Delta Vision

Context Memorandum: Recreation

This context memorandum provides critical information about recreation to support policy making. As they are developed, the context memos will create a common understanding and language about the critical factors in establishing a Delta Vision.

This is an iterative process and this document represents the beginning of a dialogue with you about how best to understand recreation and to inform recommendations by the Delta Vision Blue Ribbon Task Force. You have two weeks to submit comments that may be incorporated into the next iteration.

You may submit your comments in two ways: either online at dv_context@calwater.ca.gov or by mail. If you are using mail, please send your comments to: Delta Vision Context Memo: Recreation, 650 Capitol Mall,5th Floor, Sacramento, CA 95814.

Your attributed comment will be posted on the Delta Vision web site (http://www.deltavision.ca.gov). Please cite page and line number with specific comments; general comments may be keyed to sections.

Your participation in this iterative process is valuable and important and is greatly appreciated. Thank you for your comments.

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Section 1. Background

1 2 3

Recreation Opportunities in the Delta. The Delta provides a wide range of recreational opportunities, including fishing, hunting, boating, camping, picnicking, and nature viewing. With approximately 700 miles of navigable channels, it is one of the largest waterway complexes in the western United States. For boaters, the Delta offers a mix of broad, open channels suitable for water skiing and pleasure cruising, and smaller meandering channels, cloaked in riparian vegetation, ideally suited to house boating, swimming, and secluded picnics. The Delta provides world-renowned hunting, fishing, and nature viewing opportunities. The Pacific Flyway passes directly over the Delta. Waterways and islands provide habitat for 230 species of birds, 45 species of mammals, 52 species of fish, 25 species of reptiles and amphibians, and 150 species of flowering plants. The Suisun Marsh, the largest contiguous brackish water marsh remaining on the west coast, is home to 158 private duck clubs and a number of public waterfowl hunting areas, including the Grizzly Island Wildlife Area. The marsh also supports 80% of the state's commercial and recreational salmon fishery by providing important tidal rearing areas for juvenile fish.

Recreation Visitor and User Days. The Delta's proximity to the Bay Area and Sacramento region and its diversity of recreation settings and experiences makes it a popular recreation destination. Approximately 7 million people currently visit the Delta for recreation annually. By 2020, visitation is forecasted to reach 8 million visitor days. According to a 1996 survey of recreation in the Delta conducted by the Department of Parks and Recreation (DPR), 23.5% of registered boat owners and 23.0% of licensed anglers in California recreated in the Delta in 1995. The majority of Delta boaters and anglers come from nearby counties, but a sizable fraction come from much further distances. In 1995 Los Angeles County alone accounted for 7.3% and 3.6% of Delta boater and angler user days, respectively. Table 1 lists the top 10 counties of origin for Delta boating and fishing recreation.

Table 1: Top 10 Counties of Origin for Delta Boating and Fishing Recreation

RANK	BOATERS	PERCENT		RANK	ANGLERS	PERCENT
1	Contra Costa	12.5		1	Sacramento	10.7
2	Sacramento	9.9		2	San Joaquin	10.0
3	Alameda	8.6		3	Alameda	8.0
4	Santa Clara	7.9		4	Santa Clara	8.0
5	Los Angeles	7.3		5	Solano	7.6
6	San Joaquin	6.9		6	San Mateo	3.8
7	Stanislaus	3.7		7	Placer	3.6
8	Marin	3.4		8	Lost Angeles	3.6
9	Solano	3.1		9	Stanislaus	3.1
10	San Mateo	3.0		10	Sonoma	2.0
	Subtotal	66.3	- —		Subtotal	60.4

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People recreating in the Delta typically engage in more than one recreational activity. In recreational surveying, a user-day is counted for each activity a visitor participates in over the course of a day. Thus if a person visiting the Delta spent part of the day fishing and part of the day pleasure cruising, that would be counted as two user days of recreational activity. Surveys show that the Delta currently supports over 12 million user days of recreational activity annually. Table 2 shows the estimated number of user days occurring in the Delta, as derived from surveys of boaters and anglers.

Table 2: Estimated Delta Boating and Fishing User Days

	ESTIMATED	AVG. NO. OF	TOTAL	AVG. NO. OF	ESTIMATED
ACTIVITY	NO. OF	DAYS PER	GROUP	PERSONS	TOTAL USER
	GROUPS	YEAR	DAYS	PER TRIP	DAYS PER YEAR
Boating	186,000	26.1	4,854,600	2.97	14,418,162
Fishing	169,200	24.0	4,060800	2.91	11,816,928
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*User day estimates for boating and fishing cannot be added together because this would result in double counting. Double counting would occur because most boaters also fished and many anglers also boated.

Popular Delta Recreation Activities. The 1996 DPR survey found that fishing from a boat was the number one recreational activity in the Delta among registered boat owners and licensed anglers. The majority of surveyed boat owners also reported using the Delta for pleasure cruising, swimming, and water skiing. Among licensed anglers, shore fishing and tournament fishing were also popular. Table 3 shows the most common boating and fishing activities reported by Delta boaters and anglers. The table also shows the top ten recreation activities after boating and fishing that survey respondents reported enjoying in the Delta. Because the DPR survey only included boat owners and anglers, survey results most likely under-represent the popularity of non-boating and non-fishing activities in the Delta, such as wildlife viewing, picnicking, land-based hunting, and hiking. Nonetheless, the Delta is primarily known as a boating and fishing recreation destination, and these two recreation activities account for the majority of recreation activity occurring in the Delta.

 Delta Recreation Facilities. Most recreation facilities in the Delta are provided by private marinas. There are approximately 100 marinas in the Delta and over 11,000 boat berths.^{xii} As previously mentioned, the Suisun Marsh is home to 158 private duck clubs. There are an additional 19 private duck clubs in the rest of the Delta, mainly northwest of the Sacramento Deep Water Channel.^{xiii}

There are 22 publicly owned recreation areas in the Legal Delta (Primary and Secondary Zones). These include federal, State, county, city, land trust, and port-run facilities. Additional public lands are also reserved for wildlife protection and preservation.xiv Public facilities include the Brannan Island State Recreation Area (SRA), the Grizzly Island Wildlife Area, five DFG fishing access/launching facilities managed by

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- 1 Sacramento and Yolo Counties, and the FWS Stone Lakes Refuge. There are also
- 2 public recreation facilities operated by the East Bay Regional Park District, San Joaquin
- 3 County, and DWR, as well as a number of cities, including Antioch, Pittsburg, Rio Vista,
- 4 West Sacramento, Sacramento, and Stockton.

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Figure 1 shows the location of public and private recreation locations in the Delta.

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Table 3: Favorite Recreation Activities Among Delta Boaters and Anglers

MAJOR	MAJOR BOATING AND FISHING ACTIVITIES						
RANK	BOATERS	PERCENT	RANK	ANGLERS	PERCENT		
1	Fishing from boat	77	1	Fishing from boat	88		
2	Cruising	76	2	Fishing from shore	74		
3	Swimming from boat	71	3	Fishing in tournament	14		
4	Water skiing	61		-			
5	Sleeping in boat	49					
6	Sailing	15					
7	Hunting from boat	5					

TOP TEN ACTIVITIES AFTER BOATING AND FISHING

RANK	BOATERS	PERCENT	RANK	ANGLERS	PERCENT
1	Sightseeing	45	1	Sightseeing	52
2	Viewing wildlife	41	2	Boating	49
3	Fishing from shore	40	3	Viewing wildlife	49
4	Picnicking	34	4	Swimming	40
5	Hiking	32	5	Hiking	39
6	Swimming from shore	30	6	Picnicking	37
7	Attend special events	28	7	Nature photography	25
8	Nature photography	21	8	Attend special events	25
9	RV camping	20	9	RV camping	23
10	Visit historical/cultural	18	10	Visit historical/cultural	23
	sites			sites	

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Delta Recreation Zones. Different parts of the Delta support and concentrate different types of recreational activity. Boating is concentrated in the western and central parts while hunting and wildlife viewing are concentrated in the Suisun Marsh and areas in and around the Yolo bypass. The DPR survey divided the Delta into six recreation zones, shown in Figure 2, as follows:

16	•	North Delta	(Zone A)
17	•	Northwest Delta	(Zone B)
18	•	Central Delta	(Zone C)
19	•	West Delta	(Zone D)
20	•	East Delta	(Zone E)
21	•	South Delta	(Zone F)

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The Suisun Marsh was not part of the DPR survey and is not included in this classification, so it can be considered the seventh Delta recreation zone.

