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Trinidad Harbor Fishing Community Profile

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California's North Coast Fishing Communities Historical Perspective and Recent Trends

Trinidad Harbor Fishing Community Profile

**Final Report
to the
California State Coastal Conservancy
Award 06-128**

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EXECUTIVE SUMMARY

Background

National Standard 8 of the Magnuson-Stevens Fishery Conservation and Management Act requires that fishery managers consider the importance of fishery resources to fishing communities, to provide for their sustained participation and to minimize adverse economic impacts on them, consistent with conservation objectives. Similarly, California's Marine Life Management Act mandates the use of socioeconomic as well as biophysical Essential Fishery Information to meet fishery management goals. Information on how individual fisheries and port communities operate is important to meeting these mandates. Yet, such social science information on Northern California port communities has been sparse until recently.

This profile of the Trinidad Harbor fishing community describes the history of the area and its fisheries, present-day fishery operations, activities and associated infrastructure. It identifies some of the key regulatory and economic factors highlighted by study participants that interact with and affect the local fishing community. It is intended for use in a range of processes, from local planning and education to state and regional management.

The information presented is based on the collection and integrated analysis of archival and field data to interpret patterns, variability and change within and across fisheries and the fishing community over time. Data sources include:

- Commercial fish landing receipt data for 1981–2007 reconfigured into 34 distinct species/gear combinations;
- Commercial Passenger Fishing Vessel (CPFV) logbook data for 1980–2007;

- An extensive review of the published and gray literature, including fishery status reports and historical fishery statistics (as available); and
- Field observation, interviews and group meetings with about 30 fishery participants and other knowledgeable individuals.

History of the Trinidad Harbor Fishing Community

Located 300 miles north of San Francisco and 25 miles north of Eureka, Trinidad is known for its spectacular scenery, unique cultural history, and abundant natural resources. Once home to the Yurok village of Tsurai, Trinidad became a hub for the gold mining, whaling and timber industries in the mid- to late-1800s. As those industries declined, residents turned increasingly to fishing as a source of livelihood.

Following the Hallmark family's construction of the Trinidad Pier in 1946 and a mooring basin soon after, Trinidad became an active fishing village, with smokehouses and a seasonal 'mosquito fleet' of up to 400 salmon trollers by the late 1970s. Charter fishing operations, first established in 1952, provided recreational fishing opportunities for visitors and residents alike.

Over the past 30 years, growing concerns about the status of West Coast salmon and groundfish stocks prompted the Pacific Fishery Management Council (PFMC) and the state to implement increasingly stringent management measures for commercial and recreational fisheries. Cumulatively, these measures have discouraged (nontribal) fishing along much of the North Coast, resulting in substantial reductions in both commercial and recreational fishing activity and contributing to social and economic impacts that have altered the fisheries landscape at Trinidad.

The Trinidad Harbor Fishing Community Today

Dungeness crab pot is the primary commercial fishery, with salmon and groundfish hook-and-line vessels contributing more modestly to local activity. With limited salmon fishing opportunities, charter and private boat fishermen focus primarily on groundfish; some also target halibut and crab. Many of Trinidad's approximately 300 residents and those who live in the surrounding area fish commercially, recreationally and/or for subsistence. In addition, many of the more than 12,000 people who visit Trinidad each year participate in a variety of marine-related activities, contributing substantially to the local economy.

The Trinidad Pier, owned and operated by the Cher-Ae Heights Indian Community of the Trinidad Rancheria since 2000, is the focal point of local fishing activity. In addition, it serves nonfishing visitors and accommodates Humboldt State University Marine Lab's saltwater intake pipe. The harbor is less developed than larger ports in the region due to its geography. Key fishery infrastructure includes the 540-foot pier, 100 seasonal and about 20 permanent moorings, a launch ramp, parking area and tackle shop. A restaurant at the base of the pier attracts visitors year round. There are no processing, ice-making or cold storage facilities onsite; most of the commercial catch is offloaded by Rancheria staff and distributed outside the community. The pier's fuel dock (which had fallen into disrepair) and fish cleaning station have been removed in recent years due to water quality issues, and the aging pier is slated for reconstruction.

The harbor hosts a fleet of about 17 resident commercial fishing operations and six charter operations, which together employ about 50 people. Most of these fishermen depend on

fishing as their primary, if not their sole, source of income. The harbor also hosts many resident and nonresident anglers, particularly during the summer months.

Commercial Fishing Activity Highlights

Relative to the *long term* (1981–2007), average annual fishing activity has increased in *recent years* (2003–2007) in terms of landings (+58%), ex-vessel value (+42%) and buyers (+36%), and decreased in terms of boats (-62%) and trips (-32%).

- The crab fishery, which accounted for an annual average of 80% of landings and 70% of ex-vessel value from 1947 through 1980, maintained its dominant position from 1981 through 2007, its average annual share of landings and value increasing to 93%.
- Salmon played a substantial role into the early 1980s. However, in recent years, salmon landings and ex-vessel value have accounted on average for less than 3% of total landings and value, with 12% of boats participating in the fishery.
- A small hook-and-line fishery for rockfish and lingcod accounted on average for about 1% of landings and ex-vessel value with 17% of commercial fishing vessels active from 1981 through 2007.

Landings and ex-vessel value peaked in 2006 at 1.9 million pounds worth \$3.1 million, with crab accounting for 99% of both landings and value.

The number of boats and trips peaked in 1982, when 221 boats made 4,651 deliveries, 63% of which were salmon. In 2007, 24 boats made a low of 925 deliveries, 90% of which were crab.

The average number of buyers is greater in recent years (peaking at 19 in 2007) relative to the long term. These buyers include several (and a growing number of) fishermen who handle their own catch.

Average annual ex-vessel prices in the crab pot and rockfish/lingcod hook-and-line fisheries are (respectively) 11% and 5% lower in recent years compared to the long term, whereas the annual average price of salmon is 14% higher.

Total average annual revenue per boat for ‘Trinidad boats’ (those with a plurality of their earnings from landings at Trinidad) increased nearly tenfold from \$10,000 to \$94,000 per vessel between the 1981–1983 and 2005–2007 periods. This change was driven largely by the sharp decline in lower-earning salmon trollers and the increased predominance of crab boats (for whom average annual revenue increased from \$40,000 to \$112,000 between the 1981–1983 and 2005–2007 periods). It is not clear, however, how these increases in revenue per boat compare to costs (which also have increased over time).

Recreational Fishing Activity Highlights

Given the stringent restrictions on salmon fishing since the mid-1990s, ocean anglers at Trinidad have increasingly targeted groundfish, especially rockfish, lingcod and halibut. Community members view groundfish as a second choice to, but not a substitute for, salmon. Some locals also participate in the winter crab fishery.

- Private boat activity has declined, as indicated by reduced use of seasonal moorings (from about 400 to 90) and reduced launch ramp use (from 45–60 launches per day to 10–30 in recent years).
- The average numbers of CPFVs boats, trips and angler days at Trinidad are, respectively, 68%, 95% and 84% greater in recent years compared to the long term.
- Trinidad is the most active CPFV port in the Redwood District (Humboldt and Del Norte counties), accounting for an average of 41%–46% of activity on all measures (boats, trips and angler days) in the long term and increasing to 75%–81%, in recent years.

Key Factors Affecting Trinidad Harbor Fisheries

Salmon fishery management: The implementation of stringent regulations on (and at times, complete closure of) the commercial salmon fishery by the PFMC, as well as the state’s limited entry program initiated in the early 1980s, led to a sharp decline in the commercial salmon troll fleet, which had become the centerpiece of the Trinidad community in the summer. The core commercial fleet that remained increased its focus on the winter crab fishery; some also entered or increased their activity in the recreational charter fishery. Reduced harvest allocations to nontribal fisheries in the early 1990s led to further reductions in fishing opportunities, and sharply curtailed the seasonal influx of summer fishermen and the associated economic activity on which many local businesses such as smokehouses, tackle shops, grocers and RV parks depended.

Groundfish fishery management: Increasingly strict federal catch limits since the 1990s, together with the 2003 implementation of restricted access in the state’s nearshore fishery, have limited commercial fishery participation and made it cost-prohibitive for most buyers to purchase and transport the relatively small amounts of fish landed at Trinidad. Recent time and area closures to protect yelloweye rockfish, coupled with the 2008 salmon closure and the limited (10-day) 2009 season, eliminated many local recreational fishing opportunities, further straining local support businesses and negatively affecting the community’s sense of well-being.

Water quality management: In 1974, the state designated the Trinidad Kelp Beds an Area of Special Biological Significance (ASBS); in 2002, it was classified as a state Critical Coastal Area (CCA). Since acquiring

the pier and associated infrastructure in 2000, the Rancheria has taken several actions to meet the site's particularly high water quality standards while addressing the needs of the fishing community, which depends on safe, functional infrastructure.

Increasing costs: For fishery support businesses dependent upon recreational visitors, high fuel costs, coupled with the broader economic downturn as well as fishery closures, have contributed to reduced demand for their goods and services. Commercial fishery participants also cited increases in fuel, dockage and offloading fees, an estimated 35%–40% increase in the cost of crab pot materials, and the assessment levied on crab catches to help repay the federal West Coast groundfish trawl buyback loan.

Variable and uncertain revenues: Despite the increase in average revenue per boat in recent years, commercial fishery participants remain subject to natural variability in crab stocks and regulatory constraints on rockfish and salmon fishing. Variable and uncertain revenues from fishery-related activities affect the Rancheria's ability to maintain and repair the pier and associated facilities.

Current Situation and Outlook

The Trinidad Harbor fishing community continues to adjust to changes in fishing opportunities, as well as requirements stemming from the area's designation as an ASBS/CCA. The commercial sector's primary dependence on a single fishery (crab) and the recreational sector's limited fishing opportunities make them potentially vulnerable to changing resource, regulatory and market conditions. In addition, the North Coast Marine Life Protection Act process, begun in late 2009, is likely to lead to additional closures of nearby state waters. The Rancheria is actively pursuing funding to replace the pier; however, securing full funding for the \$8-million project has been difficult, given these factors and the current economic climate.

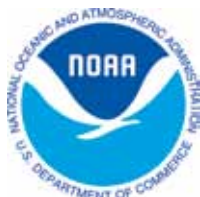
Nonetheless, the Trinidad Harbor fishing community is well positioned to address these challenges. As a natural harbor with modest infrastructure (pier, launch ramp and moorings only), there are no navigation channels or slips to be maintained. The Rancheria has more operational flexibility than most publicly managed facilities, and has successfully collaborated with the City of Trinidad and others to obtain partial funding for the much-needed reconstruction of the pier. The fishing community is a small but substantially integrated group, and most individuals recognize that their respective needs are interdependent. These features lend the Trinidad Harbor fishing community a degree of resilience that may enable it to effectively address the challenges and opportunities that lie ahead.

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Cover photo by J. Popenoe, <http://pages.suddenlink.net/popenoe/scenes/Trinidad.htm>.

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INTRODUCTION

Trinidad Harbor has supported commercial and recreational fisheries for well over a century. Located 300 miles north of San Francisco and 25 miles north of Eureka (Figure 1), Trinidad is known for its spectacular scenery, unique cultural history, and abundant natural resources. Recognizing the area’s natural assets, the State designated the Trinidad Kelp Beds as an Area of Special Biological Significance (ASBS) in 1974 (State Water Resources Control Board (SWRCB) 1974); in 2002, it was classified as a state Critical Coastal Area (CCA).¹ Most fishery-related activity centers around Trinidad Pier, built by the Hallmark family in the 1940s and operated by them until 2000, when the Cher-ae Heights Indian Community of the Trinidad Rancheria purchased it. Since then, the Rancheria has managed operations at the pier, and is leading a planning process that includes elements to meet stringent ASBS/CCA water quality standards and improve facilities to meet the needs of the fishing community, other community members, and visitors.

Trinidad is notable for its particularly rugged and undeveloped coastline and ready access to marine resources that have supported fisheries

for Dungeness crab (*Cancer magister*), groundfish (various roundfishes, flatfishes and rockfishes (*Sebastes* spp.)) and historically, coho (*Oncorhynchus kisutch*) and Chinook (*O. tshawytscha*) salmon. These and other coastal and marine resources – and the area itself – were central to the physical and cultural well-being of the residents of the Yurok village of Tsurai (as they are to Trinidad Rancheria members today; (Trinidad Rancheria 2009). Trinidad became a hub for the gold mining, whaling and timber industries in the late 1800s. As those industries declined, commercial fisheries for crab and salmon grew, with smokehouses and a seasonal ‘mosquito fleet’ of up to 400 salmon trollers by the late 1970s.

Both residents and visitors to Trinidad have participated in recreational and/or subsistence ocean fishing for decades, especially since the opening of the boat basin and launch facilities in the late 1940s. Marine-related activities are a substantial part of Trinidad’s economic base. With a resident population of about 300, Trinidad attracts more than 12,000 visitors annually who enjoy the area’s state parks,



Figure 1. Map of Trinidad Harbor, California

fishing opportunities and other amenities (Sloan and Rocha 2007). In addition, the Humboldt State University Marine Laboratory is located near the harbor, and depends on the pier infrastructure to accommodate its seawater intake systems.

NOAA's National Weather Service has noted that the area from Eureka north, including Trinidad, is uniquely positioned to experience some of the worst and most dangerous winter storms and summer fog associated with coastal upwelling. These conditions frequently and substantially limit access to fishing grounds. Although protected from northerly storms by Trinidad Head, the pier and mooring basin are exposed to southerly storms, which can wreak havoc on fishing operations. In 1959, an intense winter storm damaged the pier such that it had to be shortened by 20 feet. More recently, in the winter of 2007–2008, another storm led to the loss of the boat of a seasoned local fisherman. While some might consider the exposure too risky, most fishermen who operate in the area have come to know and accept the conditions, and are willing to persevere in order to access the rich nearby fishing grounds.

This profile of the Trinidad Harbor fishing community provides a history of the area, focusing on the development of ocean fisheries and related infrastructure, with particular emphasis on the period since 1981 (for which detailed electronic landings data are available).² It describes present-day fishery operations, activities and associated infrastructure; and discusses some of the key regulatory and economic factors highlighted by study participants that interact with and affect the local fishing community.

