2008 Life Jacket Wear Rate Observation Study

featuring

National Wear Rate Data from 1998 to 2008

&

An Evaluation of the California Delta's "Wear It!" Campaign from 2006 to 2008

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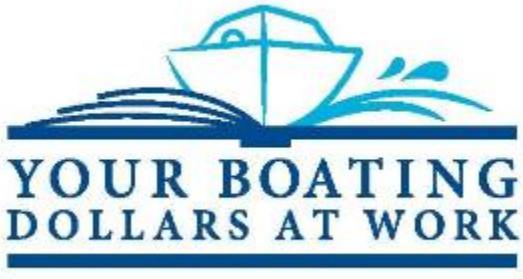

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CHAPTER 1: NATIONAL TREND DATA

CHAPTER 2: EVALUATION OF THE CALIFORNIA DELTA "WEAR IT!" CAMPAIGN

From the authors:

Certain tables, figures, and relevant text in this report have been corrected to reflect revised statistical procedures used in the 2009 Life Jacket Observation Study, created in April 2010. No conclusions were affected by these revisions.

In two figures in the original 2008 report, rates were reported without controlling for age and boat type. These have been corrected in this version. When controlling for age and boat type, on page 4 (Figure 1.2), the overall mean life jacket wear rate for all boaters with PWCs in 2008 went from 22.6% to 23.4%. Without PWCs, the overall mean life jacket wear rate for all boaters in 2008 went from 17.3% to 17.9%. Similarly, on page 6 (Figure 1.3), the adult wear rate on all boats except PWCs went from 8.1% to 9.0%. Accompanying text reflects these changes.

On page 35 (Figure 1.15), the label was changed from "Non Water-skiers" to "Towing Water-skiers" and a footnote was added to explain what types of boaters were included.

I. Introduction

This report provides data and analysis on the 2008 National Life Jacket Wear Rate Observation Study with comparison information from the previous ten year's studies (1998-2007). Tracking changes in life jacket wear rates over time provides important statistics for those individuals and groups responsible for educating the public about boating safety, improving boating safety programs, and for legislative efforts targeting safety improvements for recreational boating. The Boating Statistics 2007 report, published by the Department of Homeland Security United States Coast Guard (USCG), shows that among the 476 drowning deaths in 2007, approximately 90% (427) of the individuals were not wearing a life jacket. These statistics make it essential to not only track the national life jacket wear rate among recreational boaters, but also to understand the circumstances and patterns in which life jackets are worn.

Calendar year 2008 marked the eleventh year of life jacket wear rate data collection efforts conducted by JSI. The eleven years of data allow for a higher level of analysis (i.e., controlling for the impact of influencing factors like age, weather, and boat type) in order to unmask potential trends and indicators of increased or decreased life jacket wear among different groups of recreational boaters (e.g., adult boaters or male boaters). Overall, examining all groups of recreational boaters together, the average life jacket wear rate for 2008 was 23.4%, essentially the same as previous years, where the lowest rate was 21.3% (1999) and the highest was 23.9% (1998). However, this overall mean life jacket wear rate obscures the influence of age and boat type on life jacket wear.

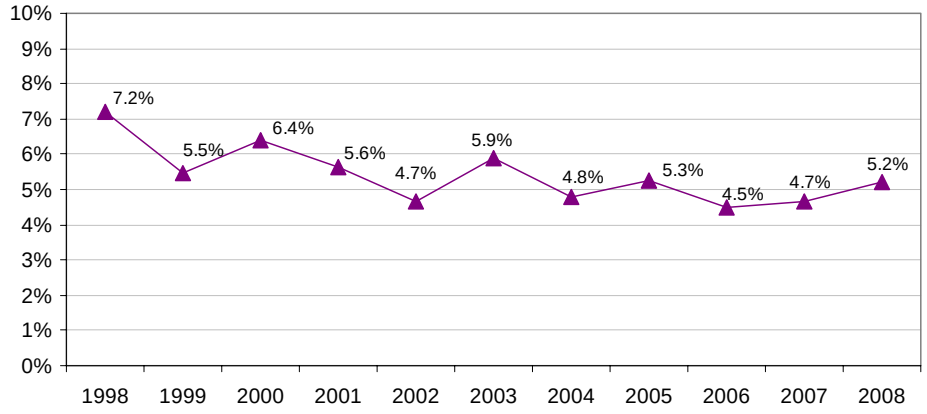
Most information in Chapter 1 is presented separately for adults and youth and by boat types. See methods and characteristics of the eleven years of data starting on page 22.

II. Strategic Plan Objective: Adult Life Jacket Wear on Open Motorboats 2006 to 2008

In 2005 the National Boating Safety Advisory Council (NBSAC) recommended the creation of a strategic plan for the National Recreation Boating Safety Program. The goals, objectives, and strategies in this Plan can help all partners in boating safety work together to reduce the incidents of preventable deaths, injuries, and property damage. One of the objectives of the Strategic Plan is to increase the observed life jacket wear rate of adults in open motorboats. For the purposes of this measurement, open motorboats includes the: Skiff/Utility and Runabout/Speedboat categories.

We have seen some encouraging results thus far. The baseline wear rate for adults in open motorboats was 4.5% in 2006. In 2007 this wear rate was 4.7%: The 2008 wear rate was 5.2%. See Figure 1.1 below for all years.

Figure 1.1 Adult Wear Rates On Open Motorboats* 1998-2008
(Weighted with 2006 Skiff-Speedboat Proportion)



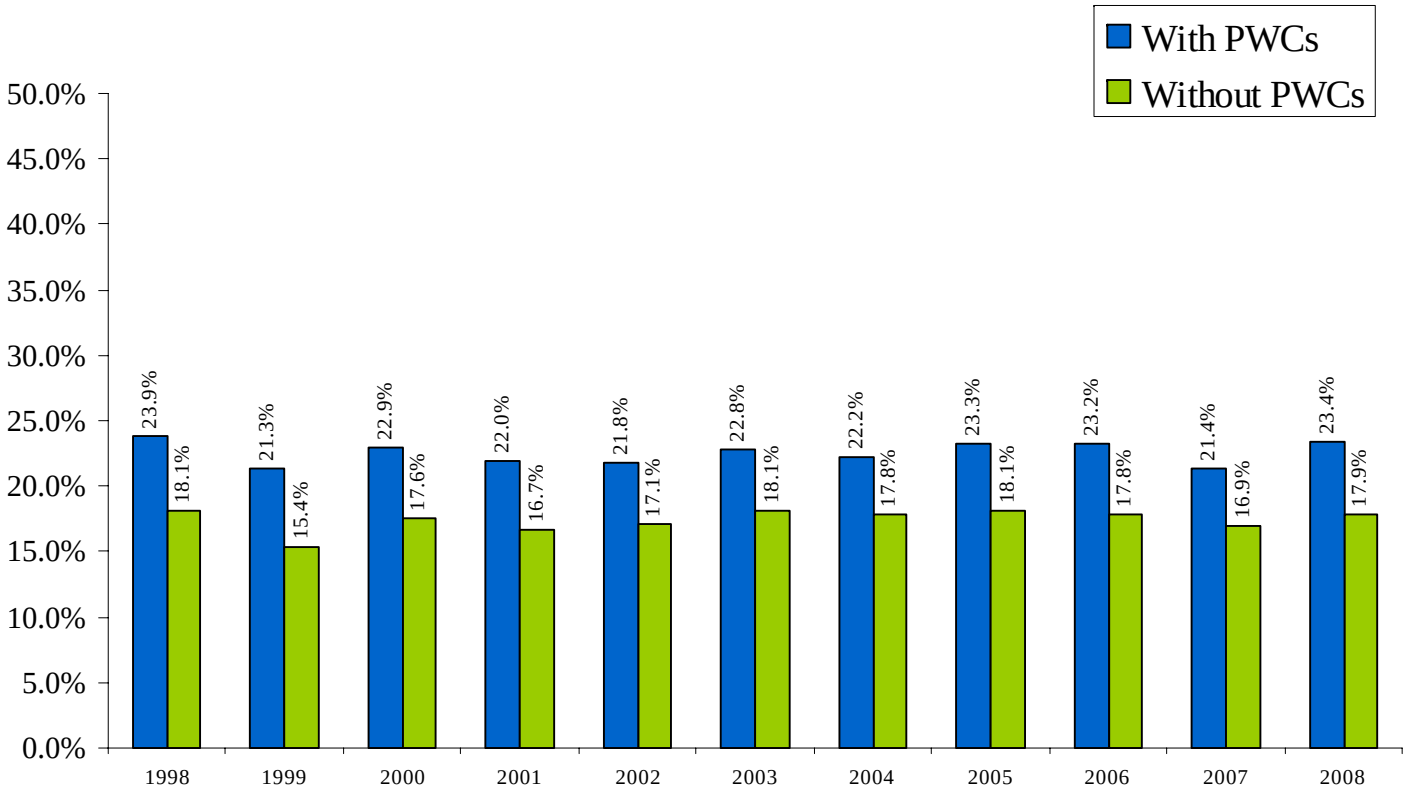
*The Open Motorboat category is created by grouping "Skiffs" and "Speedboat/Runabouts" together. The proportion of Skiffs to Speedboat/Runabouts has been set in each year to reflect the proportions observed in 2006, the year in which the Strategic Plan goals were first created.

III. Results

OVERALL LIFE JACKET WEAR: 1998 to 2008

Figure 1.2 shows the impact of Personal Watercraft wear rates (PWC) for each year's overall average wear rate (adults and youth together) by both including and excluding PWC's from the analysis. With PWC's in the analysis, the overall wear rate for 2008 was 23.4%; with them out of the calculation, the 2008 rate drops to 17.9%. There has been little variation in these rates across the eleven years, with the highest rate with PWC recorded in 1998 at 23.9% and the lowest in 1999 at 21.3%. For rates without PWC's, the highest rate of 18.1% was recorded in three different years: 1998, 2003 and 2005; the lowest rate of 15.4% was recorded in 1999.

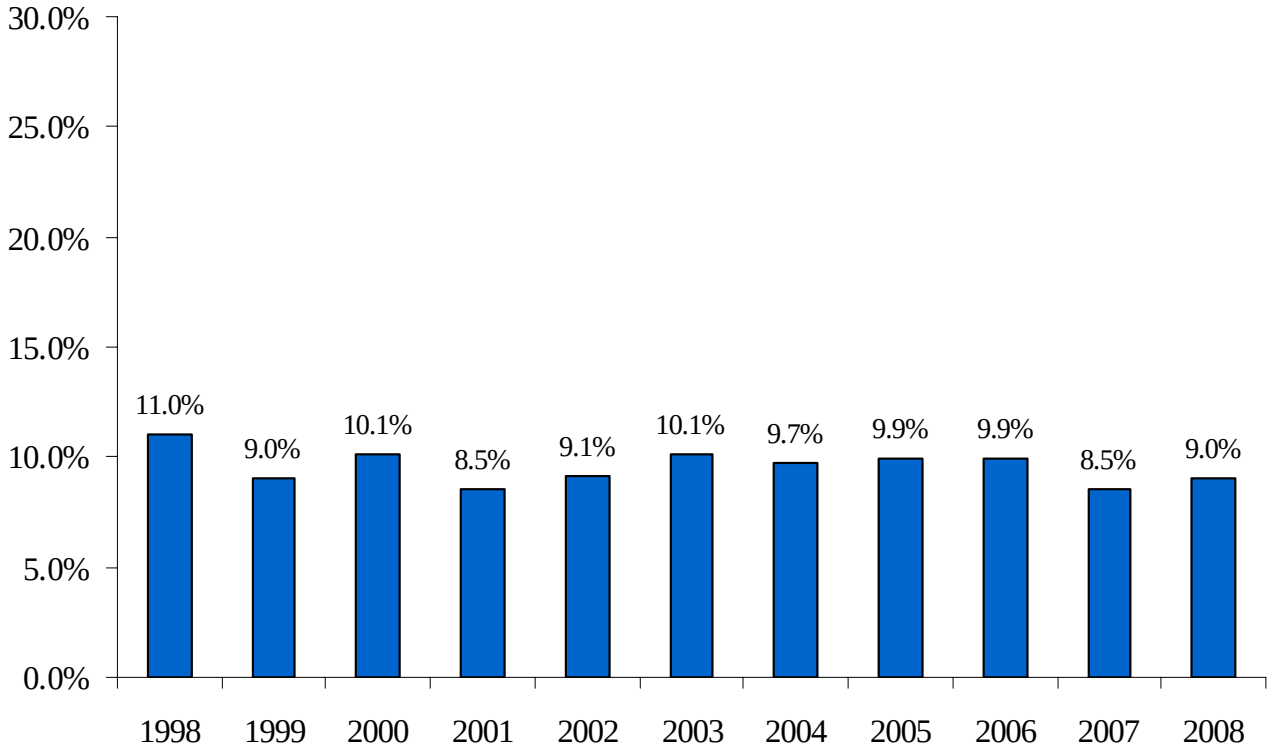
Figure 1.2 – Overall Mean Life Jacket Wear Rates ALL Boaters[1]



[1]2008 wear rates were corrected in April 2010.

The overall wear rate for adults only excluding PWCs in 2008 is 9.0% (see Figure 1.3), which is a slight increase from the previous year.

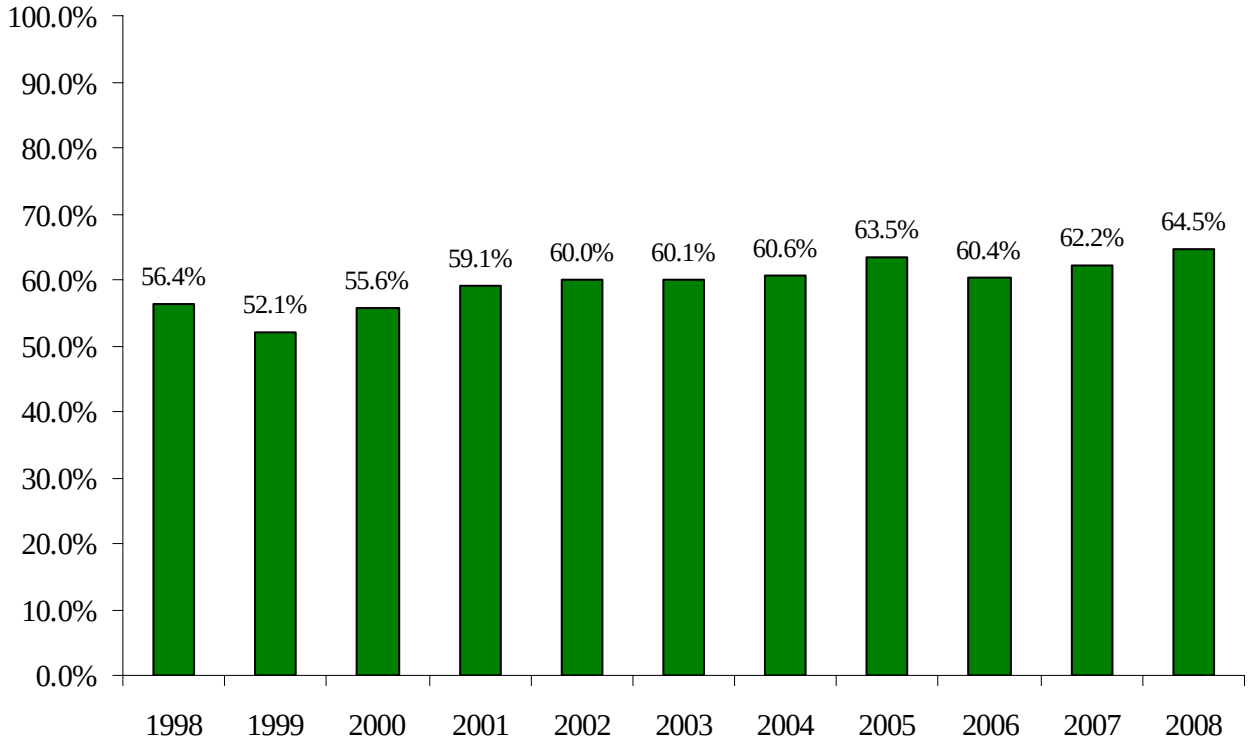
Figure 1.3 – Life Jacket Wear Among Adult Boaters, All boats except PWCs[2]



[2]2008 wear rates were corrected in April 2010.

Figure 1.4 shows the overall wear rate trend for all youth (17 years or younger) on all boats except PWCs. These rates are relatively high across the eleven years of the study with the general small upward trend. The rate for 2008 is 64.5%, the highest it has been since the beginning of the study.

Figure 1.4 – Life Jacket Wear Among Youth Boaters (17 years or younger), All boats except PWCs



Age.

Table 1.1 presents information by the different age groupings used in the study. For youth we continue to see increases in wear rates for the 6 to 12 year old group of boaters. The 2008 wear rate for this group is the highest it has ever been at 87.3% wearing. The good news continues in the two other youth age categories in 2008: under 6 year olds (92.2% in 2007 to 93.5% in 2008) and teens (31.5% up to 33.2%) which for teens is also the highest wear rates for this group across the eleven years of observations.

For adults ages 18 to 64 and 65+ there are no noticeable upward trends overall across the eleven years of data collection. In 2008 there was a small increase in overall wear rates for the 18 to 64 year old group, from 8.4% the previous year to 9.1%. For older boaters (65+) the wear rates were lower compared to the previous year (11.7%) to a 2008 rate of 6.1%.

Table 1.1 Life Jacket Wear Rates by Age Excluding Boaters on PWCs*

Age	1998 % (N's)	1999 % (N's)	2000 % (N's)	2001 % (N's)	2002 % (N's)	2003 % (N's)	2004 % (N's)	2005 % (N's)	2006 % (N's)	2007 % (N's)	2008 % (N's)
0-5 yrs	81.4% (672)	80.6% (500)	89.1% (716)	91.7% (703)	90.1% (676)	90.3% (658)	94.9% (743)	93.1% (714)	94.4% (921)	92.2% (930)	93.5% (938)
6-12 yrs	** **	69.1% (2104)	72.1% (2696)	76.6% (3122)	79.2% (2752)	79.7% (2627)	81.6% (27411)	80.6% (2487)	79.1% (2403)	84.1% (2819)	87.3% (2579)
13-17 yrs	** **	24.1% (2244)	30.5% (2725)	31.2% (2893)	32.4% (2575)	32.0% (2767)	29.8% (2572)	32.8% (2230)	33.5% (2403)	31.5% (2652)	33.2% (2507)
0-17 yrs	56.4% (4677)	52.1% (4624)	55.6% (6094)	59.1% (6695)	60.0% (5924)	60.1% (5970)	60.6% (5955)	63.5% (5414)	60.4% (5713)	62.2% (6401)	64.5% (6024)
18-64 yrs	10.9% (25470)	8.8% (24321)	10.1% (27100)	8.5% (32528)	9.2% (31742)	10.1% (28551)	9.7% (33319)	9.9% (30176)	10.0% (29591)	8.4% (32108)	9.1% (30743)
65+ yrs	13.6% (1203)	12.9% (1147)	9.9% (1040)	6.9% (1276)	6.8% (922)	9.4% (1106)	8.3% (1331)	11.0% (823)	8.3% (803)	11.7% (881)	6.1% (1190)

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*Factor controlled for: Age & Boat Type.
**In 1998 observations were recorded as 6-17yrs and therefore cannot be subdivided.

Power Boats for Adults.

Table 1.2a (page 12) presents information for the various types of power boats for adults. Averaging across these types of boats (not including PWC's) for 2008, we see a slight increase over the 2007 data (4.3% to 4.8%, see Figure 1.5 below). However, when comparing rates for individual types of power boats, there are mixed results. Skiffs increased from 8.5% to 9.2% and runabouts increased as well (3.6% to 4.1%). These increases are important since they encompass the two types of craft that adults are seen in most frequently. These increases are also reflected in the open motorboat category which has seen small increases each year since the strategic plan goals were presented in 2006 (4.5%, 4.7%, 5.2%, Table 1.2a). For cabin cruisers there was a decrease in wear rates (2.0% to 1.4%), but in this case the 2007 wear rate of 2.0% represents the highest rate for this type of boat among adults across the eleven years of data. Pontoon boats also decreased from 2.7% to 1.1%. PWC's continued as usual to have almost universal wear rates. For powered inflatables there was a decrease from 19.1% to 17.6% but for a relatively small number of boaters.

