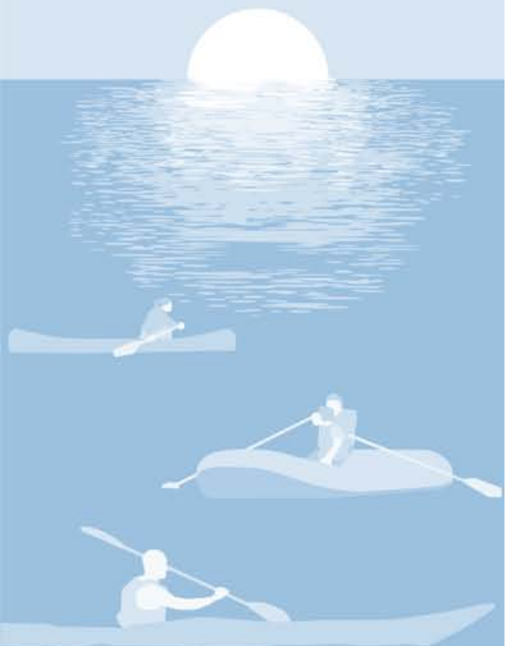
Section 9

Trends of Non-Motorized Boating



9. Trends of Non-Motorized Boating

This section describes trends of non-motorized boating in California. The discussion of trends is based on findings from the statewide and regional random telephone surveys, the active-user Internet survey, the commercial/institutional survey, interviews with waterway managers, and secondary literature.

The section is organized as follows:

A. *National Historical Trends in Non-Motorized Boating*
B. *Implications of Survey Results for Trends in Non-Motorized Boating*
C. *Summary of Trends on Non-Motorized Boating.*

A. National Historical Trends in Non-Motorized Boating

In many ways, California is a unique setting for non-motorized boating. While national non-motorized boating participation studies do not exactly mirror California non-motorized boating participation studies, examining longer-term national trends provides a contextual backdrop for our discussion of non-motorized boating trends in California.

This subsection provides a discussion of non-motorized boating trends for each major non-motorized boat type, based on seven different national and regional non-motorized boating participation and/or sales studies:

1. *National Survey on Recreation and the Environment (NSRE)*[1]
2. *Outdoor Industry Foundation (OIF)*[2]
3. *The Recreation Roundtable Survey*[3]
4. *The National Recreational Boating Survey (NRBS)*[4]
5. *American Sports Data, Inc. (ASD) SUPERSTUDY of Sports Participation*[5]
6. *National Marine Manufacturers Association (NMMA)*[6]
7. *Sailing Industry Statistics.*[7]

These studies are described in **Appendix F.**

1. Canoeing

Data for national canoeing participation goes back to the first National Survey on Recreation in 1960.[8] National canoe participation rates increased gradually and fairly steadily from 2.0 percent the first year they were measured, to a high of 8.6 percent in 2001. Since 2001, canoe participation rates have dropped slightly to 7.8 percent of the United States population.

National canoe sales have been around 100,000 per year dating back to 1980, the first year data were available. The highest two sales years were 1981, at 126,000 canoes sold, and 1999, with 121,000 canoes sold. However, on a per capita basis, the 1981 data reflects much higher sales, as there were 50 million fewer people in the United States in 1981, as compared to 1999. With the exception of 2004, when canoe sales saw a slight increase, canoe sales have dropped each year since 1999, and in 2005 were one of the lowest years on record, at 77,200 canoes sold nationwide.

Since 1999, the general slow decline in national canoe participation, and more rapid decline in national canoe sales, are in contrast to the rapid rise of recreational kayaking. Recreational kayaks are relatively inexpensive, easy to operate, and appropriate for entry level non-motorized boaters – even more so than canoes. That said, national canoe participation is still higher than any other type of non-motorized boat participation, and it is likely to continue to remain popular over the long-term, perhaps just not as popular as it has been.

2. Kayaking

National kayak participation rates were first measured in 1994, when they were still quite low, at 1.3 percent. In the early 1990s, kayaking was still a specialty sport, requiring a relatively high level of skill for either of the sport's two main subsets: whitewater kayaking or sea kayaking. By 2005, national kayak participation had increased to about 4.0 percent.[9]

The NMMA did not monitor national kayak sales until 2001, when they were already over 350,000 units sold per year, more than any other type of motorized or non-motorized boat.[10] By 2001, a new class of kayak called plastic recreational kayaks made up two-thirds of all kayak sales. Recreational kayak sales dropped slightly in 2003, but otherwise have increased each year they were measured, to a high of over 277,000 in 2005, a 17 percent increase since 2001.