The Delta's recreation zones vary greatly in terms of the quality and character of the resource, their relative size, the number of existing navigable waterways, the number of facilities, and the number of expected users. The Department of Boating and Waterways (DBW) described the features of the six DPR zones as follows:^{xv}

North Delta (Zone A). The North Delta encompasses the most northern reach of the Delta. It consists of the Sacramento River corridor from the cities of Sacramento and West Sacramento to the town of Courtland. It includes portions of Elk Slough and the northern extension of the Deep Water Shipping Canal, Lake Washington, and the Sacramento Water Lock. The estimated 2,617 acres of water surface in the zone translates to approximately 61 linear miles of navigable channels. The majority of these miles are in the Sacramento River corridor (31 miles), the Shipping Canal (9 miles), and Elk Slough (9 miles), with the remainder found along Steamboat Slough (12 miles). The inventory of recreation-related facilities in this zone includes approximately 20 facilities with eight located in Yolo County. The remaining facilities are in Sacramento County. There are eight marinas in this zone, providing a total of 988 boat slips.

Features of this zone include Discovery Park, (a Sacramento County regional water-oriented park), frontage along Old Town Sacramento (a State Historic Park), Raley Field (home of the River Cats, an AAA baseball team), the West Sacramento Waterfront Promenade, upscale residential development in the Pocket Area, remnant fruit packing and shipping facilities along the Sacramento River, the Clarksburg public boat ramp (operated by Yolo County), and the Stone Lakes National Wildlife Preserve. Much of the levee system along the Sacramento River and Elk Slough has "naturalized," with stands of cottonwood, alder, valley oak, box elder, and willow providing a scenic edge for water-based views. The North Zone could be considered the Sacramento region's gateway to the Delta. The stretch of the Sacramento River in this zone is an intensively used artery linking the lower Delta with the Old Sacramento vicinity and navigable waters upstream on the American and Sacramento Rivers.

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Figure 1: Recreation Sites in the Delta

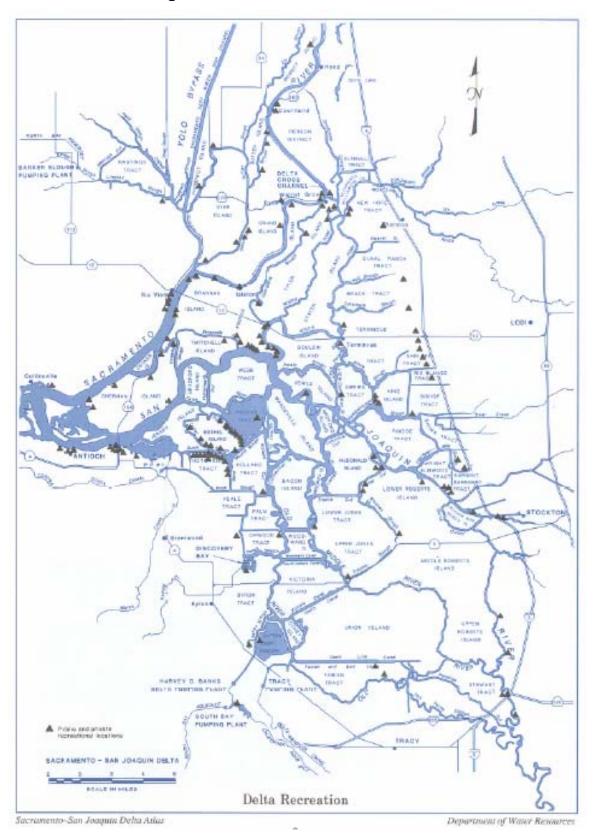
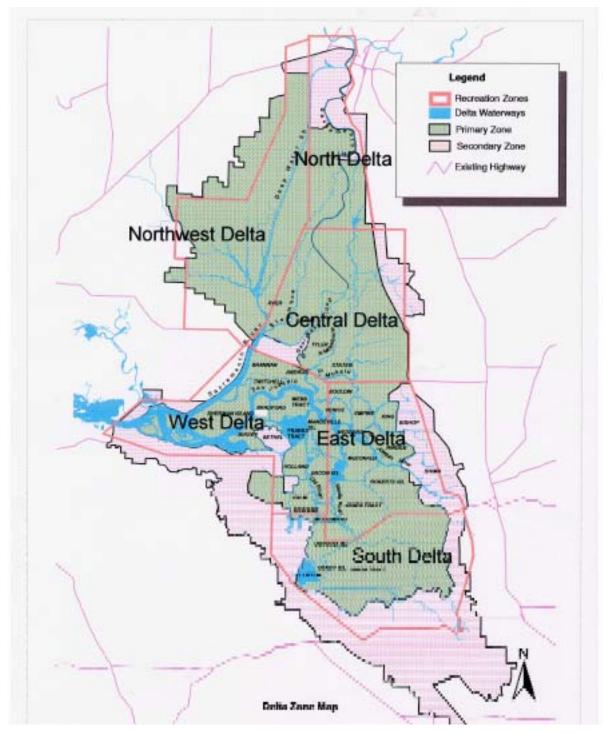


Figure 2: Delta Recreation Zones



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Northwest Delta (Zone B). The Northwest Delta includes the Yolo Bypass, Cache Slough, and portions of the Sacramento Deep Water Shipping Canal. The town of Hood is located in this zone. The estimated 7,190 acres of water surface in this zone includes approximately 58 linear miles of navigable channels. The largest single block of these

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1 navigable miles is along the Shipping Canal (18 miles). The remainder of navigable 2 miles is found within the shallow waters along Cache Slough and the adjoining channels 3 in the Cache Slough system. The Yolo Bypass is the dominant element in this zone. The 4 Yolo Bypass provides peak-flow flood area for the Sacramento River during the high-5 flow periods, allowing the floodwater to flow directly to the lower Delta. The zone is 6 notable for extensive natural and restored habitat areas, including segments of Cache 7 Slough, portions of Liberty and Prospect Islands, and the Vic Fazio Yolo Basin Wildlife 8 area. This zone has relatively limited navigable waterways and minimal boating-related 9 facilities. Drainages from Putah Creek, Willow Slough, and Haas Slough support 10 additional natural habitat areas. The primary recreation uses in the Northwest Zone are 11 waterfowl hunting and wildlife viewing, with some fishing at the southern end of the zone. 12 There are also a number of bike trails located in this zone. Although there are several 13 recreation-serving facilities in this zone, these facilities primarily serve land-based 14 activities, including duck hunting and wildlife viewing. There is only one marina facility in 15 the Northwest Zone. It provides 76 boat slips.

