North Pacific Landscape Conservation Cooperative

Introduction

Landscape Conservation Cooperatives (LCCs) are member-directed conservation partnerships among State and Federal agencies, Tribes, nongovernmental organizations, universities, existing partnership efforts, and other conservation entities. They are management-science partnerships that inform resource management actions and provide needed tools. More specifically, LCCs generate applied science to inform conservation actions related to climate change, habitat fragmentation, and other landscape-level stressors and resource issues.

LCCs provide a much needed forum to foster continuous exchange, feedback, and understanding among resource managers, scientists, and stakeholders addressing large-scale issues. It is important to note that LCCs do not replace existing organizations, nor do they infringe on their jurisdictions or mandates; instead, they provide a forum for identifying common science questions and needs for the defined landscapes, across organization lines. LCCs are part of a coordinated national network that is being developed.

The geographic area of the North Pacific LCC includes portions of four states and two provinces. Coordination will occur throughout the region and with neighboring LCCs. Coastal marine waters are included within the range of this LCC, although the western boundaries have not yet been defined.

Conservation Need

Climate change is one of the greatest environmental and conservation challenges of the 21st Century. The impacts of climate change will exacerbate existing stressors on our landscapes, fish and wildlife, and natural and cultural resources. Expected physical changes include rising mean sea level, widespread melting of snow and ice, changes in ocean currents and precipitation patterns, ocean acidification, and increased coastal erosion and flooding rates.

Haystack Rock, Oregon Islands NWR - a large seabird nesting colony / Roy Lowe, USFWS

All will contribute to increased biological impacts such as alterations in species distributions, disease outbreaks, disrupted food webs, disruption of existing plant communities and ultimately, increased species extinctions.

North Pacific LCC marine, estuarine, freshwater, and terrestrial habitats support a rich diversity of species and food webs. Marine and coastal island habitats are essential to seabirds, waterfowl, shorebirds and other Pacific Flyway migratory species. Highly productive nearshore marine ecosystems are key to sustaining healthy populations of marine mammals, Pacific salmon, forage fish, and shellfish. These resources also have cultural significance to Native Americans throughout the region.

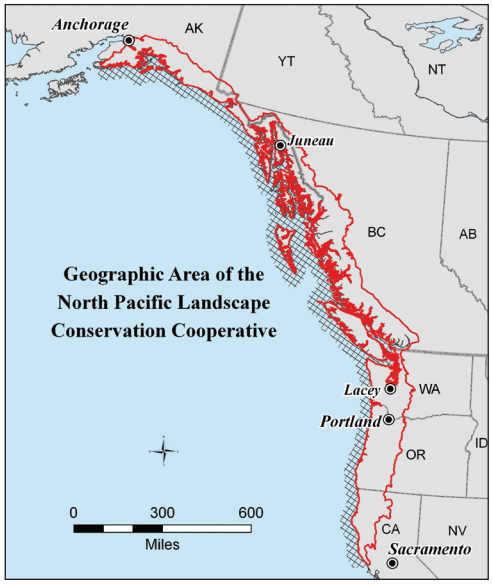
Forested habitats in the Pacific Coast range support many resident and migrant birds including the marbled murrelet, spotted owl, and Queen Charlotte goshawk, all species of conservation concern. Recently deglaciated habitats in coastal Alaska are important to breeding Kittlitz's murrelets, also a species of concern. Prairie habitats are host to numerous species of imperiled plants, birds, mammals, and butterflies.

In addition to managing the impacts to species from climate change, maintaining and preserving State and Federal protected areas, and other areas of concern will be a challenge. Inundation of lands and loss of land management ability for selected species will occur. Moreover, reduced availability of cold water and flow alterations may be severe, prompting programmatic changes to support fisheries production across the geographic scope of the LCC.

In summary, managing North Pacific natural resources and infrastructure in the face of climate change impacts and other landscape-scale stressors will be extremely challenging. The North Pacific LCC provides partners the critical bridge to link science and management to more effectively address these hurdles.

Partnerships

The North Pacific LCC will convene partners with complementary conservation goals. Participation in the LCC is anticipated to include agencies and organizations that have conservation as their mission, mandate or authority, or have identified conservation as a priority. These include Federal, State, and Provincial agencies; Tribes and First



Nations; universities; nongovernmental organizations; and other entities that will benefit from a collaborative approach to landscape-scale resource management. Other key partners of the LCC will be the three regional Climate Science Centers (CSC) within the geographic area of the North Pacific LCC - Alaska, Northwest and Southwest CSCs. Consisting mainly of university-based consortiums, a total of 8 CSCs are being established around the country to support the 21 LCCs.

The North Pacific region already has a number of major partnerships underway that capitalize on large-scale biological planning and conservation design. The LCC will build upon and support these existing efforts to broaden collaboration and help advance science planning and application across the landscape as we face climate change and related natural resource challenges. Conservation benefits can be more effectively maximized by leveraging technical and financial resources for mutually defined conservation objectives.

Organizational Structure

Preliminary discussions with partners are underway to create a framework for integrating conservation management and science. Key conservation issues are being identified that are important to partners in the North Pacific LCC.

This LCC partnership will consider other organizational models already adopted by established LCCs, but the partnership structure eventually selected will be one that best fits the needs of this LCC. This planning effort will also be coordinated with other existing climate change efforts in the region.

Following extensive planning efforts by the LCC partners, executive level oversight will be established that will guide the activities of the North Pacific LCC and define LCC priorities. Eventually, geographical and/or topical sub-units within the LCC boundary likely will be formed because of the size of the LCC. Committees may be formed to focus on specific issues, information management and outreach, and/or geographic sub-units within the LCC.

Expected Products and Outcomes

Products and services developed by the North Pacific LCC will support natural resource management decision-making and inform conservation delivery efforts on the ground. For example, the LCC may:

- Identify high priority research and technology needs and, working with the regional Climate Science Centers, promote research and new science to meet those needs
- Apply downscaled climate models at landscape scales to predict effects on fish, wildlife, plants and their habitats
- Assess watershed resiliency with changing hydroperiods to inform restoration investments
- Develop landscape level analyses of habitat fragmentation to support strategic planning
- Monitor habitat instabilities from invasive species threats and from native species range expansions
- Design and evaluate short- and long-term approaches to support wildlife adaptation efforts
- Conduct risk and vulnerability assessments to identify the most sensitive species, habitats and ecological functions
- Develop information to define factors affecting species recovery under future climate scenarios
- Assess risks to resources in areas of potential inundation from sea level rise

Next Steps

- Continue to work with Steering Committee members on the formal establishment of governance, structure and operation
- Conduct focused planning workshops to identify science priorities, focal resources and conservation targets
- Continue outreach to interested parties and key stakeholders
- Initiate webinars on science topics of interest to North Pacific LCC partners
- Evaluate geospatial tools and information management options that would best meet the needs of the North Pacific LCC
- Complete the North Pacific LCC Science Plan in 2012

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Additional Information

http://www.fws.gov/pacific/climatechange/lcc.html

Dangerous River with Harlequin Lake and Yakutat Glacier in the background. ©Mike Denega