The information presented here is based on archival and field research conducted between July 2007 and March 2009.³ Fieldwork included observation, informal and formal

interviews and group meetings. These activities engaged approximately 30 people, including 12 local commercial and recreational fishermen, three fish buyers, owners and employees of three fishery-support businesses, the harbor manager and other Rancheria and City staff, as well as other community members who have experience and knowledge of local fisheries. Field data were analyzed together with existing commercial and recreational data and information from other primary and secondary sources to interpret patterns, variability and change within and across fisheries and the fishing community over time.

History of the Port and the Surrounding Area

Prior to European settlement, the area now known as Trinidad was part of the Yurok Territory.⁴ One of the largest coastal Yurok villages, Tsurai (meaning 'mountain'), was located in the protected cove south of Trinidad Head. According to a recent Trinidad Rancheria report:

Traditionally our people subsisted on the abundant plants of the redwood forests (e.g., acorns, mushrooms, and wild herbs and teas), large game animals (e.g., deer and elk) and — as the most readily available and healthful sources of protein — salmon, rockfish (e.g., cod and snapper) 'surf' fish (smelt), shell fish (e.g., clams, crab, and mussels), and seaweed, all caught or gathered along the ancestral coastline (Trinidad Rancheria 2009).

In 1775, Spanish explorers sailed into the bay and claimed the land for Spain, naming it Trinidad (after the doctrine of the Holy Trinity). Subsequent explorers and fur traders visited the area, but it was not until the gold rush of 1850 that settlers came to stay.

Once gold was found in the Klamath, Trinity and Salmon Rivers, Trinidad was established and grew rapidly, reaching a population of 3,000 by 1851 (Murray 1950). The first official town in Humboldt County, Trinidad was the county seat from 1852 to 1854, and connected people and supplies to gold mining operations inland. Over the next several decades, fishing (mainly

for salmon), whaling and logging operations were active in and around Trinidad. The first timber mill was built at Mill Creek, just north of Trinidad, in 1853. A handful of other mills followed but, by the early 1880s, most closed as interest focused on the highly productive timber trade at Eureka (Sloan and Rocha 2007).

Trinidad Harbor Fishing Community Timeline

1800	Tsurai Community's first contact with European-Americans
1850	Gold discovered Trinidad established
1871	Trinidad Head Lighthouse built
1908	Trinidad Rancheria established
1920s	Whaling stations active Katy's Smokehouse begins processing salmon, crab
1945-46	Hallmark family builds pier
1948	Mooring basin opens
1950s	Skiff rentals encourage recreational fishery Charter fishing begins Smokehouses process salmon, crab
1959	Major winter storm damages pier and boats
1961	Highway 101 built past Trinidad
1970s	"Mosquito fleet" of 400 salmon trollers
1974	Boldt Decision Trinidad Area of Special Biological Significance (ASBS) established
1976	Magnuson-Stevens Fishery Conservation and Management Act (MSA)
1979	Klamath Management Zone (KMZ) established
1982	Salmon limited entry
1985	KMZ commercial salmon fishery closure
1992	KMZ recreational salmon fishery limited to 14 days Dungeness crab fishery moratorium on entry
1993	Salmon re-allocation to tribes (50%) Coho retention prohibited in commercial fishery
1994	Groundfish limited entry Salmon disaster Coho retention prohibited in KMZ recreational fishery
1995	Dungeness crab limited entry
1996	Sustainable Fisheries Act (MSA re-authorized)
1997	Fuel dock closes
1998	Marine Life and Nearshore Fishery Management Acts
1999	Marine Life Protection Act (MLPA)
2000	Trinidad Rancheria purchases pier West Coast groundfish disaster
2002	Nearshore Fisheries Management Plan (FMP) adopted First federal Rockfish Conservation Area (RCA) established Trinidad ASBS classified as a Critical Coastal Area
2003	Nearshore fishery restricted access
2006	MSA re-authorized Klamath salmon disaster Fish cleaning station removed from pier
2008	Statewide salmon disaster and fishery closure In-season recreational rockfish closure
2009	Statewide salmon disaster and fishery closure North coast MLPA process begins

During this time of intense settlement in the north coast region, many native peoples were forced off their land. The U.S. government negotiated with the Yurok, Karuk and Hupa tribes to establish Indian lands and reservations and quell the violence between settlers and Indians. According to Sloan and Rocha (2007), “Tsurai people were invited to attend the treaty meeting at Eel River with the possibility of moving to that proposed reservation, but declined, stating that they preferred to remain in their oceanside village.” However, as the City of Trinidad became more established, the Tsurai people were gradually displaced from their ancestral territory, with the last member of the village forced to move around 1916.⁵ Displaced Indians who did not go to the Hoopa Valley Indian Reservation (established in 1864) were later granted land rights through a 1914 Congressional act [38 Stat. 589 Chap. 222 Sec. 3, 1914]. The 60-acre Trinidad Rancheria, established in 1908, became home to the Cher-Ae Heights Indian Community, a federally recognized tribe with ancestral ties to the Yurok, Wiyot, Tolowa, Chetco, Karuk and Hupa peoples (Trinidad Rancheria 2009, City of Trinidad 2007).

History of Trinidad Pier Fisheries

Nontribal river fisheries for coho and Chinook salmon were active locally from the mid-1800s. The ocean salmon fishery, begun in Monterey Bay in the late 1880s, reached the North Coast by 1920 and, by the late 1920s, salmon fishermen were active in Trinidad (Feinberg and Morgan 1980). Trinidad Pier, built by the Hallmark family to support timber production and commercial fisheries, opened in 1946; the mooring basin opened in 1948. Infrastructure and services at the pier included a restaurant, a fuel dock and a bait and tackle shop located under the pier, a water taxi for transport to and from moorings, and a fish cleaning station. At least three smokehouses operated locally, processing commercially and recreationally caught salmon.

Long-term landings data suggest that the commercial fishery for Dungeness crab was active at least since the 1940s (Figure 2). For example, the year after the pier was built (1947), crab accounted for 60% of commercial fishery landings and 74% of the ex-vessel value at Trinidad. Fish companies such as Tom Lazio Fish Company, Hallmark Fisheries, and Eureka Fisheries received Dungeness crab, salmon, and other species. Katy’s Smokehouse, a local receiving and processing operation run by Katy State, received fish for out-of-area buyers, processed crab, and smoked salmon (for recreational and commercial fishermen). At least two other local smokehouses also processed salmon.

Marked growth in Trinidad’s recreational fisheries began in the early 1950s, following the opening of the boat basin adjacent to the pier to serve recreational as well as commercial fishermen. To provide more ocean fishing opportunities for anglers, the Hallmarks began renting skiffs. Trinidad’s first two charter operations started in 1952, targeting salmon and to a lesser extent rockfish. Locals, too, fished frequently during the summer for salmon, in the winter for crab, and year-round for rockfish, launching from the beach or the pier’s launch ramp. For Rancheria members, subsistence activities included fishing for or collecting “salmon, clams and abalone (as both food sources and for the shells, which are used in ceremonial regalia), mussels, seaweed, eels, crab, surf fish, candle fish and sea salt... all along the coast line from the Luffenholtz Beach area to the Trinidad Harbor and beyond” (Trinidad Rancheria 2009).

The area became more accessible with the opening of U.S. Highway 101 in the early 1960s. Salmon availability and easy access attracted retirees, teachers and others who would trailer their boats to Trinidad and stay for weeks or the entire summer to fish. Many anglers bought commercial licenses so they

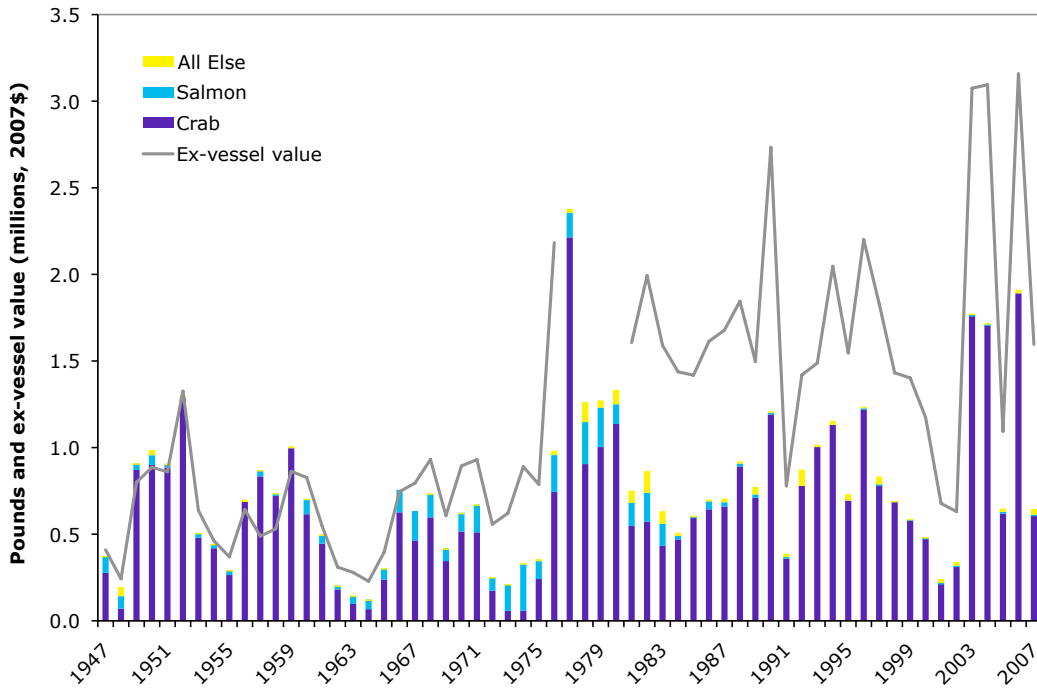


Figure 2. Pounds and ex-vessel value of commercial fishery landings at Trinidad, 1947–2007 (CDFG Fish Bulletin Series) Note: Ex-vessel value data for 1977–1980 are not available.

could catch more fish and offset expenses. This ‘mosquito fleet’ grew to as many as 400 vessels that used seasonal moorings, and more that launched from the ramp or the beach. Fishing activity generated revenues for Trinidad and its growing number of support businesses including the pier, smokehouses, RV parks, the local grocery store, restaurants and others.

In 1978, the Pacific Fishery Management Council (PFMC)⁶ implemented a Salmon Fishery Management Plan (FMP). In 1979, to better address concerns regarding fishery impacts on Klamath River fall Chinook, the PFMC established the Klamath Management Zone (KMZ; Pierce 1998), which extends from Humbug Mountain near Port Orford, Oregon to Horse Mountain, California, and encompasses Trinidad fishermen’s primary fishing grounds. In 1982, California adopted a statewide limited entry program for commercial trollers. By 1984, the PFMC had shortened the commercial salmon season in the KMZ to approximately

two months – much shorter than the 5-6 month seasons in other areas south of Cape Falcon, Oregon. This action reflected the PFMC policy of imposing greater restrictions in areas with greater impacts on Klamath fall Chinook (the KMZ) in lieu of lesser restrictions over a larger geographic area. As a result, commercial salmon seasons in the California KMZ have at times been only days or weeks in duration, and in some years completely closed as first occurred in 1985.⁷

Beginning in 1992, the PFMC prohibited retention of coho in the commercial salmon fishery south of Cape Falcon, Oregon due to conservation concerns regarding Oregon Coastal Natural coho (PFMC 1992; Trinidad Harbor Fishing Community Timeline). This led to fishery disaster declarations for California and Oregon fishing communities in 1994 and 1995. Although the KMZ commercial fishery was not as dependent on coho as fisheries further north, the California

KMZ was completely closed from 1992 through 1995, largely due to more localized factors that compounded the effects of the coho nonretention policy. In 1993, Klamath fall Chinook was declared overfished (PFMC 1994), and the Department of Interior Solicitor issued an opinion allocating 50% of Klamath-Trinity River salmon to the Yurok and Hoopa tribes. This was significantly higher than the 30% tribal allocation brokered by the Klamath Fishery Management Council in a previous 1987–1991 agreement, and required reduced allocations to nontribal fisheries, including the KMZ commercial fishery (Pierce 1998).⁸ The cumulative effect of these management actions was to discourage (nontribal) salmon fishing along much of the North Coast, resulting in substantial reductions in both commercial and recreational fishing activity at Trinidad, as elsewhere.

In 2006, the failure of Klamath fall Chinook to meet its escapement floor for the third consecutive year prompted closure of the commercial salmon fishery in California's KMZ. Then, in 2008 and 2009, the commercial fishery was closed statewide due to low escapements of Sacramento River fall Chinook. All three closures were accompanied by disaster relief for affected fishing communities. The 2008–2009 closures were unprecedented for many salmon-dependent fishing communities, and exacerbated conditions in North Coast communities following more than two decades of severe restrictions on the KMZ salmon fishery.

Fishing opportunities also have been curtailed by state and federal management in the West Coast groundfish fishery. In 1982, the PFMC implemented its Groundfish FMP and managed the commercial fishery with measures such as harvest guidelines, trip landing and trip frequency limits, size limits, and gear restrictions. In 1992, the PFMC adopted a harvest rate policy for groundfish

based on the assumption that West Coast groundfish were similar in productivity to other well-studied groundfish stocks. In 1994, the PFMC implemented a limited entry program resulting in differential regulations (including differential trip limits) for limited entry and open access vessels. Groundfish vessels in Trinidad fell into the open access category and have been affected by open access regulations since. To afford fishery participants with more flexibility and better enable them to reduce discards, trip landing limits were subsequently replaced with vessel cumulative landing limits that gradually increased in duration (weekly, biweekly, monthly, bimonthly).

In subsequent years, as growing scientific evidence indicated that rockfish (*Sebastes* spp.) had productivity rates much lower than other groundfish species, the PFMC adopted increasingly restrictive management measures for rockfishes.⁹ However, these measures came too late to reverse the effects of longstanding harvest policies based on inaccurate assumptions, and between 1999 and 2002, eight groundfish stocks were declared overfished.¹⁰ In 2000, a federal disaster was declared in the West Coast groundfish fishery.