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Central Delta (Zone C). The Central Delta encompasses the north central part of the Delta. It includes portions of the Sacramento River, Miner Slough, Steamboat Slough, Sutter's Slough, Georgiana Slough, the north and south forks of the Mokelumne River, the Delta Cross Channel, Snodgrass and Lost Slough, and Beaver, Hog, and Sycamore Sloughs. The city of Rio Vista and the unincorporated communities of Courtland, Walnut Grove, Locke, Terminous, and Isleton are situated within this zone. To the east of this zone are the cities of Galt, Woodbridge, and Lodi. The estimated 5,552 acres of water surface in the Central Zone includes an extensive system of approximately 132 linear miles of navigable channels. The majority of these miles are along the Mokelumne River corridor (North and South – 36 miles), the Sacramento River corridor (23 miles), Steamboat Slough (13 miles), Georgiana (12 miles), and Snodgrass (9 miles). In some instances, as with the Georgiana Slough and North Mokelumne River, the waterways form circular loops for multi-route options. There are 12 marina facilities in this zone providing an estimated 1,271 boating slips. Additionally, there are numerous boatingassociated facilities in this zone, including boat-accessed restaurants, resorts, and yacht clubs. The Consumnes River Preserve, the McCormack Tract, and the Delta Meadows (a California Department of Parks and Recreation facility) offer some of the most attractive natural areas with designated anchorages. These are also popular kayaking destinations. Sandy Beach Park is located on the Sacramento River near the town of Rio Vista. Open year round, the park offers a 24-hour boat-launching ramp, camp sites, picnic grounds, a hiking trail, miles of country roads for bicycling and a sandy beach stretching for over half a mile. Walnut Grove has developed a public dock to enable access to the community. The primary recreation uses in the Central Zone include boat cruising, fishing, water-skiing, boat camping, and sailing. Much of the levee system in

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this zone has been engineered with stone or rock slope protection, thereby creating a sterile appearance for the waterside environment.

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West Delta (Zone D). The West Delta encompasses the western limits of the Delta and serves as the gateway to the San Pablo and San Francisco Bays to the west. The West Zone includes the lower Sacramento and San Joaquin Rivers. The highest concentration of marina facilities is located in this zone, as well as the greatest number of boats on the water. The channels tend to be broad in this zone and contain the largest ratio of water surface area compared with land surface, especially towards the western limits of the zone. The estimated 29,522 acres of navigable water surface in this zone includes approximately 152 linear miles of navigable channels. To a large extent, these miles occur within the main flow of the Sacramento River (22 miles), the San Joaquin River (28 miles), and Old River (14 miles). There are also many waterway connector channels linking the larger water bodies. The cities of Pittsburg, Antioch, Oakley, Byron, and Brentwood adjoin the zone, while the unincorporated community of Bethel Island is located entirely within the zone. Besides the lower reaches of the Sacramento and San Joaquin Rivers, this zone includes Old River and Middle River, as well as numerous minor channels and sloughs. A unique feature of the West Zone is the many inundated islands that have expanded the extent of water area and, in some instances, the range of navigable areas. These inundated islands include, Franks Tract SRA, Little Franks Tract, Lower Sherman Island, and Mildred Island. The extensive navigable waterways include many channels sufficiently wide for larger boats and sailing vessels. The West Zone offers unique microclimate conditions that enable some of the best year-round conditions for windsurfing, sail-boarding, and sailing. These same winds tend to limit the amount of water-skiing and wakeboarding in the area, since participants in these activities typically prefer calm conditions. Because the West Zone is the primary transition area between the saline Bay waters and the fresh Delta waters, it is known to attract an abundance and diversity of fish, including striped and black bass, sturgeon, salmon, bluegill, and crappie. Other unique features of this zone include Brannan Island SRA, which includes Windy Cove day use access, public boat ramps, and over 140 campsites and areas for picnicking and swimming; Bethel Island (with the single highest concentration of boating-related facilities in the Delta); and Lower Sherman Island (a Sacramento County water-access area). xvi There are 56 marina facilities in this zone, providing approximately 5,990 boat slips. Similar to the Central Zone, there are numerous boating-associated facilities in this zone. Also, like the Central Zone, the levee system in the West Zone has typically been engineered with stone or rock slope protection, creating a sterile appearance from the waterside environment.

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<u>East Delta (Zone E)</u>. The East Delta makes up the southeastern portion of the Delta. Bordered by State Route 12 on the north, Interstate 5 on the east, State Route 4 on the south, and a north-south line from Route 4 to Route 12 on the west, the estimated 7,560

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1 acres of water surface in the East Zone includes approximately 122 linear miles of 2 navigable channels. This zone contains the Delta Loop, a 10-mile scenic loop accessible 3 by boat or car. The largest segments of these navigable miles are found along the main 4 channel of the San Joaquin River (19 miles) and the Middle River (24 miles). The city of 5 Stockton is the source for a significant number of users, as well as the economic hub 6 that links agricultural, shipping, and recreation activities in the general vicinity. The San 7 Joaquin River Shipping Canal traverses this zone from the northwest to the southeast. 8 The Middle River also flows through this zone. Besides the main river flows, there are 9 numerous channels and sloughs that define some of the higher-elevation islands, and 10 dead-end sloughs that generally run easterly along the eastern border of the zone. The 11 East Zone is considered a superior shore fishing area with many accessible connecting 12 and dead-ended sloughs. It includes a number of private yacht club facilities – typically 13 situated on vegetated islands along the larger channels. Mildred Island, a submerged 14 island adjoining Middle River, has characteristics similar to Franks Tract SRA, with 15 marginally navigable waters but reportedly very good fishing conditions. There are 13 16 marina facilities in the East Zone, offering 2,786 boating slips.

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South Delta (Zone F). The South Delta encompasses the southern extent of the Delta. This area is bordered by State Route 4 to the north, Interstate 5 to the east, the Southern Pacific Railroad easement on the west side, and Interstate 205 to the south. The estimated 5,135 navigable acres of water surface in the South Zone includes approximately 110 linear miles of navigable channels. The majority of these miles are along the main channel of the San Joaquin River (15 miles), Middle River (24 miles), Old River (42 miles), Victoria Slough (12 miles), Woodward Slough (4 miles), and the navigable portions of Discovery Bay. The Clifton Court Forebay, the California Water Project's primary collection reservoir, is located in this zone. Discovery Bay, a wateroriented, residential development, where most houses front the water and have docks and boat slips, is located off of Old River and east of the community of Brentwood. Situated on the lee side of the Diablo Range, this portion of the Delta tends to be the most sheltered in terms of wind exposure. This area tends to attract boaters drawn to quieter waters and engaged in activities such as water-skiing and fishing. There are presently five marina facilities in the South Zone, with approximately 563 boat slips provided. Old River, portions of Middle River, and the main San Joaquin channel flow through this zone. Because of the intake facility near Clifton Court Forebay, water flows are heavily regulated in this part of the Delta. Also, many of the channels in this zone have become impassable due to snags and vegetation encroachment. There are fewer boating and water-associated facilities in this zone in comparison to the adjoining zones to the north. Urban pressures are significant in this zone, with residential developments moving closer to the legal Delta Zone. The rapid population increases in residential pockets, such as Discovery Bay and the adjoining cities of Tracy, Byron, and Brentwood,

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1	suggests increased pressure on this part of the Delta for accommodating future
2	recreation needs.
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4	Table 4 provides a summary of characteristics and recreation features for each zone
5	described above.xvii
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7	Figure 3 shows the distribution of user days by recreation zone for (1) all boating
8	activities, (2) fishing from a boat, and (3) fishing from the shore.xviii The highest levels of
9	use for each activity occurs in the West Delta (Zone D), followed by the Central and East
10	Delta (Zones C and E). The least amount of boating and fishing activity occurs in the
11	Northwest Delta (Zone B).
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13	Suisun Marsh. There is a scarcity of data on recreation occurring within the Suisun
14	Marsh. It is a popular destination for waterfowl and game hunting, as well as fishing and
15	wildlife viewing. It is also used extensively for dog training. Estimated recreation user-
16	days by activity for Suisun Marsh are based on unpublished July 2005 to June 2006
17	visitor data for the Grizzly Island Wildlife Complex operated by Department of Fish and
18	Game. These data were obtained during a telephone communication with the manager
19	of the Grizzly Island Wildlife Complex, Pat Grahm, on November 16, 2006. Mr. Grahm
20	used attendance records for the complex to estimate user-days by activity. He also

provided the approximate percentage of total Suisun Marsh recreation this represented.

