

South Coast Marine Protected Areas (MPAs) Human Use and Values Evaluation  
Summary of Key Themes – Small Group Discussions with Commercial Fleet to  
Review Socioeconomic Data Collection(Summer 2013)  
January 27 – February 7, 2014  
Prepared by Ecotrust and Strategic Earth Consulting

## OVERVIEW

Beginning in July 2013, Ecotrust conducted a series of interviews with 114 commercial fishermen throughout the South Coast (Point Conception south to the border of Mexico) in an effort to evaluate the social and economic health of Southern California's commercial fishing fleet. Fishermen were invited to share their experience and expertise, including information about operating costs, historical and current fishing grounds, and the direct/indirect impacts of marine protected areas (MPAs). The information collected will help establish a baseline dataset of socioeconomic information to measure initial and future changes in commercial fishing and to the fishing fleet since the time of the implementation of the Marine Life Protection Act (MLPA) in 2012. This information will also help Ecotrust, fishermen, resource managers, and decision-makers to better understand how MPAs and other factors are effecting fishing patterns, economic activities, and commercial fishermen's ability to maintain a livelihood. A list of the questions asked during these interviews is available on Ecotrust's website ([http://www.ecotrust.org/monitoring/downloads/Monitoring-SC-Questions\\_2013.pdf](http://www.ecotrust.org/monitoring/downloads/Monitoring-SC-Questions_2013.pdf)).

As a follow up to the interviews conducted in summer 2013, Ecotrust coordinated a series of small group discussions with fishermen to ensure the results of the data collection are accurate and tell a complete story (all data was presented in an aggregated form to uphold confidentiality of participants). Each fisherman who participated in an interview was invited to take part in a small group discussion; a total of 35 fishermen participated in these informal conversations.

This project will directly inform the 5-year review of South Coast MPAs by the state of California and is one of eleven projects—and the only socioeconomic project—that makes up the South Coast MPA Baseline Program (<http://oceanspaces.org/program/south-coast-mpa-baseline-program>). The baseline program is administered by the MPA Monitoring Enterprise, a program of California Ocean Science Trust, in collaboration with the California Ocean Protection Council, the California Department of Fish and Game (CDFW), and California Sea Grant.

This document has been made available on Ecotrust's monitoring page ([www.ecotrust.org/monitoring](http://www.ecotrust.org/monitoring)) and was circulated via email and/or mail to commercial fishermen who conducted an interview (July-October 2013). It is intended as a summary of key themes expressed by the 35 fishermen who attended the small group discussions (January-February 2014) and aims to reflect their perspectives and opinions. The information provided has not been vetted for accuracy (e.g., specific dates given for regulation and management changes). The intended audience for this document is commercial fishermen to ensure that Ecotrust's notes from the small group discussions is accurate. Ecotrust will incorporate the feedback and input in this document into a final report, which will be made available on [OceanSpaces.org](http://OceanSpaces.org) later this year and ultimately shared as part of the state's 5-year review of South Coast MPAs.

This feedback provided by the South Coast commercial fishermen is organized into the following sections:

- Key Themes (aggregated spatial and socioeconomic data, historical data, and impacts of MPAs)
- Questions and Concerns
- Recommendations for Future Management

Please contact Leanne Weiss at [leanne@pointnineseven.com](mailto:leanne@pointnineseven.com) or 503.385.6501 with any questions you may have, or to provide additional information to help inform or clarify this key themes document.

## KEY THEMES

### Review of Data Collected in Summer 2013

Information shared by commercial fishermen from July-August 2013 was reviewed, evaluated, aggregated, and summarized by port and fishery. Data from any port/fishery combination with less than three respondents was suppressed to protect confidentiality. All data collected refers to activities during the 2012 calendar year. For some fisheries (e.g., lobster), this means fishermen considered the end of the 2011-12 season and the start of the 2012-13 season.

