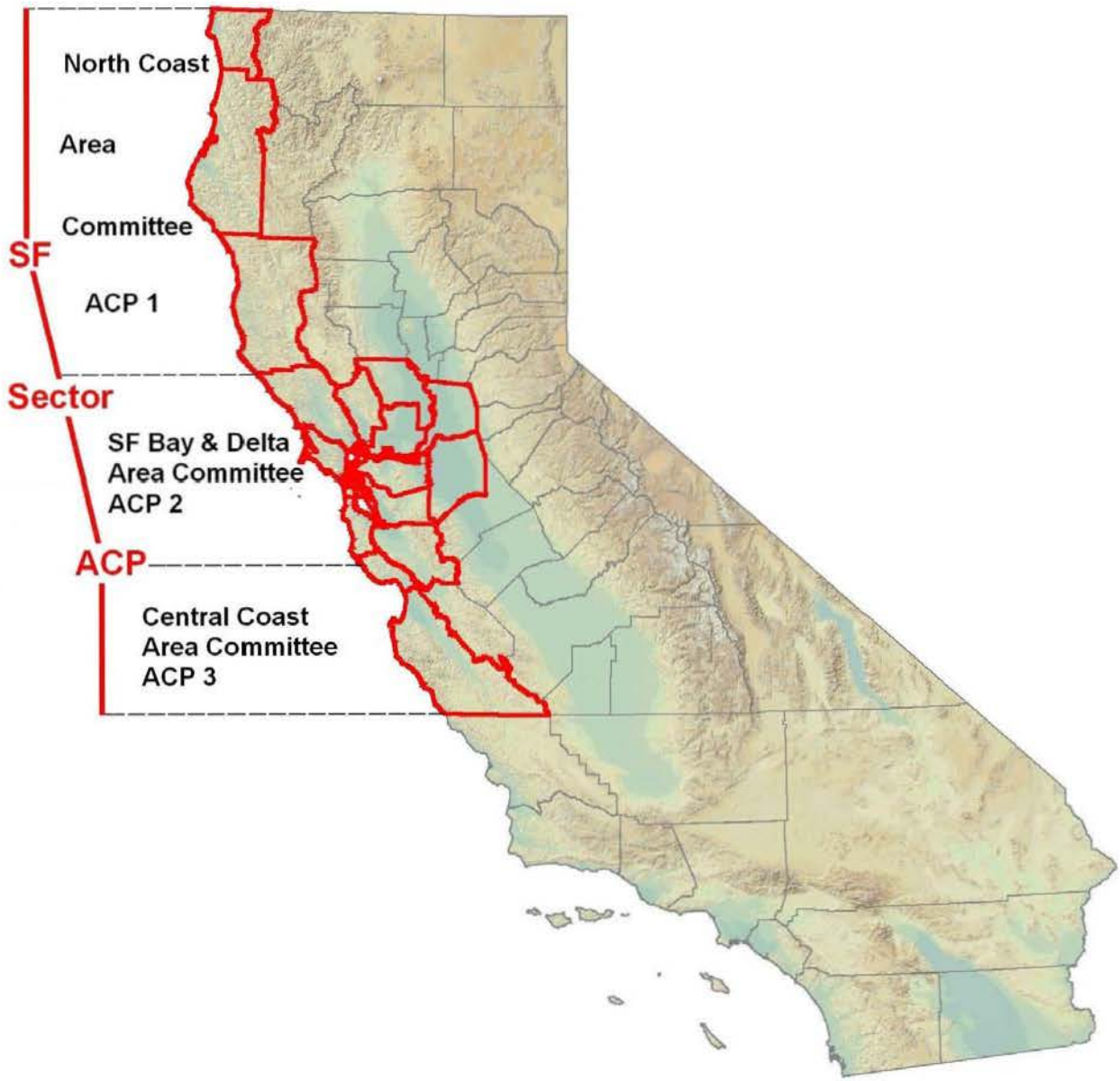
2011 Sector San Francisco - Area Contingency Plan (ACP)

Volume II: Section 9800 –

Area Committee Detail for:
ACP 1 - North Coast
ACP 2 - San Francisco Bay and Delta
ACP 3 - Central Coast



Emergency Spill Notification Numbers
National Response Center 1-800-424-8802
California Office of Emergency Services 1-800-852-7550

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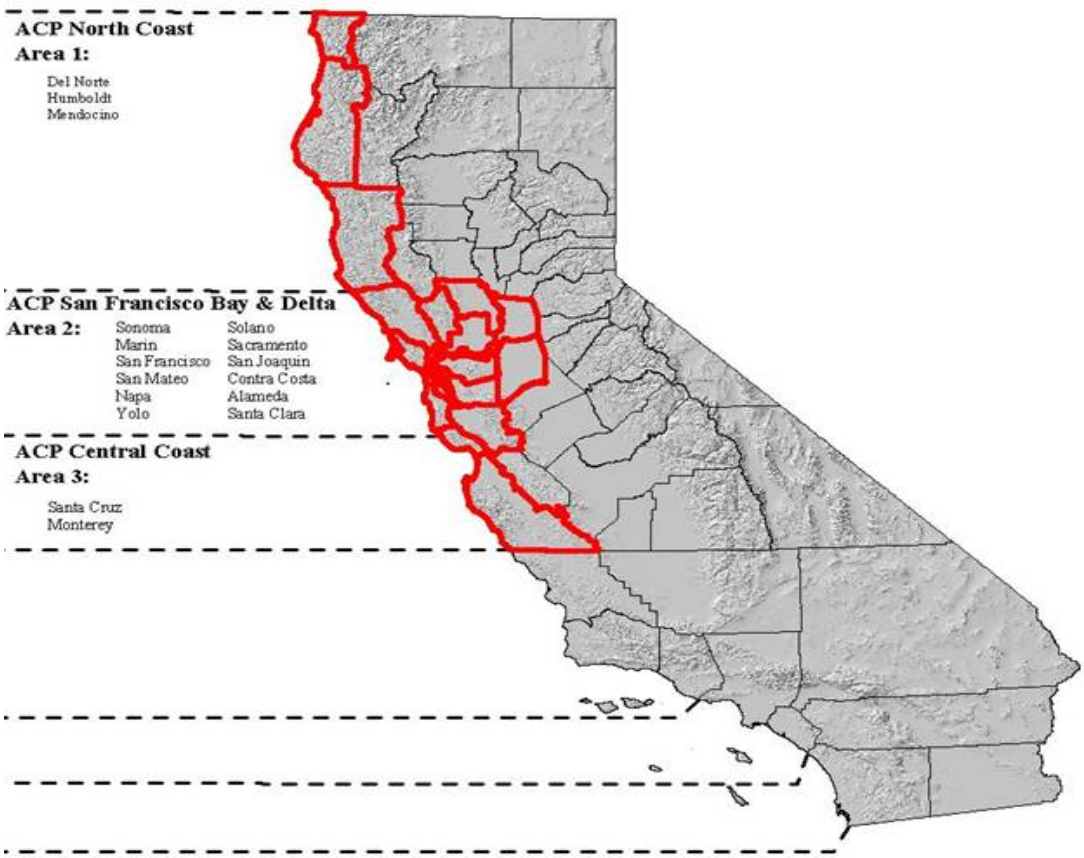
Section 9800