While recreational kayak sales have grown significantly, sales for both whitewater and sea, or touring, kayaks have appreciably declined since they were first measured in 2001. Inflatable kayak sales had their highest year on record in 2005, at 26,000 units – these boats reflect a small but fairly stable market.

The increase in kayaking appears to be driven by a rapid increase in recreational kayaking.[11] Both sales and participation data, when broken down by kayak type, show moderate declines in whitewater and sea kayaking, coupled with increases in recreational kayaking.

The significant sales of recreational kayaks over the last five years likely indicate two different trends. The first trend is a significant number of newcomers to non-motorized boating. The second trend is the widespread purchase of recreational kayaks by existing non-motorized boaters.

It seems unlikely that recreational kayak sales can continue to increase indefinitely at the current pace.[12] Sales of most other types of motorized and non-motorized boats follow a trend of increased sales to some point in time, and then gradually declining sales to about one-half, or less, of the maximum figure.

For example, outboard boat sales peaked in 1988 at 355,000, gradually declined, and have stabilized in the low 200,000 range for the last five years. Personal water craft (PWC) sales peaked in 1995 at 200,000, and since then have declined to about 80,000 over the last five years. Both of these motorized boat types are significantly more expensive than the average kayak, which may change the long-term sales dynamics.

It is too early to predict how kayak participation rates and sales will evolve over time. One hypothesis is that some percentage of the young people that are being introduced to recreational kayaks will graduate to more technical whitewater or sea kayaking as they reach their late teens and 20s. Similarly, to the extent that part of the increase in recreational kayaking is due to an increase in participation among aging Baby Boomers, some share of these individuals may become more serious about the activity as they retire, likely moving toward sea kayaking. Either of these situations could result in a reversal of the decline in whitewater and sea kayaking participation rates and sales over the next ten years.

Another, perhaps equally plausible, hypothesis is that recreational kayaking is just a passing trend.[13] If this is the case, kayak participation rates and sales will decline and stabilize over time. One of the reasons for their popularity is that recreational kayaks are inexpensive. With a low net investment in the activity, it may be easy for current participants to give up the sport when another activity attracts their interest.

3. Rafting (Inflatable Boats)

National participation rates for rafting were first measured in 1998.[14] Rafting participation covers a wide range, from "floating" in a raft to very technical whitewater rafting. National participation rates have remained fairly stable, at 5.0 percent or slightly more, since that time.

Sales of inflatable boats were monitored between 1980 and 1992, and then not again until 2003. Between 2003 and 2005, annual inflatable boat sales have been just over 30,000. Given the broad definition of inflatable boats (including boats with motors), and the use of boats for commercially guided trips, it is difficult to draw conclusions from inflatable boat sales data.

4. Sailing

There are no national participation data for sailboats 8 feet in length, or shorter. Sailing participation rates for all sizes of sailboats have historically covered a wide range, from 2.0 percent to 7.0 percent, depending on the year and the source of the study.[15] Participation rates are likely significantly lower for the three key types of 8 foot, or less, sailboats: Sabots, El Toros, and Optimists. Members of sailing organizations estimated that 1,000, or less, of each of these three types of small sailboats are being used in California at this time.[16]

While small sailboat numbers are extremely low as compared to the total number of non-motorized boats in the State, each of these sailboats has an avid following. Interest in eight feet, and shorter, small sailing boats is reportedly increasing.

The NMMA, through The Sailing Company, provides national sales data for sailboats 11 feet in length, or shorter. Sales for sailboats 11 feet in length, or shorter, have declined by about one-half since 2000, from 8,123 units nationally, to 4,005. Again, it is impossible to determine what share of these boats, or this decline, are due to 8 foot, and shorter, boats. Historically, national sales of all sailboats have declined drastically, from a high of 77,100 in 1981. The lowest national sailboat sales year on record was 1991, with only 8,700 sailboats sold. Total national sailboat sales in 2005 were 14,400. A trend noted in the industry was toward sales of fewer, but larger and more expensive, sailboats.

5. Rowing

National participation data for rowing were limited, and there were no sales figures for rowing boats.[17] While rowing participation rates have fluctuated slightly since they were first measured in 1994, the 1994 rate and the 2003 rate (the last year measured) were essentially equal, at 3.6 percent and 3.7 percent, respectively.