Across all fisheries

### Aggregated Spatial Data (e.g., maps)

- Generally, fishermen were comfortable with the results reflected in the maps.
- There was concern expressed that Ecotrust did not speak with every commercial fisherman, and in some cases very few fishermen within a specific fishery (e.g., squid, seine). Some fishermen felt that the small sample size may influence the accuracy of the mapped information.
  - One fishery had very few fishermen participate in the interview process. With this in mind, and after discussing the maps with the fishermen, it was decided that a data set would be removed from the map due to only having three respondents (the minimum number required) and the nature of the data highlighting an individual's fishing areas. Therefore, no maps will be available for this particular fishery.
- A number of recommendations were made to improve interpretation and readability of the maps, including:
  - Integrate maps with CDFW landings data by block number. This would allow for comparison of two different data sources. Since Ecotrust did not speak with every commercial fisherman in the South Coast, there was some concern the information displayed on the maps was misleading and the CDFW dataset would add additional perspective to the results.
  - Include satellite imagery into the maps (i.e., identify specific landmarks).
  - Add a kelp canopy/cover layer to the maps (i.e. kelp cover shows habitat quality).
  - Add other fisheries regulations, including federal MPAs and military closures.
  - There should be no fishing effort displayed inside an MPA.

### Aggregated Socioeconomic Data (e.g., responses to survey questions)

- 2012 was a unique year for operating costs as a high number of boats underwent an engine retrofit to upgrade to more fuel-efficient engines due to funding made available by a grant program.
- Operating costs are increasing, which most fishermen attributed to increasing fuel prices, which has a great impact on fishermen's bottom line since some fishermen need more fuel to travel further due to MPAs.

- Some fishermen would prefer for the data relating to the questions about job satisfaction be placed in a different chapter of the final report than the chapter discussing the impacts from MPAs since the responses from those questions are not a reflection of MPA satisfaction.

#### Historical Data (1992-2012)

- Fishermen thought it would be helpful to compare the historical landings data to changes in fisheries management (i.e. limited entry) to better explain trends.
- Revenue trends for a number of high valued fisheries are deeply dependent on foreign markets, and many fishermen expressed concern about long-term financial sustainability and security.
- A number of fisheries identified their strong economic reliance on solid international markets, historically Japan and currently China.

#### Impacts due to MPAs

- Fishermen across all fisheries expressed that MPAs have led fishermen to travel longer distances, often through MPAs, to access areas that permit fishing. This costs time, fuel, energy and leads to more time on the water without an immediate return on the investment. It also results in less time off the water with family.
- In addition to fishermen losing fishing grounds, many fishermen expressed that the primary way they were impacted by MPAs was due to displaced fishermen now fishing in their traditional grounds.
  - Movement of fishermen from traditional fishing grounds to offshore areas can be challenging for fishermen with smaller boats (i.e., safety). Therefore, the fishing effort from the smaller boats that cannot get to the islands is condensed into smaller areas along the coast.
- MPAs have compacted fishing grounds, creating congested areas that have more fishing pressure.
  - Fishermen have had to diversify their fishing areas and have fewer options to rotate fishing grounds. Areas that are open are typically less productive and produce a less quality product.
- Fishermen identified there are fewer safe havens to fish or anchor in during times of high winds and/or swell, as many MPAs traditionally acted as fair-weather spots.
- Fishermen expressed that fisheries such as lobster and urchin have been hit hard by MPAs, and that MPAs are not a successful management tool for these types of species.
- Some fishermen have moved ports, which has led to a shift in the social dynamic of each port, resulting in overcrowding, limited space for boats (particularly in ports without slips), etc. Other fishermen have left commercial fishing entirely.
- Many fishermen expressed concern that the full effects of MPAs are yet to be felt since the last few years have had excellent ocean conditions and there have been particularly good fishing years, for most fisheries.

#### Fishery Specific Feedback

##### CALIFORNIA HALIBUT TRAWL

##### Aggregated Spatial Data (e.g., maps)

- Fishermen confirmed the maps look accurate and they were generally comfortable with how the data was represented.
  - Fishermen noted that there was effort being shown in an area where halibut trawling is prohibited, between Point Conception and Gaviota.

#### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- No comments provided.

#### Historical Data (1992-2012)

- Fishermen recalled that the decrease in revenue and pounds landed in 1997 was as a result of international fishermen purchasing California permits and landing their catch abroad.
- Fishermen suggested Ecotrust investigate changes in international and domestic markets to better interpret changes in revenue and prices.
- Fishermen mentioned the introduction of farmed flatfish has impacted the price of wild halibut.

#### Impacts Due to MPAs

- A halibut trawler noted that MPAs are impacting the white seabass fishery also.

#### COASTAL PELAGICS

##### Aggregated Spatial Data (e.g., maps)

- Fishermen confirmed the maps generally look accurate and they were comfortable with how the data was represented.
  - Fishermen noted Santa Monica Bay is closed to seining and no effort should be reflected in that area.
  - Fishermen noted effort off San Clemente Island should include the front side.

##### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- For the fishermen Ecotrust spoke with, 2012 was an unusually high year for operational costs due to high maintenance and retrofits.

#### Historical Data (1992-2012)

- Fishermen recalled that the spike in the number of fishermen in the fishery in 1996 was due to this being the year before the moratorium on new permits and fishermen wanted to secure their landings.
- Fishermen recalled in 2000 there was an increase in the abundance of sardines.
- Recognizing most coastal pelagic fishermen are dual permit holders, fishermen expressed that the general decline in pounds landed and number of participants in the fishery over the past few years is due to increased abundance of squid.
- Fishermen expressed they would like to see the landings data measured in metric tons instead of pounds.

#### Impacts Due to MPAs

- Since the MPAs went into effect, squid have been available in such high numbers that fishermen have not relied as much on coastal pelagics. However, fishermen did express concern regarding times in the future when squid may be less abundant and they may have to rely on coastal pelagics more. In this case, fishermen felt they would likely be more impacted by MPAs.

## LOBSTER

### Aggregated Spatial Data (e.g., maps)

- Fishermen confirmed that the maps were generally accurate in representing fishing effort in 2012 with some exceptions (see below). It was also acknowledged that since Ecotrust did not speak with every lobster fisherman in the fleet, the maps were missing key information that would have displayed more effort/value in specific areas if more fishermen had participated in the study.
  - Fishermen identified all of the offshore islands as experiencing increased fishing effort due to MPAs.
    - Additional information for San Nicholas Island was provided to gain a more accurate representation of fishing in 2012.
    - There was some discrepancy among fishermen regarding the effort displayed at Santa Rosa Island. Some fishermen felt that the maps showed too much fishing effort in that area, while others felt the maps accurately displayed the shift of more fishermen from the coast to that offshore area.
    - A number of fishermen indicated that Santa Cruz Island should show more effort on the backside of the island due to displacement from MPAs.
    - A number of fishermen indicated that greater effort should be shown for Anacapa Island, since some displaced Ventura/Channel Island fishermen who traditionally fished the coast have moved to. Conversely, others said those who have traditionally fished Anacapa were moving to Santa Cruz Island.
    - Some fishermen indicated that maps should show greater effort on the leeward side of San Clemente than the backside while other fishermen confirmed that the effort shown on the leeward side was accurate.
  - Some fishermen also said they would expect the maps to show more effort in coastal areas between MPAs, while others felt that in general there has been less coastal fishing and increased fishing at the islands since the MPAs were implemented.
    - Some fishermen identified that the maximum depths displayed in the maps was incorrect and that actual fishing grounds are shallower, however other fishermen confirmed that the deeper depth contours were accurate.
    - A number of fishermen identified the areas north of Dana Point Harbor, as well as north and south of Swami's state marine conservation area (SMCA) as needing to show more effort.
  - Some fishermen identified the line from Malibu Point to Rocky Point across Santa Monica Bay needs to be corrected to reflect the existing boundary for commercial fishing.

### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- Most fishermen confirmed that while revenue for lobster in 2012 was relatively high due to the good price per pound, increased operating costs (e.g., cost of fuel and materials, amount of fuel used to travel longer distances, etc.) offset any revenue generated.
- Some fishermen also identified that catch volume has decreased, which also has had a negative impact on income and the amount of time required on the water to offset operating costs.

- Fishermen indicated that costs associated with crew depends on where someone fishes: fishermen on the coast typically do not use crew, while those fishing offshore have a crewmember.
- A few fishermen felt the “quality of life” type questions needed additional context. For example, the majority of fishermen indicated they were “unhappy” with the “management of the rules.” One fisherman clarified that it was not unhappy with the fact that there are rules, but rather the manner in which the lobster fishery is managed.

