SNAPSHOT REPORT VOLUME 3

BASELINE HIGHLIGHTS FROM
NORTH COAST SOCIOECONOMICS OF FISHERIES

Taking Stock of North Coast Fishing Communities

ABOUT THIS SNAPSHOT REPORT This report highlights some key scientific findings from the Socioeconomics of North Coast Fisheries project, one of eleven baseline projects in California's North Coast region.[1] This project characterized the socioeconomic condition of fishing communities around the time of marine protected area (MPA) implementation. Facts and figures are derived from the project's peer-reviewed technical report and associated references,[2] which can be found, along with the related data, at **OceanSpaces.org.**

Characterizing the Socioeconomics of Fishing Communities

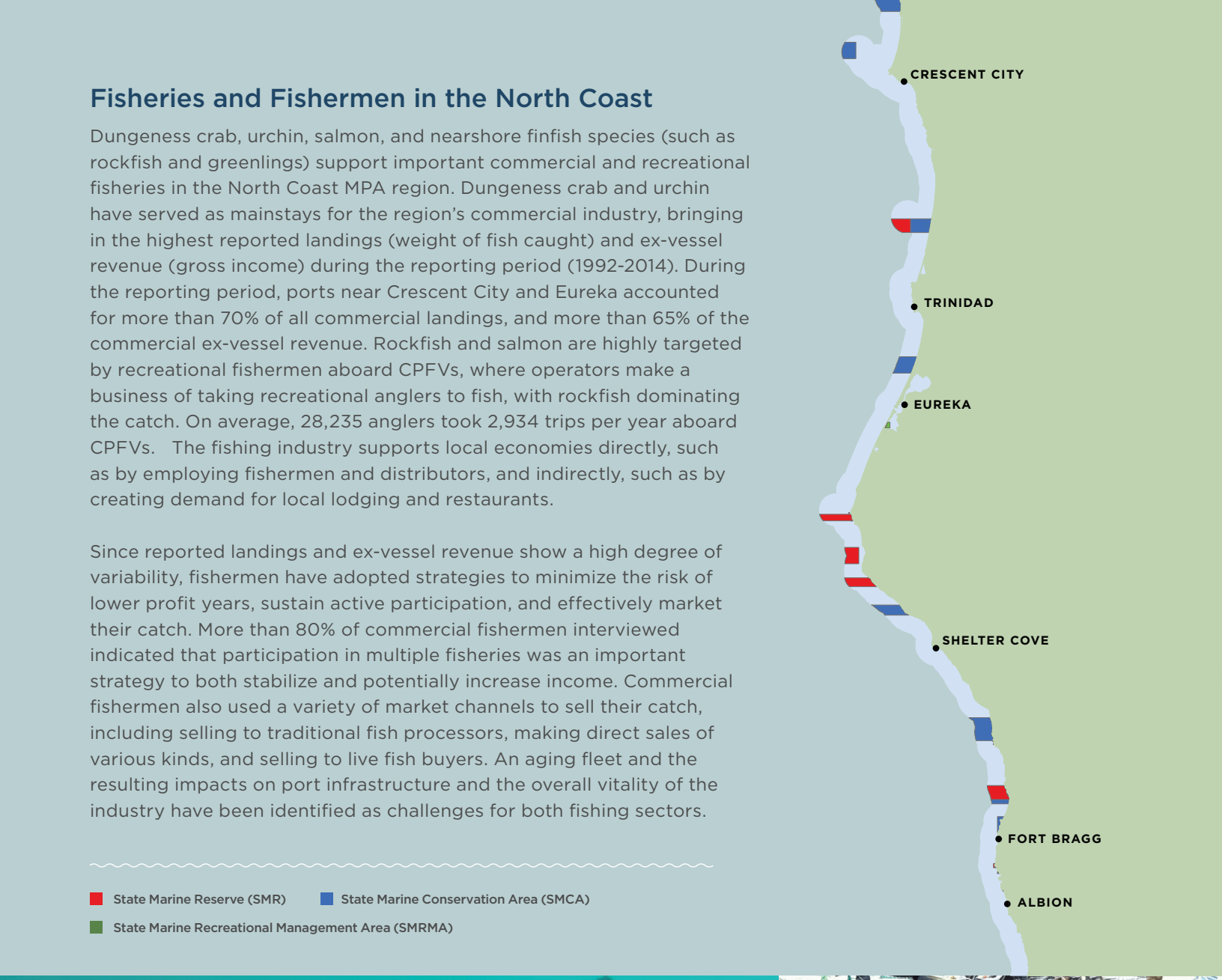
Abundant marine life and other natural resources have supported communities along California's North Coast for generations. Diverse populations of fish and invertebrates continue to be of ecological, economic, and social importance to coastal communities today. Fishing is an important source of income in the region and can be a challenging occupation due to the variability in factors such as fishing regulations, abundance, catchability, and market value of targeted species. Management actions, including the implementation of marine protected areas (MPAs), also affect fishing activity (see map). To characterize the status and trends of North Coast fisheries from 1992 to 2014 and document conditions around the time of MPA implementation, researchers conducted a project as part of MPA baseline monitoring.