The Map below shows the coastal areas addressed by the three USCG / CDFG-OSPR sponsored Area Committees within USCG Sector San Francisco. These Area Committees were directed to produce Area Contingency Plans for the marine portions of their respective areas. (Non-marine areas are addressed through EPA sponsored contingency planning in conjunction with Federal, State and local agencies and stakeholders.) Originally, three separate plans were produced. In the current format, the plans have been consolidated so that State-wide protocols are addressed through the Regional Contingency Plan, while uniform USCG Sector response procedures are addressed in an over-arching portion (Sections 1000 through Section 9700). Most of the detail specific to each ACP is now included in Section 9800, and the Table of Contents provides organization information for each ACP included.



Area Committees included in Sector San Francisco

Section 9800 -Table of Contents

9800 Local ACP Response Concerns and Preparedness for Environmental, Economic, and Cultural Resources

The main focus of spill response contingency planning is the identification and protection of environmental, cultural, and economic resources at risk. Section 9800 is a catalog of environmental, cultural, and economic concerns which have been identified by the Area Committees. Strategies to protect these sites from oil and collateral impacts are included for many of these resources which may be at risk during an event. During a spill event, the sites which may be at risk and the measures which should reasonably be deployed are determined by the probable trajectory from the spill, prevailing conditions which may favor or constrain feasible deployments, and the type of product released and the threat it poses to resources at risk. These, in combination with geographic constraints that impact spill response measures at the respective locales, define the response need and focus response decisions.

9800.1 Organization of Section 9800

Section 9800 provides geographically organized information about ecologic, cultural/historic, economic, and other significant resources that may be at risk from spills, for the three included ACPs. The Sector map on the previous page shows the domains of each of the three included Area Committees.

Within each Committee Area the Area Contingency Plan information is grouped by Geographic Response Areas (GRAs). In some instances, the GRAs fall along political boundaries such as county lines, but emphasis is given to local hydro-geographic areas, where contaminants such as oil are likely to circulate. Section 9800 is organized first by Area Contingency Plan, then by GRA or county and then into subsections for each county or Geographic Response Area. The Statewide template for organization is shown below for each geographic grouping, though local variations accommodate the needs of each of California's Area Committees (not all ACPs have all the topical subdivisions shown or in some cases have additional sections):

9810 ACP Domain
- 9811 County or Geographic Response Area Subdivision
  - 9811.1 Sensitive Sites (Note: Southern California Area Committees have subdivided this into two subsections one for Sensitive Sites and one for endangered birds)
  - 9811.2 Cultural and Other Resources at Risk
    - 9811.21 Cultural Notes (if any)
    - 9811.23 Essential Fish Habitat (usually reference to Section 9802.2)
    - 9811.23 Other Concerns (possible examples "Waterfowl Concentration by Season" or "local eelgrass distribution")
  - 9811.3 Economic Sites
  - 9811.4 Operational Divisions
  - 9811.5 Shoreline Access
  - 9811.6 Other Local Information

Each Area Plan subsection of 9800 has a table of contents following the above format to provide quick reference to include information.

9800.2 Response Prioritization

The Environmental Unit and the Environmental Unit Leader are responsible to provide environmental information, trajectory projections, and measures necessary to mitigate impacts. Foremost among these is to provide a prioritized list of protection strategies to protect resources at risk based on trajectory projections. A Resources at Risk Technical Specialist conducts sensitive site prioritization.

Protection prioritization in a spill event should be determined by two considerations: the driving consideration is how soon the oil will reach the sensitive site and the predefined protection priority associated with the site. This second consideration is applied only when there are insufficient response resources to protect all resources at risk before they are impacted by the oil. Responders should not assume that sensitive locales equidistant from the source of a spill are at equal risk from the oil. This means that the urgency to protect a key resource is first determined by the likelihood that it will be impacted in the near future before it can be protected by requisite response staff and equipment. If the sites are too numerous to protect with the response resources available within the projected times of impact, then triage of protection follows a prescribed order.

For the purpose of prioritization, "risk" is defined as "the probability of spilled oil reaching the vicinity of a sensitive site of concern." During an actual oil spill event, the relative likelihood of a site coming into contact with the oil is a function of the proximity of the spill to the site and whether prevailing conditions - the wind, current, and tides at the time of the spill, will move the oil toward or away from it. It is essential that at least a simple trajectory be developed to enable this assessment.

9800.21 Modeling Oil Spill Trajectories

During initial response “envelope trajectory” modeling is usually the most effective tool. As more assets and information becomes available, computer modeling provides better guidance. Computer models are very useful, but not often available in the initial critical hours and few spill responders are able to use them or have access to them. Recent reliable aerial observations if and when they become available, are helpful to correct projections whether from computer or envelope models. Regardless of projection method, predictions must be made on some modeling assumptions. Most spill responders have access to tide and current information and can use these to make simple trajectory estimates. The simple trajectory methods are described in more detail in Section 4600.

9800.22 Initial List of Site Protection Priorities

Using simple trajectory methods, the list of site protection priorities may be generated quickly by initial responders (typically OSPR Resources at Risk Technical Specialists) and relayed to Operations verbally over the phone or if information is incomplete, upon arrival at the ICP. The sites can be prioritized using the probable time of impact and the prioritization criteria below. Strategies most appropriate can be chosen from the ACP pages and listed in a priority-time of impact sequence. Responders with local knowledge may modify the priorities based on seasonal differences in plant and animal

distribution other local conditions. As soon as possible, more robust trajectory modeling should be initiated through the NOAA SSC as discussed below.

9800.23 Prioritization – Predefined Hierarchy of Protection in Statutes

State and Federal law establish three priority levels for dedication of emergency oil spill response resources.