#### Historical Data (1992-2012)

- Fishermen confirmed that warm water years provide the best fishing conditions for lobster, which has a positive effect on landings.
- Many fishermen expressed that the transferability of permits changed the level of effort within the fishery. For example, fishermen who have more recently entered the fishery have made a financial investment and need to fish harder to pay off debts/bills.
- The increase in revenue and landings in 1997 was due to an El Nino year, which provides good fishing conditions. Some fishermen identified that 1997 also saturated the market with lobster, which had adverse effects to the price/revenue in the following years.
- In 2008-9 fuel prices increased, which affected the cost of bait, materials (zinc, metal), etc.
- Some fishermen said they experienced poor environmental conditions in 2009-10, as well as in 2012 (i.e., cold water year). Fishermen fishing offshore islands tend to be more affected by slight changes in environmental conditions.
- The Chinese market drove an increase in the price per pound in 2010 from around \$12/pound to over \$16/pound. Many fishermen expressed that this increase in price made the increase in operational costs manageable.
  - A few fishermen indicated that this increase in market price has driven up the price of permits.
    - There are too many active fishermen and permits in the lobster fishery. Some fishermen felt that reducing the number of permits in the fishery would have an impact on the number of traps being fished without the need for a commercial trap limit.

#### Impacts Due to MPAs

- All fishermen expressed that MPAs have led to compaction, crowding, increased fishing pressure on less productive areas and more gear in the water resulting in fishermen needing to fish harder and for longer periods of time.
  - The increased price for lobster in recent years has caused an increase in gear in the water, which is intensified when effort is condensed into smaller areas due to MPAs.
- Most fishermen identified that they are needing to travel further to find viable fishing grounds and/or they are experiencing more crowding due to other fishermen being displaced from traditional grounds due to MPAs.
  - Many fishermen who have traditionally fished the coast are now fishing offshore. This has led to a variety of safety issues.
  - Fishermen with smaller boats are condensed along the coast.
- Traditionally fishermen may have rotated areas within a given season or between seasons and expressed that this strategy was no longer possible due to MPAs.

- The only way fishermen are maintaining themselves financially is due to the high price.
  - Some fishermen shared that they are seeing more lobster fishermen finding part time jobs between seasons to help offset costs.
- Fishermen explained that there has been a shift in the way fishing is conducted. Traditionally, coastal fishermen began the season by working close to shore, and then would move into deeper water. Now, due to MPAs, compaction, crowding, and large amounts of gear in the water, the “race to fish” has resulted in traps being set in all water depths at the start of the season. This leads to a much shorter fishing season.
- Many fishermen confirmed that they have adapted to MPAs, however they are concerned about the economic, physical, and mental hardships of the closures. Additionally, fishermen expressed that they are running out of options to be flexible and maintain a viable living with current regulations. Additionally, many fishermen said that they were able to adapt because they were getting such a good price for lobster and voiced concern over how they would be impacted by MPAs if the price were to drop.
- Most fishermen were in agreement that MPAs are not a suitable management tool for lobster due to lobster behavior.
- While not MPA specific, a number of fishermen identified changes in military closures (i.e., San Clemente Island, San Nicholas Island) as leading to increased effort along the coast. Some specifically mentioned that there have been changes in regulations and enforcement off San Nicholas Island.

#### NEARSHORE FINFISH

##### Aggregated Spatial Data (e.g., maps)

- There was concern expressed that the maps did not accurately represent fishing south of Point Loma, as habitat in this area is not appropriate for most finfish.
- Fishing effort/value that was depicted on the rock crab maps seemed more appropriate for finfish, while the finfish maps seemed more appropriate for rock crab.
- Additional spatial information was provided that showed a more accurate representation of fishing in 2012 off San Nicholas Island.

##### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- No comments provided.

##### Historical Data (1992-2012)

- No comments provided.

##### Impacts Due to MPAs

- No comments provided.

#### ROCK CRAB

##### Aggregated Spatial Data (e.g., maps)

- Fishermen confirmed that the maps were generally accurate in representing fishing effort in 2012 with some exceptions (see below). It was also acknowledged that since Ecotrust did not speak with every rock crab fisherman in the fleet, there are likely key fishing areas that are not represented in the maps.

- Some fishermen confirmed that there should not be any effort off San Nicholas or San Clemente Islands.
- Fishermen identified that there should be less effort shown above the South La Jolla SMR relative to fishing effort below this MPA.
- Fisherman identified the fishing effort/value that was depicted on the rock crab maps seemed more appropriate for finfish, while the finfish maps seemed more appropriate for rock crab.
- Fisherman expressed that the areas surrounding the Swami's State Marine Conservation area were too deep to fish rock crab.

#### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- No comments provided.

#### Historical Data (1992-2012)

- No comments provided.

#### Impacts Due to MPAs

- No comments provided.