Figure 1.5 – Adult Wear Rate ALL Power Boats except PWCs

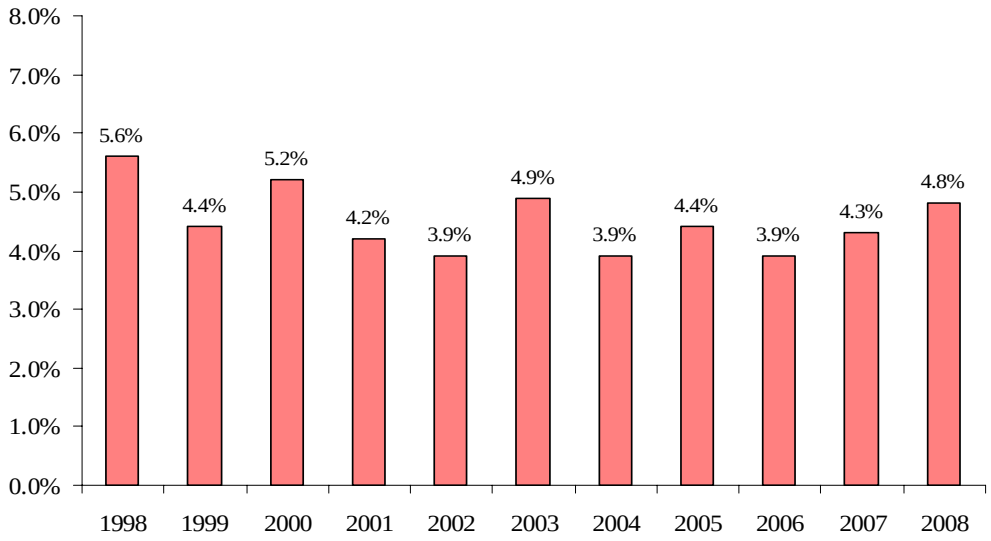

Table 1.2a Life Jacket Wear Rates by Power Boats for Adults (18 years or older)*

Boat Type	1998 % (N's)	1999 % (N's)	2000 % (N's)	2001 % (N's)	2002 % (N's)	2003 % (N's)	2004 % (N's)	2005 % (N's)	2006 % (N's)	2007 % (N's)	2008 % (N's)
All Power Boats (no PWC's)	5.6% (20813)	4.4% (19894)	5.2% (22448)	4.2% (27864)	3.9% (26304)	4.9% (24190)	3.9% (28285)	4.4% (25741)	3.9% (25412)	4.3% (27623)	4.8% (27315)
Skiff/Utility	13.2% (2032)	10.0% (1867)	10.3% (1903)	9.7% (2469)	5.9% (3177)	10.4% (4214)	7.9% (4429)	7.2% (5038)	7.3% (4091)	8.5% (5340)	9.2% (6633)
Runabout/Speedboat	5.5% (13196)	4.2% (13195)	5.3% (14463)	4.5% (16985)	4.3% (14066)	4.6% (13057)	3.9% (16633)	4.7% (13643)	3.7% (14512)	3.6% (14414)	4.1% (13901)
Open Motorboats** (Skiff/Utility+Runabout/Speedboat)	7.2% (15228)	5.5% (15062)	6.4% (16366)	5.6% (19454)	4.7% (17243)	5.9% (17271)	4.8% (21052)	5.3% (18681)	4.5% (18603)	4.7% (19754)	5.2% (20534)
Cabin Cruiser	1.3% (4012)	1.8% (3396)	1.6% (4391)	1.2% (6222)	1.9% (7111)	1.7% (5119)	1.0% (5242)	1.1% (5054)	1.7% (4280)	2.0% (5353)	1.4% (4430)
Houseboat	0.8% (252)	0.0% (151)	0.0% (216)	0.6% (162)	0.8% (124)	0.0% (328)	5.6% (216)	0.4% (219)	0.0% (112)	0.0% (43)	0.0% (51)
Pontoon	4.7% (1359)	4.0% (1231)	6.2% (1458)	1.9% (1929)	2.7% (1796)	2.9% (1610)	2.9% (1770)	4.1% (1849)	2.4% (2276)	2.7% (2150)	1.1% (2051)
PWC	96.5% (1959)	94.2% (1899)	97.4% (1761)	96.0% (2091)	95.8% (1798)	94.7% (1589)	95.5% (1721)	95.3% (1858)	97.1% (1962)	96.1% (1736)	97.6% (2009)
Powered Inflatable/Raft	25.6% (214)	15.7% (205)	22.3% (233)	13.5% (259)	27.2% (154)	14.8% (190)	9.0% (211)	1.9% (157)	11.0% (253)	19.1% (366)	17.6% (228)

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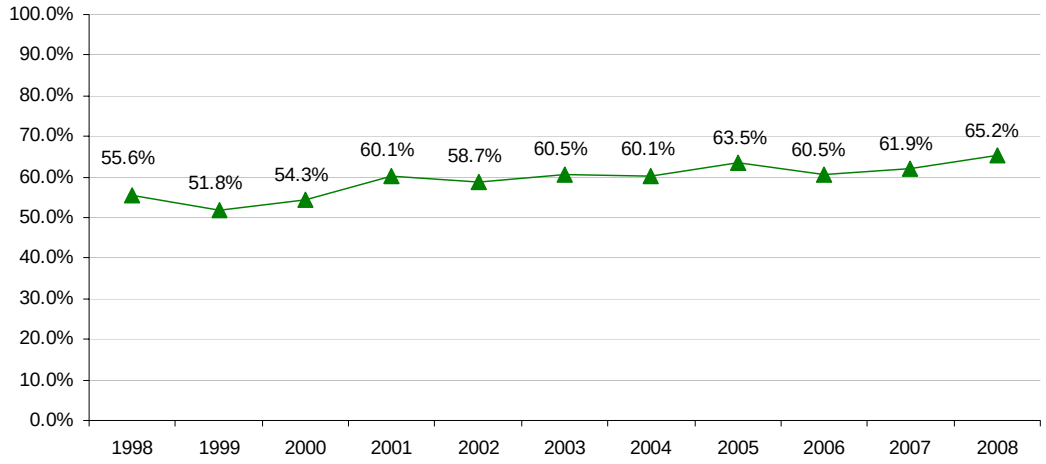
*Factors controlled for: Age & Boat Type.
** The Open Motorboat category is created by grouping "Skiffs" and "Speedboat/Runabouts" together. The proportion of Skiffs to Speedboat/Runabouts has been set in each year to reflect the proportions observed in 2006, the year in which the Strategic Plan goals were first created.

Power Boats for Youth.

Table 1.2b presents data for each type of power boat for the three age groups of youth averaged together (everyone under 18 years old). For all power boats (excluding PWC's), we find a favorable increase in 2008 (63.9%) from 2007 (60.8%). Extrapolating from the age results reported in Table 1.1, this change is probably driven by the increase in wear rates for the 6 to 12 year old group of boaters. When inspecting the information for specific types of power boats, we see gains among the most frequently used boats by this age group. For Open Motorboats (shown in Figure 1.6 below) there has been an upward trend since the strategic plan was put in place. For skiffs the increase is from 61.9% in 2007 to 65.2% in 2008. For runabouts the wear rate moves from 61.7% in 2007 to 64.6% in 2008. We also see increases in wear rates on pontoon boats from 64.1% to 65.9%. These three boat types, which are the type of craft youth are most frequently observed on, have the highest wear rates observed across the eleven years. As seen in other years, PWC wear rates are extremely high.

Figure 1.6 Youth Wear Rates On Open Motorboats* 1998-2008
(Weighted with 2006 Skiff-Speedboat Proportion)



*The Open Motorboat category is created by grouping "Skiffs" and Speedboat/Runabouts" together. The proportion of Skiffs to Speedboat/Runabouts has been set in each year to reflect the proportions observed in 2006, the year in which the Strategic Plan goals were first created.

Table 1.2b Life Jacket Wear Rates by Power Boats for Youth (17 years or younger)*

Boat Type	1998 % (N's)	1999 % (N's)	2000 % (N's)	2001 % (N's)	2002 % (N's)	2003 % (N's)	2004 % (N's)	2005 % (N's)	2006 % (N's)	2007 % (N's)	2008 % (N's)
All Power Boats (no PWC's)	53.5% (3857)	51.0% (3834)	54.3% (5179)	58.6% (5717)	58.2% (5162)	58.7% (5170)	58.8% (5191)	62.5% (4737)	58.7% (5043)	60.8% (5583)	63.9% (5257)
Skiff/Utility	55.5% (373)	52.7% (338)	49.5% (369)	68.2% (441)	54.9% (557)	63.2% (768)	60.7% (641)	63.3% (781)	58.4% (661)	63.1% (947)	68.4% (988)
Runabout/Speedboat	55.6% (2777)	51.6% (2744)	55.2% (3776)	58.8% (3987)	59.4% (3479)	60.0% (3369)	60.0% (3574)	63.5% (2966)	60.9% (3348)	61.7% (3517)	64.6% (3256)
Open Motorboats** (Skiff/Utility+Runabout/Speedboat)	55.6% (3150)	51.8% (3082)	54.3% (4145)	60.1% (4428)	58.7% (4036)	60.5% (4137)	60.1% (4215)	63.5% (3747)	60.5% (4009)	61.9% (4464)	65.2% (4244)
Cabin Cruiser	42.2% (438)	42.6% (418)	48.2% (587)	48.3% (774)	50.7% (690)	45.3% (659)	49.6% (529)	54.6% (528)	50.7% (501)	52.0% (639)	51.0% (581)
Houseboat	20.5% (39)	8.7% (46)	12.7% (64)	25.7% (44)	30.3% (30)	17.8% (63)	24.7% (35)	12.9% (38)	28.2% (40)	37.6% (5)	0.0% (1)
Pontoon	61.6% (238)	38.3% (272)	46.3% (379)	54.8% (455)	55.6% (399)	51.8% (338)	48.5% (394)	64.6% (440)	50.3% (505)	64.1% (414)	65.9% (392)
PWC	98.0% (497)	96.0% (551)	99.1% (649)	99.1% (691)	98.8% (502)	98.0% (562)	98.5% (543)	98.3% (652)	99.2% (580)	98.7% (522)	99.4% (664)
Powered Inflatable/Raft	54.4% (31)	59.3% (62)	69.7% (68)	79.5% (60)	72.8% (37)	66.8% (36)	65.8% (53)	71.2% (22)	70.6% (28)	71.1% (66)	79.7 (39)

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*Factors controlled for: Age & Boat Type.
** The Open Motorboat category is created by grouping "Skiffs" and "Speedboat/Runabouts" together. The proportion of Skiffs to Speedboat/Runabouts has been set in each year to reflect the proportions observed in 2006, the year in which the Strategic Plan goals were first created.

Paddle Craft for Adults.

In Table 1.3a, results are presented for adults in paddle craft. Overall we see the 2008 wear rates increase over 2007 rates from 40.1% to 43.1% (see Figure 1.7 below). Wear rates for individual types of paddled craft increase somewhat from 2007 levels: paddled inflatables/rafts (23.9% to 38.4%); and rowboat/dingheys (15.0% to 23.0%). Rates were essentially unchanged for canoes (19.4% to 19.7%) and there was a decline for kayaks from 72.0% to 65.5%.

Figure 1.7 – Adult Wear Rate ALL Paddle Craft

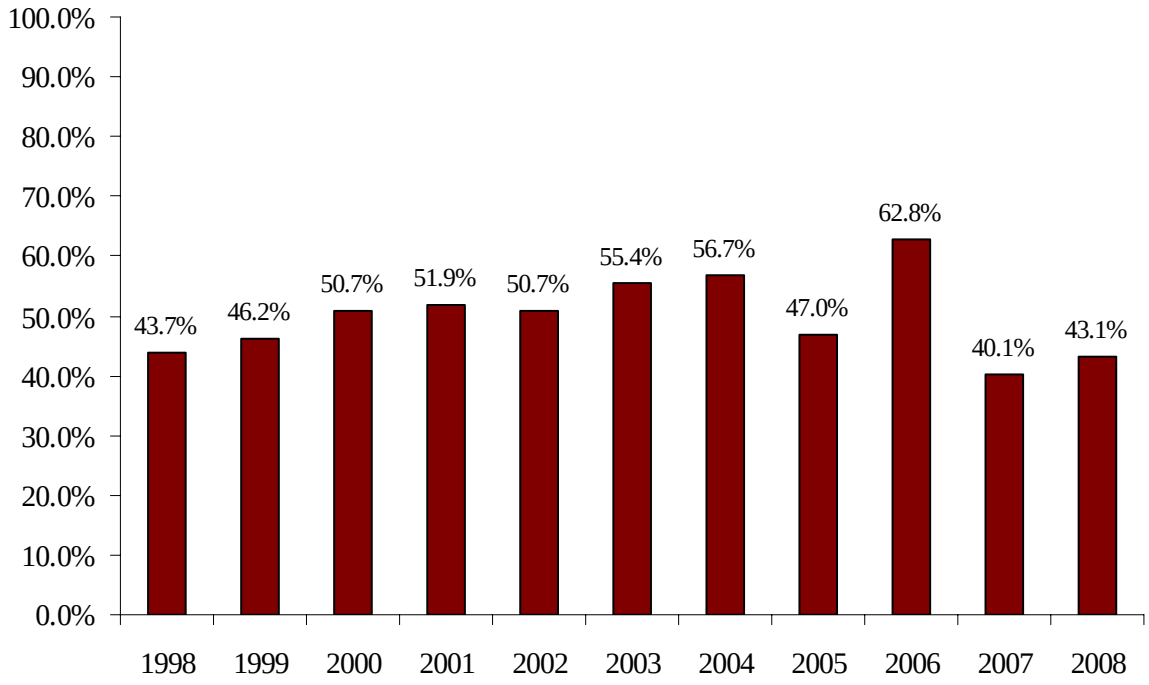

Table 1.3a Life Jacket Wear Rates by Paddle Craft for Adults (18 years or older)*

Boat Type	1998 % (N's)	1999 % (N's)	2000 % (N's)	2001 % (N's)	2002 % (N's)	2003 % (N's)	2004 % (N's)	2005 % (N's)	2006 % (N's)	2007 % (N's)	2008 % (N's)
All Paddle Craft	43.7% (2300)	46.2% (1676)	50.7% (1676)	51.9% (1816)	50.7% (1864)	55.4% (1672)	56.7% (1637)	47.0% (1616)	62.8% (1456)	40.1% (2065)	43.1% (1523)
Paddled Inflatable/Raft	46.3% (456)	71.8% (174)	13.0% (198)	65.1% (250)	65.6% (307)	60.5% (290)	57.8% (283)	76.0% (225)	77.8% (308)	23.9% (526)	38.4% (311)
Rowboat/Dinghy	20.0% (50)	24.4% (82)	37.2% (118)	18.7% (119)	27.3% (193)	22.8% (117)	10.1% (38)	59.2% (71)	26.7% (78)	15.0% (92)	23.0% (65)
Canoe	** **	17.7% (809)	33.8% (714)	23.6% (750)	15.4% (701)	30.4% (607)	26.7% (622)	14.8% (679)	29.2% (364)	19.4% (764)	19.7% (481)
Kayak	** **	82.7% (611)	85.7% (646)	84.4% (697)	85.7% (663)	81.4% (658)	87.0% (694)	74.1% (675)	77.9% (706)	72.0% (683)	65.5% (648)
Canoe/Kayak	44.2% (1794)	45.9% (1420)	58.6% (1360)	53.1% (1447)	49.7% (1364)	56.8% (1265)	58.6% (1316)	44.4% (1354)	61.2% (1070)	44.3% (1447)	46.0% (1129)

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*Factors controlled for: Age & Boat Type.
**The 1998 observations were recorded as Canoe/Kayak and therefore cannot be subdivided.

Paddle Craft for Youth.

Table 1.3b presents results for youth in paddle craft. There is an overall decline in wear rates between 2007 and 2008 from 73.5% to 67.7%. However, relatively few youth boat in these types of craft so fluctuations in wear rates should be viewed cautiously.

Figure 1.8 – Youth (17 years or younger) Wear Rate ALL Paddle Craft

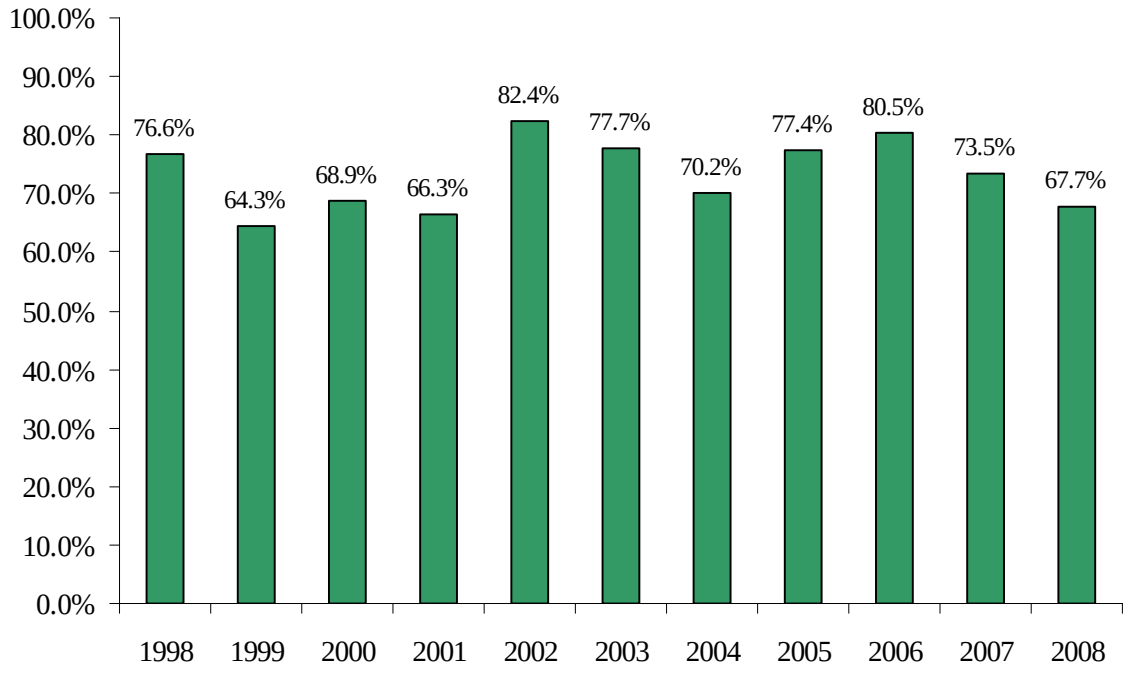

Table 1.3b Life Jacket Wear Rates by Paddle Craft for Youth (17 years or younger)*

Boat Type	1998 % (N's)	1999 % (N's)	2000 % (N's)	2001 % (N's)	2002 % (N's)	2003 % (N's)	2004 % (N's)	2005 % (N's)	2006 % (N's)	2007 % (N's)	2008 % (N's)
All Paddle Craft	76.6% (446)	64.3% (317)	68.9% (457)	66.3% (457)	82.4% (312)	77.7% (372)	70.2% (360)	77.4% (281)	80.5% (225)	73.5% (520)	67.7% (492)
Paddled Inflatable/Raft	84.4% (149)	62.4% (82)	45.8% (124)	52.3% (153)	90.3% (136)	68.9% (113)	68.4% (118)	77.5% (79)	77.9% (87)	58.4% (244)	55.6% (218)
Rowboat/Dinghy	71.4% (14)	11.1% (9)	47.1% (15)	60.3% (32)	54.7% (31)	88.6% (21)	58.0% (11)	77.1% (17)	67.3% (26)	61.0% (21)	77.8% (25)
Canoe	** **	57.7% (142)	74.6% (222)	62.4% (181)	71.1% (98)	75.0% (130)	60.3% (146)	69.4% (101)	68.9% (49)	81.0% (123)	78.0% (158)
Kayak	** **	83.3% (84)	89.2% (96)	94.3% (91)	83.7% (47)	91.6% (108)	91.2% (85)	88.7% (94)	89.0% (63)	90.1% (132)	83.5% (86)
Canoe/Kayak	72.1% (283)	67.3% (226)	78.9% (318)	73.1% (272)	74.5% (145)	82.9% (238)	71.3% (231)	79.6% (195)	82.2% (112)	85.7% (255)	80.0% (244)

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2008 National Observational Life Jacket Wear Rate Study
*Factors controlled for: Age & Boat Type.
**The 1998 observations were recorded as Canoe/Kayak and therefore cannot be subdivided.

Sailboats for Adults.

Table 1.4a documents results for adults in sailboats. For all sailing craft together there was a reduction in wear rates from the previous year of 24.7% in 2007 to 20.0% in 2008 (see Figure 1.9 below). From 2007 to 2008 declines were seen for day-sailors (50.4% to 48.3%) and also for cabin sailboats (17.1% to 12.0%).