6. Sailboarding and Kiteboarding

The conventional wisdom regarding sailboarding (windsurfing) trends is that the sport had its boom in the 1980s and early 1990s, and has since declined.[18] It is difficult to discern this trend in the national participation data, as participation rates are relatively low, thus making it difficult to accurately measure.

Table 9.1
Years of Participation for Non-Motorized Boat Owners, Statewide Random Survey (2006) (n=351)

Years of Participation	Percent of Respondents
Less than 5 years	14%
5 to 9 years	13%
10 to 14 years	11%
15 to 20 years	15%
Over 20 years	**46%**
NA	1%
Total	**100%**

The sailboarding participation data does not go back far enough to show the reportedly rapid growth in the sport when it was introduced in the United States in the late 1970s and early 1980s. Sailboarding national participation rates were first measured in 1987, at 0.8 percent. Participation stayed at about the same level for several years, and then declined to 0.6 percent in 1999. The data appeared to show a slight increase since 2002, to 0.7 percent, although the change is not statistically significant.

The NMMA tracked national sailboard sales between 1980 and 1990. National sailboard sales grew rapidly between 1980 and 1987, increasing from 21,000 to 70,000 over eight years. After 1987, sailboard sales declined just as rapidly, reaching 42,000 in 1990, after which sales were not measured.

Kiteboarding, introduced in the late 1990s, appears to be drawing new participants from current and potential windsurfers. There were no data on kiteboard sales or participation; however, all anecdotal comments pointed to relatively rapid growth of this activity.

B. Implications of Survey Results for Trends in Non-Motorized Boating

The statewide and regional random surveys and active-user Internet survey included several questions intended to help evaluate participation trends in non-motorized boating.

Trends identified in the statewide random survey can be extrapolated to the State population. **Table 9.1,** left, provides the statewide random survey results for the length of time that respondents had been involved in non-motorized boating. Almost one-half of respondents had been involved in non-motorized boating for more than 20 years. The remaining responses were split between the other years of participation categories.

Fourteen percent of California statewide NMB survey respondents, equivalent to an estimated 135,759 households statewide, had been participating in non-motorized boating for less than five years.[a] By subtracting 135,759 households from our 2006 estimate for non-motorized boat-owning households (969,707), we estimate that in 2002 there were 833,948 non-motorized boat-owning households. This represents an average annual compound rate of growth of 3.84 percent between 2002 and 2006. If we assume that this same annual 3.84 percent rate of growth continues to 2010, then the projected number of households owning non-motorized boats in 2010 would be 1,127,455.

We calculated the number of non-motorized boating participants in households that own non-motorized boats by multiplying the number of households by the average participants per household in 2006 (2.41), and the percent of households that boated in the last five years (82

[a] Calculated by multiplying 14 percent by the number of households owning non-motorized boats in 2006, which was 969,707.

Table 9.2
Estimated Number of California Households and Participants Owning Non-Motorized Boats (2002, 2006, and 2010)

Year	Persons per Household	California Households[a]	Incidence Rate, Percent of Households Owning Non-Motorized Boats	Number of Households Owning Non-Motorized Boats	Number of Participants in Households Owning Non-Motorized Boats[b]
2002	2.921	11,726,044	7.11%	833,948	1,648,048
2006	**2.938**	**12,368,706**	**7.84%**	**969,707**	**1,916,335**
2010	2.938	13,320,516	8.46%[c]	1,127,455	2,228,077

[a] State of California, Department of Finance
[b] Based on 2.41 participants per household, and 82 percent who boated in the last five years
[c] This rounded 8.46 percent incidence rate is calculated by dividing 1,127,455 by 13,320,516. The actual unrounded incidence rate is 8.46405 percent.

Table 9.3
Range Projections for Number of California Households and Participants Owning Non-Motorized Boats (2010)

Option	Incidence Rate, Percent of Households Owning Non-Motorized Boats	Number of Households Owning Non-Motorized Boats	Number of Participants in Households Owning Non-Motorized Boats
Low Estimate	7.84%	1,044,328	**2,063,801**
Medium Estimate	8.46%	1,127,455	**2,228,077**
High Estimate	8.64%	1,150,893	**2,274,395**

percent). We applied the 2.41 participants per household and 82 percent active participants to the 2002, 2006, and 2010 number of boat-owning households.

Using this methodology, **Table 9.2,** above, provides estimates and projections for the number of households owning non-motorized boats and the number of participants owning non-motorized boats in 2002, 2006, and 2010. Table 9.2 also provides the number of households in California, and the incidence rate, for those three years.

