North Central Coast State of the Region Assessment (2010-2015) Portfolio Product

Document Title: Commercial and Recreational Fisheries

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About: This product is part of a portfolio of documents developed to inform the *State of the California North Central Coast: A Summary of the Marine Protected Area Monitoring Program 2010-2015.* It was internally reviewed by CDFW. For more information about the State of the Region Assessment, visit oceanspaces.org/nccsotr.

Commercial and Recreational Fisheries

Document Contents

"The Mission of the Department of Fish and Wildlife is to manage California's diverse fish, wildlife, and plant resources, and the habitats upon which they depend for their ecological values and for their use and enjoyment by the public."

Recreational Fisheries: Private/Rental Vessels

Effort—the number of angler trips—for private/rental vessels within the North Central Coast (NCC) region decreased 75% between 2005 and 2008 with the lowest effort for the entire period also occurring in 2008 (Fig 1). Effort then steadily increased between 2008 and 2013. The average effort observed in 2012-2013 was 78,900 angler trips compared to the 2005-2007 average of 85,000 angler trips.

Catch—the number of kept and released dead finfish—peaked for private/rental vessels in 2006, decreased to a low in 2008, increased slightly in 2009 and remained at that level through 2012. Catch then rebounded in 2013. The average catch observed in 2012-2013 was 211,000 fish compared to the 2005-2007 average of 219,000 fish. The major components of the catch in 2005-2007 included some rockfish species (primarily black, blue, brown, gopher and vermilion rockfish), and Chinook salmon. The major components of the catch in 2012-2013 were similar except that more species of rockfish were taken as well as increased numbers of Pacific sanddabs.

"The major components of private/rental vessel catch from 2005-2007 included black, blue, brown, gopher, and vermillion rockfish, and Chinook salmon. The major components of catch were similar from 2012-2013, but included more species of rockfish."