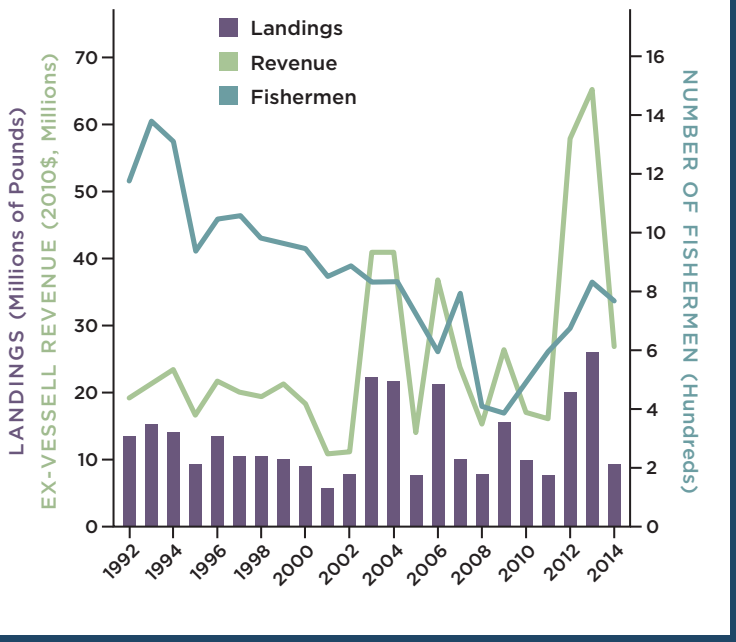
Researchers at Humboldt State University[3] and Ecotrust[4] compiled data from 1992 to 2014 using the California Department of Fish and Wildlife's Commercial Fisheries Information System and commercial passenger fishing vessels (CPFV) logbook data. The research team also worked closely with fishermen to collect information on commercial fishing and CPFV activity, including on fishermen's socioeconomic status and perceptions of marine management activities in 2013. They conducted 163 in-person interviews with commercial fishermen and 15 with CPFV operators, and convened 5 focus groups involving 30 fishermen to gather information about the context and concerns of local fishing communities. To further facilitate cooperation, the research team established a Fishermen Advisory Council that provided guidance on study design and communications with fishermen.

Fisheries and Fishermen in the North Coast

Dungeness crab, urchin, salmon, and nearshore finfish species (such as rockfish and greenlings) support important commercial and recreational fisheries in the North Coast MPA region. Dungeness crab and urchin have served as mainstays for the region's commercial industry, bringing in the highest reported landings (weight of fish caught) and ex-vessel revenue (gross income) during the reporting period (1992-2014). During the reporting period, ports near Crescent City and Eureka accounted for more than 70% of all commercial landings, and more than 65% of the commercial ex-vessel revenue. Rockfish and salmon are highly targeted by recreational fishermen aboard CPFVs, where operators make a business of taking recreational anglers to fish, with rockfish dominating the catch. On average, 28,235 anglers took 2,934 trips per year aboard CPFVs. The fishing industry supports local economies directly, such as by employing fishermen and distributors, and indirectly, such as by creating demand for local lodging and restaurants.

