

2007 National Wear Rate Observation Study

Executive Summary



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National Findings

Introduction

Over the past ten years the U.S. Coast Guard has awarded a grant to JSI Research and Training Institute to conduct a national life jacket wear rate observational study. The primary purpose of this effort is to track changes in the boating public's use of life jackets while on the water. Over the years it has become clear that the two major determinants of whether someone wears a life jacket while boating are the age of the boater and the type of boat they are in.

This executive summary presents findings from the 2007 observational study in comparison with the previous nine years of data. The data presented focus on the effect of the two most important determinants of wear rates (age and boat type) and how trends within each age group and boating type have evolved across the ten years of observations.

Also, contained within this executive summary are key findings from a U.S. Coast Guard sponsored evaluation of an intensive life jacket wear campaign carried out in the Delta region of California. The intervention was first conducted during the summer of 2007 and will continue for a second year in the summer of 2008. Data are presented in this report which compare wear rates in the Delta region for a baseline year (summer of 2006) to the first year of the intervention (summer of 2007).

Methods

In order to obtain a reliable and valid national estimate of life jacket wear across years, in general, the same methodology and

data collection tools were used for each study year from 1998 to 2007.

Site selection. Thirty states were selected for study participation using a stratified random sampling procedure. Twenty coastal states and 10 inland states were selected. Four sites from each state were observed, except in California, where eight sites were observed due to the size of the state. The 124 study sites represented a wide range of water venues, including lakes, rivers, harbors, bays, and intracoastal waterways.

The majority of sites have remained the same for all ten years of the study. Sites were selected in consultation with local offices of the USCG, members of the local Coast Guard Auxiliary or Power Squadrons, and state boating and fishing law enforcement agencies. Sites were selected to roughly represent the types of boating venues in the state and for proximity to each other in order to allow for all four sites to be observed in one weekend. Also, sites needed to have suitable shore-based viewing locations from which observations of life jacket wear could be made using high powered binoculars.

Observation protocol. All observations were conducted during the summer months of each year, beginning the weekend of July 4th and ending Labor Day weekend. Observations were conducted for two 4-hour periods in the mornings and afternoons of a Saturday and Sunday of the same weekend. Two-person teams observed boating activity from on-shore, usually at a narrowing, bridge, or near a marina. 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.

Observation forms. Two observation forms were designed for this study. The boat observation form recorded the following information on the observed boat and people aboard: type of boat (skiff/utility, speedboat/runabout, cabin cruiser, personal watercraft, pontoon, houseboat, sailboard, day sailor, cabin sailboat, canoe, kayak, rowboat/dinghy, and inflatable/raft), propulsion (outboard motor, sterndrive or inboard motor, sail only, sail and auxiliary motor, paddles/oars, and air fan), length (under 16 feet, 16-21 feet, 22-25 feet, over 25 feet), operation while being observed (motoring, sailing, paddling, drifting, anchored), and activity engaged in (fishing, water skiing, white water boating, racing at high speeds, swimming, and pleasure boating). Information collected on operators and passengers included gender, age (under 6, 6-12, 13-17, 18-64, 65+), life jacket wear (wearing or not wearing), and life jacket type (traditional or inflatable). If the boat was involved in water skiing, observers recorded which boaters were skiing at the time. Observers were instructed to record a boat only once if recognized and to not record boaters participating in guided tours and commercial trips. The observation time period was recorded in 2-hour blocks of time, starting from 6 AM until 6 PM.

The second observation form, the site form, recorded information about the site, weather, and water conditions. Observers recorded the beginning and ending time of the observation period and the water type (lakes, ponds, or reservoirs; rivers, streams creeks or canals; harbors; bays, inlets, or sounds; Great Lakes; and intra-coastal waterway). During each 2-hour time block of the observation period, observers measured the air temperature, wind speed, wave height (less than 6 inches, 6 inches to 2 feet, over 2 feet), strength of the water current (strong, moderate, weak/none), weather (sunny, partly cloudy, cloudy, raining, stormy), and visibility (good, fair, poor).