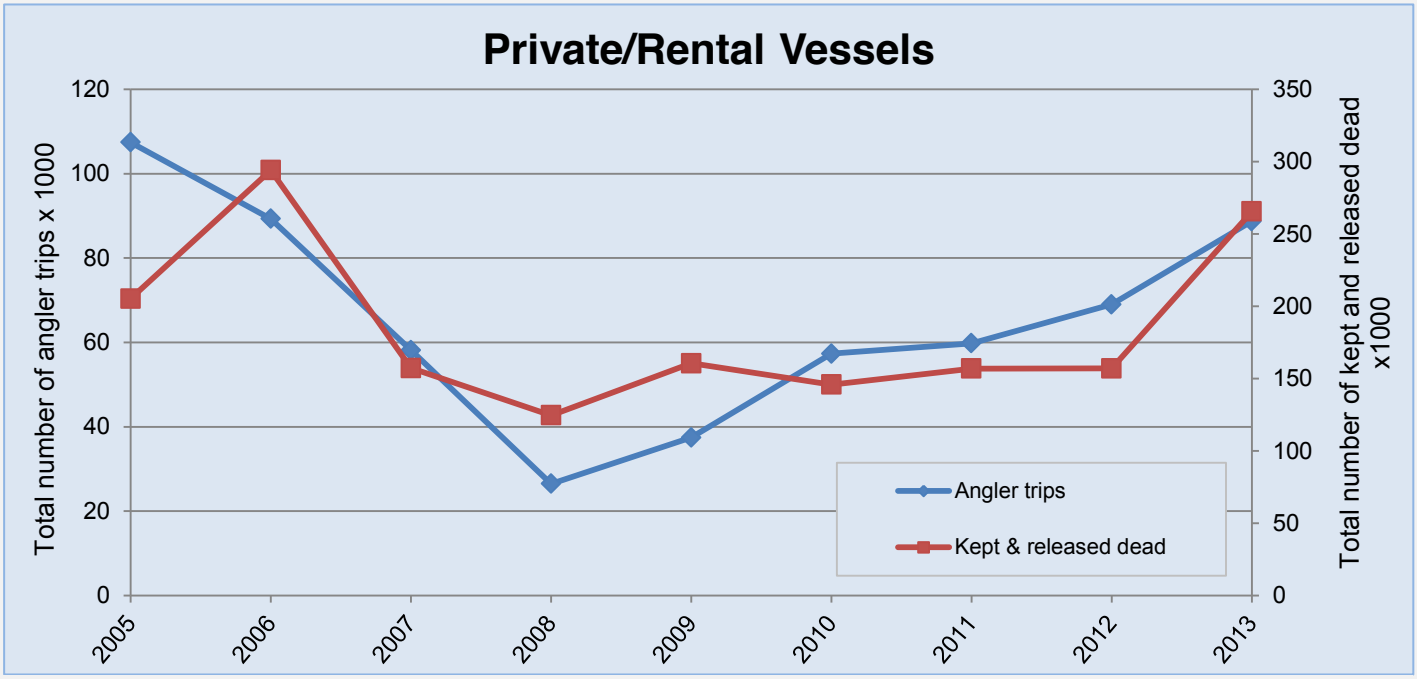


Fig 1. Estimated total number of angler trips and kept and released dead finfish for private /rental vessels in the San Francisco District (ocean only) from 2005-2013. Data Source: California Recreational Fisheries Survey (CRFS).

Recreational Fisheries: Commercial Passenger Fishing Vessels

The total number of Commercial Passenger Fishing Vessels (CPFVs) operating in the NCC Region in 2012-2013 was similar to the highest number of vessels observed in 2000-2006 (Fig 2). However, only about a quarter of the CPFVs operating in 2013 were "established" (started operating prior to 2008, still operating in 2013, and operated out of NCC Region ports for at least five years during the study period). Some vessels stopped fishing in the early 2000s; several new vessels joined the fleet in 2011-2013. Many of the CPFVs spent fewer than five years fishing in the area.

The number of trips and anglers logged by CPFVs showed similar patterns through the study period: a peak in 2004, followed by a decrease in numbers starting in 2007 with the lowest numbers recorded in 2008 and 2009 during the salmon closures. Overall, from 2000-2009 the number of trips and anglers for CPFVs dropped by more than half. Factors such as fishery restrictions and the economic decline contributed to this decline. Then from 2010 through 2013 there was an increase in these same numbers (Figs 3 and 4). The number of trips and anglers in 2012 and 2013 were still below the average number recorded for 2000 through 2006, but in 2013, these numbers were slightly higher than the lowest number recorded between 2000 and 2006.

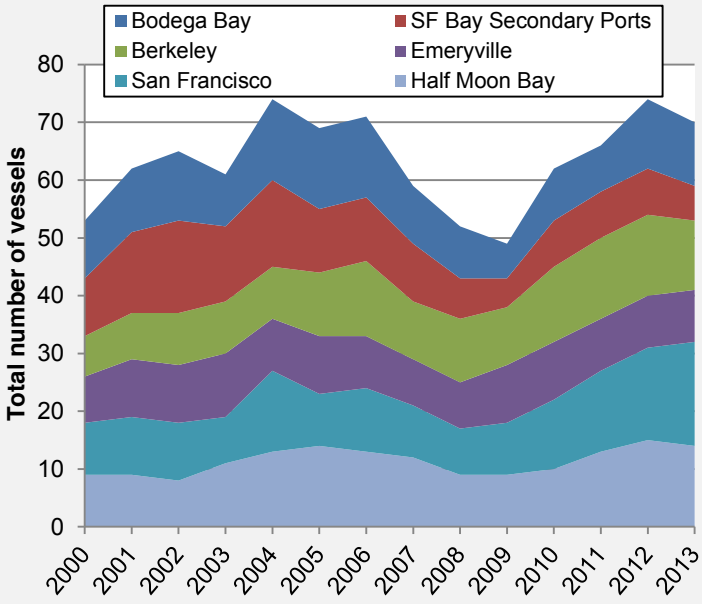


Fig 2. Total number of CPFV vessels fishing within the NCC Region from 2000-2013. SF Bay Secondary Ports include Sausalito, San Rafael, and Richmond combined. Data source: CDFW.