In order to rebuild overfished stocks, optimum yields (OYs) and trip landing limits for healthy stocks typically taken with overfished species were reduced further for both limited entry and open access vessels. The PFMC also implemented Rockfish Conservation Areas (RCAs) to reduce the catch of overfished species (PFMC 2008). The first federal RCA, implemented in September 2002, closed continental shelf and slope waters to commercial groundfish fishing from near Cape Mendocino north to the Canadian border. Additional broader restrictions followed in subsequent years, some of which affected groundfish vessels at Trinidad. These included depth-based closures and (in 2008) the extension of the limited entry vessel

monitoring system requirement to nontrawl open access vessels.

State management of the groundfish fishery also expanded during this time. The passage of the Nearshore Fishery Management Act (within the state's Marine Life Management Act) in 1998 established minimum size limits for 10 commonly caught nearshore species, and mandated the development of a Nearshore FMP. In 2001, the nearshore rockfish fishery was closed outside 20 fathoms from March through June. Two years later, the state implemented its Nearshore FMP, which specified management measures for 19 nearshore species, including gear and seasonal restrictions as well as a restricted access program as means to achieve the statewide capacity goal of 61 participants (down from 1,128 in 1999). Of the 216 transferable permits issued, 29 were allocated to the North Coast (Cape Mendocino north to the Oregon border); two of these permits are held by Trinidad area fishermen.

The Dungeness crab fishery, long an important fishery for Trinidad-based operations, has not experienced the types of drastic management changes as occurred in the salmon and groundfish fisheries. In managing the fishery, the state uses a "three S" (sex, size, season) strategy that includes male-only harvest (since 1897), a minimum size limit (since 1911) and a limited season (since 1957). In 1992, a moratorium on entry was established; restricted access was implemented in 1995. The northern crab season usually runs from December 1 through July 15, but its start has been delayed in some years because of price disputes. In addition, the opening may be delayed to insure that male crabs have completed molting, as occurred in 2005. In 2009, the state convened a Dungeness Crab Task Force in response to concerns about recent increases in participation and gear use. Following the recommendation of the Task Force (California Dungeness Crab

Task Force 2010), a bill that would establish a pilot crab pot allocation program to address those concerns (SB 1039, Wiggins) is pending in the State Legislature.

Recreational fisheries at Trinidad, which primarily targeted salmon, have similarly been affected by KMZ restrictions related to management of Klamath River fall Chinook and tribal allocation changes. However, due to its lesser impact on Klamath fall Chinook, the KMZ recreational fishery has generally been less constrained than the commercial fishery (though more constrained than the recreational salmon fishery elsewhere in the state). In 1986, the season in the California KMZ was reduced from about nine months to five months. Since then, seasons in the California KMZ have generally ranged from one to six months, with several notable exceptions (i.e., the 14-, 0-, and 10-day openings in 1992, 2008, and 2009 respectively). This is in contrast to other parts of the state, where the recreational season generally extends for six to nine months (PFMC 2009). While the KMZ recreational fishery is much reduced from the peak periods of the 1970s and 1980s, it remains an active fishery that attracts both resident and nonresident anglers, at least in those years when recreational fishing opportunity is available.

The recreational groundfish fishery has been increasingly constrained since the late 1990s to address concerns regarding depleted or overfished stocks, particularly rockfishes. As a result, the California Department of Fish and Game (CDFG) has been required to make trade-offs between closing areas (i.e., spatial management) and shortening the season. Measures have included bag limit reductions first implemented in 1998, inseason closures since 2000, and depth-based closures starting in 2004. In 2008, CDFG closed the fishery four months early (on September 2) due to a very low OY for overfished yelloweye rockfish (*Sebastes ruberrimus*).

In addition to the changing fisheries landscape, circumstances at the pier have changed as well. In the early 1990s, the fuel dock fell into disrepair and was subsequently closed. In 2000, the Trinidad Rancheria purchased the pier and associated property from the Hallmark family. Soon afterward, the Rancheria began work to address deferred maintenance, and removed the fuel dock and fuel storage tanks, which had been leaking. With increasingly strict water quality standards related to the area's status as an ASBS/CCA, the fish cleaning station was removed in early 2008. Water quality and safety concerns related to the 60-year old pier have led the Rancheria to pursue coordinated harbor planning with the Trinidad community and seek funding to replace the pier and its facilities (Trinidad Rancheria 2009).



THE TRINIDAD FISHING COMMUNITY TODAY

The Trinidad fishing community consists of both commercial and recreational fishery participants and their families, as well as fishery-support businesses located at the pier and in town (Table 1). Because Trinidad is a small community, local fishermen also rely on businesses elsewhere in the region for additional services, gear and supplies (Table 2). Local commercial fisheries are primarily focused on crab, but also include some nearshore groundfish and salmon. Recreational fisheries include private boat operations as well as six charter operations that cater mainly to nonresidents, primarily offering groundfish and crab trips and, when available, salmon trips.



Table 1. Local infrastructure and support businesses used by Trinidad fishery participants.

Business Type	Business Name
Fish receivers/buyers	Trinidad Rancheria Hallmark Fisheries Nor Cal Seafoods
Processors	Katy's Smokehouse
Marine Supply	Ace Hardware Salty's Surf N Tackle Seascape Tackle Shop
Vessel Repair/Maintenance	None
Marine Refrigeration	None
Cold Storage	None
Ice Facility	None
Fuel Dock	None
Commercial Diver	Private Individual
Retail Fish Market	Murphy's Market Katy's Smokehouse
Charter Operations	Betty Ellen Charters, F/V <i>Betty Ellen</i> Northwind Charters, F/V <i>Pioneer</i> Patrick's Point Charters, F/V <i>Toni Rae II</i> Shenandoah Fishing Charters, F/V <i>Shenandoah</i> Trinidad Bay Charters, F/V <i>Jumpin' Jack</i> Wind Rose Charters, F/V <i>Wind Rose</i>
Port Management	Trinidad Rancheria
Restaurants	Seascape Restaurant
Motels and RV Parks	Emerald Forest of Trinidad Ocean Grove Lodge Sylvan Harbor Trinidad Bay Trailer Court

Table 2. Out-of-area businesses used by Trinidad Harbor fishery participants.

Business	Type	Location
Cloudburst Fishing Company	Boatbuilding and repair	Eureka
Costco	Miscellaneous supplies	Eureka
Custom Crab Pots	Crab pot materials	Eureka
Drilling Machine Shop	Machine shop	Eureka
Englund Marine	Marine supply	Eureka
Eureka Ice & Cold Storage*	Cold storage	Eureka
Eureka Oxygen	Welding services/ supplies	Eureka
Fabcast, Inc.	Electronics/hydraulics	Eureka
Fred's Marine Electronics	Electronics	Eureka
Hallmark Fisheries	Buyer	Charleston, OR
Humboldt Bay Harbor, Recreation and Conservation District	Haul-out, refuge during storms, seasonal mooring	Eureka, Fields Landing
Mad River Outfitters	Marine supply	Arcata
NOAA Weather Service	Weather information	Eureka
Nor Cal Fisheries	Buyer	Oakland, CA
Outboard Center**	Outboard mechanic/parts	Arcata
Pro Sport Center	Diving service	Eureka
Quality Crab Pots	Crab pot materials	Rio Del
Renner Petroleum	Fuel	McKinleyville
Southbend Packers	Buyer	South Bend, WA
Trinity Supply	Diesel mechanic	Eureka
Various	Bait	Los Angeles, Eureka; Reedsport, OR; Ilwaco, Westport, WA

* Eureka Ice & Cold Storage ceased operations in 2008.

** The Outboard Center closed in 2009.

Commercial Fisheries

The primary commercial fisheries at Trinidad include the pot fishery for Dungeness crab, hook-and-line fisheries for various groundfish species, and (historically) the troll fishery for Chinook salmon.¹¹ (All other fisheries have accounted for less than 1% of landings and value over time, and cannot be reported in most years because of the small number of participants.) These fisheries are seasonal as a function of resource availability, regulations that define when, where and how each fishery may operate, the availability of buyers, and market demand (Table 3). However, it should be noted that the actual temporal distribution

of activity is often more compressed, variable and complex. For instance, the crab fishery is concentrated in the winter months due to high abundance at the start of the season (December) as well as holiday demand. Groundfish seasons are defined in two-month increments (reflecting the use of bimonthly vessel cumulative landing limits), vary by species, and are sometimes subject to inseason closures to prevent OYs of selected species from being exceeded. Since 2000, the salmon season in the California KMZ (including Trinidad) has ranged between 0 and 30 days in recent years, with complete closures in 2006, 2008 and 2009.

Table 3. Seasonality of selected commercial fisheries at Trinidad Pier.

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
Crab												
Groundfish												
Salmon												

Approximately 17 commercial fishing operations, each employing a skipper and two crew (in most cases), are based at Trinidad Harbor.¹² All participate in the crab fishery, as many as six participate in the salmon and rockfish/lingcod hook-and-line fisheries, and four operate charter businesses during the summer months. Because vessels are moored and not secured in a harbor slip, they do not exceed 36 feet in length. Fishermen have found that this size is effective for fishing, yet light enough to stay on a mooring during rough weather. When severe weather is forecast – especially from southerly fronts – some skippers run their vessels 20 miles south to Humboldt Bay for protection.

Most of Trinidad’s commercial fishermen depend on fishing as their primary, if not their sole, source of income. Some fish year-round as resource availability, weather and regulations permit, while others fish commercially in the winter and run charter operations during the summer or do other work as part of their livelihood. Historically, many salmon fishery participants were part-time fishermen who fished during the summer salmon season, and worked in other jobs locally or elsewhere the rest of the year. However, this changed with the establishment of the KMZ and the significantly shortened salmon seasons in subsequent years. Only those willing and able to travel to other areas with more substantial seasons remain active in the salmon fishery. Today, few transient vessels use Trinidad Harbor, although some occasionally anchor there while traveling along the coast.

Trinidad Pier Seafood Receiving, Processing and Marketing

Trinidad Pier staff employed by the Rancheria offload the commercial catch on behalf of fish buyers, most of whom are based outside Trinidad. Currently, no processing occurs at the pier; the catch is either trucked to buyers’ facilities elsewhere or delivered directly to markets. Due in part to the port’s isolation and the small number of buyers, many fishermen handle their own (and perhaps others’) catch, taking it to buyers, retailers or restaurants in the region (Figure 3). Generally speaking, there are no ‘off-the-boat’ sales to the public.

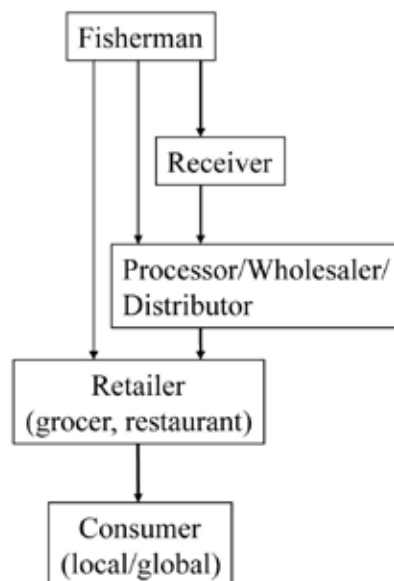


Figure 3. Pathways of seafood landed at Trinidad. Note: Thicker arrows indicate most common pathways.

Dungeness crab represents the majority of catch landed at Trinidad. Early in the season, much of the catch is distributed outside the North Coast region in the cooked and frozen markets. One notable exception is Cap'n Zach's Crab Shack, which wholesales and retails locally caught crab in nearby McKinleyville. Later in the season, more of the product is directed toward the local and San Francisco Bay area live markets. Traditionally, the groundfish fishery produced whole fish and filets for restaurants, fish markets and groceries within the region. Since the 1990s, some of the catch has been directed toward the San Francisco Bay area live market for rockfish and other groundfish species. Katy's Smokehouse, located less than a mile from the pier, provides fish smoking services (for commercial and recreational fishermen), and retails a variety of local and nonlocal seafood products. In addition, local grocery stores such as Murphy's Market sell some of the crab, rockfish and salmon landed by Trinidad fishermen to local consumers.

Recreational Fishing

The proximity of rich fishing grounds and spectacular scenery make Trinidad Bay appealing to resident and nonresident anglers alike. However, extreme weather is common along this part of the North Coast, often limiting the number of days that can be safely fished. Trinidad's ocean recreational fisheries currently include many private boat operations

and six charter operations that participate in the rockfish and lingcod (*Ophiodon elongates*) and halibut (California halibut, *Paralichthys californicus* and Pacific halibut, *Hippoglossus stenolepis*) hook-and-line, salmon (when available) and albacore (*Thunnus alalunga*) troll, and Dungeness crab pot fisheries.

As with commercial fisheries, the seasonality of recreational fisheries is defined by resource availability, weather and regulations. The seasonality of recreational fishing activity at Trinidad Harbor described in Table 4 is a simplification of actual activity, which is often more compressed and variable. For instance, the availability of albacore to recreational anglers varies widely from year to year due to variable oceanographic conditions. The groundfish fishery, which was open year-round through the early 2000s, has not opened until May in recent years, and has been subject to late-season closure to prevent OYs of selected species from being exceeded. The salmon season in the California KMZ (including Trinidad) is only open for a subset of days in some months to extend the length of the season; the fishery was completely closed in 2008 and open for only 10 days in 2009.

Charter Fishing Operations

Some of Trinidad's current charter operations ('CPFVs') have operated since at least the 1970s, run by subsequent generations of the same families. As of late 2008, six CPFVs

Table 4. Seasonality of major recreational fisheries at Trinidad Harbor.

	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC
Albacore												
Crab												
Groundfish												
Salmon												



operated out of Trinidad. Five of these are ‘six-packs’, smaller vessels (25- to 38-foot) that carry a maximum of six fishing passengers; one (a 44-foot boat) carries up to 12 passengers. Four of these operations also participate in the winter commercial crab fishery. In addition, most also offer scenic viewing (including whale-watching) trips.