Figure 1.9 – Adult Wear Rate ALL Sail Craft

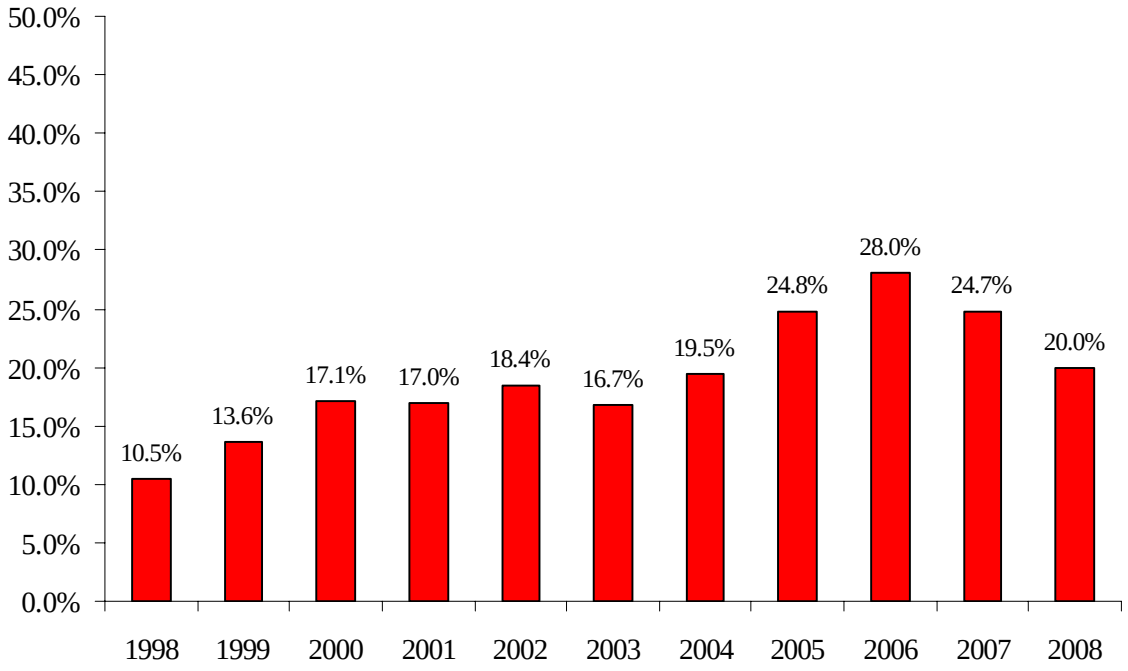

Table 1.4a Life Jacket Wear Rates by Sail and Other Craft for Adults (18 years or older)*

Boat Type	1998 % (N's)	1999 % (N's)	2000 % (N's)	2001 % (N's)	2002 % (N's)	2003 % (N's)	2004 % (N's)	2005 % (N's)	2006 % (N's)	2007 % (N's)	2008 % (N's)
All Sail Craft	10.5% (2912)	13.6% (3420)	17.1% (3565)	17.0% (3843)	18.4% (4087)	16.7% (3149)	19.5% (4149)	24.8% (3084)	28.0% (3279)	24.7% (3217)	20.0% (3079)
Sailboard	100% (55)	16.4% (46)	94.0% (30)	80.6% (15)	83.2% (55)	96.7% (27)	92.9% (40)	53.0% (20)	92.1% (12)	83.7% (18)	94.6% (17)
Day Sailor	27.7% (975)	30.7% (739)	35.6% (791)	37.9% (604)	46.7% (1124)	38.4% (815)	49.7% (984)	56.4% (736)	59.1% (607)	50.4% (397)	48.3% (649)
Cabin Sailboat	5.6% (1882)	9.1% (2635)	11.3% (2744)	10.2% (3224)	9.5% (2908)	10.2% (2307)	10.1% (3125)	15.4% (2328)	19.1% (2660)	17.1% (2802)	12.0% (2413)
Other Boats	64.5% (88)	63.8% (96)	27.4% (36)	0.0% (38)	23.3% (75)	28.5% (66)	25.6% (15)	17.6% (51)	19.7% (52)	60.3% (38)	5.1% (55)

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2008 National Observational Life Jacket Wear Rate Study
*Factors controlled for: Age & Boat Type.

Sailboats for Youth.

Table 1.4b shows that the overall wear rates on sailcraft for youth declined somewhat from 69.2% in 2007 to 64.1% in 2008. Again, however, relatively few youth are found on this type of craft and therefore fluctuations in rates should be interpreted cautiously.

Figure 1.10 – Youth (17 years or younger) Wear Rate ALL Sail Craft

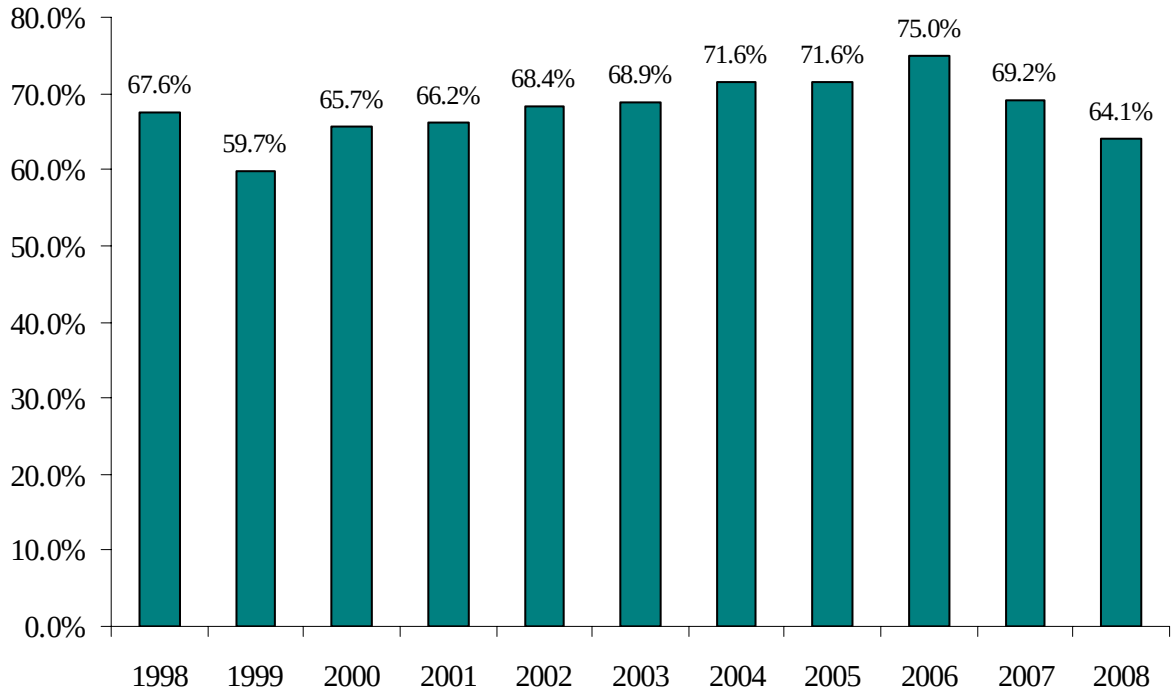

Table 1.4b Life Jacket Wear Rates by Sail and Other Craft for Youth (17 years or younger)*

Boat Type	1998 % (N's)	1999 % (N's)	2000 % (N's)	2001 % (N's)	2002 % (N's)	2003 % (N's)	2004 % (N's)	2005 % (N's)	2006 % (N's)	2007 % (N's)	2008 % (N's)
All Sail Craft	67.6% (285)	59.7% (347)	65.7% (329)	66.2% (424)	68.4% (381)	68.9% (323)	71.6% (323)	71.6% (327)	75.0% (371)	69.2% (270)	64.1% (274)
Sailboard	100.0% (1)	0.0% (3)	100.0% (7)	66.7% (6)	75.0% (4)	n/a (0)	92.1% (48)	100% (1)	100% (4)	82.2% (8)	0.0% (0)
Day Sailor	80.3% (117)	71.1% (114)	81.6% (81)	92.0% (85)	82.1% (113)	84.3% (107)	87.5% (83)	73.4% (67)	93.2% (122)	86.5% (54)	88.0% (75)
Cabin Sailboat	64.1% (167)	58.3% (230)	61.5% (241)	58.2% (333)	63.5% (264)	60.6% (216)	68.3% (192)	69.4% (259)	65.7% (245)	62.4% (208)	56.4% (196)
Other Boats	100.0% (21)	82.8% (64)	82.3% (21)	70.2% (7)	59.8% (9)	44.9% (26)	79.5% (10)	59.2% (17)	37.5% (13)	97.6% (23)	24.0% (6)

JSI Research and Training Institute, Inc.
2008 National Observational Life Jacket Wear Rate Study
*Factors controlled for: Age & Boat Type.

IV. Conclusions for Life Jacket Wear Rates National Data

This report covers observational data collected from 1998 to 2008. In this year's report trends in life jacket wear for types of boats and for various age groups were displayed. A summary of key findings are:

1. In 2008 there were small increases in power boat wear rates for adults, particularly for skiffs and for speedboats which are the two most frequently used boats by adults.

2. Overall, adult wear rates continue to be high in boats that are perceived to be easier to capsize or for which there is mandated wear—PWC's, kayaks, inflatable/rafts and day-sailors.

3. Wear rates on PWC's for both adults and children are almost universal.

4. In 2008, changes in youth wear rates continue to be encouraging. Youth rates among 6 to 12 year olds and teenagers were the highest they have ever been in the eleven years of observations. Increases for youth overall were seen in skiffs, speedboats and pontoon boats, the three most frequently used boats by youth.

5. Children's wear rates have increased about 10% over the eleven years of data collection. The largest increases across the eleven year period are for children in the 6 to 12 year old category. This in all likelihood is a reflection of changing legal mandates at the state and federal level.

V. Appendix: Methods & Descriptive Information

To provide reliable and valid indicators of changes in life jacket wear rates, it was essential for observation procedures to remain as close as possible to those used in previous years. The same states have been observed for each of the eleven years of data collection efforts, over the same period of time. The vast majority of the sites in each of 30 states observed have remained the same for all eleven years. The following is a detailing of the methods used in all eleven years of data collection efforts.

Time period - Observations were conducted during the summer months of each year, beginning the weekend of July 4th and ending on Labor Day weekend.

Site selection - A total of 30 states were chosen in which to conduct observations. The states were originally selected by a stratified random sampling procedure. Approximately three-fourths of the coastal states (19 out of 26 states) were chosen, and approximately one-half of the inland states (11 out of 24) were selected. Four sites from each state were visited, except in California, where eight sites were observed due to the size of the state. The 124 sites represented a wide range of water venues including lakes, rivers, harbors and bays, and intracoastal waterways. The sites were selected based on consultations with local offices of the USCG, members of the local Coast Guard Auxiliary or Power Squadron, and state boating or fishing law enforcement agencies. Sites were selected to roughly represent a variety of available boating venues in the state, as well as their proximity to one another to allow for relatively short travel time between sites. In addition, sites needed to have suitable shore-based viewing locations from which observations of life jacket wear could be made using high-powered binoculars.

Observational procedures - Observations were conducted for four-hour periods either in the morning or the afternoon of a Saturday or Sunday. The goal was to observe as many boats as possible during a four-hour time frame. Viewing locations were on shore at a narrowing, bridge, or near a marina to facilitate observations. Two-person teams observed boating activity. One team member made the observations using high-powered binoculars and called out the information, which was then recorded on observation forms by the second team member. Team members alternated responsibilities frequently to ward off fatigue. In addition to recording information on boating activity and life jacket wear, observers recorded data about the site. This included information on weather and water conditions. JSI project staff trained the observers during two half-day sessions. The first half-day training consisted of reviewing the observation manual, observation forms, and required equipment. The observation manual contained procedures, definitions, and pictures of various types of boats to facilitate consistent classification by the observers. The second half-day of training allowed observation team members an opportunity to practice using the required equipment and observation forms with the assistance and guidance of a JSI project staff member.

Observation Forms - There were two observation forms designed. The first was the boat observation form, which was intended to record information about the boat and people on the boat. The second form was the site form, which was designed to record information about the site, weather and water conditions. The forms have remained the same from year to year, with the exception of two changes made in 1999 and one change made in 2004. These changes are discussed in detail below.

A) Boat Forms - Observers recorded the observation time period in two hour blocks of time (8am - 10am, 10am - 12pm, 12pm - 2pm, 2pm - 4pm, 4pm - 6pm); the type of boat observed (skiff, speedboat, cabin cruiser, personal watercraft (PWC), pontoon boat, houseboat, sailboard, day sailor, cabin sailboat, rowboat, inflatable, canoe, kayak, and other); the type of propulsion (outboard engine/motor, inboard engine, sail only, sail and auxiliary engine/motor, paddles/oars, air fan, and other); length of boat (under 16 feet, 16-20 feet, 21-25 feet, and over 25 feet); type of operation (motoring, sailing, paddling, drifting, or at anchor); and activity engaged in (fishing, fishing tournament, water-skiing, white-water, high speed racing, swimming, pleasure boating, and other). Observers also recorded operator/passenger status; gender (male, female, or unknown); age (under six, 6 - 12, 13 - 17, 18 - 64, 65 or older); life jacket wear (wearing or not wearing); life jacket type (old or new). In addition, if the boat was involved in water-skiing, observers indicated which boaters were skiing at the time.

B) Site Forms - At each site, the observers recorded the beginning time and ending time of the observation period, water type (lake, river, harbor/bay, Great Lake, intracoastal waterway) and water temperature. The following environmental factors were measured by observers at each two hour time block during the observation period: air temperature; wind speed; wave height (less than six inches, six inches up to two feet, or over two feet); weather (sunny, partly cloudy, cloudy, raining, or stormy); and visibility (good, fair, or poor).

Over the past eleven years of observations only three categories of information have been changed. In 1999, the original 6 to 17 year old age category was divided into a 6 to 12 year old group and a 13 to 17 year old group. Also in 1999, the boat category of canoes/kayaks was separated to record canoes and kayaks individually. In this report, life jacket wear rates are reported for both the combined and separated categories of age and canoes and kayaks to allow for nine years of previous data to be included in the analysis. Finally, in 2004 the USCG requested that JSI breakout the boat size categories from three (under 16 feet, 16-25 feet and over 26 feet) to four categories (under 16 feet, 16-20 feet, 21-25 feet and over 26 feet). Observations made in 2004 - 2008 are the only years to record observations using the expanded boat size categories. The old classification size variable will be used to measure trends since 1998.

2008 Boat Form

TIME: ○ 7:59 or earlier ○ 8:00 - 9:59 am ○ 10:00 - 11:59 am ○ 12:00 - 1:59 pm ○ 2:00 - 3:59 pm ○ 4:00 - 5:59 pm ○ 6:00 or later

1451

POWER BOAT:		PADDLE:	SAIL:	OTHER:
○ Skiff/Utility	○ PWC	○ Kayak	○ Day sailor	○ Inflatable/Raft
○ Runabout/Speedboat	○ Pontoon	○ Canoe	○ Cabin sailboat	○ Houseboat
○ Cabin cruiser		○ Rowboat/Dinghy	○ Sailboard	○ Other

SIZE (ft):	PROPULSION:	OPERATION:	ACTIVITY:	
○ Under 16	○ Outboard	○ Cruising/Motoring	○ Pleasure	○ Fishing
○ 16 - 20.9	○ Sterndrive/Inboard ○ Sail Only	○ Sailing	○ Water skiing	○ Intent to Fish
○ 21 - 25.9	○ Sail and Motor	○ Rowing/Paddling	○ White water	○ Swimming
○ 26 - 45.9	○ Paddles, Oars/Manual ○ Air Thrust	○ Drifting	○ Racing or High Speed	○ Other
○ 46 +	○ Other	○ Anchored		

	GENDER			AGE(years)					PFD			WS
	M	F	?	0-5	6-12	13-17	18-64	65+	Old	New	No	
OP	○	○	○	○	○	○	○	○	○	○	○	Yes
P1	○	○	○	○	○	○	○	○	○	○	○	○
P2	○	○	○	○	○	○	○	○	○	○	○	○
P3	○	○	○	○	○	○	○	○	○	○	○	○
P4	○	○	○	○	○	○	○	○	○	○	○	○
P5	○	○	○	○	○	○	○	○	○	○	○	○
P6	○	○	○	○	○	○	○	○	○	○	○	○
P7	○	○	○	○	○	○	○	○	○	○	○	○
P8	○	○	○	○	○	○	○	○	○	○	○	○
P9	○	○	○	○	○	○	○	○	○	○	○	○

POWER BOAT:		PADDLE:	SAIL:	OTHER:
○ Skiff/Utility	○ PWC	○ Kayak	○ Day sailor	○ Inflatable/Raft
○ Runabout/Speedboat	○ Pontoon	○ Canoe	○ Cabin sailboat	○ Houseboat
○ Cabin cruiser		○ Rowboat/Dinghy	○ Sailboard	○ Other

SIZE (ft):	PROPULSION:	OPERATION:	ACTIVITY:	
○ Under 16	○ Outboard	○ Cruising/Motoring	○ Pleasure	○ Fishing
○ 16 - 20.9	○ Sterndrive/Inboard ○ Sail Only	○ Sailing	○ Water skiing	○ Intent to Fish
○ 21 - 25.9	○ Sail and Motor	○ Rowing/Paddling	○ White water	○ Swimming
○ 26 - 45.9	○ Paddles, Oars/Manual ○ Air Thrust	○ Drifting	○ Racing or High Speed	○ Other
○ 46 +	○ Other	○ Anchored		

	GENDER			AGE(years)					PFD			WS
	M	F	?	0-5	6-12	13-17	18-64	65+	Old	New	No	
OP	○	○	○	○	○	○	○	○	○	○	○	Yes
P1	○	○	○	○	○	○	○	○	○	○	○	○
P2	○	○	○	○	○	○	○	○	○	○	○	○
P3	○	○	○	○	○	○	○	○	○	○	○	○
P4	○	○	○	○	○	○	○	○	○	○	○	○
P5	○	○	○	○	○	○	○	○	○	○	○	○
P6	○	○	○	○	○	○	○	○	○	○	○	○
P7	○	○	○	○	○	○	○	○	○	○	○	○
P8	○	○	○	○	○	○	○	○	○	○	○	○
P9	○	○	○	○	○	○	○	○	○	○	○	○

POWER BOAT:		PADDLE:	SAIL:	OTHER:
○ Skiff/Utility	○ PWC	○ Kayak	○ Day sailor	○ Inflatable/Raft
○ Runabout/Speedboat	○ Pontoon	○ Canoe	○ Cabin sailboat	○ Houseboat
○ Cabin cruiser		○ Rowboat/Dinghy	○ Sailboard	○ Other

SIZE (ft):	PROPULSION:	OPERATION:	ACTIVITY:	
○ Under 16	○ Outboard	○ Cruising/Motoring	○ Pleasure	○ Fishing
○ 16 - 20.9	○ Sterndrive/Inboard ○ Sail Only	○ Sailing	○ Water skiing	○ Intent to Fish
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○ 26 - 45.9	○ Paddles, Oars/Manual ○ Air Thrust	○ Drifting	○ Racing or High Speed	○ Other
○ 46 +	○ Other	○ Anchored		

	GENDER			AGE(years)					PFD			WS
	M	F	?	0-5	6-12	13-17	18-64	65+	Old	New	No	
OP	○	○	○	○	○	○	○	○	○	○	○	Yes
P1	○	○	○	○	○	○	○	○	○	○	○	○
P2	○	○	○	○	○	○	○	○	○	○	○	○
P3	○	○	○	○	○	○	○	○	○	○	○	○
P4	○	○	○	○	○	○	○	○	○	○	○	○
P5	○	○	○	○	○	○	○	○	○	○	○	○
P6	○	○	○	○	○	○	○	○	○	○	○	○
P7	○	○	○	○	○	○	○	○	○	○	○	○
P8	○	○	○	○	○	○	○	○	○	○	○	○
P9	○	○	○	○	○	○	○	○	○	○	○	○

PFD Study 2008

CODE State | Site | Block | Page Number

PFD Study 2008 **Site Form** ☐☐☐ **ID** ☐☐ ☐☐ ☐

# of Boats Observed | State | Site | Block

1. Site Information

Observer Names: _____ City: _____

Site Name: _____ Water: _____

Date of Observation: ☐☐ / ☐☐ / ☐☐ Day of the week: O Sat. O Sun.

Observation start time: ☐☐:☐☐ O AM O PM Observation end time: ☐☐:☐☐ O AM O PM

2. Type of Body of Water

O Bay, inlet or sound O River, stream, creek or canal O Other: _____

O Harbor O Lake, pond, or reservoir (not Great Lakes)

O Intercoastal waterway O Great lake (not including tributaries)

3. Site Conditions

Water temperature: ☐☐ degrees F

A. First Weather Observation (to be completed during 1st time block of boat observations)

Time:

O 7:59 or before O 8-9:59 AM O 10-11:59 AM O 12-1:59 PM O 2-3:59 PM O 4-5:59 PM O 6 PM or later

Air Temp. ☐☐☐ F	**Water Conditions**	**Current**	**Visibility**	**Weather Conditions**
Wind Speed ☐☐ knots	O Calm (less than 6")	O Strong	O Good	O Sunny O Raining
	O Choppy (6" to 2')	O Moderate	O Fair	O Partly Cloudy O Stormy
	O Rough (over 2')	O Weak/None	O Poor	O Cloudy

VI. Information on Boats and People Observed

To date, 156,653 boats and 432,758 boaters have been observed (Figure 1.11). For this year, 2008, 14,306 boats carrying 40,731 boaters were observed. Across the eleven years, the number of boats, and the number of boaters observed have increased. However, the proportions of the different types of boats, length of boats, operation and activity of boats, as well as the age and gender of the boaters observed has remained fairly consistent (see Figures 1.12 through 1.17). This indicates not only that the sites chosen have yielded diversity in the boats and boaters observed each year, but also a diversity that has remained consistent across the years. These figures demonstrate that the degree of representativeness of the sample of recreational boaters and their boating habits has remained constant across the eleven years.

Figures 1.18 through 1.24 illustrate the weather and water conditions across the sites from year to year. Like the boat and boater data, across all of the sites the mixture of the weather and water conditions has remained fairly constant over the years. Therefore, any changes reported in life jacket wear rates were not due to changes in types of boats or boaters observed from year to year, and most likely not due to fluctuations in weather or water condition changes across the sites.