Training protocol. All observers were trained yearly during two half-day sessions. The first half-day training consisted of reviewing the observation forms, equipment (e.g., wind gauge, thermometer), and an observation guidebook containing procedures, definitions, and pictures of various types of boats and life jackets. The second half-day training was a practice observation session. Each observation team member took a turn as the observer and as the recorder in order to become familiar with the study equipment and study procedures.

Changes in data collection. Three categories of information have been changed since the start of this study. In 1999, the original 6-17 year old age category was divided into a 6-12 year old category and a 13-17 year old category. Also in 1999, the original canoe/kayak category was broken out to record canoes and kayaks separately. In this report, life jacket wear rates are reported for only the revised categories for 1999-2006. Finally, in 2004, the 16-25 feet boat length category was divided into a 16-20 feet category and a 21-25 feet category.

Statistical analyses. Wear rates were calculated by age category after controlling for boat type to ensure that the yearly rates were not influenced by fluctuations in the number of observations of different types of boats. Similarly, rates calculated by boat type were adjusted for age to ensure the rates were not influenced by yearly fluctuations in the number of observations of boaters of varying ages.

In 2007 a total of 14,567 boats carrying 41,978 boaters was observed. Of these boaters 34,792 were adults and 6946 were youth. This brings the cumulative counts observed over ten years to 142,165 boats carrying 392,027 boaters.

Observation Results

In 2007 the overall wear rate for all people and all boats did not show an increase (21.4%). After removing PWC's from the statistics, the overall wear rate is 16.9%. Calculating estimates for youth and adults separately without PWC's, overall rates for 2007 are 62.2% for youth and 8.4% for adults. For overall averages this represents a small increase for youth and a small decrease for adults (more details below).

Age. Table 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 2007 wear rate for this group is the highest it has ever been at 84.1% wearing. On the other hand there are small dips in the wear rates in 2007 compared to 2006 for under 6 year olds (92.2% vs 94.4%) and teens (31.5% vs 33.5%).

For adults ages 18 to 64 and 65+ there are no noticeable trends overall across the ten years of data collection. In 2007 there was a small decrease in overall wear rates for the 18 to 64 year old group from 10.0% the previous year to 8.4%. For older boaters (65+) the wear rates were higher compared to the previous year of 8.3% to now 11.7% in 2007. Additional years of data will have to be gathered before it is known if these changes are trends or happenstance fluctuations.

Table 1 Life Jacket Wear Rates by Age Excluding Boaters on PWC*

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)
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)
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)
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)
6-17 yrs	53.7% (4061)	46.1% (4348)	51.1% (5421)	54.7% (6015)	56.5% (5327)	55.1% (5394)	56.5% (5313)	60.2% (4717)	56.0% (4806)	58.5% (5471)
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)
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)
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)

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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 2a presents information for the various types of power boat for adults. Averaging across these types of boats (not including PWC's) for 2007, we see a slight increase over the 2006 data (4.3% vs. 3.9%). However, when comparing rates for individual types of power boats, there are mixed results. Skiffs increased from 7.3% to 8.5% but runabouts stayed essentially the same (3.7% to 3.6%). For cabin cruisers there was also a slight increase in wear rates (1.7% in 2006 vs 2.0% in 2007) but in this case the 2.0% represents the highest wear rate for this type of boat among adults across the ten years of data. Pontoon boats increased slightly also from 2.4% to 2.7%. PWC's continued as usual to have almost universal wear rates. For powered inflatables there was an increase from 11.0% to 19.1% but for a relatively small number of boaters.

Table 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)
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)
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)
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)
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)
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)
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)
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)
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)

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 *Factors controlled for: Age & Boat Type.

Power Boats for Youth. Table 2b presents data for each type of power boat for the three age groups of youth averaged together. For all power boats (excluding PWC's), we find a small increase in 2007 (60.8%) from 2006 (58.7%). Extrapolating from the age results reported above, 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 skiffs the increase is from 58.4% in 2006 to 63.1% in 2007. For runabouts it is 60.9% in 2006 to 61.7% in 2007. And for cabin cruisers it is 50.7% in 2006 to 52.0% in 2007. We also see increases in wearing on pontoon boats from 50.3% to 64.1%. Again, PWC wear rates are almost universal.

