

**Marine Life Protection Act Initiative  
Public Comments Submitted  
through June 16, 2010**

**From:** Adam Wagschal  
**Sent:** Wednesday, June 16, 2010 8:12 AM  
**To:** MLPAComments  
**Subject:** State Marine Recreational Management Areas

State Marine Recreational Management Areas (SMRMA) have been proposed within areas of Humboldt Bay where we expect certain (and uncertain) future projects to occur. Can you please provide guidance regarding how the presence of SMRMAs would affect state approvals (e.g., permitting, CEQA compliance, etc.) of these projects? We are interested in how approvals for the specific project types described below would be affected, but we also anticipate "unknown project types" and would appreciate a general description of how "any project" would be evaluated within a SMRMA. Additionally, we anticipate that as the MLPAI proceeds, there may be motions to change the SMRMA proposals to State Marine Conservation Area (SMCA) proposals. If project approvals within SMCAs would be different than SMRMAs please describe the differences.

- Using dredge material to raise the elevation of salt marshes and other habitat types as an adaptation to sea level rise.
- Building new boat ramps or docks.
- Maintaining boat ramps or docks.
- Cleaning boat ramps or docks.
- Installing fish cleaning stations.
- Maintaining fish cleaning stations.
- Removing pilings.
- Removing other debris (e.g., railroad tracks)
- Levee maintenance.
- Levee expansion.
- Moving a levee.
- Removal of non-native species by mechanical means.
- Removal of non-native species with chemicals (herbicides).
- Placing navigational aids.
- Building temporary blinds to hunt waterfowl.
- Boat anchoring and long term mooring.
- Existing mariculture activities.
- Expansion of mariculture activities.
- Dredging.
- Archeological surveys including "digs".
- Existing wastewater discharge.
- New wastewater discharge.
- Introduction of native oysters.
- Habitat enhancement via placement and anchoring of woody debris.
- Bridge maintenance, including structural replacements.
- Building new bridges.

Additionally, please provide guidance as to how SMRMAs and SMCAs would affect approvals for upstream projects that might affect water quality in the MPA.

Long list, but my guess is there can be some grouping in the response.  
Thank you, Adam

**From:** The Pelican  
**Sent:** Thursday, June 10, 2010 7:38 AM  
**To:** MLPAComments  
**Subject:** Respect and restore Kashia Pomo rights!

To Governor Schwarzenegger, and all others involved:

Thanks to the MLPA initiative, members of the Kashia Pomo Tribe and other tribes are now banned from their traditional seaweed, abalone and mussel harvesting grounds by the creation of a no-take marine reserve off Stewarts Point in Sonoma County, a site sacred to the tribe.

This represents a familiar pattern in conservation law: an indigenous practice, carried on for thousands of years without disrupting the ecological integrity of the area, is overwhelmed by a huge wave of over-harvesting by mechanised fishing-boats and too many people trying to get "their share" of a dwindling resource. Then, alarmed at the damage, framers of The Law decree that no one, not even the indigenous people whose means of subsistence have already been almost destroyed, can take anything from the area. This is to attack the problem with a very blunt instrument, smashing the subsistence of the ONLY people that have behaved impeccably with regard to the ecological balance.

On any theory of justice this is wrong. Stopping over-exploitation is a good idea, but it is not necessary to close down a sacred site. The relatively tiny take of the marine life at Stewart's Point by the local Kashia Pomo band is not what caused the problem, and it will not exacerbate it. All that this ban does is to meanly deprive people who are already desperately poor of their means of subsistence. A well-justified and explicit exception could easily, and should now, be made, respecting the traditional rights of the Pomo. Not to remedy this situation is dishonourable and shameful.

We are not members of the tribe. We are white, and as such we feel tainted, and disgusted, by the mean-spirited acts against Indians, just as we detest all acts of cruelty, which this is.

This MLPA Initiative has openly violated numerous state, federal and international laws, including the American Indian Religious Freedom Act, the UN Declaration on the Rights of Indigenous Peoples, the Bagley-Keene Open Meetings Act and the First Amendment of the U.S. Constitution. If this initiative is supposed to be a good idea, we hate to think what a bad idea would be like! By whatever means necessary, this should be changed.

Respectfully submitted,

Russell Wells  
Kathleen Lassiter  
21962 Timber Cove Road,  
Jenner, CA 95450.

**From:** monique sonoquie  
**Sent:** Friday, June 11, 2010 10:17 AM  
**To:** MLPAComments  
**Subject:** American Indian Rights and MLPA

I support traditional harvesting rights and am concerned about the violation of the American Indian Religious Freedom Act and the UN Declaration on the Rights of Indigenous Peoples. indian harvesting rights are not only law, but natural law. we have sustained this environment for over thousands of years and will continue to do so. agencies and governments need to work with us, not against us to ensure protection and sustainable ecosystems.

monique sonoquie  
indigenous youth foundation, inc  
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93117

**From:** Adam Wagschal  
**Sent:** Friday, June 11, 2010 3:53 PM  
**To:** MLPAComments  
**Cc:** 'Kelly Sayce'; Kelly Sayce  
**Subject:** Socioeconomic Study

Please distribute the attached study report to the Blue Ribbon Task Force and Science Advisory Team.

Thank you, Adam

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Adam Wagschal  
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Humboldt Bay Harbor, Recreation and Conservation District  
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# **HUMBOLDT COUNTY PRE-MLPA COMMUNITY-BASED SOCIOECONOMIC CHARACTERIZATION AND RISK ASSESSMENT**

- First Interim Report –

Overview of Socioeconomic, Demographic, and  
Fisheries-Specific Trends and Conditions



Prepared for

**The County of Humboldt Headwaters Fund**

by

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# HUMBOLDT COUNTY PRE-MLPA COMMUNITY-BASED SOCIOECONOMIC CHARACTERIZATION AND RISK ASSESSMENT

- First Interim Report -

Overview of Socioeconomic, Demographic, and Fisheries-Specific Trends and Conditions

## 1.0 Introduction

The following pages constitute the first in a series of reports to be submitted to the County of Humboldt Headwaters Fund as stipulated in the schedule of deliverables for the study titled *Humboldt County Pre-MLPA Community-Based Socioeconomic Characterization and Risk Assessment*. The study is being conducted to provide Humboldt County and other public trust entities and stakeholder groups with timely scientific information regarding the potential socioeconomic implications of establishing a new network of marine protected areas (MPAs) along the North Coast<sup>1</sup> region of California, as required by the California Marine Life Protection Act (MLPA).

This first interim report utilizes archival and primary source information to describe select aspects of the socioeconomic and demographic context within which the MLPA is being implemented along the North Coast. The report is a preliminary component of the overall research effort in that it forms the basis for more thorough documentation of relevant socioeconomic, demographic, and fisheries-specific trends and conditions as the project moves forward. Coupled with additional archival data and data deriving from extensive in-depth interview and user group mapping work currently being conducted in communities throughout the study area, such documentation will, in turn, enable valid comparative analysis of MPA array scenarios as needed by decision-makers who seek to minimize the social costs and maximize the biophysical and human benefits of the new network of marine reserves.

**Background.** As required by the MLPA, a new network of MPAs is currently being designed and will soon be implemented along the Humboldt County coastline and along the adjacent coastlines of Mendocino and Del Norte Counties. Because the North Coast fishing industry is already constrained by an assortment of economic, regulatory, and environmental challenges, and because some operators and business owners in the fisheries and distribution support sectors are struggling to remain the industry, closure of certain fishing grounds has the potential to reduce involvement in commercial and recreational activities that have been central to the economy Humboldt County for many decades. Given a lack of viable employment alternatives, and it is therefore likely that the new network of MPAs will generate some detrimental social and

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<sup>1</sup>As defined in relation to the MLPA process, the “North Coast” of California includes Humboldt and Del Norte Counties, and the northern part of Mendocino County. Because MPAs have already been designated in southern Mendocino County, the current analysis does not address that portion of the county in the same manner as the remainder of the North Coast, where MPA array options are still being developed.

Oeconomic effects to the region's commercial, charter, and recreational fishing fleets and to the ports, harbors, businesses, and communities that support them.

The situation is indeed complicated by a lack of local and regional economic alternatives. The Northern California timber industry has been in decline for decades, the current recession is constraining tourism activity, and the region is not physically well-connected to significant population centers and the economic opportunities available in such areas. Moreover, while the new MPAs may eventually generate environmental benefits along the North Coast, it is as yet uncertain whether closed fishing grounds will one day be reopened. In any event, living marine resources will not immediately flourish within the MPAs or in areas adjacent to the new reserves. Thus, any socioeconomic benefits potentially resulting from MPA-induced improvements to the status of the region's fish, crab, and shellfish populations can occur only over the long-term. Given the uncertainty of long-term MPA benefits and the likelihood that area closures will constrain an already challenged fishing industry in the near-term, especially under certain MPA array scenarios, work is needed to develop a clear understanding of fleets and communities that are particularly vulnerable to MPA-related changes.

***Impact Assessment and the Headwaters Fund.*** This study is being conducted for the Humboldt County Headwaters Fund by Impact Assessment, Inc. (IAI), a California-based research firm that has specialized in objective assessment of socioeconomic dimensions of marine fisheries and related coastal zone management issues since 1980. The firm and its principals are highly experienced in the objective assessment and monitoring of social and economic changes potentially or actually following from regulatory measures intended to improve management of public trust natural resources around the coastal zone of the United States.

The Headwaters Fund was established in 2003 as a public sector resource for advancing the economic well-being of communities in Humboldt County. Entities and agencies that channel the fund- such as various County of Humboldt agencies, the City of Eureka, and the Humboldt Bay Harbor, Recreation and Conservation District- are likely to benefit from the data and analytical products described in this proposal, both in a general sense under the County's Comprehensive Economic Development Strategy, and with direct regard to information needed to effectively anticipate and plan for implementation of the MLPA in Humboldt County. Such products will be of value for the same reasons to planners and other officials in neighboring Mendocino County and Del Norte County.

## **1.1 Overarching Goal and Underlying Rationale**

The *Humboldt County Pre-MLPA Community-Based Socioeconomic Characterization and Risk Assessment* was developed to provide public officials with scientific information needed to assess and adjust for any potential MPA-related effects that are likely to be detrimental to fishermen and other residents of coastal communities across Humboldt County and adjacent counties, and to maximize any potentially beneficial outcomes of the MLPA process in the region. The project is specifically designed to improve the quality and quantity of social and economic information that is available to inform decisions regarding the selection of MPA arrays for implementation along the North Coast. The basic rationale underlying the study is that the

potential human benefits and liabilities resulting from establishing any new network of MPAs along the North Coast have not been sufficiently assessed and that such assessment must occur before decision-makers make any final determinations regarding the number, size, and placement of the new reserves.

Documenting the nature of the potentially affected human environment and assessing potential risks and benefits of MPA arrays *in advance* of the regulatory action is directly analogous to the sequence used by federal agencies under stipulations in the National Environmental Policy Act of 1969 and other federal policies that call for early determination and equitable distribution of benefits and liabilities associated with regulated use or development of public trust resources. In this sense, the *Humboldt County Pre-MLPA Community-Based Socioeconomic Characterization and Risk Assessment* is, in the context of the MLPA Initiative, a novel and proactive commitment to a well-tested evaluative sequence that will maximize the quantity and quality of social science information available for decision-making purposes *prior to* implementation of the action in question - in this case, establishment of new marine reserves and associated restriction and/or displacement of economically viable commercial and recreational fishing activities and other uses of the marine environment.

The project is also intended to improve understanding of the biophysical consequences of the new MPAs - as indicated by the reaction of fishermen to MPA-induced closures of commercial and recreational fishing grounds. Prior research in the Central California region clearly indicates the tendency of commercial and recreational fishermen to adapt to closure of historic grounds by fishing in close proximity to the margins of the new reserves and/or in other suitable ocean areas within a reasonable distance from port. This has led to highly concentrated fishing activity in certain areas and, in some cases, crowding and conflict (Impact Assessment 2010). Although the biological effects of MPA-induced displacement and re-concentration of fishing effort are generally not well understood or well-communicated in the MPA literature, it is obvious that displaced and re-concentrated fishing effort bear implications for the status of the marine ecosystems of which the reserves and adjacent ocean areas are component parts. In actuality, assessment of the interface between physical and human effects of a government action such as those occurring via the MLPA process is an important element of a sufficient environmental review process. This is elucidated in the 2009 Amendments to the California Environmental Quality Act (CEQA) Guidelines,<sup>2</sup> which state that:

Where a physical change [in this case, a putative shift in fishing pressure on marine ecosystems along the North Coast] is caused by economic or social effects of a project [in this case, the project is establishment of new reserves under the MLPA and the social effects involve forced displacement of fishing activity], the physical change may be regarded as a significant effect in the same manner as any other physical change resulting from the project. Alternatively, economic and social effects of a physical change may be used to determine that the physical change is a significant effect on the environment. If the physical change causes adverse economic or social effects on people, those adverse effects may be used as a factor in determining whether the physical change is significant.

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<sup>2</sup> As directed by SB97, the California Natural Resources Agency adopted Amendments to CEQA Guidelines on December 30, 2009. On February 16, 2010, the Amendments were approved by the Office of Administrative Law and filed with the Secretary of State to be included in the California Code of Regulations. The Amendments became effective on March 18, 2010.

For example, if a project would cause overcrowding of a public facility and the overcrowding causes an adverse effect on people, the overcrowding would be regarded as a significant effect [a reasonable analogy being MPA-induced displacement of fishing effort and resultant crowding along the margins of a reserve or in adjacent areas with favorable habitat].

However, it must be noted that the CEQA- related Environmental Impact Review (EIR) process undertaken in association with the MLPA Initiative has thus far incorporated only very limited social or economic assessment of the new MPAs *prior to* their designation and implementation. Such assessment has been limited to modeled ex-vessel value losses potentially resulting from closed fishing grounds. It is significant in the context of CEQA and in the lives of the region's fishery participants that such models *have not* sufficiently addressed:

- (a) the economic costs or environmental implications of displacement to adjacent or other unregulated areas within the region's larger marine ecosystems;
- (b) the social or economic challenges or environmental implications of increased crowding, competition, or conflict resulting from MPA-induced re-concentration of fishing effort; or
- (c) the economic or social costs of lost or displaced fishing opportunities as these may affect fishery support sectors and coastal communities, particularly in the context of ongoing environmental, regulatory, and other challenges in the region's marine fisheries, including the current regional and national economic recession.

Given the lack of empirical data on these critically important issues, certain findings in the State's EIR documents for the North Central MLPA process are necessarily speculative in nature. The *Humboldt County Pre-MLPA Community-Based Socioeconomic Characterization and Risk Assessment* will serve to reduce such speculation for the North Coast MLPA process by providing empirically-based description and analysis of the potentially impacted human and physical environments, the likely nature of interactions between fishing fleets and the marine environment under various MPA array scenarios, and the broader socioeconomic implications of implementing area closures given existing fisheries-specific and other social and economic challenges along the North Coast.

## **1.2 Geographic Scope of the Project**

This study is focused on description and assessment of relevant socioeconomic trends and conditions and potential industry and community impacts in Humboldt County, northern Mendocino County, and Del Norte County. Compilation and analysis of existing archival data and new primary source information are being directed to facilitate a clear understanding of the potential human implications of the MLPA process for commercial and recreational fishing fleets, harbors, and coastal communities across the region. Particularly intensive primary source research is being conducted in Trinidad, McKinleyville, Eureka, King Salmon, Shelter Cove, Fort Bragg, Crescent City, and Albion.

The study involves analysis of data regarding relevant conditions and factors across those areas of the North Coast where new MPAs have not yet been implemented under the MLPA. Region-wide coverage is a logical strategy since: (a) comparative analysis is likely to underscore any unique economic or social attributes or vulnerabilities in each study county and/or its respective communities; (b) documentation of social and economic connections between the region's commercial and recreational fishing fleets, communities, and affected counties will enhance planning for and management of potential MLPA-related risks and benefits both within and across each of the three counties in this distinctive geographic region of California, and (c) the strategy will accommodate the dynamic realities of marine fisheries, which very often involve operational and economic transactions across jurisdictional boundaries.

### **1.3 Project Objectives, Associated Research Methods, and Pertinent Research Questions**

The *Humboldt County Pre-MLPA Community-Based Socioeconomic Characterization and Risk Assessment* is employing a highly systematic approach for satisfying the central objectives of the project, which involve empirically-based identification, documentation, and analysis of the component parts and linkages that comprise the marine fisheries "systems" of the North Coast; and assessment of how the candidate MPA array alternatives could affect such systems and thereby present the possibility of risks or benefits to the adjacent communities. That is, the project will involve development of a valid and thorough understanding of: (1) historic and contemporary patterns of use of the ocean environment by the various North Coast commercial and recreational fishing fleets and other ocean user groups in the region; (2) the social and economic relationships of those fleets and user groups to the shoreside industries and communities that support them; and (3) the potential for the MPA arrays to negatively affect or benefit such use patterns and social and economic linkages over the near- and long-term.

Rather than using limited data of uncertain validity to estimate the economic effects of the new MPAs, the strategy employed in the current study emphasizes the need for a wide range of empirically-grounded and cross-validated social and economic data, and quantitative and qualitative analysis deriving from sustained work in the study communities. To date, estimates of the economic costs of establishing prospective MPAs along the California Coast under the MLPA have merely been modeled, and for the harvest sector only. Moreover, the modeled estimates have been based on a single variable (hypothetical removal of ex-vessel value associated with recently reported landings from areas identified as important by fishermen), and the data upon which the models have been constructed have been compiled from short-term interaction with available respondents and existing databases. It must be noted that the models have not clearly or consistently accounted for potentially highly significant MPA-induced changes in the spatial distribution and/or manner and extent of fishing effort, nor has there been any accounting of the shoreside effects of any new MPAs, or analytical controls for or assessment of the historic or contemporary social, economic, or regulatory context within which the region's fisheries have been and are being conducted.<sup>3</sup>

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<sup>3</sup> While these critical elements of holistic analysis were pivotal in IAI's MLPA-related work along the Central Coast, again, the study was not funded until after the MPAs had already been implemented.



***Project Objectives and Research Methods.*** The current project will be the first to address the significant limitations described above in advance of the MLPA MPA array selection process. Doing so requires the satisfaction of ten basic project objectives and use of well-tested social science research methods involving: compilation, review, and analysis of relevant and valid secondary source data; use of a systematic social network sampling process; extensive in-depth interviewing with key persons active in the public sector and in the commercial and recreational fishing industries and related support businesses across the study region; and sustained presence and ethnographic observation in the study communities.

Each of the research methods used during the course of this project are well-tested and thoroughly described in the social science research literature<sup>4</sup> and each has been successfully used by IAI over the past 30 years. The project will also build on other fisheries social science research conducted in the study area between 2005 and the present. The project objectives and associated research approach and methodology are as follow:

- (1) Conduct preliminary, reconnaissance-type fieldwork in North Coast communities, serving to initiate working relationships between IAI and public officials, industry leaders, and other key persons in the study communities and county; and to initiate development of valid research protocols for use during subsequent in-depth research in the region;
- (2) Compile and conduct extensive review and analysis of existing databases<sup>5</sup> of relevance for characterizing relevant social, economic, demographic, and cultural aspects of life in the study region, with particular emphasis on data regarding socioeconomic and demographic conditions among the fleets, ports, and communities that are most likely to be affected by the new MPAs in the North Coast study region;
- (3) Employ a rigorous social network sampling process to identify key persons in the harvest, distribution, and support sectors of the region's commercial and recreational marine fisheries, and to identify particularly knowledgeable persons in those sectors;<sup>6</sup>
- (4) Build and sustain lasting working relationships and trusted confidence with resource user group representatives, fishery participants, and others with a stake in the process and outcome of the MLPA in the region; such relationships are critically important for ensuring

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<sup>4</sup> Readers are referred especially to *Research Methods in Cultural Anthropology – Qualitative and Quantitative Methods*. 1995. H. Russell Bernard. Second edition. Walnut Creek: Altamira Press.

<sup>5</sup> This would ideally include review and potential use of the socioeconomic database developed by Ecotrust during its work with fishermen along the North Coast as part of the MLPA Initiative.

<sup>6</sup> For detailed discussion of this methodology and its potential for enhancing MPA-related socioeconomic analysis along the Coast of California, readers are referred to Petterson and Glazier. 2008. Fishery Management, Monitoring Systems, and Data layering in Data-Poor Environments. Proceedings from the *Managing Data Poor Fisheries Workshop* sponsored by California Sea Grant Extension Program and California Department of Fish and Game. In press.

the validity of interview data and can be developed only through sustained presence in the study communities;

- (5) Conduct a series of increasingly exacting in-depth interviews and mapping work with highly knowledgeable persons in each of the affected commercial and recreational fisheries and other ocean use groups, and cross-validate the results with archival data and data of observation in order to develop a thorough and valid understanding of: (a) historic and contemporary resource use patterns and the various opportunities and constraints that have affected those use patterns over time, (b) social and economic linkages between specific ocean user groups and shoreside support businesses/industries across the study communities and counties; and (c) the potential social and economic risks and benefits of establishing new marine reserves in the North Coast region as these may affect ocean user groups, support sector industries, and adjacent communities;
- (6) Develop a formalized descriptive and analytical socioeconomic characterization of the study communities and counties based on synthesis of valid spatial, archival, and primary source ethnographic data to document, describe, validate, and explain: (a) trends and spatial variability in use of the marine environment by commercial and recreational fishing fleets and other groups; (b) linkages between those uses/groups and shoreside support businesses and industries; and socioeconomic and demographic trends and conditions in the ocean industries and communities prior to establishment of any new MPAs;
- (7) Use the above socioeconomic characterization as the basis for formally assessing the potential economic and social risks and benefits of establishing arrays of new marine reserves along the North Coast; use analyses that will enable analytical parsing of potential MPA effects from other sources of change and preliminary identification of social and economic variables that may serve as valid indicators of long-term MPA-related socioeconomic, social-behavioral, and biophysical change; utilize both qualitative and quantitative data and analysis to compare the socioeconomic risks of the most viable (potentially implemented) array alternatives as these may affect commercial and recreational fishing and related support sectors and communities across the study region.
- (8) Report all descriptive and analytical findings in full and summary terms to the Headwaters Fund and to resource managers and other public officials who will be involved in the MLPA process in Northern California; provide interim reports in timing with the needs of public officials and other stakeholders involved in the assessment of MPA array alternatives during the late summer and fall months of 2010;
- (9) Generate recommendations for systematic monitoring and assessment of the human effects of the new North Coast MPAs over the long-term;
- (10) Present project findings in a final meeting with Headwaters Fund and other public sector entities in the North Coast region.

***Pertinent Research Questions.*** An important if obvious and overriding research question relates to the historic and contemporary status of the principal fisheries that have been and are conducted from the study communities, and the full and intricate manner and degree to which commercial and recreational fishing is linked to social and economic aspects of life in the study communities and region as a whole. That is, what is the social and economic nature of the North Coast system of marine fisheries? Answering this question in sufficient detail will provide the context needed to identify risks potentially following from the establishment of a series of MPA-related closures to commercial and/or recreational fishing along the North Coast.