Figure 1.11 – Number of Boats and People

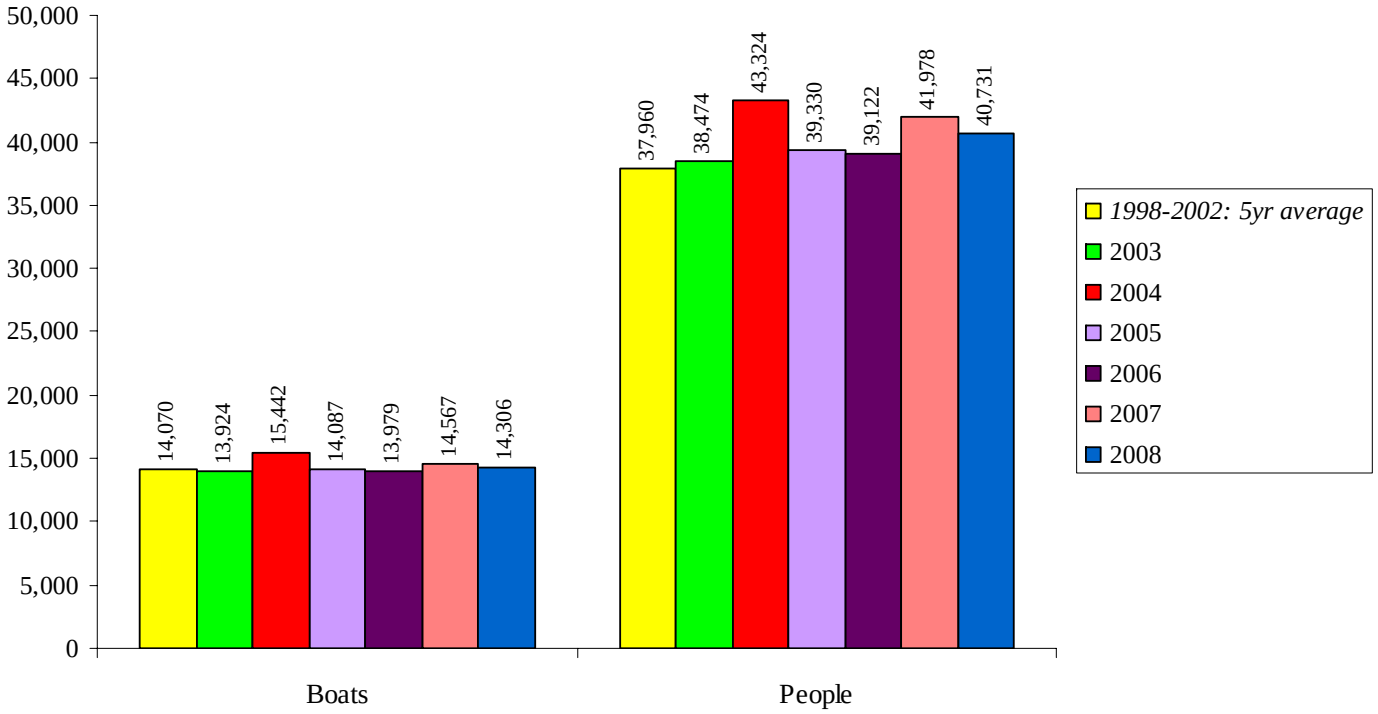


Figure 1.12 – Types of Boats

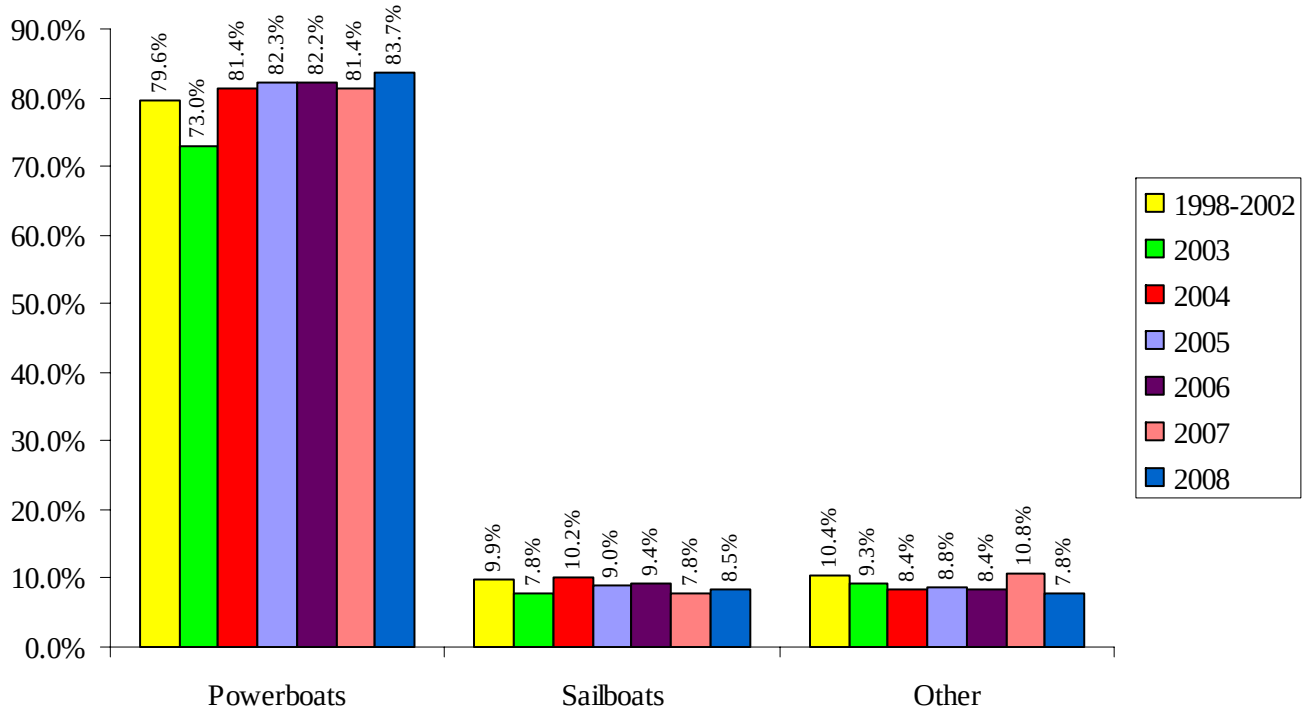


Figure 1.13a – Length of Boats

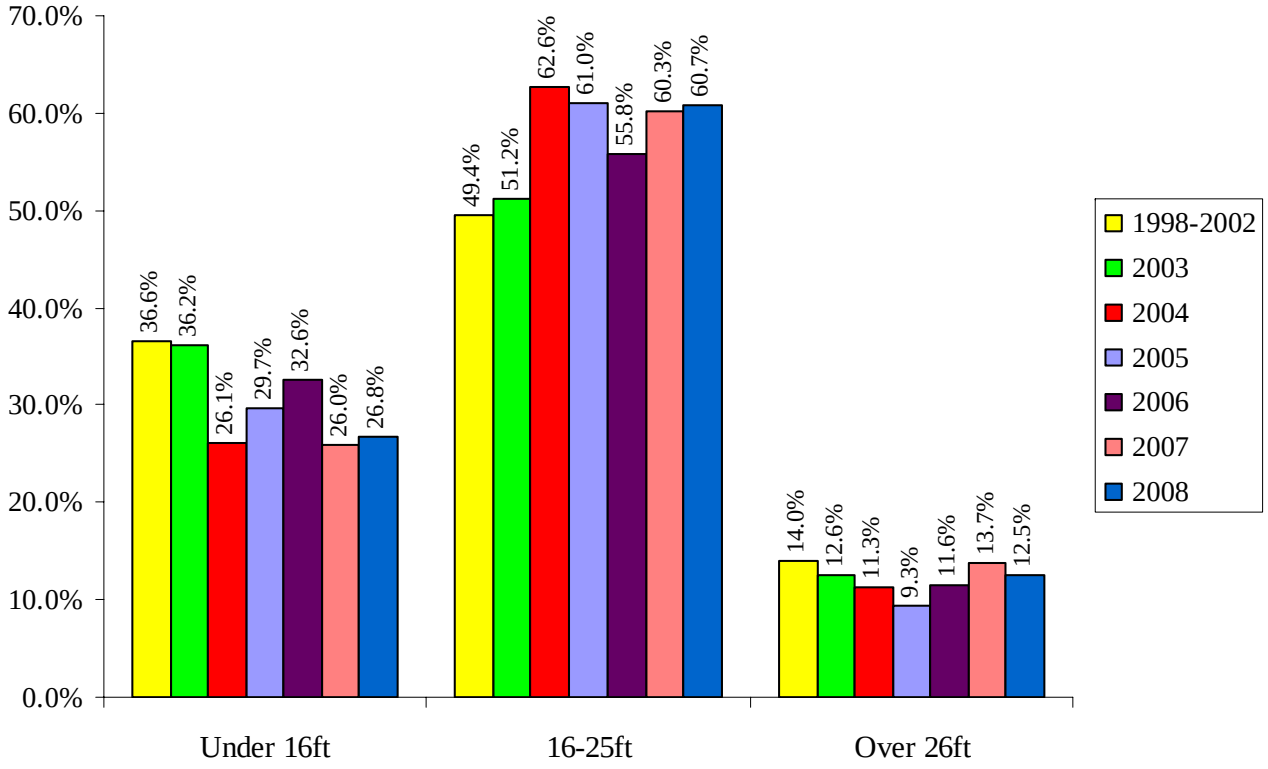


Figure 1.13b – Length of Boats 2004-2008 Data Only

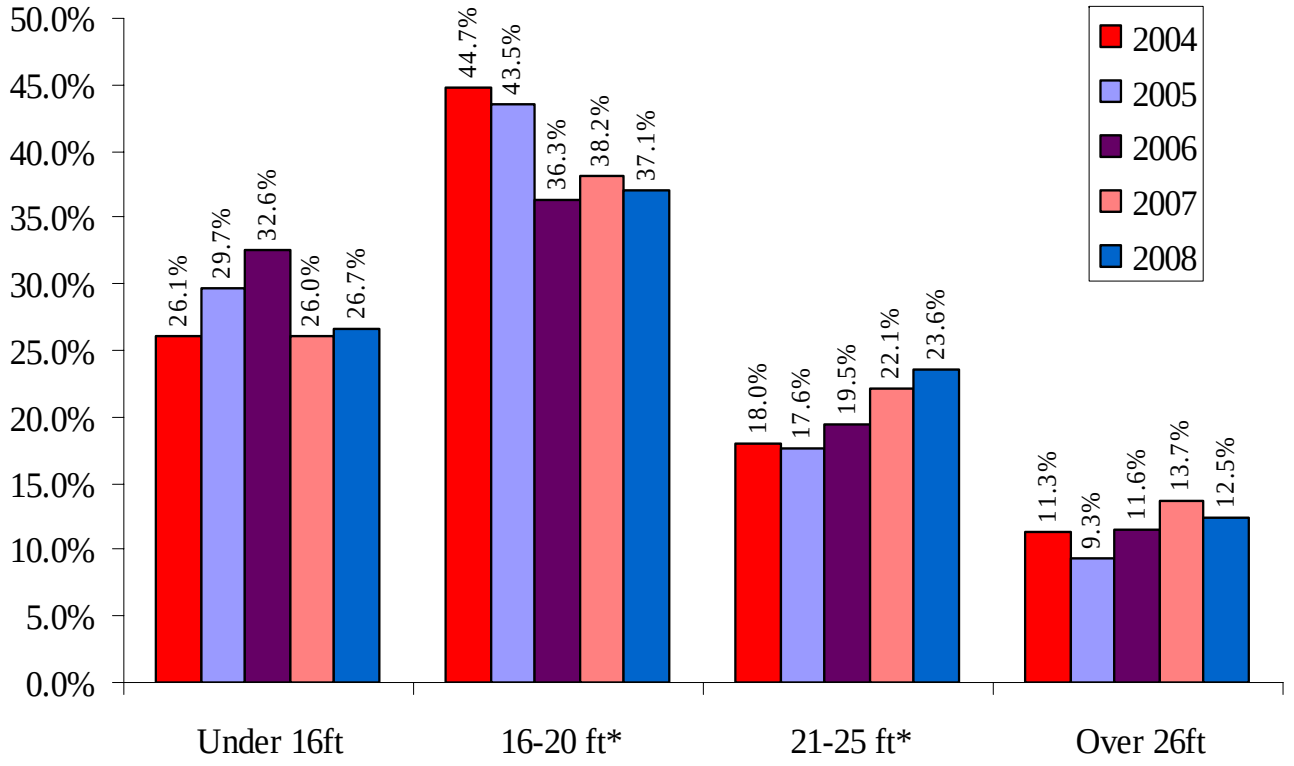


Figure 1.14 – Operation of Boats

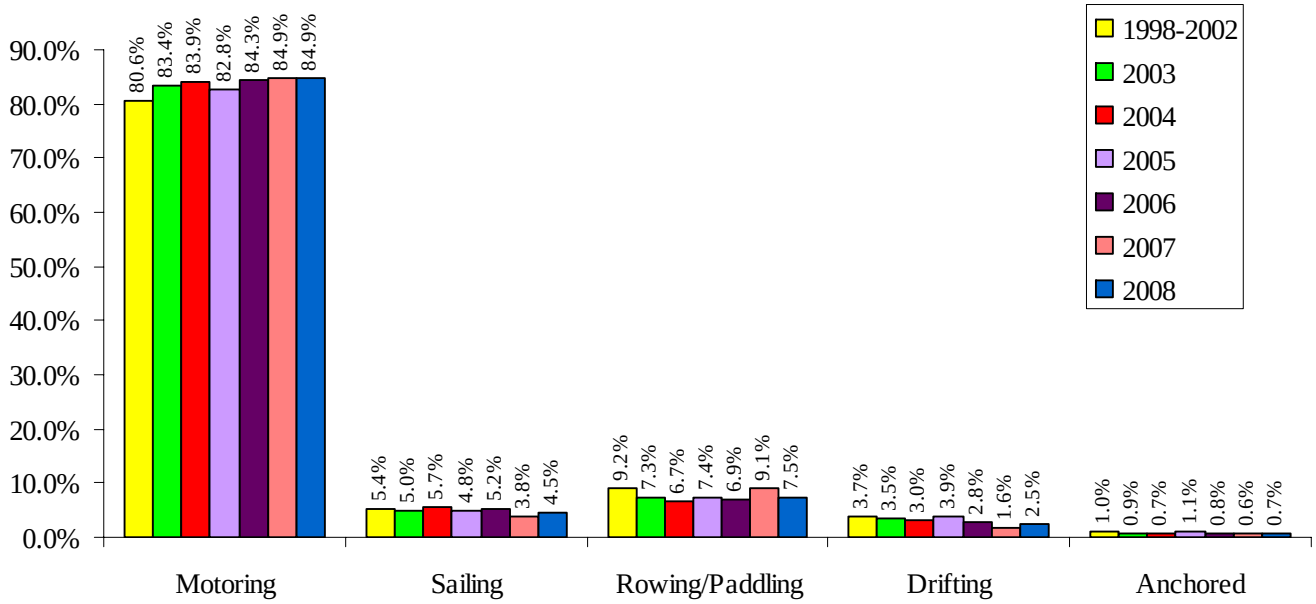
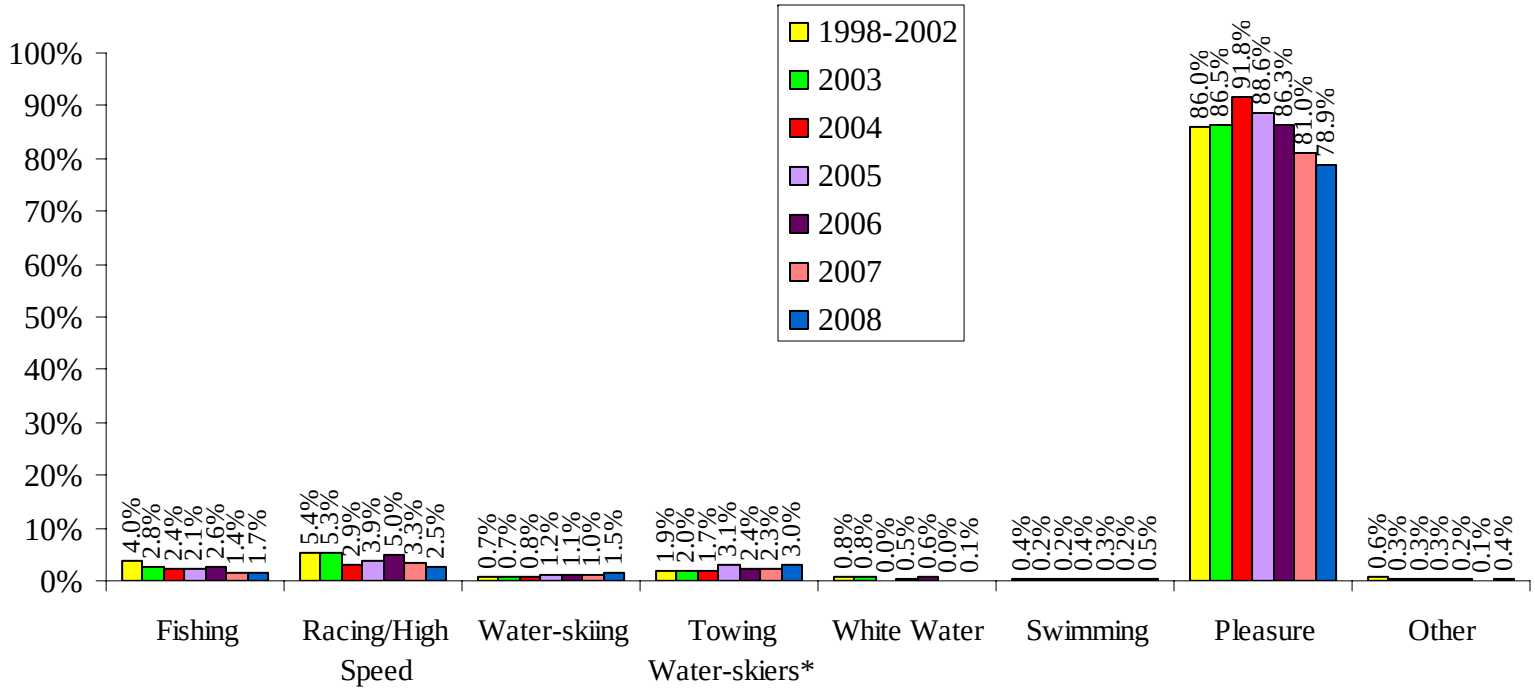


Figure 1.15 – Activity of Boaters



*The activity "Towing Water-skiers " indicates that these boaters were passengers in a boat towing water-skiers or other towing activities. Likewise, "water-skiing" includes all towing sports. Label changed in April 2010.

