ACP 1 North Coast

9808 ACP 1 North Coast Introduction

ACP 1 covers the marine shoreline of Del Norte County, Humboldt County and Mendocino County. The Del Norte County shoreline is its own geographic area (GRA 1), the Humboldt County shoreline is divided into two geographic areas (GRAs 2 and 3), and the Mendocino County shoreline is its own geographic area (GRA 4). The North Coast Area includes 82 environmentally sensitive sites. Sections 9809.1, 9810.1, 9811.1, and 9812.1 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 and environmental conditions. 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.

9808.1 General Response Strategies For The North Coast Area

Although each environmentally sensitive site has a unique set of characteristics, most of North Coast sites fall into three broad categories: Offshore Rocks/Rocky Headlands/Pocket Coves, Tidal Inlets (creeks, sloughs, 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 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 accessible 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)

Many North Coast tidal inlet sites have one or more response strategies. Because some 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 at any given time. Therefore, the following general strategies have been provided to aid in developing an appropriate response for various types of conditions.

Many North Coast tidal inlets are small creeks that may easily be diked or dammed to prevent oil from entering on an incoming tide during low flow conditions. This may be done manually or with heavy equipment (front- end loader or bulldozer) provided the site has access, the proper type of sediment (fine to medium grained sand), and sufficient time to accomplish the task. Inlets with relatively steep gradients may not need to be diked if the creek maintains sufficient 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, culverts or pipes placed within the base of the dike may allow for an adequate amount of water flow to pass to keep the dike intact. These 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 by a growing sandbar during the summer months and periods of low precipitation creating an inland lagoon or small estuary isolated from tidal flow. Although this natural dike limits interaction with the sea, large waves or high tides often allow seawater to wash over the sandbar requiring consideration of additional protective measures if shoreline oiling is anticipated.

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 for better protection. 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 equipment to access the site.

There are several tidal inlets in the North Coast that are either too wide, too deep, or flow too rapidly to consider diking (even with 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 collection 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 time of the incident.

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. Therefore, the use of a berm should be considered. Prior to developing a berm, most beaches will need to be pre-cleaned to prevent oiling and the subsequent need to dispose of vast amounts of beach debris accumulated (i.e., driftwood and kelp) if time allows. On cobble beaches, however, 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 sorbent materials.

Calif. Dept. of Fish and Wildlife
Office of Spill Prevention and Response

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ACP 1
All GRA Locations

0 5 10 20 Miles
0 10 20 40 Kilometers