#### SEA CUCUMBER DIVE

##### Aggregated Spatial Data (e.g., maps)

- Sea cucumber divers confirmed the maps were generally accurate and showed appropriate levels of effort/associated value. There was some concern expressed that Ecotrust did not speak with all members of the sea cucumber fleet, and so key fishing areas were not represented.
  - Some fishermen expressed that typical years show more effort on Catalina, however for a number of reasons there was less fishing at Catalina in 2012 (back and leeward side).
  - Fishermen also indicated the map didn't accurately reflect fishing on both sides of the Point Vicente SMCA, which is traditionally targeted by the Cambodian fleet.

##### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- Fishermen indicated the average percentage of revenue from an individual's gross income that was allocated for operating costs in 2012 may have been influenced by the geographic location of the port (i.e. fishermen north of Los Angeles typically have 2-3 divers on a boat, whereas Los Angeles south typically have 1-2 divers).
- Since many sea cucumber fishermen are dual permit holders with urchin, fishermen were generally comfortable with the average operating costs that additional operating costs they incur are shared amongst the two fisheries.
- A number of fishermen identified the need for better understanding of the life cycle of sea cucumber, as well as better management mechanisms.
  - While some fishermen thought it should have been done years ago, most fishermen were encouraged by a recent survey circulated by CDFW designed to gather information about the fishery to inform management.
- Similar to urchin, sea cucumber fishermen would like to see a better relationship with processors, particularly with regards to setting better standards for urchin "grades" and pricing.
  - Fishermen involved in direct marketing are able to gain a higher price per pound.

#### Historical Data (1992-2012)

- When reviewing the average price per pound of cucumber over twenty years, some fishermen identified the increase in price (2008, 2010) has been driven by increased demand in China.
  - Increase in pricing is indicative of increased affluence in China. An economic boom has resulted in many more people able to afford to eat this delicacy, whereas in the past it would only be eaten on special occasions.
  - 2008 increase in price per pound represented increased demand for product from China in celebration of the Olympics held that year in Beijing. The number of processors in the South Coast increased from 1-2 to 6-8.
  - 2012 increase represents the Chinese preparing for 2012, the year of the Dragon, which is a lucky year to have a child. Fishermen shared that an increase in weddings in 2010/11 where cucumbers would be served as a banquet delicacy led to increased demand.
- This increased demand led to a “gold rush” in this relatively unmanaged fishery in 2010.
  - Also in 2010, the increase in price led many dual permit-holding fishermen to land sea cucumber instead ofurchin.
- 2011 was a very strong year in pounds/landings and pricing for sea cucumber.
  - 2012 the MPAs went into effect, and pounds landed, number of fishermen in the fishery, and revenue all decreased. Pricing maintained at 2011 levels.

#### Impacts Due to MPAs

- MPAs located on the backside of Catalina Island have impacted cucumber fishermen, removing access to key habitat that was highly productive, as well as safe haven for inclement weather.

#### SEA CUCUMBER TRAWL

#### Aggregated Spatial Data (e.g., maps)

- Fishermen confirmed the maps look accurate and they were generally comfortable with how the data was represented.

#### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- No comments provided.

#### Historical Data (1992-2012)

- No comments provided.

#### Impacts Due to MPAs

- No comments provided.

#### SPOT PRAWN

#### Aggregated Spatial Data (e.g., maps)

- Fishermen confirmed that on the whole maps looked accurate, however there was some concern regarding anonymity and requested that the map be suppressed to maintain anonymity.
  - Fishermen confirmed the backside of Catalina is accurate, however there should also be some level of effort depicted on the front side of Catalina.

#### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- Fishermen indicated that operating costs related to fuel and bait is lower for spot prawn when compared to other fisheries (e.g., lobster). However, there is a high investment in crew, which could be the reason for the average percentage of operating costs relative to gross annual revenue.

#### Historical Data (1992-2012)

- No comments provided.

#### Impacts Due to MPAs

- No comments provided.

#### SQUID –BRAIL

##### Aggregated Spatial Data (e.g., maps)

- Fishermen confirmed that the maps are acceptable. However, there was some concern expressed that Ecotrust did not speak with all members of the fleet.

#### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- Fishermen expressed concern that the average percentage of gross annual revenue allocated for operating costs seemed low, since 40% of the revenue per trip is allocated to the crew. Other fishermen identified paying crew 20% of revenue. Some suggested 50% would be a more accurate average for operating costs.
- 2012 only provided brailers ~20 days of fishing before the season closed. Additional days were fished as allowed by the “two ton” fishery regulation.
- Fishermen would like to see better relationship between management and the fishery, and for the quota to be based on fisheries dependent data.