Table 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)
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)
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)
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)
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)
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)
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)
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)
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)

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*Factors controlled for: Age & Boat Type.

Paddle craft for Adults. In Table 3a results are given for adults in paddle craft. Overall there is a sharp decline in wear rates from 62.8% in 2006 to 40.1% in 2007. This decline reflects lower rates in all of the paddle craft boat types for adults. However the bulk of the decline is driven by the huge decrease in wear rates observed for inflatable rafts from 77.8% the year before to 23.9% in 2007. Upon closer inspection, we found that this decline in large measure was caused by results from one site—a narrow, shallow, slow river in Oklahoma in which the temperature on the observation day was 101 degrees. Almost no one was wearing a life jacket in this situation. Furthermore, there was an unusually large number of boaters observed that day at this site. In fact, this one site accounts for over half of the adult, inflatable raft users observed in 2007.

It is still true, however, that the other paddle craft also showed declines this year. Rowboats/dinghies went from 26.7% to 15.0%; Canoes from 29.2% to 19.4% and Kayaks from 77.9% to 72.0%. Additional years of data will need to be collected to determine whether these are trends or happenstance fluctuations.

Table 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)
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)
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)
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)
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)
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)
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)

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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 3b shows results for youth in paddle craft. As for adults we find an overall decline in wear rates between 2006 and 2007 from 80.5% to 73.5%. In contrast to the adults, however, this overall decline is almost entirely due to the reduction in wear rates for the paddled inflatable rafts, which again was primarily due to the one site in Oklahoma. For some other types of paddled craft there were actually gains in wear rates: a small increase in kayaks from 89.0% in 2006 to 90.1% in 2007 but a notable increase in canoe wear rates from 68.9% to 81.0%. The 81.0% reading for all youths in canoes is the highest rate observed over the ten year period, albeit with a small number of boaters of this age in this type of boat.

Table 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)
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)
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)
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)
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)
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)
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)

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*Factors controlled for: Age & Boat Type.

**The 1998 observations were recorded as Canoe/Kayak and therefore cannot be subdivided.

Sailboats for Adults. Table 4a shows results for adults in sailboats. Overall there was a small reduction in wear rates from the previous year of 28.0% in 2006 to 24.7% in 2007. The results from this group of boats is primarily driven by the cabin sailboat category because nationwide we observe many more adults in this type of boat compared to day sailors. The cabin sailboat rate declines from 19.1% to 17.1%. The day sailor rate actually declines more from 59.1% in 2006 (the highest wear rate across the ten years for this type of boat) to 50.4% in 2007. However, the relatively small numbers of adults observed in day sailors mitigates the effect of this decline on the total average decline for the sailboat category.

Table 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)
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)
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)
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)
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)
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)

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 *Factors controlled for: Age & Boat Type.

Sailboats for Youth. Table 4b shows the overall wear rates declined in this group of boats, and again this decline is driven largely by the numbers of youth observed on cabin sailboats which is much larger than the number of youths observed in day sailors. In 2006 the boat group average was 75.0% and this declined to 69.2% in 2007. Caution should be used in drawing any conclusions from these findings not only because it is a one year decline but also because of the relatively small number of this age boater observed in this group of boats.

Summary of Wear Rate Changes Nationally

In 2007 for adults there were small increases in power boat wear rates particularly for skiffs, but these increases were mitigated by one year declines in rates for paddle craft and sailboats. In 2007 for youth the results are a little more encouraging. Youth rates continued to increase in the 6 to 12 year age category, and for all youth the wear rates increased slightly for powered boats (which is primarily the type of boat in which youths are found). There were also small increases for kayaks and a notable increase in canoes for this age group, although - again - caution should be used given the small number of youth observed in these types of boats.

Table 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)
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)
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)
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)
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)
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)

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 2007 National Observational Life Jacket Wear Rate Study
 *Factors controlled for: Age & Boat Type.