The region's principal fisheries bring extensive revenue to the communities and counties of the North Coast, not only through ex-vessel sales, but also via linkages between various seafood distribution and industry support sectors and the harbors and communities that sustain and are sustained by the commercial and recreational fishing industry. Thus, as noted above, an important objective of the proposed study is to elucidate the nature of social and economic linkages between the fisheries sectors, and by extension, between the fisheries sectors and the larger economies of the communities and county. This objective leads to a series of questions regarding the capacity of participants in the harvest and associated support sectors of the region's commercial fisheries to persist in the industry in the face of any future source of change (including MLPA-mandated area closures) and/or to adapt by finding viable economic alternatives. Similarly, uncertainties arise in conjunction with potential constraints on and the secondary effects of new limits on recreational fishing. Relevant questions include, but are not limited to the following:

- What principal physical environmental, economic, and social factors have conditioned participation and production in the region's commercial and recreational fishing industries and to what extent over the course of time, and how do these conditioning factors vary in nature and effect for specific fisheries and communities?
- How have fishery participants in all sectors adapted to changes in the marine environment, the seafood market, and the regulatory environment over time?;
- How do such adaptive strategies vary by fishery and by community; and why have some participants exited from the various fishing-related sectors of the region's economy?
- How does participation in the region's principal fisheries vary in terms of dedication of time and effort; that is, what percentage of participants in the harvest sector can be considered high-liners, full-timers, or part-timers, and are there natural breaks that would indicate a useful typology of participation and production?
- For those who do not fish on a full-time or avid commercial basis, typically what alternative forms of employment or income are used to supplement the household income; do such activities include work as fishing guides or charter operators and what is the nature and extent of opportunity in the recreation-oriented fishing sector?
- For those who do fish on a full-time or avid basis, have alternative forms of employment or income been necessary to maintain the fishing operation or household budget, and if

so, what is the nature of these alternatives; to what extent and how often are they necessary; and do they include work as fishing guides, as charter operators, or in some tourism-related capacity?

- To what extent do persons in the harvest sector participate in multiple fisheries over the course of a given year; what are the typical configurations in this regard; and why, how, when, and where are such strategies typically employed?
- What geographic areas are most important to participants in each of the principal fisheries, and what economic effects can be anticipated for all sectors under scenarios in which certain productive or relatively non-productive areas are closed to commercial fishing activity?
- To which areas will commercial operators likely redirect their efforts should certain fishing grounds be declared off-limits to fishing, and what is the likely cost in time and money associated with such regulation for participants in each sector of the region's principal commercial fisheries?
- Will area closures contribute to ongoing operational challenges in a cumulative or confounding manner, and if so, how, and what are the implications of such changes; might certain operators no longer be able to persist in a given fishery, and what alternative economic opportunities are available to such persons in this region?
- What is the likelihood that social conflicts or gear interactions will occur as a result of MPA-induced re-concentration of fishing effort and how might these be prevented or mitigated?
- What is the status of other industries of the region (such as the timber, agricultural, and tourism industries), and what is the likelihood that these could provide sources of employment for persons displaced from the region's marine fisheries as a result of the establishment of new marine reserves or other constraining factors and events?

#### **1.4 Research Products and Deliverables**

This project will involve ongoing and timely provision of descriptive and analytical information to the sponsor as needed for decision-making purposes, and production of a series of technical reports and other deliverables. As noted above, this First Interim Technical Report uses primary and secondary source data to describe select aspects of the human context within which the MLPA is being implemented along the North Coast. The report forms the basis for more thorough description and analysis to be provided in subsequent project deliverables.

A second Interim Technical Report will be titled "*Socioeconomic Characterization of the MPA-Affected North Coast Human Environment.*" This will build on the current report to provide public officials and stakeholders with descriptive information and preliminary analysis needed to better conceptualize the potentially affected human environment and the general nature of

potential MPA effects on that environment. The report will empirically identify, define, and analyze the component parts and linkages that comprise marine fisheries “systems” of the North Coast. The report will thereby document historic and contemporary patterns of commercial and recreational use of the North Coast ocean environment, and the social and economic relationships between the fishing fleets and other user groups to the shoreside industries and communities that support them. This will form the basis for developing a valid and empirically-based assessment of the potential risks and benefits of specific MPA array alternatives.

The Initial Project Report will be titled “*Socioeconomic Characterization of the Affected Human Environment and Analysis of North Coast MPA Array Scenarios.*” This report will provide initial socioeconomic assessment of select MPA array scenarios to public officials and stakeholders in Humboldt, Del Norte, and Mendocino Counties. The document will include: (1) a prefatory section summarizing the goals and objectives of the project, research methods used, challenges encountered during the study, and solutions used to meet those challenges; (2) project findings, including full description of the affected human environment and analysis of the human environmental risks and benefits potentially arising from those MPA array alternatives that are most likely to be considered for implementation; and (3) recommendations for developing a monitoring framework with which to assess human dimensions of the new MPAs over the long-term. The document will include cited references and an annotated bibliography.

The Final Project Report will be titled *Socioeconomic Characterization of the Affected Human Environment and Final Analysis of North Coast MPA Array Scenarios.* This document will incorporate recommended revisions to the initial project report and an Executive Summary describing the basic nature of the project, select elements of the affected human environment, key results of the risk assessment, and summary recommendations for a long-term human dimensions monitoring framework.

## **1.5 Organization of this Document**

Following this introductory chapter, Chapter Two describes socioeconomic and demographic trends and current conditions in Humboldt, Del Norte, and Mendocino Counties. The chapter is based largely on archival sources which indicate recent changes in the county populations and economies. Information regarding trends at the state and national levels of analysis are provided wherever possible for sake of comparison. Of particular note in the chapter are indications of significant economic challenges, recently compounded by the regional and national recession.

Chapter Three provides background trends and conditions for the North Coast Commercial Fishing Industry. The discussion is organized by county, and within each county, by port. Subsequent interim reports will elaborate on this background description, providing similar coverage of the region’s recreational fisheries and more specific detail of trends and conditions in those fisheries that are most likely to be affected by the pending MLPA MPA designation process. References follow.

# Humboldt County and Adjacent Counties



## **2.0 Socioeconomic and Demographic Aspects of Humboldt and Adjacent Coastal Counties**

Many residents of Humboldt, Del Norte, and Mendocino Counties have long had strong economic, social, and cultural ties to the region’s marine resources. But of significance to the present study, the fishing and seafood processing sectors have generally declined over the past two decades (Kildow and Colgan 2005). Several factors have contributed to this decline, including: increasingly stringent fishing regulations; cycles of limited abundance of certain species; increased availability of farmed and imported salmon and other seafood products; declining market prices; rising overhead costs; and gradual loss of the critical mass of human and fiscal capital and physical infrastructure required to effect profitable commercial fisheries.

Constraints and challenges notwithstanding, many North Coast residents remain engaged in and/or dependent on some aspect of the region’s fishing industry. This chapter provides context for understanding the macroeconomic and demographic context within which the industry and its participants are situated. It must be noted that much of the secondary data used in this report were compiled just prior to the national recession,<sup>7</sup> and that trends of economic growth documented in many areas during the mid-2000s would soon be reversed, and significantly so.

**Regional Demographic Overview.** The North Coast is isolated by its rugged, mineral-rich mountain ranges and dense forests. The region has been occupied by Native Americans for millennia. Numerous tribes eventually established themselves in the region, including the Wiyot, Yurok, Hupa, Karok, Chilula, Whilkut, Mattole, and Nongatl. While the region was first explored by Europeans in the late eighteenth century, it was not settled until the mid-nineteenth century. Early homesteaders were attracted to the area’s natural resources, including gold, timber, and fish.

The North Coast study region consists of Humboldt, Del Norte, and Mendocino Counties. Humboldt is the largest of the three North Coast counties in terms of total area and population (Table 2-1). Over 75 percent of all California redwood forests are located in the North Coast region, 40 percent of which are located in Humboldt County (Stewart 2007). The North Coast region is characteristically rural. A few small non-tribal communities were established along the coast during the mid-1800s to facilitate the gold mining, timber, and fishing industries. Today, the largest coastal population centers in this region are: McKinleyville, Arcata, Eureka, and Fortuna in Humboldt County; Crescent City in Del Norte County; and Fort Bragg in Mendocino County.

**Table 2-1 Total Population and Square Miles of North Coast Counties**

<b>County</b>	<b>Total Population</b>	<b>Land Area (Sq. miles)</b>	<b>Water Area (Sq. miles)</b>	<b>Total Area</b>
Humboldt	128,897	3,573	480	4,053
Del Norte	28,870	1,008	222	1,230
Mendocino	86,184	3,509	369	3,878
<b>Total North Coast Region</b>	<b>243,951</b>	<b>8,090</b>	<b>1,071</b>	<b>9,161</b>

Source: U.S. Census Bureau 2010

<sup>7</sup> The U.S. Census Bureau provides county- and some city-level data through 2008, prior to the national recession. The Employment Development Department updates its labor force information on a monthly basis and therefore provides the most current employment data.

U.S. Census data indicate that the North Coast’s population grew from 222,293 persons to 243,951 persons between 1990 and 2008, an increase of nearly 10 percent (U.S. Census Bureau 2009). Numerous tribes with ancestral territories live directly adjacent to the coast, including the Wiyot, Yurok, Trinidad Rancheria, Pomo, Mattole, Sinkyone, Tolowa, Yuki, and Pomo (CMLPAI 2009). Some tribes are federally recognized, while others are not. According to the California Native American Heritage Commission (2009), the Hupa (or Hoopa) and Karuk also have coastal interests in the study region but do not have a direct land link to the Pacific Ocean. Native Americans comprise six percent of the persons living in the North Coast region. The following table presents figures for select demographic indicators for the three North Coast counties and region as a whole (Table 2-2). Data for California and the nation as a whole are included for comparison.

**Table 2-2 Select Demographic Factors for the North Coast Region: 2006-2008**

County	Total Population	Caucasian (%)	African American (%)	Native American (%)	Asian (%)	Hispanic*	Other (%)
Humboldt	128,897	82.3	1.0	5.5	2.1	8.2	9.1
Del Norte	28,870	73.8	3.3	7.8	3.0	16.0	12.1
Mendocino	86,184	86.8	1.0	4.7	1.5	20.1	6.0
North Coast	243,951	90.0	1.7	6.0	2.2	14.7	9.0
California	36,418,499	60.9	6.2	0.8	12.3	36.1	19.8
United States	301,237,703	74.3	12.3	0.8	4.4	15.1	8.2

\* Persons of Hispanic origin may be of any race; therefore total population percentages exceed 100

Source: U.S. Census Bureau, 2006-2008 American Community Survey 2009

**North Coast Regional Economic Overview.** Historically, the North Coast regional economy has been based in natural resource extraction and exploitation. Today, economic and population growth in the North Coast region are challenged by a diminishing resource base, a rugged and geographically isolated landscape, extensive state and national park lands, limited inland truck and rail access, the national recession, and other regionally specific factors. Several select current economic characteristics of the North Coast region are depicted in Table 2-3.

**Table 2-3 Select Economic Characteristics for the North Coast Region: 2006-2008**

County	BA Degree or Higher (%)	Median Household Income (\$)*	Per Capita Income (\$)*	Persons in the Civilian Labor Force (%)	Persons below Poverty Level (%)	Median Home Value (\$)*
Humboldt	26.4	40,515	23,262	60.5	18.4	328,100
Del Norte	14.2	35,861	18,276	47.3	20.3	252,600
Mendocino	23.0	43,307	23,685	60.0	16.8	443,600
North Coast	21.2	39,894	21,741	55.9	18.5	341,433
California	29.4	61,154	43,641	64.8	12.9	510,200
United States	27.4	52,175	40,208	65.2	13.2	192,400

\*Income is reported in 2008 inflation-adjusted dollars. Source: BEA 2009; U.S. Census Bureau, American Community Survey 2009

Unemployment rates are consistently much higher for the counties of Humboldt, Del Norte, and Mendocino than for the State of California as a whole (Figure 2-1). Analysts project that job opportunities are most likely to increase in the information technology and financial sectors (EDD 2009a).



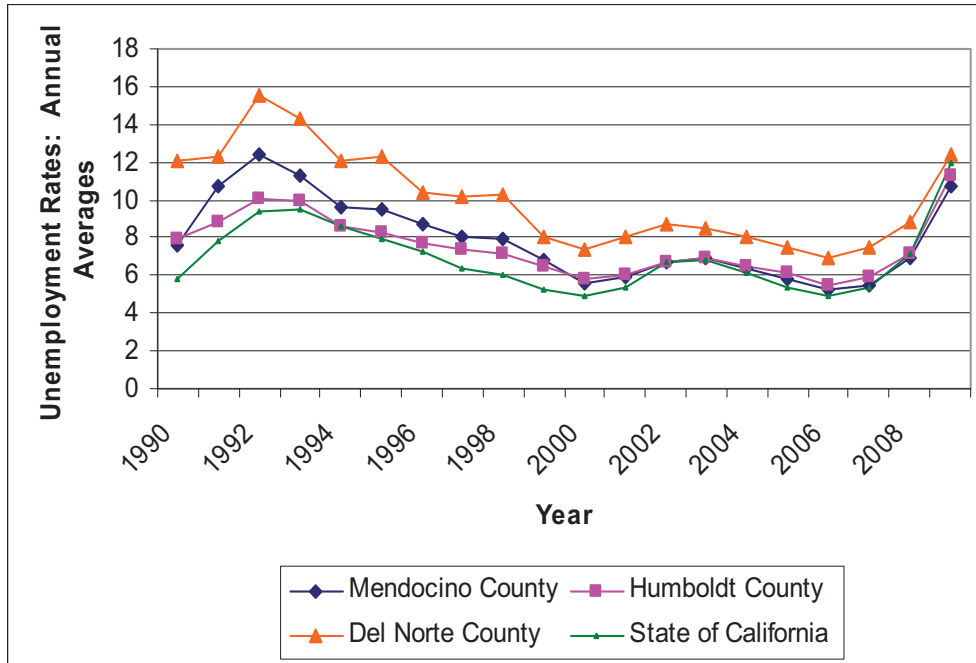


Figure 2-1 Unemployment Rates for the North Coast Region by County: 1990-2009  
 Source: <http://www.calmis.ca.gov/file/lfhist/mendohlf.xls>

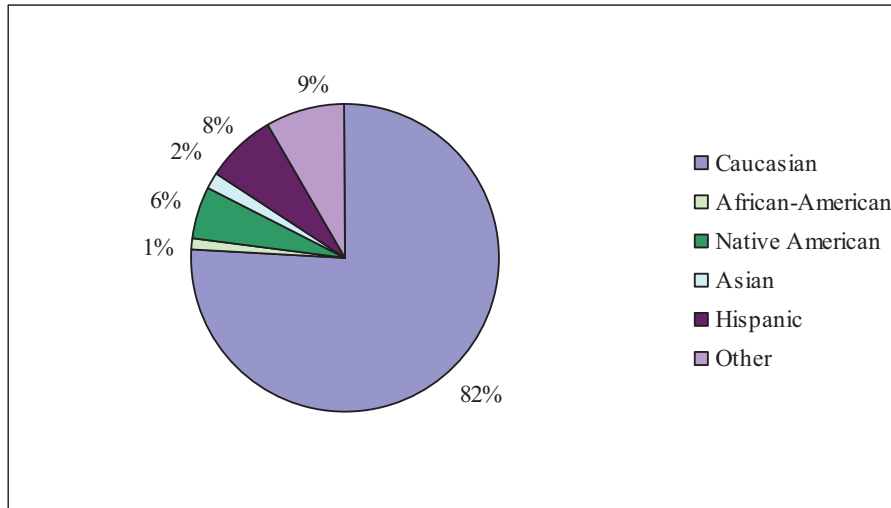
## 2.1 Humboldt County

**Geographic Overview.** Humboldt County encompasses 4,053 square miles, including 480 square miles of water and 121 miles of coastline (U.S. Census Bureau 2009). Nearly 1,500,000 acres of Humboldt County are densely forested.

**Population Trends.** Historically, Humboldt County’s population growth was closely linked to the growth of its timber industry. Between 1900 and 1940, the county’s population increased from approximately 25,000 persons to 43,000 persons (Dean et al. 1973). During the post-War years, increasing national demand for wood products led to significant growth in the region’s timber industry. Between 1940 and 1960, Humboldt County gained nearly 60,000 residents; the timber industry employed a significant portion of the workforce. During the 1960s, national demand for timber decreased. As a result, between 1960 and 1970, the county’s population decreased from about 107,000 persons to 98,000 persons, reflecting a decline of eight percent (Dean et al. 1973).

Today, Humboldt County is the most populous of the three North Coast counties. The 2006-2008 interim Census enumerated 128,897 residents. More than half of the entire North Coast population resides in Humboldt County. Approximately 52 percent of Humboldt County’s total population is concentrated along the coast in the communities of Eureka (26,128), Arcata (16,651), McKinleyville (13,599), and Fortuna (10,497). Small coastal and inland communities include Rio Dell (3,174), Ferndale (1,382), Shelter Cove (500), and Trinidad (311). Inland areas are sparsely populated. Between 1990 and 2006, the county population increased by eight percent, mainly in the aforementioned coastal communities (U.S. Census Bureau 2009).

Native American people comprise six percent of the county’s total population (Figure 2-2) (U.S. Census Bureau 2009). There are eight Native American tribal groups in the county. Eighty-two percent of Humboldt County residents are Caucasian; eight percent are Hispanic (U.S. Census Bureau 2009).



**Figure 2-2 Principal Racial Groups in Humboldt County: 2006-2008** (U.S. Census Bureau 2009)  
 Note: Persons of Hispanic origin may be of any race; total population percentages therefore exceed 100

**Current Economic Trends.** Humboldt County ranks lower than the State of California on all indicators of socioeconomic status considered here. The percentage of persons living below the poverty threshold in Humboldt County and in the City of Eureka is particularly high (Table 2-4).

**Table 2-4 Select Demographic Factors: Humboldt County and Eureka, 2006-2008**

Select Demographic Factors	Humboldt County	City of Eureka	State of California
Civilian Unemployment Rate (%)*	12.2	13.0	12.8
BA Degree or Higher (%)	26.4	22.5	29.4
Persons below Poverty Level (%)	18.4	20.3	12.9
Median Household Income (\$)**	40,515	43,603	61,154
Per Capita Income (\$)**	23,262	21,177	43,641

\*EDD unemployment rates are for February 2010; \*\* Incomes are in 2008 inflation-adjusted dollars;  
 Source: BEA 2009; U.S. Census Bureau, American Community Survey 2009

**Key Sectors of the Humboldt County Economy.** The region’s natural resources are of historic significance to the economic well-being of people of Humboldt County. Timber production figured prominently in the county’s economy from the mid-1800s through the mid-1980s. Commercial fishing, mining, tourism, agriculture, and sport fishing have also been significant contributors to the county’s economy.

**Timber.** The manufacture of timber and other forest products<sup>8</sup> in Humboldt County dates back to 1851. Several mills were developed along Humboldt Bay near existing railways and docks to facilitate timber exportation, and timber production rose steadily through the 1920s (Planwest

<sup>8</sup> Other forest products include veneer, plywood, and pulp.

Partners Inc. 2008; Vaux 1955). Production expanded once again during the mid-1940s, when post-war demand for timber increased. The rapid depletion of old-growth redwood forests in other areas of the Pacific Northwest brought many timber men to Humboldt County to exploit previously untapped stands of Douglas fir trees. By 1953, 180 sawmills were in operation in Humboldt County (Vaux 1955). The forest products industry employed nearly 25 percent of the Humboldt County workforce in 1971. However, unsustainable levels of production combined with the establishment of the 131,983-acre Redwood National Park in 1969 to significantly reduce timber production and the number of jobs available to county residents. By 2000, many of the county's lumber manufacturing facilities had been abandoned, and the number of operating sawmills in Humboldt County dropped to 12 (Morgan et al. 2004). Presently, timber production is one-third that of the mid-1980s, diminishing from nearly 700,000 thousand board feet (MBF) in 1984 to just under 230,000 MBF in 2008 (California Board of Equalization 2009). Employment in the forest products industry has dropped commensurately (Stewart 2007).

***Commercial, Recreational, and Subsistence Fishing.*** Commercial and recreational fishing have long been important to residents of Humboldt County; the commercial and recreational salmon fisheries here date back to the mid-1800s. By the late 1940s, several seafood processing plants were located in the Humboldt Bay area (Planwest Partners Inc. 2008). Today, an economically significant commercial fishing fleet operates out of Eureka. Two seafood processing facilities and four buyers at Humboldt Bay process and distribute the fleet's landings (Pomeroy et al. 2010). Additionally, nearly 7,200 recreational vessel owners in Humboldt County fish in the region, as well as numerous shore-based anglers. The region's principal fisheries generate extensive revenue for coastal communities and the county, not only through ex-vessel sales, but also via seafood processing and distribution and the use of the harbor and fishery support businesses.

Five ports of landing in Humboldt County are: Trinidad, Eureka, Fields Landing, King Salmon, and Shelter Cove. The California Department of Fish and Game considers the ports of Eureka, Fields Landing, and King Salmon as part of the Humboldt Bay or "Eureka area" complex, for purposes of landings data collection. Shelter Cove is located 54 statute miles south of Eureka. Trinidad is roughly 30 miles north of Eureka. The port of Eureka is the only deepwater port between San Francisco and Coos Bay, Oregon.

In 2008, Eureka was the third leading port in the State of California in terms of ex-vessel value, and fourth in terms of landings (NMFS 2008). In that year, 140 captains offloaded 14 million pounds of seafood at Eureka receiving and processing facilities, with a nominal ex-vessel value of \$10 million (PacFIN 2008). Currently, between 100 and 120 commercial vessel owners use Eureka as their homeport (North Coast Strategy for Economic Development 2007; Pomeroy et al. 2010). Commercial fishery participants describe the resident fleet as including 80 crabbers, 15 to 20 salmon trollers, 8 to 10 trawlers, and 5 to 10 smaller vessels that primarily target sablefish and other nearshore species using line and pot gear (Pomeroy et al. 2010). The pot/trap fishery for Dungeness crab is the most economically important commercial fishery in Humboldt County. Between 2000 and 2008, an annual average of 4.6 million pounds of Dungeness crab with a corresponding nominal ex-vessel value of \$7.6 million was offloaded at Humboldt County ports of landing (CDFG 2009).

Mariculture is an important sector of the county economy. Oysters have been farmed in Humboldt Bay since the mid-1800s (Planwest Partners, Inc. 2008). Production increased substantially in the 1950s. Currently, five businesses produce seed and adult oysters and clams in the area (Pomeroy et al. 2010). These firms produce an annual average of 75,000 gallons or 60 percent of oysters grown in California (Driscoll 2009; North Coast Strategy for Economic Development 2007). The majority of cultivation occurs in the northern portion of Humboldt Bay, also known as Arcata Bay (North Coast Strategy for Economic Development 2007). Currently, Humboldt Bay is the only site in the study region with a thriving mariculture industry.

Native Americans groups, such as the Yurok, Wiyot, and people of the Trinidad Rancheria, rely extensively on coastal marine resources for subsistence. Other groups rely principally on riverine resources.

**Agriculture.** Production of crops and livestock contribute substantially to the Humboldt County economy (U.S. Department of Agriculture 2007). The value of all agricultural crops and products harvested in Humboldt County was \$228 million in 2008 (County Farm Bureau Federation 2008). The most valuable agricultural products of 2008 were: timber (\$104,797,000), nursery products (\$49,117,000), milk (\$20,674,000), and cattle and calves (\$19,816,000) (County Farm Bureau Federation 2008). Of the three North Coast study counties, the Humboldt County agricultural industry is the most prolific, in terms of value. The total value of crops and products in Humboldt County ranked 31 out of 58 counties in the State of California in 2008 (County Farm Bureau Federation 2008).