#### Historical Data (1992-2012)

- Over the past few years, the quota for squid has been met early, leaving little opportunity for fishermen that brail to do so. This can put economic and emotional strain on fishermen.
- Fishermen identified the spike in average price per pound (1998) was likely due to the El Niño event that caused a decrease in the abundance of squid, but led to an increase price driven by Chinese demand.
- Chinese markets have positively impacted the price for squid. There was concern expressed over what will happen to the squid fishery once the Chinese markets are saturated.

#### Impacts Due to MPAs

- Losing access to key areas on Catalina, including Blue Cavern no-take SMCA and Long Point SMR have had large, negative impacts on the brail fleet.

#### SQUID – SEINE

##### Aggregated Spatial Data (e.g., maps)

- Fishermen made significant edits to their own maps (which will modify the aggregated map), particularly regarding the depths fishing takes place within (between 10-50 fathoms).

- Fishermen confirmed that in 2012, seiners did not fish Catalina.

#### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- For the fishermen Ecotrust spoke with, 2012 was an unusually high year for operational costs due to large maintenance and retrofit projects on their vessels.

#### Historical Data (1992-2012)

- Fishermen expressed concern with the data showing the number of fishermen in the fishery exceeded the 52 seiner permits available.
- Fishermen recalled that the spike in the number of fishermen in the fishery in 1996 was due to this being the year before the moratorium on new permits and fishermen wanted to secure their landings.
- The minimal landings in 1998 were due to the 1997-98 El Nino effect. Most fishermen are dual permit holders with coastal pelagics, and focused on that fishery in 1998.
- In 2010, 2011, 2012 the quota was met before the end of the season, however the fluctuations in pounds landed is due to landings by the brail fleet.

#### Impacts Due to MPAs

- Since the MPAs went into effect, squid have been available in such high numbers that fishermen have been able to work around MPAs. However, there have been years where squid remain inside an MPA and inaccessible for the greater part of a season. Concern was expressed for the impact fishermen face in future years where there may be less squid, and the squid are congregating within MPAs.

#### URCHIN

##### Aggregated Spatial Data (e.g., maps)

- Fishermen confirmed that the maps were generally accurate in representing fishing effort in 2012 with some exceptions (see below).
- Since Ecotrust did not speak with all members of the urchin fleet, there was concern expressed that not enough fishermen participated in a number of the ports to fully inform the information displayed on the maps.
  - Some fishermen felt that there are areas of fishing effort that were missing from the map (e.g., north of Pt. Vincente State Marine Conservation Area (SMCA), off Palos Verdes).
  - A number of fishermen indicated that more effort should be shown on the west end of Santa Cruz Island. Santa Cruz Island has become a fall back area that typically has good weather conditions following the implementation of both coastal and offshore MPAs in the Santa Barbara/Ventura area.
    - Other fishermen indicated they are seeing less fishing effort on Santa Rosa and Santa Cruz Islands.
  - One fisherman indicated that the maps for the Northern Channel Islands needs to reflect fishing effort that takes place at 10 fathoms, and in the coastal areas.
- San Clemente currently represents one of the most important areas for urchin fishermen fishing out of San Pedro.

- Even though areas of San Miguel and Santa Rosa are still open and highly productive, they are much further away than the coastal areas that were previously fished. This is very difficult for fishermen due to fuel costs, and those with smaller boats are unable to cross the channel.

#### Socioeconomic Aggregated Data (e.g., responses to survey questions)

- While the sample size of urchin fishermen interviewed in some ports was relatively small, urchin fishermen confirmed that the socioeconomic data provided a good representation of the conditions and sentiments within the fishing community.
  - Since some urchin fishermen are dually permitted for sea cucumber, fishermen were generally comfortable that additional operating costs they incur are shared across these two fisheries.
- Most urchin fishermen make all their income from the fishery and about 40% goes back to operating costs.
- Operating costs also vary depending on what type of air supply is used (SCUBA vs. hookah).
- There was some discrepancy regarding the percent of gross annual income in 2012 that was allocated for crew.
  - Channel Islands fishermen have larger boats and use SCUBA more often so they need to use more crew than in other regions.
- When presenting the average percent of revenue that goes to crew, fishermen who do not use crew should not be included in the average since it makes the percentage look lower than it should be.
- Most urchin fishermen, particularly those fishing south of Channel Islands Harbor, have a deep interest in building better working relationships with processors, particularly with regards to setting better standards for urchin "grades" and pricing.
  - Current prices (ranging from \$0.80-\$1.50 per pound) have not varied for last ten years, and do not consider increases associated with costs of living, nor the price per pound the processors receive.
  - The amount of money urchin divers earn is unpredictable and dependent on the amount a processor is willing to pay. Fishermen have no control over pricing.
- There is an interest to improve the urchin fishery's direct marketing capabilities, and fishermen would like to see the leadership within the urchin fishery have the opportunity to play a stronger role in setting fair pricing.