First Priority - Protection of human health and safety
Second Priority - Protection of environmental resources
Third Priority - Protection of economic resources

Examples of resources that will receive a first priority response (human health and safety) includes:

-power plant intakes -desalinization plants
-drinking water intakes -other health/safety intakes
-public use areas at risk (e.g. fire departments)
(e.g. hazardous fumes)

Within the Second Priority – Environmental Resources – sites are ranked by sensitivity. This sensitivity may be useful in making priority decisions between two sites if both are impacted simultaneously but inadequate resources are available for concurrent protection (See 9801 below)

9800.24 Further Considerations in Preparing Trajectory Projections

Trajectories and oil distribution maps may and should be corrected with reliable overflight information if and when it becomes available. If viewing conditions are poor, do not assume that the overflight information in better than envelope calculations; unreliable overflight information has resulted in regrettable consequences in past spills. Routine overflights provide the most insight if they are concurrent with high and low slack water since those times will show maximum extent of oil movement. Repeat envelope trajectory calculations with updated information until computer model results are available.

Real- time current measures can be helpful to improve envelope trajectories. Such real-time data are available for many locations through the Physical Oceanographic Real-Time System (PORTS®), CODAR (Cencoos or Socoos), and other online information sources.

Freshwater runoff can significantly change the time and velocity of tidal currents. Estimates of oil distribution will be improved by applying the previous day's deviation between real-time current measurements and the predicted tidal currents to estimate the deviation for today's predicted tidal currents.

Computer simulations are the preferred method to make trajectory projections. Responders should use computer predictions for periodic intervals over the short term future as soon as possible in the response. Computer simulations combined with current

overflight information can provide projections which include scope as well as extent of spill expansion and have greater detail for some local current patterns. The projection images are very useful for determining which resources are most likely to be reached by the oil and therefore at most "risk". Computer simulations are effective for looking at advanced time intervals. For example, predictions are useful for every six hour increment (interval keyed to the maximum and minimum tides) for the first 36 to 48 hours and including any predicted changes the wind direction and/or speed and weather. Normally, computer projections are through the National Oceanic and Atmospheric Administration's Scientific Support Coordinator. Envelope trajectories may still be used to verify the output from simulations.

Wind has less effect upon the distribution of oil in a strong current (as in bays and estuaries.) First, since oil is moving at 100% of flow, currents are dominating oil dispersion in high current environments. Second, helical flow patterns in currents will usually keep oil in the main channel until slack tide. The helical flow will stop at slack tide and the oil will be blown directly down wind. Oil blown out of the channel during the slack before the ebb (at high tide) may be carried back into the channel by the ebb tide before it can impact shorelines, however, oil blown out of the channel during the slack before the flood (at low tide) will be blown directly downwind until it strands on the shoreline. In ocean environments, winds tend to be more dominant because currents tend to be more modest; however, recent CODAR information indicates that there may be periods of high velocity ocean currents of up to two knots in places along the California coastline.

9801 Ecologically Sensitive Sites

Protection of environmental resources has the highest priority after human health and safety. Both Federal and State laws require that sites having special ecological sensitivity be identified and provisions be made to protect or otherwise mitigate for the site impacts from spills. In California these locations are termed “Sensitive Sites.” For each sensitive site, information is summarized in the Site Summary, Site Strategy, and accompanying Strategy Diagram pages in Section 9800.

The purpose of this section is to provide background, definitions, and philosophy behind the site identification and protection. The selection of sites and development of specific protection strategies to meet the site specific needs was conducted using a standardized protocol to ensure consistency for California’s entire coast. The process of site visits, training exercises, and discussions allows trustees and response experts to exchange concerns and feasibility limitations in forming protection strategies. Using this approach, the local area committee incorporates input of State and Federal trustees, and stakeholders (industry, spill response coops and contractors, non-governmental environmental groups, and other agencies) to form consensus on the appropriate site protection strategies and response resources. The committee will revise strategies based on new knowledge and to adapt to changing conditions. This information is updated and maintained by the Department of Fish and Game, OSPR, in the Site Information and Spill Response Strategy (SISRS) database. The sensitive site ACP pages included in Section 9800 are produced from the SISRS database, and the database always has the most current information available for sensitive sites.

9801.1 Sensitivity Ranking of Ecologically Sensitive Sites

Each site has an environmental sensitivity ranking. The ranking index was developed in order to identify the relative sensitivities of these sites to oil and, in turn, to help determine protection priority of sites. These ranks define the environmental sensitivity of the area and its resources at risk. The environmental sensitivity differs by location or season depending on conditions or the presence of species. Accordingly each site is ranked A, B, or C based on the following definitions:

> Category A - Extremely Sensitive – highest concern for protection:
> Wetlands, estuaries and lagoons with emergent vegetation (marsh-riparian ESI 10) Sheltered tidal flat (ESI 9); and Habitats for rare, threatened or endangered species (State or Federal); Sites of significant concentrations of vulnerable and sensitive species (e.g. pinniped pupping)
>
> Category B - Very Sensitive – very high concern for protection:
> Major pinniped haulout areas during non-pupping seasons; Moderate concentrations of vulnerable and sensitive species; other low energy habitats (ESI types 8A, 8B, 7 and 6B)
>
> Category C - Sensitive – great concern for protection:
> Higher energy habitats (ESI 6A through 1) for example: *Habitats important to large numbers of species of sport, commercial value, and scientific interest or species experiencing significant population declines though not yet threatened.*

The A, B, or C ranking should not be misconstrued as defining whether a site can be effectively protected from oiling nor which site should receive priority in operational shoreline protection. Some “A” sites or portions of “A” sites may not be feasible to protect using conventional techniques. For example some seabird colonies and pinniped haulouts may be in such high energy environments that booming is precluded, and the primary protective measures is effective offshore skimming and advanced technology such as dispersants and burning; in fact, collateral impacts from aircraft and other response activity may rank equally in concern. Assigning a response priority is usually guided according to the time by which the oil slick is likely to impact a sensitive site regardless of sensitivity ranking. The OSPR Resources At Risk Technical Specialist will be invaluable in helping the response prioritize deployments.

9801.2 Ecologically Sensitive Site ACP Pages

Each site is described on three pages: Site Summary, Site Strategy, and Strategy Diagram. The Site Summary Sheet provides a thumbnail sketch of the layout of the site including geography, size, ownership, resources at risk of oiling at the site, and special concerns including cultural/historic sensitivities. Also included is a list of key contacts having special knowledge or stewardship.

The Site Strategy page provides specific information on response strategies to be implemented to protect the site from marine oil spills. Most sites have more than one protection strategy. These additional strategies may be used as back-ups to the primary protection strategy or as alternatives to accommodate prevailing conditions. It should be understood that the described strategies are intended as initial protection strategies for the first 24 hours of a spill. Additional or modified protection measures should also be

considered. As responders and planners adjust strategies to meet the needs presented by prevailing conditions, they should, as much as possible, do so with the prior advisement of the on-scene OSPR Resources at Risk Technical Specialist and with the approval of the IC. In other words, strategies presented here are flexible and may require modification in real response situations. The Strategy Diagram page depicts the site protection strategies, topography and roads.