The extent to which the county's agricultural endeavors can be expanded is limited by steep inland mountain ranges, narrow river valleys and flood plains, and a scarcity of flat land. As such, most agricultural activity occurs on the relatively flat land along the coastal zone (Dean et al. 1973).

**Tourism.** Camping, fishing, hiking, wildlife viewing, and marine-related recreation are important resident and non-resident activities in Humboldt County. Development of a more robust tourism industry is challenged by the county's geographic isolation from major cities and the absence of a major airport. Nevertheless, tourism is an economically important and growing industry for the county (North Coast Strategy for Economic Development 2007). Popular coastal destinations include the Humboldt Redwoods State Park, the Redwood National Park, state campgrounds, reserves, rivers, beaches, and recreation areas.

According to the California Travel Impact Report prepared by Dean Runyan Associates, average annual travel spending by visitors to Humboldt County increased three percent between 1992 and 2007.<sup>9</sup> In comparison, the average annual travel spending by visitors to the State of California as a whole increased four percent during that same period. In 2007, the county's tourism industry employed 4,770 persons, or 6.5 percent of the county's total workforce, and accounted for 3.6 percent of total employee earnings. In that same year, the Humboldt County-

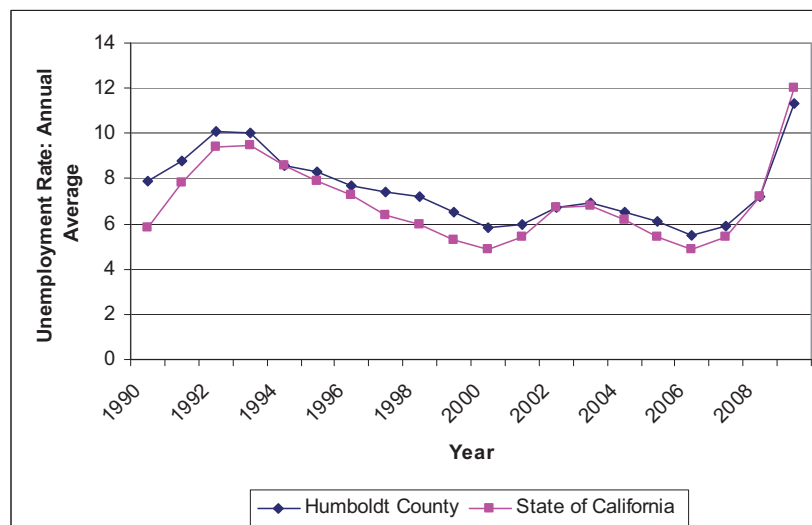
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<sup>9</sup> Travel spending includes money spent for accommodations, food and beverage services, retail sales, transportation/fuel, and arts, entertainment and recreation. Tourism industry employment includes jobs in establishments where travel spending occurs.

based travel industry accounted for \$294 million in sales. Tourist-generated state sales tax receipts amounted to \$7.5 million of the county’s total receipts of \$102.6 million (Dean Runyan Associates 2009).

**Current Employment Trends.** Unemployment levels in Humboldt County are both chronically and seasonally elevated. Employment in many of the county’s key industries – logging, commercial fishing, sport fishing, coastal tourism, and agriculture – is highly seasonal, with peak activity co-occurring during the summer months.<sup>10</sup> Thus, county unemployment levels are highest in the winter months when these activities decline.

In December 2009, the rate of unemployment in Humboldt County was 11.5 percent, reflecting an increase of 3.8 percent from unemployment rates in December 2008 (Figure 2-3) (EDD 2009b). By February 2010, the rate of unemployment in the county had climbed to 12.2 percent. Unemployment rates were particularly high in the coastal communities of Arcata (11.5 percent), Eureka (13 percent), and McKinleyville (14 percent) (EDD 2010a).



**Figure 2-3 Unemployment Rates for Humboldt County: 1990-2009**  
Source: Employment Development Department 2010a

The national recession has accelerated Humboldt County’s general trend of high unemployment rates, declining industries, and increasing impoverishment. Between October 2008 and October 2009, total Humboldt industry employment decreased by 2,600 jobs, ending the year with 46,900 jobs. Workers in the education and health services sector gained jobs; persons in nearly all other sectors lost jobs. No change occurred in the number of farm jobs (Table 2-5) (North Coast Prosperity Network 2009).

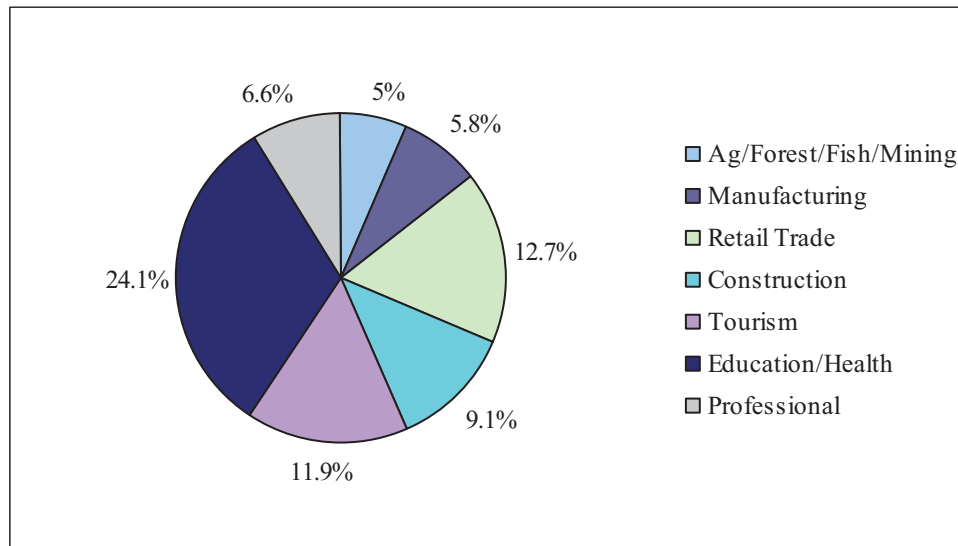
<sup>10</sup> Employment in fisheries and seafood production is not well measured. The majority of seafood harvesters are self-employed and their earnings are not captured by agencies that report employer industry data, such as the U.S. Census Bureau or the Bureau of Economic Analysis.

**Table 2-5 Changes in Number and Percent of Jobs in Humboldt County: 2008-2009**

Industry/Sector	October 2008	October 2009	Change in Number of Jobs between October 2008-2009	Percent of Change between October 2008-2009
Education & Health Services	5,900	6,100	+200	+3.4
Farm	1,200	1,200	0	0
Trade, Transportation, & Utilities	9,600	8,800	-800	-8.3
Government	14,200	13,500	-700	-4.9
Retail Trade	7,200	6,700	-500	-6.9
Construction	2,500	2,100	-400	-16.0
Leisure and Hospitality	5,100	4,800	-300	-5.9
Manufacturing	2,800	2,600	-200	-7.1
Wholesale Trade	1,000	900	-100	-10.0
Mining and Logging	600	500	-100	-16.7
Information	700	600	-100	-14.3
Financial Activities	1,800	1,700	-100	-5.6
Professional & Business Services	3,300	3,200	-100	-3.0
<b>Total: All Industries</b>	<b>49,500</b>	<b>46,900</b>	<b>-2,600</b>	<b>-5.3</b>

Source: EDD 2010a

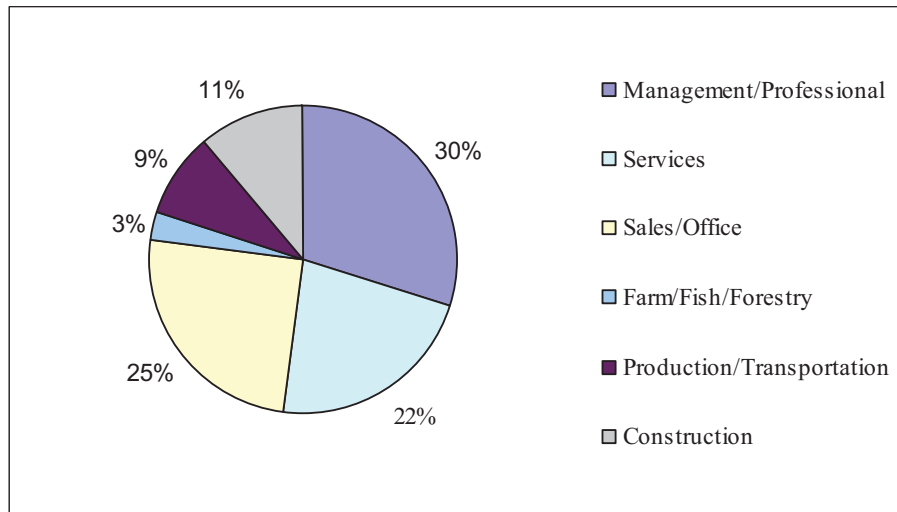
Educational and health care services sectors employed 24 percent of the workforce in 2008. Other key sectors include retail trade, tourism, and construction (Figure 2-4). Government is also a major sector, providing employment to 22.2 percent of all workers.



**Figure 2-4 Employment by Select Industries, Humboldt County: 2006-2008**  
(U.S. Census Bureau 2009)

**Major Employers.** The most significant occupational sectors in Humboldt County are management, sales and office, and services (Figure 2-5). The services and management sectors show the most extensive growth from 1990, increasing 34.7 percent and 25.4 percent, respectively. Employment in the sales and office sector has decreased 10 percent since 1990. According to statistics available to the U.S. Census Bureau (2009), employment in the farming, fishing and forestry sector declined by half from 1990 employment figures. However, it is

important to note that statistics for self-employed persons, including fishing captains, is not adequately captured in the Census database.



**Figure 2-5 Employment by Occupation, Humboldt County: 2006-2008**  
(U.S. Census Bureau 2008)

Today, the largest employers in coastal Humboldt County are in the education, health, and social services sector. Humboldt State University and St. Joseph Hospital employ large numbers of workers (Table 2-6).

**Table 2-6 Major Employers in Humboldt County: 2010**

Employer Name	Location	Industry/Business Description	Employer Size Class
Humboldt County Health Department	Eureka	County Government/Public Health Programs & Crisis Intervention Services	100-249
Humboldt County Sheriff Department	Eureka	Sheriff	100-249
Six Rivers Youth Football	Eureka	Child and Youth Services	100-249
Bettendorf Trucking	Arcata	Trucking	250-499
Blue Lake Casino	Blue Lake	Casinos/Gambling	250-499
Caltrans	Eureka	State Government/Transportation Programs	250-499
Eureka City Clerk	Eureka	City Government/Executive Offices	250-499
Humboldt County Education Office	Eureka	County Government/Education Programs	250-499
Sierra Pacific Industries	Arcata	Lumber Manufacturers	250-499
Humboldt County Social Service Department	Eureka	County Government/Social & Human Resources	500-999
Mad River Community Hospital	Arcata	Hospitals	500-999
Humboldt State University	Arcata	Universities & College Academic	1,000-4,999
St. Joseph Hospital	Eureka	General Medical and Surgical Hospital	1,000-4,999

EDD 2010b

In the county's adjacent inland communities, the dominant industries are retail trade, education and research, and tourism. Timber (lumber and wood products), dairy products, fisheries and aquaculture, specialty agriculture and horticulture, manufacturing, arts and culture, and information and technology are also important economic sectors and sub-sectors (North Coast Prosperity Network 2009).

## 2.2 Del Norte County

***Geographic Overview.*** Del Norte is the northernmost county in the State of California. It encompasses a total of 1,230 square miles of land and 222 square miles of lakes, rivers, and estuaries. It is the smallest of the three North Coast counties.

***Population Trends.*** Del Norte is the least populous but fastest growing county in the North Coast region. Between 1990 and 2008, the county's population grew from 23,460 persons to 28,870 persons, an increase of 23 percent (U.S. Census Bureau 2008). Crescent City, the county's largest coastal community and only incorporated city, had a population of 4,006 persons in 2000 (U.S. Census Bureau 2000). The county's only port of landing, Crescent City Harbor, is also located in Crescent City. Adjacent coastal communities and their year 2000 populations include Smith River (2,003) and Klamath (651); populations are not available for nearby Requa and Fort Dick.

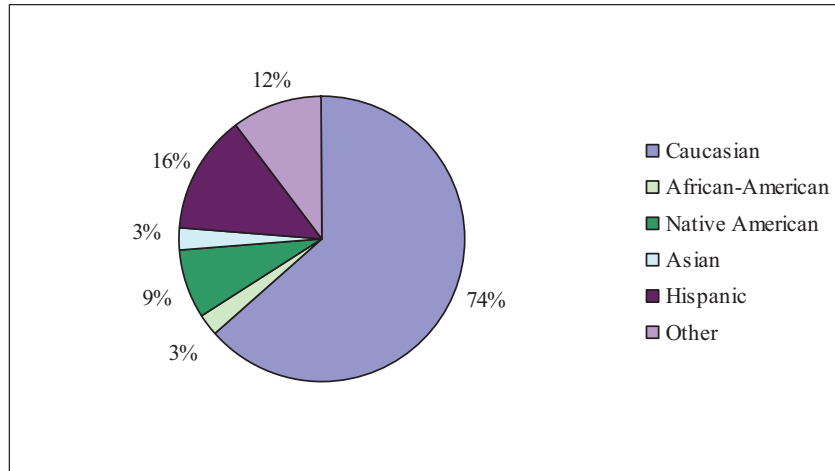
The discovery of gold along the Trinity River in 1850 and Myrtle Creek in 1853 precipitated the first major influx of non-Native Americans into the county. Many settled in the Crescent City area near the bay, which was first utilized as a port of entry for supplies and later as a shipping port for timber. Homesteaders continued to arrive in the area following the establishment of the county's first commercial lumber mill in the mid-1850s.

The majority of residents in Del Norte County are Caucasian; however, this county is the most ethnically diverse of the three North Coast counties. Persons of Native American descent comprise nine percent of the Del Norte population; Hispanics account for 16 percent.<sup>11</sup> Tribal groups in coastal Del Norte include the Yurok, Tolowa, Karuk, and the Elk Valley Rancheria (Figure 2-6).

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<sup>11</sup> Persons of Hispanic origin may be of any race; therefore, percentages describing racial composition exceed 100.





**Figure 2-6 Principal Racial Groups in Del Norte County: 2006-2008** (U.S. Census Bureau 2009)  
 Note: Persons of Hispanic origin may be of any race; total population percentages therefore exceed 100

Archeological evidence points to the presence of the Yurok and Tolowa tribes in the North Coast region thousands of years prior to the arrival of non-Native American settlers in the 1850s. Today, the Yurok tribe has several reservations in Del Norte County: the Smith River Rancheria, which includes the Towola; the Elk Valley Rancheria, which includes the Karuk, and Towola; and the Resighini Rancheria. These reservations are located along the lower 36 miles of the Klamath River and the California coast from Wilson Creek to Trinidad Bay. Marine resources are an important staple of the Yurok diet. The Yurok Tribe harvests relatively large amounts of Chinook and coho salmon and other Klamath River Basin aquatic resources for subsistence (Pierce 2002). The Tolowa group is located along the Smith River plain, north of Crescent City. They are members of the federally recognized Smith River Rancheria, Elk Valley Rancheria, and Confederated Tribes of Siletz. Marine resources, such as smelt and salmon, clams, mussels, eels, and kelp have long been a vital part of Tolowa subsistence (Collins 1996; Thornton 1984).

**Current Economic Trends.** Del Norte County ranks lower than the State of California on all indicators of socioeconomic status considered here. In the North Coast study region, Del Norte County has the highest percentage of persons living below the poverty threshold: 20 percent of Del Norte County residents and nearly 35 percent of Crescent City residents were living below the poverty threshold in 2008. Median household income for the county also falls well below the state average (Table 2-7) (U.S. Census Bureau 2009). According to Stewart (2007), geographic isolation from a major metropolitan area and a decline in relatively high wage manufacturing jobs partially account for the below average median household income level.

**Table 2-7 Select Demographic Factors: Del Norte County, 2006-2008; Crescent City 2000†**

Select Demographic Factors	Del Norte County	Crescent City	State of California
Civilian Unemployment Rate (%)*	13.6	17.1	12.8
BA Degree or Higher (%)	14.2	13.3	29.4
Persons below Poverty Level (%)	20.3	34.6	12.9
Median Household Income (\$)***	35,861	25,783	61,154
Per Capita Income (\$)***	18,276	16,434	43,641

† 2008 American Community Survey data is only available for communities with populations of 20,000 or more.  
 \*EDD unemployment rates are for February 2010; \*\* Income is in 2008 inflation-adjusted dollars; Sources: EDD 2010b; U.S. Census Bureau 2009

**Key Sectors of the Del Norte County Economy.** Historically, minerals, timber, and marine products were central to the economy of Del Norte. While natural resource extraction industries remain economically significant to the county, fewer Del Norte County residents work in those occupations today than in recent past decades (Stewart 2007). Sawmills, which were once numerous in Del Norte County, are now closed. The size of the county's commercial fishing fleet has greatly diminished. Today, the service industry, which includes tourism, is the county's largest and fastest growing industry, in terms of employment (County of Del Norte 2006).

**Timber.** In the early 1970s, the Del Norte County timber harvest accounted for 6.5 percent of California's total annual timber harvest. The forest products industry employed 25 percent of the county's workforce. Establishment and subsequent expansion of Redwood National Park combined with untenable levels of production to significantly diminish regional timber production and the number of jobs available to county residents. Currently, two wood products facilities operate in the county. The forest products industry employed 4.4 percent of the county's total workforce in 2000. In that same year, timber felled from Del Norte County forests accounted for 2.2 percent of California's total annual timber harvest. This yield was 86 percent below the 1972 harvest (Headwaters Economics 2009; Morgan et al. 2004). By 2008, the Del Norte County timber harvest accounted for less than one percent of the state's total annual timber harvest (California Board of Equalization 2009).

**Commercial Fishing.** The commercial fishing industry in Del Norte County began in the 1860s. Salmon was the principal species targeted. The economic importance of the fishing industry to the county and its residents increased as the timber industry began to decline in the mid-1900s (Norman et al. 2006). Today, the county's commercial fishing industry centers on Dungeness crab, sablefish, black rockfish, ocean (pink) shrimp, and Pacific whiting.

Crescent City Harbor is the only commercial port of landing in Del Norte County. In 2008, Crescent City Harbor was the fourth leading port in the State of California in terms of ex-vessel value, and fifth in terms of landings (NMFS 2008). In 2000, 200 captains delivered their catch to Crescent City Harbor (Norman et al. 2006). More than 75 percent of those captains offloaded Dungeness crab only, or as part of an annual round that includes other species, such as groundfish or salmon. The sole large-scale processor in Crescent City processes and wholesales multiple species. Currently, about 140 captains offload at the harbor (PacFIN 2008).

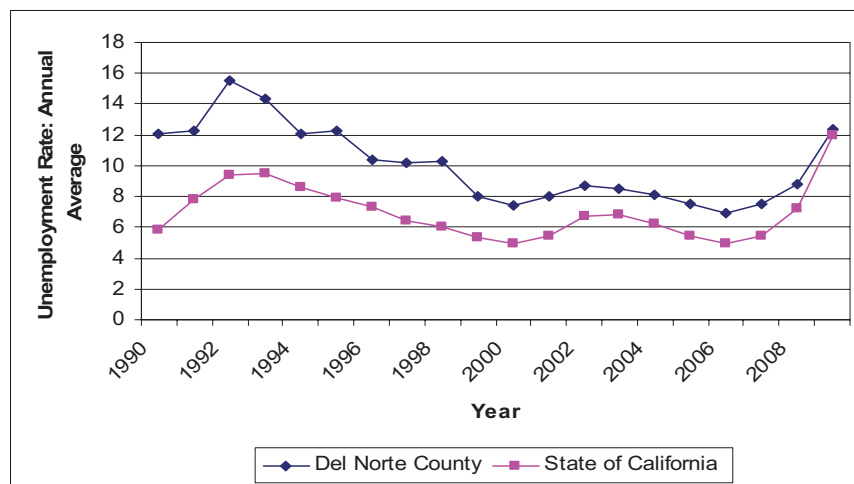
The number of commercial vessels docking at one of the harbor's 238 permanent slips has significantly declined in recent years. This decline is largely attributed to current regulations addressing changing resource conditions in various groundfish and Klamath River Fall Chinook salmon populations.

**Agriculture.** Crops and livestock production are moderately important to the economy of Del Norte County (U.S. Department of Agriculture 2007). The value of all agricultural crops and products harvested in Del Norte County during 2008 was \$52.6 million (County Farm Bureau Federation 2008). The most valuable agricultural products were: cows (\$11,964,000), milk (\$10,590,000), lily bulbs (\$7,990,000), and timber (\$5,165,000) (County Farm Bureau Federation 2008). Relative to the value of crops and products produced in other counties, Del Norte County's crops and products ranked 44 out of 58 counties in 2008.

**Tourism.** The Del Norte tourist industry centers on outdoor activities and marine recreation such as camping, fishing, hiking, biking, kayaking, rafting, and bird watching. Popular destinations include the Tolowa Dunes State Park, the Redwoods National Park Headquarters and Visitor Information Center, the Smith River National Recreation Area, and the Elk Creek Wildlife area. The county’s tourism industry growth is undermined by its relative remoteness and rugged topography.

According to the California Travel Impact Report prepared by Dean Runyan Associates, the average annual travel spending by visitors to Del Norte County increased by almost three percent between 1992 and 2007; four percent was average for the state as a whole. In 2007, the county’s tourism industry employed 1,760 persons, or nearly 15 percent of the county’s total workforce, and accounted for 10 percent of total employee earnings. In that same year, the travel industry in Del Norte accounted for \$102 million in sales. The county’s tourist-generated state sales tax receipts amounted to \$2.7 million of its total receipts of \$14.2 million (Dean Runyan Associates 2009).

**Current Employment Trends.** Unemployment rates in Del Norte County have long exceeded the state average (Figure 2-7). In February 2010, the unemployment rate in Del Norte County was nearly 14 percent (EDD 2010b). In Crescent City, the unemployment rate was 17 percent (EDD 2010c). A local county official links Del Norte’s high unemployment rates and poverty levels to the decline of the county’s timber and fishing industry (Atherton 2009). Employment here is also highly seasonal, with unemployment rates typically peaking in the winter months when tourist-related traveling and spending are down (Headwaters Economics 2009).



**Figure 2-7 Unemployment Rates for Del Norte County: 1990-2009**  
Source: Employment Development Department 2010d

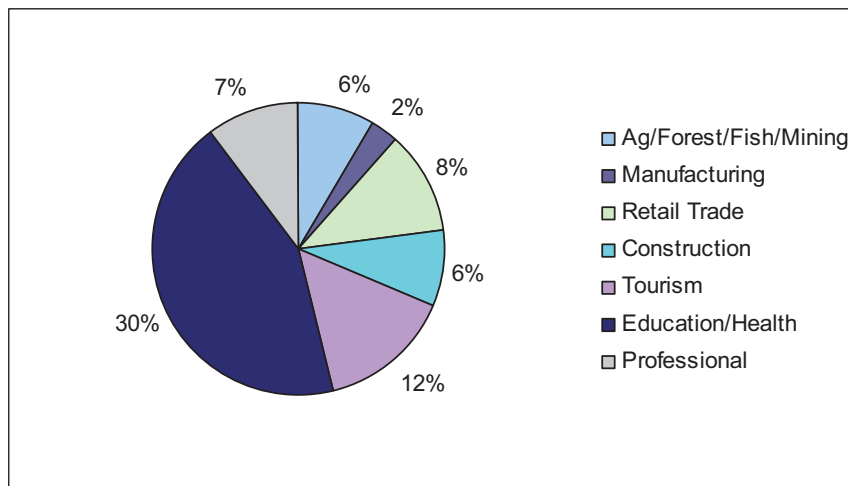
The national recession has accelerated Del Norte County’s general trend of high unemployment rates, declining industries, and increasing impoverishment. Between December 2008 and December 2009, total Del Norte County industry employment decreased by 270 jobs or 3.2 percent, ending the year with 8,200 jobs (EDD 2010b). Workers in the manufacturing, financial activities, and mining, logging, and construction sectors gained jobs; persons in most other sectors lost jobs (Table 2-8).