Private Boat Operations

Although recreational activity is not as extensive as in previous decades, a substantial core group of residents and many visitors continue to fish out of Trinidad. Many of these individuals, tribal and nontribal alike, depend on fishing (in many cases along with other food-collecting activities) for subsistence as well as recreational, social and cultural benefits. Use of the harbor’s 90 moorings is variable. According to the harbor manager (in summer 2009),

“we’ve averaged 30 to 40 boats a day (launching) on the weekend, 10 to 30 during the week. It was definitely more historically, especially when we had a full salmon season. On weekends, we had 45 to 60 boats – basically twice as much (as this year).”

Harbor Infrastructure and Fishery-Support Businesses

Trinidad Harbor’s exposure to southerly storms precludes the development of more substantial harbor infrastructure and in turn limits local fishery development. According

to a 1981 feasibility study, the Army Corps of Engineers determined that harbor development would require building a breakwater to protect boats and facilities from southerly storms, but that such a structure would also cause shoaling and require frequent dredging, the costs of which would exceed the benefits (Oscar Larson & Associates 1981). As a result, Trinidad Harbor has remained a relatively undeveloped ‘natural harbor’ with moorings but no berthing. Nonetheless, it provides the only semi-protected mooring facility on the coast between Eureka and Crescent City. Trinidad’s commercial and recreational fishery participants utilize equipment, goods and services provided by the Rancheria, which owns and operates the six-acre harbor site. This includes the pier and mooring basin; boat launching, cleaning and maintenance facilities; a receiving station with hoists; a bait-and-tackle shop; the Seascape Restaurant; and parking and storage areas (Table 5). About 100 moorings are available seasonally for recreational boats; there are no slips. Commercial fishermen own and maintain their own moorings. Boats up to 26 feet in length can use the Rancheria’s launch ramp; smaller boats may be launched from the adjacent beach. Due to water quality regulations related to the area’s status as an ASBS/CCA, the pier’s fuel dock and fish cleaning station were removed recently, and there is no pump-out station.

A few businesses located elsewhere in Trinidad provide goods and services to recreational and commercial fishery participants. For recreational fishermen, these include Salty’s Surf N Tackle shop, Murphy’s Market, and several RV parks and campgrounds in and just north of Trinidad. Katy’s Smokehouse sells bait for fishing, processes commercially and recreationally caught fish, sells smoked (commercially caught) seafood to consumers, and is involved in fish receiving at the pier.

Table 5. Trinidad Pier user groups, infrastructure and services (as of July 2008).

User groups	Rancheria-owned infrastructure	Services
Commercial fishermen	Launch ramp (1)	Boat launching
Recreational fishermen	Moorings (~100 seasonal)	Boat washing
Charter Private boat	Offloading Infrastructure Hoists (4)	Fish receiving
Community residents	Receiving station (1)	Water taxi
Tourists	Other Infrastructure Restaurant Bait and tackle shop Skiff storage racks	
	Parking	

Given the limited infrastructure and variety of support businesses locally, Trinidad’s commercial and recreational fishermen also utilize businesses elsewhere in the region and along the West Coast to obtain needed goods and services. For example, many purchase fishing gear and equipment, and obtain electrical, mechanical and hydraulic services in nearby Eureka. Some haul out at the Humboldt Bay Harbor, Recreation and Conservation District’s boatyard in Fields Landing. In addition, when especially rough weather is forecast, fishermen move their boats to more-protected Humboldt Bay. Three small boat repair/maintenance businesses in nearby McKinleyville and Eureka primarily service sport boats.

Fishing Organizations and Events

One commercial fishing association, the Trinidad Bay Fishermen’s Marketing Association, is active locally. At one time, Trinidad also had a Commercial Fishermen’s Wives Association. More recently, women

associated with Trinidad’s commercial fisheries have been active in county-wide Humboldt Women for Commercial Fisheries, which has developed a “Humboldt Wild Seafood” campaign to promote local seafood sales. Among the state’s recreational fishing organizations, the Humboldt Tuna Club, the Humboldt Area Saltwater Anglers and the Recreational Fishing Alliance are active along the North Coast; however, none is active at Trinidad.

Two annual events celebrate Trinidad’s fishing heritage. The Trinidad Fish Festival, held in June, is a community event that historically featured local crab and salmon and increasingly attracts visitors. With the decline in local salmon fishing, however, the festival has had to rely on salmon imported from other states. In November, the fishing community and the Rancheria together participate in the Blessing of the Fleet in anticipation of the opening of the winter crab season.

COMMERCIAL FISHERY ACTIVITY AT TRINIDAD

This section focuses on commercial fishing activity at Trinidad between 1981 and 2007.¹³ The information provided here is based on customized summaries of Pacific Fisheries Information Network (PacFIN) landings receipt data, augmented by sources that provide earlier and/or longer-term data, and data from fieldwork conducted between late 2007 and early 2009. In the discussion that follows, we compare the *long term* (1981–2007) to *recent years* (2003–2007) to demonstrate how recent activity compares with longer-term activity. Although this section addresses activity beginning in 1981, it should be noted that some local fisheries (i.e., crab, groundfish and salmon) have a much longer history in Trinidad; however comparable data are not readily available for the pre-1981 period (see Figure 2).

We use five measures of fishing activity derived from the landings receipt data. Landings are reported as ‘round weight’ (in pounds), reflecting the total weight of the fish caught. (For species such as salmon, which are gutted at sea, landed weights are converted to round weights to provide comparability with other species.) Ex-vessel value represents the amount paid to fishermen at the first point of sale, usually a dockside receiver. Prices are calculated as the total ex-vessel value divided by total pounds landed. Both ex-vessel value and price are

adjusted for inflation using \$US 2007 values as a base. Boat counts represent individual (resident and nonresident) fishing operations, though not necessarily individual fishermen, as some fishermen may own and/or operate multiple boats, and most boats have crew (and possibly multiple skippers), which these counts do not include. Buyer counts are based on the number of unique buyer IDs in the landings data, and include fishermen who land their own catch (e.g., for direct sales to restaurants) as well as buyers who purchase fish from fishermen who deliver their catch at the docks.¹⁴ The number of trips provides a count of the number of deliveries each boat makes at the port.¹⁵ To insure confidentiality, data are not reported for some fisheries and/or years if fewer than three vessels and/or buyers participated.

Average annual landings at Trinidad were 58% higher in recent years than over the long term, largely reflecting increases in crab fishing activity. Ex-vessel value has been 42% higher in recent years relative to the long term, reflecting the combined effect of the 66% increase in crab landings and an 11% decline in crab prices between the two periods. While the number of buyers has increased in recent years by 36%, the numbers of boats and trips have declined by 62% and 32%, respectively (Table 6).

Table 6. Long-term and recent annual average, percent difference, and highs and lows in selected measures for commercial fisheries at Trinidad, 1981–2007.

All fisheries	Long-term average (1981–2007)	Recent average (2003–2007)	Percent difference	High year(s) (amount)	Low year(s) (amount)
Landings (lbs)	849,180	1,340,516	+58	2006 (1,909,551)	2001 (231,935)
Ex-vessel value (\$)	1,699,129	2,404,426	+42	2006 (3,157,485)	2002 (638,115)
Boats	65	25	-62	1982 (221)	2005 (22)
Buyers	11	15	+36	2007 (19)	1988 (6)
Trips	1,538	1,049	-32	1982 (4,651)	2002 (664)
Price (\$/lb)	2.10	1.87	-.11	2001 (2.90)	1993 (1.48)

Annual landings (all species combined) at Trinidad ranged from lows of 232,000–346,000 pounds (in 2001 and 2002) to highs of 1.7–1.9 million pounds (in 2003, 2004 and 2006) (Figure 4, Table 6), averaging about 850,000 pounds over the long term and 1.34 million pounds in recent years. Crab has been the dominant fishery, accounting for 63%–70% of landings between 1981 and 1983 and 91%–99% of landings in every year since. Salmon accounted for 21%–23% of landings between 1981 and 1983 before dropping sharply to zero or near zero most years since. Rockfish/lingcod landings accounted for 5%–7% of landings in 1982, 1989, 1991, 2001 and 2002 but rarely more than 1% in most other years.

Since 1981, ex-vessel value at Trinidad has ranged between lows of \$638,000–\$672,000 (in 2001 and 2002) to highs of \$3.1–\$3.2 million (in 2003, 2004 and 2006) (Figure 5), averaging \$1.7 million over the long term and \$2.4 million in recent years. The crab fishery

has accounted for 91%–99% of total landed value since 1984. Salmon accounted for 34%–36% of landed value in 1981–1982, but its contribution to total value has dropped to zero or near zero most years since. Rockfish/lingcod landings accounted for 5% of landed value in 1989, 2001 and 2002 but rarely more than 1% in other years.

An annual average of 22 boats made landings at Trinidad in recent years, compared to a long-term average of 65 boats. Most of this change is due to the sharp decline in salmon fishery participation following implementation of stringent KMZ management measures beginning in the 1980s. Of the boats that landed at Trinidad between 1981 and 1989, on average, 68% participated in the salmon fishery and 39% participated in the crab fishery. With the decline in salmon fishing opportunities, average annual participation in the salmon fishery dropped to 11%, while it doubled to an average of 80% in the crab

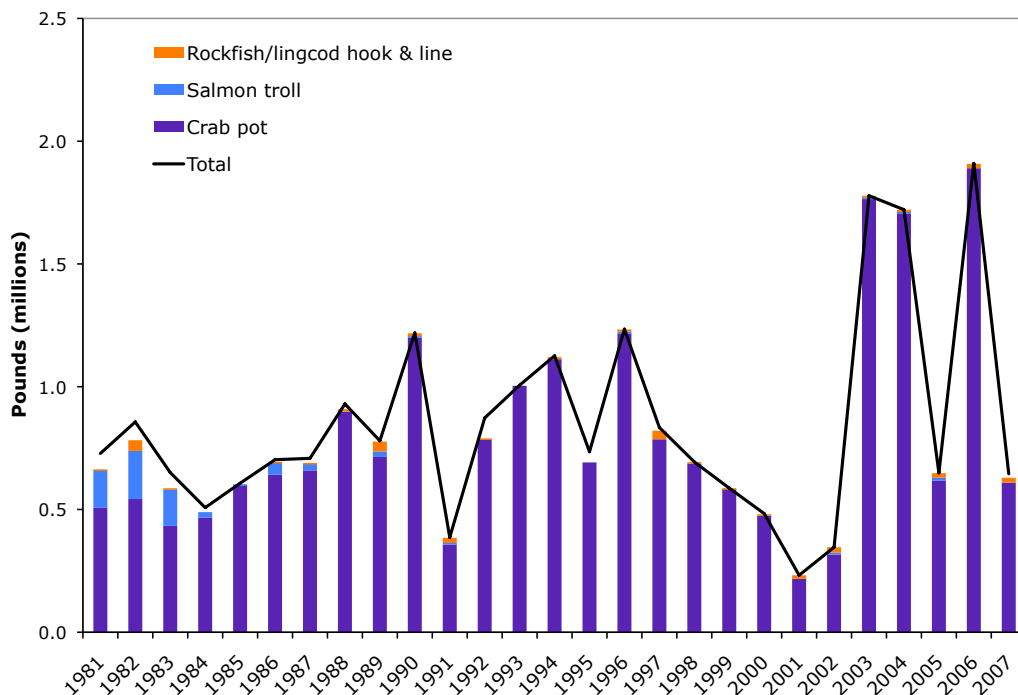


Figure 4. Commercial fishery landings (pounds) at Trinidad for selected fisheries and overall, 1981–2007.
Note: Activity cannot be reported for years when more than zero and fewer than three boats or buyers participated in the salmon troll (1988, 1997, 1999–2000, 2007) and rockfish/lingcod hook-and-line (1984–1985, 1993, 1995) fisheries.

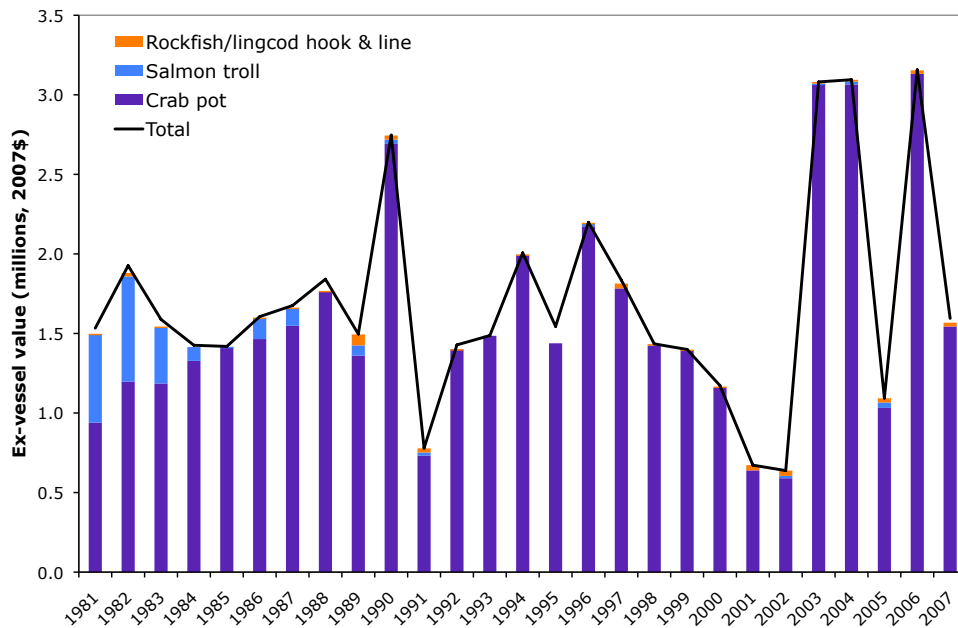


Figure 5. Ex-vessel value (2007\$) of commercial fishery landings at Trinidad for selected fisheries and overall, 1981–2007. Note: Activity cannot be reported for years when more than zero and fewer than three boats or buyers participated in the salmon troll (1988, 1997, 1999–2000, 2007) and rockfish/lingcod hook-and-line (1984–1985, 1993, 1995) fisheries.