In addition to the information here about local sensitivities, more information assets can be accessed through respective government agencies including:

- Site Information and Spill Response Strategy database – Ca Dept. Fish & Game, OSPR Ecological Sensitivity Atlases for the California Coast – CA Dept. of Fish and Game or NOAA
- Rare Find Database - CA Dept of Fish and Game - endangered species both Federal and State listed species
- Wildlife Habitats Relational Database – CA Dept of Fish and Game – species associated with habitat types

9802 Cultural and Other Resources at Risk

This sub-section includes GRA specific information about resources at risk which are not geographically localized, identified, or variable distributed from year to year. For example, though cultural resource sensitivity is noted on Sensitive Site Summary pages, most cultural resource information is very confidential and not published, but local key contacts may be included here. Another example may be bird wintering concentrations. One of the required elements is "Essential Fish Habitat;" any specific local information may be available here.

9802.1 Cultural and Historic Resources

Cultural or historic resources details are noted on the site summary pages when sensitive sites overlap cultural sites. However, most cultural resource information is very confidential and is only available from other sources. The Cultural and Historic Resources Information System (CHRIS) is an elaborate database maintained by the Office of Historic Preservation of the California Department of Parks and Recreation. Access to the database is restricted and similar information is not publicly available here in order to keep these resources as secure as possible.

Mitigation of impacts to Cultural and Historic Resources is addressed in Appendix XIX of the RCP. The key guidance is the draft CALIFORNIA IMPLEMENTATION GUIDELINES FOR FEDERAL ON-SCENE COORDINATORS FOR THE PROGRAMMATIC AGREEMENT ON PROTECTION OF HISTORIC PROPERTIES DURING EMERGENCY RESPONSE UNDER THE NATIONAL OIL AND HAZARDOUS SUBSTANCES POLLUTION CONTINGENCY PLAN. It provides the process for FOSCs to protect and conserve cultural and historic resources during a response through the FOSC's Historic Properties Specialist.

Details included in ACP GRAs are for local contacts and similar local information.

Sources of Cultural and Historic Resources Information

- Cultural and Historic Resources Information System (CHRIS) accessed through Office of Historic Preservation of the California Department of Parks and Recreation (916-653-6624), local Information Center Managers (individuals who maintain database hubs), and certified archeological contractors.
- Tribal information may best be accessed through the Native American Heritage Commission (NAHC) - Tribal contact list: (Dr. Meyers - 916-653-6251; Dr Gaublaz 916-653-4082, 916-6575390) and through the cooperation of Tribal Historic Preservation Officers (THPOs) – who have access to local tribal information which may not otherwise be available.
- More detailed information may be provided in individual ACP material in Section 9800.

9802.2 Essential Fish Habitat

"Essential Fish Habitat" is a required element ACPs. "Essential Fish Habitat" is legally and distinctively different than "Critical" habitat and includes areas important to

sustaining commercial species as well as threatened and endangered species habitats "essential" for the conservation.

Essential Fish Habitat

Ocean fisheries are managed under the Fishery Conservation and Management Act of 1976, now known as the Magnuson-Stevens Fishery Conservation and Management Act (MSA). The Act provided the National Marine Fisheries Service (NMFS) legislative authority for fisheries regulation in the United States, in the area between three-miles to 200 miles offshore.

In 1996, the Magnuson-Stevens Act was re-authorized and amended by the Sustainable Fisheries Act of 1996 (Public Law 104-267) to emphasize the sustainability of the nation's fisheries and establish a new standard by requiring that fisheries be managed at maximum sustainable levels and that new approaches be taken in habitat conservation. This habitat is called “Essential Fish Habitat” (EFH). The Act established procedures designed to identify, conserve, and enhance EFH for those species regulated under a Federal fisheries management plan.

The purpose of addressing habitat in this act is to provide for one of the nation’s overall marine resource management goals – maintaining sustainable fisheries. As evidenced for all wildlife resources, suitable habitat is essential for their subsistence. Although the concept of EFH is similar to that of “Critical habitat” under Endangered Species Act (ESA), measures recommended to protect EFH by NMFS or a Council are advisory, not proscriptive. An effective EFH consultation process is crucial to ensuring that Federal actions serve the Magnuson-Stevens Act resource management goals. For those species currently listed under ESA, but not necessarily under EFH, individuals and habitats must be protected and consultation with NMFS and/or United States Fish & Wildlife Service (USFWS) should be implemented.

The MSA requires Federal agencies to consult with NMFS on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH (MSA §305(b)(2)). See ACP Section 4800 for consultation procedures.

EFH means “those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity” (MSA §3). For the purpose of interpreting this definition of EFH: Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50 CFR 600.10). Adverse effect means any impact which reduces quality and/or quantity of EFH, and may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey or reduction in species fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions (50 CFR 600.810).

The EFH mandate applies to all species managed under a federal Fishery Management Plan (FMP). For the Pacific West Coast (excluding Alaska), there are FMPs, covering groundfish, coastal pelagic species, and Pacific salmonids. Therefore, Federal agencies

must consider the impact of a proposed action on EFH for any species managed under those FMPs. A brief description of EFH identified in each FMP follows. Detailed descriptions are contained in the references following the EFH Assessment template.

Groundfish: EFH for Pacific coast groundfish is defined as the aquatic habitat necessary to allow for groundfish production to support long-term sustainable fisheries for groundfish and for groundfish contributions to a healthy ecosystem. Descriptions of groundfish EFH for each of the 83 species and their life stages result in more than 400 EFH identifications. When these EFHs are taken together, **the groundfish EFH includes all waters from the mean higher high water line, and the upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon and California seaward to the boundary of the U.S. exclusive economic zone (EEZ).**

Coastal pelagic species: Amendment 8 to The Coastal Pelagic Species Fishery Management Plan describes the habitat requirements of five pelagic species: Northern anchovy, Pacific sardine, Pacific (chub) mackerel, jack mackerel and market squid. These four finfish and market squid are treated as a single species complex because of similarities in their life histories and habitat requirements. EFH for coastal pelagic species is defined as: **The east-west geographic boundary of EFH for CPS is defined to be all marine and estuarine waters from the shoreline along the coasts of California, Oregon and Washington offshore to the limits of the EEZ and above the thermocline where sea surface temperatures range between 10o – 26o C. The southern boundary is the U.S.-Mexico maritime boundary. The northern boundary is more dynamic, and is defined as the position of the 10o C isotherm, which varies seasonally and annually**.

