Competing for the Recreational Dollar: An Analysis of the California Commercial Passenger-Carrying Fishing Vessel Industry

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Introduction

California has a large and diverse marine recreational fishery. Anglers on commercial passenger-carrying fishing vessels (CPFV's) harvest a substantial proportion of California's marine recreational fisheries landings, accounting for about 40 percent and 16 percent of the total 1986 marine recreational catch in southern and northern California, respectively (NMFS, 1987). In 1986, 459,369 CPFV anglers landed some 2,835,021 fish in southern California, while 200,925 CPFV anglers landed 1,240,100 fish in central and northern California¹.

In central and northern California's cold upwelled waters, traditionally targeted species include Pacific salmon, Oncorhynchus spp.; striped bass, Morone saxatilis; rockfishes, Sebastes spp.; lingcod, Ophiodon elongatus; and white sturgeon, Acipenser transmontanus. With the exception of the winter months, chinook salmon, Oncorhynchus tshawtscha, is the predominant target species. Several types of trips are offered to central and northern California anglers. One-day trips are offered for trolling or mooching for salmon (February-November), bottom fishing for rockfish and lingcod (all year), bait fishing for sturgeon in San Francisco Bay (winter), and live bait or trolling for albacore, Thunnus alalunga, in years when they migrate near shore in the late summer. When live anchovies, Engraulis mordax, are available from late spring through early fall, some San Francisco area vessels run one-day potluck trips targeting whatever is available that day. Striped bass, California halibut, *Paralichthys californicus*, chinook salmon and rockfish are the preferred target species.

In the subtropical waters off the urbanized southern California coast, pelagic species such as albacore; Pacific bonito, Sarda chiliensis; other tunas, Thunnus spp.; yellowtail, Seriola lalandei; Pacific barracuda, Sphyraena argentea; and Pacific or chub mackerel, Scomber japonicus, are traditional CPFV target species. Rockfishes and several basses (Paralabrax spp.) are important seasonally. In southern California, one-half to full day inshore freelance trips predominate throughout the year. These trips are analogous to northern California potluck trips except the target species are different (barracuda, bonito, basses, yellowtail, mackerel, rockfish, etc.). One-day trips targeting albacore (summer-fall) or rockfish (all year) are also available. Multi-day trips (2-3 days) are offered off California and northern Mexico targeting albacore, other tunas, and yellowtail. Long range trips up to 19 days long operate further offshore and south targeting tunas, yellowtail, and wahoo, Acanthocybium solanderi. The albacore, multiday, and long-range trips operate primarily out of San Diego.

In recent years, California's CPFV fleet has experienced an economic decline. In southern California, the fleet has decreased from 197 active vessels in 1963

(Young, 1969) to 170 in 1986¹. Loads have also decreased from a total of 505,459 anglers in southern California in 1963 (Young, 1969) to a total of 459,369 anglers in 1986¹. This occurred during a period of a 54 percent increase in California's population and a 38 percent increase in angling licenses (California Department of Finance, 1988:13, 135).

Declines are also apparent in the northern California fleet, which primarily operates from the San Francisco Bay Area and targets salmon. In 1963, 111 CPFV's were active in the Bay-Delta fleet, carrying 77,641 anglers (Young, 1969), but by 1986 the fleet had declined to 97 vessels carrying a total of 81,331 anglers¹. Angler trips from San Francisco declined from the 1971-75 annual average of 102,500 to an annual average of 71,200 trips during 1983-87 (PFMC, 1988). Reasons commonly cited by CPFV owners for these declines include: Reduced fish abundance and availability, high costs, and competition with other recreational activities.

Little is known about California's CPFV industry or the characteristics, motivations, and perceptions of CPFV anglers. The only indepth review of the northern California CPFV industry (PFMC, 1978) addressed the salmon fishery. An historical review of the California recreational fishery (Smith, 1979) provides background on the development of gear and techniques. Several recent studies have begun to examine CPFV angler behavior (Andrews and Wilen, 1988) and California marine anglers' characteristics (NMFS, 1987). Several studies in other states provide concepts that can be applied in California to provide useful information to help the CPFV industry try to reverse its economic decline (Ditton, et al., 1978;

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¹California Department of Fish and Game. 1987. Tables of landings of California commercial passenger carrying fishing boat fleet. (Unpubl., tables provided by M. Oliphant, Commercial Passenger Fishing Vessel Project, Long Beach, Calif.)