The estimates are presented in Table 5.

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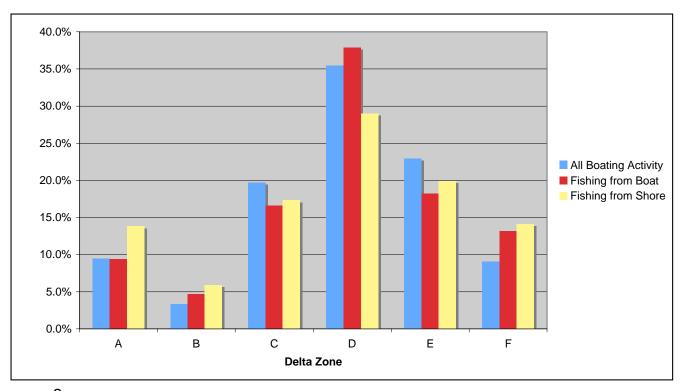
Table 4: Delta Recreation Zone Characteristics

	North	Northwest	Central	West	East	South	Total
Total Water Surface (acres)	3,145	7,545	5,915	29,995	7,940	5,255	59,795
Navigable Water Surface (acres)	2,617	7,190	5,552	29,522	7,560	5,135	57,576
Navigable Surface Area (sq. miles)	4.1	11.2	8.7	46.1	11.8	8.0	89.9
Linear Miles of Navigable Waterways	61	58	132	152	122	110	635
Number of Marinas*	8	1	12	56	13	5	95
Boat Slips*	988	76	1,271	5,990	2,786	563	11,674
Water Features	linkages to other zones,	Yolo Bypass: flood structure, shipping canal, and extensive tidal margin lands	Many navigable channels – some circu- lar – the Delta Cross- Channel	Gateway to San Pablo and San Francisco Bays, many inundated islands	Numerous main river flows, chan- nels, channel islands, sloughs, city of Stockton	Sheltered & quiet waters, Clifton Court Forebay, regulated water flows, many conges- ted channels	
Typical Types of Recreation	Cruising, fishing, and channel exploring	Mostly land- based hunting and wildlife viewing	Cruising, fishing, water-skiing, camping, sailing	Wind- surfing, sailing, fishing	Fishing, sailing	Water-skiing, wake-board- ing, fishing	
Unique Characteristics	Discovery Park, Old Sacramento, Stone Lakes Wildlife Preserve	Extensive natural and re- stored habitat areas	Consumnes River Pre- serve, Delta Meadows	Brannan Island, Bethel Island, Big Break Interpretive area	Mildred Island, several yacht clubs	Discovery Bay, many areas sheltered from wind by Diablo Range	

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Figure 3: Distribution of Boating and Fishing User Days by Delta Zone



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Table 5: Estimated Suisun Marsh Recreation User Days

	Grizzly	% of	Total
Activity	Complex	Marsh Total	Suisun Marsh
Wildlife Viewing, Dog Training, etc.	12,500	100%	12,500
Fishing	30,000	65%	46,154
Waterfowl hunting	6,000	*	67,620
Pheasant hunting	1,300	75%	1,733
Elk	40	100%	40
Pig, Rabbit	125	100%	125

^{*} Private clubs in Suisun Marsh = 158 clubs x 10 hunters/day x 3 days/wk x 13 wks = 61620; Estimation method independently proposed by Pat Grahm and Steve Chappell of the Suisun Resource Conservation District.

Source: Telephone communication with Pat Grahm, Grizzly Island Wildlife Complex

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Economic Impacts of Delta Recreation. Recreation is an important part of the Delta economy. People coming to the Delta to boat, fish, or engage in other recreational activities support the Delta economy through their expenditures for food, lodging, services, and supplies. The DPR survey estimated that in 1995 boaters spent on average \$183 (adjusted to 2006 dollars) inside the Delta per boat trip, while anglers spent on average \$147 per trip. Estimated expenditures within the Delta by boaters and anglers in1995 were in excess of 326 million

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- dollars (adjusted to 2006 dollars).xix Delta recreation also benefits the rest of
- 2 California's economy. In addition to money spent inside the Delta, the DPR
- 3 survey found that Delta boaters and anglers spent on average \$126 and \$163,
- 4 respectively, per trip on businesses outside the Delta. Estimated recreation
- 5 expenditures in 1995 by Delta boaters and anglers benefiting businesses located
- 6 outside the Delta were in excess of 270 million. Total Delta boater and angler
- 7 recreation expenditures benefiting California businesses were estimated to
- 8 exceed half a billion dollars in 1995. Table 6 provides a breakdown of Delta
- 9 recreation expenditures estimated by the DPR survey.

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Table 6: Delta Recreation Expenditures in 1995

Activity /	Average E	xpenditure	nditure Estimated Expenditures		Total
Expenditure	Per Trip	(2006 \$)	for All Trips in	1995 (2006\$)	Annual
	Inside Delta	Outside Delta	Inside Delta	Outside Delta	(2006 \$)
	Dollars	Dollars	1000 Dollars	1000 Dollars	1000 Dollars
Boating					
Boating					
Lodging	31.55	16.62	56,306	29,660	85,966
Food	50.25	31.71	89,690	56,588	146,278
Supplies	68.26	53.08	121,824	94,731	216,555
Recreation	32.83	24.90	58,591	44,433	103,024
Total Boating	182.89	126.31	326,411	225,412	551,823
Fishing					
Lodging	39.76	43.23	66,499	72,306	138,805
Food	39.27	37.24	65,682	62,282	127,964
Supplies	41.07	54.30	68,685	90,828	159,513
Recreation	26.70	27.97	44,664	46,783	91,447
Total Fishing	146.80	162.74	245,530	272,199	517,729

^{*}Note that total expenditures for boating and fishing cannot be added together. Adding them would result in double counting because many registered boaters are licensed anglers and vice-versa. The total annual expenditure estimates therefore provide a lower-bound estimate of recreation spending in the Delta.

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An economic impact analysis using the DPR survey data done by UC Berkeley economists in 1998 concluded that Delta recreation had a sizeable impact on the Delta economy. Using regional economic models of the Delta and California, this study estimated that Delta recreation contributed \$587 million (2006 dollars) to the Delta economy in 1995 and supported approximately 8,000 jobs in the Delta. These figures represent about 1.7% of income and 3.2% of employment in the Delta in 1995.

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For the state as a whole Delta recreation contributed just over one billion dollars (2006 dollars) to the California economy and supported approximately 14,000 jobs.

Recreation 14 Written by: David Mitchell

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Because the surveys upon which the impact estimates were based only counted boaters and anglers, and only if they were registered and licensed, the authors of this report consider the impact estimates to be lower bounds of actual economic impacts resulting from Delta recreation. Other popular Delta recreation activities, such as hunting, wildlife viewing, sightseeing, windsurfing, biking and camping also produce economic benefits to the region and state.