Figure 1.16 – Gender of Boaters

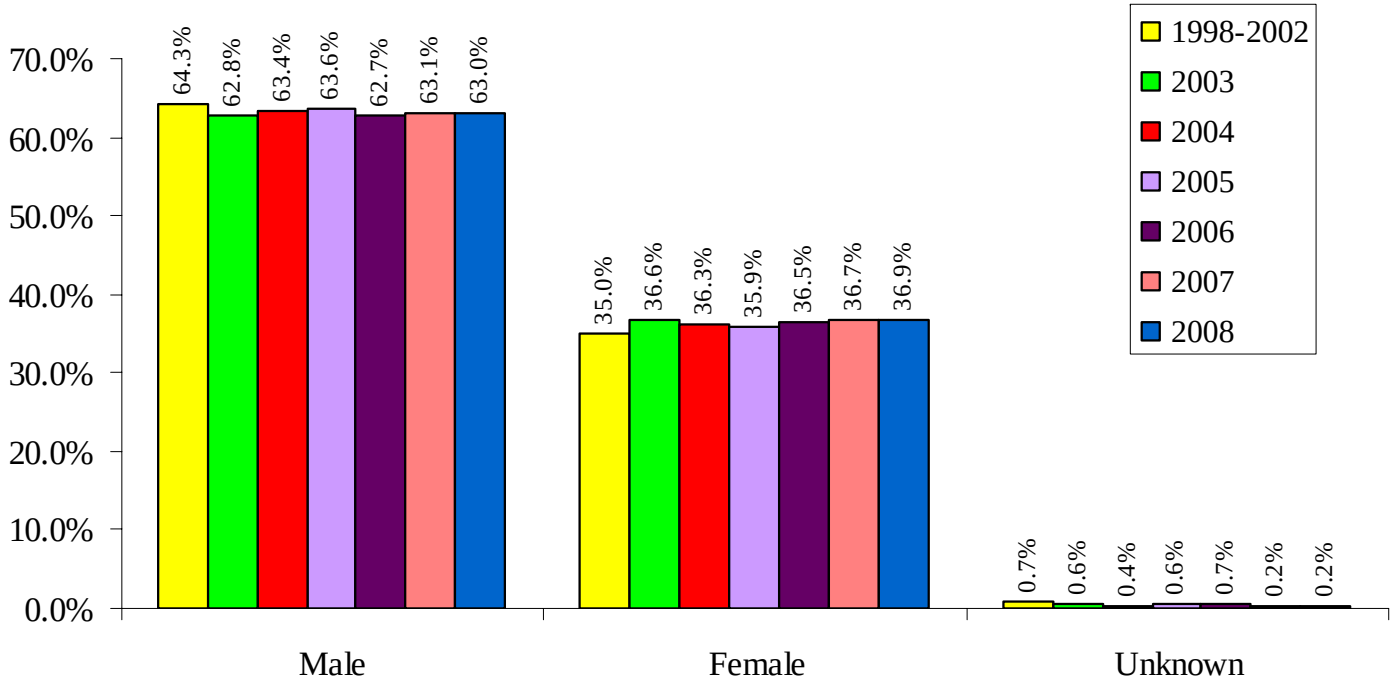


Figure 1.17 – Age of Boaters

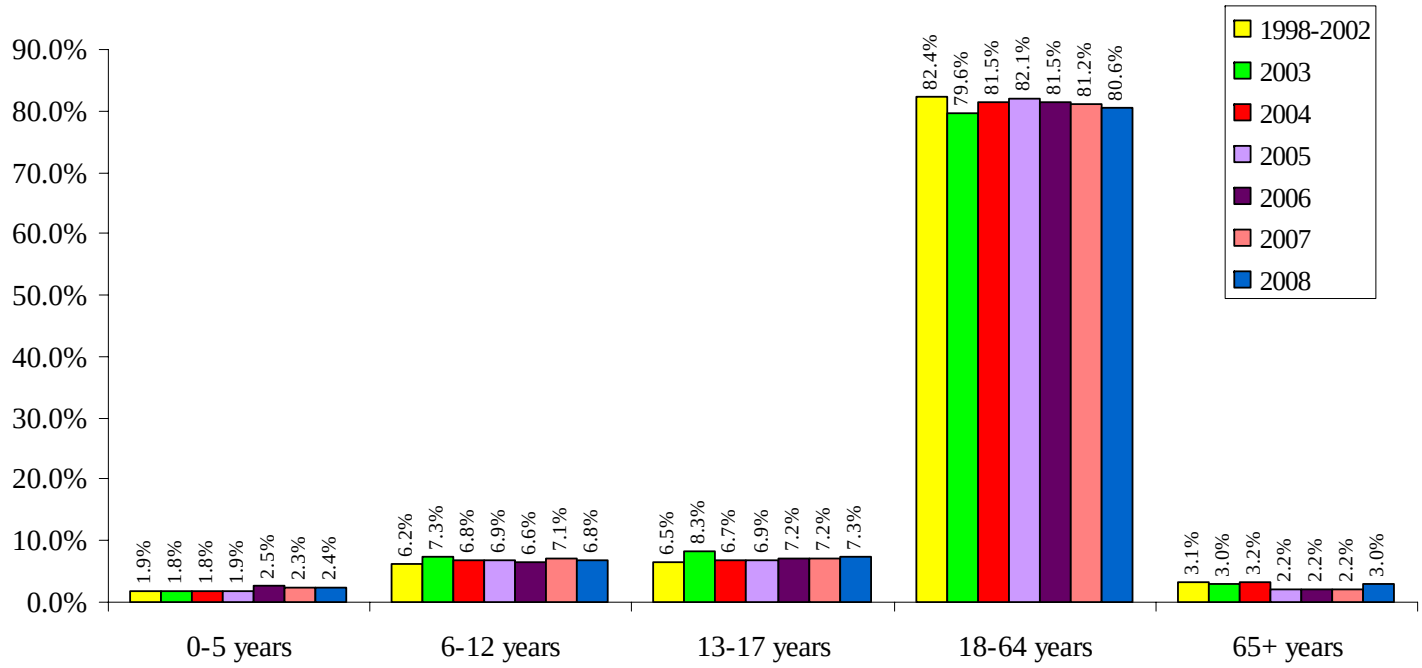


Figure 1.18 – Water Temperature in which all Boats Operated

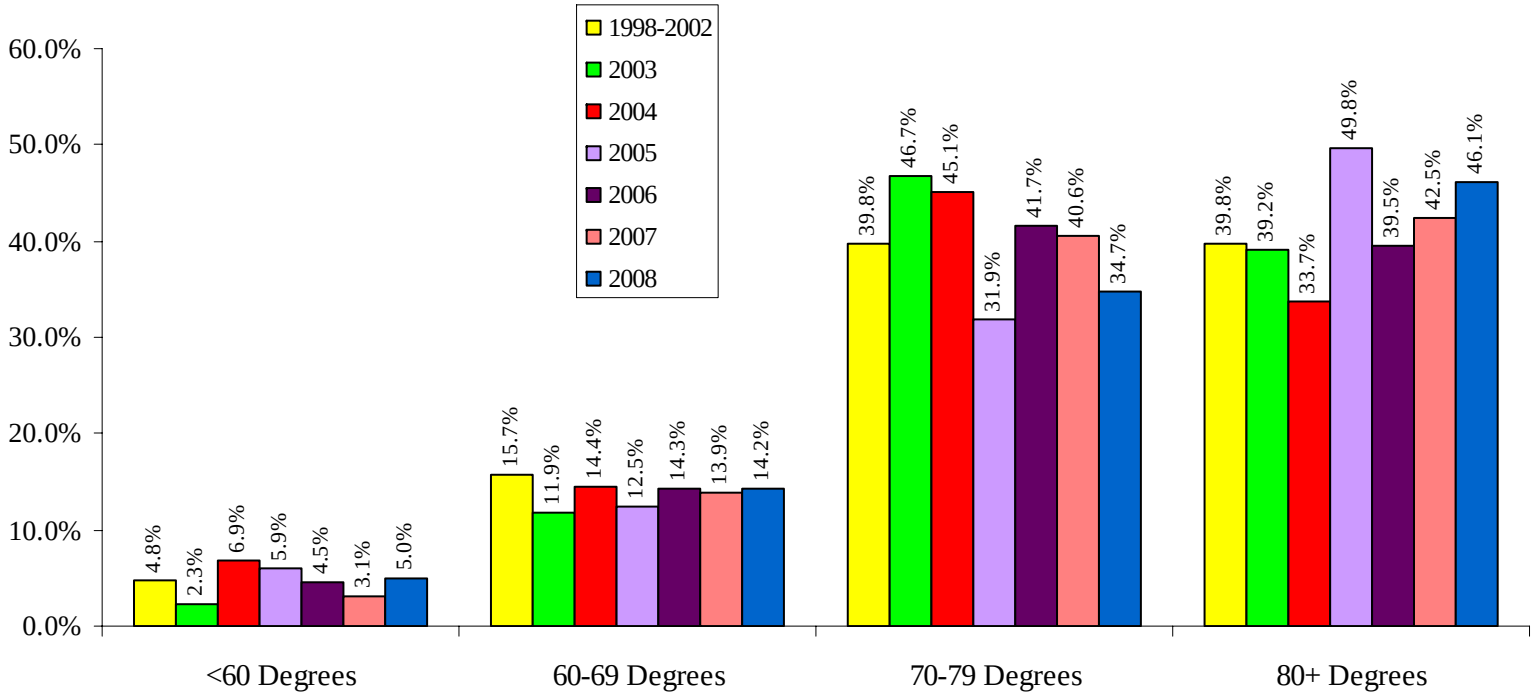


Figure 1.19 – Water Current in which all Boats Operated

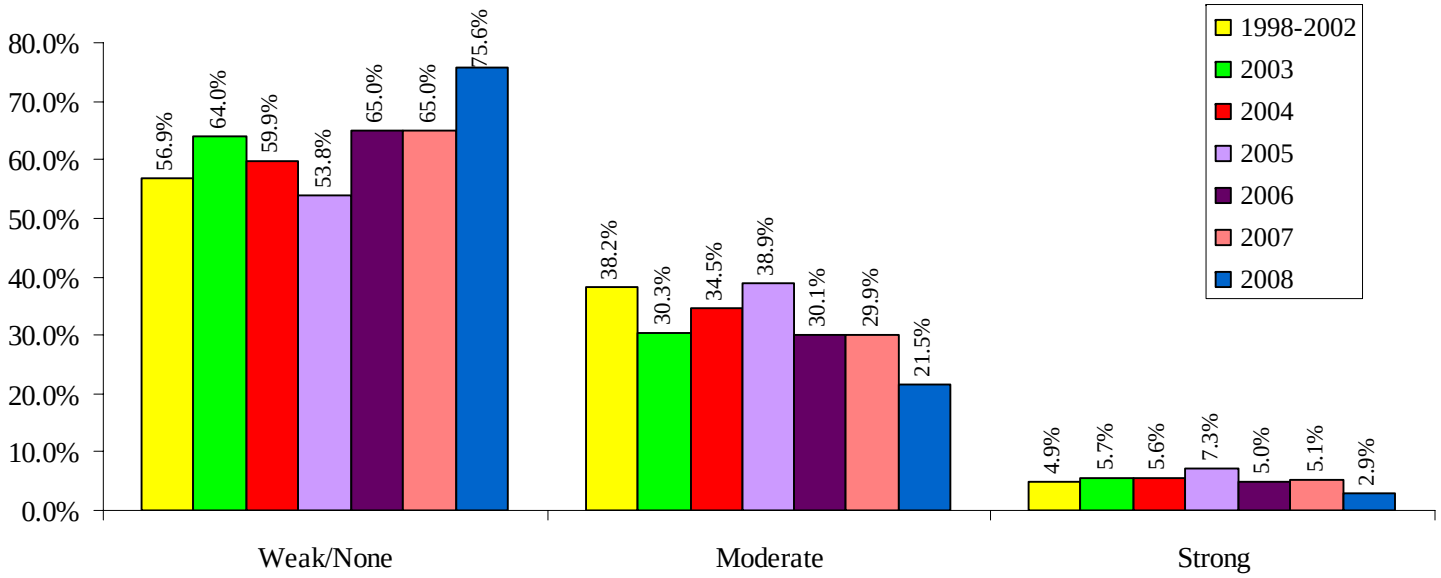


Figure 1.20 – Wave Height in which all Boats Operated

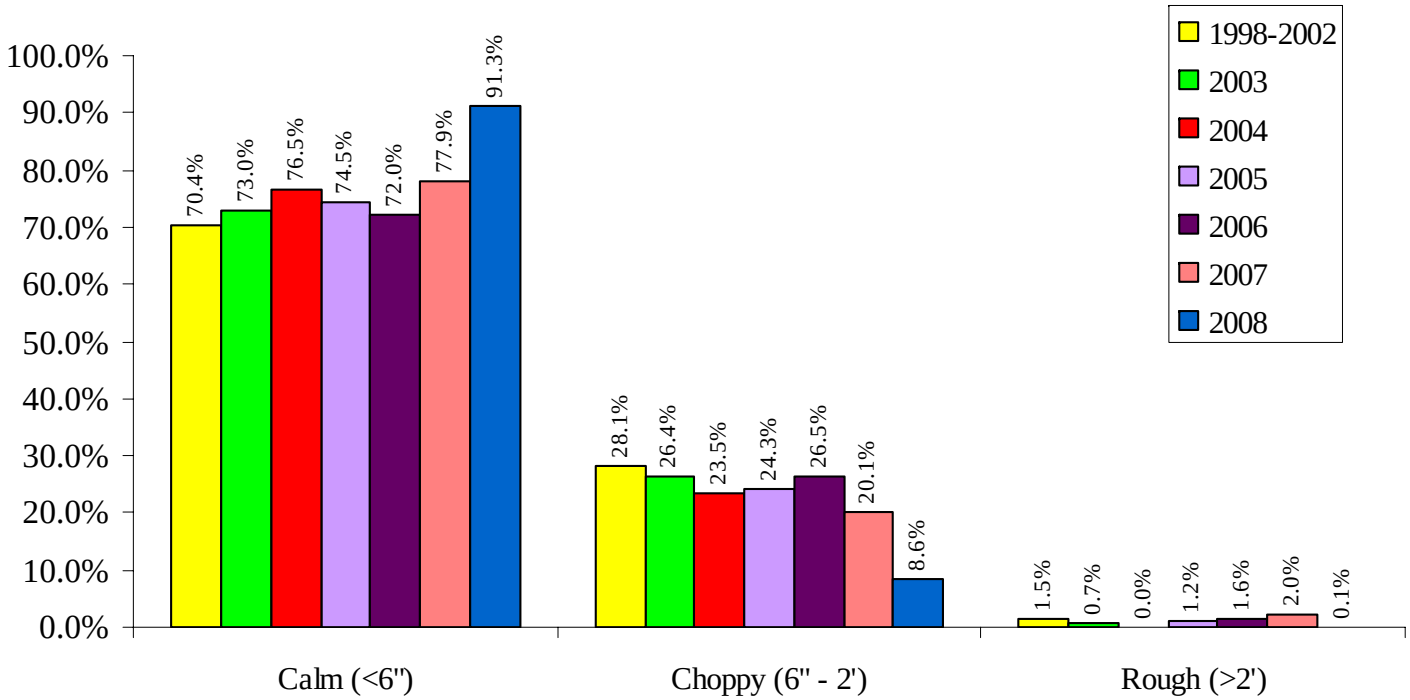


Figure 1.21 – Visibility in which all Boats Operated

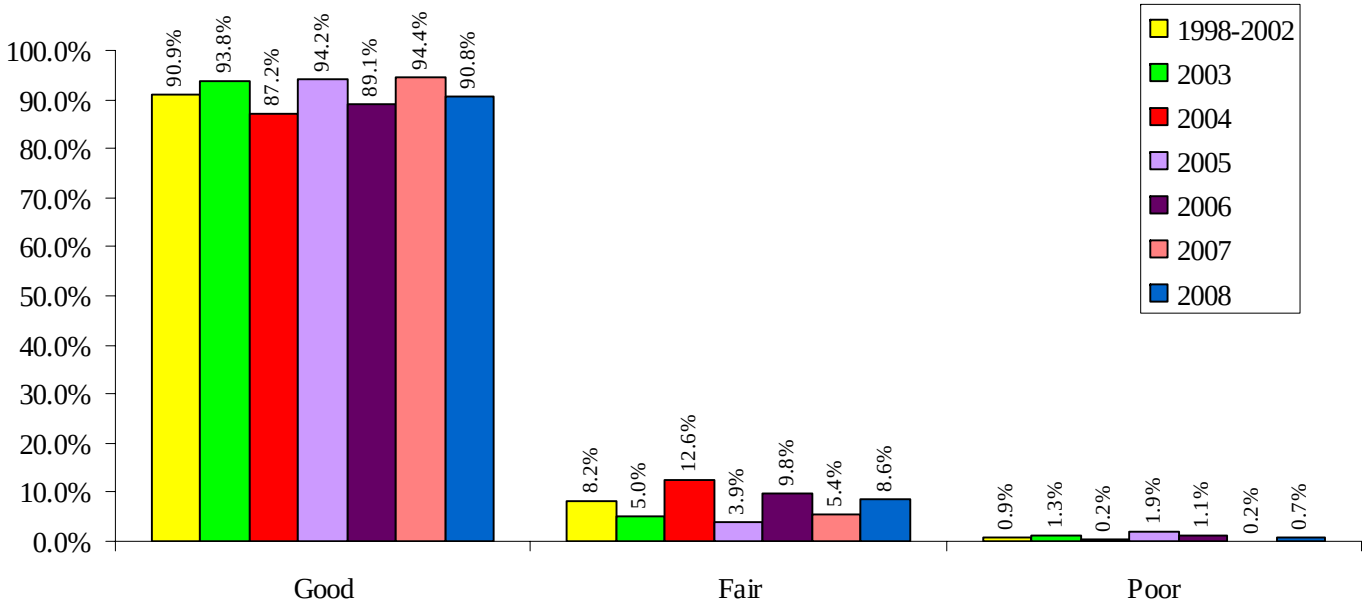


Figure 1.22 – Weather in which all Boats Operated

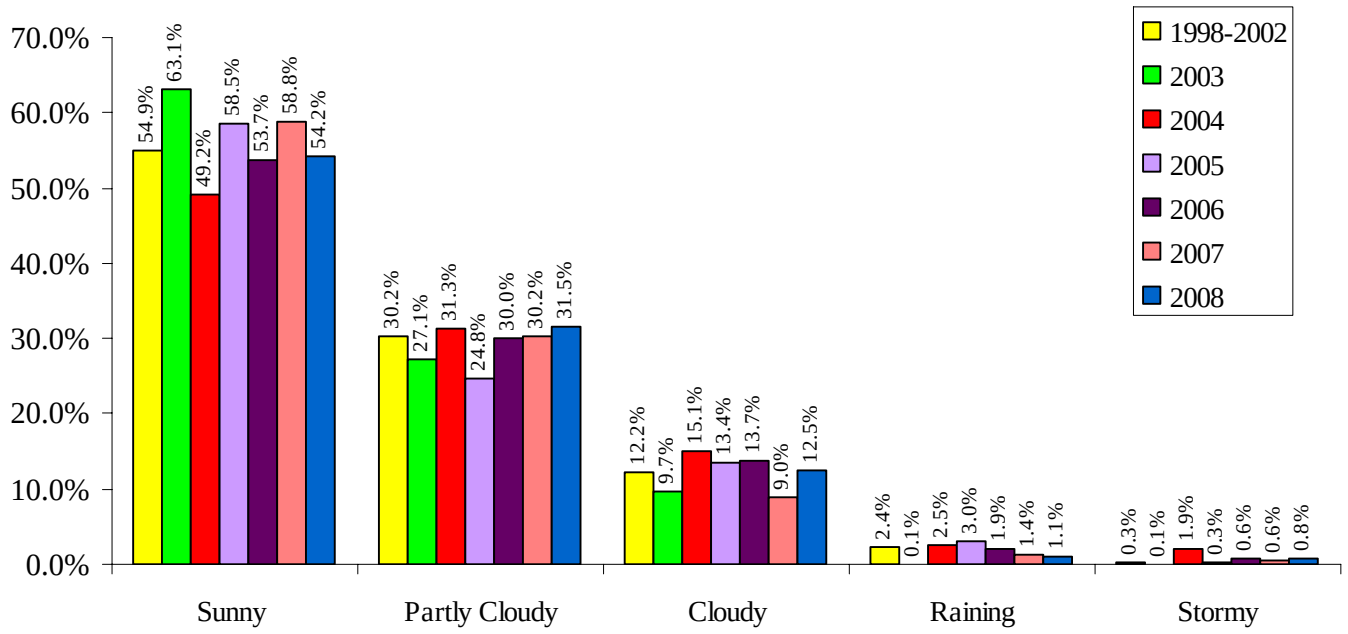


Figure 1.23 – Air Temperature in which all Boats Operated

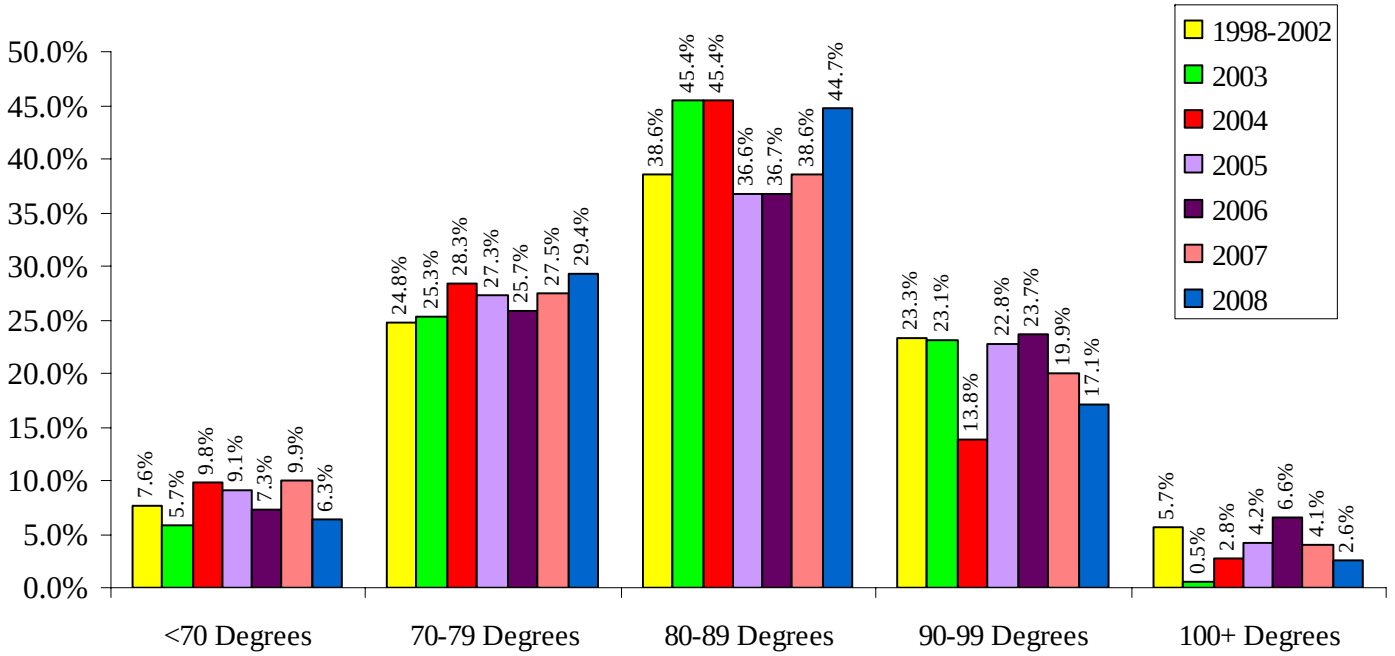
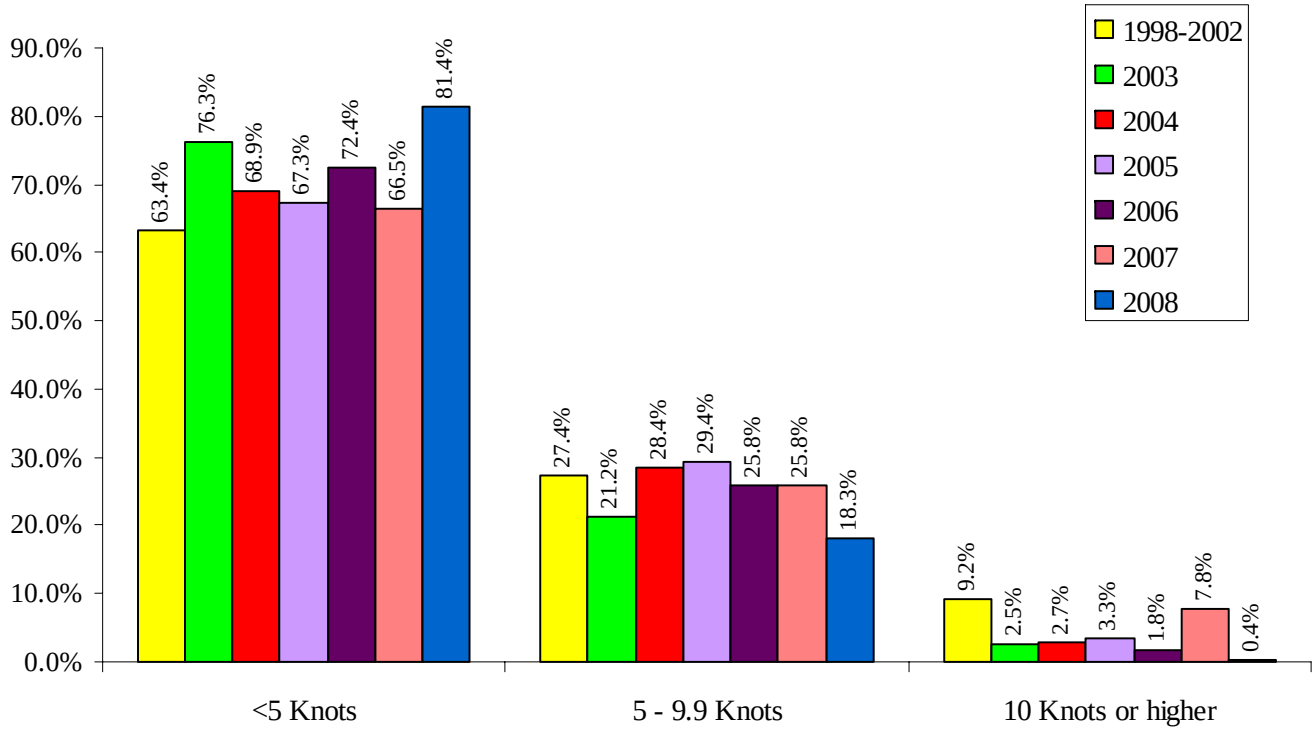