Pacific salmonids - chinook, coho, steelhead and Puget Sound pink salmon: EFH for the Pacific coast salmon fishery means those waters and substrate necessary for salmonid production needed to support a long-term sustainable salmonid fishery and salmonid contributions to a healthy ecosystem. To achieve that level of production, EFH includes all those streams, lakes, ponds, wetlands, and other currently viable water bodies and most of the habitat historically accessible to salmon in Washington, Oregon, Idaho, and California. Southern steelhead may have occupied as much as 15% of the winter steelhead range in California, but the present distribution in southern California has been reduced to perhaps 1% of the stream miles they formerly inhabited (E. Gerstung, in: CDFG, 1995). **The Evolutionary Significant Unit includes all naturally spawned populations of Southern California steelhead (and their progeny) in streams from the Santa Maria River to Malibu Creek. -In the estuarine and marine areas, salmon EFH extends from the near shore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California north of Point Conception. - Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years).**

References

Casillas, E., L. Crockett, Y. deReynier, J. Glock, M. Helvey, B. Meyer, C. Schmitt, M. Yoklavich, A. Bailey, B. Chao, B. Johnson and T. Pepperell. 1998. Essential Fish Habitat West Coast Groundfish Appendix, National Marine Fisheries Service, 778 pp.

Calif. Dept. of Fish and Game (CDFG). 1995. Fish species of special concern in California. By Moyle, Yoshiyama, and Williams. Sacramento. 272 p.

PFMC (Pacific Fishery Management Council). 1999. Amendment 14 to the Pacific Coast Salmon Plan. Appendix A: Description and Identification of Essential Fish Habitat, Adverse Impacts and Recommended Conservation Measures for Salmon (August 1999).

PFM (Pacific Fishery Management Council). 1998. Final Environmental Assessment/Regulatory Review for Amendment 11 to the Pacific Coast Groundfish Fishery Management Plan (October 1998).

PFMC (Pacific Fishery Management Council). 1998. The Coastal Pelagic Species Fishery Management Plan: Amendment 8 (December 1998).

9802.3 Other Resources at Risk

This section is available to address any other resources of concern which have not been addressed in previous sections. The California Wildlife Plan (Appendix XXII of RCP) includes methods of assessing transient resources such as migratory birds during a spill response.

9803 Economically Sensitive Sites

Strictly economic resources are designated as the third priority for dedication of oil spill response resources, following human health and safety and environmental resources. The economic sites are ranked using a continuation of the environmental scale with D, E, and F categories. People involved with response planning recognize that throughout California's marine waters, along the State's shoreline, and within coastal communities are many resources of economic importance that could be severely impacted by an oil spill incident. Limitations of time, personnel, and the availability of information caused that not all resources of significant economic value and susceptible to marine oil spills could be identified at this time.

9803.1 Criteria-for Priority Response and Types of Economic Resources

Economic resources that have a greater potential for long-term damages receive a higher rank or priority for emergency response. The following criteria or definitions are used to categorize economic resources in terms of priority for response:

D = Economic activities and resources which require high water quality for their operations or existence. Resources that fall into this category would face severe, long-term economic impacts from a spill. This category includes commercial fishing areas (also have environmental rank), aqua culture and mariculture areas, marine labs, salt pond intakes, aquarium water intakes, etc.'

E = Facilities, businesses, or resources which directly use coastal or bay waters within their economic activity and which are at risk of oiling from a spill in marine waters. The resources falling into this category would face significant disruption of their activity, but shorter term potential damages from oiling than resources in the "D" category. This category would include resources such as marinas, harbors, commercial piers, industrial intakes, and parks or recreational areas.

F = This category contains marine associated facilities, businesses and resources. These resources would face economic impacts from a marine spill, but do not depend directly on marine water for their economic base. Resources in this category will tend to face less severe damages than those identified in categories D or E. This category includes economic resources such as waterfront hotels, restaurants,shops, and residential areas. (Note: residential sites would be evacuated to avoid health risks).

9803.2 Types of Economically Significant Resources and Ranking

Listed below are various types of significant economic resources potentially at risk from oiling- and the appropriate response priority category.

- aqua culture, mariculture (D)
- aquariums, marine labs (D)
- facility intakes [not affecting public health] (D)
- parks, beaches, recreational areas (E)

- vessel or boat traffic areas: shipping, lanes, harbor entrances, river mouths, bays, anchorages (E,)
- marinas, houseboat areas (E)
- ferries and tour boats (E)
- port or harbor facilities (E)
- boat moorings, cargo piers, terminals, fishing piers (E)
- ship or boat repair shops (E)
- tourist hotel, restaurant areas (F)
- waterfront residential areas (F)

9803.3 Information About Sensitive Economic Resources

Economic sections within GRAs contains lists, and/or maps of sensitive economic areas or resources. Below is a description of the types of information that may be provided for each identified economic resource or facility. Some information is unavailable for specific resources identified within this section.

1. Resource or facility identification number
2. Geographic location of resource or facility
3. Brief description of the resource at risk
4. Contact names and numbers (24 hour access if available)
5. Priority response ranking

9804 Shoreline Operational Divisions

Shoreline Operational Divisions are presented in the ACP as front-loaded information to assist in rapid response planning to provide for quickly organized operational objectives and assignments along affected shorelines. The operational divisions have been developed in conjunction with the US Coast Guard, California Fish and Game OSPR, and various Oil Spill Response Organizations. Experience has demonstrated that in the earliest stages of spill response having organizational issues such as this prepared in advance is very useful to the response team.

The shoreline operational divisions are organized and named according to County boundaries. Within county domains, divisions are boundaries are guided by logical geo-political features such as coastal physical characteristics and land ownership/management issues, shoreline cleanup logistical considerations, and manageable sized coastline segments (generally not longer than about ten miles although some variation occurs.) Logistics, access, and manageability were driving considerations in this effort, particularly as it relates to types of cleanup operations required and problems likely to be present.

In ACP areas having more than one county, Shoreline Operational Divisions will utilize county codes followed by a single alpha character (A to Z). Shoreline operational divisions are labeled from north to south in each county. For example, the north-most operational division in Los Angles County is “LA-A.” In large bays (i.e. San Diego), the labeling will progress in a clockwise direction to accommodate changing coastline angles. Divisions can be easily subdivided (as necessary) by the Operations Section management to provide for appropriate work assignment effort.

Double digit alpha characters (AA to ZZ) will be used for all offshore operational areas and any other special operational areas needed during response.

9805 Shoreline Access

Some Area Committees have provided detailed shoreline access to aid Planning and Operations Section managers in the rapid deployment of field response personnel and equipment on coastal beaches during the emergency phase of spill response. If this information is available for a particular Area Committee area of responsibility, it will be found in this section of the respective Geographic Response Area.