Section 2. Trends and Issues

Delta Recreation Levels. According to the Department of Boating and Waterways (DBW), total outdoor recreation use in California increased at a rate nearly equal to the State's population growth rate in the last decade. DBW found rates of participation in some outdoor activities to be growing rapidly while rates of growth in other activities were slowing or turning negative. The activities growing most rapidly included use of personal watercraft (jet skis, etc.), nature study outings, sightseeing, and hiking or walking for pleasure. Activities showing the slowest growth or negative growth included fishing and hunting. In the Delta, the DPR surveys found that the majority of surveyed anglers and boaters reported they were reducing the amount of time spent in the Delta fishing, swimming, and hunting, with hunting and fishing showing the greatest reduction.

Overall recreation levels in the Delta are forecasted to increase over the next 10 to 20 years, but at a slower rate than regional or state population growth. The DBW forecasted that Delta boating visitation would increase at an average rate of 0.79% per year between 2000 and 2010, but then would slow considerably to an average rate of 0.46% per year between 2010 and 2020. Total annual visitor days are forecasted to increase from their current level of about 7 million visitor days to about 8 million visitor days by 2020.

Urban Development. Counties containing and surrounding the Delta are some of the fastest growing regions in California. Development within the secondary zone of the Delta has been increasing in recent years and more is forecasted. The use of Delta recreation facilities mainly has come from people living within 40-60 miles of the Delta' and thus demand for new facilities will likely come from people living in and near the Delta. Several fast growing population centers including Sacramento, Stockton, Lathrop and Tracy, the eastern Contra Costa County cities of Brentwood, Antioch and Pittsburg, and the Solano County cities of Fairfield, Vacaville, Rio Vista and Suisun lie in the areas surrounding the Delta.

Urban development in areas in and around the Delta has implications for Delta recreation. On the one hand, people living in these areas are the most likely to visit the Delta for recreational purposes and may serve as drivers for investment in upgrading Recreation

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and adding Delta recreational facilities serving their interests. On the other hand, much of the Delta's appeal as a recreation destination stems from its rural characteristics, its wildlife and natural beauty, and its distance from the helter-skelter pace of urban living. Poorly planned or piecemeal urban development in and around the Delta could degrade some of the Delta's features that are most attractive to its visitors.

Delta Recreation and Water Quality. Surveys conducted by DBW found that public perceptions of Delta water quality were an important determinant of attitudes about the Delta as a boating destination. ***i Both large- and small-boat owners cited poor water quality as a significant impediment to using Delta waters. These perceptions are, in part, attributable to the basic conditions/processes occurring in the Delta: i.e., peat soils and estuarine conditions. But surveyed boaters also identified improper disposal of boat wastes, reduced water flows from water diversions, invasive aquatic plants, and obstacles and debris in the water as significant water quality concerns in the Delta. In addition, illegal dumping and abandoned vessels throughout the Delta, some quite large, also contribute to Delta water quality degradation.

Delta Recreation and Aging Marina Infrastructure. As previously noted most recreation facilities in the Delta are provided by private marinas. Two-thirds of these marinas are older than 40 years. DBW site inspections and marina surveys have noted significant evidence of deferred maintenance. Similar problems have been noted at Brannan Island SRA, which provides one of the few public access points for boating in the Delta. Dredging is the most commonly cited need among marina operators, followed by docks/slips repair or replacement, dry boat storage, launch ramp lanes, parking, and transient docks. Silting of harbors and slips is a problem for both public and private access points and water quality concerns has made this an increasingly difficult issue to address on a site by site basis. The cost to repair or replace identified needed improvements to Delta marinas over the next two decades was estimated to range from \$107 million to \$159 million.xxiiv

DBW provides loans to local public agencies and businesses for the development of small craft harbors, grants to public agencies for the construction of boat launching facilities, and state monies for public-access boating facilities on state owned or controlled property. The department places a high priority for new and improved public access to the Delta and encourages potential applicants to coordinate future projects with the department.

Delta Cultural/Historic Resources. There is significant opportunity for cultural resource rehabilitation and interpretation/education at Locke with the Locke Boarding House project. DPR and Sacramento Housing and Redevelopment Agency are partners in the restoration of the Boarding House in Locke and construction is expected to begin

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in early June 2007. There are numerous other cultural features throughout the Delta that could become points of recreation attraction if described and interpreted.

Delta Recreation and Public Access. Most recreation in the Delta is water-based and involves or requires boating. Sherman Island Wildlife Area, Franks Tract SRA and Little Franks Tract are accessible from the water only. In addition, some private marinas are accessible only by water, such as Tinsley Island, which is owned by the Saint Francis Yacht Club. Land-based recreation in the Delta, while popular, is more limited, partly because so much of the land in the Delta is privately owned and public access is restricted. In 1994, the Delta Public Commission sponsored a study looking into Delta recreation and public access. **xvi* DBW also conducted a Delta boating needs assessment in the late 1990s. **xvi* Findings from these studies included:

It is difficult to develop recreational areas in the Delta because of the lack of available land with good road and water access. Most of the land is privately held and used for agriculture. When developments do occur they are usually concentrated in one area. The concentration of facilities, however, can lead to congestion on the water and land. When boaters using different kinds of craft and with different skill levels get into a congested area, conflicts and accidents become more likely.

 There is perceived lack of quality destinations and, in general, poor connections between the water-side environment and land-side facilities and recreation destinations.

There is a scarcity of day-use facilities/destinations throughout the Delta, thus limiting the range of activities for Delta users. Many of the existing public day-use facilities are in disrepair in the Delta. Beach access was identified as a high-demand resource in the Delta that is in scarce supply. The existing public beach facilities are generally in poor condition. Beach facilities are difficult to create and maintain due to the fluvial processes that occur in the Delta.

 Non-motorized boating – canoeing, kayaking, and other paddle-driven boats – is currently limited, in part by the scarcity of access sites and facilities.

 The Delta could be a good place for bicycling, hiking, wildlife observation, and visiting undeveloped historic areas. However, there are few opportunities for these activities.

 Sightseeing is a popular recreational activity due to the rural, scenic quality of the Delta. Maintaining this quality is important for sightseers and the local community.
 Assuring that views from Delta roadways are not marred by unattractive uses, such

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as billboards, maintenance yards and junkyards, etc. will preserve the Delta's
 recreation and access value.

Because much of the land in the Delta is privately owned and actively used for agriculture, there are many opportunities for conflicts between recreational users and landowners. Many of these conflicts can be resolved through the proper design and location of recreation and public access areas. Currently, there are very few areas where travelers on the highways can legally park next to a river or slough to picnic or view the water. Land must be acquired before public recreation projects can be developed.

Bank fishing is a very popular activity. Anglers can be seen fishing from many of the levees along the major roadways in the Delta. There are only one or two areas in the Delta where bank fishing opportunities have been provided as part of a public project. As a result, fishing takes place on private land and in roadside areas that traditionally have been used. Cars are parked along the road in informal pulloff areas. Anglers may perceive these areas as public. However, many of the areas may be inappropriate for parking and fishing because they are adjacent to roadways with fast moving cars or on private property. Virtually no garbage or restroom facilities are available. The provision of new public areas off main roads and with adequate parking and support facilities could provide anglers with defined areas, while diminishing the number of people who fish in undesignated, unsafe areas.