Figure 1.24 – Wind Speed in which all Boats Operated



2008 Life Jacket Wear Rate Observation Study

CHAPTER 2: EVALUATION OF THE CALIFORNIA DELTA "WEAR IT!" CAMPAIGN

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I. Introduction

Given the general lack of notable changes in wear rates for adults after several years of the national media campaigns to encourage voluntary wearing of life jackets, a new approach was needed. In 2007, the U.S. Coast Guard and California's Department of Boating and Waterways along with two national boating associations, BoatU.S. and the National Safe Boating Council, Inc., combined forces to implement an intensive educational and promotional campaign in one geographic market, the Delta region of California (see Figure 2.1). The intent was to determine, with a large amount of resources invested, whether an educational campaign could actually produce notable and sustainable changes in wearing behavior. In this report we present evidence from a three year study to assess the effectiveness of this ad campaign.

The Delta Campaign

The campaign included a variety of elements. The following description is taken from materials published by the California Delta Campaign team.

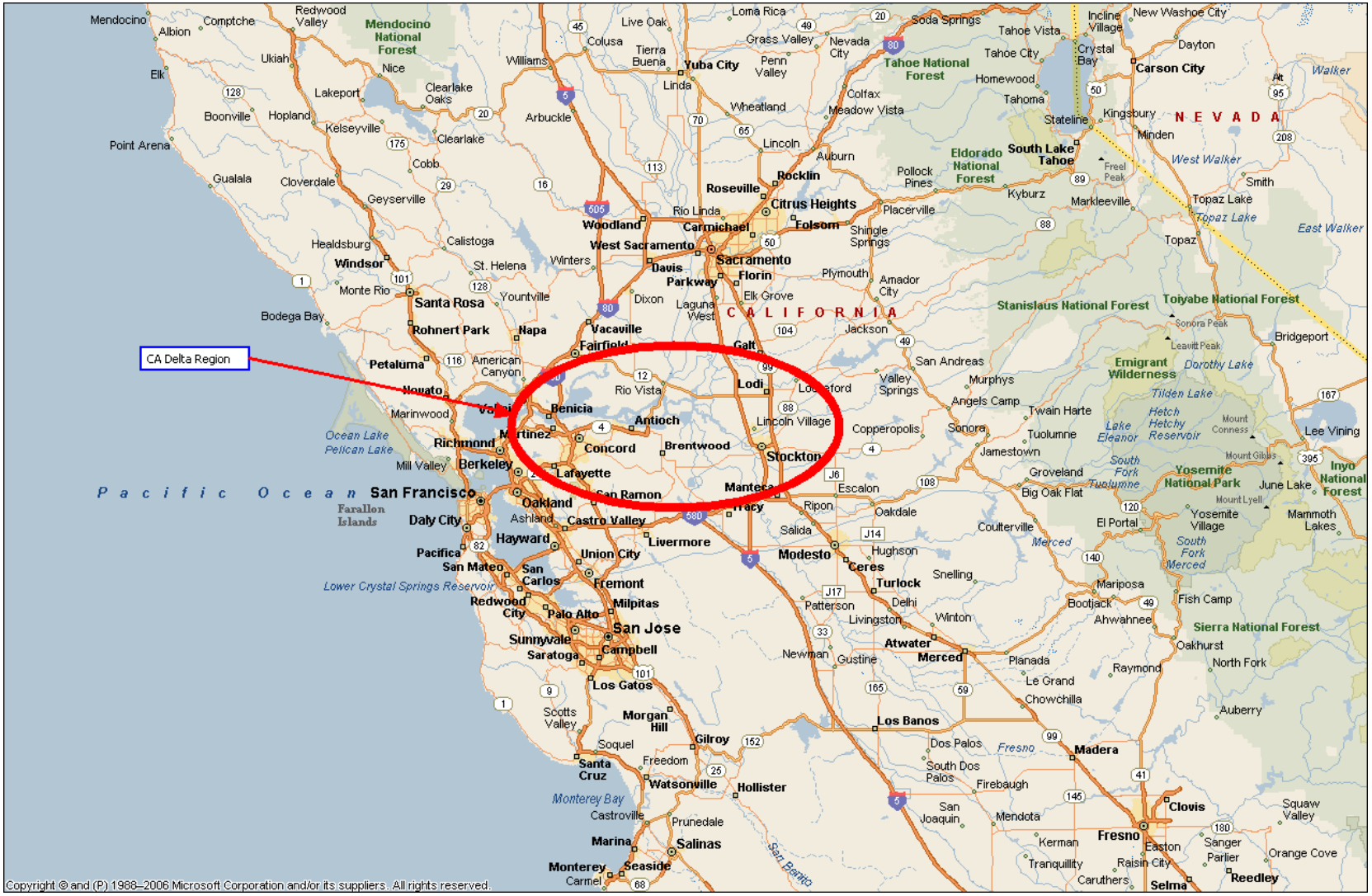
"Wear It!" Targeted Marketing Campaign. "The Wear It California" initiative represents a first-time collaborative effort which includes: the U.S. Coast Guard, the California Department of Boating and Waterways, BoatU.S. and the National Safe Boating Council. Designed to reach "trailer boaters", this campaign was implemented in accordance with a key marketing principle: frequency + diversity = success. Thus, the "Wear It! California" initiative was designed to deliver the message – "wear your life jacket" – many times through multiple means including venues where the boater would be most likely to hear it – and listen.

The 2007 Summer Campaign. Toward that end, one of the most visible and unique strategies was the campaign's "experiential marketing" approach, which was accomplished by featuring a "Campaign Tour Boat", visually represented by a colorful wrap that profiles the "Wear It!" logo. Cruising the Delta throughout the summer months, the boat was staffed with campaign "ambassadors" who engaged boaters in conversations about the importance of wearing a life jacket, provided demonstrations, and distributed educational materials. In addition, the ambassadors distributed free of charge over 1400 inflatable life jackets and obtained pledge cards from the recipients to "Wear It".

The Tour Boat dates and locations, as well as the boat itself, was debuted at a scheduled Press Conference during National Safe Boating Week, and continually publicized via mass media, partner outreach, local celebrities, and Web venues throughout the summer months. As of Labor Day weekend 2007, the campaign boat had visited 15 different marinas over 16 weekends.

To reach boaters beyond the water – but still in environments or through means where the boater was most likely to "ingest" the message – the campaign featured third party sponsorships with such entities as: marine retailers and shops, including West Marine®, Fisherman's Warehouse, and local marinas; and community organizations that shared a mutual goal to make the Sacramento area a safe community. These partners helped to raise the visibility of the campaign and promote life jacket safety messages through in-store displays, company/organizational promotional material, and their own individual public relations initiatives. Through this strategy, the campaign greatly expanded not only its reach, but also its variety in message distribution.

Figure 2.1 California Delta Region (in red)



From these sources as well as information distributed by the campaign boat ambassadors, it was estimated that over 10,000 Delta boaters were reached with" boating safety material" in 2007.

The 2008 Campaign. Although the philosophy of the "Wear It!" Campaign remained the same, budget problems in California government forced severe cut-backs in activities that used the California Department of Boating and Waterways resources. The key reduction was to cut back the appearances of the Campaign Tour boat. Instead of the 16 weekend appearances in 2007, the Tour Boat in 2008 only made two appearances. However, each weekend during the summer there were activities at specified marinas to hand out literature and to give away inflatable life jackets. In summary, the "intensity" of the face of the campaign was much lower in 2008.

II. Methods

The observation methods used to evaluate the Delta campaign were identical to those used in the national observation study. Possible water venues that were suitable for viewing were identified by the California Department of Boating and Waterways. For 2006, JSI staff visited the most likely water venues from among those nominated and made a final selection of four new sites in the Delta to complement two sites that had traditionally been included in the national observation study. These sites were each observed four times during the summer of 2006 as baseline data. The campaign team was not made aware of the specific locations of the observation sites so that a fairer test of the generalizability of the changes could be ascertained.

The other slight modification to traditional study methods was to start observations at 6am, so as to better make observations of wear rate behaviors by boaters who are fishing.

In 2007, as the campaign was unfolding, and it became known to the evaluators where the campaign stops would be (the central Delta not the outskirts of the Delta), in midsummer JSI added four more central Delta sites that were each observed once. Also two of the central delta sites that had been included were visited more frequently by our observation teams to maximize our ability to capture any changes in wear rate behaviors.

In 2008, as it became clearer from the preliminary analyses of the 2007 data that there were multiple confounding issues that were affecting wear rates, particularly the effect of fishing tournaments as well as the campaign effects itself, a substantial increase in frequency of observations were made. Nine Delta observation sites were visited nine times (each weekend) during the summer of 2008 starting on the July 4th holiday weekend and concluding on Labor Day weekend. Two of the observation sites (Lake Camanche and New Melones Lake) were considered to be located on the Delta Outskirts where the campaign was not active and seven sites were considered to be part of the Central Delta area where the campaign was active. The seven Central Delta sites were all places that the "Wear It!" campaign workers planned to visit. In addition, one of the sites (Discovery Bay) that had been observed in 2006 and 2007, was in the Central Delta but was not going to be visited by the campaign, so this site was also included but only observed four times during the summer, the same number of times it was observed in 2006 and 2007. As indicated above, the plans for the schedule of visits by the campaign Tour Boat were severely cut back, although the "Wear It!" campaign ambassadors did make appearances as scheduled and did publicity and promotions on-shore at marinas. See Figure 2.2 for an indication of the location of the Delta region observation site locations and the years observations were made there.

Figure 2.2 Central Delta Observation Site Locations

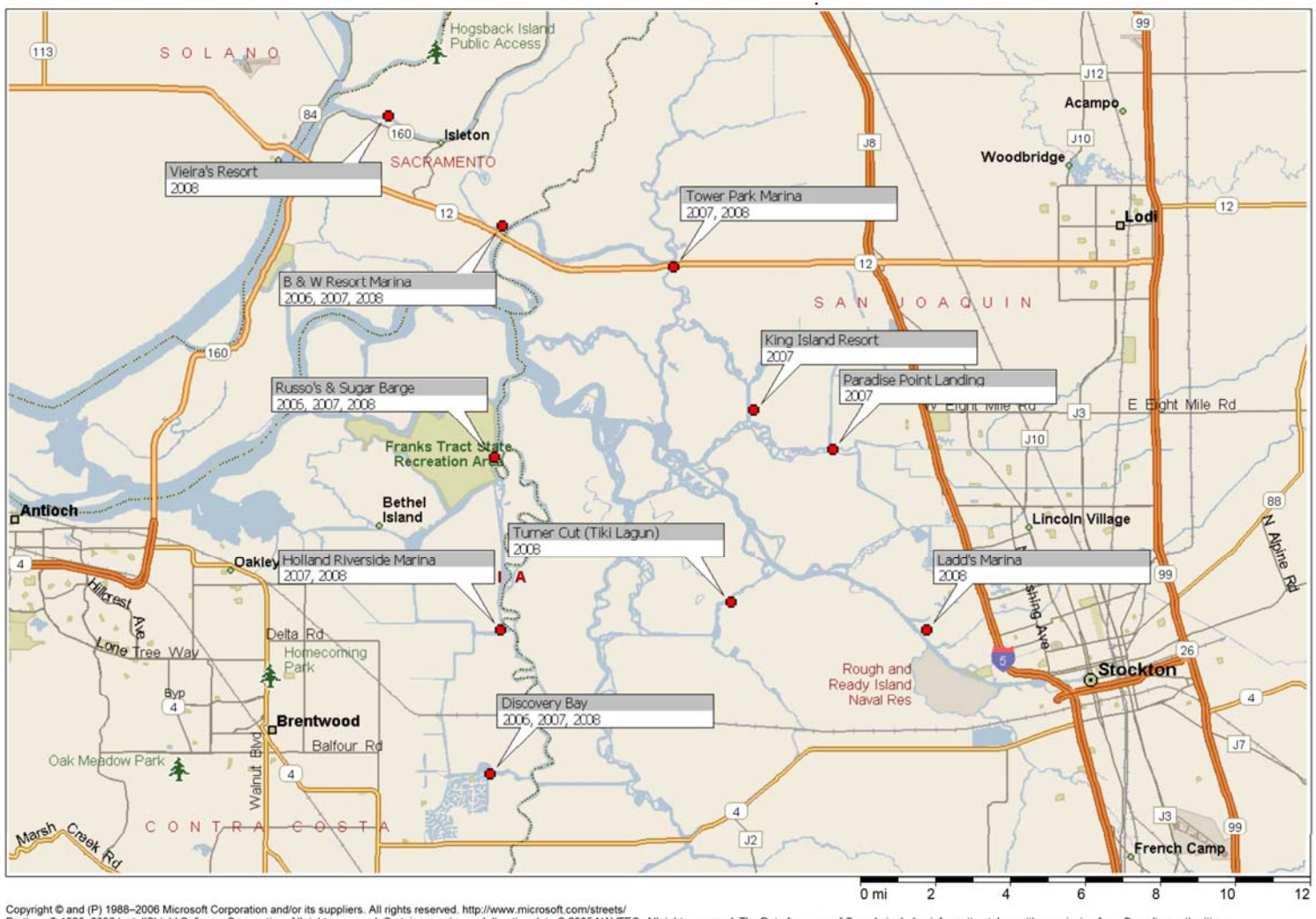


Table 2.1 shows the number of boats and number of boaters observed in each of the three years of the evaluation for the Central Delta area, the Delta Outskirts area, and Total observations. The total number of boaters observed in the Delta area were 5,462 boaters in 2006; 7,985 boaters in 2007 and 26,221 boaters in 2008. The main focus of our evaluation analysis was in the Central Delta area since that is where the campaign was active. Most of the tables which follow only include Central Delta observations, and in many cases the information is split into adults and youth (0-17 years old).

Further, in many of the tables, two groups of boaters are excluded: boaters riding on PWCs and the persons being pulled by a boat for waterskiing, tubing or wakeboarding. The reason these two groups are excluded in many of the tables is that they are covered by mandatory regulations and may cloud the impact of the "Wear It!" Campaign which was focusing on increasing voluntary use of life jackets. In summary, the numbers of Central Delta adult boaters excluding those on PWCs and those being pulled by a boat in the analyses were: 3,194 in 2006; 5,339 in 2007; and 16,493 in 2008. The number of Central Delta youth boaters excluding those on PWCs and those being pulled by a boat in the analyses were: 596 in 2006; 1,017 in 2007; and 3,172 in 2008 (See Table 2.2).

Table 2.1: Frequency Distributions of Boats and Boaters (Weighted and Unweighted) by Geographic Sub-Regions of the Delta for Adults

	2006		2007		2008	
Total Number of Boats with any Adults Observed (All-No Weighting)						
Central Delta	71.2%	1407	86.0%	2433	82.8%	7078
Delta Outskirts	28.8%	569	14.0%	395	17.2%	1474
Total	100.0%	1976	100.0%	2828	100.0%	8552
Total Number of Adult Boaters Observed (All-No Weighting)						
Central Delta	73.8%	3400	86.7%	5677	83.3%	17745
Delta Outskirts	26.2%	1210	13.3%	872	16.7%	3570
Total	100.0%	4610	100.0%	6549	100.0%	21315
Total Number of Adult Boaters Observed (Weighted-ALL)						
Central Delta	73.6%	3387	86.7%	5677	83.3%	17730
Delta Outskirts	26.4%	1213	13.3%	872	16.7%	3560
Total	100.0%	4600	100.0%	6549	100.0%	21290
Total Number of Adult Boaters Observed (Weighted-No PWC)						
Central Delta	73.7%	3191	86.7%	5347	83.3%	16702
Delta Outskirts	26.3%	1140	13.3%	820	16.7%	3348
Total	100.0%	4331	100.0%	6167	100.0%	20050
Total Number of Adult Boaters Observed (Weighted-No WS)						
Central Delta	73.8%	3380	86.7%	5665	83.3%	17668
Delta Outskirts	26.2%	1200	13.3%	871	16.7%	3534
Total	100.0%	4580	100.0%	6536	100.0%	21202
Total Number of Adult Boaters Observed (Weighted-No WS/PWC)						
Central Delta	73.9%	3194	86.7%	5339	84.0%	16493
Delta Outskirts	26.1%	1126	13.3%	819	16.0%	3146
Total	100.0%	4320	100.0%	6158	100.0%	19639

Table 2.2: Frequency Distributions of Boats and Boaters (Weighted and Unweighted) by Geographic Sub-Regions of the Delta for Youth

	2006		2007		2008	
Total Number of Boats with any Youth Observed (All-No Weighting)						
Central Delta	74.1%	337	82.7%	593	77.2%	1874
Delta Outskirts	25.9%	118	17.3%	124	22.8%	552
Total	100.0%	455	100.0%	717	100.0%	2426
Total Number of Youth Boaters Observed (All-No Weighting)						
Central Delta	71.8%	612	83.6%	1200	77.1%	3782
Delta Outskirts	28.2%	240	16.4%	236	22.9%	1124
Total	100.0%	852	100.0%	1436	100.0%	4906
Total Number of Youth Boaters Observed (Weighted-ALL)						
Central Delta	69.7%	711	83.6%	1200	77.7%	3732
Delta Outskirts	30.3%	309	16.4%	236	22.3%	1074
Total	100.0%	1020	100.0%	1436	100.0%	4806
Total Number of Youth Boaters Observed (Weighted-No PWC)						
Central Delta	70.8%	658	83.2%	1086	78.5%	3468
Delta Outskirts	29.2%	272	16.8%	219	21.5%	950
Total	100.0%	930	100.0%	1305	100.0%	4418
Total Number of Youth Boaters Observed (Weighted-No WS)						
Central Delta	68.4%	657	82.8%	1130	78.6%	3532
Delta Outskirts	31.6%	304	17.2%	234	21.4%	961
Total	100.0%	961	100.0%	1364	100.0%	4493
Total Number of Youth Boaters Observed (Weighted-No WS/PWC)						
Central Delta	68.0%	596	82.4%	1017	79.0%	3172
Delta Outskirts	32.0%	280	17.6%	217	21.0%	844
Total	100.0%	876	100.0%	1234	100.0%	4016

Matching 2006 & 2008 Distributions to 2007

In terms of wear rate calculations, most data are presented collapsing the traditional life jackets and the newer inflatable life jackets into a simple "wearing" category. During the analysis of changes in wear rates it became clear that there were two major factors that influence wear rates outside of the intervention efforts. One factor was the types of boats the boater was using and the other was whether the boat was involved in either actually fishing at the time of the observation, or intending to fish compared to all other boating activities. Therefore, in order to assess the impact of the interventions and to protect the comparisons of wear rate changes across the years from fluctuations on these two factors, the proportions of boaters in each of these situations in 2006 and 2008 was weighted to match the distributions in 2007. A similar strategy was used for the youth wear rate comparisons but in this instance, the factor weighted was the proportions of under 6 year olds, 6 to 12 year olds, and 13 to 17 year olds. Again, the proportions observed in 2007 were matched for the 2006 and 2008 data.