**Table 2-8 Changes in Number and Percent of Jobs in Del Norte County: 2008-2009<sup>12</sup>**

Industry/Sector	December 2008	December 2009	Change in Number of Jobs between December 2008-2009	Percent of Change between December 2008-2009
Manufacturing	130	140	+10	+7.7
Mining, Logging, and Construction	270	280	+10	+3.7
Financial Activities	200	210	+10	+5.0
Information	110	110	0	0.0
Professional and Business Services	160	160	0	0.0
Leisure and Hospitality	850	850	0	0.0
Retail Trade	1,016	984	-32	-3.1
Farm	330	270	-60	-3.0
Wholesale Trade	1,000	900	-100	-10.0
Government	3,940	3,840	-100	-2.5
Education and Health Services	1,200	1,150	-850	-4.2
Trade, Transportation, and Utilities	1,200	1,150	-850	-4.2
<b>Total, All Industries</b>	<b>8,470</b>	<b>8,050</b>	<b>-420</b>	<b>-4.9</b>

Source: EDD 2010d

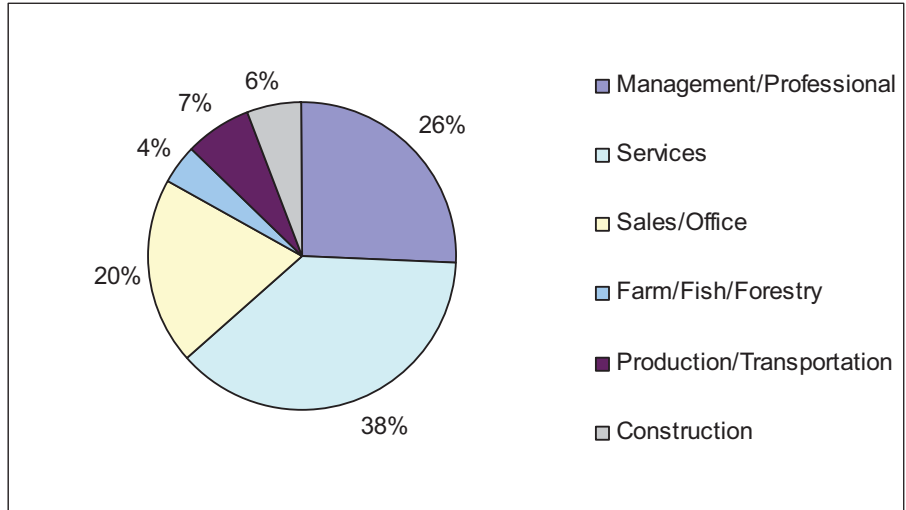
Thirty percent of the workforce was employed in education and health care services in 2008. Other key sectors include tourism and retail trade (Figure 2-8). Government is also a major sector, employing 38.6 percent of all workers.



**Figure 2-8 Employment by Select Industries, Del Norte County: 2006-2008**  
(U.S. Census Bureau 2009)

**Major Employers.** The most significant occupational sectors in Del Norte County are services, management, and sales and office (Figure 2-9). The services sector shows the most extensive growth since 1990, increasing from 22 percent to 38 percent. Employment in the farming, fishing and forestry sector decreased by nearly three percent from 1990 employment figures (U.S. Census Bureau 2009).

<sup>12</sup> Data do not necessarily include seasonal or contract labor and crew.



**Figure 2-9 Employment by Occupation, Del Norte County: 2006-2008**  
(U.S. Census Bureau 2008)

Pelican Bay State Prison is the largest employer in Del Norte County. In 2006, prison jobs accounted for approximately 1,500 jobs or 18 percent of total county employment (California Department of Corrections and Rehabilitation 2009). The other major employers in coastal Del Norte County typically employ between 50 and 249 people. Most of those businesses are located in Crescent City. Other than the prison, Sutter Coast Hospital is the only business in Crescent City with more than 250 employees (Table 2-9).

**Table 2-9 Major Employers in Del Norte County: 2010**

Employer Name	Location	Industry/Business Description	Employer Size Class
Crescent City Nursing and Rehabilitation	Crescent City	Nursing and Convalescent Homes	100-249
Del Norte County Social Services	Crescent City	County Government-Social/Human Resources	100-249
Elk Valley Casino	Crescent City	Casinos	100-249
Hambro Forest Products, Inc.	Crescent City	Building Materials	100-249
Home Depot	Crescent City	Home Centers	100-249
Lucky 7 Casino	Smith River	Casinos	100-249
Palmer Westbrook	Smith River	Agricultural Products	100-249
WalMart	Crescent City	Department Store	100-249
Yurok Tribe	Klamath	Native American Reservations & Tribes	100-249
Sutter Coast Hospital	Crescent City	Hospitals	250-499
Pelican Bay State Prison	Crescent City	Correctional Institution	1,000-4,999

EDD 2010e

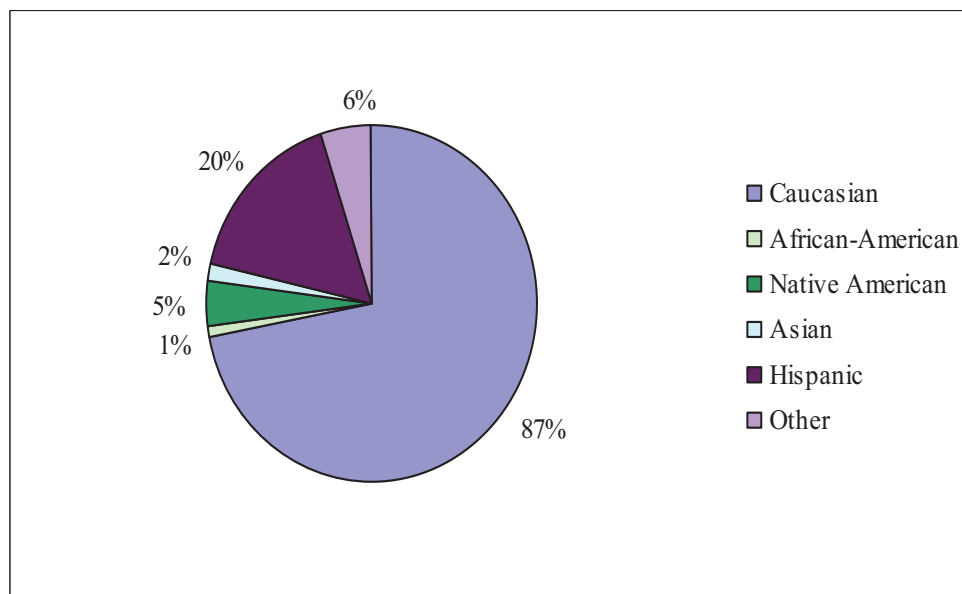
## 2.3 Mendocino County

**Geographic Overview.** Mendocino encompasses 3,510 square miles of land and 369 square miles of lakes, rivers, and estuaries. The county's rocky and rugged coastline spans approximately 100 miles. Noyo Harbor, located just south of the City of Fort Bragg, is the largest harbor in the county.

**Population Trends.** Like Humboldt and Del Norte Counties, Mendocino County is a rural area. Many of its population centers are small and unincorporated. The 2006-2008 interim Census enumerated a total of 86,184 residents, reflecting a ten percent increase since the 1990 Census (U.S. Census Bureau 2009). Incorporated towns include: Fort Bragg (7,026) Point Arena (474), Willits (5,073), and Ukiah (15,497) (U.S. Census Bureau 2000).

The Noyo area was first settled as a small lumber town in 1852 (Scofield 1954). More small lumber mills and ranches were established along the banks of coastal creeks and rivers in the greater Fort Bragg area in 1867. The Noyo/Fort Bragg population remained small until the completion of a railroad line between Fort Bragg and Willits in 1916, which facilitated expansion of the region's timber and commercial fishing industries. The harbor's importance as a center for commercial salmon fishing continued to grow throughout much of the 20<sup>th</sup> century.

The majority of residents in Mendocino County are Caucasian. Hispanics comprise the next largest ethnic category<sup>13</sup> and constitute the fastest growing segment of the county's population. Between 1990 and 2006, the Hispanic population increased by 72 percent. Native American groups comprise five percent of the population (Figure 2-10) (U.S. Census Bureau 2009).



**Figure 2-10 Principal Racial Groups in Mendocino County: 2006-2008** (U.S. Census Bureau 2009)  
Note: Persons of Hispanic origin may be of any race; total population percentages therefore exceed 100

<sup>13</sup> Persons of Hispanic origin may be of any race; therefore, percentages describing racial composition exceed 100.

The Pomo Indians are the earliest known inhabitants of northern Mendocino County. These hunter-gatherers relied extensively on coastal and riverine resources, including salmon, marine shellfish, and marine mammals (Norman et al. 2007). Today, the Pomo Indians live in many rancherias located across several counties in Northern California. In Mendocino County, the Pinoleville Band of Pomo Indians lives on the Pinoleville reservation, which is located north of Ukiah. Although they live inland, aquatic products remain significant to their daily diet today (Pritzker 2000).

**Current Economic Trends.** Mendocino County ranks lower than the State of California on all indicators of socioeconomic status considered here (Table 2-10). In 2008, nearly 17 percent of Mendocino County residents and 20 percent of Fort Bragg residents were living below the poverty threshold. Per capita personal income and median household income both fall below state averages as well (U.S. Census Bureau 2009).

**Table 2-10 Select Demographic Factors: Mendocino County, 2006-2008; Fort Bragg 2000†**

Select Demographic Factors	Mendocino County	City of Fort Bragg	State of California
Civilian Unemployment Rate (%)*	12.5	13.9	12.8
BA Degree or Higher (%)	23.0	13.6	29.4
Persons below Poverty Level (%)	16.8	20.4	12.9
Median Household Income (\$)***	43,307	36,548	61,154
Per Capita Income (\$)***	23,685	20,275	43,641

† 2006-2008 American Community Survey data is only available for communities with populations of 20,000 or more. \*EDD unemployment rates are for February 2010. \*\*\* Income is in 2008 inflation-adjusted dollars. Source: EDD 2010f; U.S. Census Bureau, American Community Survey 2009

**Key Sectors of the Mendocino County Economy.** Timber and marine resources are of historic significance to the people of Mendocino County. Agriculture, especially viticulture, and tourism are also economically important Mendocino County industries.

**Timber.** In the early 1970s, the Mendocino County timber harvest accounted for nearly 10 percent of California’s total annual timber harvest and the forest products industry employed approximately 23 percent of the county’s workforce (Headwaters Economics 2009; Morgan et al. 2004). In the late 1970s, sharp declines in the U.S. housing and construction markets, increases in imported wood products, and restricted timber access –especially on federal lands– significantly diminished regional timber production and the number of jobs available to county residents.

In 2000, eight wood product facilities, including six sawmills, employed over four percent of the county’s total workforce (Headwaters Economics 2009; Morgan et al. 2004). In that same year, the Mendocino County timber harvest accounted for nearly nine percent of California’s total annual timber harvest. In 2008, the Mendocino County timber harvest amounted to almost seven percent of the state’s total timber harvest for that year (California Board of Equalization 2009).

**Commercial Fishing.** Mendocino County has three main ports of landing: Noyo Harbor, Albion, and Point Arena. Landings are occasionally made at the lesser ports of Westport, Elk, and Mendocino, but in relatively small amounts. Noyo Harbor is the leading commercial port in the county in terms of the volume of landings. Ocean salmon was the first commercial fishing industry at Noyo in the early 1900s. The introduction of motorized trolling vessels in the 1920s

greatly increased salmon landing capacity (Norman et al. 2007). In the 1970s, at least 130 commercial fishermen utilized Noyo Harbor as their homeport. The majority of those resident fishermen trolled for salmon. Many more non-resident fishermen also trolled for salmon at Noyo. Trawl and crab fishermen were also active. Salmon landings dominated the catch offloaded at this port through the mid-1990s, when salmon abundance began to decline and seasonal closures were instituted to address that decline. Today, some 100 fishing operations offload their catch at this harbor (PacFIN 2009). Of those operations, approximately 80 utilize Noyo as their homeport. Primary commercial fisheries at Noyo Harbor currently include: the troll fishery for Chinook salmon; the trawl, hook-and-line, and trap fisheries for groundfish, including sablefish and nearshore rockfish; the urchin dive fishery; and the pot fishery for Dungeness crab. Other fisheries of lesser or past importance include the troll fishery for albacore tuna and the trawl fishery for ocean (pink) shrimp, among others (Pomeroy et al. 2010). The number of processors in the Noyo Port District has declined from six to three between 1970 and 2008.

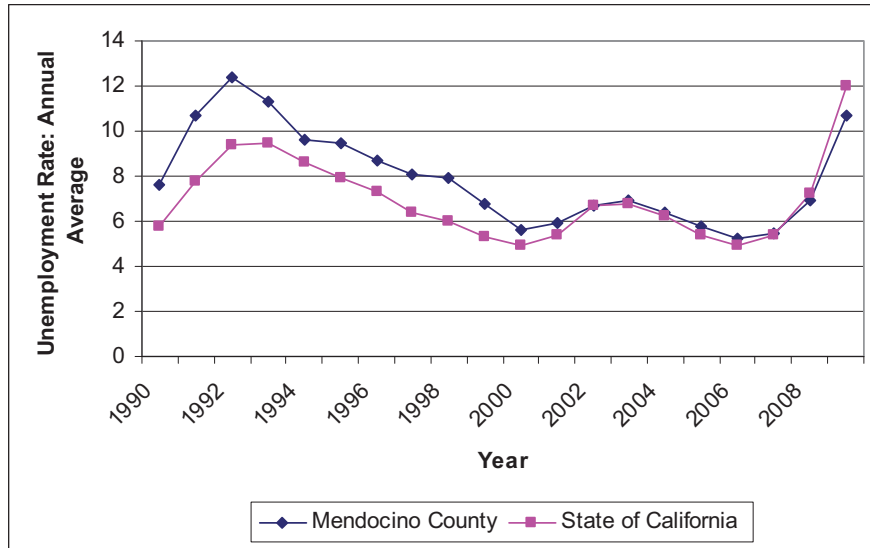
***Agriculture.*** Production of crops and livestock contribute significantly to the Mendocino County economy (U.S. Department of Agriculture 2007). In 2008, the value of all agricultural crops and products harvested in Mendocino County was \$148 million (County Farm Bureau Federation 2008). The most valuable agricultural products were: wine grapes (\$62,047,000), timber (\$39,209,000), pears (\$11,875,000), and cattle/calves (\$5,943,000) (County Farm Bureau Federation 2008). Relative to the value of the crops and produce in other California counties, the total value of Mendocino County's crops and products is moderately low, ranking 36 out of 58 counties in 2008.

***Tourism.*** Tourism in Mendocino County is centered on outdoor activities and marine recreation such as camping, fishing, hiking, tide-pooling, and whale watching. The county features numerous state parks and beaches. Popular destinations include the Mendocino Headlands State Park, Manchester State Park, Mackerricher State Park, Sinkyone Wilderness State Park, Greenwood State Beach, and Glass Beach.

According to the 2008 California Travel Impact Report prepared by Dean Runyan Associates, the average annual travel spending by visitors to Mendocino County increased three percent between 1992 and 2007; spending increased four percent at the state level. In 2007, 5,290 persons, or 10 percent of the county's total workforce, worked in some sector of the Mendocino tourist industry and accounted for over seven percent of total employee earnings. In that same year, Mendocino County's travel industry generated \$326 million in sales. The county's tourist-generated state sales tax receipts amounted to \$8.3 million of its total receipts of \$76.4 million (Dean Runyan Associates 2009).

***Current Employment Trends.*** Since 1990, the unemployment rates in Mendocino County have either exceeded or paralleled those of the state as a whole (Figure 2-11). In February 2010, the Mendocino County unemployment rate was 12.5 percent (EDD 2010f).





**Figure 2-11 Unemployment Rates for Mendocino County: 1990-2009**  
 Source: Employment Development Department 2009f

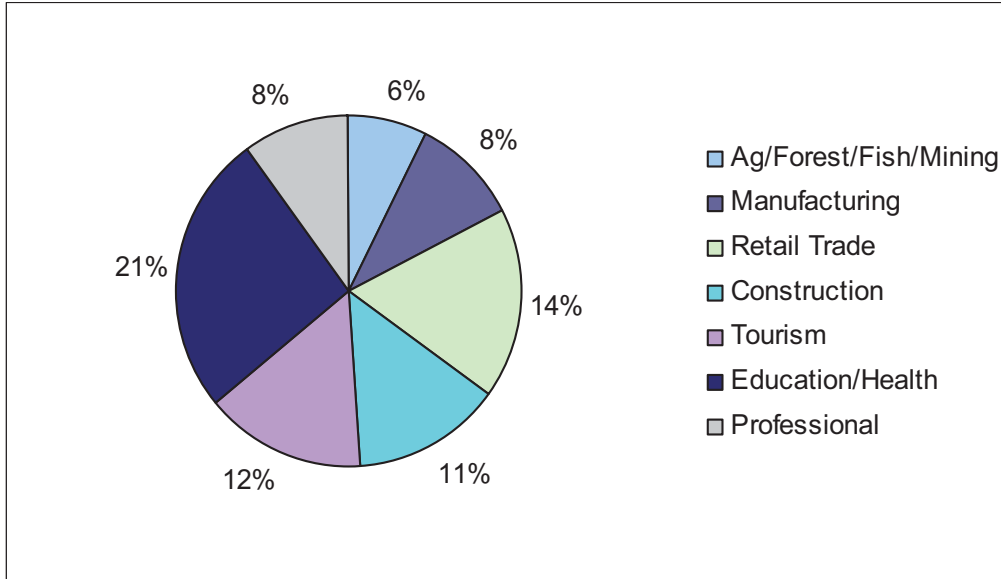
Between December 2008 and December 2009, total Mendocino County industry employment decreased by 1,730 jobs or 5.6 percent, ending the year with 29,190 jobs (EDD 2010f). Jobs were lost in nearly every sector. The financial activities sector was the only occupational field to gain jobs (Table 2-11).

**Table 2-11 Changes in Number and Percent of Jobs in Mendocino County: 2008-2009**

Industry/Sector	December 2008	December 2009	Change in Number of Jobs between December 2008-2009	Percent of Change between December 2008-2009
Financial Activities	1,210	1,230	+20	1.7
Mining and Logging	210	210	0	0.0
Construction	1,240	1,110	-130	-10.5
Trade, Transportation, and Utilities	5,900	5,430	-470	-9.2
Leisure and Hospitality	3,770	3,400	-370	-9.8
Retail Trade	4,520	4,190	-330	-7.3
Government	7,710	7,380	-330	-4.3
Manufacturing	2,500	2,330	-170	-6.8
Farm	1,620	1,470	-150	-9.3
Wholesale Trade	730	660	-70	-9.6
Education and Health Services	3,780	3,730	-50	-1.3
Professional and Business Services	1,890	1,860	-30	-1.6
Information	370	360	-10	-2.7
<b>Total: All Industries</b>	<b>30,920</b>	<b>29,190</b>	<b>-1,730</b>	<b>-5.6</b>

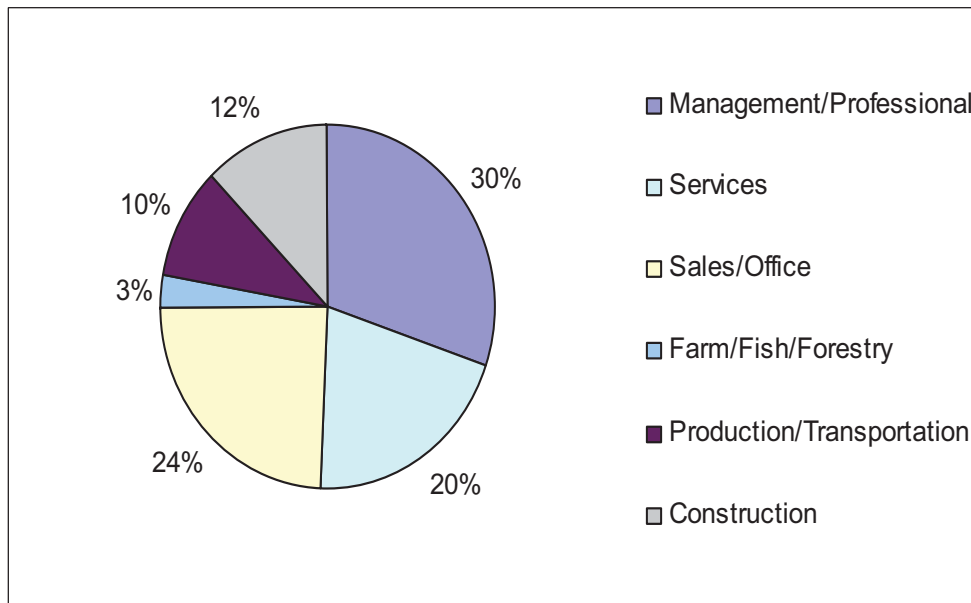
Source: EDD 2009f

Twenty-one percent of the county workforce was employed in the education and health care services sector in 2008. Other key sectors include retail trade and tourism (Figure 2-12). Government is also a significant sector, providing employment to 19 percent of all workers.



**Figure 2-12 Employment by Select Industries, Mendocino County: 2006-2008**  
(U.S. Census Bureau 2009)

**Major Employers.** The most significant occupational sectors in Mendocino County are management, sales and office, and services (Figure 2-13). The management and services sectors show the most extensive growth between 1990 and 2008, increasing from 24 percent and 15 percent, respectively. Employment in the farming, fishing, and forestry sector decreased by nearly five percent between 1990 and 2008 (U.S. Census Bureau 2009).



**Figure 2-13 Employment by Occupation, Mendocino County: 2006-2008**  
(U.S. Census Bureau 2008)

Today, county government employs large numbers of workers. The Coast District Hospital, and Safeway, a retail grocery store, are among the county’s largest employers located in Fort Bragg (Table 2-12) (EDD 2010g).