Since reported landings and ex-vessel revenue show a high degree of variability, fishermen have adopted strategies to minimize the risk of lower profit years, sustain active participation, and effectively market their catch. More than 80% of commercial fishermen interviewed indicated that participation in multiple fisheries was an important strategy to both stabilize and potentially increase income. Commercial fishermen also used a variety of market channels to sell their catch, including selling to traditional fish processors, making direct sales of various kinds, and selling to live fish buyers. An aging fleet and the resulting impacts on port infrastructure and the overall vitality of the industry have been identified as challenges for both fishing sectors.





Commercial Fishermen

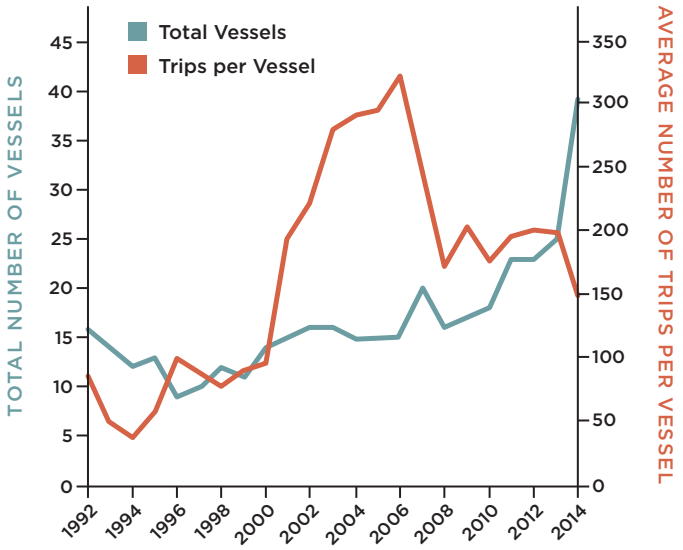
Commercial fishermen in the North Coast region have substantial experience on the water, with an average age of 54 years and nearly 30 years of commercial fishing experience. While commercial fisheries in the region have experienced a fluctuating, but steady decline in the number of active fishermen since the late 1990s, beginning in 2010 a gradual increase in commercial fishermen participation has been observed. While landings and ex-vessel revenue have also varied over this period, they have displayed a slightly increasing trend. On average commercial fishing accounted for greater than 80% of fishermen's annual income in 2013, with about half of that used to cover operating costs.

HIGHS & LOWS IN NORTH COAST FISHERIES

The number of commercial fishermen participating in North Coast fisheries of interest (blue line) has declined over the study period, with numerous fluctuations and a gradual increase since 2010. Landings (purple bars) and ex-vessel revenue (green line) both showed a modest increase in recent years, also with fluctuations. Modified from the HSU/Ecotrust technical report.

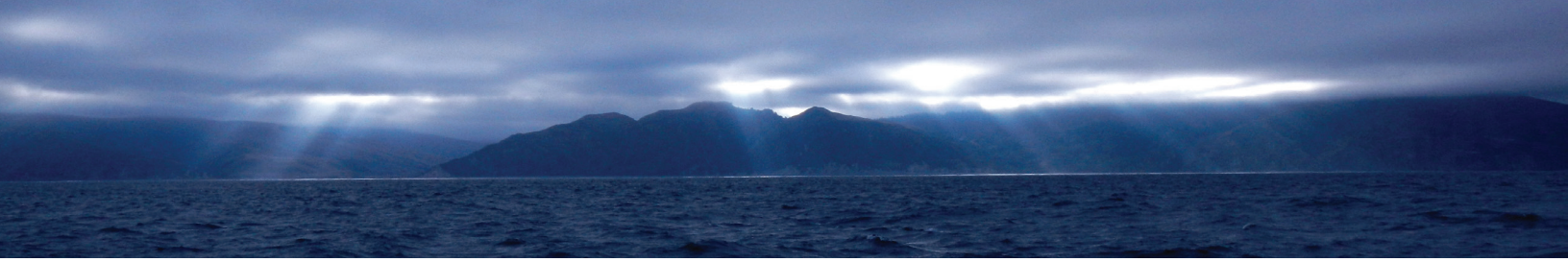
CPFV Fishermen – 'Party Boats'

In general, CPFV operators that were interviewed were younger and relied less on fishing for income than commercial fishermen. The average age of CPFV fishermen interviewed was 44 years, with operators owning or operating a boat for 10 years on average. There has been a steady rise in the number of CPFV operators, particularly in Eureka, since the late 1990s, and until 2006, a corresponding rise in the average number of trips per vessel. Based on interviews, owning or operating a CPFV accounted for 70% on average of fishermen's income and about one-third of this income was used to pay for operating costs.