The incidence rate for 2006 is from the statewide random survey, while the incidence rates for 2002 and 2010 are calculated by dividing boat-owning households by total households. The estimated number of households in California for 2010 is based on Department of Finance estimates for the California population in 2010, multiplied by the number of persons per household in 2006, the most recent year for which this data was available. The 2010 projection in Table 9.2 assumes the same 2.41 participants per household, and the 82 percent active participation.

Table 9.3, above, provides two additional 2010 projections (one a lower projection and one a higher projection) for the number of households owning non-motorized boats, and the number of participants in households owning non-motorized boats. The calculations for number of participants are again based on 2.41 participants per household and 82 percent of households participating in the last five years.

The most conservative estimate, the Low Estimate, assumes no change of incidence rate, and simply applies the 2006 incidence rate of 7.84 percent to the projected number of households in 2010. Thus, for the Low Estimate, all non-motorized boating growth is based only on Department of Finance population projections.

The Medium Estimate is based on the methodology described above, using the growth rate in number of households, based on the annual historical compound rate of growth from 2002 to 2006.

The High Estimate results in the largest projection, and is based on the annual historical compound growth rate of the incidence rate from 2002 to 2006, and the Department of Finance population projections. The High Estimate applies an 8.64 percent incidence rate to the estimated number of households in 2010. These three estimates all fall within a 10 percent range, and provide a reasonable basis from which to project non-motorized boating participation over the next several years.

These projections do not include estimates for increased non-motorized boating participation through clubs, rentals, instruction, or guided trips. One can predict that these categories of non-motorized boating participation will increase in future years as well.

To provide further insight into non-motorized boating participation trends, we examined the demographic characteristics of boaters in the statewide random survey. Because the statewide random telephone survey loses statistical power as the results are based on fewer respondents, these data should be evaluated for their overall trends, not absolute numbers. The active-user Internet survey results, also discussed in this subsection, do not reflect a random sample, but rather a subset of involved boaters.

The statewide random survey results for boaters participating less than five years (n=49) show some interesting trends in new boater participants. Fewer new boaters were Caucasian, and more new boaters were Asian, Black, or Latino. This finding would indicate that perhaps non-motorized boating is becoming more diverse, reflective of the diverse population in the State. New boaters also tended to be less educated, and have less household income, than the overall population of boaters. However, these characteristics may be a reflection of the generally younger age of new boaters. Demographic characteristics of new active-user non-motorized boaters reflected similar trends.

The age that individuals start participating in non-motorized boating can provide insight into future participation trends. Among statewide random survey respondents boating less than five years, there was a greater proportion of young new boaters (24 years or less). There were also more new boaters in the middle age groups, 35 to 44 and 45 to 55.

Examining the ages of non-motorized boaters in each of the statewide random survey categories for "years of non-motorized boating participation" also supported the finding that many boaters started the activity either as young adults or in middle age. Individuals may start participating in non-motorized boating at any age. However, two distinct age groups emerged when individuals were most likely to start participating in non-motorized boating: (1) in their late teens and early twenties, or (2) in their forties or early fifties.

The fact that more individuals start participating in non-motorized boating in these two age groups seems intuitively reasonable. Many people in their early twenties are exploring new activities, and may try activities that they did not participate in as a child. At the younger end of the middle age group, individuals in their early 40's may be trying new family activities as their children get old enough. At the older end of the middle age group, individuals whose children have left home may be looking for new recreational activities.

Given the age characteristics of California's population, one might predict that non-motorized boating will continue to grow over the next several years. In 2005, approximately 28 percent of California's population was under the age of 18.[19] Another 8 percent of the 2005 population was between the ages of 18 and 24. Approximately 14 percent of the 2005 California population was between the ages of 45 and 54. This latter age group represents a portion of the Baby Boomer generation, which currently covers those in their early 40's to early 60's (those born between 1945 and 1964). As this large (and active) segment of the population reaches later into middle age and retirement, they are expected to boost participation in many recreational activities.[20] In addition, as the children of Baby Boomers approach young adulthood, they are also likely to increase participation in recreational activities (although perhaps not the same activities as their parents).

It is likely that much of the recent growth in non-motorized boating reflects increased participation in the front-end of the Baby Boomer generation and that of their children. If this is the case, we might expect a continued increase in non-motorized boating participation over the next several years. However, we would also expect an eventual decline in participation as these two cohorts continue to age.

California's growing population will also impact participation in non-motorized boating. California's population is expected to reach 50 million before 2050, increasing from 37 million in 2006.[21] The California State Parks report notes that, "with this level of growth, even activities with static or declining rates of participation will grow in absolute terms because there will be more Californians to participate."[22] Those activities with increasing participation rates will have even greater growth in participation.