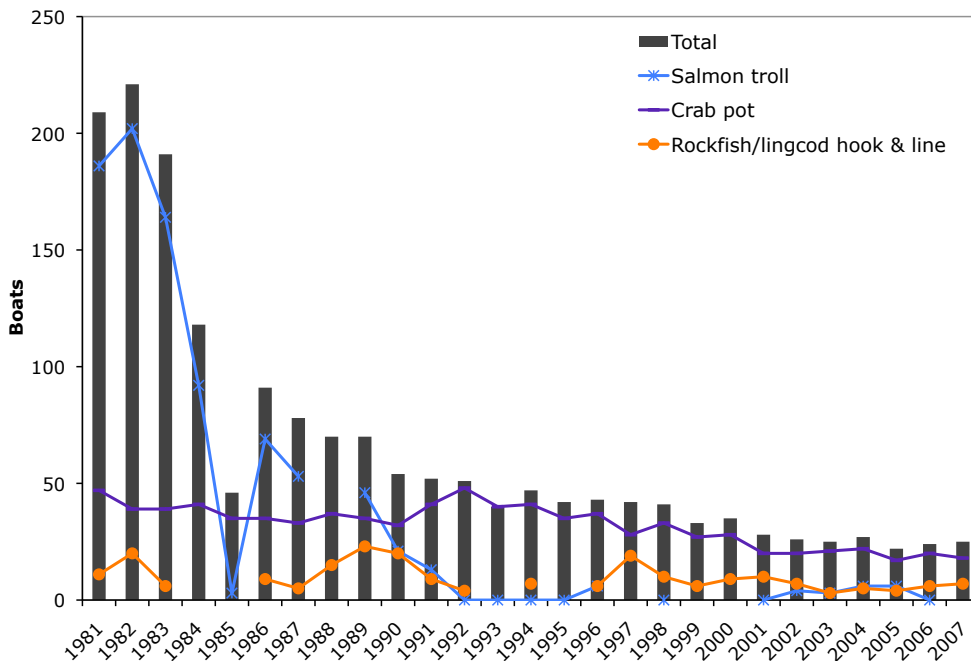


Figure 6. Number of boats with commercial fishery landings at Trinidad for selected fisheries and overall, 1981–2007. Note: Activity cannot be reported for years when more than zero and fewer than three boats or buyers participated in the salmon troll (1988, 1997, 1999–2000, 2007) and rockfish/lingcod hook-and-line (1984–1985, 1993, 1995) fisheries.

fishery after 1989. An annual average of 20% of boats with landings at Trinidad participated in the rockfish/lingcod hook-and-line fishery in recent years, compared to 14% over the long term. However, the numbers of boats with landings in these fisheries has been fewer in recent years relative to the long term. And, although Trinidad historically hosted a large transient fleet (primarily targeting salmon), today nearly all of the boats that land there are resident.

Trinidad’s commercial fishermen make day trips only, but may deliver more than once on a given day. The number of trips at Trinidad declined precipitously from 4,031–4,651 trips between 1981 and 1983 to 664–1,568 trips since 1985 (Figure 7). The average annual number of trips (or deliveries) declined by 32% from an average of 1,538 trips over the long term to 1,049 trips in recent years (Table 6). This change is due largely to the sharp

contraction of the salmon fishery, where the recent average number of trips is 95% less than the long-term average. Crab accounted for an average of 27% of total trips between 1981 and 1983 (when salmon trips were dominant), increasing to an annual average of 92% since 1992 (when salmon became negligible). Crab trips have consistently accounted for more than 90% of deliveries since 1992, except in 1997, 2002 and 2005, when crab was either less abundant or determined (through annual testing) to be unready for harvest at the beginning of the season (CDFG 2006). The number of rockfish trips, while relatively small (and involving a small number of boats), increased 36% from a long-term average of 56 trips to an average of 87 trips in recent years. The number of fish buyers at Trinidad declined from 10–14 from 1981 through 1984 to 7–9 from 1985 through 1993, then increased to 10–19 from 1994 through 2007. On average, about three-fourths of buyers participated in

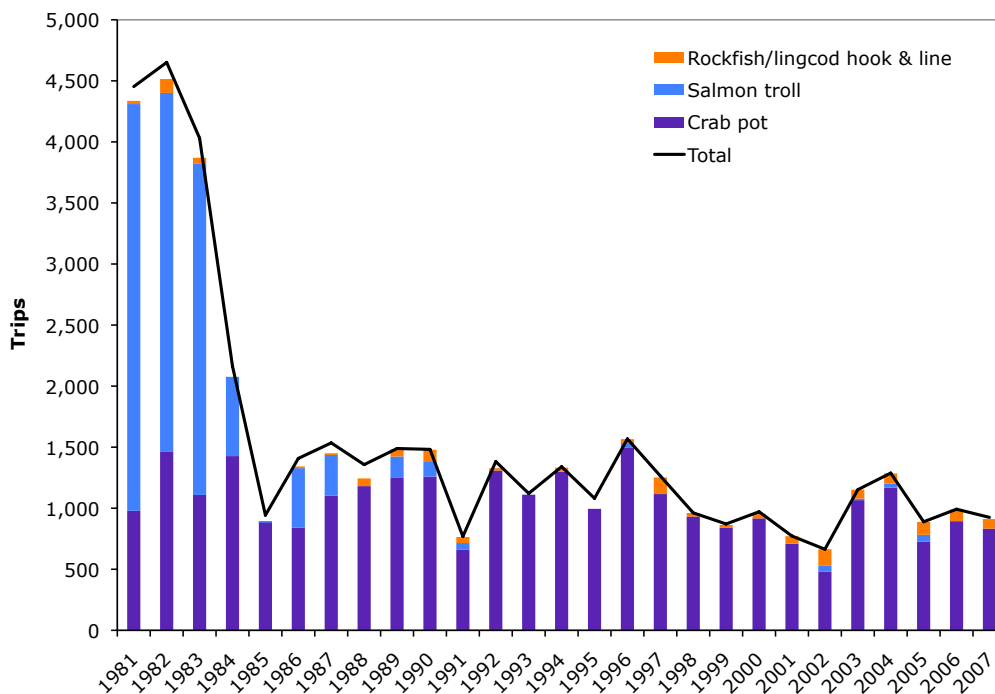


Figure 7. Number of trips by commercial fishing vessels landing at Trinidad for selected fisheries and overall, 1981–2007. Note: Activity cannot be reported for years when more than zero and fewer than three boats or buyers participated in the salmon troll (1988, 1997, 1999–2000, 2007) and rockfish/lingcod hook-and-line (1984–1986, 1993, 1995) fisheries.

the crab fishery over the long term (76%) and the recent term (72%). The average proportion of buyers participating in the rockfish/lingcod fishery (41%) is the same for the two periods. The proportion of buyers participating in the salmon fishery dropped from 27% for the long term to 18% in the recent term.

Of the 19 buyers that received commercially caught seafood at Trinidad in 2007, at least three were local nonfisherman businesses, at least four and as many as eight were local fishermen, and the remainder were buyers based in other locations in Humboldt County, elsewhere in California, and in Oregon and Washington. Although the data show an increase in the number of buyers, fishermen note that the actual number of ‘fish houses’ – large volume fish buyers that process and/or distribute the catch – has declined in the region.

Average annual ex-vessel prices per pound in recent years for all fisheries combined and for the crab fishery are very similar, and are 11% less in the recent term compared to the long term. Likewise, the average recent term price in the rockfish and lingcod fishery is slightly (4%) lower compared to the long term, although average price per pound varied widely (\$0.49–\$3.56) from year to year and likely more so among species within and across years. In contrast, the average annual ex-vessel price in the salmon fishery was 8% greater in the recent term compared to the long term.

The distribution of ex-vessel value among vessels and buyers was examined to determine the extent to which consolidation of fishing activity has occurred. As the number of boats delivering fish to Trinidad dropped over the past decade (1998–2007), the proportion of boats accounting for 90% of the ex-vessel value of landings increased from 39% (16 of 41 boats) to 56% (14 of 25 boats), suggesting

less consolidation of the fleet over time. In contrast, the proportion of buyers accounting for 90% of landed value does not exhibit a clear trend, instead decreasing from 30%–40% in 1998 and 1999 to 6%–17% during the period 2000–2004, then increasing to 13%–26% through 2007. Overall, the data suggest greater consolidation among buyers than vessels, with an annual average of 47% of boats (13 of 29) and 23% of buyers (3 of 13) accounting for 90% of the ex-vessel value of landings for the period 1998–2007.

Activity Within Commercial Fisheries

The Dungeness Crab Pot Fishery

The Dungeness crab fishery has been the primary commercial fishery at Trinidad, accounting, on average, for nearly 80% of landings and 70% of ex-vessel value for the period 1947–1980¹⁶, and 93% of both landings and value for the period 1981–2007. According to fishery participants, some of the best crab grounds along the North Coast are within close range of the harbor and, although their abundance is cyclical, these grounds have generally been very productive. The fishery’s importance has increased since the mid-1980s, filling the void left by the loss of salmon fishing opportunities in the area.

Both over the long term (1981–2007), and in recent years (2003–2007), crab generally accounted for the vast majority of fishing activity (landings, ex-vessel value, boats, trips, buyers) at Trinidad.¹⁷ The one exception is



long-term average vessel participation, where it ranks a close second to the salmon troll fishery. The fishery is highly variable, especially so since 2001, with record high landings (1.7–1.9 million pounds) and revenues (\$3.1 million) in 2003, 2004 and 2006; and record low landings (217,000–316,000 pounds) and revenues (\$590,000–\$631,000) in 2001 and 2002 (Figure 8, Table 7). On an average annual basis, landings and value have been 66% and 49% higher (respectively) in recent years relative to the long term. The increase in value has been tempered somewhat by an 11% decline in prices from \$2.11 per pound over the long term to \$1.88 per pound in recent years.

Fishery participation varied from 33 to 48 boats between 1981 and 1992, then declined, with 18 boats landing crab in 2007 (see Figure 6). Participation peaked at 48 boats in 1992, the year the state placed a moratorium on entry. The number of trips also has declined, though not commensurately with the decline in vessel participation. The number of boats was 39%

lower in recent years relative to the long term, while the number of trips was 10% lower over the same periods, indicating increased effort per boat in the fishery.

The number of buyers increased from 5–8 per year between 1981 and 1993 to 10–12 between 1994 and 1996, then varied between 5 and 11 buyers between 1997 and 2005 before peaking at 16–19 in 2006–2007. The average number of buyers in recent years (11) has been 30% higher than in the long term (8).

Average ex-vessel price for crab ranged between \$1.48 per pound (in 1993) and \$2.94 per pound (in 2001). Prices in recent years averaged \$1.88 per pound, 11% lower than the long-term average of \$2.11 per pound.

The Salmon Troll Fishery

As elsewhere along the North Coast, the commercial salmon fishery was active at Trinidad until the mid-1980s. During the period 1960–1976, salmon landings averaged 113,000 pounds

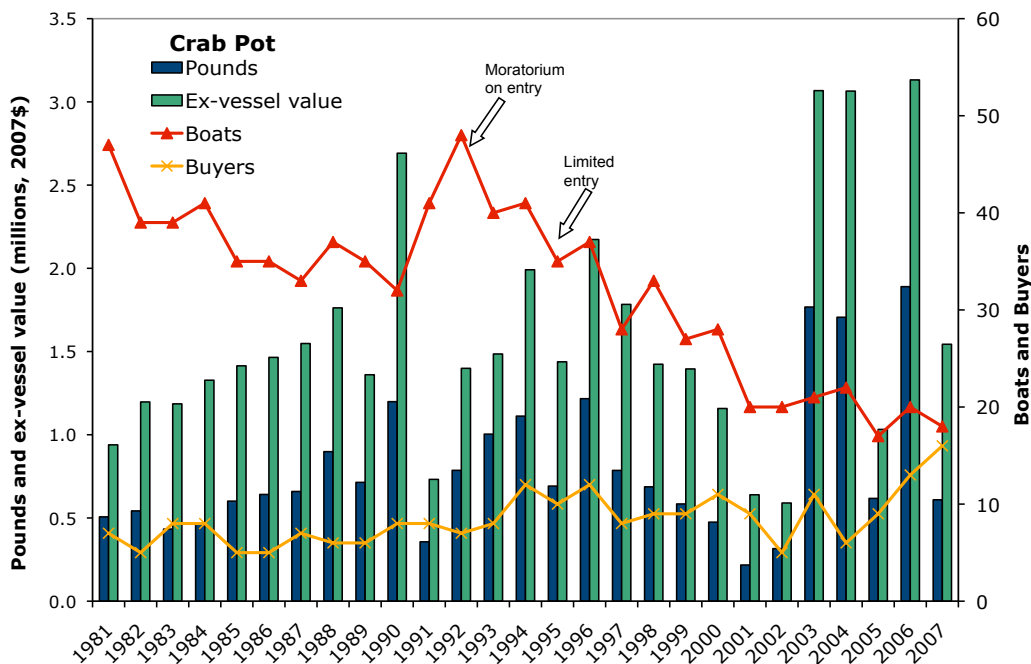


Figure 8. Landings, ex-vessel value (2007\$), and number of boats and buyers for the commercial Dungeness crab fishery at Trinidad, 1981–2007.

Table 7. Long-term and recent annual average, percent difference, and highs and lows in selected measures for the commercial crab pot fishery at Trinidad, 1981–2007.

Crab pot	Long-term average (1981–2007)	Recent average (2003–2007)	Percent difference	High year(s) (amount)	Low year(s) (amount)
Landings (lbs)	795,696	1,317,988	+66	2006 (1,889,823)	2001 (217,456)
Ex-vessel value (\$)	1,590,364	2,404,426	+49	2006 (3,131,998)	2002 (589,986)
Boats	32	20	-39	1992 (48)	2005 (17)
Buyers	8	11	+30	2007 (16)	1982, 1985, 1986 (5)
Trips	1,039	937	-10	1996 (1,494)	2002 (481)
Price (\$/lb)	2.11	1.88	-11	2001 (2.94)	1993 (1.48)

per year worth \$295,000, accounting for an average of 29% of landings and 40% of ex-vessel value of landings at the port (see Figure 2).