Evaluation of California's Delta Campaign

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, the U.S. Coast Guard and the State of California along with two national boating associations combined forces to implement an intensive educational and promotional campaign in one limited geographical market. 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 the next part of this report we present evidence from an expanded observational database to assess the effectiveness of such a 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. 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, 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.

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.”

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. 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 the Delta a total of 4328 boaters were observed in 2006 and 6,102 in 2007.

Results

Figure 1 shows the overall wear rates for adults in the Delta region, with indications of the mix of inflatable life jackets and traditional life jackets. There was no change observed in the sites that were on the outskirts of the Delta area between 2006 and 2007 (5.4% in both years and almost exclusively traditional style life jackets). These areas were not visited by the campaign boat.

However, in the central Delta region (where the campaign activities were concentrated), there was a sharp increase in wear rates from 2006 to 2007 (6.3% to 12.3%). This increase was seen for both styles of life jackets but the proportional rate of increase was greater for inflatable style life jackets (a 350% increase of inflatable style lifejackets compared to a 50% increase in traditional style lifejackets).

Figure 1
2006 versus 2007 Delta Adult Wear Rates by Geographic Subregions – Percent Wearing

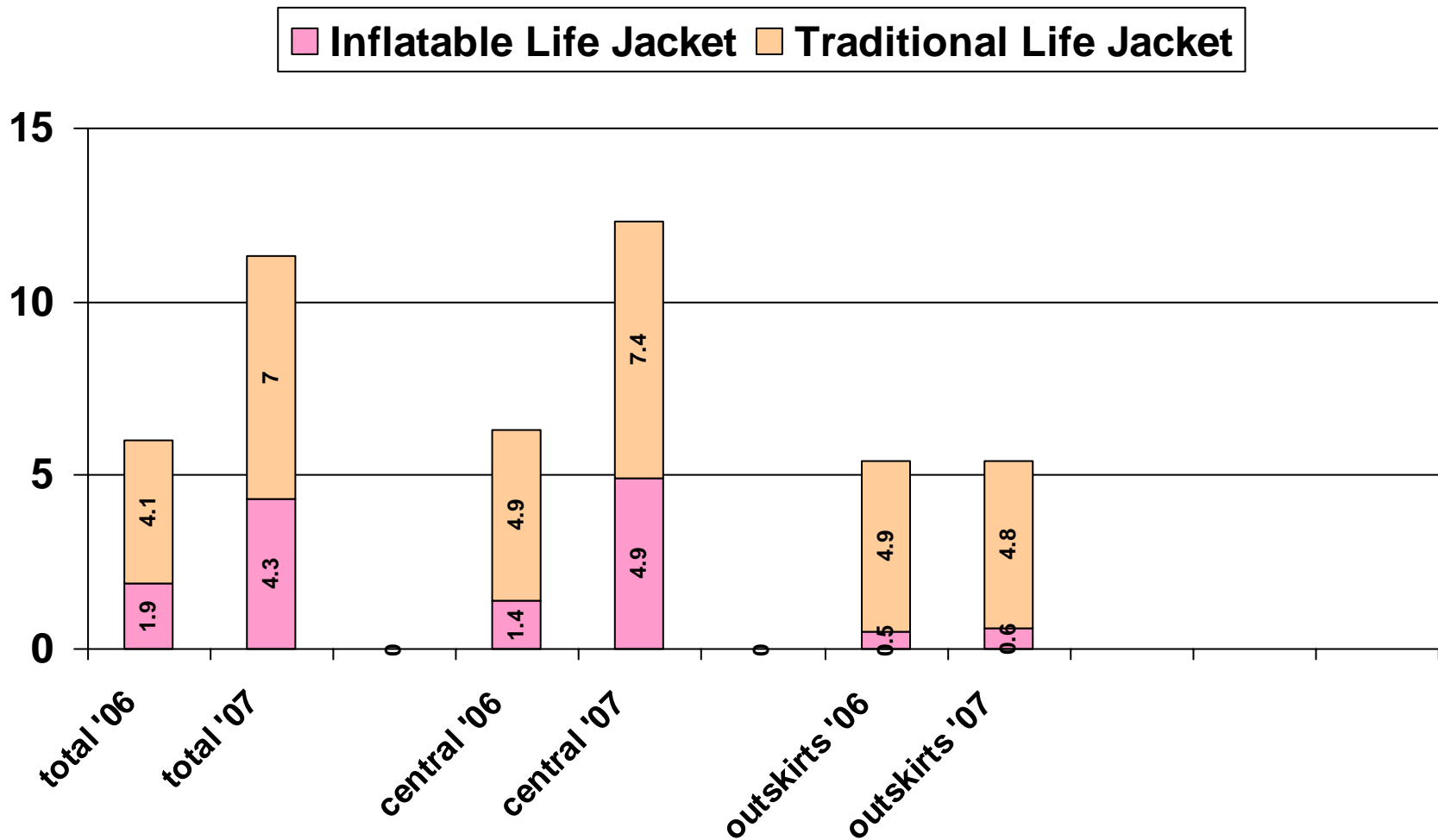


Figure 2 gives more insight as to the causes of these increases. There are two factors that seem to be affecting wear rates in the Delta region across these two years. There seems to be a “fishing tournament” effect and also a campaign effect.

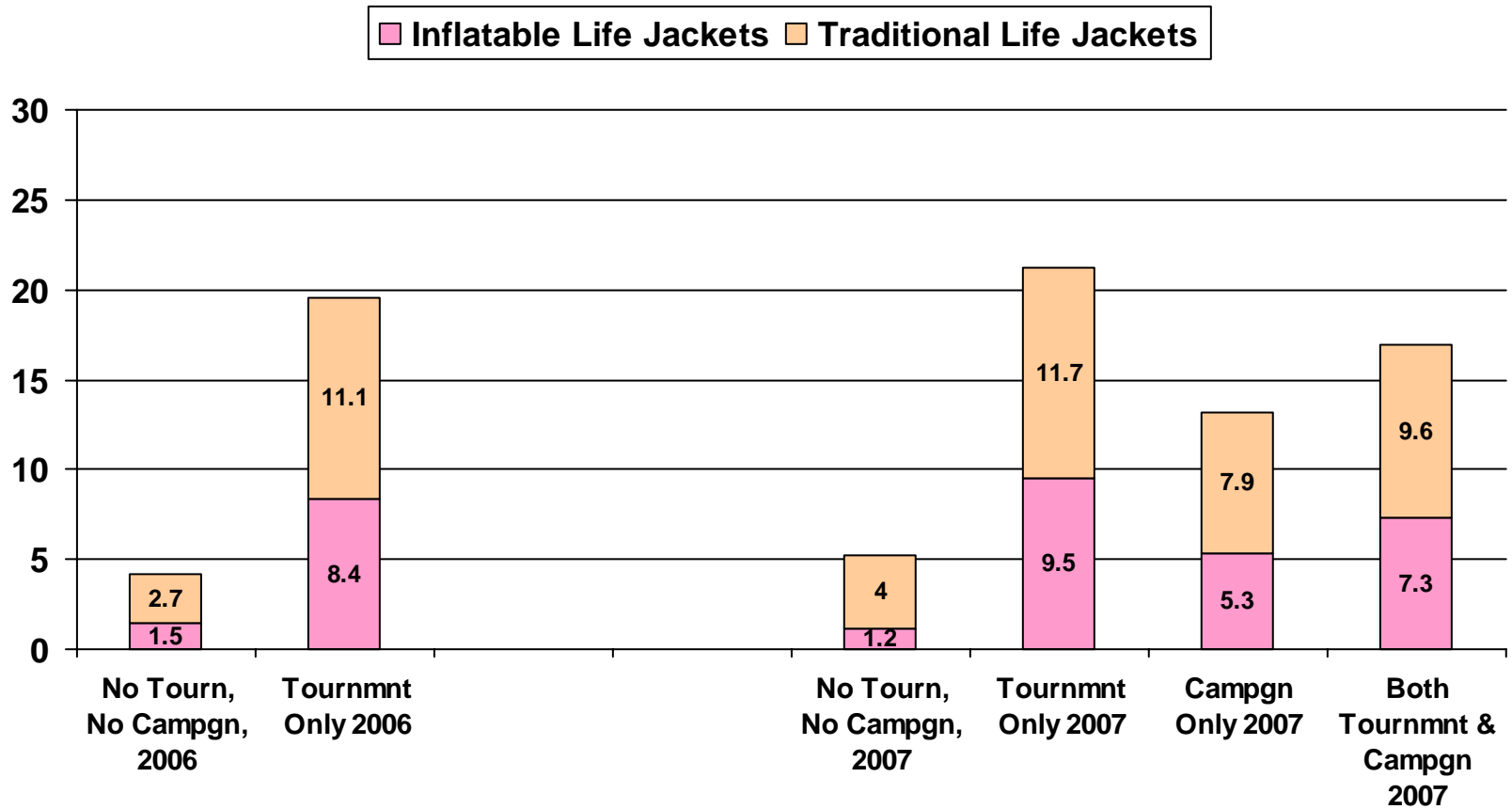
In the summer of 2006, before the campaign existed, there was a clear difference in wear rates at sites where a fishing tournament was in progress compared to sites where there were no fishing tournaments (19.5% versus 4.2%).