Dawson and Wilkins, 1980; Johnson and Griffith, 1985).

The objectives of this project were to:
1) Measure CPFV owners' and anglers' demographics, information sources, decision-making behavior, and perceptions and 2) recommend strategies for industry to improve and market their recreational product, based on survey results.

Methods

The data presented in this report were gathered from four separate and distinct sampling arenas. In both northern and southern California, one sample was drawn from CPFV anglers and another from the vessel owners. Due to difficulties with securing passenger lists from owners in both northern and southern California, slightly different procedures were used to survey anglers in each of these areas.

Angler Samples

In northern California, the angler sample was gathered from questionnaires distributed onboard San Francisco Bay Area CPFV's (Sausalito) during November 1987, May 1988, and July 1988. One weekend day and one weekday were sampled in each of these months. Anglers were asked to complete the questionnaire on the vessel's trip to the fishing grounds. This procedure resulted in 232 usable questionnaires.

In contrast to the procedure utilized in northern California, the sample of southern California anglers was gathered by mail questionnaire. The Sportfishing Association of California (SAC) assisted in supplying the names of 1,570 anglers who had fished with the southern California CPFV fleet. These questionnaires were mailed to 800 anglers selected randomly from the SAC list during the week of 31 March to 7 April 1987. In all, 364 (45.5 percent) of the questionnaires were returned and usable.

In a procedure similar to that employed for the southern California anglers, data for the northern and southern California vessel owner samples were gathered by mail survey. The northern California surveys were mailed directly to the 59 Golden Gate Fishermen's Association members in February 1987, while 235 southern California vessel owner surveys

were included in the March 1987 newsletter of the Sportfishing Association of California. In all, the northern California procedure resulted in 22 (37.3 percent) returned and usable questionnaires, while the southern California procedure produced 54 (23 percent) returns.

The Questionnaires

The northern and southern California angler questionnaires were identical except for questions that demanded geographic specificity due to differences in fisheries. The nine-page survey instrument assessed the following:

- 1) Fishing and other recreational activities.
- Sources of information about the CPFV industry.
- 3) Factors influencing the decision to go fishing on a CPFV.
 - 4) Perceptions of the CPFV industry.
 - 5) Demographic characteristics.

The surveys mailed to northern and southern California vessel owners differed only to reflect differences in fisheries. The 6-page questionnaires assessed the following:

- 1) Aspects of the respondent's business operation.
 - 2) Perceptions of various fishes.
- 3) Perceptions of how clients view the CPFV industry.
 - 4) Demographic characteristics.

All the survey instruments were pretested to perfect item wording, improve questionnaire flow and quality of response, and correct questionnaire length. In all, 45 questionnaires were pretested.

Results and Discussion

CPFV Owners

Characteristics of southern and northern California CPFV businesses are quite similar (Table 1), but southern California owners tend to be younger and have larger vessels. Larger vessels are needed for the multi-day trips and large passenger loads common in the southern California fishery.

While many vessels may specialize in one fishery, they may also switch into other fisheries seasonally (Table 2).

Table 1.—Characteristics of northern and southern California CPFV owners (mean values).

Characteristics	Southern $(N = 54)$	Northern (N = 22)
Length of vessel (feet)	66	50
Years in industry	20	20
Years of education	14	15
Age	41	50
Bookings as charters (%)	46%	46%

Table 2.—CPFV participation in major types of fisheries.

	Southern California (N = 54)		North Califo (N =	rnia
Fishery	No. of vessels	Mean no. of days	No. of vessels	Mean no. of days
Albacore	32	48	5	31
Rockfish	35	69	15	82
Inshore freelance	43	134		
Multi-day trips	24	23		
Long-range trips	9	68		
Salmon trolling Potluck (striped			21	133
bass, etc.)			4	19
Sturgeon			1	2
Nature trips			11	26

While the dominant fishery in northern California (Monterey Bay to Oregon border) is salmon trolling, many vessels target rockfish and schedule nature and whale watching trips during the winter months or during times of low salmon abundance. When live anchovies are available during the spring and fall months, some vessels run potluck trips targeting several types of fish on the same day such as striped bass, California halibut, rockfish, lingcod, and salmon.