#### Historical Data (1992-2012)

- Fishermen explained that in the early 1990s, urchin was primarily exported to Japan.
- Spike in pricing in 1994 represents the strong economic climate of the United States, and strong exchange rate with Japan for product.
- In the late 1990s, Japan began receiving product from Russia and other countries, which spurred on the establishment of a local market.
- As identified above, most fishermen identified the processors as controlling the pricing and profit.
- In years where landings were higher in San Pedro than in Santa Barbara, pick up boats in San Pedro may be responsible for the higher landings for those years.

- Most fishermen agreed that the ocean has been healthy (e.g., good kelp cover) the last 7-8 years. This, coupled with a minimum size limit that gives urchins an opportunity to spawn before they are harvested, has been positive for landings and the fishery as a whole.
- A number of fishermen felt that the pricing included in the historical data is inaccurate.
  - Some fishermen commented that at times a low base price is recorded on a fish ticket and the actual pricing is later updated to reflect the quality of the urchin. The prices are not changed on the original ticket. Therefore, the data on price in CDFW's database is inaccurate.
- Fishermen shared that 1 in 3 permits in the urchin fishery typically is latent.

### Impacts Due to MPAs

- Almost all urchin fishermen expressed being greatly impacted by MPAs. Primary effects include:
  - Traveling greater distances, including through MPAs to get to "fishable" areas that are typically less productive. This requires more effort, more fuel, more time away from family, and a greater possibility of running into weather and/or having increases in boat maintenance.
  - Compression, compaction, creating more effort in open areas that are generally less productive.
  - Loss of useful "fallback" areas when weather is poor or simply as part of a fisherman's rotation so to not fish a specific area too hard. (E.g., Gull Island and Point Dume had huge impacts for the Santa Barbara and Channel Island urchin divers because they were good fallback areas during inclement weather.)
- Some fishermen indicated up to 50% of their traditional fishing grounds were no longer accessible due to MPAs.
- There were some fishermen who were puzzled by the 25% in San Pedro of urchin fishermen who identified they have not been impacted by MPAs.
  - A possible explanation is that those not impacted by MPAs are new permit holders.
- Some fishermen stated that MPAs were not necessary for the urchin fishery since they were harvested sustainably and the stock was healthy prior to implementing MPAs.
- MPAs create more effort in the open areas such that only small urchins are in the open areas and the closed areas are overgrown with urchins that eat all of the kelp and create urchin barrens, which is not beneficial to support fish and vital habitat.
- MPAs do not work for urchins and there is no "spill over" effect because urchins do not move inside and outside of MPAs. Additionally, most fishermen believe that the current harvest rates are sustainable for the fishery and do not need to be further restricted.

### QUESTIONS AND CONCERNS

The following are key questions and concerns expressed by fishermen across fisheries.

#### Ecotrust Socioeconomic Survey Methods

- Fishermen expressed concern that Ecotrust did not interview enough fishermen within specific fisheries (e.g., sea cucumber, squid).

- It was acknowledged that fishermen understood why there would be a reluctance to participate. There remains a great deal of mistrust of scientific data collection and research, particularly regarding how data used in MPA planning led to many closures of valuable fishing grounds.
- Most fishermen recognized the value of socioeconomic data collection, however concerns were raised as to how the data collected will be used and how fishermen will be adversely affected.
- Fishermen encouraged Ecotrust to build on and be informed by the many ecological research projects have been/continue to be conducted in the South Coast.
- A number of fishermen were interested in learning how NAFTA has contributed to socioeconomic shifts within specific fisheries.
- Fishermen also mentioned there is a disincentive for fishermen to participate in this study and provide information of this nature (or provide inaccurate information) for fear that the data may be used in a manner that incite new regulations and additional restrictions on the fishing community.

