Restoring Connections – Fish Passage and Coastal Estuary Enhancement in Estero de Limantour, Point Reyes National Seashore, CA

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Abstract

Coastal Watershed Restoration Project Overview

Project planning for the Coastal Watershed Restoration Project was initiated in 2005 at 40 project sites. Construction and monitoring activities were concluded in 2008 at 35 of the project sites. Environmental Assessments, one for the road crossing sites, and one for the dam removal sites. Project activities included removal of failed or inadequate infrastructure to restore connectivity of hydraulic flow regimes, and reduction of long-term maintenance requirements. Each of the project sites involved habitat at or near point Reyes National Seashore. Restoration projects at four locations, including a wilderness culvert removal and channel re-establishment at Mt. Vision Road Crossing. In addition, contractors established replacement habitat for California red-legged frog by creating an additional habitat for California red-legged frog.

Reversing Culverts with Bridges

At three sites, the project replaced degraded and failing culverts with bridge structures intended to accommodate state and federal fish passage guidelines, including the needed 100-year discharge. The intent of the design was to replace these existing facilities with structures that would decrease the overall project life-cycle costs and increase ecological connectivity in the project area. State approved concrete arch culverts were installed to accommodate the road crossings. At sites where culverts represented an impediment to fish passage, including vertical drop out of the culverts, roughened rock ramp were installed to facilitate fish passage.

Muddy Hollow Pond Dam Removal

The 400-foot long Muddy Hollow Dam was constructed in the early 1960s to provide recreational opportunities in the Drake Creek watershed. The 10-foot high earthen dam was constructed across a meandering creek to create a reservoir for irrigation. The dam created an abrupt break between freshwater and estuarine habitat. The removal of the dam allows for more natural tidal and floodplain processes to occur in the project area. The new channel through the dam removal section includes a constant flow of water and a constant discharge of water. The new channel through the dam removal section includes a constant flow of water and a constant discharge of water. The new channel through the dam removal section includes a constant flow of water and a constant discharge of water. The new channel through the dam removal section includes a constant flow of water and a constant discharge of water.

Limantour Beach Pond Dam Removal

Limantour Beach Pond Dam removal was a small dam across Limantour Estuary in Estero de Limantour. In 2008, the dam was removed. In addition, contractors established replacement habitat for California red-legged frog by creating an additional habitat for California red-legged frog.

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Climate Change Adaptation Strategy: Restoring Hydrologic Connectivity

Point Reyes National Seashore has taken steps to mitigate the effects of climate change on its natural resources. In collaboration with the National Park Service’s Climate Change Adaptation Program, the National Park Service has developed a Climate Change Adaptation Strategy. The strategy aims to identify and implement actions to reduce the impacts of climate change on the Park’s ecosystems and natural resources. The strategy includes the following key components:

1. Identifying vulnerable species and ecosystems
2. Assessing the potential impacts of climate change on the Park’s natural resources
3. Developing and implementing adaptive management strategies
4. Engaging stakeholders and partners in the process
5. Communicating the findings and actions to the public

The strategy is being implemented through a series of projects and initiatives, including the Coastal Watershed Restoration Project. The project is designed to reduce long-term maintenance costs, enhance ecological connectivity, and support a sustainable reservoir. The project will also help to reduce the impacts of climate change on the Park’s natural resources by protecting and restoring critical habitats and ecosystems.