In considering future levels of non-motorized boating, the total days of statewide non-motorized boating participation will also be impacted by existing boaters. Statewide random survey respondents were asked whether they expected to increase, or decrease, participation in non-motorized boating over the next five years. **Table 9.4,** above, summarizes these results.

Table 9.4
Expected Change in Non-Motorized Boating Participation Over the Next Five Years, Statewide Random Survey (2006) (n=351)

Change in Participation	Percent of Respondents
A lot more	**14%**
A little more	**24%**
About the same	48%
A little less	6%
A lot less	7%
NA	1%
Total	**100%**

Almost one-half of statewide random survey respondents expected to participate in non-motorized boating at the same (current) level over the next five years. Of the remaining participants, the majority expected to participate either a lot more, or a little more, with fewer expecting to participate less.

Answers to this question may be skewed toward increased participation, as people tend to answer these types of questions optimistically. Still, the vast majority of respondents expected to maintain, or increase, participation in non-motorized boating. There were relatively few differences in expected participation over the next five years between the most experienced non-motorized boaters (over 20 years) and the newer non-motorized boaters (9 years or less).

It is difficult to predict how increased participation among current non-motorized boaters could impact total participation days. In the statewide random survey, the average number of days of participation in non-motorized boating was 24, and the median number of days of participation was 10. More than one-half of respondents (55 percent) participated in non-motorized boating between one and ten days per year. Approximately 40 percent of respondents participated in non-motorized boating between 11 and 100 days per year, and very few respondents (5 percent) participated more than 100 days per year.

Respondents that expected to participate more in non-motorized boating primarily did so because: (1) they enjoy the activity; (2) they will have more free time; or (3) they want to spend time with their family. **Table 9.5,** right, summarizes reasons for increased participation. (Note: the total adds to more than 100 percent because respondents could identify more than one reason.)

Respondents that expected to participate less in non-motorized boating primarily did so because: (1) of health issues; (2) they are no longer interested; or (3) they are getting too old. These findings support the hypothesis that as Baby Boomers reach an age when they are no longer active, overall non-motorized boating participation may decline. **Table 9.6,** right, summarizes reasons for decreased participation in non-motorized boating.

Trends identified in the non-random active-user Internet survey reflect the opinions of a small, but very active, group of non-motorized boaters. While they are not reflective of the general State population, they do provide insight into an important component of the non-motorized boating community. The active-user Internet survey participation trends are described below.

In comparing years of participation in non-motorized boating between the statewide random survey respondents and active-user Internet respondents, fewer of the active-user respondents have participated in non-motorized boating for more than 20 years, and more have participated less than ten years. **Table 9.7,** right, provides the years of participation for active-user Internet survey respondents. **Table 9.8,** on the next page, provides the expected participation in non-motorized boating in the next five years, for active-user Internet survey respondents. Among this group, more respondents expected to increase participation, compared to the statewide random survey respondents.

Table 9.5
Reasons for Increasing Non-Motorized Boating Participation, Statewide Random Survey (2006) (n=135, with 287 total responses)

Reasons for Increasing Participation	Percent of Respondents
Enjoy the activity	53%
More free time	52%
To be with family	40%
Improved skill level	19%
To be with friends	18%
To try new types of boating	13%
Fixing or buying a new boat	6%
Replacing another hobby	5%
Other	7%

Table 9.6
Reasons for Decreasing Non-Motorized Boating Participation, Statewide Random Survey (2006) (n=44, with 67 total responses)

Reasons for Decreasing Participation	Percent of Respondents
Health, illness, or injury	52%
No longer interested	30%
Getting too old	20%
Not enough time	14%
Using or getting a motorboat	9%
Lack of or inadequate facilities	7%
Family is too young	7%
Participating in other activities	5%
Other	9%

Table 9.7
Years of Participation for Non-Motorized Boat Owners, Active-User Internet Survey (2006) (n=1,518)

Years of Participation	Percent of Respondents
Less than 5 years	17%
5 to 9 years	20%
10 to 14 years	15%
15 to 20 years	13%
Over 20 years	32%
NA	3%
Total	**100%**

Table 9.8
Expected Change in Non-Motorized Boating Participation Over the Next Five Years, Active-User Internet Survey (2006) (n=1,518)

Change in Participation	Percent of Respondents
A lot more	**22%**
A little more	**29%**
About the same	41%
A little less	4%
A lot less	1%
NA	3%
Total	**100%**