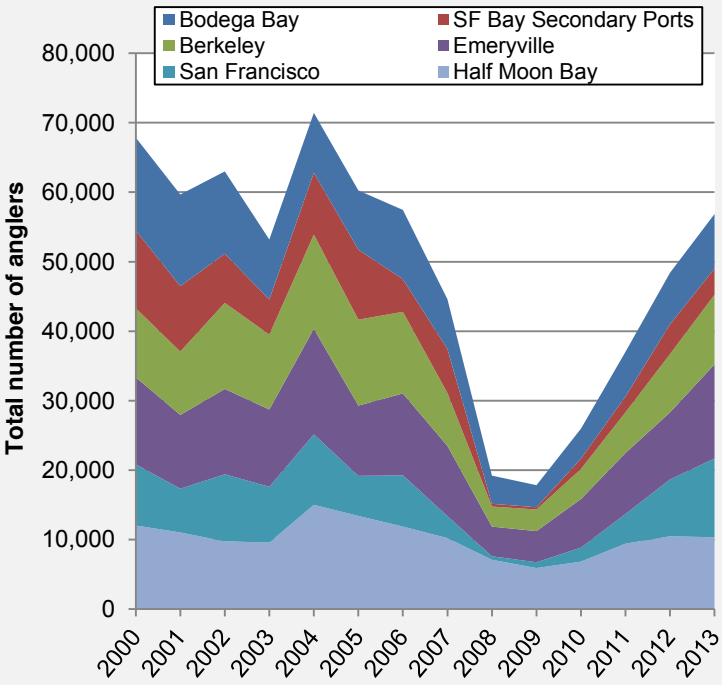


Fig 3. Total number of CPFV anglers fishing within ports of the North Central Coast Region from 2000-2013. SF Bay Secondary Ports include Sausalito, San Rafael, and Richmond combined. Data source: CDFW.

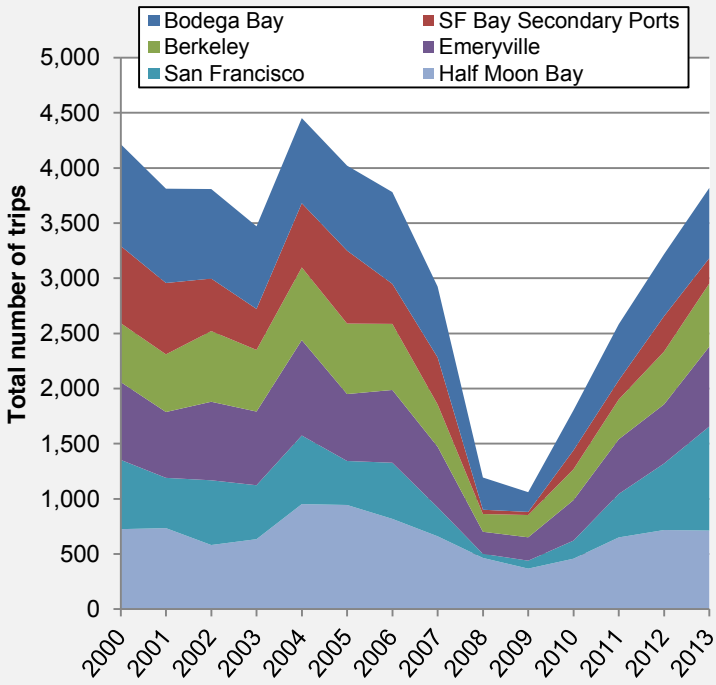


Fig 4. Total number of CPFV trips within ports of the North Central Coast Region from 2000-2013. SF Bay Secondary Ports include Sausalito, San Rafael, and Richmond combined. Data source: CDFW.

Recreational Fisheries: Commercial Passenger Fishing Vessels, Continued

For the years 2000 through 2006, 53% of the CPFVs trips targeted salmon, 28% targeted rockfish/lingcod/cabezon, and 4% targeted Dungeness crab (Fig 5). During this same time period, salmon, rockfish/lingcod, and Dungeness crab made up 15%, 69%, and 6%, respectively, of the CPFV catch (Fig 6). During the salmon closures in 2008 and 2009, trips that targeted rockfish/lingcod/cabezon climbed to 59% while Dungeness crab trips increased to 8%. Rockfish/lingcod and Dungeness crab made up 87% and 6%, respectively, of the catch during this period. For the more recent years of 2012 and 2013, 47% of the CPFVs trips targeted salmon, 36% targeted rockfish/lingcod/cabezon, and 9% targeted Dungeness crab with these species making up 9%, 76%, and 12%, respectively, of the catch.

"The number of trips and anglers for CPFVs peaked in 2004, and began decreasing in 2007 with the lowest numbers recorded in 2008 and 2009 during the salmon closures."