III. Results

Delta Wear Rates by Sub-Regions for Adults

Figure 2.3 and Table 2.3a show the overall wear rates for adults in the Delta region with information presented for the Central Delta area and the Delta Outskirts excluding boaters on PWCs and in the water waterskiiers.

In the *Outskirts* of the Delta for adults there was a slight upward trend in overall wear rates (no PWCs and no waterskiiers) from 4.7% in 2006 to 5.3% in 2007 and to 7.6% in 2008).

In the *Central* Delta region for adults there were significant changes in overall wear rates. From 2006 to 2007 wear rates increased from 8.6% to 12.1% but then dropped in 2008 to 9.6% which, however, was still slightly higher than the baseline data.

These overall general results were consistent with the intensity and Geographic locations for the campaign which were concentrated in the Central Delta region and were more intense in 2007 than they were in 2008.

Figure 2.3
Delta Adult Wear Rates by Geographic Sub-Regions
For Years 2006, 2007 & 2008 (Percent Wearing)

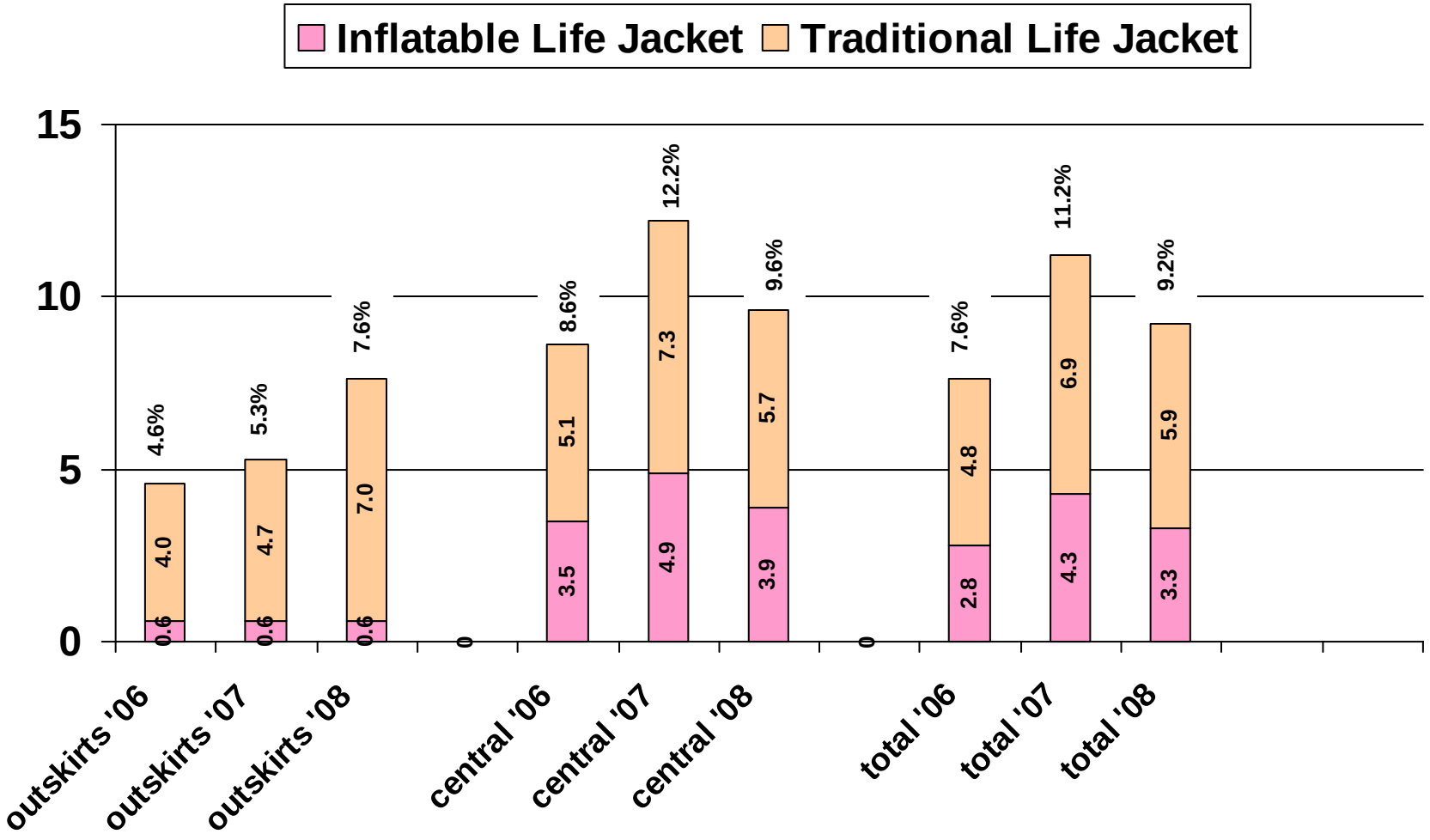


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Table 2.3a: Adult Wear Rates for Delta Sub-Region by Year
(Excluding PWCs and in the water Water-skiers)

Delta Region	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Delta Outskirts ***	1074 95.3%	52 4.7%	771 94.7%	43 5.3%	2905 92.4%	239 7.6%
Central Delta ****	2903 91.4%	272 8.6%	4677 87.9%	646 12.1%	14884 90.4%	1574 9.6%
Total	**3977** **92.5%**	**325** **7.6%**	**5448** **88.8%**	**689** **11.2%**	**17789** **90.8%**	**1813** **9.3%**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.3b: Frequency Distribution of Number of Adult Boaters for each Delta Sub-Region by Year
(Excluding PWCs and in the water Water-skiers)

	2006		2007		2008	
Total Number of Adult Boaters Observed (Weighted-No WS/PWC)						
Central Delta	73.9%	3194	86.7%	5339	84.0%	16493
Delta Outskirts	26.1%	1126	13.3%	819	16.0%	3146
Total	100.0%	4320	100.0%	6158	100.0%	19639

Delta Wear Rates by Sub-Regions for Youth

For youth in the *Outskirts* wear rates remained relatively constant (approximately 54%) and there were no statistically significant differences across the years (See Table 2.4a).

For youth in the Central Delta, the wear rates were relatively similar from 2006 to 2007 but jumped noticeably in 2008 (46.3%, 44.7% and 53.0% respectively).

Table 2.4a: Youth Wear Rates for Delta Sub-Region by Year
(Excluding PWCs and in the water Water-skiers)

Delta Region	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Delta Outskirts [ns]	129 46.0%	151 54.0%	97 46.2%	113 53.8%	385 45.6%	460 54.4%
Central Delta [****]	312 53.7%	269 46.3%	559 55.3%	452 44.7%	1489 47.0%	1681 53.0%
Total	**440** **51.2%**	**420** **48.8%**	**656** **53.7%**	**565** **46.3%**	**1873** **46.7%**	**2141** **53.3%**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.4b: Frequency Distribution of Number of Youth Boaters for each Delta Sub-Region by Year
(Excluding PWCs and in the water Water-skiers)

	2006		2007		2008	
Total Number of Youth Boaters Observed (Weighted-No WS/PWC)						
Central Delta	68.0%	596	82.4%	1017	79.0%	3172
Delta Outskirts	32.0%	280	17.6%	217	21.0%	844
Total	100.0%	876	100.0%	1234	100.0%	4016

Traditional versus Inflatable Life Jacket Use

Table 2.5a shows more detail in wear rates by life jacket type (traditional versus inflatable) for adults (since children were not allowed to wear the newer inflatable life jackets) for the two sub-regions.

In the *Outskirts* of the Delta the proportion of adults wearing inflatable life jackets (0.6%) did not change at all during the three year period. The changes in life jacket wear rates in the Outskirts were confined to boaters wearing traditional style life jackets.

In the *Central* Delta wear rates for inflatables went up a bit in 2007 (from 3.5% to 4.9%) but then dropped back down in 2008 (3.9%). This same pattern also held for traditional style life jackets (from 5.1% to 7.3% and then down to 5.7%).

Table 2.5a: Adult Wear Rates for Delta Sub-Region by Year
(Excluding PWCs and in the water Water-skiers)

Delta Region	2006			2007			2008		
	Traditional PFD N Percent	**Inflatable** N Percent	**No PFD** N Percent	**Traditional PFD** N Percent	**Inflatable** N Percent	**No PFD** N Percent	**Traditional PFD** N Percent	**Inflatable** N Percent	**No PFD** N Percent
Delta Outskirts **	45 4.0%	7 0.6%	1074 95.3%	38 4.7%	5 0.6%	771 94.7%	221 7.0%	18 0.6%	2905 92.4%
Central Delta ****	161 5.1%	111 3.5%	2903 91.4%	386 7.3%	260 4.9%	4677 87.9%	938 5.7%	636 3.9%	14884 90.4%
Total	**206 4.8%**	**118 2.8%**	**3977 92.5%**	**424 6.9%**	**265 4.3%**	**5448 88.8%**	**1160 5.9%**	**654 3.3%**	**17789 90.8%**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.5b: Frequency Distribution of Number of Adult Boaters for each Delta Sub-Region by Year
(Excluding PWCs and in the water Water-skiers)

	2006		2007		2008	
Total Number of Adult Boaters Observed (Weighted-No WS/PWC)						
Central Delta	73.9%	3194	86.7%	5339	84.0%	16493
Delta Outskirts	26.1%	1126	13.3%	819	16.0%	3146
Total	100.0%	4320	100.0%	6158	100.0%	19639

From this point forward in this report the data are limited to the Central Delta region unless otherwise indicated, since this area was where the "Wear It Campaign" was most concentrated.

All Tables beginning with 2.6a forward present wear rate data *excluding PWCs and in the water Water-skiers*.

Age Comparisons

In Table 2.6a wear rates are shown for the three age categories of youth compared with adult rates which were described earlier. For the youngest group of boaters (under 6 years old), the campaign did not significantly effect wear rates, but that is most likely due to the exceedingly high wear rates from the beginning with rates ranging from 86% to 91%. For children in the 6 to 12 year old category wear rates jumped up noticeably in 2008 from 72% in 2007 to 86% in 2008. For teenagers (13 to 17 years old) we see a similar pattern in which the rates jump noticeably from 14.6% in 2007 to 21.5% in 2008.

Table 2.6a: Wear Rates for Age Group by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

AGE GROUP	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Children (0-5 years) ns	11 14.1%	64 85.9%	12 9.0%	122 91.0%	41 9.8%	380 90.2%
Children (6-12) years****	44 21.8%	157 78.2%	97 27.7%	253 72.3%	149 13.6%	946 86.4%
Teens (13-17 years) ***	258 84.3%	48 15.7%	450 85.4%	77 14.6%	1299 78.5%	355 21.5%
Adults (18 years & over)****	2903 91.4%	272 8.6%	4677 87.9%	646 12.1%	14884 90.4%	1574 9.6%
Total	**3215** **85.6%**	**541** **14.4%**	**5236** **82.7%**	**1098** **17.3%**	**16372** **83.4%**	**3255** **16.6%**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.6b: Frequency Distribution of Number of Boaters for Age Group by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Age							
Children (under 6 years old)	2.0%	75	2.1%	134	2.1%	421	ns
Children (6 to 12 years old)	5.3%	201	5.5%	350	5.6%	1095	
Teens (13-17 years)	8.1%	306	8.3%	527	8.4%	1654	
Adults (18 years & over)	84.6%	3194	84.1%	5339	83.9%	16493	
Total	100.0%	3776	100.0%	6350	100.0%	19663	

Adult Gender Comparisons

Table 2.7a shows the life jacket wear rate differences between *adult males and adult females* in the Central Delta area.

In all three years of the study we see the same general finding that *adult males* are more likely to wear life jackets than *adult females* in each year of the study. This is likely due to the different types of boats that males are more likely to be found in and the different types of activities that involve boating males. Men are more likely to be involved in fishing and are more likely to be found in smaller boats and skiffs. All of these situations influence wear rates.

The pattern of wear rates for both males and females, however, is very similar across the three years — lowest rates in the baseline 2006 year, then a sizeable increase in wear rates in 2007 followed by a decline in 2008 but still somewhat higher than the 2006 baseline year (Males: 11.1%, 15.1%, 12.4% and Females: 2.8%, 5.7%, 3.6%).

Table 2.7a: Adult Wear Rates for Gender by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Gender	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Male ****	1969 88.9%	246 11.1%	3096 84.9%	550 15.1%	9739 87.6%	1379 12.4%
Female ****	931 97.2%	27 2.8%	1572 94.3%	95 5.7%	5139 96.4%	192 3.6%
Total	**2900**	**272**	**4668**	**645**	**14878**	**1571**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.7b: Frequency Distribution of Number of Adult Boaters for Gender by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Gender							
Male	69.7%	2224	68.5%	3652	67.6%	11147	ns
Female	30.3%	967	31.5%	1676	32.4%	5337	
Total	100.0%	3191	100.0%	5328	100.0%	16485	

Youth Gender Comparisons

Table 2.8a shows the differences in wear rates *for male and female youth.*

Similar to adults, male youths show higher wear rates than female youths in each of the three years of the study although the magnitude of the differences is not as large as it is for adults. This is probably due to the fact that youth, ages 0 to 11, are mandated to wear life jackets and therefore rates of girls and boys are expected to be similar. Across the three years of the study there were not any increases observed between 2006 and 2007. In 2008 wear rates increased but the difference between males and females decreased.

Table 2.8a: Youth Wear Rates for Gender by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Gender	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Male *	151 50.8%	146 49.2%	292 52.8%	261 47.2%	811 46.8%	922 53.2%
Female ****	159 59.6%	108 40.5%	264 60.4%	173 39.6%	674 47.3%	750 52.7%
Total	**309**	**254**	**556**	**434**	**1485**	**1672**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.8b: Frequency Distribution of Number of Youth Boaters for Gender by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Gender							
Male	52.7%	305	55.8%	556	54.9%	1735	ns
Female	47.3%	273	44.2%	440	45.1%	1424	
Total	100.0%	578	100.0%	996	100.0%	3158	

The "Tournament Effect" versus "Campaign Effect"

There were two "interventions" that were on-going during this period of the evaluation that might have affected wear rates. The first "intervention" was the presence of a fishing tournament on some observation days for some boaters. Fishing tournament rules require participants in the tournament to wear a life jacket when their boat is underway. Of course, it is also likely that some of these participants might continue to wear their lifejackets even while the boat is not underway and they are actively fishing. JSI was able to obtain information from the California Department of Fish and Game about the marinas that were the check-in points for all tournaments held in the Delta.

So for each day of observation, sites were coded as to whether a fishing tournament was active in the immediate area. It is unknown how far participants went beyond the check-in point as they participated in the tournaments, so there is some possibility that participants in one marina area would actually be viewed by our observers from another marina area not participating in the tournament. This possibility is not likely, however, given the distances between the observation sites.

Another issue is that while observing boaters there is no way to know whether they are actually participating in the tournament. There could be many boaters in the area involved in other activities. For the purposes of analysis, all boaters observed on the day of a tournament in the waters within site of the sponsoring marina were classified as boating when a tournament was in progress. We did distinguish, however, what activity boaters were doing within either a tournament area or a non-tournament area. For the purposes of this study boaters were classified as either fishing (because they were actively fishing) or as "intending to fish" when fishing could be observed in the boat but not currently in use. If boaters were doing neither of these things then the activity was classified as "other activities".

Campaign Effects for Adults

Boaters were classified as boating on a day the Campaign was in effect if they were observed on one of three different occasions: the same day the campaign was present at that marina; the day *after* the campaign visited the marina or the *weekend after* the campaign visited the marina. For boaters observed before the campaign or for those observed more than 12 days later, they were considered to be boating when the campaign was <u>not present</u>.

Table 2.9a shows the effects of the "Wear It!" Campaign on *adult* life jacket wear rates. When the Campaign was "present" *adult* wear rates were higher in both 2007 and 2008 (24.3% and 11.1%) than in the baseline year when there were not campaign days (8.6%) or in the "not present" observations in 2007 (5.5%) and 2008 (8.8%). The fact that the wear rates were highest in 2007 and then dropped back somewhat, is consistent with the reduction in the intensity of the intervention.

Table 2.9a: Adult Wear Rates for Campaign by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Campaign	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
No Campaign ****	2903 91.4%	272 8.6%	3253 94.5%	189 5.5%	9852 91.2%	948 8.8%
Campaign ****	0 .	0 .	1424 75.7%	457 24.3%	5032 88.9%	626 11.1%
Total	**2903**	**272**	**4677**	**646**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.9b: Frequency Distribution of Number of Adult Boaters for Campaign by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Campaign							
No	100.0%	3194	64.7%	3452	65.6%	10817	p<.0001
Yes	0.0%	0	35.3%	1887	34.4%	5676	
Total	100.0%	3194	100.0%	5339	100.0%	16493	

Campaign Effects for Youth

Table 2.10a shows the campaign effects for *youth boaters*. There was no indication that the campaign made any effect on *youth* wear rates in 2007 compared to 2006. In 2008, wear rates for youth were higher than they were in the baseline year, but they were almost equally high in the "no campaign" days (52.4%) as in the "campaign" days (54.4%). It is very likely that the potential of the campaign to influence youth wear rates is less since children under 12 were mandated to wear life jackets all through the three year period. The only age category of youth that might be influenced by the campaign are teens between 13 and 17. For this age group the data show the same pattern as for all youth: relatively similar from 2006 to 2007, then a jump in wear rates in 2008.

Table 2.10a: Youth Wear Rates for Campaign by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Campaign	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
No Campaign **	312 53.7%	269 46.3%	405 53.9%	346 46.1%	1041 47.6%	1146 52.4%
Campaign ****	0 .	0 .	154 59.2%	106 40.8%	448 45.6%	535 54.4%
Total	**312**	**269**	**559**	**452**	**1489**	**1681**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.10b: Frequency Distribution of Number of Youth Boaters for Campaign by Year
(Central Delta, Excluding PWCs and in the water Water-Skiers)

	2006		2007		2008		p
Campaign							
No	100.0%	596	74.1%	754	69.0%	2189	p<.0001
Yes	0.0%	0	25.9%	263	31.0%	983	
Total	100.0%	596	100.0%	1017	100.0%	3172	

Tournament Effect for Adults

Table 2.11a shows the impact of the presence of a tournament in an area. In all three years, *adult boaters* who were boating in an area where a tournament was happening that day were more likely to wear a lifejacket than on non-tournament days. So clearly tournaments influenced wear rates (again at least for boaters who were participating in the tournament). For observations in locations where there was not a tournament in progress, wear rates for adults were higher in 2007 and 2008 (9.0% and 8.2%) than in 2006.

Table 2.11a: Adult Wear Rates for Tournament by Year
(Central Delta, Excluding PWCs in the water Water-skiers)

Tournament	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
No Tournament ****	2319 95.2%	118 4.9%	2818 91.1%	277 9.0%	12643 91.9%	1123 8.2%
Tournament *	584 79.1%	154 20.9%	1859 83.4%	369 16.6%	2240 83.2%	452 16.8%
Total	**2903**	**272**	**4677**	**646**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.11b: Frequency Distribution of Number of Adult Boaters for Tournament by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Tournament							
No	76.9%	2456	58.2%	3105	83.7%	13796	p<.0001
Yes	23.1%	738	41.8%	2234	16.4%	2697	
Total	100.0%	3194	100.0%	5339	100.0%	16493	

Tournament Effect for Youth

For *youth*, the tournament effect is less clear in part because a greater proportion of youth observed in a tournament location were not actually participating in the tournament (See Table 2.12a). In 2006, wear rates are actually lower for youth boating on a tournament day than on non-tournament days. This finding should be viewed with caution, however, as there were relatively few *youth* observed at tournament locations (n=32).

In 2007 and 2008 wear rates for *youth* were higher on tournament days than for non-tournament locations similar to the adult findings. For the non-tournament days *only,* the 2008 youth wear rates are higher than the baseline rates.

Table 2.12a: Youth Wear Rates for Tournament by Year
(Central Delta, Excluding PWCs and in the Water Water-skiers)

Tournament	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
No Tournament ****	292 53.2%	257 46.8%	419 56.8%	319 43.2%	1320 47.7%	1446 52.3%
Tournament *	20 62.3%	12 37.7%	140 51.3%	133 48.7%	169 41.8%	235 58.2%
Total	**312**	**269**	**559**	**452**	**1489**	**1681**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.12b: Frequency Distribution of Number of Youth Boaters for Tournament by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Tournament							
No	94.7%	565	73.0%	742	87.2%	2766	p<.0001
Yes	5.3%	31	27.0%	275	12.8%	406	
Total	100.0%	596	100.0%	1017	100.0%	3172	

Tournament and Campaign Effects Combined for Adults

Since both the tournament effect and campaign effect seemed to be important for adults, it is interesting to look at the combination of these two situations.

Table 2.13a shows the *adult* wear rates for this combination of situations. For the "no tournament/no campaign" condition the baseline year wear rates were 4.9%. In 2007 this rate actually drops to 3.2% and then it goes up in 2008 (7.5%).

In each year on days when there was a "tournament only" in the area (and no campaign present), the wear rates were higher than the 4.9% for "no tournament/no campaign situation" at baseline (2006 = 20.9%; 2007 = 9.8%; and 2008 = 19.5%). This finding replicates the similar findings from an earlier table concerning the impact of a tournament on wear rates.