### Fisheries Management

- A number of fisheries management topics were raised during discussions with fishermen including:
  - Lobster: the lobster fishery management plan (FMP) that is currently in development was raised in most conversations with lobster fishermen. Some fishermen expressed that 300 traps should be the maximum with no option to stack multiple permits; while other fishermen did not believe a trap limit was needed. Most fishermen expressed the need to better regulate the sport industry. Transferability of permits was also a concern, with many fishermen identifying this as a driver for increased traps in the water.
  - Nearshore finfish: fishermen expressed confusion and frustration that there has been no increase to the quota, even though the number of permits has decreased.
  - Sea Cucumber: interest expressed in convening a meeting with the fleet, CDFW to discuss redesigning sea cucumber management.
  - Squid: concern was raised that the brail fleet will no longer have access to the "two-ton" fishery. Additionally, fishermen expressed concern that the quota that has been set is not based in science, and would benefit by being flexible to reflect the ever-changing biology/ecology of the species.
- Fishermen expressed that CDFW is focused on creating revenue rather than effectively managing California's ocean resources. Fishermen would like to see CDFW managers have additional credentials in fisheries management, economics, etc.
- A number of fishermen stated that if there is limited entry in one fishery then there should be limited entry in all fisheries to prevent a transfer of effort from one fishery to another.
- Some fishermen expressed interest in developing co-management strategies with CDFW.
  - Fishermen have extensive ocean experience and many have been making observations for over 30 years. Including fishermen's knowledge as a key part of fisheries management is essential to the success of California's commercial fisheries.
  - Fishermen would like to be considered as resource managers who are invested in protecting the resource.

### Other

- Some fishermen expressed concerns about how MPAs are adding complexity to Federal programs like VMS, as fishermen need to identify if they are planning to transit an MPA. Enforcement demands and increased costs associated with VMS are a problem.
- A number of fishermen identified the recent – and plans for ongoing – sand replenishment activities in north San Diego County. Fishermen would like to see research conducted on the effects of sand replenishment on local fisheries, particularly lobster, urchin, and sea cucumber.

### RECOMMENDATIONS FOR FUTURE MANAGEMENT CONSIDERATIONS

The following are recommendations for future management considerations expressed by fishermen across fisheries.

#### Socioeconomic Data Collection

- For fisheries where permits are transferable, fishermen identified the need to better understand how permits move within a fishery (i.e., geographically, age of fishermen, etc.) and how these shifts may impact a specific port or community socially and economically.
- Most fishermen would like to be more involved in the collection and interpretation of data.

#### Adaptive MPA Management

- Many fishermen identified rotating MPAs as a beneficial management approach, particularly for urchin and lobster fisheries since permanent MPAs do not help improve those stocks. The state of Washington's approach to rotating urchin fishing grounds was identified as possible model.
  - Additionally, urchin fishermen would like to have access to MPAs to translocate larger urchin out of MPAs to avoid urchin barrens within MPAs and improve overall quality.
- Fishermen would like to see MPA management better integrated with fisheries management and the Marine Life Management Act (MLMA).
- Fishermen are concerned that their participation in projects that collect socioeconomic information are designed to gather information that will be used to restrict access and place limits on a fisherman's livelihood. Most fishermen want to ensure the time they have invested in participating in a survey does not negatively impact them in the short- and long-term.

#### Fisheries Science

- Fishermen expressed the need for better understanding of the lifecycles of specific species (e.g., sea cucumber, squid, lobster), as well as interspecies relationships.

#### Fisheries Management

- Most fishermen would like better fisheries management based on robust, neutral science and informed by fishermen's knowledge to maintain ecological longevity and economic security.
- Some fishermen are interested in collaborating with scientists and managers in research projects. A recent collaborative project with lobster fishermen was highlighted as a model that could be used for other fisheries.
- Fishermen identified a number of fisheries where they felt management measures should be revised (e.g., quota for squid) or strengthened (e.g. sea cucumber).
  - Some fishermen identified the need for a size limit in the sea cucumber fishery.

- A number of fishermen were interested in learning about the harvest patterns in each port, including the number of permits by port correlated with catch and block numbers, number of active/inactive permits, number of part-time fishermen, number of buyers and distribution scale, etc.
- Fishermen would like to have landings receipts cross-referenced with buyer's receipts (especially in the urchin fishery) to help improve accuracy and transparency of data.