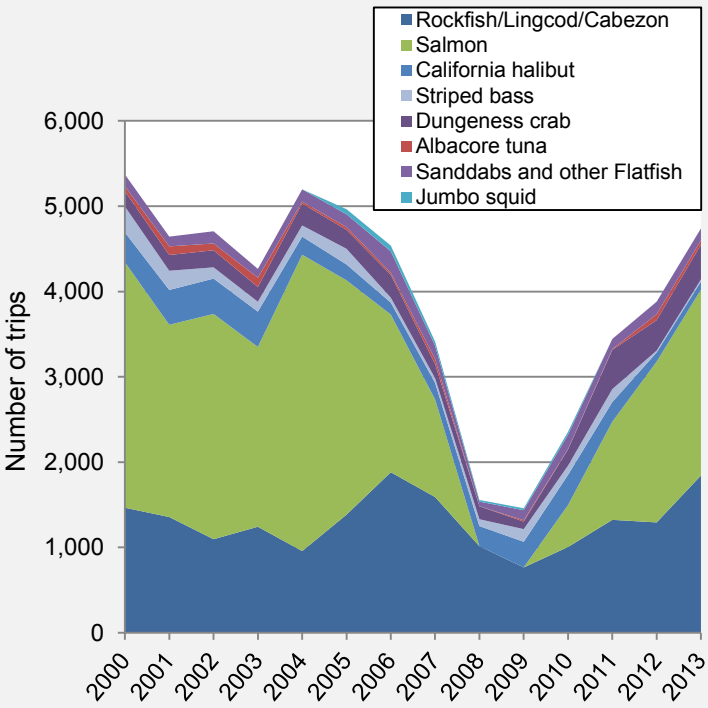


Fig 5. Total number of CPFV fishing trips by target species for the North Central Coast Region from 2000-2013. Data source: CDFW.

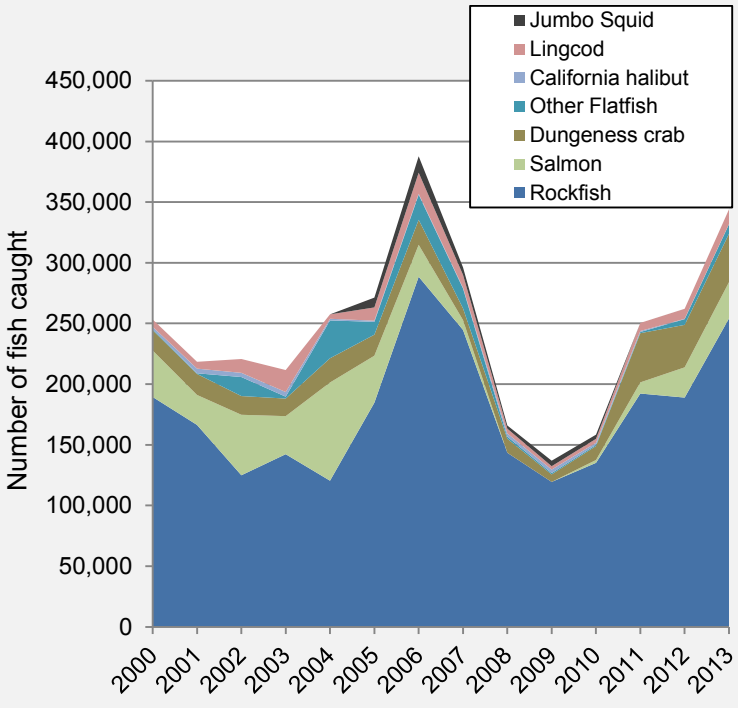


Fig 6. Total number of specific target species caught during CPFV fishing trips within the North Central Coast Region from 2000-2013. Data source: CDFW.

Commercial Fisheries: Influential Factors

Factors such as ocean conditions, fish availability, fishery closures and restrictions, market and gas prices, and the state of the economy can affect commercial landings, ex-vessel revenue (amount of money received at dock for the landed catch), and the number of fishermen participating in each fishery. While it is difficult to match any given change to a specific factor, it is possible to identify particular factors that likely contributed to the observed trends. Changes in fish availability and fishery closures and restrictions, such as the reduction of the groundfish trawl fleet and more restrictive groundfish regulations (including area closures), both contributed to decreases in non-fisheries of interest during the 1990s to mid-2000s. Decreased availability of salmon, salmon closures in 2008-2009, and the occurrence of a major national and global recession resulted in further decreases with low landings observed through 2009, while reduced salmon restrictions, increased availability of Dungeness crab, and increased fishing effort by California and out-of-state fishermen contributed to increased landings and ex-vessel revenue of fisheries of interest in 2010-2011. The small reduction in the contribution of fisheries of interest to landings and ex-vessel revenue in 2012-2013 resulted primarily from dramatic increases in the availability of market squid in the region and somewhat reduced numbers of Dungeness crab.