In southern California (Morro Bay to San Diego), inshore freelance fishing is the primary fishery, supplemented with winter rockfish trips when pelagic species are less abundant. Albacore angling on 1-3 day trips depends on the species' annual and highly variable migrations (1987 and 1988 were extremely poor years). Several vessels specialize in longrange trips of 1-2 weeks in Mexican waters.

Vessel owners were asked for their ideas about improving their operations (Table 3) and attracting more customers (Table 4). Their suggested improvements focused on better customer service. Southern California owners frequently stated a need for better trained and more reliable

Table 3.—CPFV owners' suggestions for industry improvements.

	Number mentioning			
Suggestions	Southern California (N = 54)	Northern California (N = 22)		
Increase services (crew,				
politeness, etc.)	25	7		
Improve facilities (comfort,				
cleanliness, etc.)	15	7		
Limit loads	6	2		
Improve enforcement				
of regulations onboard	5			
Increase fish availability	5			
Improve onboard				
handling of fish	3			
Seasick pill that works		2		

Table 4.—CPFV owners' ideas for attracting more customers.

	Number mentioning			
Ideas	Southern California (N = 54)	Northern California (N = 22)		
Increase advertising				
and promotion	19	13		
Improve fishing	7	8		
Market recreational health				
benefits (relaxation)	9			
Lower cost of				
fares and licenses	8	3		
Angler education				
(methods, utilization)	6			
Improve crews	5			
Improve vessels		3		
Improve onboard				
handling of fish	2			

deckhands who treat all customers politely. Improved facilities (seating, galleys, protection from weather) and cleanliness were often cited as needed improvements.

Most owners were concerned about the difficulty of attracting customers. Many cited a need for additional advertising and promotion. Nine southern California owners suggested that these promotions should emphasize the health benefits of a relaxing fishing trip away from the urbanized southern California environment. Some owners felt that improved fishing conditions would attract more customers and suggested pollution control as ways to increase resource abundance.

The idea of angler education was unique to the southern California owners and contains two thrusts: 1) Education about catching and utilization of underutilized species such as mackerel and 2) education to clarify mass media reports about the risks of eating southern California fish

Table 5.—Employment status, income, ethnicity, and sex of California CPFV anglers (in percent).

Characteristics	Southern California	Northern California
Employment Status	(N = 362)	(N = 211)
Employed full-time	71	64
Employed part-time	3	4
Retired	25	32
Student	1	1
Unemployed	1	
Income (thousands)	(N = 354)	(N = 194) 2
\$5 to <10	1	1
10 to <20	5	9
20 to <30	12	16
30 to <40	18	19
40 to <50	17	17
50 to <60	15	14
>60	33	23
Ethnicity	(N = 357)	(N = 205)
Caucasian	90	82
Hispanic	1	6
Japanese	5	3
Chinese	1	2
Other Asian		2
Black	2	1
Native American		2 2 1 2 2
Other	2	2
Gender	(N = 363)	(N = 210)
Percent male	96	88

due to contamination by toxics. Finally, some CPFV owners' suggestion for lower fares is tempered by their concerns about increasing costs for moorage, insurance, maintenance, and the potential for a Federal marine angling license.

CPFV Anglers

Characteristics, Activities, and Information Sources

Anglers in these two samples tend to be well-educated Caucasian males with high incomes (Tables 5, 6). More than half earned at least \$40,000 annually. A significant portion (25 percent) are retired people who may have more time available for recreation and represent a large potential market for CPFV's. The one striking difference between the two samples is the much greater fishing experience of the southern California anglers. This is probably due to the selection of the sample from the Sportfishing Association of California mailing list. Anglers on this list tend to be serious fishermen with a lifelong commitment to recreational angling².

²Bill Nott, President, Sportfishing Association of California. 1987. Personal commun.

Table 6.—Selected characteristics of California CPFV anglers (mean values).

Characteristics	Southern California	Northern California
Age	51 (N = 357)	49 (N = 204)
Years of education	15 (N = 361)	14 (N = 215)
Years fishing	37 (N = 356)	16 (N = 216)

Table 7.—Days spent annually on recreational activities by California CPFV anglers.