9806 California Strategy Concepts, Systems Approach, and Nomenclature

Every geographic area has its own approach and a certain amount of variability in language. This section will aid responders unfamiliar with California response understand local methods, concepts, and vernacular.

9806.1 Booming Systems

Boom and booming systems are described here to enable planners and operations staff to better achieve their objectives. First, boom terminology used on the west coast is different than much of the rest of the U.S. and the World Oil Spill Catalog. In general, harbor boom (see definition below) is used as primary site protection in the San Francisco Bay/Delta Area, although some strategies call for swamp boom (river boom - see below). For response and planning purposes, harbor boom may be substituted for swamp boom and two consecutive layers of swamp boom are roughly equivalent to one layer of harbor boom. Swamp boom may be used in low energy applications: areas with little chop or waves and light currents.

However, responders should be aware of several issues and amend actions as necessary. Long-skirted booms in shallow channels can aggravate entrainment problems. In such instances, it may be inadvisable to substitute harbor boom for swamp boom.

Also, wherever oil accumulates against booms in rough or choppy conditions, there can often be the problem of oil washing over the flotation. This nullifies the booming. To avoid this problem, protective strategies are designed to avoid collection of oil in pockets (except for the purposes of skimming), and instead, are oriented to keep oil moving along booms to collection or deflection as much as the situation permits. Responders, both in operations and planning will need to adjust boom configurations to prevent excessive “pocketing” so as to minimize entrainment and over-wash. This may mean altering boom angles. This may also be unavoidable and require back-up layering of boom. Some strategies include this as a contingent alternative, but regardless, if over-wash is a problem, then a second layer should be viewed as the containment and deployed in the “shadow” of the becalming first layer. In some instances the lesser freeboard of swamp boom may provide adequate control once the wave has been broken.

Regardless of strategy design, deployment and adjustment remain key to successful booming. If strategies are not properly deployed, whether prescribed or amended, and maintained though proper anchoring and tending, the protective booming will be

neutralized. Every effort by managers and responders should be made to ensure proper execution.

9806.2 Skimming Systems

This paragraph provides an introduction to skimming issues in site strategies. In the following strategies, the inclusion of self-powered skimming vessels is minimized in recognition that the first response resource priority is on-water skimming: the best protection for sensitive sites is to minimize oil impacting sites by best available means (ON WATER RECOVERY). However, shore-side skimming and defection offshore to skimming are integral parts of protecting the sensitive site or nearby sites at risk. The philosophy of strategy development includes the intent to leverage opportunities to control, capture, immobilize or collect oil at shorelines where possible. Once oil has been immobilized, either contained or confined nearshore, oil skimming efficacy dramatically improves. Also, once oil has impacted a site, it may be a reasonable tactic to keep it at that locale rather than let it re-mobilize to impact yet another site.

Since there are a variety of skimming units that may be included in the strategy, this preamble provides an opportunity to define skimming systems so that the elaborate descriptive verbiage need not be repeated in each strategy. A number of acronyms for skimming systems are included in the Acronyms and Nomenclature section below: TSA, SFS, SPS, and SSS.

A skimming system includes four elements: a skimming device, storage for skimmed oil, a pumping devise to move captured oil from skimming device to storage, and a power supply capable of enabling all devices.

9807 Glossary of Acronyms and Nomenclature Used in Strategies

To minimize repetitious verbiage in protection strategies, the following acronyms and nomenclature may be used in strategies and in Strategy Pages (and SISRS database).

Anchoring Systems – Whether expressly stated or not, anchoring systems must be sufficient to hold boom in the aggressive currents where boom may be deployed. To insure successful anchoring, the anchoring system should includes: anchors with anchor buoys to control placement, anchor chains which equal or exceed the weight of anchors indicated, enough line to produce adequate scope to hold anchors (rule of thumb is 3:1 (line to depth), but 5-7:1 for high current areas), and a buoy between anchor line and boom (crown buoys) to keep the anchor from sinking the boom under tension conditions.

BBE - boom boat equivalent – the capability of a vessel to transport and deploy 600 feet of Hboom or 1800 ft of swamp boom.

Boom boats - a boat suitable for transporting, towing and deploying large amounts of boom, usually crewed with a helmsman and two crew for deployment, usually referenced in terms of BBE. Boom boats must be capable of grounding without sustaining damage. (Also see Shallow Water Boom boats and Very Shallow Water Boom Boats.)

Bboats - see boom boat

Danforth - refers to “danforth anchors” with chain, typically presented as a number of anchors and minimal weight (e.g., 3/12+ - means three anchors of a minimum of 12 lbs each) with at least an equal weight of anchor chain weight whether specified or not. Without substantial anchor chain weight, anchors will not hold. Northill anchors are equivalent.

Hboom - see harbor boom

Harbor boom - an inland waters type boom (greater than 18" and less than 42" overall (flotation and skirt)) of a curtain boom design (skirted boom with solid flotation). Early strategies attempted to clarify boom size by indicating flotation and skirt as follows: 9X9+ which indicated a boom with at least 9" of flotation and 9" of skirt, and would be interpreted as at least 18" overall.

sorbm - sorbent boom, with or without a skirt Shallow water boom boats - a boom boat capable of working in three feet of water or less, and should be able to withstand stranding without sustaining damage.

Skiff - a small two person craft able to operate in 3 foot waves or larger and capable of delivering personnel and equipment to shores.

Skf - see skiff

SFS - stationary floating skimmer - a floating platform supporting a skimmer and storage – which could be a VOSS.

SPS - self-propelled skimmer - a small to medium sized skimmer with its own propulsion and storage – which could be a VOSS.

SSS - shore side skimmer, includes a skimming unit, such as a ropemop or weir skimmer and its support pack and a storage container such as a vacuum truck, baker tank, or other tank.

swpbm - see swamp boom

Swamp boom - a river boom type (less than 18" overall) of a curtain boom design

Towed skimming array - a skimming system with two boats towing collection booms which funnel oil to a skimming system

TSA - towed skimming array - an array with two boats towing collection booms which funnel oil to a skimming system

VOSS – Vessel of Opportunity Skimming System – a skimming system (skimming device, pump, power supply, and storage) place on a vessel which was not designed for skimming per se.

VSA – “V”-Skimming Array -Same as TSA

“V”-Skimming Array -Same as TSA

Very shallow water boom boats - a boom boat capable of working in two feet of water or less, and should be able to withstand stranding without sustaining damage.

xboom – is any boom other than harbor boom, swamp, or sorbent boom. This term is used to simplify equipment tables. A type designator should be used as well as a length. Type designators include:

TB or **TBB** – tidal barrier boom;
OB – ocean boom;
FB – fence boom;
OS – oil snare;
BB – bushy boom

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9810 North Coast Sensitive Sites

9810.01 Table of Contents

9810.1 Introduction

The North Coast Area includes 82 environmentally sensitive sites. Sections 9811.1, 9812.1, 9813.1 and 9814.1 contain the Site Summary sheets which detail the significance of each sensitive site. Many of these sites have individual response strategies that may be considered as guidelines for response when the threat of oiling creates the need to deploy protective measures. In some cases, more than one strategy is included for a given site due to variations in a site's profile from one visit to another.