Commercial Fisheries: Landings and Revenue

The researchers used landings data from California Department of Fish and Wildlife (CDFW) to characterize the status of commercial fishing, focusing on Dungeness crab, nearshore finfish (hook-and-line and longline), California halibut, salmon and urchins from 1992 through 2013. Annual landings averaged 7.9 million pounds and 18 million in ex-vessel revenue (2010 dollars—what its value would have been in 2010) from 1992-2013. Landings for all fisheries in the region generally decreased through the 1990s and 2000s to a low in 2007-2009 and then increased to a level in 2013 that exceeded all previous years in the study period except 1992 and 1997 (Fig 7). Ex-vessel revenue fluctuated more than landings, but generally followed the same pattern.

"The contribution of the fisheries of interest to the region's landings increased from 18% in 1992 to 69% in 2011 with the ex-vessel revenue increasing from 32% to 84% during the same time period."."

Landings of the fisheries of interest varied considerably from year to year but also dropped to a low in 2007-2009 (Fig 8). Landings then peaked in 2011 to their highest level and decreased slightly in 2012-13. Ex-vessel revenue for fisheries of interest followed a similar pattern. In addition, the contribution of the fisheries of interest to the region's landings increased from 18% in 1992 to 69% in 2011 with the ex-vessel revenue increasing from 32% to 84% during the same time period. By 2013, this contribution for landings dropped to 33%, but remained high at 78% for ex-vessel revenue.

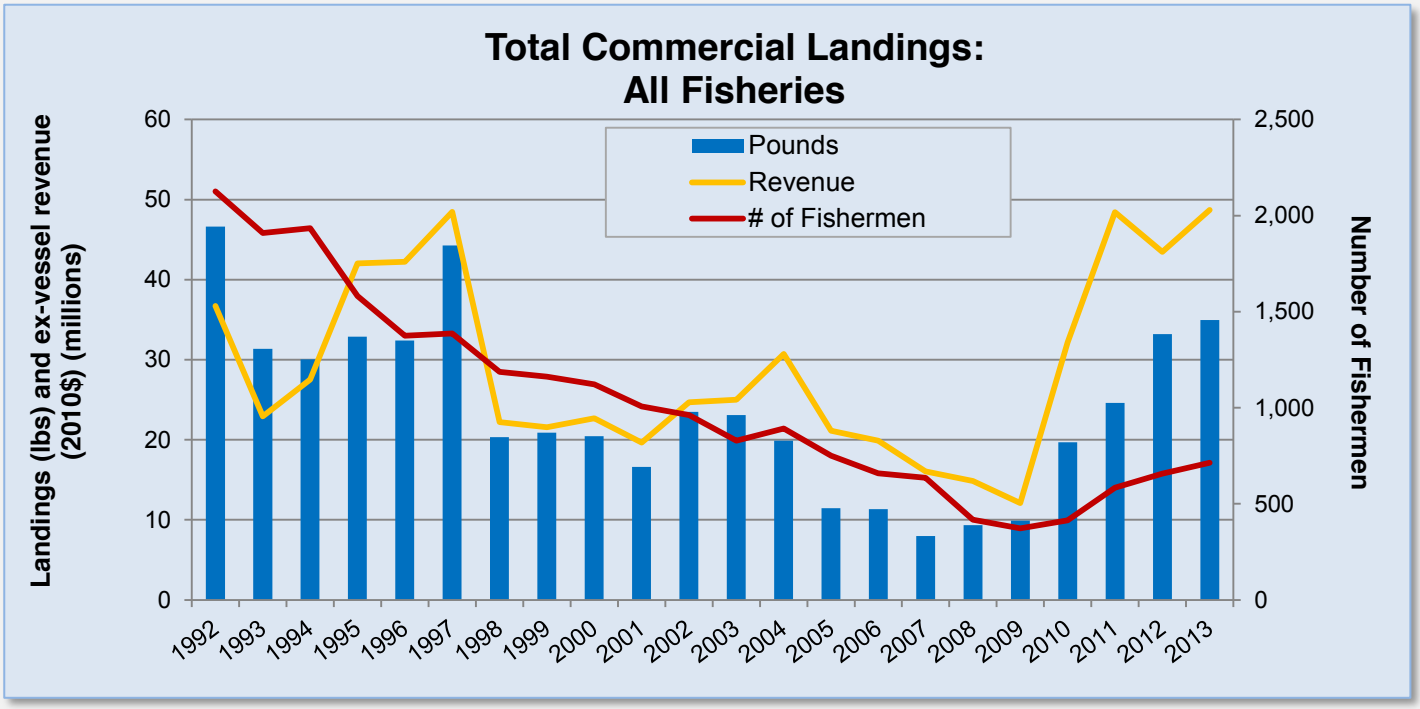


Fig 7. North Central Coast Region total commercial landings (lbs), ex-vessel revenue (2010$), and number of fishermen for all fisheries from 1992-2013. Data source: CDFW.