**Table 2-12 Major Employers in Mendocino County: 2010**

<b>Employer Name</b>	<b>Location</b>	<b>Industry/Business Description</b>	<b>Employer Size Class</b>
City of Ukiah	Ukiah	Government Offices	100-249
Coyote Valley Shodakai Casino	Redwood Valley	Casinos	100-249
Food Help Program	Ukiah	Civil and Social Organizations	100-249
Forestry and Fire Protection	Willits	Government-Forestry Services	100-249
Mendocino County Office-EDCTN	Ukiah	Government Offices – County	100-249
Mental Health Services	Ukiah	Government Offices – County	100-249
MetalFX	Willits	Sheet Metal Fabricators - Manufacturing	100-249
Safeway	Fort Bragg	Grocers - Retail	100-249
Ukiah Campus	Ukiah	Colleges and Universities	100-249
Frank R. Howard Mem. Hospital	Willits	Hospitals	250-499
Hillside Health Center	Ukiah	Dentists	250-499
Mendocino Coast District Hospital	Fort Bragg	Hospitals	250-499
Mendocino County Coroner	Point Arena	Government Offices-County	250-499
Mendocino County Sheriff	Point Arena	Sheriff/Police Protection	250-499
Mendocino County Social Services	Ukiah	Government Offices-County	250-499

EDD 2010g

### **3.0 County and Port-Level Descriptions of the North Coast Commercial Fishing Industry**

This chapter describes the commercial fishing fleets of the North Coast. The description is organized by county and port, with extensive discussion of Crescent City, Trinidad, Eureka,<sup>14</sup> Shelter Cove, Noyo, and Albion harbors (Table 3-1).

**Table 3-1 Major North California Harbors by Study County**

<b>Humboldt County</b>	<b>Del Norte County</b>	<b>Mendocino County</b>
Trinidad, Eureka, Shelter Cove	Crescent City	Noyo, Albion

### **3.1 North Coast Fishing Effort and Supporting Infrastructure**

**Overview.** The manner and extent of commercial fishing effort varies significantly across the study region in several respects, including the amount and value of annual landings, the number of vessels moored in and delivering to a particular port, the number and types of seafood dealers, and the types of fisheries pursued. Here, we discuss overall trends in commercial fishing effort over the last three decades. We present an in-depth examination of the commercial fishing industry for ports across the region using county-level data provided by the PacFIN database and port-level data available through the CDFG database.<sup>15</sup> Two data streams are necessary given the reporting limitations of each.<sup>16</sup> The landings and revenue data presented here reflect effort for all local, in-state, and out-of-state commercial fishing vessels that delivered to ports in the study region between 1981 and 2008.

**California’s North Coast Fleet.** For this analysis, California’s North Coast fishing fleet is defined as the total number of commercial fishing operations that have made landings at all Humboldt County, Del Norte County, and Mendocino County harbors between 1981 and 2009. California’s North Coast commercial fishing fleets vary extensively in terms of vessel characteristics, types of gear used, fishing strategies and locations, and expenditures and revenue. Moreover, most captains harvest more than one species, use more than one type of gear,<sup>17</sup> and change gear and target species seasonally. Others participate in specific fisheries when conditions are optimal. Skippers fishing for high value seafood, such as crab, tend to persist in these fisheries year after year, while others will tend to exit and enter fisheries as opportunity,

<sup>14</sup> Given their close proximity, we include Eureka, Fields Landing, and King Salmon as components of the Eureka area harbor complex.

<sup>15</sup> The PacFIN central database relies on fish ticket and vessel registration data provided by the Washington, Oregon, and California (W-O-C) state fishery agencies. Those data are available at the state and county levels. See <http://www.psmfc.org/PacFIN/data.html>.

<sup>16</sup> PacFIN data are available from 1981 through 2009; however the available information is aggregated to the county level only. Port level data are provided by CDFG; however datasets were only available for 2000 through 2008 at the time when IAI engaged in its analysis.

<sup>17</sup> According to Radtke and Davis (2000), over the last several decades, commercial fishing operations increasingly involved the use of multiple types of gear. Between 1989 and 1997, crews using only one type of gear decreased from 71 percent to 64 percent, while crews using three or more types of gear increased from nine to 12 percent.

harvest guidelines, and regulations warrant (Radtke and Davis 2000; Starr et al. 2002). Continued regulatory access to a particular fishery, such as crab, also plays a role in persistence.

***Resident and Non-Resident Commercial Fishing Vessels Combined.*** The overall number of commercial fishing vessels active in the State of California has declined precipitously since 1981. According to PacFIN, 6,908 vessels were active in the California fleet in 1981. By 2009, the fleet contracted to 1,914 active vessels.<sup>18</sup> The North Coast component of the statewide fleet reached its peak in 1981 at 3,213 vessels. Approximately 375 vessels now participate. Fleet attrition has been particularly acute in recent years, with the overall California fleet diminishing by 30 percent between 2007 and 2009, and the North Coast fleet contracting by 42 percent during the same period (Pacific States Marine Fisheries Commission 2009). The recent closures of the West Coast salmon fishery significantly diminished the number of commercial fishermen active along the North Coast and elsewhere in California.

Statewide landings and revenues have declined in conjunction with reduction in the size of the California fleet. Landings at California ports dropped from 796 million pounds in 1981 to 370 million pounds in 2009, a decline of 54 percent. Ex-vessel revenues fell by 49 percent during the same period. North Coast landings declined by 51 percent during the period 1981 through 2009, but ex-vessel revenues increased by 14 percent (Pacific States Marine Fisheries Commission 2010).

***Small Commercial Vessels Registered to Residents.*** PacFIN uses vessel identification numbers (VIDs) to track the number of vessels active in a specific county or region. The VIDs, obtained from fish ticket data recorded by seafood dealers and processors, include boats owned by residents and non-residents. In contrast, the California Department of Motor Vehicles (DMV) vessel registration database includes only those vessels registered to California residents. Significantly, the DMV database includes commercial (and recreational) vessels under 30 feet in length only.<sup>19</sup> As such, the DMV database captures trends in the number of small commercial vessels owned by residents of California, while the PacFIN database captures trends in commercial fishing vessels of all sizes as utilized by all commercial fishermen operating in California, including out-of-state residents.

DMV vessel registration data indicate a decline in participation in the North Coast small-boat commercial fishing fleet between 1981 and 2009.<sup>20</sup> In 1981, 468 small commercial fishing were active in the region; by 2009, that number had dropped by 49 percent to 237 vessels (California Department of Motor Vehicles 2009). Peak participation occurred in the early 1990s with 589

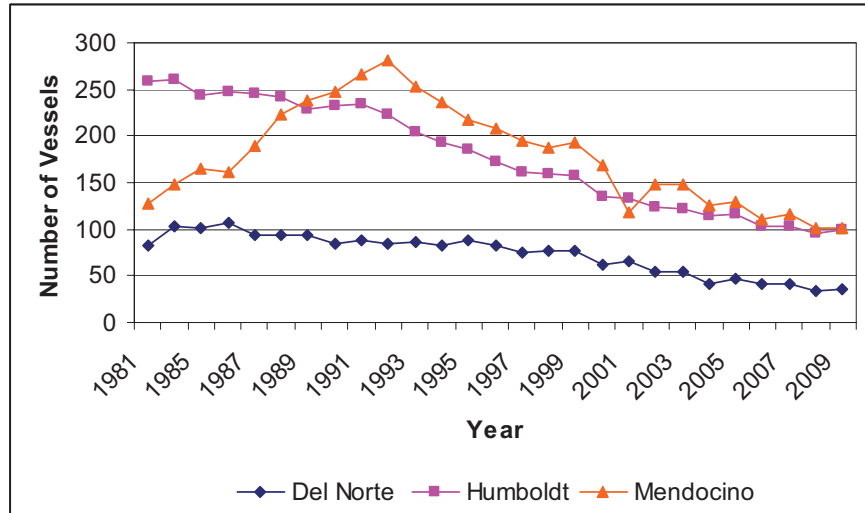
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<sup>18</sup> The U.S. Coast Guard issues all commercial vessels a six-digit identification number. PacFIN uses those vessel identification numbers (VIDs) to track the number of resident and nonresident vessels offloading seafood in a particular region. The VIDs are obtained from fish ticket data recorded by seafood dealers and processors, and, in some cases, fishermen.

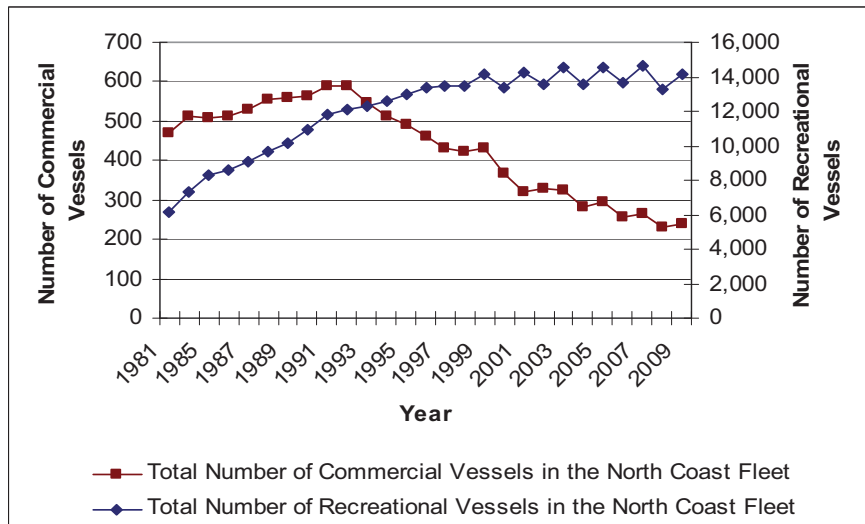
<sup>19</sup> By law, every sail-powered vessel more than eight feet and every motor-driven vessel (regardless of length) that is not documented by the U.S. Coast Guard is to be registered with the Department of Motor Vehicles. Commercial vessels of five net tons or more, or 30 feet or more in length, are required to be documented by the U.S. Coast Guard but are not required to be registered with the DMV (California Department of Motor Vehicles 2007).

<sup>20</sup> Data are not available for 1982 or 1984.

vessels (Figure 3-1). The greatest contraction in the number of North Coast commercial fishing vessels occurred in Humboldt County and Del Norte County, with declines of 58 percent and 57 percent, respectively. In Mendocino County, the number of registered commercial fishing vessels decreased by 20 percent. During the same period, the number of recreational vessels registered to North Coast residents increased from 6,030 vessels to 14,129 vessels (Figure 3-2).



**Figure 3-1 Trends in Resident-Owned Small Commercial Vessels by County**  
(California Department of Motor Vehicles 2009)



**Figure 3-2 Trends in Resident-Owned Small Commercial and Recreational Vessels: North Coast**  
(California Department of Motor Vehicles 2009)

While the data sets vary in terms of absolute numbers, both the PacFIN and DMV data reveal a decline in the overall size of the North Coast commercial fishing fleet. Pomeroy and Dalton (2003) assert that the decline between 1981 and 1985 was in part the result of the implementation of a limited entry program for the commercial salmon fishery in 1982, and the effects of the 1982-1983 El Niño event, which affected abundance and also limited access to the fishing

grounds. Prohibition of commercial salmon trolling in the Klamath Management Zone (KMZ)<sup>21</sup> beginning in 1985 also contributed to that decline (Pomeroy et al. 2010a). In subsequent years, measures for managing the Chinook salmon population in the KMZ included abbreviated commercial fishing seasons and limited quotas (Pierce 1998).

The introduction of limited entry permit programs for species other than salmon also reduced or capped the number of vessels reporting landings in California and other Pacific Coast states. For instance, the federal groundfish limited entry program has resulted in fewer active commercial operations in California, though profits for captains with permits have reportedly increased (Radtke and Davis 2000).

Other factors contributing to the overall decline in participation in California and North Coast commercial fisheries include: an increasing number of regulations; cycles of abundance and scarcity of certain species; increased availability of farmed and imported products (especially salmon) in the marketplace; declining market prices for certain species; and mounting overhead costs, such as fuel, insurance, and Workman's Compensation (Pomeroy and Dalton 2003).

Most recently, the implementation of 29 marine protected areas along the Central Coast of California has affected the nature and extent of participation in that region. In some areas, the MPAs have led to increased travel time and associated increases in fuel expenses and, in some cases, increased overall operating costs (Impact Assessment, Inc. 2010).

Participation in the North Coast fishing industry has been significantly impacted by complete regional closures of the commercial ocean salmon fishery in 1985, 1992, 1993, 1994, and 1995, and statewide closures in 2008 and 2009. Closures/tight restrictions in the recreational ocean salmon fishery for those same years, especially in 1991 and 1992, have also impacted participation (Pomeroy et al. 2010a). In some cases, salmon disaster funds made available to eligible commercial fishermen and businesses have mitigated some of the impacts of those closures. Nevertheless, the economic ramifications of reduced or absent salmon seasons for North Coast fishing communities are far-reaching. Impacts are greatest on those communities whose commercial fishermen lack sufficient fishing alternatives or non-fishing alternative opportunities for adapting to changes in the industry (PFMC and NMFS 2008).

***North Coast California Study Region: Landings from 1981 to 2009.*** The most economically important commercial species in the North Coast study region include: Dungeness crab, Chinook salmon, red sea urchin, ocean (pink) shrimp, Pacific whiting, and groundfish – including sablefish, rockfish, Dover sole, and petrale sole.

Dungeness crab is the most economically significant fishery in the North Coast region. Between 2000 and 2008, Dungeness crab landings accounted for 51 percent of total ex-vessel sales in the region (Table 3-2). Fishermen delivered 49 million pounds of Dungeness to Crescent City Harbor, 23 million pounds to Eureka, nine million pounds to Trinidad, and five million pounds to Noyo during those same years (CDFG 2009).

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<sup>21</sup> The KMZ is defined as that area from Humbug Mountain, Oregon, to Horse Mountain, California. Fort Bragg is not part of the KMZ.

**Table 3-2 Ex-Vessel Value of the Top Five Species Landed at North Coast Harbors: 2000-2008**

Species	Total Revenue (\$)	Total Landings in Pounds	Average Annual Revenue (\$)	Average Annual Landings (lbs)
Dungeness Crab	146,196,931	86,289,909	16,244,103	9,587,767
Chinook Salmon	30,664,289	8,187,006	3,407,143	909,667
Sablefish	24,895,246	18,967,571	2,766,138	2,107,507
Dover Sole	11,392,108	31,711,029	1,265,789	3,523,447
Red Sea Urchin	10,155,168	14,878,171	1,128,352	1,653,130
<b>Total North Coast Landings</b>	<b>285,125,949</b>	<b>329,077,307</b>	<b>31,680,661</b>	<b>36,564,145</b>

Of all the North Coast study counties, Del Norte County landings have been most extensive. Between 1981 and 2009, an average of 21 million pounds of seafood was offloaded in Del Norte County, with an annual average ex-vessel value of \$12.7 million.<sup>22</sup> Annual landings at the ports of Humboldt County averaged 20.9 million pounds and \$11.6 million. Landings at Mendocino County averaged 14.3 million pounds and \$9.3 million annually (Table 3-3).

As regards recent data, in 2008, 384 vessel operators delivered 35 million pounds of seafood to North Coast ports of landing. Estimated total ex-vessel value of the catch was \$27 million (Pacific States Marine Fisheries Commission 2009).

**Table 3-3 Average Total Landings, Value (million USD), and Landings Data by County: 1981-2009**

County	Landings (million lbs)	Revenue (million \$)	Fish Tickets	Vessel IDs	Processors <sup>23</sup>
Del Norte	21.0	12.7	6,671	352	35.0
Humboldt	20.9	11.6	7,442	361	46.7
Mendocino	14.3	9.3	9,761	493	51.0
<b>North Coast Regional Total</b>	<b>56.2</b>	<b>33.6</b>	<b>23,874</b>	<b>1,206</b>	<b>132.7</b>

Source: PacFIN 2010

**Seafood Processors, Wholesalers, Receivers, and Dealers.** By law, a fish buyer—which includes processors, wholesalers, receivers, and dealers—must complete a landing receipt when fishermen deliver their catch, and must submit the landing receipts to the CDFG on a semi-monthly basis. If the fisherman sells his catch directly to the ultimate consumer, then he is defined as a “retail fisherman” and he must complete the landing receipt or fish ticket (CDFG 2003). Each buyer or retailer has been issued a unique processor identifier number or “PID” for tracking purposes. As such, “seafood processors” include both well-established processing and distribution operations *and* licensed individuals who regularly or occasionally sell to seafood buyers *or* buy seafood from commercial fishermen (Table 3-4).

<sup>22</sup> Unless otherwise noted, all ex-vessel values in this report are nominal and have not been adjusted for inflation.

<sup>23</sup> Includes licensed processors, wholesalers, receivers, dealers, and retail fishermen.

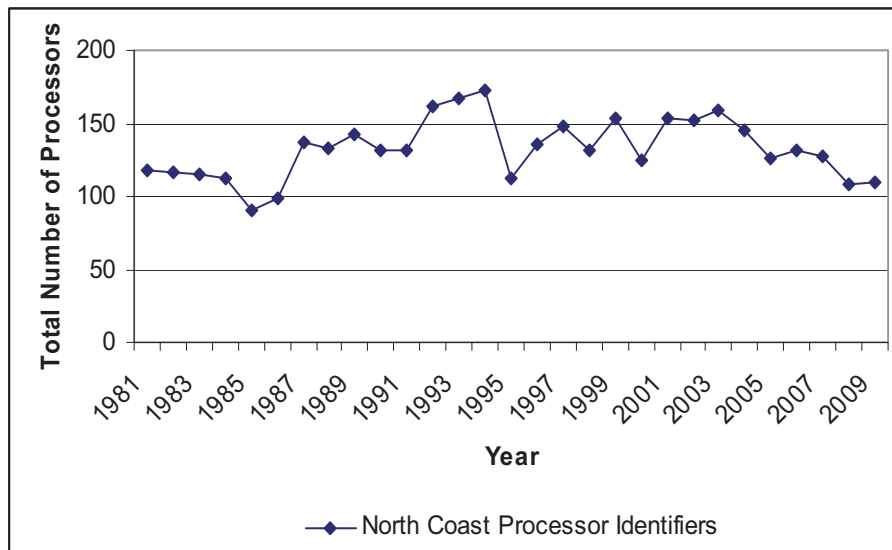


**Table 3-4 Types of Seafood Processors**

<b>Business Type</b>	<b>Description</b>
Fish Processor	Any person who processes fish for profit and who sells to other than the ultimate consumer.
Fish Wholesaler	Any person who, for the purpose of resale to persons other than the ultimate consumer, receives, purchases, or obtains fish from another person, who is required to be licensed as a fish processor, fish receiver, or fish wholesaler.
Fish Receiver	Any person who purchases or receives fish for commercial purposes from a commercial fisherman not listed as a fish receiver.
Fisherman's Retail	A commercial fisherman who sells all or a portion of his/her catch to the ultimate consumer.

Source: CFGC 1998

According to the PacFIN research database, the number of processors involved in North Coast fisheries has varied extensively since 1981, ranging from a high of 172 in 1994 to a low of 90 in 1985. Approximately 110 processors purchased or sold seafood in 2009 (Figure 3-3). For this discussion, it is critical to note that direct sales of fish made by individuals/commercial fishermen to seafood restaurants, seafood markets, and other retail establishments account for approximately 75 percent of PacFIN identified processors. As Pomeroy et al. (2010a, 2010b, 2009a, 2009b) report, there were seven active processing and distributing plants/operations and approximately 20 active buyers in the North Coast study region in 2010.



**Figure 3-3 Number of Processors, North Coast: 1981-2009**  
(PacFIN 2010)

**Fishing Communities: Vulnerability, Dependence, and Resilience.** Fishing communities are defined in part by the degree to which residents are engaged in or dependent on marine fisheries for economic, social, and cultural purposes. The Pacific Fisheries Management Council (PFMC) further defines dependence as the degree to which a port community’s fishing-related socioeconomic structure relies on the sustained harvest of a single species or very few species. A port community’s fishing-related socioeconomic structure includes fishermen, buyers, processors, various industry support sectors, and the harbors that sustain and are sustained by the commercial and recreational fishing industries. Fishery management and enforcement personnel can comprise another component of a fishing community’s fishing-related socioeconomic structure (PFMC 2009: 168-169).

In a key component of a federal socioeconomic study on the rationalization of the Pacific Coast groundfish fishery (PFMC & NMFS 2006),<sup>24</sup> analysts developed criteria for assessing the degree to which West Coast fishing communities were engaged in and/or dependent on commercial fishing activities, and the capacity of those communities to adapt to potentially constraining regulatory changes. Communities deemed highly dependent on commercial fishing but lacking “resilience,” i.e., the social or economic capacity to adapt to change, were classified as “vulnerable” or “highly vulnerable.” According to the authors, “the purpose of identifying ‘communities of concern’ or ‘areas of vulnerability’ is to alert decision-makers to regions that may require particular focus and/or mitigation efforts” (PFMC & NMFS 2006b: A-79).

It is notable in the current analysis that Del Norte County, and the cities of Crescent City, Fort Bragg, and Eureka are identified as “vulnerable” due to high levels of dependence on commercial fishing and low levels of resilience. The counties of Humboldt and Mendocino were classified as “most vulnerable” using the same criteria (PFMC & NMFS 2006: A-107-110). In this analysis, indicators of limited resilience included a high degree of community isolation and rurality, limited industry diversification, and high unemployment and poverty rates.

As discussed in Chapter Two of this report, the people of the North Coast region have long been economically dependent on its natural resource base; that is, timber, fish, and minerals. However, various factors have increasingly challenged the viability of industries involving extraction of those resources, and alternative industries, such as tourism, are limited in part by the geographic isolation of the region. Thus, unemployment rates in Humboldt, Del Norte, and Mendocino counties are chronically high, and significant near-term improvement appears unlikely. While regional planners seek new opportunities and economic development is a priority, many North Coast residents remain dependent on some aspect of commercial, recreational, or subsistence fishing activities and are struggling to adapt to changing economic, environmental, and regulatory conditions.

### **3.2 County by County Overview of Marine Fisheries**

This section provides additional descriptive detail regarding trends in North Coast fisheries for the period 1981 to 2009. The section is organized by county, with extensive discussion of commercial activity at the principal ports in each county. The North County study region extends from Crescent City Harbor in Del Norte County to Albion Harbor in Mendocino County. Data are aggregated to describe baseline trends for the region as a whole and to identify important sources of change in each county.

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<sup>24</sup> *In:* Pacific Fishery Management Council (PFMC) and National Marine Fisheries Service (NMFS). 2006. Proposed Acceptable Biological Catch and Optimum Yield Specifications and Management Measures for the 2007-2008 Pacific Coast Groundfish Fishery, and Amendment 16-4: Rebuilding Plans for Seven Depleted Pacific Coast Groundfish Species; Final Environmental Impact Statement Including Regulatory Impact Review and Initial Regulatory Flexibility Analysis. Pacific Fishery Management Council, Portland, Oregon. October 2006.

## Humboldt County

**Overview.** Trinidad, Eureka, Fields Landing, and Shelter Cove are the principal ports of landing in Humboldt County. Fishermen will occasionally offload small amounts of crab or tuna at King Salmon.

In 2008, Eureka was the fourth leading port in California in terms of landings, and the third leading port in terms of ex-vessel value (NMFS 2008). In that year, 13.3 million pounds of seafood were landed at Eureka, with a total ex-vessel value of \$9.3 million. Trinidad landings totaled 593,000 pounds in 2008, with an ex-vessel value of \$1.3 million; landings at Fields Landing totaled 883,000 pounds, and were valued at \$629,000; Shelter Cove landings totaled 41,000 pounds, and were valued at \$112,000; and King Salmon landings totaled 3,000 pounds, and were valued at nearly \$9,000. The distance and dissimilarities among the ports of Trinidad, Eureka, and Shelter Cove are sufficient to warrant separate socioeconomic description of each, while close proximity and shared infrastructure permits concurrent discussion of Eureka, Fields Landing, and King Salmon.