Salmon landings declined precipitously from 196,000 pounds in 1982 to 500 pounds in 1985, increased to 51,000 pounds in 1986, then experienced a second decline that persists to this day (Figure 9, Table 8). Ex-vessel value

declined similarly, from \$661,000 in 1982 to \$1,700 in 1985, followed by a secondary peak of \$132,000 in 1986 and another, more persistent decline through 1991. The initial declines in salmon activity occurred following the state’s implementation of limited entry in 1982, increasingly shorter seasons in the California KMZ, and a complete closure of the KMZ in 1985. No salmon fishing activity occurred in

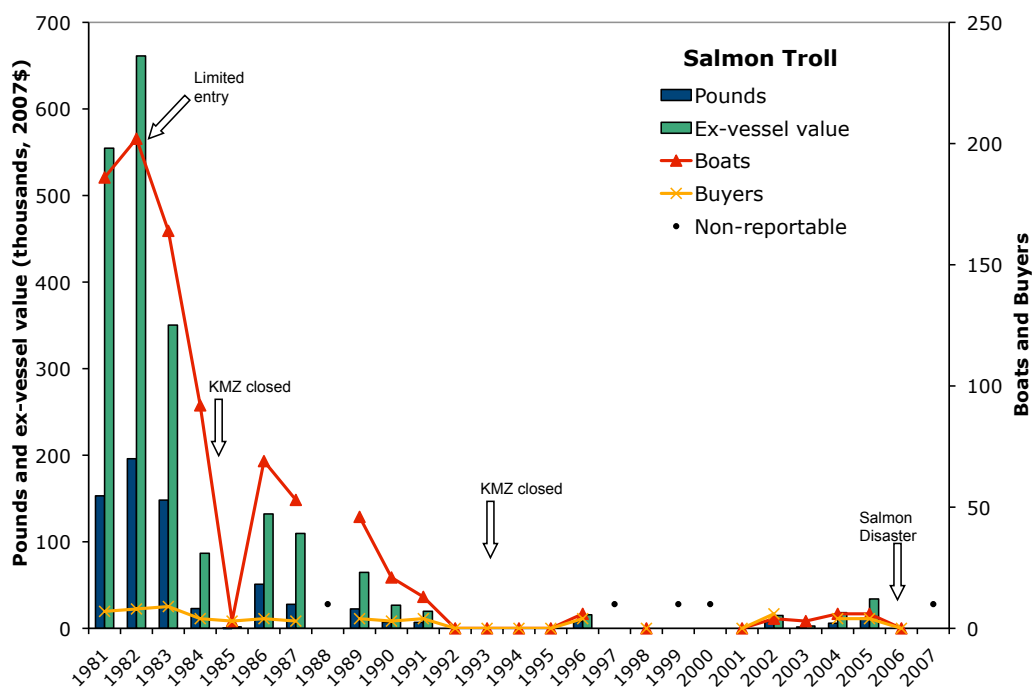


Figure 9. Landings, ex-vessel value (2007\$), and number of boats and buyers for the commercial salmon troll fishery at Trinidad, 1981–2007. Note: Activity cannot be reported for years when more than zero and fewer than three boats or buyers participated (1988, 1997, 1999–2000, 2007).

seven of the 16 years between 1992 and 2007, and cannot be reported for five years (including 2007) due to the small number of participants.

Fishery participation declined from 186–202 boats in 1981 and 1982 to three boats in 1985, increased to 69 boats in 1986, and declined thereafter. Salmon trips declined from 2,900–3,300 trips in 1981 and 1982 to three trips in 1985, increased to 487 trips in 1986, then declined again (see Figure 7). The number of salmon buyers ranged from seven to nine between 1981 and 1983, and has exceeded four buyers in only one year since 1984.

Salmon fishing activity is much lower in recent years relative to the long term, with landings, value, boats and trips down 84%, 86%, 90% and 95%, respectively. Because salmon activity at Trinidad has been modest to negligible since the mid-1980s, the long-term averages tend to mute the differences between the high level of activity in the early- to mid-1980s and subsequent years.

From 1981 through 1991, average annual ex-vessel salmon prices ranged between \$2.36 and \$3.95 per pound (round weight), then declined to \$1.72–\$2.40 during the period 1992–2003. Prices increased to about \$3.00 per pound during the period 2004–2006

and nearly doubled in 2007 (although the average 2007 price per pound is not reported to ensure confidentiality). However, although ex-vessel salmon prices have increased quite dramatically in recent years, these changes have yielded little benefit for Trinidad’s much-diminished salmon fishery.

The Rockfish/Lingcod Hook-and-Line Fishery

The commercial hook-and-line fishery for rockfish and lingcod is a small but persistent fishery at Trinidad. Activity has been highly variable, with landings peaking at more than 35,000 pounds in 1982, 1989 and 1997, and value peaking at \$69,000 in 1989 (Figure 10, Table 9). Interspersed with these peak years are years of low activity, some of which cannot be reported due to the small number of participants.

Average annual landings and ex-vessel value were 7% and 10% higher, respectively, in recent years relative to the long term. The ex-vessel value of landings remained well below \$10,000 per year through much of the 1980s. Ex-vessel values in most years since 1989 suggest the influence of the growing Asian (domestic and export) market for fresh groundfish. Continuing production for the fresh (versus live) fish market,

Table 8. Long-term and recent annual average, percent difference, and highs and (nonzero) lows in selected measures for the commercial salmon troll fishery at Trinidad, 1981–2007. Note: No landings occurred in 1992–1995, 1998, 2001 and 2006. Years when fewer than three boats or buyers participated are included in averages, but excluded from highs and lows.

Salmon troll	Long-term average (1981–2007)	Recent average (2003–2007)	Percent difference	High year(s) (amount)	Low year(s) (amount)
Landings (lbs)	30,490	4,806	-84	1982 (195,936)	1985 (514)
Ex-vessel value (\$)	95,134	13,698	-86	1982 (661,234)	1985 (1,745)
Boats	40	4	-90	1982 (202)	1985, 2003 (3)
Buyers	3	3	0	1983 (9)	1985, 1987, 1990 (3)
Trips	500	26	-95	1981 (3,331)	1985 (3)
Price (\$/lb)	2.01	1.92	-4	1987 (3.95)	1996 (1.96)

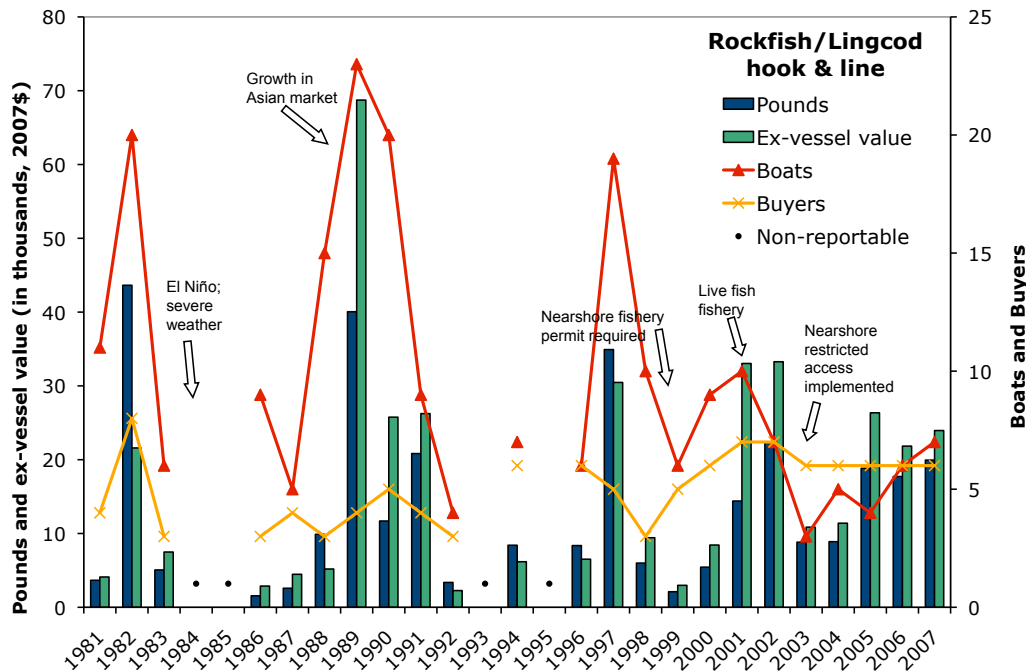


Figure 10. Landings, ex-vessel value (2007\$), and number of boats and buyers for the commercial rockfish/lingcod hook-and-line fishery at Trinidad, 1981–2007. Note: Activity cannot be reported for years when more than zero and fewer than three boats or buyers participated (1984–1986, 1993, 1995).

Table 9. Long-term and recent annual average, percent difference, and highs and lows in selected measures for the commercial rockfish/lingcod hook-and-line fishery at Trinidad, 1981–2007.

Rockfish/lingcod hook-and-line	Long-term average 1981–2007	Recent average (2003–2007)	Percent difference	High year(s) (amount)	Low year(s) (amount)
Landings (lbs)	14,843	18,900	+7	1982 (43,638)	1986 (1,554)
Ex-vessel value (\$)	17,106	18,879	+10	1989 (68,730)	1992 (2,266)
Boats	10	5	-50	1989 (23)	2003 (3)
Buyers	5	6	+19	1982 (8)	1983, 1986, 1988, 1992, 1998 (3)
Trips	62	87	+41	1997 (136)	1986, 1987 (14)
Price (\$/lb)	1.31	1.27	-3	2001 (2.29)	1982 (0.49)

especially given local demand and Trinidad’s remoteness from San Francisco Bay area, however, limits the live market’s influence. Vessel participation peaked at 19–23 boats in 1982, 1989, 1990, 1997, with 1–15 boats participating during the remaining years. Participation in the state-managed nearshore fishery was capped in 1999 and limited more

sharply in 2003 with the implementation of restricted access, which applies to several (but not all) of the groundfish species targeted by Trinidad’s commercial fishermen. The number of trips peaked in 1982, 1997 and 2002. Comparing the recent term to the long term, the number of boats participating in the fishery has declined by 50%, but trips have increased

by 41%, indicating an increase in average effort per boat.

The number of rockfish/lingcod buyers is 19% greater in the recent term compared to the long term, ranging from one to eight during the period 1981–1999, and 6 to 7 since 2000. Most of these buyers are fishermen marketing their catch to local groceries and restaurants.

The modest difference (-3%) in recent ex-vessel prices relative to the long term masks the price fluctuations that have characterized this fishery over time. Average price per pound varied from \$0.49 to \$2.20 between 1981 and 1991, stayed below \$1.00 from 1992 through 1997, then ranged from \$1.23 to \$2.29 through 2007.

Commercial Fishery Combinations

Commercial fishery participants move among fisheries, ports and fishing areas in response to changes in resource availability, regulations, weather and other factors. Reflecting the highly constraining nature of regulations in recent years, one fisherman noted, “You follow the seasons, the regulations, not so much the fish.” Examination of fishery combinations provides insight into the changing nature of individual operations as well as the community.

For purposes of identifying trends in fishery participation, it would be reasonable to focus on boats that are resident (homeported) in Trinidad. However, although recent data on resident vessels were collected as part of the fieldwork for this project, similar data for earlier years are not readily available. Thus, in lieu of focusing on resident vessels, we focused on those boats that earned a plurality (i.e., the greatest proportion) of their annual ex-vessel revenues from Trinidad landings (hereafter referred to in this section as ‘Trinidad boats’). While there may be some coincidence between port of residence and the port accounting for plurality of revenue, one is

not necessarily a good proxy for the other. Figure 11 illustrates the one- and two-way fishery combinations characteristic of ‘Trinidad boats’ during three time periods: 1981–1983, 1993–1995 and 2005–2007. The numbers in each box indicate the average annual number of vessels that participated exclusively in that fishery in each of the three periods. For example, an annual average of 126 boats participated only in the salmon troll fishery during the first period (1981–1983), none participated only in this fishery during the second period (1993–1995), and an average of fewer than three participated during third period (2005–2007). The numbers on the lines connecting two boxes indicate the average number of vessels that participated exclusively in the fisheries denoted by those two boxes. For example, the line connecting the salmon troll and crab pot boxes indicates that an annual average of 20 vessels participated in both the salmon and crab fisheries (only) during the first period, and fewer than three participated during the second and third periods.

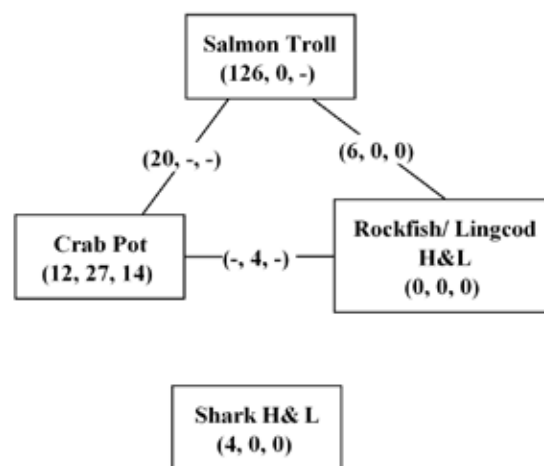


Figure 11. Major one- and two-way fishery combinations utilized by Trinidad boats (three-year averages: 1981–1983, 1993–1995 and 2005–2007). Note: “-” indicates fishery combinations involving one or two boats; not reported to insure confidentiality.

A number of fisheries and fishery combinations that existed in 1981–1983 are no longer pursued (or are pursued by too few boats to report). The most notable changes are the dramatic reduction in salmon troll-only vessels and lesser reductions in salmon troll combination vessels. The number of crab-only vessels more than doubled between the 1981–1983 and 1993–1995 periods, then declined to previous levels during the period 2005–2007. The shark fishery is an anomaly, with landings made only in 1983 by 12 boats (thus averaging four boats for the period). The only three-way combination that can be reported is salmon troll/crab pot/rockfish hook-and-line, which was pursued by an average of four Trinidad boats during the period 1981–1983 but fell to zero in the two subsequent periods.

Study participants noted many of the changes depicted in the fishery combinations, emphasizing the importance of salmon for resident and nonresident fishermen in the early 1980s, the subsequent departure of the summer mosquito fleet that targeted salmon, and the increased emphasis on crab for the boats that remained. They also cited changes in nearshore fishery management, especially the implementation of limited entry in 2003, after which only two resident fishermen qualified for permits.