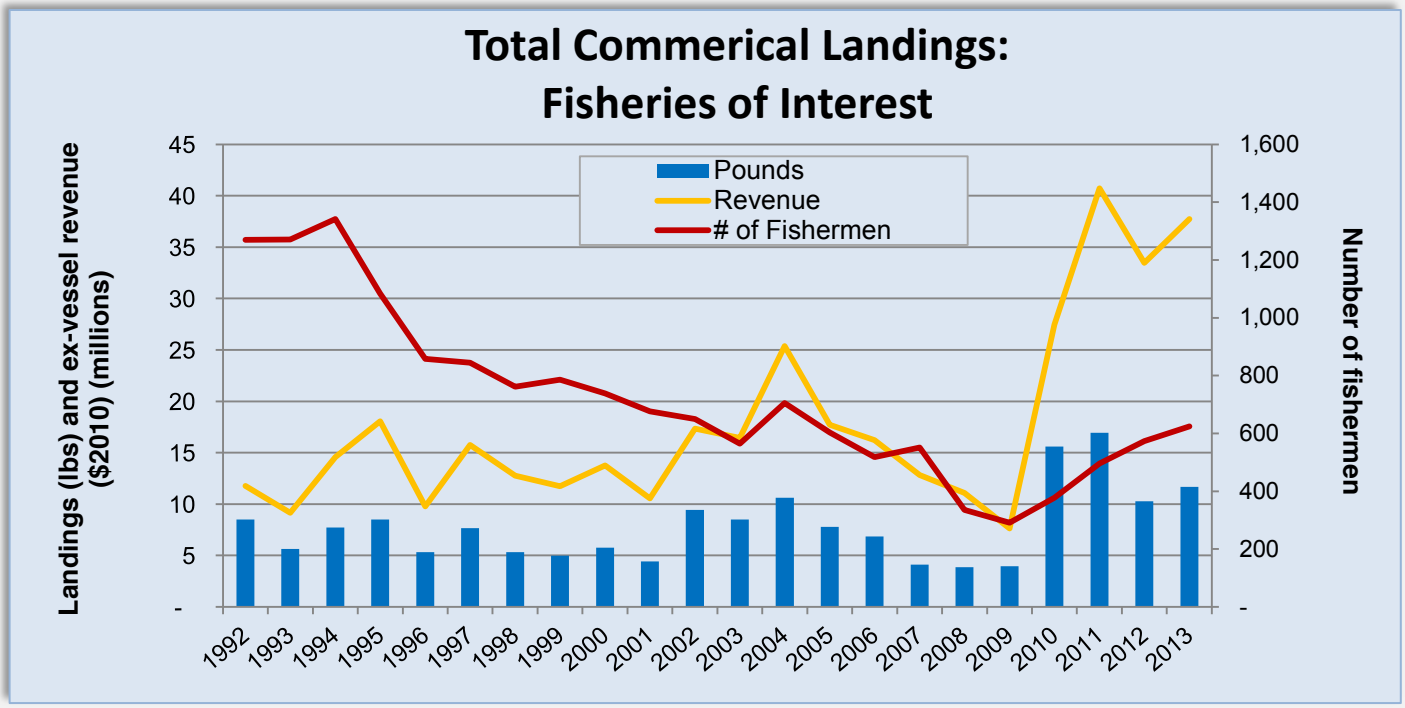
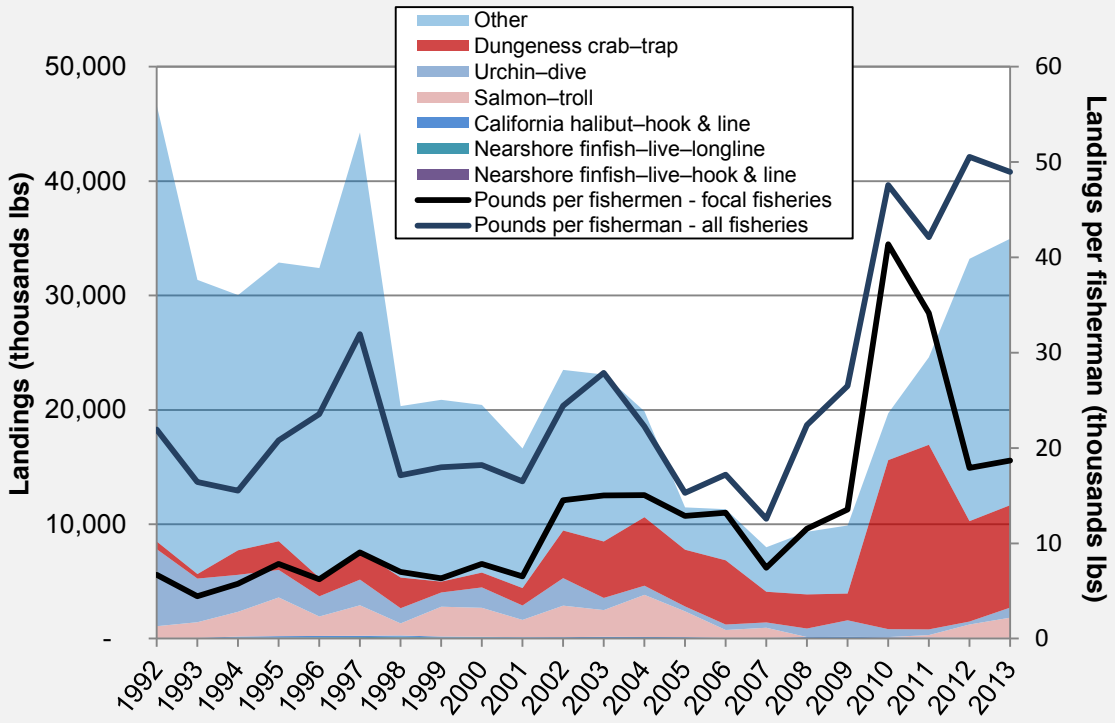


