



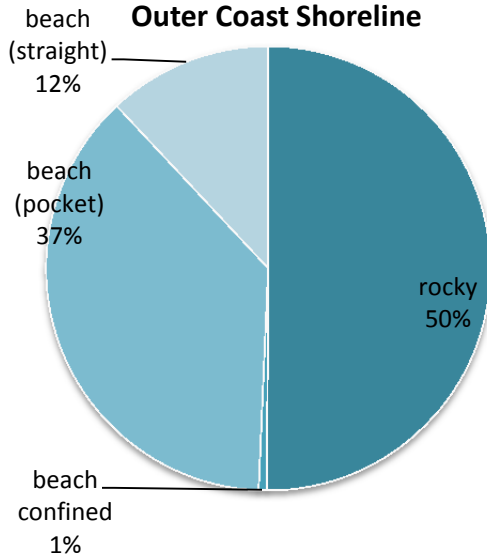
Mendocino County

Coastal Zone



Mendocino County has about 159 miles of shoreline. The terrestrial coastal zone area totals approximately 93,000 acres (about 145 square miles), includes numerous rural coastal communities, a portion of the California Coastal National Monument, and state beaches and parks that provide significant public access and recreational opportunities. Scenic Highway 1 winds along the coast for over 90 miles. The county includes the remote, rugged norther shoreline of the Sinkyone Wilderness State park and visitor-serving, tourism oriented towns of Fort Bragg, Little River, Albion, Elk, Point Arena, Gualala, and the Town of Mendocino, which is designated as a special community under the LCP. Noyo Harbor, adjacent to Fort Bragg, contains a U.S. Coast Guard Station, commercial fishing fleet, and numerous recreational water craft. The harbor at Point Arena includes a pier that also supports commercial and recreational fishing activities and provides for public access. Mendocino County has substantial agricultural and timberland resources along the uplifted marine terraces and within the lower watersheds of the Ten Mile, Big, Albion, Navarro, Garcia, and Gualala Rivers.

Outer Coast Shoreline



Coastal Zone Resources

- Ports & Harbors: Albion, Fort Bragg, Mendocino, Port Arena
- Publicly Owned/Accessible: 15,800 acres
- Public Access Coastal Areas: 103 locations
- Coastal Zone Wetlands: 6,000 acres

Ocean Economy

2013 County Ocean Sectors GDP **\$101 M**

2013 Major Ocean Economic Sectors

Tourism and Recreation GDP	\$75 M
Living Resources GDP	\$18 M
Transportation GDP	\$3 M

0.2%

of State Ocean Sector GDP

Source: National Ocean Economics Program, 2016

While Mendocino County's ocean sectors Gross Domestic Product (GDP) accounts only for 0.2% of the state's total GDP, its pristine natural resources are heavily utilized for recreational purposes and tourism, such as abalone diving, camping, beachcombing, hiking, and fishing. The Tourism and Recreation Sector account for a major component of Mendocino County's ocean economy. Many public access points are vulnerable in Mendocino County. Losing public access points to rising sea levels would negatively impact the local coastal economy.



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Hazards and Vulnerability

Vulnerabilities associated with sea level rise are not well known in Mendocino County. The county would benefit from a regional vulnerability assessment to identify vulnerable assets and better understand potential impacts to its plentiful natural resources to adequately prepare for rising sea levels. Statewide assessments [1] and Commission staff expertise [2] were used for a preliminary identification of the resources that will face flooding and erosion threats exacerbated by sea level rise in the future.



Westport Union campground

Population at risk to 100yr Flood

530 = current risk | 650 = future with
1.4m SLR

Source: Heberger et al., 2009

storm surge, wave run-up, and flooding [2]. State beaches and their amenities, such as parking, beach access and recreational use facilities (i.e. facilities for kayaks, abalone diving, and boating) are already vulnerable. Beaches and their amenities should be studied more thoroughly to determine if they are able to retreat and/or if the

infrastructure should be moved to a less vulnerable location.

Potential Bluff Erosion Risk w/ 1.4m SLR

1,400 properties | 930 people

Source: Heberger et al., 2009, County parcel data

A 2009 Pacific Institute study found that Mendocino County has higher vulnerability to erosion than flooding impacts given a 1.4 m sea level rise and 100-year storm. In fact, the county was projected to have the largest area (7.5 sq. miles) of coastal cliff erosion for any county north of Santa Barbara County under this scenario [1].

Westport Union Landing State Park has already begun experiencing some impacts from sea level rise. The state park area, some campgrounds, and a vista point are all vulnerable to bluff erosion [2]. Caltrans has begun planning retreat for some of the parking areas here and relocation of a low-lying section of Highway 1 just inland of Seaside Beach [3].

Many public access points and coastal trails are currently experiencing erosion, damage from

Mendocino County has recently experienced water supply shortages due to drought conditions. With the Town of Mendocino, over 400 privately owned water wells draw from a discontinuous and unevenly distributed ground water supply, contributing to well failures and/or inadequate year-round on-site supply [4]. Ensuring adequate on-site water supply to serve new development is an issue in the Commission’s review of the Mendocino Town Plan update [4]. However, the proposed LCP update does not address the potential threats of sea level rise to water supply. Some areas of the county’s coastal zone with shallow groundwater are already experiencing tidal water infiltration and groundwater supplies will likely become more vulnerable in the future.

