spinal cord injury	52	1	0	4	1	0	0	0	38	7	1	0	0	0	0	0	0
Sprain/strain	144	0	2	10	0	0	1	3	84	28	12	3	0	0	1	0	0
Other	6	1	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
Unknown	217	1	4	17	5	2	0	8	101	48	16	0	0	2	0	1	12
All Injuries	2629	28	40	220	42	34	7	65	1367	624	133	11	18	5	4	3	28

Table 35 - NUMBER OF FATAL VICTIMS BY LIFE JACKET WEAR, CAUSE OF DEATH & VESSEL TYPE 2017

Cause of Death	Life jacket worn?	Number of deaths	Airboat	Auxiliary sailboat	Cabin motorboat	Canoe	Houseboat	Inflatable	Kayak	Open motorboat	Personal watercraft	Pontoon	Rowboat	Sailboat (only)	Sailboat (unknown)	Standup paddleboard	Other	Unknown
Carbon monoxide	Yes	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	No	4	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cardiac arrest	Yes	6	0	1	0	0	0	0	1	3	1	0	0	0	0	0	0	0
	No	5	0	0	1	0	0	0	0	2	1	0	1	0	0	0	0	0
	Unknown	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
Drowning	Yes	68	0	0	0	9	0	8	26	17	3	1	1	0	0	3	0	0
	No	370	3	4	15	32	2	9	50	176	13	27	18	5	0	7	6	3
	Unknown	11	0	0	0	0	0	0	5	5	1	0	0	0	0	0	0	0
Hypothermia	Yes	4	0	0	0	0	0	0	1	3	0	0	0	0	0	0	0	0
	No	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	Yes	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	No	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	Unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trauma	Yes	38	0	0	2	0	1	0	0	12	19	0	0	4	0	0	0	0
	No	65	0	0	7	0	2	0	0	46	6	3	0	1	0	0	0	0
	Unknown	10	1	0	0	0	1	0	0	7	0	1	0	0	0	0	0	0
Unknown	Yes	8	0	0	0	0	0	0	0	6	0	0	0	1	0	0	0	1
	No	41	0	0	4	3	0	2	5	20	2	0	0	1	0	1	0	3
	Unknown	22	0	1	3	0	0	2	6	5	0	0	0	0	0	0	0	5
All Causes		658	4	6	36	44	8	21	94	305	46	33	20	11	1	11	6	12



Table 37 • RECREATIONAL VESSEL REGISTRATION BY LENGTH AND MEANS OF PROPULSION 2017

MECHANICALLY PROPELLED	11,090,600
Under 16 feet	4,193,365
16 to less than 26 feet	6,318,918
26 to less than 40 feet	495,460
40 to 65 feet	71,562
Over 65 feet	11,295
NOT MECHANICALLY PROPELLED	870,968
Rowboats	103,895
Sailboats	102,878
Paddlecraft	492,420
Other	171,775
TOTAL	11,961,568