	Mean number of days			
Activity	Southern California	Northern California		
CPFV fishing	18	13		
Backpacking	2	7		
Skiing	2	4		
Hunting	6	8		
Boating	21	13		
Freshwater fishing	13	18		
Camping	12	10		
Spectator sports	13	15		
Team sports	9	11		
Nature trips	4	5		
Other salt- water fishing	18	5		

Table 7 indicates that California's CPFV industry is competing with many other recreational industries for their customers. Other types of fishing, boating, and sports are the primary competition. Growth in these other forms of recreation in recent years may have contributed to some of the decline in the CPFV industry. The number of registered recreational vessels in California increased 80 percent between 1967 and 19883, increasing non-CPFV access to ocean fishing. Nationally, participation in many recreational activities (softball, golf, tennis, spectator sports) increased at a level equal or greater than population growth (USDOC, 1989:226-227).

The respondents' participation on CPFV's (Table 8) shows that the southern California fishery is more diverse but dominated by the inshore freelance fishery and that the salmon fishery attracts the most effort in the north. This difference is not unexpected because all of the northern California sampling was done on vessels trolling for salmon.

When asked to rank their sources of in-

³Compiled from U.S. Coast Guard *Boating Statistics* (1968-1988).

Table 8.—Mean number of days of angler participation in CPFV fisheries.

	Mean number of days			
Fishery	Southern California	Northern California		
Inshore freelance	11	7.		
Albacore	4			
Rockfish	4	3		
Multi-day trips (2-3 days)	3			
Long-range trips (>3 days)	4			
Salmon trolling		11		
Potluck (striped bass, etc.)		1		
Sturgeon		1		
Other (shark, billfish, etc.)	5	1		

Table 9.—Anglers' most important sources of information about CPFV fishing.

	Number of anglers			
Source	Southern California	Northern California		
Newspapers	112	17		
Other fishermen	47	19		
Magazines	38	3		
Friends	36	68		
Landing dock	31	3		
Bait and tackle shops	19	12		
Telephone call-in	8	2		
Coworkers	2	15		
Relatives	2	4		
Cable and network TV	1	3		
Radio	3	5		
Tourist information				

formation about CPFV fishing, southern California anglers often selected mass media such as newspapers and magazines⁴ (Table 9). Western Outdoors News and the Los Angeles Times were relied on heavily. In contrast, northern California anglers most often ranked interpersonal sources such as friends, other fishermen, and coworkers as their most important information sources.

There are several possible reasons for this difference. Perhaps the more rural northern California environment facilitates interpersonal communication networks, while mass-media channels are more heavily utilized in urbanized southern California. Another likely explanation is that southern California newspapers regularly publish detailed daily catch reports that anglers use in making their decision to go fishing. Northern California newspapers generally publish

Table 10.—Southern California anglers' perceptions of five types of CPFV fishing (percent agree 1).

Item	Alba- core	Rock- fish	Inshore free- lance	Multi- day (2-3 days)	Long- range (>3 days)
Compared to other types of outdoor recreation I participate in, this type of fishing is expensive	82	32	30	78	84
This type of fishing is relaxing and reduces stress	58	83	94	90	88
I enjoy this style of fishing (gear and techniques)	96	61	93	97	94
The boat is usually too crowded on these trips	79	61	82	41	30
The fish I catch are handled well onboard to preserve their eating quality	70	69	64	88	93
This type of fishing usually pays for itself in terms of the amount of fish taken home to eat	31	64	29	50	52
The bag limit (number of fish permitted) is too low in this fishery	9	21	16	13	12

¹Includes both those who agree and those who strongly agree as measured on Likert scale: 1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree.

Table 11.—Northern California anglers' perceptions of three types of CPFV fishing (percent agree 1).

Item	Salmon trolling	Potluck	Rockfish
Compared to other types of outdoor recreation			
I participate in, this type of fishing is expensive	76	67	65
This type of fishing is relaxing and reduces stress	96	90	87
I enjoy this style of fishing (gear and techniques)	95	87	77
The boat is usually too crowded on these trips	41	55	55
The fish I catch are handled well onboard to preserve their eating quality	96	88	87
This type of fishing usually pays for itself in terms of amount of fish taken home to eat	51	48	66
The bag limit (number of fish permitted) is too low in this fishery)	44	38	35

¹Includes both those who agree and those who strongly agree, as measured on Likert scale: 1 = strongly agree, 2 = agree, 3 = disagree, 4 = strongly disagree.

weekly reports. It is also interesting that none of the respondents mentioned tourist information as an important source. This indicates either that the industry is not using this medium or that its use has little effect.