Another area of concern is the City of Fort Bragg wastewater treatment plant, which is currently not considered vulnerable, but it is located on a bluff edge and may become vulnerable with higher rates of erosion accelerated by sea level rise [2].



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LCP and Sea Level Rise Planning

Local Coastal Programs (LCPs) are planning tools used by local governments to guide development in the coastal zone, in partnership with the Coastal Commission. LCPs specify the appropriate location, type, and scale of new or changed uses of land and water and include a land use plan and measures to implement the plan (such as zoning ordinances). The Coastal Commission has awarded three rounds of the Local Assistance Grant Program since January 2014 to support certification and updates of LCPs, with an emphasis on addressing the impacts of climate change. No local governments in Mendocino County have applied for a grant from the Coastal Commission to address the impacts of sea level rise within their LCP jurisdictions. Table 1 below shows whether jurisdictions have studies or LCPs that address sea level rise. While staff reviewed a Caltrans vulnerability assessment focused on roads for a region that included Mendocino County, it is not listed as a vulnerability study because it does not go into the level of detail necessary to be useful at the LCP segment planning scale [3]. "In part" means an LCP segment has some explicit policy language addressing sea level rise. Fort Bragg and Point Arena LCPs both require siting and design of new development to take into account the effects of future sea level rise.

Table 1. LCP Planning in Mendocino County

Jurisdiction/Segment	Certified LCP?	Grant?	Vulnerability Assessment?	Updated for SLR?	Shoreline by Jurisdiction
Mendocino County	No	No	No	No	91%
County Balance Segment	Yes (1992)	No	No	No	
Town Segment	Yes (1996)	No	No	No	
Pygmy Forest Segment	No	No	No	No	
City of Ft. Bragg	Yes (1983)	No	No	In Part	3%
City of Pt. Arena	Yes (1981)	No	No	In Part	1%
Federal Lands and Ports					4%

Coastal Act Management Priorities

Mendocino County faces multiple sea level rise vulnerabilities related to public access and recreation, natural resources, and water supply for residential development.

Public Access and Recreation (Coastal Act Sections 30210, 30211, 30213, 30220, 30221)

One of the highest priorities in the Coastal Act is the mandate to protect and maximize public access to the coast. Sea level rise in Mendocino County could lead to a loss of public access and recreational opportunities due to permanent inundation, episodic flooding or erosion of beaches and recreational areas, and increased bluff erosion affecting bluff top trails. Planning is needed to address erosion of bluff top and dune segments of the Coastal Trail and loss of access/parking at state beaches. State parks and Caltrans will be important partners in the planning for preservation of public access points, campgrounds, and stretches of beach that are vulnerable to flooding and erosion.

Coastal Habitats, ESHA, and Wetlands (Coastal Act Sections 30230, 30231, 30233, 30240)

Inundation and increased erosion from sea level rise could convert habitats from one type to another and generally reduce the amount of nearshore habitat, such as sandy beaches and rocky intertidal areas.



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Mendocino riparian areas also face potential sea level rise related habitat loss that should be further investigated (e.g., 10-mile River, Noyo River, Big River, Gualala River).

Water quality and supply (Coastal Act Section 30231)

Sea level rise can lead to saltwater intrusion into valuable groundwater aquifers, potentially rendering some existing wells unusable and decreasing the total groundwater supply in coastal areas. In fact, many private wells supplying residences in Mendocino County already face threats due to drought and insufficient recharge. Considering the high vulnerability of water supply in many locations (Cleone, Fort Bragg, the Town of Mendocino), developing an understanding of the saltwater intrusion threat into groundwater supplies should be a top priority.

Additional Considerations

- In Point Arena, storm surge impacts have already impacted commercial and recreational fishing and visitor serving facilities at the harbor, and future planning should integrate sea level rise effects on threats to coastal dependent uses there.
- Transportation infrastructure is vulnerable to coastal erosion that will be exacerbated by sea level rise as well as flooding from sea level rise itself in low lying areas[1]. Adaptation options to address these vulnerabilities may differ (i.e flooding vs. erosion); however, multi-agency coordination with Caltrans and others will be critical to evaluating appropriate adaptation options and long-term planning solutions.
- As discussed above, vulnerabilities to sea level rise and the related increase in coastal erosion in Mendocino County are not well known. There is a need for additional study and analysis, including conducting vulnerability assessments, to better understand and plan for likely impacts from sea level rise. The Coastal Commission's Local Assistance Grant Program and the Coastal Conservancy's Climate Ready Program could be potential funding sources that could support such efforts.

References

- [1] [Heberger M, H Cooley, P Herrera, PH Gleick, E Moore. 2009. The Impacts of Sea-Level Rise on the California Coast. Prepared by the Pacific Institute for the California Climate Change Center.](#)
- [2] California Coastal Commission North Coast District Staff Interview. July 18, 2016.
- [3] [GHD, ESA PWA, Trinity Associates. 2014. "District 1 Climate Change Vulnerability Assessment and Pilot Studies FHWA Climate Resilience Pilot Final Report."](#)
- [4] [Mendocino Town LCP Update.](#)