Table 9.9
Reasons for Increasing Non-Motorized Boating Participation, Active-User Internet Survey (2006) (n=778, with 2,285 total responses)

Reasons for Increasing Participation	Percent of Respondents
Enjoy the activity	79%
Improved skill level	57%
To be with friends	46%
More free time	36%
To be with family	29%
Replacing another hobby	18%
To try new types of boating	16%
Fixing or buying a new boat	1%
Other	1%

Table 9.10
Reasons for Decreasing Non-Motorized Boating Participation, Active-User Internet Survey (2006) (n=62, with 88 total responses)

Reasons for Decreasing Participation	Percent of Respondents
Not enough time	60%
Lack of access	16%
Lack of or inadequate facilities	13%
Logistics make difficult	11%
Health, illness, or injury	11%
Getting too old	8%
Family is too young	8%
No longer interested	8%
Poor water quality	3%
Using or getting a motorboat	2%
Other	2%

For active-user non-motorized boaters, participating more in non-motorized boating means participating in many more days per year as compared to statewide random survey respondents. Active-user boaters participated in non-motorized boating an average of 73 days, and median of 50 days per year.

The reasons for increasing, or decreasing, non-motorized boating participation were somewhat different for the active-user survey respondent, as compared to the average statewide survey respondent. A greater percentage of active-user respondents simply enjoy the activity. A majority of respondents also expected to increase participation because they were increasing their skill level. In addition, more active-user respondents expected to increase participation to be with friends, and fewer as a family activity, than the statewide random survey respondents.

Table 9.9, left, summarizes the reasons active-user respondents expected to increase participation. **Table 9.10,** following Table 9.9, summarizes the reasons active-user respondents expected to decrease participation in non-motorized boating. The majority of active-user respondents expect to decrease participation because they do not have enough time, as compared to the statewide respondents, for whom health and age were major reasons.

C. Summary of Trends on Non-Motorized Boating

This final subsection discusses and synthesizes general trends in non-motorized boating, as observed by the many individuals and organizations that participated in this study of non-motorized boating in California.

Non-motorized boating trends identified by commercial/institutional survey respondents reflect the opinions and observations of individuals that are closely, and actively, involved in non-motorized boating. More than one-half of commercial survey respondents have been in the industry for more than 15 years. Thus, these respondents provided an experienced perspective. They also provided a wide range of perspectives, depending on the types of services they offered and types of non-motorized boats they used.

Overall, commercial survey respondents noted a general increase in non-motorized boating participation among beginners, particularly recreational kayaking (at the expense of canoeing). With the increase in recreational kayaking comes increases in both family and beginner participation. This also means a growing number of inexperienced boaters, pointing to a need for expanded non-motorized boating education and instruction.

Several commercial survey respondents noted that in addition to the rapid growth in beginner level recreational kayaking, sea kayaking is increasing in popularity. Kayak fishing was identified as one of the fastest growing segments of both the paddle sports and fishing industries.

In general, whitewater rafting outfitters have seen a reduction in commercial participation since the early to mid-1990s, when participation peaked. Some outfitters have noticed that commercial participation is once again growing, but is also highly dependent on water levels. One growth area for commercially guided raft trips was the "luxury trip", providing gourmet food and wine, along with whitewater. Rafting outfitters also noted that many commercial participants have less time, and are interested in shorter (half or one-day) trips. Other trends rafting outfitters identified were: (1) declining participation among youth; and (2) a broader diversity of customers than in the past.

Commercial survey respondents in the sailboarding/kiteboarding industry commented that kiteboarding is growing exponentially, while sailboarding is declining or holding steady.

River managers, typically Federal, State, or County employees, also identified several trends in non-motorized boating.[23] One observation on river use trends was that private kayak participation on whitewater rivers was down, while guided trip participation numbers were steady. A second observation was that as the population is aging, non-motorized boaters are less interested in camping, and more interested in finding a motel and nice restaurant after a day of kayaking.

A growing trend among whitewater kayakers is the practice of "playboating". Playboating is when boaters stay in one location in the river and "play" in the hydraulics, rather than running a stretch of the river.

In general, the ability to monitor river flows on the Internet has increased the number of private boaters (primarily whitewater kayakers) running rivers in the winter off-season period. After a winter storm, boaters now check river flows on various web pages, and if flows are high enough, they can be on the river within a few hours. Prior to the availability of such real-time river flow information, boaters would have to drive to the river to see whether it could be run.