In addition to participating in commercial fisheries, about a third of Trinidad’s resident commercial skippers operate their vessels as charter boats. This pattern of integrating commercial fishing (primarily in the winter) and recreational fishing (primarily in the summer) has become more common at Trinidad in recent years with increasing commercial fishery regulation. Local fishermen report that running charters is lower-paying but “steady work” that requires keeping to a schedule, while commercial fishing is more variable and uncertain, but affords more flexibility and opportunities for significant earnings for a single trip (or season).

The loss of salmon and groundfish fishing opportunities has also led some Trinidad fishermen to move to more southerly areas that are open for the summer salmon season. However, with the reduction in salmon fishing opportunities elsewhere as well as locally, and strong (if somewhat variable) local crab fishery conditions, more fishermen are staying in the area, with some working in land-based jobs when they are not fishing.

Revenue Per Boat

Trends in aggregate revenues do not necessarily correlate with how individual vessels may be faring in terms of revenue. To illustrate this point, we estimated average annual revenue per boat for those that earned a plurality (i.e., the greatest proportion) of their annual ex-vessel revenues from landings in Trinidad. For the remainder of this section (as in the previous section), ‘Trinidad boats’ refers to boats that meet this plurality of revenue criterion.

The number of ‘Trinidad boats’ declined from 183 in 1981 to 21 in 2007 (Figure 12). The decline was particularly precipitous in the early 1980s, reflecting the dramatic decline in salmon fishing opportunities. Average annual revenue per boat (based on each vessel’s landings in all ports and fisheries) was consistently less than \$15,000 prior to 1985, when salmon-only operations were the most among Trinidad boats. Average annual revenue per boat ranged from \$23,000 to \$69,000 between 1985 and 2002, and reached highs of \$131,000–154,000 after 2002, with crab-only operations as the most common fishery combination.

To illustrate how vessel revenue is affected by fishery-specific participation, we assigned each Trinidad vessel to its ‘principal fishery’, that is, the fishery from which the boat derived the plurality of its annual revenue. For vessels associated with each principal fishery, we then estimated annual revenue per boat (based on their landings at all ports and in all fisheries). Estimates for 1981–1983, 1993–1995 and 2005–

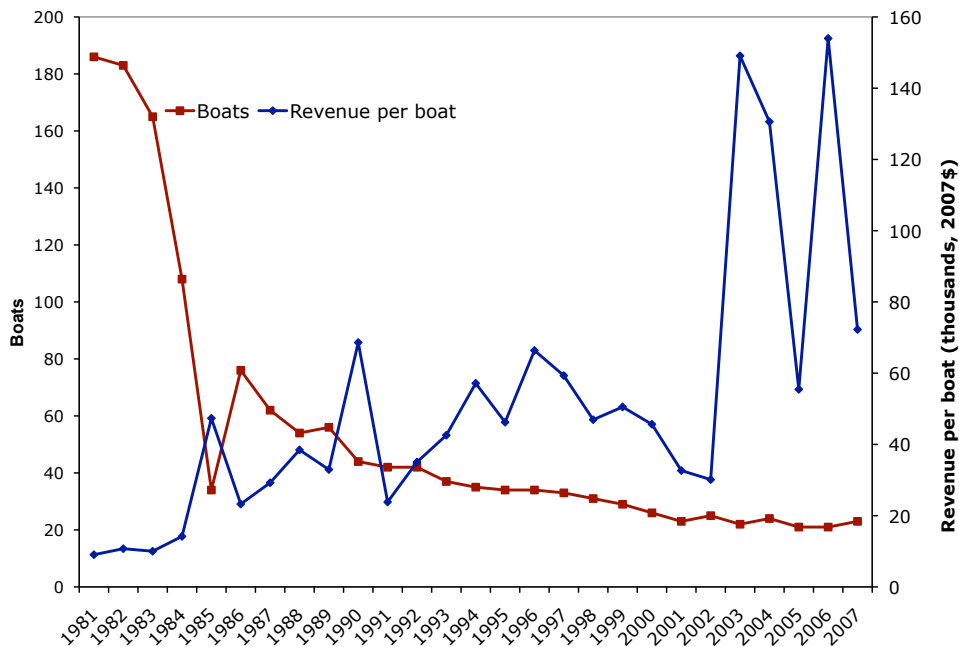


Figure 12. Number of boats with plurality of revenue from landings at Trinidad, and average annual revenue per boat (2007\$, all ports, all fisheries), 1981–2007.

2007 indicate a significant decline in the number of vessels whose principal fishery was salmon troll, and a lesser though substantial decline in the number of crab pot vessels (Table 10). The low revenues in the early 1980s reflect the predominance of salmon trollers (many of them part-time commercial fishermen) in the Trinidad fleet at that time, while the high revenues in

recent years reflect the predominance of crabbers and the upsurge in the crab fishery. Whether this recent upswing is indicative of future trends is uncertain, given the high degree of variability in the crab fishery. The extent to which increases in revenue per vessel have kept pace with increasing costs is also unclear.

Table 10. Average annual number of Trinidad boats and average annual revenue per boat (2007\$), by major fishery and overall, 1981–1983, 1993–1995 and 2005–2007. Note: At least three unique boats participated in the rockfish/lingcod H&L fishery during the 1981–1983 and 1993–1995 periods. Salmon troll data cannot be reported for 2005–2007, when more than zero but fewer than three boats or buyers participated.

Major Fishery	Number of boats			Average annual revenue per boat (All ports, all fisheries)		
	1981–1983	1993–1995	2005–2007	1981–1983	1993–1995	2005–2007
Salmon troll	140	0	-	\$3,163	\$0	-
Rockfish/lingcod H&L	2	1	3	\$1,798	\$5,353	\$5,738
Crab pot	33	34	18	\$39,813	\$48,777	\$112,247
All boats	178	35	22	\$9,929	\$48,663	\$93,900

RECREATIONAL FISHERY ACTIVITY AT TRINIDAD HARBOR

Given the limitations on salmon fishing, ocean anglers at Trinidad have increasingly targeted groundfish, especially rockfish, lingcod and halibut. Groundfish is viewed by community members as a second choice to, but not a substitute for, salmon. In addition, with rich fishing grounds within and near Trinidad Bay, many local anglers also target crab in the winter. Some anglers participate in the recreational albacore fishery in the late summer and early fall, but only if the resource is within about 10 miles of the coast.

This section focuses on recreational ocean fishing activity associated with Trinidad Pier, and is based primarily on CPFV (charter) logbook data collected by CDFG and field data collected for this project. Effort estimates from the California Recreational Fisheries Survey (CRFS), which are available only at the ‘district’ level, are used to place Trinidad’s recreational fisheries in context.¹⁸ The CPFV trends described here must be viewed with caution, as confidentiality rules limit the reporting of data in some years and because not all CPFV operators comply with the logbook requirement. In the discussion of CPFV activity below, the *long term* is the period from 1980 through 2007, whereas *recent years* pertains to the most recent five years of the time series (2003–2007).¹⁹

We use four measures of fishing activity derived from recreational fishery data. ‘Boats’ are counted as the number of unique CPFVs that operated in a given year. A ‘boat trip’ represents a combined departure and return of a boat, regardless of trip length. An ‘angler trip’ is defined as one angler spending part or all of one or more days fishing before returning to the location where the trip began. An ‘angler day’ is defined as one person’s fishing on a given day. For example, two anglers each fishing for three days are counted as six angler days.

According to the CRFS, an annual average of 143,300 angler trips were made in the Redwood District (comprised of Del Norte and Humboldt counties) during the period 2005–2007. About 34% of these trips were from manmade structures, 32% from beach/bank, 31% from private boats, and 4.3% from CPFVs. It is difficult to determine how much of the recreational effort in the Redwood District occurs in the Trinidad area, as the CRFS does not provide effort estimates by port.

Charter Fishing Activity

Based on our analysis of the CPFV logbook data, annual activity averaged three boats over the long term and five boats in recent years, a 68% increase between the two periods (Figure 13). Participation dropped below three boats in 14 of the 28 years (1980–1983, 1985–1987 and 1994–2000), precluding the reporting of data for those years. The average numbers of boat days and angler days were also higher in recent years (2003–2007) relative to the long term (1980–2007), with boat days increasing 95% from 181 to 354, and angler days increasing by 84% from 1,039 to 1,914. Between 2001 and 2007, participation increased from three to seven boats. According to study participants, seven boats remained active through 2008 but that number dropped to six boats by the summer of 2009. Most of these trips were half-day trips that targeted rockfish and other groundfish species on nearby fishing rounds, along with winter crabbing.

Trinidad’s CPFV activity has increased as a proportion of Redwood District activity in recent years relative to the long term. Trinidad accounted for an annual average of 75% of boats, 81% of boat trips and 79% of angler trips in the district in recent years. Based on logbook data, Trinidad thus appears to be the major recreational port in Northern California for charter activity.

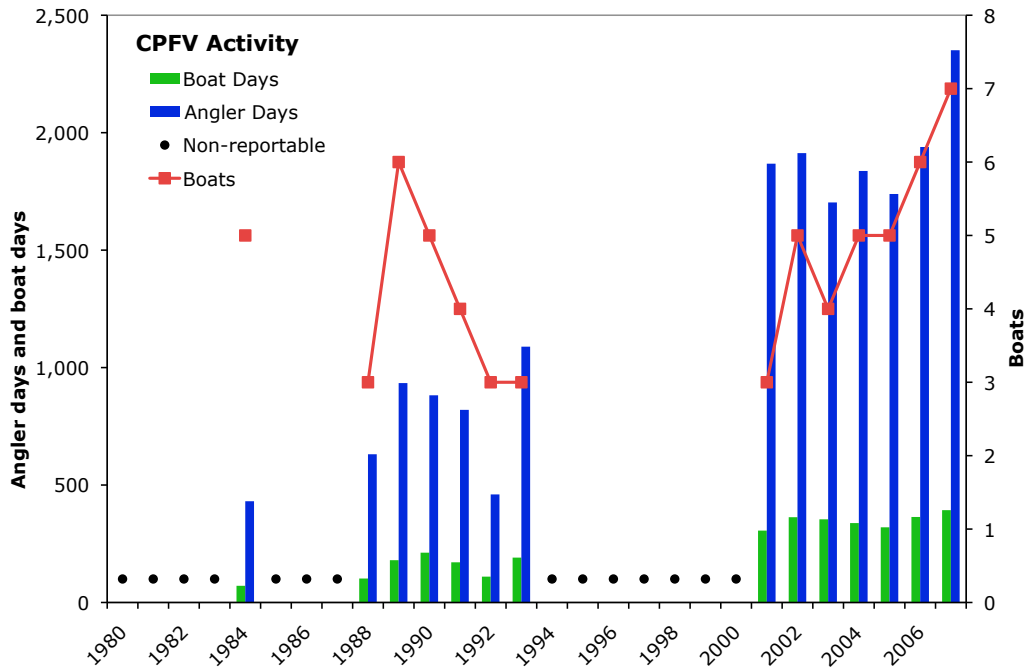


Figure 13. Charter fishing activity at Trinidad, 1980–2007. Note: CDFG CPFV logbook data. Activity cannot be reported for years when more than zero but fewer than three boats participated (1980–1983, 1985–1987, 1994–2000).

Private Boat Fishing Activity

Although port-specific data on private boat fishing activity are not available, study participants reported that this mode of fishing far exceeded CPFV activity through the 1980s and into the early 1990s. Sharp reductions in KMZ season length, as well as bag limit reductions and prohibitions on coho retention, however, led to a sharp decline in private boat activity. According to the harbor manager and other sources, recreational mooring use declined from about 400 boats in the early to mid 1980s to about 90 in 2008. In that same time period, beach and launch ramp use also has declined. Nonetheless, even as private boat activity has decreased, private boat fishing (resident and nonresident alike) continues to play an important role at Trinidad.



KEY FACTORS AFFECTING TRINIDAD HARBOR FISHERIES

Trinidad's fisheries and fishing community have experienced considerable social and economic change over the past 30 years. Regulatory, market and environmental factors have influenced individuals and communities, sometimes gradually and at other times more abruptly. Some of these factors originated locally, while others are regional, national or even international in nature. Moreover, these forces do not operate in isolation. Rather, they interact in complex and cumulative ways, posing both challenges and opportunities to the viability and resilience of the Trinidad fishing community. The following discussion focuses on specific factors highlighted by study participants as having most influenced local fisheries, infrastructure, and the community as a whole.

Regulatory Factors

Salmon Fishery Management

Participants reported that increasingly stringent salmon management from the mid-1980s through the early 1990s, more than anything else, changed the landscape of fishing at Trinidad. As new state permitting requirements and KMZ closures limited commercial fishing activity, the 'mosquito fleet' that had become the centerpiece of Trinidad's fishing community in the summer diminished, with some shifting to recreational fishing or moving their operations to other areas where salmon fishing opportunities were available. The Trinidad Harbor fishing community, which had been built on salmon fishing, experienced a dramatic reduction in participation and activity. As an indicator of this change, the harbor has gone from having 400 fully occupied summer moorings in the early 1980s to fewer than 100 (and used more sporadically) in recent years (Dean Runyan Associates 2001).

The reduction in fishing activity over time affected local businesses, such as smokehouses, tackle shops, grocers and RV Parks, which depended on the seasonal influx of visitors and burst of economic activity. One study participant noted:

We're a close-knit community; we help each other out. All fisheries [participants] know each other. Sixteen years ago, the snapshot was: Katy's was always busy, they were the only vacuum-sealer around. Murphy's [Grocery Store] would store fish for people. You could clean your fish on or in the water.

Some businesses closed, while others diversified or shifted their emphasis. For example, two local smokehouses closed, and Salty's, a local bait and tackle shop, diversified to provide goods and services used for surfing and river fishing. As the number of commercial fishery participants dropped off, so did dockage and mooring revenues. The Rancheria has adjusted by increasing dockage and offloading fees for commercial fishing operations.²⁰

Amid these changes, a core fleet of commercial fishermen remained, increasing their activity in the winter crab fishery. Commercial fishermen who had been operating charters during the summer season began to rely more on those as



well, and over time the charter fleet increased. The response to more recent limitations on the salmon fishery reflects ongoing adaptation to reduced salmon fishing opportunities, especially since the early 1990s. Regarding the three-day 2007 salmon season, a charter operator noted:

[My crewman/relief captain] took customers salmon fishing in 2006. Those customers planned their vacation for the same time and place the next year, but the season was closed. So we focused on rockfish. Most of our customers [now] ...like rockfish because they're easy to catch. If there was coho [allowed] or the KMZ was open, fishing would be very different.