**Humboldt County Landings and Revenue.**<sup>25</sup> Between 1981 and 2009, total reported landings in Humboldt County averaged 20 million pounds per year; total ex-vessel revenues averaged \$12 million. Landings for that period peaked in 1981 at 38 million pounds, with an ex-vessel value of \$15 million. Following that peak, landings have generally trended downward. In 2009, 137 fishing operations offloaded a total of 13 million pounds of seafood; ex-vessel values were \$14 million (Figure 3-4) (PacFIN 2010).

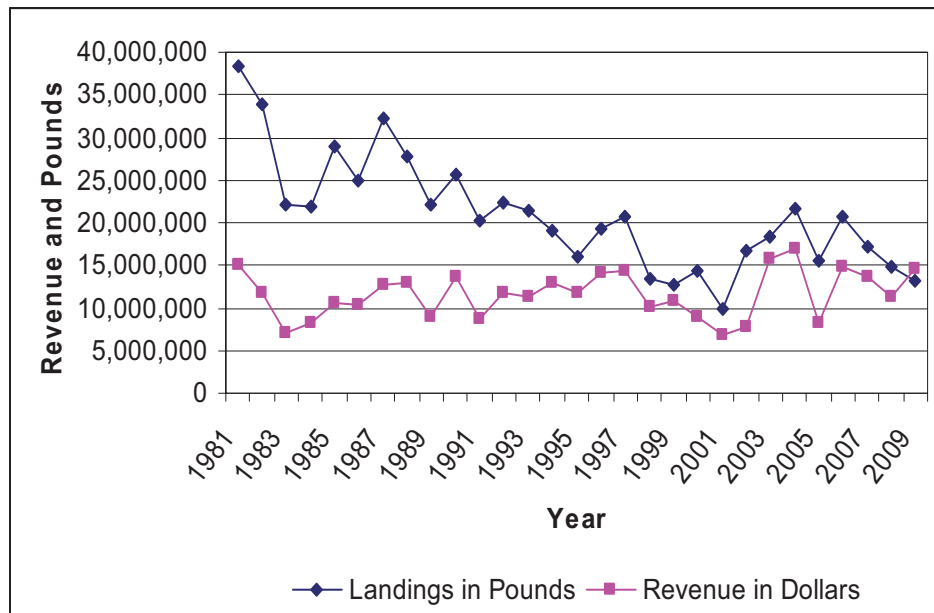
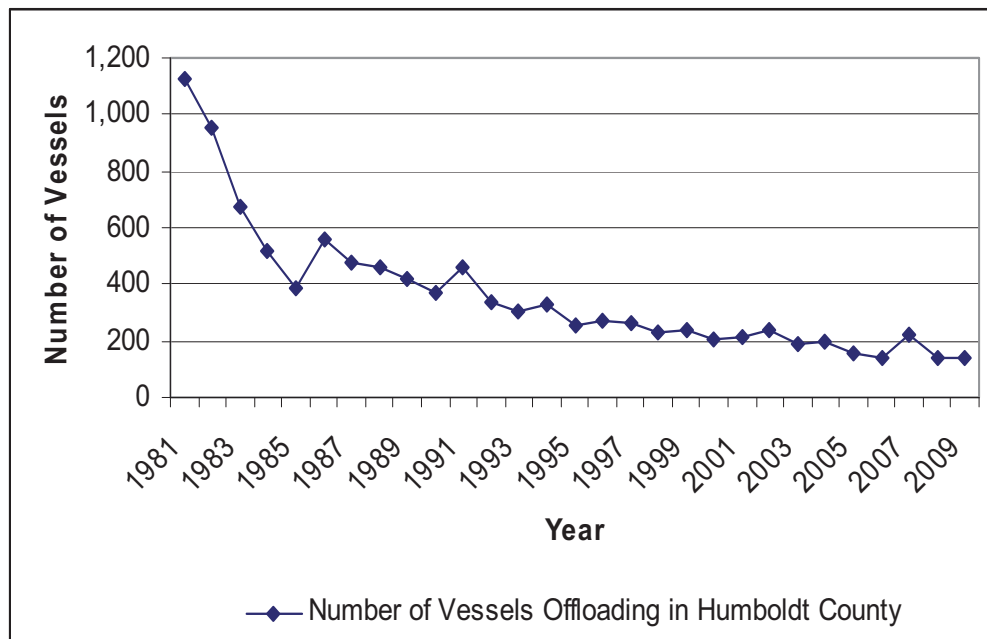


Figure 3-4 Landings vs. Revenue, Humboldt County: 1981-2009  
(PacFIN 2010)

<sup>25</sup> PacFIN landings data for Humboldt County were obtained from the Eureka area ports of landing: Eureka, Fields Landing, and King Salmon.

**Vessels and Fish Tickets.** Between 1981 and 2009, an average of 361 fishing operations offloaded their catch at the ports of Humboldt County. Peak productivity occurred in 1981, when 1,126 captains sold their catch to buyers/processors at Humboldt County ports of landing. The size of the fleet diminished rapidly over the next several years, declining 66 percent by 1985 when the KMZ was closed. Between 1985 and 2008 the size of the fleet fluctuated somewhat, but the overall trend was one of contraction. By 2009, the Humboldt County fleet had dwindled to 137 vessels (Figure 3-5). During the same period, the total number of fish tickets<sup>26</sup> submitted to CDFG decreased by 78 percent, from 17,580 in 1981 to 3,835 in 2009 (PacFIN 2010).



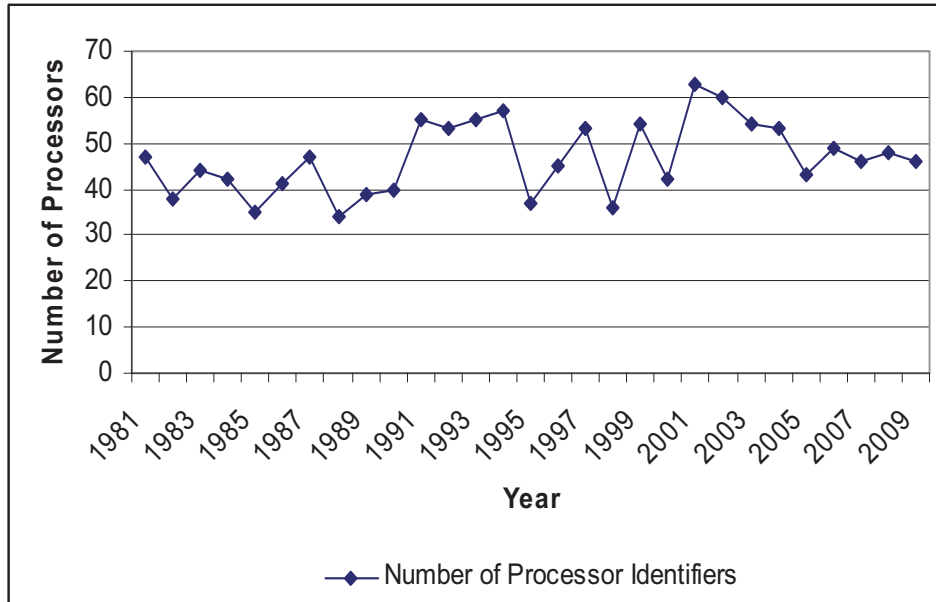
**Figure 3-5 Commercial Vessel Participation in Humboldt County: 1981-2009**  
(PacFIN 2010)

**Processors.** The number of processors active in Humboldt County has tended to fluctuate since 1981, ranging from a low of 34 in 1989 to a high of 63 in 2002 (Figure 3-6).<sup>27</sup> On average, 47 seafood processors were operating in the Humboldt area between 1981 and 2009 (PacFIN 2010).

Two seafood processing and distributing firms and four buyers were active in Humboldt County in 2009, all located in the Eureka area. Numerous fishermen in the area sell their catch directly to seafood restaurants, seafood markets, or other retail establishments.

<sup>26</sup> Landing receipts, also known as “fish tickets,” are forms documenting the landing of seafood. Seafood dealers must complete and submit the forms to CDFG twice monthly.

<sup>27</sup> Includes licensed processors, wholesalers, receivers, dealers, and retail fishermen who sell their catch to consumers.



**Figure 3-6 Number of Processors, Humboldt County: 1981-2009**  
(PacFIN 2010)

### Trinidad Harbor

Trinidad Harbor is the northernmost port of landing in Humboldt County. The natural harbor is approximately 25 nautical miles north of Eureka and 43 nautical miles south of Crescent City. Trinidad is used by numerous commercial and recreational fishermen, and about six charter boat captains. Trinidad Head was designated an Area of Special Biological Significance (ASBS) in 1974 and classified as a state Critical Coastal Area (CCA) in 2002. With a year 2000 population of 311, the City of Trinidad is the smallest incorporated city in the State of California (U.S. Census Bureau 2000).

Trinidad Harbor first developed as a shipping and supply center for the mining and timber industries during the mid-1800s. By the 1870s, whaling crews were using the harbor for its safe anchorage and easy access to land. During the twentieth century, recreational anglers began frequenting Trinidad Bay to troll for salmon (Scofield 1954). Recreational and commercial salmon trolling increased markedly following completion of Trinidad Pier in 1946 and an accompanying mooring basin in 1948. A fuel dock, bait and tackle shop, restaurant, and salmon smokehouses were constructed over the next decade or so (Pomeroy et al. 2009b). By the late 1970s, hundreds of recreational anglers trolled for salmon from Trinidad Bay.

Today, marine-related tourism and recreational angling also contribute to the Trinidad economy. Sloan and Rocha (2007) report that more than 12,000 tourists visit Trinidad each summer to fish for salmon, various rockfish, greenling, cabezon, cod, surf perch, and other species. Clamming and crabbing are also popular. Local business owners report that tourism activity is an important source of revenue for the small community.

*Harbor Infrastructure.* The Cher-Ae Heights Indian Community of the Trinidad Rancheria has owned and operated the Trinidad Pier since 2000. The natural harbor accommodates around 100 vessels on average, all of which tie off to floating moorings emplaced immediately adjacent to the pier. The Rancheria maintains the pier, hydraulic boat lift, receiving station with four hoists, launching facility for vessels up to 26 feet in length, a tackle shop, and a restaurant (Table 3-5). The harbor has no fuel dock, vessel maintenance or repair facilities, or cold storage. Fishermen necessarily patronize businesses elsewhere in the county to obtain supplies, services, and gear not available at Trinidad.

Captains of trailerable vessels often use the launching facility at Trinidad Harbor, while captains of larger sportfishing boats, commercial fishing vessels, and charter vessels make consistent use of the mooring and offloading facilities. Most of the latter typically move their vessels to Eureka for safe anchorage during periods of high winds or heavy swells. Rancheria officials intend to replace the 60 year-old wooden pier with a modern steel and concrete structure, beginning as early as 2010.

The Rancheria charges fishermen for boat launching, mooring, and offloading services, thereby covering maintenance and other costs.

**Table 3-5 Trinidad Pier User Groups, Infrastructure, and Services**

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

Source: Pomeroy, C., C. Thomson, and M. Stevens 2009b

*Commercial Fisheries.* As of February 2010, 18 commercial vessels were mooring on a regular basis at Trinidad Harbor; most were less than 36 feet in length. Most captains were participating in the winter crab fishery. Seven fishermen, two with limited entry permits and five with open-access permits, currently participate in the commercial rockfish fishery. The rockfish/lingcod fishery includes the state-managed limited entry nearshore fishery and the federally managed groundfish fishery.

In recent years, Dungeness crab has been the most economically important commercial species landed at Trinidad Harbor, followed by rockfish, salmon, and lingcod (Table 3-6). In 2008, crab landings accounted for 96 percent of all revenues generated by fishing operations based at Trinidad Harbor (CDFG 2009). Since the early 1990s, regional and statewide salmon season closures have significantly reduced commercial landings of Chinook salmon at this harbor (Pomeroy et al. 2009b).

**Table 3-6 Ex-Vessel Value of the Top Five Species Landed at Trinidad Harbor: 2000-2008**

Species	Total Revenue (\$)	Total Landings in Pounds	Average Annual Revenue (\$)	Average Annual Landings in Pounds
Dungeness Crab	14,196,931	8,151,614	1,577,436	905,734
Black Rockfish	122,441	103,123	13,604	11,458
Chinook Salmon	88,080	29,287	9,786	3,254
Lingcod	31,269	22,448	3,474	2,494
Various Rockfish (except black)	9,684	3,151	1,076	350

Source: CDFG 2009

*Market Infrastructure.* Pomeroy et al. (2009b) report that most Trinidad-based fishermen sell their catch directly to local wholesale or retail seafood businesses in the larger region. A local seafood retailer and smokehouse operator also buys seafood from the local fleet.

#### Eureka, King Salmon, and Fields Landing

*Eureka.* The City of Eureka is 21 miles south of Trinidad Head and 60 miles north of Shelter Cove. Eureka is located immediately adjacent to central Humboldt Bay, which is the only deepwater port between San Francisco and Coos Bay, Oregon, and the largest estuary in northern California. According to Norman et al. (2007: 419), Humboldt Bay is comprised of many complex habitats that support 95 species of fish, more than 180 species of invertebrates, and 30 species of mussels, oysters, and clams.

Eureka was established in the mid-1800s as a port of entrance and supply center for the mining industry. After the Gold Rush subsided, settlers used the port for offloading fish and shipping timber. Salmon and shark were among the first commercial fisheries to develop. Shark liver oil was valued during this period as a source of Vitamin A (Planwest Partners, Inc. 2008; Scofield 1954).

Today, the revenues commercial fishing captains generate at Eureka are significant. In 2008, 140 fishing operations offloaded 14 million pounds of seafood with an ex-vessel value of \$10 million at Eureka processing and distribution facilities (PacFIN 2008). Eureka was the fourth leading port in California in terms of landings, and the third leading port in terms of ex-vessel value in that year (NMFS 2008).

*King Salmon.* The King Salmon area is located approximately four miles south of Eureka on the southeastern perimeter of Humboldt Bay. Recreational anglers have long trolled for salmon in this area (Scofield 1954). Today, two privately-owned marinas serve recreational fishermen. One maintains approximately 50 slips for vessels less than 24 feet in length, a bait shop, fuel pump, and 54 parking spaces for recreational vehicles. The second provides dock space for approximately 28 vessels up to 22 feet in length, parking spaces for 83 recreational vehicles, and fuel, bait, and ice sales.

Docks attached to private residences also line the many inland channels of King Salmon and numerous home owners rent dock space during salmon season. Another privately-owned dock

provides space for up to eight vessels, and a hoist for offloading. Although recreational fishermen are the principal users of the privately-owned docking areas, certain commercial fishermen may occasionally offload through arrangements with the owners.

Of the combined 86 slips available in the King Salmon area, only about 15 are occupied on a year-round basis. Most are recreational fishing vessels. Popular forms of recreational fishing in this area include use of static hook and line gear for rockfish and halibut, and troll gear for salmon. Crab pots are also commonly used.

In total, 137 RV parking spaces are available at the two marinas. Of those, about 120 are occupied by longtime residents, a trend which has reportedly increased in recent years as residents seek affordable housing alternatives. They further report diminished requests by recreational fishermen to rent RV and docking spaces following the establishment of the KMZ and other management measures that restrict salmon fishing.

*Fields Landing.* The unincorporated community of Fields Landing is located approximately five miles south of Eureka. Fields Landing has no berthing or moorings facilities.

Fields Landing first developed in the 1880s as a point of transshipment for timber products. From 1938 to 1950, the last active whaling station in the United States operated from Fields Landing. The station was converted to a fish reduction cannery and by the early 1950s, the area had become “a well-equipped fishing port” with “three [distribution] plants with docks, hoists, scales and modern equipment for handling fish” (Scofield 1954: 36).

Today, Fields Landing is primarily utilized by recreational fishermen, although some commercial landings are tendered here, primarily Dungeness crab, hagfish, and various groundfish. Recreational fishermen use the public boat launch, which accommodates vessels up to 40 feet in length. There is also a public boatyard where fishermen can do their own vessel maintenance and repair.

*Eureka Area Harbor Infrastructure.* The Woodley Island Marina and the Eureka Public Marina are the principal berthing facilities in the Eureka area. Although numerous commercial vessels use the Woodley Island facility, both marinas accommodate commercial, recreational, and charter boat operators. The two privately-owned marinas at King Salmon primarily serve recreational fishermen. There are four public boat ramps in the area.

As noted in Table 2-7, key elements of the physical infrastructure includes: four offloading facilities, several work stations, hoists, a fuel dock, two boatyards, dry storage, a fishing pier, and an ice plant.

The primary offloading facilities in the Eureka area are the K Street Dock, the Commercial Street Dock, Dock B, and Fields Landing. Commercial fishermen occasionally offload small amounts of crab and tuna at King Salmon. Pomeroy et al. (2010a) report that, at least 20 Eureka area businesses directly support the area’s commercial and recreational fishing fleet (Table 3-7).



**Table 3-7 Eureka Area User Groups: Infrastructure and Services**

Location	Primary Facilities	Owner/Operator(s)	Services	User Groups†
Eureka	Woodley Island Marina	HBHRCH	Berthing (237 slips), utilities, work area, storage	C, R, AR, T
	K Street Dock	City of Eureka/Caito Fisheries	Offloading, tie-ups	C
	Commercial Street Dock	City of Eureka/Pacific Choice Seafood. Englund Marine	Offloading, fuel, marine supply, tie-ups	C
	Dock B <sup>28</sup>	City of Eureka/Wild Planet, Humboldt Seafood Unloaders	Offloading, tie-ups	C
	Eureka Public Marina	City of Eureka	Berthing (160 slips, plus side-ties), utilities, launch ramp, storage	C, R, AR, T
	Fishermen's Work Area/C Street	City of Eureka	420 ft dock, 4 jib cranes, work area	C
King Salmon	Johnny's Marina and RV	Privately owned	50 slips, utilities, fuel, bait, RV park	R, AR
	EZ Marina and RV Park	Privately owned	28 slips, fuel, bait, ice	R, AR
	Local Seafood Co. Dock	Privately owned	8 docking spaces, hoist, fish cleaning station	C
Fields Landing	Boat Repair Yard	City of Eureka	Boat repair, offloading, public boat launch, public dry dock	C, R, AR

†User Groups: C = commercial fishermen, R = recreational fishermen, AR = area residents, T = tourists  
 Source: Pomeroy, C., C. Thomson, and M. Stevens 2010a; IAI 2010

*Commercial Fisheries.* Currently, between 100 and 120 commercial fishing vessel owners call Eureka their homeport (North Coast Strategy for Economic Development 2007). Commercial fishery participants describe the contemporary local fleet as including 80 crabbers, 15 to 20 salmon trollers, eight to ten trawlers, and five to ten smaller groundfish vessels that primarily target sablefish and other nearshore species (see Pomeroy et al. 2010a). The Dungeness crab pot fishery is the most lucrative species landed at Eureka area ports. Between 2000 and 2008, an annual average of 4.6 million pounds of Dungeness crab with a corresponding nominal ex-vessel value of \$7.6 million was offloaded at Eureka area ports. In 2008, Dungeness crab landings accounted for 39 percent of all fishery-specific revenue at Eureka area ports (CDFG 2009). Other economically important fisheries include hook-and-line for groundfish and rockfish; trawl for groundfish, Pacific whiting, and ocean shrimp; troll for albacore tuna; and barrel trap for hagfish (Table 3-8).

Mariculture is an important component of Eureka's commercial fishing industry. Currently, five businesses produce seed and/or adult oysters in Humboldt Bay. In 2008, the firms produced an average of 75,000 gallons or 60 percent of oysters grown in California (Driscoll 2009; North Coast Strategy for Economic Development 2007). The Pacific Oyster and Kumamoto oysters are the most commonly cultivated species. Most of the products are trucked to Seattle and/or

<sup>28</sup> Following the January 2010 earthquake, the two active buyers at Dock B were relocated to temporary facilities at the foot of C and D Streets, while the City's Fishermen's Terminal is under construction (Pomeroy et al. 2010).

San Francisco for worldwide distribution. A Humboldt Bay operation is also a major global supplier of seed for selected species.

**Table 3-8 Ex-Vessel Value of the Top Five Species Landed at Eureka: 2000-2008**

Species	Total Revenue (\$)	Total Landings in Pounds	Average Annual Revenue (\$)	Average Annual Landings in Pounds
Dungeness Crab	37,798,597	22,557,178	4,199,844	2,506,353
Sablefish	9,390,231	7,135,716	1,043,359	792,857
Dover Sole	6,052,997	17,335,405	672,555	1,926,156
Albacore Tuna	4,397,436	5,783,239	488,604	642,582
Petrale Sole	2,797,921	3,727,444	310,880	414,460

Source: CDFG 2009

Dungeness crab is consistently the single most economically important species offloaded at Fields Landing (Table 3-9). Other species, such as hagfish, sablefish, and Dover sole, have been economically important, but the volume of these landings varies extensively due to fluctuating market demand and the lack of a consistent buyer for these species at the port.

**Table 3-9 Ex-Vessel Value of the Top Five Species Landed at Fields Landing Harbor: 2000-2008**

Species	Total Revenue (\$)	Total Landings in Pounds	Average Annual Revenue (\$)	Average Annual Landings in Pounds
Dungeness Crab	1,237,718	770,235	137,524	85,581
Hagfish	600,656	1,164,928	66,739	129,436
Sablefish	497,177	416,278	55,241	46,253
Dover Sole	281,262	872,154	31,251	96,906
Rockfish	210,339	486,552	23,371	54,061

Source: CDFG 2009

Relatively small amounts of Dungeness crab are offloaded at King Salmon; between 2004 and 2008, fishermen offloaded 20,600 pounds of crab at this location. Fishermen have delivered small amounts of tuna and salmon to King Salmon in recent years, but in such small amounts that CDFG typically aggregates those landings with the landings data of “All Other Ports” in the Humboldt area.

*Eureka Area Market Infrastructure.* In their profile of Eureka area fisheries, Pomeroy et al. (2010a) enumerate four principal seafood distributors and two processor-distributors in various locations along the Eureka waterfront. Three of the six firms typically receive more than 80 percent of Eureka area landings.

The largest processing operation leases a 50,000 foot facility from the City of Eureka, where it handles groundfish, crab, albacore tuna, ocean shrimp and, when available, salmon. The processor also employs about 170 persons on average (North Coast Strategy for Economic Development 2007).

The second Eureka-based processor specializes in crab. Some crab is processed on site, but the majority is transported to a larger facility in Fort Bragg. Indeed, a large percentage of seafood landed in Eureka is trucked elsewhere, though several retailers, grocery stores, and numerous restaurants sell locally landed seafood.

*Community Issues.* Fishermen and business owners in the local seafood industry have been affected by increasing groundfish regulations and the recent closures of the commercial and recreational salmon seasons. Given historically high levels of dependence on the salmon and groundfish fisheries, and relatively low levels of economic resilience, i.e., viable alternative industries, PFMC and NMFS (2008) have classified the city of Eureka as “vulnerable,” or lacking the social or economic capacity to adapt to changing economic, environmental, and regulatory conditions.

## Shelter Cove

Shelter Cove is approximately 60 nautical miles south of Eureka and 40 nautical miles north of Fort Bragg. The only launch site between Humboldt Bay and Fort Bragg is located at Shelter Cove. The community is geographically isolated. Road access is challenging, but there is an airstrip for private planes. Despite the inherent difficulties of accessing the community of Shelter Cove, it is a popular destination for recreational anglers. Its year-round population of about 600 persons swells to nearly 2,000 during the summer months, when tourists and Humboldt County residents with second homes in the area come to Shelter Cove (Humboldt Local Agency Formation Commission 2009). Many visitors are from inland areas, including Redding and the Sacramento Valley area. Most guests trailer their boats. The majority of local business owners are dependent on visiting recreational fishermen and tourists to patronize their hotels, motels, campground, and seasonally operational restaurants.