The response strategies should be taken into consideration when a particular site or group of sites is threatened by a discharge of oil. However, the strategies were developed for conditions existing on the date surveyed, conditions which may or may not be present when an actual response is deemed necessary. The conditions present when a threat of oiling exists (i.e. weather, current, tide, availability of response resources, type of product, biological resources present, type of sediment present, site accessibility, etc.) should dictate the type of response. Furthermore, the strategies presented should be considered a "last line of defense" to prevent oil from entering a specific environmentally sensitive site. Certainly, every effort to contain and recover the discharged oil while it is on the water should be made prior to employing the exclusionary booming measures that many of the strategies call for.

9810.11 General Response Strategies For The North Coast Area

Although each environmentally sensitive site has a unique set of characteristics, the vast majority of North Coast sites fall into three broad categories: Offshore Rocks/Rocky Headlands/Pocket Coves, Tidal Inlets (creeks and rivers), and Beaches. Below are general strategies for these three site categories.

Offshore Rocks/Rocky Headlands/Pocket Coves

Sites of this nature are generally accompanied by high wave energy, which drastically reduces the effectiveness of existing spill response technology. Furthermore, these sites are often very difficult and dangerous to access via land or water due to heavy surf, submerged rocks, sheer cliffs and lack of roads to the area. As a result, response options are very limited, which underscores the importance of recovering the oil on-water if at all possible.

Although high wave energy in the vicinity of offshore rocks and rocky headlands hinders the deployment and clean-up capabilities of response equipment, it is effective at breaking up oil and providing a continuous washing of oiled surfaces. Therefore, it may be appropriate not to respond to these sites. Response may be more feasible in the pocket coves that are prevalent among the rocky headlands of the North Coast, since they are often sheltered from the high wave energy.

Tidal Inlets (creeks and rivers)

The majority of North Coast tidal inlet sites currently have one or more response strategies. Because these tidal inlets undergo significant physical changes throughout the year (i.e. varying flow rates, location of mouth, gradient of inlet, sediments present, tidal cycles, etc.), the strategies provided may not be the best response to a particular incident. Therefore, the following general strategies have been provided to aid in developing an appropriate response for various types of conditions.

Many of the North Coast tidal inlets are small creeks that may easily be diked to prevent oil from entering on an incoming tide. This may be done manually or with heavy equipment (front- end loader or bulldozer) provided the site has both the proper type of sediment (fine to medium grained sand) and a sufficient amount to accomplish the task. Inlets with relatively steep gradients may not need to be diked, as long as the creek maintains flow to the sea (including on an incoming tide).

The rate of flow of the inlet must also be taken into consideration when diking. If the flow is too great to effectively dike the creek, through flow culverts placed within the base of the dike may allow an adequate amount of water to pass to keep the dike intact. These through flow culverts must be placed below the surface of the water to prevent oil from passing through the dike.

Many North Coast creeks and rivers naturally dike themselves during the summer months, creating a lagoon shoreward of the natural dike. Although this natural dike limits interaction with the sea, large waves or high tides often allow seawater to wash over the natural dike.

To prevent oil from entering the lagoon via large waves or high tides, a berm could be developed to heighten the highest portion of the natural dike. As with construction of sediment dikes, feasibility of the berm may depend on the type and amount of sediment available at the site. Furthermore, construction of such a system generally requires the use of large machinery (front- end loaders or bulldozers). Use of a berm may be dependent on the ability of heavy machinery to access the particular site.

There are a number of tidal inlets in the North Coast that are either too wide, too deep, or flow too rapidly to consider diking (even with through flow culverts). Effective use of boom and skimming systems must be used at these sites to prevent oiling. However, swift currents and entrainment of oil will often prevent exclusionary booming from being a practical solution. Instead, deflection boom should be placed to force the oil to a catchment site (fine to medium -grained sand beach is best) for recovery of the oil. Another option is placing the deflection boom along both sides of the inlet to deflect the oil to a skimmer located at the apex of the two lengths of boom. Again, this will be dependent on the resources available and the conditions present at the site at the given time.

Beaches

These sites are often accompanied by dynamic surf, which drastically reduces the effectiveness of existing response technology. As such, booming and skimming will generally not be feasible at these sites. Therefore, the use of a berm should be considered.

Prior to developing a berm, most beaches will need to be pre-cleaned in order to prevent oiling (and the subsequent need to dispose) vast amounts of beach debris (i.e. driftwood and kelp). On cobble beaches, though, pre-cleaning should be weighed against the effects of oil penetration. In some instances, kelp strewn along this type of beach could prevent oil from penetrating the surface, thereby reducing the severity of impact on the site.

The development of a berm generally requires the use of front-end loaders or bulldozers. Heavy equipment access to the site is key. In addition, the type and quantity of sediment available is very important. Fine to medium-grained sand is best for berm construction.

Oil collected along the base of the berm may be recovered using adsorbent materials.

9810.12 Sensitive Sites Summary Table

9810.12.1 Table Introduction & Explanation

The ACP has evolved from a planning document that was strictly focused upon the most probable protection strategies that were to be deployed during the initial 24 hours of an oil spill response into a more broad spectrum planning tool that attempts to encompass a much larger sphere of parameters that should all be considered during a more global preplanning exercise than was initially proposed.

The summary table on the following page is designed to condense the wealth of information that is contained in the various strategy pages of the ACP. The table gives the responder a summary document that can be used to quickly determine where response strategies have already been developed and what special parameters and issues (i.e. cultural, ecological, or economical), will need to be considered as a spill response effort is deployed in the field.

The North Coast Area Committee has categorized all of the ACP sites according to the relative ability and desirability of each site to be accessed with response equipment and the availability of that equipment for on scene deployment. Seven Categories for response were chosen, and they are defined in the following graph.

9810.12.2 Table Response Category Priorities By Number

1. Easily accessed site that is close to pre-staged response equipment.
2. Easily accessed site that is distant (20+ miles) from pre-staged response equipment.
3. Access is difficult, and pre-staged response equipment is close to the site.
4. Access is difficult, and pre-staged response equipment is distant (20+ miles) from the site.
5. Environmental damage could result from an intrusive response, and the land Trustee(s) recommends against an on site response.
6. Immediate response is probably not necessary, but this does not preclude a potential need to clean after impact evaluation.
7. Conventional response is not realistic based upon current technology. These are sites with either extreme currents, high energy shorelines, or on off shore rocks.