Generally, river managers noted that it is difficult to track overall river paddling trends year-to-year from participation data because typically a high water year attracts more users, while a low water year attracts fewer users. Historical river use data are provided in Appendix D.

The South Fork of the American River has far higher participation levels than any other whitewater river in the State (and is among the most popular rivers nationally). Participation in commercial rafting on the South Fork varies widely, and appears to be increasing over the last few years, since achieving a low point in 2001. Participation on most other rivers has varied somewhat over time, although commercial rafting participation on most rivers appears to be relatively stable.

In summary, we make the following observations on trends in non-motorized boating in California:

- The majority of those that do participate in non-motorized boating expect to either keep participating at the same levels, or increase participation, over the next five years.
- Non-motorized boating participation may slow or decline when Baby Boomers become too old to participate.
- Typical participants view non-motorized boating as an enjoyable recreational activity and a way to spend time with their families. More actively involved non-motorized boating participants also view non-motorized boating as an enjoyable activity, but are more focused on the challenge and skill required, as well as the social aspects of the activity.
- Kayaks account for almost one-half of estimated non-motorized boating participation days. The majority of kayak participation is by non-motorized boat owners.
- Commercial river rafting in California is a major non-motorized boating activity, particularly in the Sacramento Basin and Central Valley regions. This activity has generally declined since the mid-1990s, and is often dependent on rainfall. However, participation has been increasing in recent years.
- Canoeing participation is generally declining, although it has never been particularly popular in California, as compared to other states.
- Beginner-level and family-oriented recreational kayaking is growing. Recreational kayaks are popular because of their ease of use and low cost. This creates a need for education and instruction among these often inexperienced boaters.
- The increase in recreational kayaking may be a passing trend, or it may be an entry point to other types of non-motorized boating. It is possible that the majority of new non-motorized boaters that recently purchased recreational kayaks will eventually give up kayaking for another activity.[24] However, some smaller percentage of new recreational kayakers may continue in the sport, advancing to sea kayaking, whitewater kayaking, or some other non-motorized boating activity.
- Team and competitive non-motorized boating such as outrigger canoeing, rowing (crew), and dragon boat racing, are likely to remain niche activities. These sports have an active and avid following, but total participation numbers are relatively low.
- Participation in sailboarding has been fairly steady at a low level, although there are a number of avid sailboarders in certain regions of the State (San Francisco Bay Area, South Coast, San Diego). Kiteboarding, while still a small niche activity, is increasing rapidly, albeit from a small base.
- The number of non-motorized boat-owning households, and participants within those households, has increased at an estimated annual compound rate of growth of 3.84 percent over the last four years (from 2002 to 2006). Projecting forward, the number of non-motorized boat-owning households is expected to increase to between 1.044 million to 1.151 million, by 2010. The number of non-motorized boating participants in those households is projected to range from 2.064 million to 2.274 million in 2010.
- The number of non-motorized boating participants is expected to continue to increase. The largest share of new non-motorized boaters are young adults and those in their 40's and 50's. As the Baby Boomer generation ages and retires, it is likely that this large, and active, cohort will continue to drive increases in the number of non-motorized boaters. At the same time, the children of Baby Boomers are at an age when they are trying new activities, including non-motorized boating.

Section 9 Endnotes

1 For the 1960-1961 survey: Abbott L. Ferriss, et al., *National Recreation Survey* (Washington D.C.: prepared for the Outdoor Recreation Resources Review Commission, ORRC Study Report 19, 1962); For the 1982-1983 survey: National Park Service, *1982-1983 Nationwide Recreation Survey* (Washington D.C.: U.S. Department of Interior, National Park Service, April 1986); For the 1994-1995 survey: H. Ken Cordell, Jeff Teasley, and Greg Super, *Outdoor Recreation in the United States: Results from the National Survey on Recreation and the Environment* (Athens, Georgia: Prepared for the USDA Forest Service, August 1997), and H. Ken Cordell, et al., *Outdoor Recreation in American Life: A National Assessment of Demand and Supply Trends* (Athens, Georgia: Sagamore Publishing, 1999); for the 1999-2004 survey: H. Ken Cordell, et al., *Outdoor Recreation for 21st Century America* (State College, Pennsylvania: Venture Publishing, Inc., 2004), United States Forest Service, *Recreation and Tourism Statistics Update, Participation in Outdoor Activities by People Living in Region 5* (Athens, Georgia: Southern Research Station, USFS, April 2006), United States Forest Service, *1999-2000 National Survey on Recreation and the Environment* (Athens, Georgia: Southern Research Station, USFS, 2001), H. Ken Cordell, et al., "United States of America: Outdoor Recreation," Chapter 16 in *Free Time and Leisure Participation: International Perspectives* (CAB International, 2005), and Vernon R. (Bob) Leeworthy et al., Projected Participation in Marine Recreation: 2005 and 2010 (Silver Spring, Maryland: National Oceanic and Atmospheric Administration and U.S. Forest Service, March 2005). With the exception of the published books, studies from the NSRE are available at: http://www.srs.fs.usda.gov/trends/Nsre?nsre2.html.