A small receiving and processing station for ocean salmon was established at Shelter Cove in 1926. The station ceased operating in 1937 when the poorly maintained pier was washed out by winter storms (Scofield 1954).

In the late-1940s, local entrepreneurs initiated a small boat rental and sportfishing business in Shelter Cove. Recreational salmon fishing became increasingly popular during the 1960s. In 1970, skiff fishermen landed 2,000 pounds of salmon at Shelter Cove. Sportfishing and recreational use of the area increased once public access to the privately owned beach was granted in the mid-1970s (Machi 1984).

Commercial fishing activity increased significantly during the 1970s, and by 1979, some 70 fishermen landed 200,000 pounds of salmon at Shelter Cove. Most fishermen used small skiffs (Machi 1984). Rockfish, crab, and abalone were also pursued from Shelter Cove during the 1970s. Located just south of the KMZ, Shelter Cove was a key point of access for salmon fishermen during the 1980s. As many as 55 commercial fishermen trolled for salmon at Shelter Cove during the height of the fishery in the mid-1980s.

*Harbor Infrastructure.* Shelter Cove has no berthing facilities, but fishermen can drop anchor here during mild weather. A breakwater provides enough protection to allow boats to use the boat launch when tides and weather permit. The breakwater, ramp, and other facilities are maintained by the Humboldt Bay Harbor, Recreation and Conservation District (HBHRCD). There is no fuel dock. Light tackle is available for purchase at the local campground, and fuel is

sold at the general store. Fishermen can hire a privately-owned tractor service for assistance launching their vessels, as the access leading to cove waters is quite steep. The nearest full-service tackle and gear shop is in Garberville, an approximately 45 minute drive from Shelter Cove.

*Commercial Fisheries.* The resident fleet consists of three full-time and two part-time commercial fishermen who primarily target crab, rockfish, Pacific halibut and, when regulations permit, salmon. On average, the most economically important commercial fisheries at Shelter Cove in recent years were Chinook salmon and Dungeness crab (Table 3-10).

**Table 3-10 Ex-Vessel Value of the Top Five Species Landed at Shelter Cove Harbor: 2000-2008**

Species	Total Revenue (\$)	Total Landings in Pounds	Average Annual Revenue (\$)	Average Annual Landings in Pounds
Chinook Salmon	470,915	201,694	52,323	22,140
Dungeness Crab	231,047	954,791	25,671	106,087
Rockfish, assorted	94,579	53,539	10,508	5,948
Red Sea Urchin	92,481	13,410	10,275	1,490
Lingcod	34,436	13,993	3,826	1,554

Source: CDFG 2009

*Market Infrastructure.* There are no buyers, seafood processing facilities, or distributors at Shelter Cove. Fishermen sell their catch directly to the public at off-site locations and/or to local restaurants and retail establishments. The small fleet, relatively low volume of landings, and geographic isolation reportedly deter seafood firms from establishing operations in Shelter Cove.

*Community Issues.* The economy of Shelter Cove has historically been based in the timber and fishing industries. Tourism is increasingly important in the modern era. The status of the industries is interdependent; a downturn in one sector tends to affect the others. The timber industry drives construction of new homes in the area, which in turn drives real estate sales and residential growth. Recreational fishing brings new residents and tourists to Shelter Cove. Many respondents explain that they moved to Shelter Cove to enjoy fishing during their retirement years. According to one resident, “There is not much reason to be here but to fish.”

However, some of the amenities that once supported Shelter Cove’s recreational fishing and tourism industries have closed. In 2002, the marina’s hotel, full-service restaurant, gear and tackle shop, and ice facility were sold to an absentee land owner. Much of that infrastructure has deteriorated. One harbor employee speculates that, given the current economic downturn, the owner has little financial incentive to improve the facilities, “from any entrepreneurs standpoint, [re-investment] does not make sense.”

Regular restaurant service is important for maintaining tourism in the area. However, the few restaurants in Shelter Cove operate seasonally, as there is not enough local business to sustain full-time operation. One inn keeper describes the businesses in Shelter Cove as interrelated: “when one drops off, we are all affected.”

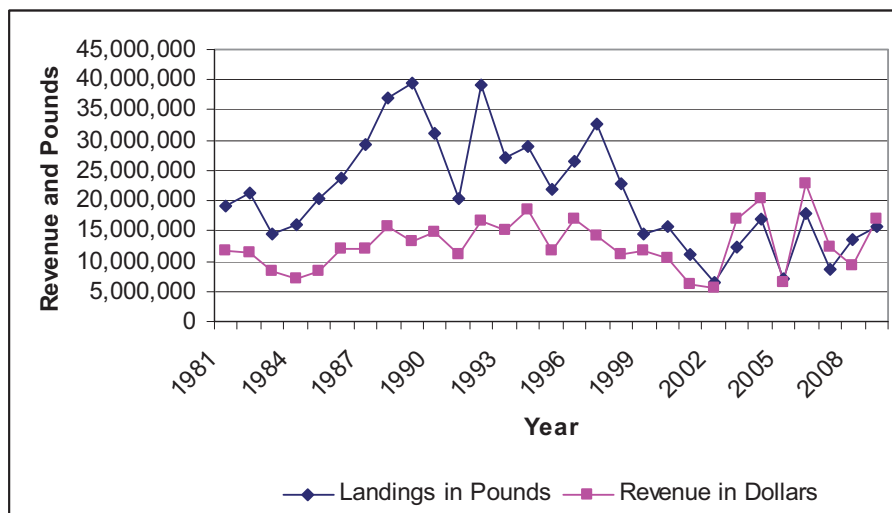
The campground is particularly dependent on tourism. The campground’s peak season coincides with the recreational salmon, rockfish, and abalone seasons – these occur between April and

September. The eight-acre campground offers extensive camping and recreational vehicle sites, with overflow capacity. The on-site store sells a small selection of tackle and some food items. The campground's occupancy rates have been relatively low in recent years due to salmon closures and/or limited salmon seasons. Low occupancy rates have, in turn, resulted in sporadic availability of the tractor service to assist with boat launching. Some locals fear that the lack of a full-time tractor service may deter recreational anglers from returning to Shelter Cove in the future.

Currently, local plans for economic improvement hinge on increasing Shelter Cove's coastal tourism base, and increasing its residential population. However, community officials assert that current management measures limiting recreational rockfish take and the recent salmon closures are undermining growth of the recreational fishing industry in Shelter Cove. Additionally, the economic recession is deterring residential growth.

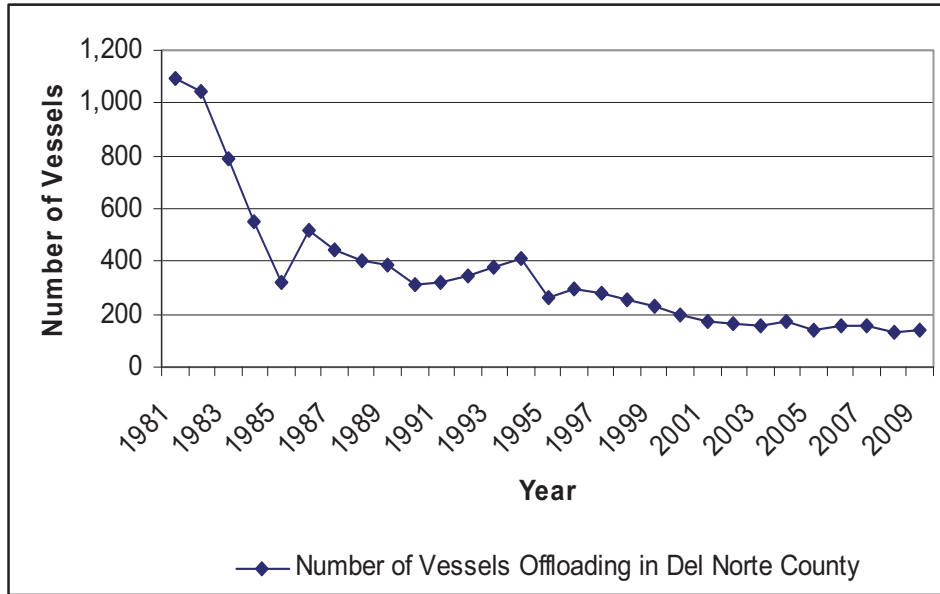
### Del Norte County

**Del Norte Landings and Revenue.** Crescent City Harbor is the sole port of landing in Del Norte County. Between 1981 and 2009, total reported landings averaged 21 million pounds per year; total ex-vessel revenues averaged \$13 million. Landings for that period peaked in 1992 at 39 million pounds, with an ex-vessel value of \$17 million. Following that peak, landings fluctuated but significantly decreased overall. In 2009, 137 fishing operations offloaded a total of 16 million pounds of seafood, with an ex-vessel value of \$17 million (Figure 3-7) (PacFIN 2010).



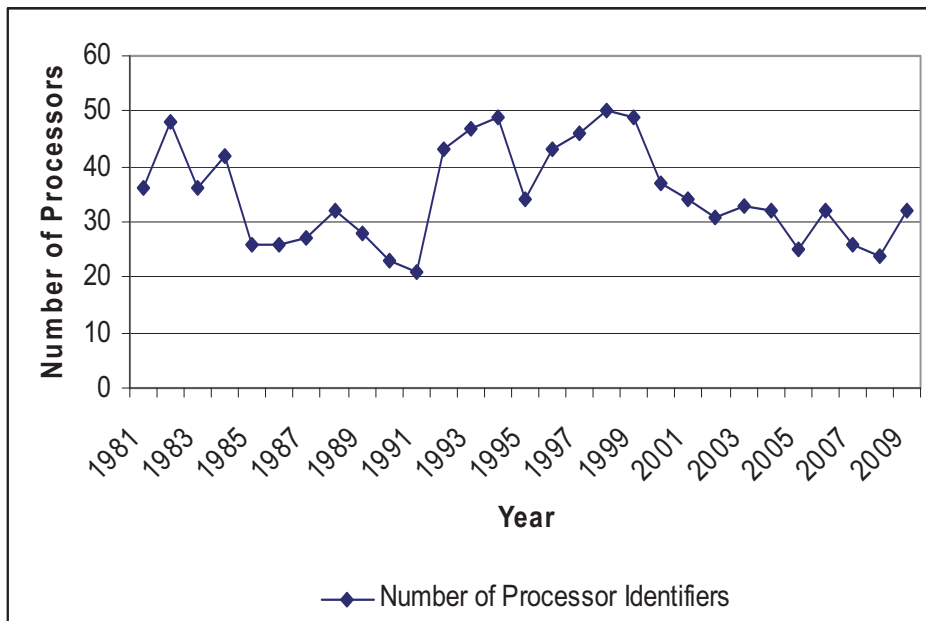
**Figure 3-7 Landings vs. Revenue, Del Norte County: 1981-2009**  
(PacFIN 2010)

**Vessels and Fish Tickets.** The number of commercial fishing operations making landings in Del Norte County peaked at nearly 2,000 in 1981. On average, 352 fishermen offloaded between 1981 and 2009. The number of fish tickets submitted also decreased during the period, dropping from 15,786 tickets in 1981 to 3,061 in 2009, an 80 percent decrease. The size of the fleet had declined to 137 operators by 2009 (Figure 3-8).



**Figure 3-8 Commercial Vessel Participation in Del Norte County: 1981-2009**  
(PacFIN 2010)

**Processors.** Since 1981, the number of processors in Del Norte County has ranged from a low of 21 to a high of 50 (Figure 3-9). On average, 35 seafood buyers were operating in Crescent City between 1981 and 2009 (PacFIN 2010). In 2010, processing operations at Crescent City Harbor included one on-site and approximately five off-site buyer/processors (Pomeroy et al. 2009a).



**Figure 3-9 Number of Processors, Del Norte County: 1981-2009**  
(PacFIN 2010)

## Crescent City

Crescent City is the only commercial harbor in Del Norte County, and the northernmost port in the State of California. Historically, it has been one of the state's most prolific ports of landing for commercial and recreational crab, salmon, groundfish, and ocean shrimp (Pomeroy et al. 2009a). Sole, lingcod, rockfish, flounder, whitebait, smelt, albacore, sablefish, surf perch, shark, and halibut have also been historically important (Scofield 1954). Despite facing several economic and market challenges in recent years, including fluctuations in the abundance of certain species, increasingly restrictive groundfish regulations, and a diminished fleet, the harbor economy, which depends on the revenues generated by its commercial and recreational fishing fleets, continues to thrive.

The harbor was first established as a point of transshipment for goods needed by the miners and other settlers who began arriving in the mid-1850s. As the Gold Rush tapered off, residents began to exploit the region's vast marine and timber resources. A whale processing station operated between 1855 and 1857, with offshore whaling activities continuing through 1894 (Bertão 2006; Scofield 1954). In the 1860s, fishermen began to develop the Chinook salmon fishery in Crescent Bay, but upstream logging and mining activities sullied the spawning grounds and the salmon population quickly diminished. Salmon populations resurged following the decline of the mining industry in the 1870s, and several salmon canneries were established along the Klamath River in the mid-1880s. Once the first local spur of a rail system was completed in the early 1900s, the port developed as a point of transshipment of lumber to the San Francisco area and other urban localities (McEvoy 1986).

Commercial and recreational fishing activities at Crescent City Harbor expanded following several port improvement projects in the 1930s, including the addition of a breakwater to protect the port from large swells and storm surge (Leidersdorf 1975). When federal funds for rebuilding a damaged wharf were not forthcoming, the local citizenry contributed their own resources to construct the aptly-named Citizen's Dock (Leidersdorf 1975; Powers 2005). Once completed in 1950, Citizen's Dock was the area's primary seafood offloading terminal.

In 1964, a tsunami destroyed much of the harbor's existing infrastructure. Subsequent reconstruction work, which included a new boat basin with a secure mooring area, 300 berths, and new offloading, processing, and boat building facilities, brought an influx of commercial and recreational fishermen to Crescent City. Shoreside receiving and processing activities increased as well. By the 1980s, three buyer-processors and at least another four buyers were based at the port (Pomeroy et al. 2009a).

According to Pomeroy et al. (2009a), commercial and recreational fishing activities began to contract in the late 1970s following new regulatory measures for managing salmon and coast-wide groundfish populations. Key regulatory events impacting salmon include the establishment of the KMZ in 1979; the implementation of a limited entry program in 1982; and reduction of the salmon season in the KMZ in 1984. Fishing activities continued to contract throughout the 1990s and the 2000s following several key regulations affecting the groundfish fishery including: the implementation of a restricted access program in 1994; implementation of the state nearshore fisheries management plan in 2000; and the federal groundfish permit/vessel buyback program in

2003.<sup>29</sup> El Niño events in 1982 and 1983, which resulting in large fluctuations in the abundance of ocean shrimp and other species, also deterred commercial fishing activities. In particular, significantly reduced salmon and groundfish landings along with rising costs of operating the harbor’s wastewater treatment facilities affected shoreside receiving and processing operations. Between 1997 and 2001, three local buyer/processors ceased operations. Pomeroy et al. (2009a) report that the crab and Pacific whiting fisheries have largely supported local infrastructure since 2001.

*Harbor Infrastructure.* Crescent City Harbor is owned and operated by the Crescent City Harbor District. The south-facing channel of the crescent-shaped, natural harbor provides shelter under most weather conditions. This mixed-use harbor can accommodate approximately 230 resident vessels and approximately 500 temporary/seasonal vessels. Harbor facilities include four docks, seven receiving stations, one commercial fish processing plant, an ice plant, hoists, a boatyard and fabricator, a fuel supplier, gear and tackle shops, a boat launch, and a marine supply store. Vessel repair and maintenance services are also available (Table 3-11). In total, approximately 20 businesses at or near the harbor provide goods and services in direct support of commercial and recreational fishing activities (Pomeroy et al. 2009a).

Reportedly, all 230 berths in the harbor’s inner basin were typically occupied year-round until occupancy began to decline in 1999. Between 1999 and 2003, the rate of occupancy averaged 68 percent (RRM Design Group 2006). Pomeroy et al. (2009a) report that the number of boats using the 500 seasonal slips along the outer basin declined by 90 percent between 1980 and 2008.

**Table 3-11 Crescent City Harbor User Groups, Infrastructure, and Services**

<b>User Groups</b>	<b>Harbor-Owned Infrastructure</b>	<b>Harbor Services</b>	<b>Resident Business Types</b>
Commercial fishing Recreational fishing (charter, private boat and shore-based) Resident businesses Community residents Tourists	Docks/slips Inner Basin (~230) Outer Basin (variable) Launch ramp (2) Parking Offloading Infrastructure - Docks (4) - Hoists (6 receiving, 1 public) - Receiving stations (7) - Receiving/processing buildings (2) Other Infrastructure - Fish cleaning station - Work dock - Transient dock - Boatyard	Bilge Pump-Out Station Oil recycling station Bathrooms/showers Dredging of harbor channel and berthing Visitor berthing Fuel, water, ice Dock power Waste disposal and recycling Dry Storage	Fish buyers (6) Fish Processor (1) Electronics services (2) Marine supplies (1) Bait/tackle shop (1) Fuel Dock (1) Ice Plant (1) Commercial divers (4) Boatyard/Dry Dock (1) Restaurants (5) RV Parks (2)

Source: Pomeroy, C., C. Thomson and M. Stevens 2009a

<sup>29</sup> See Table 1-x in Chapter 01 for timeline, description and impact of regulatory measures affecting North Coast fisheries.



*Commercial Fisheries.* Currently, about 120 skippers use Crescent City as their homeport. Pomeroy et al. (2009a:10) describe the vessels of the home fleet as including “five trawlers, 12 nearshore fishing operations, and about 100 crabber/trollers.” Nearshore fishing operations include six full-time and three part-time participants in the shallow and/or deeper nearshore rockfish fisheries, and ten fishermen in the coonstripe shrimp trap fishery. Four of the latter fleet are relatively new to the fishery, having shifted their efforts from salmon to shrimp due to salmon closures.

The principal commercial species landed at Crescent City Harbor are Dungeness crab and various groundfish. In 2008, groundfish landings accounted for 19 percent of all fishery revenues in Crescent City (CDFG 2009). The latter involve use of hook-and-line for nearshore rockfish; trawl gear for Dover sole, petrale sole, and thornyheads; and trap and longline for sablefish. Other currently important fisheries include trawl fisheries for ocean shrimp and Pacific whiting.

Pomeroy et al. (2009a) report that about half of the vessels offloading at Crescent City harbor were historically owned by local skippers. The ratio between resident and non-resident captains changed markedly following salmon and groundfish restrictions in the 1980s and 1990s. Today, nearly 75 percent of skippers and crew delivering at Crescent City are residents, but non-resident fishing operations account for 100 percent of Pacific whiting deliveries (Pomeroy et al. 2009a).<sup>30</sup>

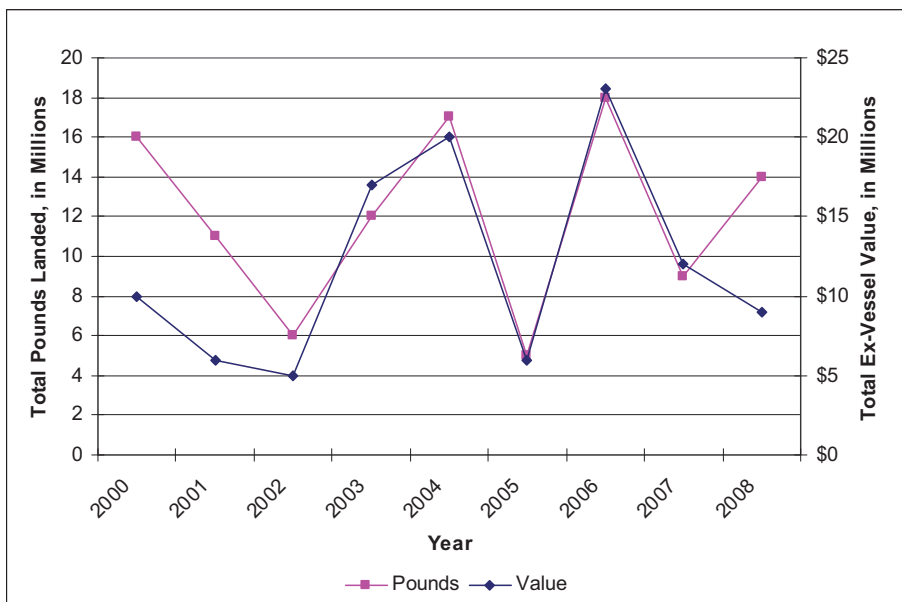
Between 2000 and 2008, the most economically important commercial fisheries at Crescent City harbor were: Dungeness crab, sablefish, black rockfish, ocean shrimp, and Pacific whiting (Table 3-12; Figure 3-10) (CDFG 2009). Coonstripe shrimp, salmon, thornyhead, albacore tuna, Dover sole, and petrale sole are also commercially important, but landings of these species have varied extensively during the last decade due to resource availability, regulations, and market demand.

**Table 3-12 Ex-Vessel Value of the Top Five Species Landed at Crescent City Harbor: 2000-2008**

Species	Total Revenue (\$)	Total Landings in Pounds	Average Annual Revenue (\$)	Average Annual Landings in Pounds
Dungeness Crab	83,984,270	49,073,464	9,331,585	5,452,607
Sablefish	4,476,850	3,442,660	497,427	382,517
Ocean (pink) Shrimp	2,556,477	6,968,159	284,053	774,239
Black Rockfish	2,042,694	1,166,033	226,966	129,559
Pacific Whiting	1,743,333	27,126,294	193,703	3,014,032

Source: CDFG 2009

<sup>30</sup> The U.S. Pacific whiting fishery mostly occurs off Oregon and Washington. Total allocation is divided between the U.S. (74%) and Canada (26%) (Pomeroy et al. 2010:28).



**Figure 3-10 Total Pounds Landed and Ex-vessel Revenues of Primary Fisheries at Crescent City Harbor, Del Norte County: 2000-2008**  
Source: CDFG 2009

*Market Infrastructure.* According to Pomeroy et al. (2009a), four on-site fish processing operations were based at Crescent City harbor in 1997. Today, the harbor’s fish buying and processing capacity consists of one on-site buyer/processor and six buyers with receiving stations, some of whom also distribute the seafood to non-resident processors.

Processing capacity at the harbor is limited by wastewater treatment problems. The harbor-run wastewater treatment plant reportedly fell into disrepair in the early 2000s, and current wastewater treatment procedures are not meeting water quality control standards. The harbor is periodically fined for discharging untreated effluent directly into the ocean without a National Pollutant Discharge Elimination System (NPDES) permit (Madar 2009a). Consequently, much of the fish landed at Crescent City harbor is processed elsewhere. Some Dungeness crab, groundfish, and Pacific whiting are processed in Crescent City, and some is transported to Eureka, Oregon or other West Coast locations. All salmon is sent south to Eureka, Fort Bragg or other west coast locations for processing. Coonstripe shrimp is captured and sold live. Some shrimp is sold directly to local restaurants and retail stores, but most is trucked to the San Francisco Bay area for further distribution. A few nearshore rockfish fishery participants also sell their product directly to local venues. Currently, no albacore tuna buyers or processors are located in Crescent City; most tuna is sold in Oregon, though some fishermen sell directly to the public.