In the summer of 2007, the summer the campaign began, there is evidence that the tournament effect continues to increase wear rates, but also that there was a campaign effect. We classified sites as “Tournament” if observations took place on the day the tournament was taking place. We classified sites as “Campaign” sites if the campaign boat had visited that site the weekend before, or the day before, or the same day as the observations were being made.

When observations were made at sites where no tournament was going on and where there was no campaign, the wear rates were 5.2%. However, when a tournament was in place (but no campaign happening) the rates were again much higher (21.2%). When the campaign had visited recently the wear rates were also higher (13.2%) and they were higher if both a tournament was going on and the campaign boat had recently made an appearance (16.9%).

The other apparent fact is that when either a tournament was in place or the campaign boat had made a recent appearance, a much higher proportion of those wearing were wearing inflatable style lifejackets (approximately 40% of the wearers compared to only about 20% of the wearers when neither tournament or campaign was present).

Figure 2
2007 Adult Wear Rates in CENTRAL Delta Sites by
Campaign versus Fishing Tournament – Percent Wearing



Fishing. Table 5 gives further evidence that the fishing tournaments make an impact on wear rates. Data are shown for boaters who are actually fishing or who intend to fish (motoring with fishing gear visible) compared to all other activities. In the Central Delta region where both the campaign and tournaments were active, there is a great increase in the proportion wearing between 2006 and 2007 for those who “intend to fish” but a decline for those actually fishing. This finding is consistent with the “rules” of the tournaments that require participants to wear life jackets when a boat is underway but not when anchored or drifting (although many keep their lifejackets on instead of taking it on and off each time the boat is underway; particularly if they are using the inflatable type lifejacket).

Table 5: Delta Adult Wear Rates for Type of Activity: 2006 versus 2007

Areas Observed	Fishing				Intent to Fish				Any Other Activity			
	2006	2007	Change	Sig	2006	2007	Change	Sig	2006	2007	Change	Sig
Total Delta				*				****				*
Number of Boaters	187	282			597	1209			3544	4641		
% Wearing Traditional Style	10.2%	4.6%	-5.6%		10.7%	20.5%	9.8%		2.7%	3.6%	0.9%	
% Wearing Inflatable Style	7.0%	5.7%	-1.3%		4.8%	15.6%	10.9%		1.2%	1.3%	0.1%	
% Wearing Either Style	17.2%	10.3%	-6.9%		15.5%	36.1%	20.7%		3.9%	4.9%	1.0%	
Central Delta				**				***				**
Number of Boaters	131	249			249	997			2813	4072		
% Wearing Traditional Style	12.2%	4.4%	-7.8%		18.1%	24.0%	5.9%		2.2%	3.5%	1.3%	
% Wearing Inflatable Style	9.9%	6.4%	-3.5%		11.2%	18.8%	7.6%		1.3%	1.4%	0.1%	
% Wearing Either Style	22.1%	10.8%	-11.3%		29.3%	42.8%	13.5%		3.5%	4.9%	1.4%	
Delta Outskirts				ns				ns				ns
Number of Boaters	56	33			348	212			731	569		
% Wearing Traditional Style	5.4%	6.1%	0.7%		5.5%	4.3%	-1.2%		4.5%	4.9%	0.4%	
% Wearing Inflatable Style	0.0%	0.0%	0.0%		0.0%	0.9%	0.9%		0.8%	0.5%	-0.3%	
% Wearing Either Style	5.4%	6.1%	0.7%		5.5%	5.2%	-0.3%		5.3%	5.4%	0.1%	