Fig 8. North Central Coast Region total commercial landings (pounds), ex-vessel revenue ($2010), and number of fishermen for fisheries of interest from 1992-2013. Data source: CDFW.

Commercial Fisheries: Per Fisherman

The most important fisheries of interest in the NCC Region in landings and ex-vessel revenue were Dungeness crab (trap), urchin (dive), and salmon (troll) (Figs 9 and 10). As the contribution of fisheries of interest to the total landings and ex-vessel revenue in the region increased, and the number of fishermen in these fisheries decreased, the annual landings per fisherman (pounds) and the ex-vessel revenue per fisherman ($2010) for these fisheries of interest began to more closely mirror those for all fisheries. Annual landings per fisherman (for both fisheries of interest and all fisheries) jumped between 2009 and 2010, primarily due to increased Dungeness crab landings.

Landings per fishermen for all fisheries in 2011-2013 generally increased due to the increased landings of market squid while those for the fisheries of interest dropped as Dungeness crab landings decreased slightly. For the period 1992-2013, annual landings per fishermen for fisheries of interest increased 180%. Annual ex-vessel revenue per fishermen (both fisheries of interest and all fisheries) jumped between 2009 and 2011, and then decreased in 2012 to levels still considerably higher than any observed prior to 2008. These changes primarily reflect the contributions to ex-vessel revenue from Dungeness crab. Annual commercial revenue per Dungeness crab fisherman more than tripled over the time period, reaching $131, 577 per fisherman in 2011.



"For the period 1992-2013, annual landings per fishermen for fisheries of interest increased 180%. Annual ex-vessel revenue per fishermen jumped between 2009 and 2011, and then decreased in 2012 to levels still considerably higher than any observed prior to 2008."

Fig 9. North Central Coast Region commercial landings (pounds) for all fisheries showing each fishery of interest's contribution and the contribution by all "other" fisheries with commercial landings per fisherman provided for both fisheries of interest and for all fisheries combined. Data source: CDFW.

"Annual landings per fisherman (for both fisheries of interest and all fisheries) jumped between 2009 and 2010, primarily due to increased Dungeness crab landings."