*Community Issues.* A 2006 tsunami seriously damaged much of the Crescent City Harbor infrastructure. The harbor is currently undergoing extensive repairs to restore and increase the number of existing slips in the inner boat basin. The dock will be redesigned to mitigate the effects of potential future tsunamis. Repair and reinforcement costs are estimated at nearly \$22 million. City and county officials have made the harbor a top priority in their requests for federal stimulus monies (Madar 2009a).

The harbor's revenue stream has been affected by the declining number of local commercial salmon troll and groundfish trawl operations, and the diminished activity among the local recreational fleet. The declines can be attributed to the downturn in the Sacramento River and Klamath River Basin Chinook salmon stocks and the regulations enacted to address these problems, and to the groundfish vessel buyback program which resulted in the departure of sixteen trawl vessels from the harbor.<sup>31</sup> McHugh (2005) reports that harbor operations have been additionally challenged by budget cuts, staff layoffs, maintenance deferral, and infrequent dredging. Harbor officials have increased rental fees to make up revenues lost to the egress of vessels. In an effort to diversify its economic base and increase revenues, port officials are also seeking to attract new retail businesses to the harbor (Crescent City Harbor District no date; PFMC and NFMS 2008).

Harbor district officials are currently working to expand Crescent City's seafood processing capacity. However, the aforementioned wastewater treatment issue is limiting that effort; the harbor lacks the funds to subsidize wastewater treatment or to build a new plant (Madar 2009a). The City has requested \$2.25 million in federal stimulus monies to upgrade and expand the harbor's seafood processing facilities and build a new wastewater treatment plant (Madar 2009a). Negotiations between the City and the existing processor are underway to allow the processor's effluent to be treated in the city's new treatment plant. Such an arrangement would result in potentially significant economic benefits for the local economy. In addition to attracting new processors and employment opportunities to the harbor, the existing processor could expand operations, hiring enough employees to remain active year-round (Madar 2009b).

The commercial fishing industry in Del Norte County is central to the local economy. In a recent socioeconomic analysis conducted by PFMC and NFMS (2006), Del Norte County and Crescent City were classified as "vulnerable" with "high levels of dependence on commercial fishing and low levels of resilience;" that is, there are few viable alternatives to the fishing industry in the region. In March 2010, the unemployment rate in Del Norte County was 14.0 percent (EDD 2010d).

Additionally, large amounts of land in and around Crescent City are owned by the state and federal governments, which limits both industrial expansion and the personal acquisition of private property (Pomeroy et al. 2009a). Del Norte County's tax-based revenue stream therefore is also limited, as is the local government's fiscal ability to maintain or improve existing community infrastructure. For these and many other reasons, the county's ability to adapt to economic change is currently constrained.

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<sup>31</sup> Some fishermen later bought back in to the fishery.

## Mendocino County

***Mendocino County Landings and Revenue.*** The primary ports of landing in Mendocino County are Noyo (a.k.a. Fort Bragg), Albion, and Point Arena.<sup>32</sup> Between 1981 and 2009, total reported landings in Mendocino County averaged 14 million pounds per year; total ex-vessel revenues averaged \$9 million. Landings for that period peaked in 1988 at 39 million pounds, with an ex-vessel value of \$22 million. Following that peak, catch, effort, and value decreased significantly. In 2009, 102 fishing operations offloaded a total of 7.6 million pounds of seafood; ex-vessel values were \$6.9 million (Figure 3-11) (PacFIN 2010).

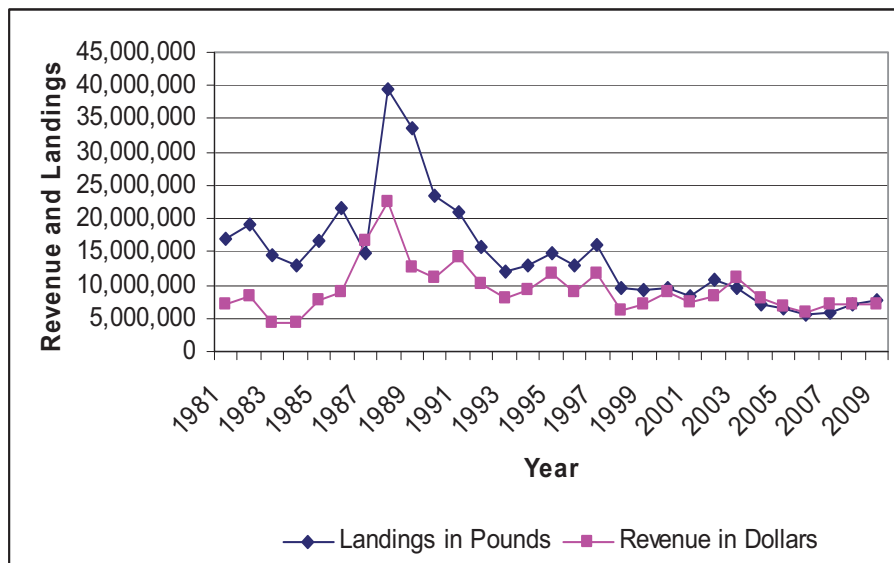
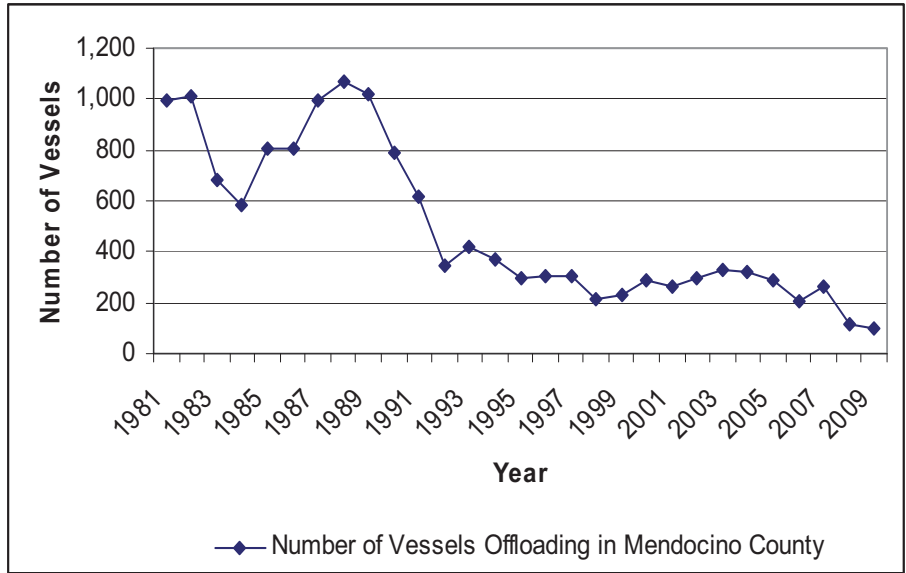


Figure 3-11 Landings vs. Revenue, Mendocino County: 1981-2009  
(PacFIN 2010)

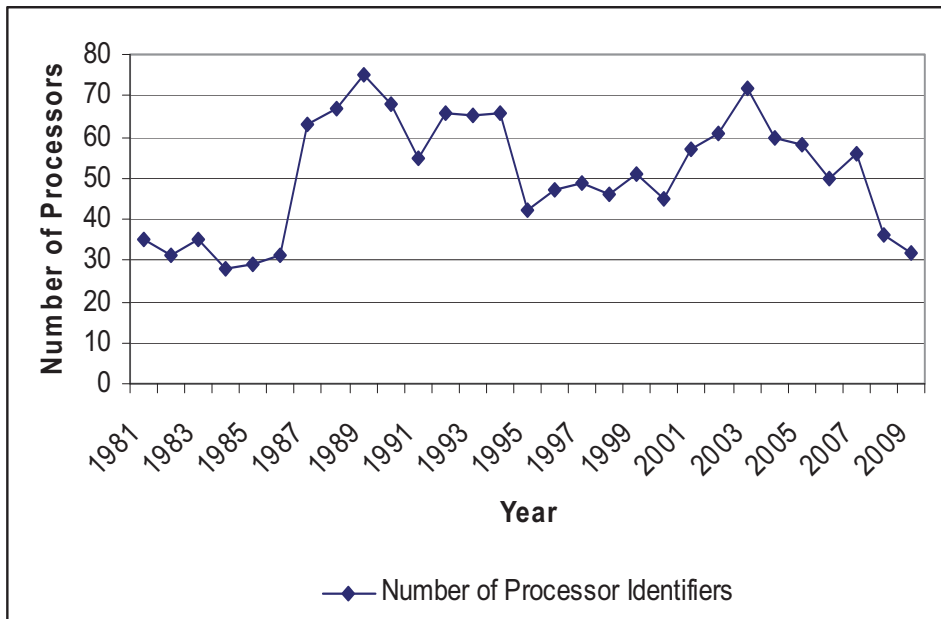
***Vessels and Fish Tickets.*** The number of commercial fishermen active in Mendocino County contracted considerably between 1981 and 2007 (Figure 3-12). The number of active vessels dropped from 995 in 1981 to 102 in 2009, reflecting a decrease of 90 percent. During the same period, the number of fish tickets dropped by 68 percent.

<sup>32</sup> The North County study region extends from Crescent City Harbor in Del Norte County to Albion Harbor in Mendocino County; therefore, Point Arena in southern Mendocino County is not included in this overview.



**Figure 3-12 Commercial Vessel Participation in Mendocino County: 1981-2009**  
(PacFIN 2010)

Since 1981, the number of buyers in Mendocino County has ranged from a low of 32 to a high of 75 (Figure 3-13). On average, there were 51 buyer/processors operating in the Mendocino area between 1981 and 2009 (PacFIN 2010). As of 2010, three on-site processors and six fish buyers were operating at Noyo Harbor in Mendocino County.



**Figure 3-13 Number of Processors, Mendocino County: 1981-2009**  
(PacFIN 2010)

**Community Issues.** In the 2006 socioeconomic study of West Coast fishing communities, PFMC and NMFS (2006) classified Mendocino County as “most vulnerable” and the Fort Bragg port community as “vulnerable.” In 2008, groundfish landings accounted for 53 percent of all

fishery revenues in the Fort Bragg/Noyo Harbor district (CDFG 2009). Fishery participants and the marine-related businesses that support the fishing industries in Fort Bragg reportedly have been significantly affected by the recent closures of the commercial and recreational salmon season.

### Noyo Harbor/Fort Bragg

Noyo Harbor is the southernmost port in the North Coast region. The harbor is located along the Noyo River, just south of the City of Fort Bragg, about 88 miles south of Eureka. The Noyo Port District is a geographic area delimited for tax base purposes. It encompasses approximately ten square miles and is bordered by Pudding Creek on the north, Jughandle Creek on the south, and the Pacific Ocean. The harbor is the only port between Bodega Bay and Eureka, a stretch of some 300 miles.

The Noyo Port District owns approximately 300 acres of land and tideland properties (Winfield Smith Associates & Land Planning Research 1992). Funding for improvements and maintenance is primarily derived from slip, hoist, and pier fees and other rental concessions (Pomeroy et al. 2010b).

Fishermen have been trolling for salmon in the naturally protected Noyo Bay since the harbor was established around the turn of the 20<sup>th</sup> century (Norman et al. 2007). During salmon season, hundreds of resident and non-resident fishing boats reportedly crowded the harbor and trolled nearby waters. The trawl fishery was also extensive, beginning in the 1930s and 40s (LeBaron 1992). Noyo's groundfish trawl fleet peaked at approximately 30 vessels in the 1980s. At least six large processors operated along the waterfront during that period. Harvest and processing productivity began to drop off substantially in the late 1980s for many reasons, including increasing groundfish regulations and other species management measures.

By the mid-1990s, 16 groundfish fishermen and three processors remained. In 2003, the federal groundfish trawl buyback program further reduced the groundfish fleet by almost half. Closures of the commercial salmon fishery have most recently winnowed the local fleet.

Currently the harbor's mooring basin is operating at 68 percent capacity. The local fleet reportedly has changed from 90 percent commercial vessels and 10 percent recreational vessels in the 1970s, to 40 percent commercial vessels and 60 percent recreational vessels today. Recreational anglers target abalone, salmon, rockfish, lingcod, crab, and occasionally albacore tuna (Pomeroy et al. 2010b).

*Harbor Infrastructure.* The Noyo Harbor inner basin was completed in the 1960s. The facility currently provides 238 slips, but can accommodate only shallow-draft vessels. Currently, services at the harbor include a privately-owned ice plant, a privately-owned fuel station, two boat ramps, a commercial fisherman's work dock with hoist, three marine supply shops, and a boatyard (Table 3-13). The boatyard is equipped to handle only minor repairs; vessels requiring extensive repair must travel either to San Francisco or Eureka.

**Table 3-13 Noyo Harbor User Groups, Infrastructure, and Services**

User Groups	Harbor-Owned Infrastructure	Harbor Services	Resident Business Types
Commercial fishing	Docks/slips	Bilge Pump-Out Station	Fish buyer (6)
Recreational fishing	Inner Basin (238)	Oil recycling station	Fish Processor (3)
(charter, private boat and shore-based)	Launch ramp (2)	Bathrooms/showers	Fish Market (2)
Resident businesses	Parking lot	Visitor berthing	Marine supplies (3)
Community residents	Restrooms	Dock power, water	Bait/Tackle shops (2)
Tourists	Fuel Dock (C. Renner Petroleum)	Waste disposal	Boat Building/Repair (2)
	Offloading Infrastructure		Charter Operations (5)
	- none		Restaurants (7)
	Other Infrastructure		Ice Plant (1)
	- work dock/hoist		Coast Guard Station (1)
	- transient dock		Fuel Dock (1)
			Dive Shop (1)
			Kayak Rentals (2)

Source: Pomeroy, C., C. Thomson and M. Stevens 2010b

The Dolphin Isle Marina and RV Park is located on the river less than a mile upstream from Noyo Harbor. Recreational fishermen are the principal clientele. Marina facilities include 150 slips, a fuel dock, a fish-cleaning station, and a tackle and bait shop.

*Commercial Fisheries.* The salmon troll, groundfish trawl, and crab trap fisheries have long been economic mainstays in the Fort Bragg/Noyo region. Today, the primary commercial fisheries at Noyo Harbor include troll for salmon; trawl, hook-and-line, and trap for groundfish; dive for red sea urchin; and pot for Dungeness crab. Other fisheries of lesser or past importance include the troll fishery for albacore tuna and the trawl fishery for ocean shrimp, among others (Table 3-14) (Pomeroy et al. 2010b). The live fish fishery, primarily for rockfish, is also economically important.

**Table 3-14 Ex-Vessel Value of the Top Five Species Landed at Noyo Harbor/Fort Bragg: 2000-2008**

Species	Total Revenue (\$)	Total Landings in Pounds	Average Annual Revenue (\$)	Average Annual Landings in Pounds
Chinook Salmon	30,074,621	7,946,408	3,341,624	882,934
Sablefish	10,530,988	7,972,917	1,170,109	885,879
Dungeness Crab	9,211,464	4,782,627	1,023,496	531,403
Red Sea Urchin	7,472,620	11,176,629	830,291	1,241,847
Dover sole	5,057,849	13,503,470	561,983	1,500,385

Source: CDFG 2009

In the 1970s, nearly 130 active commercial fishermen and their crew utilized Noyo Harbor as their homeport. The majority trolled for salmon. As many as 500 boats occupied the harbor during peak salmon fishing seasons (Winfield Smith & Associates and Land Planning Research 1992).

Prior to the statewide salmon season closure in 2008, approximately 80 skippers used Noyo Harbor as their homeport. The local fleet included some seven trawlers, 30 to 40 salmon trollers, 10 to 15 urchin dive boats, and 15 to 20 multi-fishery vessels (Pomeroy et al. 2010b).

Informants now characterize the local fleet as more diversified, with the majority of active fishermen participating in multiple fisheries, most of which include crab. Sea urchin divers

continue to focus primarily on that specific fishery. Approximately 76 full- and part-time skippers currently utilize Noyo as their homeport.

Captains of transient vessels also utilize Noyo Harbor facilities, especially during salmon season. Pomeroy et al. (2010b) report that many California commercial salmon fishermen call at Noyo during the season because of tighter harvest restrictions to the north. Additionally, the fishing grounds off Fort Bragg have historically been among the best for salmon. For many in the local fleet, the salmon season begins in the Pillar Point area in San Mateo County or the San Francisco Bay area and gradually moves north to Shelter Cove. A few operations travel as far north as Alaska. During seasons of high abundance, all slips at Noyo are filled. Boats that cannot secure a slip tie up along the river.

Historically, Noyo Harbor has been known as a highly productive region for salmon. Between 2000 and 2007, fishermen offloaded 8.1 million pounds of salmon at Noyo, accounting for 86 percent of the total 9.4 million pounds of salmon landed at North Coast ports. These landings had an average annual ex-vessel value of \$3.8 million.

Salmon season closures reportedly have been devastating to the local fleet. Some salmon fishermen have left the industry, while others have adapted to the closures by shifting into different fisheries or intensifying their effort in the crab fishery. Many fishermen are working second jobs in the construction or tourist industries, as opportunities allow.

Noyo Harbor is the only North Coast port where significant volumes of red sea urchin are landed. The fishery involves use of SCUBA gear. The urchin fishery peaked in this area during the mid- to late-1980s, with divers from as far south as San Diego coming to Noyo to participate in the fishery. In years of abundance—and depending on international market demand—this fishery can be quite lucrative. In 2002, 2.2 million pounds of red sea urchin was landed at Noyo Harbor, with a corresponding value of \$1.8 million dollars. Japanese buyers in San Francisco and Eureka constitute the largest local market for urchin. Area processors report a growing demand for urchin. In 2007 and 2008, approximately 10 to 15 divers participated in the fishery (Pomeroy et al. 2010b). Today, there are nearly 40 participants.

The sablefish (blackcod) fishery is also a high-value fishery, due in large part to demand from Asia. Between 2000 and 2008, an annual average of 886,000 pounds of sablefish, with an average ex-vessel value of \$1.2 million, was offloaded at Noyo Harbor. Most of the sablefish captains in the area have open access permits. Some are also licensed to participate in the live fish fishery, primarily for nearshore rockfish. Much of the live product is trucked to San Francisco.

*Market Infrastructure.* Currently, three on-site seafood processors are based at Noyo Harbor. One processes groundfish, crab, and salmon; two process urchin. Six fish buyers (including the three processors) operate permanent receiving stations at the harbor. Each is equipped with a hoist and associated offloading facilities. Buyers from Eureka, San Francisco, Sacramento, and Santa Rosa purchase seafood from fishermen and processors at Noyo. A small number of local fishermen sell their catch directly to the public and/or to local retail establishments. Two seafood markets purchase and resell locally landed seafood products.



*Community Issues.* Unlike other port communities where tourism has superseded commercial fishing as a major source of revenue, tourism activities remain relatively limited in Noyo. This is due in part to the distance of Noyo from large population centers.

Currently, the mooring basin at Noyo is only 68 percent occupied. The change in the numbers of vessels delivering seafood to and mooring at Noyo Harbor between 1981 and 2010 can be attributed primarily to the substantial decline in the salmon fishery. The decline relates to implementation of a statewide limited entry program for salmon in the early 1980s, reduced fishing opportunities following the re-allocation among tribal and non-tribal fishery sectors in the early 1990s, and the recent closures (Pomeroy et al. 2010b).

The significant egress of commercial and recreational vessels from the harbor has impacted the Harbor District revenue stream. The majority of harbor funding comes from moorage fees, with a lesser proportion deriving from parking fees, property taxes, and other sources. The decline of the once dominant logging industry in this region, including the 2002 closure of the Georgia-Pacific lumber mill, has also resulted in the loss of hundreds of jobs and substantial tax revenues for the district.

## Albion

Albion Harbor and Fishing Village is located at the mouth of the Albion River, equidistant between Fort Bragg and Point Arena. The small, privately-owned facility is utilized by both commercial and recreational fishermen. Visitors to Albion frequently stay at a small campground adjacent to the harbor. Albion Harbor and Fishing Village is maintained through fees garnered for docking, offloading camping, day use, launching, and rentals of kayaks, canoes, cottages, and trailers. Amenities at nearby Schooner Campground include dock space, a launch ramp, and camping sites. There are no charter services in Albion.

Like many coastal communities in Northern California, the community of Albion was first established as a timber town. The first sawmill was established in 1852, and a railroad line and shipping wharf soon followed (Scofield 1954). Fishermen began to troll for salmon in the river lagoon during the late-1800s. From the 1920s through the 1950s, fishermen would sell their catch to buyers, who would drive the product to Noyo Harbor for processing and/or further distribution (Scofield 1954). In 1965, a local entrepreneur established a campground for recreational anglers at Albion, replete with fishing docks, moorings, and a small restaurant (Tahja 2008). The campground serves as a base for most recreational anglers fishing out of Albion today.

*Harbor Infrastructure.* Harbor infrastructure at Albion includes a commercial dock with 18 slips, a recreational dock with space for nearly 30 vessels, an offloading area and receiving station, a hoist, two launch ramps for small vessels, and storage spaces for boats and RVs (Table 3-15). There is also mooring space in the bay. Ice and bait are sold at the campground. Fuel is available in town. Campground facilities include tent and RV sites, trailer and cottage rentals,

day use areas, shower and bathroom facilities, a general store, and a café that is open during fishing season.

**Table 3-15 Albion User Groups: Infrastructure and Services**

Location	Primary Facilities	Owner/Operator(s)	Services	User Groups†
Albion	Albion Harbor and Fishing Village	Privately Owned and Operated	Launch Ramps	R, T, AR
			Dock	C, R
			Offloading Dock/Receiving Station	C
			Hoist and fork lift	C, R
			Fish cleaning station	R
			Camp store	R, T
			Albion Café	R, T, AR
			Tent/RV sites	R, T
			Kayak rental	T

†C = Commercial fishermen; R= Recreational Fishermen; T =non-consumptive orientated tourist; AR= area resident  
Source: IAI 2010

*Commercial Fisheries.* The primary commercial fisheries conducted from Albion are sea urchin, rockfish, salmon, cabezon, and greenling (Table 3-16). Four to twelve divers participate in the sea urchin fishery, and two fishermen participate in the nearshore hook-and-line rockfish fishery. As many as thirteen local fishermen trolled for salmon from Albion Harbor in 2006.

**Table 3-16 Ex-Vessel Value of the Top Five Species Landed at Albion Harbor: 2000-2008**

Species	Total Revenue (\$)	Total Landings in Pounds	Average Annual Revenue (\$)	Average Annual Landings in Pounds
Red Sea Urchin	2,590,067	3,688,132	287,785	409,792
Rockfish, various	110,977	32,161	12,330	3,573
Cabezon	57,547	17,847	6,394	1,983
Chinook Salmon	30,673	9,617	3,408	1,068
Kelp Greenling	23,281	5,610	2,587	623

Source: CDFG 2009

*Market Infrastructure.* Market channels for distributing seafood are limited at Albion Harbor. Currently, two buyers with receiving stations seasonally purchase seafood at the offloading dock. One buys sea urchin and trucks it to Fort Bragg for processing. The other specializes in live seafood products, and transports his purchases to San Francisco.

There are no retail seafood establishments in Albion. A small number of fishermen sell lingcod directly to the campground café.

*Community Issues.* High costs have discouraged the harbor owner from dredging the area, last dredged in 1997. Consequently, it is difficult for vessels with deepwater drafts to enter or exit the harbor, especially during low tide. Unchecked silting has rendered some dock sites unusable.

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