Significance levels: ns = not significant; * = .05; ** = .01; *** = .001; **** = .0001

Delta Wear Rates by Boat Type. In Table 6 additional evidence is found that the tournaments and the campaign both affected those who were more likely involved in fishing activities than general recreation. A sizeable increase in wear rates is seen in the Central Delta region for skiffs (23.7% increasing to 37.0%) but not for runabouts or speedboats (2.9% versus 3.8%). Skiff type boats are more likely to be used in fishing and may also be the type of boat for which the logic of wearing a lifejacket is more apparent than a speedboat. It is also interesting to note that there were increases in wear rates on skiffs even in the outskirts of the Delta region where the Campaign boat did not make any appearances and for which there were not tournaments on the days we observed.

Summary of the Initial Delta Campaign Evaluation.

There are positive signs that the intensive, multi-message approach was having an effect. There was also even stronger evidence that there is also a fishing tournament effect which changes wear rate behaviors (at least on the day of the tournament).

One reason the campaign effect may not have appeared as strongly as it could, is the fact that the campaign rolled out during the summer and hence needed time to build momentum. During the summer of 2008, it will be possible to see whether the campaign has even greater impacts as the campaign moves into its second summer.

In order to be able to statistically and reliably distinguish between the tournament effect and the campaign effect, an increase in observations to include all weekends should be made.

Table 6: Delta Adult Wear Rates for Specific Boat Types: 2006 versus 2007

Areas Observed	Skiff				Runabout/Speedboat				Pontoon			
	2006	2007	Change	Sig	2006	2007	Change	Sig	2006	2007	Change	Sig
Total Delta				****				ns				ns
Number of Boaters	954	1608			2511	3668			247	241		
% Wearing Traditional Style	9.6%	18.4%	8.8%		2.5%	2.9%	0.4%		2.4%	2.9%	0.5%	
% Wearing Inflatable Style	5.5%	14.1%	8.6%		1.0%	0.9%	-0.1%		0.0%	0.4%	0.4%	
% Wearing Either Style	15.1%	32.5%	17.4%		3.5%	3.8%	0.3%		2.4%	3.3%	0.9%	
Central Delta				****				ns				*
Number of Boaters	550	1350			2015	3239			136	143		
% Wearing Traditional Style	14.2%	20.4%	6.2%		1.9%	2.8%	0.9%		0.0%	3.5%	3.5%	
% Wearing Inflatable Style	9.5%	16.6%	7.1%		1.0%	1.0%	0.0%		0.0%	0.7%	0.7%	
% Wearing Either Style	23.7%	37.0%	13.3%		2.9%	3.8%	0.9%		0.0%	4.2%	4.2%	
Delta Outskirts				***				ns				ns
Number of Boaters	404	258			496	429			111	98		
% Wearing Traditional Style	3.5%	7.8%	4.3%		5.0%	3.3%	-1.7%		5.4%	2.0%	-3.4%	
% Wearing Inflatable Style	0.0%	1.2%	1.2%		0.6%	0.2%	-0.4%		0.0%	0.0%	0.0%	
% Wearing Either Style	3.5%	9.0%	5.5%		5.6%	3.5%	-2.1%		5.4%	2.0%	-3.4%	

Significance levels: ns = not significant; * = .05; ** = .01; *** = .001; **** = .0001