2 Leisure Trends Group, *Outdoor Recreation Participation Study, Seventh Edition, For Year 2004* (Boulder, Colorado, Outdoor Industry Foundation and Outdoor Industry Association, June 2005); and Leisure Trends Group, *Outdoor Recreation Participation Study, Eighth Edition, For Year 2005* (Boulder, Colorado, Outdoor Industry Foundation and Outdoor Industry Association, June 2006).

3 Roper ASW, Outdoor Recreation in America 2003: Recreation's Benefits to Society Challenged by Trends (Washington D.C., prepared for The Recreation Roundtable, January 2004).

4 Strategic Research Group, *2002 National Recreational Boating Survey State Data Report* (Columbus, Ohio: prepared for the United States Coast Guard, November 30, 2003); and Strategic Research Group, *2002 National Recreational Boating Survey Report* (Columbus, Ohio: prepared for the United States Coast Guard, November 30, 2003).

5 American Sports Data, Inc., *The Superstudy® of Sports Participation Volume 3, Outdoor Activities 2005* (Cortland Manor, New York: American Sports Data, Inc., 2006): and American Sports Data, Inc., "California"; "Ethnicity", and "Lifestyle Segments" reports (Cortland Manor, New York: American Sports Data, Inc., 2006).

6 National Marine Manufacturers Association, *2005 Recreational Boating Statistical Abstract* (Chicago: NMMA, 2006).

7 The Sailing Company, *2006 State of the Industry* (Middletown, Rhode Island: The Sailing Company, 2006).

8 Ferriss et al., 1962. Canoeing trends based on: NSRE, NMMA, Roper ASW, OIF, and ASD.

9 Kayaking trends based on: NMMA, NSRE, OIF, and ASD.

10 NMMA, 2006.

11 NMMA, 2006; Leisure Trends Group, June 2006; and M.S. Enkoji, "Active gift giving: tastes change, so make selections carefully" (The Sacramento Bee, November 27, 2007, B1).

12 Matt McClellan, "Kayak makers turn to innovation" (Plastics News, August 9, 2004, p.1)

13 M.S. Enkoji, November 27, 2007. Enkoji cites the decline of in-line skates as an example of a fading sports trend.

14 Rafting trends based on: NSRE, NMMA, OIF, and ASD.

15 Sailing trends based on: NMMA, NSRE, The Sailing Company, Roper ASW, and personal communications with: Steve Lowry of El Toro International Yacht Racing Association, Steve Sherman and Susan Dennis of United States Optimist Dinghy Association, and Tom Newton of International Naples Sabot Association.

16 Personal communications with: Steve Lowry of El Toro International Yacht Racing Association, Steve Sherman and Susan Dennis of United States Optimist Dinghy Association, and Tom Newton of International Naples Sabot Association.

[17] Rowing trends based on: NSRE, and Roper ASW.

[18] Sailboarding trends based on: NSRE and ASD.

[19] U.S. Census Bureau. "California General Demographic Characteristics: 2005." (U.S. Census Bureau, http://factfinder.census.gov.)

[20] California State Parks. Park and Recreation Trends in California (Sacramento, California: California State Parks, May 13, 2005).

[21] California State Parks, 2005.

[22] Ibid., p.2.

[23] Personal communications with: Gay Baxter, Klamath National Forest; Jeff Horn, Folsom Office of the Bureau of Land Management; Cheryl Bowen, Sequoia National Forest; Noah Rucker-Triplett, El Dorado County; Jim Michaels, California State Parks; Bill Deitchman, California State Parks; Steve Welch, Stanislaus National Forest; John Swanson, Stanislaus National Forest; Terry Schumaker, Sierra National Forest; and Jennifer Munn, Tulare County.

[24] For example, Enkoji, November 27, 2007, cites that in-line skating participation dropped by more than half between 1998 and 2005; McClellan, August 2004, noted that the kayak industry growth was slowing.