Groundfish Fishery Management

Federal groundfish and state nearshore fishery management followed salmon as key regulatory factors that have shaped Trinidad's commercial and recreational fisheries. Study participants highlighted federal landing limits for the species they target and the state's limited entry program for the commercial nearshore fishery.

Historically, a number of Trinidad's resident commercial fishermen participated in the rockfish fishery when they were not fishing for salmon or crab. According to one study participant, "There was a rockfish fishery, but it wasn't very profitable. Trawl fleets fished nearby. Up until about two to three years before the (federal West Coast groundfish trawl buyback, they were pretty wide operating. Drag fish and rockfish weren't worth very much." The emergence of the live fish fishery changed this somewhat, although increasingly strict catch limits in all sectors of the fishery in recent years together with the implementation of restricted access program in the state's nearshore fishery in 2003 have limited participation and production. In addition to

directly limiting catch, these limits have made it cost-prohibitive for most buyers to purchase and transport the relatively small amounts of fish landed at Trinidad.

CPFV operators and recreational anglers highlighted recent time and area closures to protect yelloweye rockfish as further diminishing local fishing activity in 2007 and 2008. This, coupled with the 2008 salmon closure, eliminated most local recreational fishing opportunities. According to the harbormaster:

...salmon people plan to come here and fish for the whole summer, from all over the country, but now they won't [due to 2008 salmon closure]. Luckily I didn't order any salmon gear for the tackle shop but I know the other gear stores did. You can fish for rockfish, but it only takes a couple times before you have more than you need.

This event further depressed revenue-generating activity in and around Trinidad Pier and, according to several study participants, negatively affected the community's sense of well-being.

Water Quality Management

Trinidad fishing community members highlighted challenges to the pier, associated infrastructure and services following from Trinidad's status as an ASBS/CCA. Fishery-related water quality concerns identified by the Rancheria include leakage from septic systems at the harbor and pier runoff, both nonpoint sources of pollution that are 'prohibited discharges', as defined by the State Water Resources Control Board (SWRCB) because they contain pollutants and violate the 'zero discharge' rule for ASBSs (Savage and Sundberg 2009). (Such discharges are also an issue for the City of Trinidad.) The pier runoff was due in part to waste from the fish cleaning

station that served charter operators and private boat and pier anglers. The harbor also provided a boat washing service that used bleach to better clean boat hulls. In 2007, the Rancheria removed the fish cleaning station from the pier, and replaced the use of bleach with a pressure washer for boat cleaning (Savage and Sundberg 2009). They also plan to improve restroom facilities in 2010 (Trinidad Rancheria 2009).

The removal of the fish cleaning station, in particular, has had broad practical and social impacts. Without a place to clean their catch at the harbor, many anglers have resorted to dumping their fish carcasses along nearby county roads. In addition, the station's removal eliminated an important focal point for the community and a draw for visitors. One study participant noted:

We no longer have a fish cleaning station. That was a social feature. You'd go check out what the fishing had been like...Now there are fish carcasses along Scenic Drive. Anyone who came to the pier went to Seascape [Restaurant]. They were enthralled by people's catch and cleaning the fish, and would want to go fishing.

The larger and more challenging issue is the replacement of the aging pier itself, a critical need that is shared among recreational and commercial fishery participants, support businesses and the community. The pier was built several decades ago with creosote-treated pilings and pressure treated wood. By SWRCB standards, the pier's decking and deteriorating pilings were identified as a nonpoint source of contaminated runoff and a hazard to the ASBS (Savage and Sundberg 2009). Given that the existing pier does not meet water quality standards (and other standards established since its construction in the late 1940s), the Rancheria is seeking to replace

it. To date, they have secured funding from several sources including the California State Coastal Conservancy, the Headwaters Fund and the State Water Resources Control Board (SWRCB) to support various aspects of the pier reconstruction project. However, securing full funding for the project, estimated to cost \$8 million²¹, poses a significant challenge, especially given variability in resource availability and regulatory uncertainty. These circumstances make it unclear what future use – and revenues to the pier needed to maintain facilities and services – will look like.

Economic Factors

Economic factors highlighted by study participants and evident in the course of the research for this project focused on new and increasing costs and uncertain or declining revenues. Some of these, such as increasing gear and fuel costs, are common in the larger economy and across most fisheries. Others, most notably the replacement of the pier, are specific to Trinidad, but are analogous to other ports in the region, where maintenance, repair and replacement of fishery-support infrastructure are at issue.

Increasing Costs and Variable, Uncertain or Declining Revenues

Several fishery participants and support business operators cited the high cost of fuel, which rose to more than \$4 per gallon at the time of this study. (Fuel prices subsequently declined, and varied between \$2 and \$2.60 per gallon before tax.²²) Some fishermen adapted by teaming up on a single vessel and sharing the cost. Support business operators reported they felt that high fuel costs, coupled with the broader economic downturn as well as fishery closures, contributed to reduced demand for their goods and services. Commercial crab fishermen cited increasing gear costs, noting:

The cost of traps has gone through the roof. All the materials cost \$83 per trap last year; it's \$115 this year.²³ Six or seven years ago, it was \$65–67 a trap. Buoys are \$8.15 and \$3 apiece. [They come in two sizes.] So altogether [with other materials], each trap costs us \$150 apiece. The bridles alone are worth \$3–4 apiece.

Fishermen also noted increasing dockage and offloading fees, as well as the 1.24% assessment levied on the ex-vessel value of their crab catches to help repay the federal West Coast groundfish trawl buyback loan.²⁴

Commercial fishermen also expressed concerns about variable and uncertain revenues because of the natural variability in crab stocks and regulatory constraints on rockfish (and salmon) fishing. In general, recent average ex-vessel revenues per boat from landings at Trinidad only (about \$96,000) are more than twice those for the long term (about \$41,000). (This excludes revenues from landings at other ports.) Although ex-vessel revenues have been

considerably greater most years since 2003 compared to previous years, they are also much more variable (Figure 5). In addition, it is not clear whether revenues have kept pace with increasing costs.

For the Rancheria, the cost of replacing the pier together with variable and uncertain revenues from its use are of central concern. In addition to the pier's function as a tribal investment, it directly or indirectly supports 60 local tribal and nontribal families, and generates activity that supports 25 local businesses, according to a May 2005 survey done for the Rancheria (Sundberg pers. comm.). Replacing the pier is more costly because of the stringent ASBS/CCA-driven water quality standards. In addition to dockage and offloading fees, the Rancheria depends on fees for mooring rentals, boat launches and boat washing, used primarily by recreational fishermen. However, these sources of revenue, too, have become less reliable following recent declines in recreational use, linked to regional fishery closures.

CURRENT SITUATION AND OUTLOOK

Trinidad Harbor's fishing community faces challenges as it continues to adjust to changes in fishing opportunities, as well as requirements stemming from the area's designation as an ASBS/CCA. Of particular concern to fishery participants are continued access to fishery resources, especially in light of the North Coast MLPA process begun in late 2009, maintaining and/or increasing business (the influx of recreational anglers and other tourists), and replacement of an aging pier that is central to the identity and viability of the fishing community.

Following fundamental change in salmon fishing opportunities, the commercial fleet now consists almost entirely of resident fishermen who have become highly dependent on the crab fishery. In the recreational sector, the level of private boat fishing activity has declined substantially, although charter activity – targeting rockfish and other groundfish species – has increased. In fact, both commercial and charter activity at Trinidad have grown over time, as measured by landings and ex-vessel revenue in the former and boats, trips and angler days in the latter. Yet each sector's primary dependence on a single fishery makes it vulnerable to fluctuations in resource availability and further regulation. Moreover, Trinidad's commercial fishermen and CPFV operators, many of whom are second or third generation fishermen (including some in their 50s and 60s), are concerned about the financial and regulatory hurdles to new participants, including their own children.

The cumulative effects of reduced opportunities in the salmon and rockfish fisheries, higher costs, and the broader economic downturn have put a strain on some members of the Trinidad fishing community, especially those dependent on seasonal recreational fishing activity. Lost revenues together with regulatory and economic uncertainty have made it difficult for local business owners to plan ahead (e.g., place preseason orders for salmon gear, hire summer staff). Potential visitors, in turn, may be deterred from making plans to visit, as occurred in 2008. This same uncertainty is a challenge to the Rancheria as it pursues comprehensive planning for the Trinidad Pier and the harbor area.

Yet the Trinidad Harbor fishing community is in a unique position for addressing these challenges. First, its infrastructure needs are modest compared to other more developed sites. As a natural harbor with a pier, launch ramp and moorings only, there are no navigation channels or slips to be maintained. Second, Trinidad's fishing community consists of a small but substantially integrated group, with many individuals taking part in both commercial and recreational or subsistence fishing activities. Each group has particular needs, but most individuals recognize that their respective needs and the options for meeting them are interdependent. Finally, the pier's private ownership affords operational flexibility (within broader regulatory constraints) that publicly managed facilities do not have. These features lend the Trinidad Harbor fishing community a degree of resilience that may enable it to effectively address the challenges and opportunities that lie ahead.

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ENDNOTES

- ¹ http://www.coastal.ca.gov/nps/Web/cca_critdesc.htm, accessed 7/30/10. See Appendix B for a glossary with definitions of these and other key terms used throughout this report.
- ² Shore-based ocean, inland and river fisheries, clam digging and other collecting activities - both tribal and nontribal — are also integral to the community and the region, but are beyond the scope of this report.
- ³ See Appendix C for further methodological information.
- ⁴ Yurok ancestral lands include the Lower Klamath River and the California coast from Little River (south of Trinidad) north to Damnation Creek (south of Crescent City; Sloan and Rocha 2007).
- ⁵ The Tsurai village lands are currently owned by the City of Trinidad and managed by the Tsurai Ancestral Society, which includes descendents of the original inhabitants.
- ⁶ Passage of the federal Fishery Conservation and Management Act in 1976 (PL 94-265) led to the establishment of eight regional management councils, including the PFMC.
- ⁷ Regulations have generally been more restrictive in the California KMZ than the Oregon KMZ, reflecting somewhat different policies regarding how much fishing opportunity each state is willing to forego in the KMZ to maintain opportunity in other areas.
- ⁸ The tribal allocation was upheld in *Parravano v. Babbitt*, 70 F.3d 539 (9th Cir. 1995), cert. denied, 518 US. 1016 (1996).
- ⁹ See Ralston (2002) for a discussion of the biology of West Coast groundfish and how growing understanding of that biology affected PFMC management.
- ¹⁰ Pacific ocean perch, bocaccio and lingcod were declared overfished in 1999, canary rockfish and cowcod in 2000; darkblotched and widow rockfish in 2001; and yelloweye rockfish in 2002. Lingcod was declared rebuilt in 2005. In 2009, Petrale sole was declared overfished.
- ¹¹ See Leet et al. 2001 and Starr et al. 2002 for descriptions of these fisheries and gear types.
- ¹² A 2005 survey of Trinidad Harbor employment conducted for the Rancheria identified 34 crew and 22 skippers associated with 22 fishing operations (Trinidad Rancheria unpub. data). Some of those operations have moved or left fishing since.
- ¹³ The 1981 start date for this analysis is based on the availability the Pacific States Marine Fisheries Commission's PacFIN database, which integrates Washington, Oregon and California commercial fishery landings data to provide a consistent coast-wide electronic record of landings from 1981 forward. The PacFIN data for California are based on the C-MASTER data provided by CDFG to the PacFIN program.
- ¹⁴ An entity is counted as a buyer in a given year if it receives at least one delivery. In reality, the number of active buyers capable of regularly receiving the catch from multiple boats is considerably smaller.

- ¹⁵ Because multiple species may be caught during a fishing trip, trips are measured by assigning each delivery to the fishery accounting for the greatest (i.e., plurality of) ex-vessel value associated with that delivery. In some cases, fishing for particular combinations of species and/or using multiple gear types on a single trip is prohibited.
- ¹⁶ Ex-vessel value data are not available for 1977-1980.
- ¹⁷ Note that crab season straddles the calendar year (December through July), and most landings occur within the first one to two months of the season (Hankin et al. 2001). As a result, activity reported for a given year may not correspond to that of a season, *per se*. We analyzed the data by calendar year for consistency with analyses for other fisheries, most of which have seasons that lie within the calendar year.
- ¹⁸ Initiated by the state in 2004, the CRFS provides comprehensive estimates of effort and catch for all recreational fishing modes, landings and species for each of six multi-county 'districts'. (Modes include: "manmade" structures, beaches and banks, CPFVs or charter boats, and private boats.) The CRFS includes some modified components of NMFS' Marine Recreational Fisheries Statistical Survey (MRFSS), a nationwide recreational catch and effort survey implemented in 1980 (and subsequently replaced by the Marine Recreational Information Program in the mid-2000s), and recreational data collected in CDFG's Ocean Salmon Project (<http://www.dfg.ca.gov/marine/crfs.asp>). See the Regional Profile for a discussion of recreational fishing in the larger North Coast region.
- ¹⁹ The 1980 start date for this analysis is based on the availability of raw electronic CDFG logbook data.
- ²⁰ As of 2007-2008, the Rancheria collected dockage of \$0.09 per pound for use of the pier and crab unloading fees of \$0.17 per pound. Crab unloading fees were increased to \$0.22 per pound as of early 2009. Some fishermen unload their own catch, and pay dockage but not offloading fees.
- ²¹ http://trinidad.ca.gov/minutes/04-23-08_cc_mins.pdf, accessed 7/15/09.
- ²² <http://www.psmfc.org/efin/data/fuel.html#Data>, accessed 11/23/09.
- ²³ In reviewing the draft of this report, one local fisherman noted that the base price increased to \$125 per pot as of September 2009.
- ²⁴ The assessments for other California, Oregon and Washington fisheries are different; see Federal Register (2005) for further information.