In addition to these mechanical response categories, the table indicates with either a “Y” (yes) or “N” (no) that a response strategy has been developed for the site, or if there are any known historical or cultural heritage issues, or critical fish habitat issues, or economic issues associated with these sensitive sites.

9810.12.3 Summary Table of the North Coast Sensitive Sites by response issue paramaters

SITE NUMBER	SITE NAME	RESPONSE CATEGORY	RESPONSE STRATEGY	HISTORICAL OR CULTURAL	CRITICAL FISH HABITAT	ECONOMIC
1-105-A	Off Shore Rocks Near Pyramid Point	6	N	Y	N	N
1-110-A	Smith River Mouth & Lagoon	2	Y	Y	Y	N
1-115-A	South Spit Smith River	6	N	Y	N	N
1-125-A	Lake Tolowa	6	Y	Y	Y	N
1-130-A	Southwest Seal Rock	7	N	N	N	N
1-135-A	Point Saint George	7	N	N	N	N
1-140-A	Castle Rock National Wildlife Refuge	5	N	N	N	N
1-145-A	Elk Creek & Crescent City Harbor	1	Y	N	Y	Y
1-150-A	Battery Point	7	N	N	N	N
1-155-A	Del Norte Coast Redwoods State Park	7	N	Y	N	N
1-160-B	Scat Beach	7	N	N	N	N
1-165-C	Last Chance Rock	7	N	N	N	N
1-170-A	Footsteps Rocks to Radar Station Rocks	7	N	Y	N	N
1-175-B	Wilson Creek	2	Y	Y	Y	N
1-180-B	Klamath River Mouth & Estuary	2	Y	Y	Y	Y
1-185-B	Flint Rock & White Rock	7	N	Y	Y	N
1-205-A	Gold Bluffs Beach	6	N	Y	N	N
1-210-A	Redding Rock	7	N	N	N	N
1-215-A	Redwood Creek	4	Y	N	N	N
1-220-A	Stone Lagoon	4	N	N	Y	N
1-230-A	Big Lagoon	4	N	Y	Y	N
1-235-A	Patrick's Point to Trinidad Head	7	N	Y	Y	N
1-240-A	Trinidad Bay to McConnahas Mill Creek	2	N	Y	Y	Y
1-245-A	Little River Lagoon & Beach	1	Y	N	Y	N
1-250-A	Clam Beach	6	N	N	Y	N
1-255-A	Mad River Lagoon	3	Y	N	Y	N
1-260-A	Eel River Estuary	3	Y	Y	Y	N
1-265-A	Centerville Beach	6	N	N	N	N
1-268-A	False Cape Rock	7	N	N	N	N
1-270-B	Bear River	6	N	N	Y	N
1-273-A	Cape Mendocino	7	N	N	N	N
1-275-B	Steamboat Rock	7	N	Y	N	N
1-279-B	Hair Seal Rock	7	N	N	N	N
1-285-A	Mattole River	2	Y	Y	Y	N
1-290-B	Cooksie Creek	4	N	N	Y	N
1-294-A	Shubrick Peak	7	N	N	N	N
1-298-B	Shelter Cove & Cormorant Hotel	4	N	N	N	Y
1-305-A	Humboldt Bay & Inner Samoa Peninsula	1	Y	N	Y	Y
1-310-A	North Humboldt Bay	1	Y	Y	Y	Y
1-320-A	Mad River Slough	1	Y	Y	N	N

SENSITIVE SITES BY RESPONSE ISSUE PARAMATERS

SITE NUMBER	SITE NAME	RESPONSE CATEGORY	RESPONSE STRATEGY	HISTORICAL OR CULTURAL	CRITICAL FISH HABITAT	ECONOMIC
1-324-A	Arcata Bay Sloughs	3	Y	Y	Y	N
1-326-A	Eureka Slough	3	Y	Y	Y	N
1-328-A	Woodley Island	2	Y	Y	N	Y
1-330-A	Indian Island	1	Y	Y	N	N
1-340-A	Palco Marsh	1	Y	N	N	N
1-345-A	Elk River Marshes	1	Y	N	Y	N
1-350-A	South Humboldt Bay	1	Y	Y	Y	N
1-352-A	White Slough & Salmon Creek	3	Y	Y	Y	N
1-360-A	South Spit	1	N	Y	N	N
1-400-C	Morgan Rock	7	N	N	N	N
1-402-B	Seal Rocks	7	N	N	N	N
1-404-A	Jackass Creek	5	N	N	N	N
1-406-B	Little Jackass Creek	5	N	N	N	N
1-408-A	Usal Creek	4	Y	Y	Y	N
1-410-A	Shoreline Rock	7	N	N	N	N
1-412-A	Soldier Frank Point	7	N	N	N	N
1-414-A	Rockport Bay & Cottaneva Creek	4	N	N	N	N
1-416-A	Hardy Creek	4	Y	N	N	N
1-430-A	Ten Mile River	2	Y	Y	Y	N
1-432-B	Inglenook Creek & Sandhill Lake	4	N	N	N	N
1-440-B	Pudding Creek	1	Y	Y	Y	N
1-442-A	Soldier Point	7	N	N	N	N
1-444-A	Noyo Harbor Entrance & Dolphin Cove	1	Y	N	Y	Y
1-448-B	South Fort Bragg	3	N	Y	Y	N
1-452-B	Casper Point	7	N	N	N	N
1-454-A	Casper Creek & Doyle Creek	1	Y	N	Y	N
1-456-A	Pt. Cabrillo to Russian Gulch	1	Y	N	Y	N
1-458-B	Mendocino Headlands State Park	7	N	N	N	N
1-460-A	Big River	1	Y	N	Y	N
1-462-B	Mendocino Bay	1	N	N	N	N
1-464-A	Van Damme State Park & Little River	1	Y	N	Y	N
1-466-B	Dark Gulch	3	Y	N	Y	N
1-468-A	Albion River	1	Y	N	Y	Y
1-470-A	Salmon Point & Big Salmon Creek	2	Y	N	Y	N
1-472-A	Navarro River State Park	2	Y	Y	Y	N
1-474-A	Greenwood Creek to Cuffey's Cove	4	Y	N	Y	N
1-476-B	Bonee Gulch	7	N	N	N	N
1-478-A	Elk Creek	4	Y	N	Y	N
1-480-C	Irish Gulch	2	Y	N	N	N
1-482-B	Alder Creek	2	Y	N	Y	N
1-484-A	Garcia River & Manchester State Beach	4	Y	N	Y	N
1-486-B	Point Arena	2	N	N	N	N

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