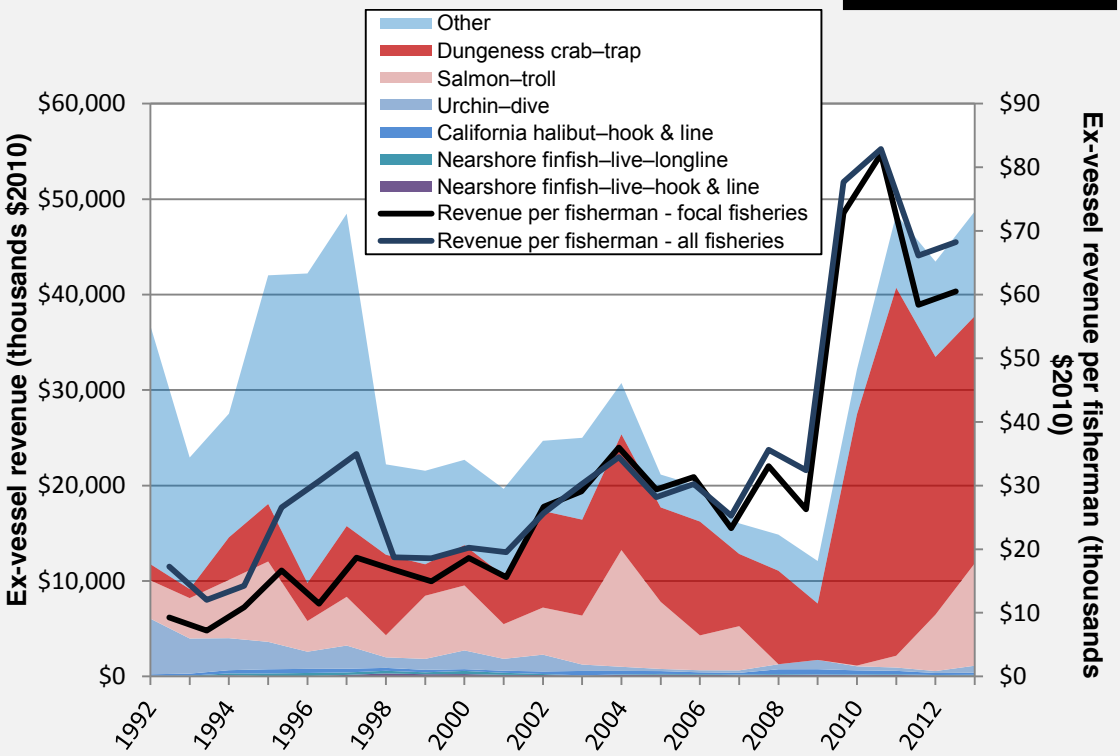


Fig 10. North Central Coast Region commercial ex-vessel revenue ($2010) for fisheries of interest and all "other" fisheries and commercial ex-vessel revenue per fisherman for fisheries of interest and for all fisheries combined. Data source: CDFW.

Commercial Fisheries: Socioeconomics

Changes in the socioeconomic environment (e.g., changes in fish availability and fishery restrictions) prior to, during, and after implementation of the North-Central Coast Region marine protected areas (MPAs) hamper analysis of the effect of these MPAs on commercial fisheries. However, three-quarters of the 101 commercial fishermen interviewed by Point97/Ecotrust staff (who made landings in 2010 in the fisheries of interest) reported being directly affected by MPAs. For example, they travelled farther, fished in more dangerous waters, and experienced more crowding in the remaining areas.

Commercial and Recreational Fisheries Document Contributions

Primary Author	*Debbie Aseltine-Neilson, CDFW, Marine Region*
Shelter Island Photo	*California Recreational Fisheries Survey Archive*
Cabezon Photo	*Mark Winscher, CDFW, Marine Region*
CPFV Photo	*California Recreational Fisheries Survey Archive*
Dungeness Crab Photo	*CDFW/Marine Applied Research and Exploration (MARE) archive*
Troll Boat Photo	*James Phillips, CDFW, Marine Region*
Kelp and Urchin Photo	*Athena Maguire, CDFW, Marine Region*
Red Urchin Photo	*Rebecca Garwood, CDFW, Marine Region*
Round Haul Net Vessel Photo	*Steve Wertz, CDFW, Marine Region*
Halibut Photo	*Travis Tanaka, CDFW, Marine Region*
Light Boat Photo	*Tom Mason, CDFW, Marine Region*

Document designed by Amanda Van Diggelen, CDFW, Marine Region