• Many of the Delta waterways have been designated as natural areas in the Delta Waterways Plan. This designation means that these areas are valuable habitat and that an area is too sensitive for development. Many of these areas are presently being acquired for habitat preservation. Recreational activities such as uncontrolled boating, waterskiing and jet skiing activities on Delta waterways can adversely affect wildlife and wildlife habitat areas. It has been noted that some channel islands providing wildlife habitat have been eroded. Several Delta landowners attribute such erosion to boat wakes and water transport.

Delta Recreation and Delta Water Supply, Ecosystem, and Flood Protection Actions. Proposed actions in the Delta to improve ecosystem function, water supply quality and reliability, and flood protection have implications for Delta recreation.

Existing gates and other flow regulating structures, for example, can impede or interfere with popular boating routes and destinations in the Delta. Likewise, improvements to levees for flood protection may reduce the scenic quality of the Delta riparian landscape valued by boaters, picnickers, and sightseers and affect riparian cover valued by anglers. Levee projects may also require temporary or permanent closure of sloughs or channels to all or certain types of boating, or greater restrictions on boating speeds and

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wake formation. As already mentioned, habitat restoration actions may conflict with some forms of Delta recreation, but they may also enhance others.

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7 8 As part of its boating needs assessment, DBW evaluated proposed CALFED actions in the Delta in terms of potential recreation opportunities. The evaluation is reproduced in Table 7.xxvii The DBW evaluation focused mainly on recreation opportunities potentially created by these actions and not so much on potential recreation impacts. The list of proposed actions also does not reflect the current level of interest in strengthening Delta levees for flood protection.

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11 Table 7: Possible CALFED Actions and Associated Recreation Opportunities

Pro	oject	Potential Recreation Benefits	Potential Associated Recreation Facilities
1.	The flooding of Holland and Bouldin Islands	 Increased fishing opportunities Increased water surface area for boating 	 Potential for shoreline access features and parking facilities Potential for boat launch ramps and marina facilities
2.	Potential screened diversion and conveyance channel at Hood	 No benefits to recreation identified at this time 	
3.	Delta Cross Channel reoperation and diversion facility on the Sacramento River	 No benefits to recreation identified at this time 	
4.	Georgiana Slough restoration	 Increased or improved fishing opportunities Improved wildlife viewing and nature study opportunities 	 Potential for shoreline access features and parking facilities Potential for car top nonmotorized boat access points with parking and day-use facilities
5.	North and South Fork of the Mokelumne River possible setback levees or channel modifications	 Improved wildlife viewing and nature study opportunities 	 Potential for car top non- motorized boat access points with parking and day-use facilities in conjunction with setback levees
6.	Habitat restoration and flood control at McCormack-Williamson Tract	 Improved wildlife viewing and nature study opportunities 	 Potential for shoreline access features and parking facilities Potential for car top non-motorized boat access points with parking and day-use facilities Potential for nature trails (water and land) for pedestrians, canoers, and kayakers.
7.	Old River Channel enlargement	Opportunity for design to accommodate public access	 Potential for development of vehicle access and boat-in day- use areas adjacent to river.
8.	South Delta channel dredging, screening, and consolidation of agricultural intakes	 Boating navigation improved by dredging 	 Potential to assist marina owners/operators with dredging needs
9.	South Delta levee setbacks and improvements	 Improved wildlife viewing and nature study opportunities 	 Potential for car top non- motorized boat access points with parking and day-use

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Project	Potential Recreation Benefits	Potential Associated Recreation Facilities
		facilities in conjunction with setback levees
South Delta operable flow control barriers	Opportunity to include boating facility needs in design	Potential for development of boating facilities in conjunction with flow control barriers that provide for movement of boats from one side of the barriers to the other via ramps or locks.
11. Clifton Court Forebay pumping station and fish screen	 Reduced losses to select sport fish species Delta-wide 	
Proposed Delta-wide Ecosystem Restoration Program	 Enhanced terrestrial and aquatic habitat in selected sloughs and waterways 	 Potential for expansion of non- motorized boating opportunities. Potential for enhanced wildlife observation and nature study opportunities. Potential for improved fishing opportunities.

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Section 3. Delta Recreation Policies

5 6 **State Policies.** The Delta Protection Act of 1992 declared that the basic goals of the state for the Delta are the following:

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 Protect, maintain, and, where possible, enhance and restore the overall quality of the Delta environment, including, but not limited to, agriculture, wildlife habitat, and recreational activities.

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Assure orderly, balanced conservation and development of delta land resources.

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Improve flood protection by structural and nonstructural means to ensure an increased level of public health and safety.

17 18 With regard to Delta recreation the Act declared:

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The Delta's waterways and marinas offer recreational opportunities of statewide and local significance and are a source of economic benefit to the region, and, due to increased demand and usage, there are public safety concerns requiring increased coordination by all levels of government.

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 Recreational boating within the Delta is of statewide and local significance and is a source of economic benefit to the region.

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 Cities, towns, and settlements within the Delta are of significant historical, cultural, and economic value and that their continued protection is important to the economic and cultural vitality of the region.

Agricultural, recreational, and other uses of the Delta can best be protected by implementing projects that protect wildlife habitat before conflicts arise.

Regulation of land use and related activities that threaten the integrity of the Delta's resources can best be advanced through comprehensive regional land use planning implemented through reliance on local government in its local land use planning procedures and enforcement.

The voluntary acquisition of wildlife and agricultural conservation easements in the Delta promotes and enhances the traditional Delta values of agriculture, habitat, and recreation.

Delta Protection Commission Policies. The Delta Protection Act of 1992 established the Delta Protection Commission (DPC). DPC jurisdiction includes portions of five counties—Solano, Yolo, Sacramento, San Joaquin, and Contra Costa—and is referred to as the "Primary Zone" of the Delta. The DPC consists of 23 members including six state agency representatives, five local county supervisors, three regional government representatives, five reclamation district representatives, the Delta representative on the Bay Delta Authority, and three governor-appointed Delta residents representing agricultural, habitat, and recreation interests.

Pursuant to the Act, the Commission completed a regional land use plan for the Primary Zone of the Delta in 1995. The plan contains findings, policies, and recommendations in several areas, including recreation, public access, and boating. The plan is adopted in Delta county and city general plans and the policies are to be adhered to by these local governments in making land use decisions and developing land use management tools. The Commission serves as an appeal body in the event a local land use approval is determined to be inconsistent with the Act or the policies of the DPC land use plan. Upon successful appeal, the project is remanded back to the authorizing local entity for reconsideration during which time the project approval is stayed until the Commission reconsiders an amended proposal or litigation is settled.

 Recreation policies and recommendations adopted by the DPC are contained in its 1995 "Land Use and Resource Management Plan for the Primary Zone of the Delta." This plan was revised and reprinted in 2002. It adopted nine policies and ten recommendations related to recreation in the Delta, as follows:

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1 2 3	P-1. Where public funds are limited, local governments shall promote maintenance and supervision of existing public recreation areas over construction of new public facilities.
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5 6	P-2. To minimize impacts to agriculture and to wildlife habitat, local governments shall encourage expansion of existing private water-oriented commercial recreational
7	facilities over construction of new facilities. Local governments shall ensure any new
8	recreational facilities will be adequately supervised and maintained.
9	
10	P-3. Local governments shall develop siting criteria for recreation projects which will
11	ensure minimal adverse impacts on: agricultural land uses, levees, and public drinking
12	water supply intakes, and identified sensitive wetland and habitat areas.
13	
14	P-4. Local governments shall improve public safety on Delta waterways through
15	enforcement of local, State, and federal laws.
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17	P-5. Local governments shall encourage provision of publicly funded amenities in or
18	adjacent to private facilities, particularly if the private facility will agree to supervise and
19	manage the facility (fishing pier, overlook, picnic area) thus lowering the long-term cost
20	to the public.
21	
22	P-6. Local governments shall support multiple uses of Delta agricultural lands, such
23	as seasonal use for hunting, or improved parking and access sites.
24	
25	P-7. Local governments shall support improved access for bank fishing along State
26	highways and county roads where safe and adequate parking can be provided and with
27	acquisition of proper rights-of-access from the landowner. Adequate policing, garbage
28	cleanup, sanitation facilities, and fire suppression for such access shall be provided.
29	
30	P-8. New, renovated, or expanded marinas shall include adequate restrooms,
31	pumpout facilities, trash containers, oily waste disposal facilities, and other facilities
32	necessary to meet needs of marina tenants. Use fees may be charged for the use of
33	these facilities but such fees shall not exceed the cost of maintenance.
34	
35	P-9. Local governments shall encourage new recreation facilities that take
36	advantage of the Delta's unique characteristics.
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38	R-1. Support a scientifically valid survey of current recreational uses and current
39	and future recreation needs in the Delta to determine type, number, and location of
40	needed recreation facilities. Study needs for trails, unified directional signage, and
41	billboard controls, in the Delta.
TI	binboard controls, in the Delta.

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R-2. Support a scientifically valid study of the carrying capacity of the Delta waterways for recreation activities without degradation of habitat values which minimize impacts to agriculture or levees.

R-3. New projects in the Secondary Zone, adjacent to the Primary Zone, should include commercial and public recreation facilities which allow safe, supervised access to and along the Delta waterways (pedestrian and bike trails, launch ramps including small boat launch ramps, windsurfing access, overlooks, nature observation areas, interpretive information, picnic areas, etc.).

R-4. Marina owners and operators should take advantage of grants available from the Department of Boating and Waterways to fund new pumpouts.

R-5. To protect rare and endangered fish species from adverse impacts of poaching, the Department of Fish and Game (DFG) should study the feasibility and value of banning night fishing in the Delta.

R-6. State and federal projects in the Primary and Secondary Zones should include appropriate recreation and/or public access components to the extent consistent with project purposes and with available funding. State and federal agencies should consider private or user group improvements on publicly-owned lands to provide facilities (example: windsurf access at Brannan Island State Recreation Area).

R-7. Local governments should develop design guidelines for new or enlarged recreation facilities to protect adjacent agricultural land uses.

R-8. Local governments should develop funding sources to provide adequate enforcement of existing laws to protect health, safety and welfare of Delta recreational users.

R-9. To provide adequate dilution of any potential discharges, new marinas or marina expansions should not be permitted within 1.5 kilometers (0.9 miles) of any drinking water intake located in an open waterway, nor within any waterway or dead-end slough that terminates in a drinking water intake. Projects not meeting this criteria should be considered on a case-by-case basis to determine if a proposed project can be mitigated to provide comparable effectiveness.

R-10. New, expanded, or renovated marinas should minimize toxic discharges (including paint, paint chips, chemicals, heavy metals, tribytulin, oil, grease, and fuel)

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1	and prohibit discharges of untreated sewage as required under local, State, and federal
2	laws and regulations.
3	
4	County Government General Plan Policies. The general plan's of the five
5	counties within the jurisdiction of the DPC address recreation in the Delta to varying
6	degrees. Below is a summary of County general plan policies pertaining to Delta
7	recreation for each county.
8	
9	Yolo County. The Yolo County general plan established the following recreation
10	and open space policies relevant to Delta recreation access and resource
11	development:xxix
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13	 The County shall encourage and support coordinated efforts by State and federal
14	agencies, cities, special districts, and non-profit and conservation organizations
15	to protect lands containing open space resources.
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17	 The County shall utilize the following objective criteria when considering
18	conversion of open space lands to other uses:
19	 The use is directly related and essential to an otherwise approved
20	open space, agricultural or recreational activity; and
21	 Lack of suitable locations in Yolo County prevent the use from
22	locating within an area not designated for open space uses; and
23	 The site is not located in a conservation easement, contracted
24	agricultural preserve,
25	 Farmland Security Zone, flood control bypass or channel, or
26	earthquake fault zone; and
27	 The use will not diminish or prevent open space, recreational or
28	agricultural use on adjoining lands; and
29	 The use can be developed without impairing the open space
30	experience, managed resource production and other open space uses
31	and activities in the vicinity; and
32	 The use does not conflict with any adopted local, State or federal
33	plans for protection of open space resources.
34	
35	 Development shall be directed away from naturally occurring riparian areas and
36	wetlands.
37	
38	 Lands reserved for bypass systems such as the Yolo Bypass and Sacramento
39	Bypass shall remain designated as open space in order to prevent flooding
40	hazards.

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 The County shall encourage and support the development of private recreational facilities that preserve scenic and environmentally sensitive resources and that do not result in the creation of land use conflicts.

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The County shall support the efforts of the Cache Creek Conservancy and the Yolo Bypass Working Group to preserve open space and improve scenic resources within and along Cache Creek and within the Yolo Bypass.

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The County shall work with willing landowners to create a continuous corridor of natural open space along Lower Cache Creek, Lower Putah Creek, the Sacramento River and within the Yolo Bypass with provision for limited access at specific locations to recreational and educational uses from a County road or highway. The County shall also consider establishing bicycle access to select areas.

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 Only those uses that are river- or creek-dependent, such as fishing, canoeing, boating, and nature observation shall be directly located on Cache Creek, Lower Putah Creek, and the Sacramento River. More active uses, including parking, restrooms, and picnic areas shall be located in areas away from sensitive habitat.

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The County shall support improved access for bank fishing where safe and adequate parking can be provided and with acquisition of proper rights-of-access from the landowner. Adequate policing, garbage cleanup, sanitation facilities, and fire suppression for such access shall be provided.

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31 32 The County shall promote and support the growth of individual and collective private sector agri-tourism and eco-tourism operations of all sizes that benefit from wide expanses of open space and agricultural land, including overnight agricultural adventures (staying overnight and working on a farm), other lodging, markets and farmers markets, restaurants, wineries, bird watching, fishing and hunting lodges and clubs and equestrian centers. The County shall work with those operators to encourage regional marketing programs and to ensure that public and private efforts are complementary.

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<u>Solano County</u>. The Solano County Resource Conservation and Open Space Plan (Phase 2), a part of the General Plan, identifies lands along the Sacramento River and its Delta tributaries and within Suisun Marsh as significant outdoor recreational sites. To protect these and other recreation areas, the Land Use and Circulation Element of the Solano County General Plan, adopted December 1980 and as amended through June 2003, establishes policies regulating development in these areas. Policies unique to the Sacramento River and Delta area include:

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 Preserving the scenic quality of the Sacramento River and Delta area as a valuable element of the natural landscape and important scenic resource through compatible land uses;

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 Providing for public and private recreation and access to the river and delta areas for such uses as fishing, boating, picnicking, hiking, and nature study in a manner that is compatible with surrounding land uses; and

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Ensuring that the County shall support the policies and recommendations of the Delta Action Plan.

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As described in the Solano County Policies and Regulations Governing the Suisun Marsh, the General Plan also sets policies related to land use in the Suisun Marsh and Secondary Management Area. The Plan sets the following policies:

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 Within Suisun Marsh, provision should be made for public and private recreational development to allow for public recreation and access to the marsh for such uses as fishing, boating, picnicking, hiking, and nature study;

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 Recreational uses in the marsh should be located on the outer portions near population centers and easily accessible from existing roads; and

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 Recreational activities that could result in adverse impacts on the environment of Suisun Marsh should not be permitted.