Angler Perceptions of CPFV Fishing

Anglers' perceptions of some attributes of CPFV fishing provide some useful insights (Tables 10, 11). With the exception of southern California rockfish and inshore freelance fishing, the majority of respondents consider CPFV fishing expensive compared to other outdoor recreation. This suggests that CPFV operators need to consider economic incentives such as reduced weekday and off-season

rates to attract customers in the highly competitive outdoor recreation market. The inexpensiveness of southern California rockfish and inshore freelance fishing should be emphasized in CPFV marketing.

Almost all CPFV anglers find most fisheries to be relaxing and enjoyable. One exception is albacore fishing which involves intense competitive angling to capture the fish before they leave the vessel's area. Another exception is the rockfish fishery where very heavy sinkers (1-2 pounds) and gear are used to capture small fish (<5 pounds). CPFV operators might consider experimenting with light-tackle rockfish fishing to increase anglers' enjoyment.

Crowding is often mentioned as a nega-

⁴Mention of trade names or commercial firms or products does not imply endorsement by the National Marine Fisheries Service, NOAA.

tive attribute of CPFV fishing. This appears to be especially true in the albacore and inshore freelance fisheries. Offering limited loads at a higher price and providing incentives for going fishing at nonpeak times might help to lessen this negative perception.

The vast majority of anglers fishing in the cool northern California environment (50°-60°F air and water temperatures) or on long-range vessels equipped with refrigeration perceive that their fish are handled well onboard. However, about one-third of the respondents were not satisfied with onboard handling in the southern California albacore, rockfish, and inshore freelance fisheries. Warmer air temperatures (60°-90°F), water temperatures (60°-75°F) and the elevated body temperatures of pelagic fishes (bonito, mackerel, and albacore) can lead to rapid deterioration in eating quality. Because catching fish to eat is an important motivation for anglers (Matlock et al., 1988), improving onboard preservation techniques (e.g., refrigeration) could increase customer satisfaction. This may be especially critical for any expansion of inshore fisheries targeted at mackerel, bonito, and other pelagic species that tend to spoil rapidly (Dewees et al., 1988).

Most California anglers consider rockfish fishing cost-effective in terms of fish taken home to eat. Anglers seem willing to use heavy and more burdensome gear because of the food value of rockfish. Use of lightweight gear for rockfish might maximize both the food and angling attributes of this fishery in anglers' minds. During 1989 several northern California vessels began offering lightweight tackle trips for rockfish.

Only 29 percent of the respondents felt that inshore freelance fishing was costeffective even though it is the least expensive fishing method. Although this perception could be due to the smaller size and numbers of fish captured, we feel that the primary reason could be the low esteem anglers have of many inshore fish as food fish. This is especially true for mackerel, bonito, and white croaker. Steps to improve the food quality (onboard refrigeration) and angler acceptance (education) of these species could increase angler satisfaction.

In southern California, where most

Table 12.—Anglers' most important consideration when deciding to go CPFV fishing.

	Number of anglers			
Consideration	Southern California	Northern California		
Reports of recent catches	80	36		
Desire to get away and relax	62	26		
Anticipation of catching fish	31	24		
Time available	27	11		
Fishing with friends/coworkers	25	34		
Enjoying ocean environment	22	7		
Anticipated weather conditions	17	3		
Cost of fishing	11	6		
Past experiences on				
similar trips	7			
Type of gear used	7	6		
Time of year	6			
Fishing with relatives	5	8		
Learning more about fishing	3	5		
Other fishermens' opinions				
you respect	2			

target species have no or high (10 fish) bag limits, few anglers felt that bag limits were too low. In northern California, 35-44 percent of the respondents felt that the bag limits were too low. In recent years the bag limits for salmon and striped bass have been reduced from three to two fish. Some anglers feel that these limits are too restrictive.

Angler Decisions

Table 12 summarizes the anglers' most important considerations which influence whether they will go CPFV fishing. There appear to be two groups of important considerations. One is related to catching fish (recent catch reports, anticipation of catches) (Andrews and Wilen, 1988) and the other is related to aesthetics (relaxation, environment, friends). This finding is consistent with past studies (Stevens, 1966; Dawson and Wilkins, 1981; Fedler, 1984; Andrews and Wilen, 1988). Finally, lack of time seems to be more of a barrier than cost.