INCREASING PARTY BOAT POPULARITY

The North Coast has experienced a substantial increase in the number of vessels being operated as CPFVs or "party boats." The number of trips per vessel peaked in the mid-2000s and have declined in the following years. Modified from the HSU/Ecotrust technical report.

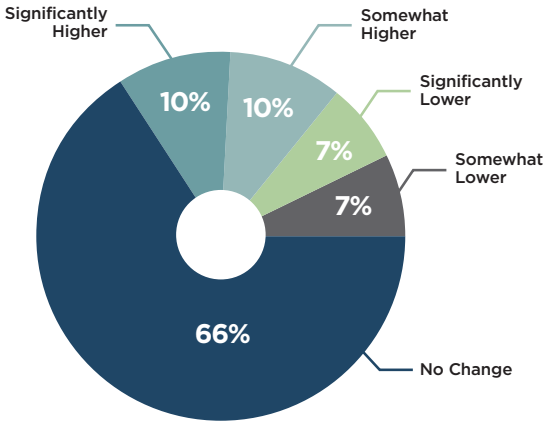


Changes after MPA Implementation

It is difficult to attribute changes in fishing activity to the implementation of MPAs, since fishing activity is affected by various environmental and economic conditions. At the time of interviews, the North Coast MPAs had only been in existence for over a year. Initial data collected during interviews with fishermen is a valuable benchmark for tracking the effects of MPAs on fishermen over time.

Over 70% of commercial and CPFV operators stated that they felt MPAs affected their fishing activity, primarily by restricting fishing in traditional areas or requiring them to travel longer distances to fish. Urchin divers perceived the effects of MPAs to be the most impactful, and Dungeness crab fishermen the least impactful. However, when asked if there was a change in fishing income between 2009 and 2013 corresponding to before and after MPA implementation, the majority of commercial fishermen felt that no change had occurred. A large number of CPFV operators reported no change, or slight increase, in income.

CHANGE IN INCOME
AS REPORTED BY NORTH COAST COMMERCIAL FISHERMEN



Adapted from technical report.

Looking Forward

Engaging and building relationships with fishing communities before, during, and after data collection is crucial to building transparency and trust in the information that may be used to assess the effects of MPAs. Continuing to implement efforts to engage these communities and collect information through focus groups and interviews with fishermen can help to understand long-term patterns and underlying causes of potential change. The use of digital data collection technology also may present the opportunity for both fishermen and fisheries managers to actively monitor fisheries' performance and effectively implement management approaches that minimize the impacts to fishermen's livelihoods. Data collection efforts to increase transparency and include fishermen can allow for advancing management practices, maximizing economic benefits to fishing communities, and increasing the flexibility that is needed to respond to changing information needs. Enhancing our understanding of how humans utilize, value, and rely on the marine environment will be critical to monitoring how MPAs are affecting fishing communities into the future.

ABOUT NORTH COAST MPA BASELINE MONITORING

California Ocean Science Trust, California Department of Fish and Wildlife (CDFW), California Ocean Protection Council (OPC), and California Sea Grant coordinated and collaborated in the implementation of baseline monitoring, which was funded by OPC. Results from this work will inform CDFW management recommendations to the California Fish and Game Commission from the first five years of MPA implementation in the region, anticipated in 2018. MPA monitoring results can also inform the management of fisheries, water quality, and climate change.

FOOTNOTES

1. To learn more about the socioeconomics of fisheries monitoring project, visit OceanSpaces.org: https://goo.gl/84vdo3
2. S Hackett, L. Richmond, C. Chen, L. Ordoñez-Gauger, N Enelow, and L. Casali. 2017. Socioeconomics of North Coast fisheries in the context of marine protected area formation. California Sea Grant. San Diego, CA. 313 pp. https://goo.gl/tRMCrg
3. Humboldt State University: https://goo.gl/BaBa9C
4. Ecotrust: https://goo.gl/J6PKoH

CALIFORNIA OCEAN SCIENCE TRUST

CALIFORNIA OCEAN PROTECTION COUNCIL

Sea Grant California

CALIFORNIA DEPARTMENT OF FISH & WILDLIFE

oceanSPACES