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<u>Contra Costa County</u>. The Contra Costa County general plan established the following recreation and open space policies relevant to Delta recreation access and resource development:^{xxx}

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 As a unique resource of State-wide importance, the Delta shall be developed for recreation use in accordance with the State environmental goals and policies.
 The recreational value of the Delta shall be protected and enhanced.

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There are resource areas within the County, e.g., the San Pablo Bay and throughout the Delta, where substantial potential exists for private recreational development. These should be encouraged if the projects include programs for environmental enhancements to their immediate areas and are limited to extensive recreational facilties.

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1 2 3 4 5 6	Additional marinas to serve the Delta and the Bay may be permitted in select areas provided they can be clustered and located adjacent to similar uses, along waterways having an adequate channel width as defined by the State Harbors and Navigation Code, in areas having adequate public access, and when such uses will not conflict with adjacent agricultural uses.
7 8 9 10	 Maintenance of scenic waterways of the County shall be ensured through public protection of the marshes and riparian vegetation along the shorelines and Delta levees.
11	San Joaquin County. The San Joaquin County general plan established the
12	following recreation and open space policies relevant to Delta recreation access and
13	resource development:
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> Areas with significant development constraints, such as the Delta, should be predominantly maintained as open space.

The County has designed several scenic roads: Lower Roberts Island Road, Bacon Island Road, State Route 4, Eight Mile & Empire Tract Road. The policies for scenic roads (1) require that development proposals along scenic routes shall not detract from the visual and recreational experience; (2) initiate programs to enhance its scenic routes by litter removal programs, route identifications signs, and provision of parking at desirable viewpoints, (3) require landscape plans for development along scenic routes, and (4) include in the Design Review Manual guidelines for development in the viewshed of scenic routes.

Some limited commercial recreation may be permitted in agricultural zones. Typical uses allowed include marinas. Marinas shall be evaluated to assess their impacts on the waterways, riparian vegetation, adjacent land uses, and traffic circulation.

Sacramento County. The Sacramento County general plan established the following recreation and open space policies relevant to Delta recreation access and resource development:xxxi

The Delta Primary Zone, defined by the Delta Protection Commission (DPC), is a unique resource with a rich cultural heritage, a strong agricultural base, and many opportunities for recreation and habitat conservation. In order to help preserve these and other important values of the Delta Primary Zone, the Board of Supervisors adopted a resolution incorporating the Delta Protection Commission's "Land Use and Resource Management Plan for the Primary Zone

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of the Delta" (DPC adopted 2/23/95) into the Sacramento County General Plan (Resolution # 96-1083). The Board's action excluded Policy P-3 of the Delta Plan's Utilities and Infrastructure Section regarding sewage treatment facilities and disposal of sewage effluent and sludge. The Board adopted Delta Plan policies relate to many aspects of open space and resource conservation, and shall be considered when making decisions on projects within the Primary Zone of the Delta.

 Expansion of urban uses in rural areas shall be limited to the established Delta communities of Freeport, Hood, Courtland, Locke, and Walnut Grove and to specific small expansions which support the agriculturally and recreationally based economies of the Delta.

Southwest Sacramento County provides critical open space area extending east from the Sacramento River and Snodgrass Slough to Highway 99 and Galt and north from Dry Creek/Mokelumne River to the Urban Area. Together with the Cosumnes River corridor east of 99, the Lower Cosumnes River and Stone Lakes Basin comprise the heart of the County's open space preservation strategy: a natural resource buffer between development progressing southward from Laguna and Elk Grove and northwest from Galt. This area has nationally important wildlife habitat. Flooding is frequent and extensive. During major floods, large areas are inundated by a combination of Cosumnes River overflow and the backup of Central Valley runoff unable to drain into the Delta. It is a key Plan policy to retain the floodplain as open space, with prohibitions on leveeing or filling to reduce the floodplain to accommodate development. Urban services are not anticipated to extend beyond the Cosumnes/Deer Creek floodplain.

• Much of the water used in the Sacramento Area is withdrawn from the American River and eventually returns to the Sacramento River as runoff or treated discharge from the Regional Sanitation Plant. Area-wide water conservation measures would benefit biological and recreational values in both the American and Sacramento Rivers by reducing water withdrawal amounts and maintaining natural discharge flows through the Delta.

Marsh and riparian areas are an integral and vital element of the County's natural landscape. Such areas serve as permanent or seasonal home to a plethora of wildlife species, several of which are listed as threatened or endangered. Furthermore, such areas preserve open space, enhance passive recreational opportunities, and provide flood control.

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Section 4. References

i http://www.delta.ca.gov/delta.asp

[&]quot; Ibid.

iii http://www.iep.ca.gov/suisun/facts/index.html

iv Ihid

^v Wade, W. and J. Plater, "Estimating Potential Demand for Freshwater Recreation Activities in the Sacramento-San Joaquin Rivers Delta: 1997-2020," Energy and Water Economics, 2002.

vii 1997 Sacramento-San Joaquin Delta Recreation Survey; http://www.delta.ca.gov/recsur.asp

ix http://www.delta.ca.gov/pdf/Delta_Fact_Sheet.pdf

^{*} http://www.delta.ca.gov/delta.asp

xi 1997 Sacramento-San Joaquin Delta Recreation Survey; http://www.delta.ca.gov/recsur.asp xii http://www.dbw.ca.gov/PDF/DeltaAssessment-PDF/Chapter2/Chapter%202.pdf

http://www.delta.ca.gov/atlas/duckclub.pdf

xiv Delta Protection Commission, "Delta Protection Commission Recreation And Access Study," July 1994.

xv http://www.dbw.ca.gov/PDF/DeltaAssessment-PDF/Chapter2/Chapter%202.pdf

xvi Access for windsurfers at Windy Cove was closed by the winter storms of early 2006. Windy Cove is currently open, but the access to the water has been fenced off. Re-establishing an access point at Windy Cove would likely be expensive due to engineering needed to build the access on unstable soil. There is still windsurfing access at Sherman Island (Sac County Parks), which is a few miles south on 160.

xvii lbid. Table 4 is a reproduction of Table 2-1 in Department of Boating and Waterways.

[&]quot;Sacramento-San Joaquin Delta Boating Needs Assessment: 2000-2020."

xviii 1997 Sacramento-San Joaquin Delta Recreation Survey; http://www.delta.ca.gov/recsur.asp xix Goldman, G., et al., 1998. "The Economic Impact of Recreational Boating and Fishing in the Delta." Dept. of Agricultural and Resource Economics, University of California at Berkeley. xx Ibid.

xxi Department of Boating and Waterways. "Sacramento-San Joaquin Delta Boating Needs Assessment: 2000-2020."

XXIII lbid

pepartment of Boating and Waterways has budgeted for the next fiscal year the repair and expansion of the Brannan Island SRA boat launch facility, including adding a new launch lane, which will increase capacity by one-third.

xxv Delta Protection Commission, "Delta Protection Commission Recreation And Access Study," July 1994.

Department of Boating and Waterways. "Sacramento-San Joaquin Delta Boating Needs Assessment: 2000-2020."

xxvii Table 7 is a reproduction of Table 8-2 in Department of Boating and Waterways.

[&]quot;Sacramento-San Joaquin Delta Boating Needs Assessment: 2000-2020."

xxviii http://www.delta.ca.gov/plan.asp

http://www.yolocounty.org/org/ppw/planning/general_plan_documents.htm

http://www.co.contra-costa.ca.us/depart/cd/current/advance/GeneralPlan.htm

xxxi http://www.saccounty.net/general-plan/gp-home.html