For 2007 and 2008 observations when the campaign was present and no tournament was in progress, wear rates were higher than the baseline for non-tournament and non-campaign observations (4.9% versus 24.3% in 2007 and 9.7% in 2008). These findings replicate the earlier table concerning the impact of the campaign—a strong impact in 2007 and a weaker impact in 2008. Also, when both interventions are present—a tournament and the campaign, *adult* wear rates are higher than the baseline year for non-tournament and non-campaign days (4.9% versus 24.3% in 2007 and 14.7% in 2008). Again, we see the effect of the weakening of the campaign in 2008 compared to 2007.

Table 2.13a: Adult Wear Rates for Tournament/Campaign by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Tournament/Campaign	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
No Tournament/Campaign ****	2319 95.2%	118 4.9%	2179 96.8%	72 3.2%	8915 92.5%	721 7.5%
Tournament Only ****	584 79.1%	154 20.9%	1074 90.2%	117 9.8%	937 80.5%	227 19.5%
Campaign Only ****	0 .	0 .	639 75.7%	205 24.3%	3728 90.3%	402 9.7%
Tournament & Campaign ****	0 .	0 .	785 75.7%	252 24.3%	1304 85.3%	225 14.7%
Total	**2903**	**272**	**4677**	**646**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.13b: Frequency Distribution of Number of Adult Boaters for Tournament/Campaign by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Tournament and/or Campaign							
No tournament/campaign	76.9%	2456	42.3%	2256	58.5%	9651	p<.0001
Tournament only	23.1%	738	22.4%	1196	7.1%	1166	
Campaign only	0.0%	0	15.9%	849	25.1%	4146	
Both tournament & campaign	0.0%	0	19.4%	1038	9.3%	1530	
Total	100.0%	3194	100.0%	5339	100.0%	16493	

Boat Type for Adults

In the Delta the vast majority of boating activity is on powered boats. In Table 2.14a shows the changes in wear rates for different types of boats. The changes in wear rates can be seen clearly almost entirely in the "skiffs/utility" classification of boats. We considered skiffs to be boats with a low rise above the waterline without a covered bow area; mostly flat bottom type boats, and those with center consoles. Therefore Boston Whaler type boats and Bass boats were put in this group. Speedboats/Runabouts were boats with a higher rise above the waterline, more comfortable seating, covered bow areas (even if some seating was in the bow area) but without any closed cabin area.

For skiffs the wear rates went from 25.8% in 2006 to 37.0% in 2007 and then dropping back somewhat to 30.3% in 2008. For speedboats/runabouts the changes were almost non-existent with 2006 wear rates of 3.0%; 2007 of 3.7% and then 2008 of 2.1%. Interestingly there was an increase in PWC wear rates in 2007 and 2008 above the 2006 rates, but relatively few PWCs were observed in 2006 so this increase should be viewed with caution.

Table 2.14a: Adult Wear Rates for Boat Type by Year
(Central Delta, Excluding in the water Water-skiers)

Boat Type	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Skiff/Utility ****	597 74.2%	207 25.8%	850 63.0%	499 37.0%	2932 69.7%	1274 30.3%
Runabout/Speedboat ****	1868 97.1%	57 3.0%	3117 96.3%	120 3.7%	9902 97.9%	217 2.1%
Cabin cruiser ns	293 99.5%	2 0.5%	490 98.0%	10 2.0%	1517 98.1%	29 1.9%
PWC ***	16 8.1%	181 91.9%	14 4.3%	315 95.7%	23 2.2%	1005 97.8%
All other powered boats ns	116 99.0%	1 1.0%	196 95.2%	10 4.9%	545 96.5%	20 3.5%
Other boats ns	19 80.4%	5 19.6%	24 77.4%	7 22.6%	120 71.3%	48 28.7%
Total	**2909**	**452**	**4691**	**961**	**15039**	**2593**

Table 2.14b: Frequency Distribution of Number of Adult Boaters for Boat Type by Year
(Central Delta, Excluding PWCs and in the water Water -Skiers)

	2006		2007		2008		p
Boat Type *(Excluding WS Only)*							
Skiff/Utility	23.8%	806	23.8%	1350	23.8%	4211	ns
Runabout/Speedboat	57.4%	1941	57.4%	3251	57.4%	10146	
Cabin Cruisers	8.8%	296	8.8%	501	8.8%	1549	
PWCs	5.8%	197	5.8%	329	5.8%	1028	
All other powered boats	3.5%	117	3.6%	206	3.2%	566	
Other boats	0.7%	24	0.6%	31	1.0%	168	
Total	100.0%	3380	100.0%	5668	100.0%	17668	

Boat Type for Youth

For youth in 2008, wear rates changed only for those riding in speedboats/runabouts (See Table 2.15a), in a pattern similar to that already described for youth. For all other types of boats there were no statistically significant changes.

Table 2.15a: Youth Wear Rates for Boat Type by Year
(Central Delta, Excluding in the water Water-skiers)

Boat Type	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Skiff/Utility [ns]	23 43.6%	29 56.4%	31 40.3%	46 59.7%	77 39.7%	118 60.3%
Runabout/Speedboat [****]	244 55.1%	199 44.9%	463 57.2%	347 42.8%	1300 48.2%	1396 51.8%
Cabin cruiser [ns]	36 59.3%	25 40.7%	40 55.6%	32 44.4%	99 44.1%	126 55.9%
PWC [ns]	1 1.7%	52 98.3%	5 4.4%	108 95.6%	5 1.8%	254 98.2%
All other powered boats [ns]	13 42.6%	18 57.4%	23 47.9%	25 52.1%	54 43.1%	71 56.9%
Other boats [n/a]	3 100.0%	0 0.0%	2 50.0%	2 50.0%	11 37.6%	18 62.4%
Total	**320**	**322**	**564**	**560**	**1546**	**1984**

Table 2.15b: Frequency Distribution of Number of Youth Boaters for Boat Type by Year
(Central Delta, Excluding PWCs and in the water Water-Skiers)

	2006		2007		2008		p
Boat Type *(Excluding WS Only)*							
Skiff/Utility	8.1%	53	6.8%	77	5.5%	195	p<0.0001
Runabout/Speedboat	69.0%	454	72.1%	815	76.4%	2698	
Cabin Cruisers	9.7%	64	6.4%	72	6.4%	225	
PWCs	8.0%	53	10.0%	113	7.3%	259	
All other powered boats	4.7%	31	4.3%	49	3.6%	125	
Other boats	0.5%	3	0.4%	4	0.8%	29	
Total	100.0%	657	100.0%	1130	100.0%	3532	

Boat Activity for Adults

Since the vast bulk of the boaters were involved in "pleasure" boating in the Delta, there was only one other category of activity that had a sizeable number of participants and that was a category that combined fishing and intent to fish. *Fishing* activity was indicated if someone in the boat was actively fishing at the time of observation, and *Intent to Fish* was recorded if the observers could see fishing gear in the boat that was not currently in use. Most of these boats were underway when observed. Therefore it is not certain that the "intent" was to go fishing - perhaps some were returning from fishing and others were engaged in other activities but happened to also have fishing gear present. However, because of the fishing tournament rules which require participants to wear a life jacket when the boat is underway, we felt it was important to include all boats and boaters with visible fishing equipment in a "fishing activity" category, even though they were not fishing at the moment.

For adults in the Central Delta, it is clear that the bulk of the changes observed were for boaters who were involved in fishing or intending to fish categories (See Table 2.16a). In 2006 the baseline rate was 26.1% wearing, but in 2007 that rate jumped to 36.4% and declined somewhat in 2008 to 30.5%. Because this pattern fits the campaign effect observed earlier, it is our interpretation that this jump and then decline in wear rates were primarily the effect of the intensity of the "Wear It!" Campaign in 2007 and the decrease in intensity of the campaign in 2008; rather than a change in the more vigorous enforcement of fishing tournament rules to wear a life jacket while underway.

For adult boaters involved in "other activities" there was an increase in wear rates in 2007 from 3.2% to 4.7% but this increase went away in 2008.

For youth boaters there were so few that were classified as fishing or intending to fish, these data are not presented.

Table 2.16a: Adult Wear Rates for Boat Activity by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Boat Activity	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Fishing/Intent to Fish ****	552 73.9%	195 26.1%	793 63.6%	453 36.4%	2676 69.5%	1175 30.5%
Other Activities ****	2351 96.8%	78 3.2%	3878 95.3%	192 4.7%	12207 96.8%	399 3.2%
Total	**2903**	**272**	**4671**	**645**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.16b: Frequency Distribution of Number of Adult Boaters for Boat Activity by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Boat Activity							
Fishing/Intent to Fish	23.4%	746	23.4%	1247	23.4%	3855	ns
All Other Activities	76.6%	2448	76.6%	4082	76.6%	12638	
Total	100.0%	3194	100.0%	5329	100.0%	16493	

Boat Activity for Skiffs and Speedboats/Runabouts Only for Adults

Given that there were notable differences across time in adult wear rates for Skiffs compared to Speedboats/Runabouts and also differences when the boats were observed to be fishing or intending to fish, the next table presents information for the combination of these two factors.

In table 2.17a it is clear that for each type of boat, the type of activity makes a difference in wear rates. Similarly, for the activity categories, the type of boat makes a difference in wear rates.

For skiffs involved in fishing or intent to fish, wear rates move in the usual pattern but at a somewhat higher level (2006 is 27.6%; 2007 is 39.7%; 2008 is 32.7%). For skiffs involved in other activities, the wear rates increase substantially in 2007 but drop back almost to baseline levels in 2008 (17.5% to 25.6% to 19.8%). For speedboats involved in other activities there is an increase in 2007 but this ground is lost in 2008 (2.6% to 3.5% to 1.7%).

There were no increases for speedboats/runabouts that were fishing or intending to fish, although these results should be viewed cautiously given the relatively low number of boaters in this situation.

Table 2.17a: Adult Wear Rates for Boat Type & Boat Activity by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Boat Type & Boat Activity	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Skiff & Fishing/Intent to Fish ****	476 72.4%	182 27.6%	662 60.4%	435 39.7%	2288 67.3%	1110 32.7%
Skiff & All other activities ns	123 82.5%	26 17.5%	186 74.4%	64 25.6%	618 80.2%	153 19.8%
Speedboat & Fishing/Intent to Fish ns	51 84.6%	9 15.4%	91 91.0%	9 9.0%	261 84.4%	48 15.7%
Speedboat & All other activities ****	1824 97.4%	48 2.6%	3026 96.5%	111 3.5%	9553 98.3%	166 1.7%
Total	**2473** **90.3%**	**265** **9.7%**	**3965** **86.5%**	**619** **13.5%**	**12721** **89.6%**	**1477** **10.4%**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.17b: Frequency Distribution of Number of Adult Boaters for Boat Type & Boat Activity by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Boat Type & Boat Activity							
Skiff & Fishing/Intent to Fish	23.9%	658	23.9%	1098	23.9%	3400	ns
Skiff & All other activities	5.4%	150	5.4%	250	5.4%	774	
Speedboat & Fishing/Intent to Fish	2.2%	60	2.2%	100	2.2%	310	
Speedboat & All other activities	68.5%	1888	68.5%	3148	68.5%	9747	
Total	100.0%	2756	100.0%	4596	100.0%	14230	

Boat Characteristics

The following section presents changes across time in adult wear rates for different types of boat characteristics (length, propulsion source and operation). There was an increase in 2007 over 2006 rates and then a drop down in 2008, but at levels still above the baseline year. This follows the general pattern of wear rates that has been observed for adults in the Delta. See Tables 2.18a, 2.19a, 2.20a.

Table 2.18a: Adult Wear Rates for Boat Size by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Boat Size	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Under 16ft **	126 93.3%	9 6.7%	153 81.0%	36 19.1%	673 81.2%	156 18.8%
16 - 20.9ft ****	1792 89.2%	216 10.8%	3258 86.3%	519 13.7%	8009 88.8%	1012 11.2%
21 - 25.9ft *	518 95.6%	24 4.4%	777 92.5%	63 7.5%	4879 92.9%	375 7.1%
26 + **	467 95.3%	23 4.8%	487 94.6%	28 5.4%	1310 97.7%	31 2.3%
Total	**2903**	**272**	**4675**	**646**	**14871**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.18b: Frequency Distribution of Number of Adult Boaters for Boat Size by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Boat Size							
Under 16ft	4.2%	135	3.5%	189	5.0%	831	p<.0001
16 - 20.9ft	63.4%	2025	71.0%	3788	54.8%	9034	
21 - 25.9ft	17.0%	542	15.8%	844	32.0%	5273	
26 +	15.4%	491	9.7%	516	8.1%	1342	
Total	100.0%	3194	100.0%	5337	100.0%	16480	

Table 2.19a:Adult Wear Rates for Boat Propulsion by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Boat Propulsion	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Outboard Engine ****	719 76.7%	218 23.3%	1067 67.5%	514 32.5%	3896 74.5%	1336 25.5%
Inboard Sterndrive ****	2148 97.8%	48 2.2%	3585 96.6%	125 3.4%	10869 98.3%	190 1.7%
Other Propulsion[ns]	19 80.4%	5 19.6%	24 77.4%	7 22.6%	119 71.3%	48 28.7%
Total	**2885**	**270**	**4676**	**646**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.19b: Frequency Distribution of Number of Adult Boaters for Boat Propulsion by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Boat Propulsion							
Outboard Engine	29.6%	938	29.7%	1582	31.8%	5239	p<.0001
Inboard/Sterndrive	69.7%	2211	69.8%	3722	67.2%	11087	
Other Propulsion	0.8%	24	0.6%	31	1.0%	167	
Total	100.0%	3172	100.0%	5335	100.0%	16493	

Table 2.20a: Adult Wear Rates for Boat Operation by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Boat Operation	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Motoring ****	2701 91.8%	240 8.2%	4489 88.9%	562 11.1%	14243 91.3%	1350 8.7%
Other Operation ****	202 86.3%	32 13.7%	177 68.1%	83 31.9%	640 74.1%	224 25.9%
Total	**2903**	**272**	**4666**	**645**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.20b: Frequency Distribution of Number of Adult Boaters for Boat Operation by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Boat Operation							
Motoring	92.7%	2960	95.1%	5064	94.8%	15629	p<.0001
Other Operation	7.3%	234	4.9%	260	5.2%	865	
Total	100.0%	3194	100.0%	5324	100.0%	16493	

Site Characteristics

Tables in this section present changes in adult wear rates for different conditions at the sites (water temperature, wind speed, wave height, air temperature, current strength and visibility). Since these types of factors remain relatively constant throughout the July and August months in the Delta, there is not much variation in these conditions. When there are enough boats at different levels of these characteristics, we find that the same general pattern of change is observed — increase over baseline in 2007 and then dropping back down in 2008. Therefore the findings in these tables will not be discussed in detail (See Tables 2.21a, 2.22a, 2.23a, 2.24a, 2.25a, 2.26a).

Table 2.21a: Adult Wear Rates for Water Temperature by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Water Temperature	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Less than 75 ****	1103 86.9%	167 13.2%	2128 79.1%	564 21.0%	3667 88.4%	479 11.6%
75 or above ****	1800 94.5%	105 5.5%	2549 96.9%	82 3.1%	11216 91.1%	1095 8.9%
Total	**2903**	**272**	**4677**	**646**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.21b: Frequency Distribution of Number of Adult Boaters for Water Temperature by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Water Temperature							
Below 75	40.0%	1279	50.7%	2705	25.3%	4166	p<.0001
75 or more	60.0%	1915	49.3%	2634	74.7%	12327	
Total	100.0%	3194	100.0%	5339	100.0%	16493	

Table 2.22a: Adult Wear Rates for Wind Speed by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Wind Speed	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
<5 knots ****	1043 88.7%	133 11.3%	1784 82.4%	381 17.6%	8672 89.9%	979 10.1%
5-9.9 knots **	1568 92.2%	132 7.8%	1855 89.2%	225 10.8%	5628 91.0%	554 9.0%
10+ knots **	292 97.8%	7 2.2%	940 96.3%	36 3.7%	583 93.3%	42 6.7%
Total	**2903**	**272**	**4579**	**642**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.22b: Frequency Distribution of Number of Adult Boaters for Wind Speed by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Wind Speed							
<5 knots	37.0%	1181	41.5%	2174	58.7%	9677	p<.0001
5-9.9 knots	53.5%	1708	39.8%	2085	37.5%	6190	
10+ knots	9.6%	305	18.7%	978	3.8%	625	
Total	100.0%	3194	100.0%	5237	100.0%	16493	

Table 2.23a: Adult Wear Rates for Wave Height by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Wave Height	2006		2007		2008	
	No PFD N Percent	Wearing PFD N Percent	No PFD N Percent	Wearing PFD N Percent	No PFD N Percent	Wearing PFD N Percent
Calm (less than 6 inches) ****	1941 89.1%	238 10.9%	3692 86.1%	597 13.9%	12650 90.4%	1343 9.6%
Choppy (6 inches to 2 feet) ****	962 96.6%	34 3.4%	887 95.2%	45 4.8%	2233 90.6%	231 9.4%
Total	**2903**	**272**	**4579**	**642**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.23b: Frequency Distribution of Number of Adult Boaters for Wave Height by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Wave Height							
Calm (less than 6)	68.5%	2187	82.2%	4304	85.0%	14021	p<.0001
Choppy (6 to 2)	31.5%	1007	17.8%	933	15.0%	2472	
Total	100.0%	3194	100.0%	5237	100.0%	16493	

Table 2.24a: Adult Wear Rates for Air Temperature by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Air Temperature	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Below 80 ****	1045 84.6%	190 15.4%	1763 80.3%	434 19.8%	5132 87.1%	763 12.9%
80-89 ****	1228 95.8%	54 4.2%	1230 89.3%	148 10.7%	5424 93.6%	371 6.4%
90 or above ****	630 95.8%	27 4.2%	1586 96.4%	60 3.7%	4328 90.8%	440 9.2%
Total	**2903**	**272**	**4579**	**642**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.24b: Frequency Distribution of Number of Adult Boaters for Air Temperature by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Air Temperature							
Below 80	38.8%	1239	42.1%	2206	35.8%	5905	p<.0001
80-89	40.3%	1288	26.4%	1383	35.2%	5803	
90 or above	20.9%	667	31.5%	1648	29.0%	4785	
Total	100.0%	3194	100.0%	5237	100.0%	16493	

Table 2.25a: Adult Wear Rates for Water Current by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Water Current	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Moderate ****	1863 91.3%	178 8.7%	3573 88.8%	451 11.2%	6123 86.9%	920 13.1%
Weak/none ****	1040 91.7%	94 8.3%	1006 84.0%	191 16.0%	8761 93.1%	654 7.0%
Total	**2903**	**272**	**4579**	**642**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.25b: Frequency Distribution of Number of Adult Boaters for Water Current by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Water Current							
Moderate	64.5%	2061	77.1%	4038	42.9%	7067	p<.0001
Weak/none	35.5%	1133	22.9%	1199	57.2%	9426	
Total	100.0%	3194	100.0%	5237	100.0%	16493	

Table 2.26a: Adult Wear Rates for Visibility by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

Visibility	2006		2007		2008	
	No PFD N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent	**No PFD** N Percent	**Wearing PFD** N Percent
Good ****	2686 91.3%	257 8.7%	4579 87.7%	642 12.3%	14302 90.8%	1442 9.2%
Fair ****	217 93.4%	15 6.6%	0 .	0 .	582 81.5%	132 18.5%
Total	**2903**	**272**	**4579**	**642**	**14884**	**1574**

Significance levels: ns = not significant, n/a = not applicable (small numbers or no comparison), *p<0.05, **p<0.01, ***p<0.001, ****p<0.0001

Table 2.26b: Frequency Distribution of Number of Adult Boaters for Visibility by Year
(Central Delta, Excluding PWCs and in the water Water-skiers)

	2006		2007		2008		p
Visibility							
Good	92.7%	2962	100.0%	5237	95.7%	15779	p<.0001
Fair	7.3%	232	0.0%	0	4.3%	714	
Total	100.0%	3194	100.0%	5237	100.0%	16493	

IV. Summary and Conclusions on the Delta "Wear It!" Campaign

The "Wear It" campaign was shown to have a modest effect on wear rates in the Delta region in 2007 and 2008 compared to 2006. The increases in wear rates were much more noticeable in 2007 when the campaign was at full intensity. In 2008 when the campaign was forced to cut-back on its more visible symbol, the Campaign Tour Boat, increases in wear rates diminished to levels for the most part still above baseline (2006) but substantially lower than in 2007.

The influence of the campaign was more noticeable in the Central Delta area where the campaign was more visible. It increased wear rates for adults in the Central Delta region. It particularly was successful for adult boaters involved in fishing or intending to fish activities and/or boaters on skiffs/utility boats.

The campaign was not as successful in increasing youth wear rates; most of these boaters were covered by mandatory laws and exhibited relatively high wear rates from the beginning. The campaign also did not succeed in increasing wear rates for adults in speedboats/runabouts, particularly when these boats were not engaged in fishing or intending to fish activities.

The results of this evaluation show that with intensive promotion and engagement by several boating safety groups, wear rates can be improved. In particular, there seemed to be a positive interplay between the message of the "Wear It!" Campaign and the existing rules for fishing tournaments, which require participants to wear life jackets while boats are underway. Wear rates most likely benefited as a result of the combination of these interventions.
But this evaluation also shows that when the intensity of the promotion is reduced, wear rates decline. Whether a longer intensive campaign at the levels of the 2007 effort could produce more lasting effects is unknown.