CPFV owners are well aware of anglers' positive response to reports of recent good catches (Andrews and Wilen, 1988), but CPFV owners also commented that even when catch success is higher, loads are much lighter during nonsummer months than during summer. This problem is especially acute in northern California. Perhaps an increased effort to make daily catch reports widely available through mass media would attract more nonsummer customers.

Table 13.—Anglers' suggestions for CPFV improvements.

Suggestion	No. of anglers mentioning	
	Southern California (N = 364)	Northern California (N = 232)
Limit loads	142	31
Improve Service		
Treat customers better Better/more polite	44	9
deckhands Improved fish handling/	29	6
preservation	27	4
Rotate fishing spots	20	
Instruction for novices	17	3
Improve Facilities		
Toilets, bunks, seating,		
galley, etc.	53	19
Better bait	18	
Faster boats	9	
Don't let crew fish	20	
Limit gillnets/con-		
servation concerns	16	9
Lower prices	12	
Less alcohol/drugs	7	3
More catch & release fishing	6	
Less littering	6	
Fine as is		55

CPFV owners should also consider incorporating the nonconsumptive attributes of CPFV fishing in their marketing efforts. Anglers rate relaxation, companionship, and enjoyment of the environment as important aspects of the CPFV experience.

Angler Suggestions for CPFV Improvements

When anglers were asked an openended question about how CPFV fishing could be improved (Table 13), northern California respondents appeared to be more satisfied (55 responded "fine as is"). This is probably because the smaller vessel size and smaller loads allowed for more personal service in northern California.

Overall, the suggestions focused primarily on lessening crowding, improving services, and improving facilities. Limiting loads is difficult because it often will necessitate raising prices. CPFV owners might consider limiting loads during the week or off-season to develop a steadier clientele during nonpeak periods. Offering lower prices at nonpeak periods may help to spread out customers over the year.

Improved service suggestions focus on better treatment of customers. In the

highly competitive recreation business, customers obviously want to be treated at least as well on fishing vessels as they are by other recreation businesses. De Young (1987) found the quality of service to be more important than catching fish in attracting repeat customers. Crew training and attention to customer satisfaction needs improvement.

Improved facilities are related to customer service. Respondents were particularly interested in cleanliness and improved seating. Comfort and convenience appears particularly important for the retired anglers who make up an important segment of CPFV clientele.

Recommendations

This survey of California CPFV owners and customers leads to the following comments and recommendations for the industry to consider if it wishes to reverse its gradual economic decline.

CPFV owners should continue to use the mass media to create awareness about CPFV fishing. Emphasize the nonconsumptive benefits of CPFV fishing as well as recent catch reports. In northern California the use of daily catch reports in newspapers and on radio should be considered.

Tourist information was not an important source used by anglers. This indicates either that the CPFV industry isn't utilizing this potential advertising opportunity, or that potential anglers don't read those materials. If they aren't currently doing so, CPFV owners might consider making tourists more aware of their service through tourist publications, travel agents, chambers of commerce, and joint marketing efforts with local tourist facilities (e.g., motels).

Friends and co-workers are important sources of information for northern California anglers. Increased use of interpersonal "relationship marketing" as described by De Young (1987) could increase customer loyalty and repeat business. This type of marketing emphasizes service, personal follow-up, and incentives for repeat customers.

Select crew members based on their ability and commitment to provide helpful, polite service to customers. Train the

crew to work with the public.

Devise ways for limiting loads. Many anglers indicated a willingness to pay more for lighter loads. Provide incentives to encourage anglers to fish during the week or other periods when loads are light.

Provide good service to anglers, such as clean and comfortable facilities, fresh coffee, instruction for new anglers, information on care and use of the catch, information on the marine environment, opportunities for catch-and-release fishing, and improved onboard handling of the catch.

Consider limiting loads and using lighter tackle on rockfish trips. This may only be feasible on inshore shallow-water trips. Lighter gear may help improve anglers' perceptions of the fighting ability of rockfish to match their high appeal as food.

Provide onboard chilling of the catch, especially in southern California, with either refrigerated seawater or ice. Immediate chilling of fish such as mackerel, barracuda, and bonito should improve their quality significantly. This could lead to increased angler satisfaction and participation in the inshore freelance fishery.

Conduct research to determine why tourists and residents do or don't use CPFV's and how they could be attracted. Conduct research to determine how to target CPFV services at California's changing population, especially retirees and growing ethnic groups.

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