



## Climate-relevant Conservation and Sustainable Resource Management Goals for each NPLCC Priority Topic Area

### NPLCC Priority Resources

The NPLCC considered both valued natural and cultural resources and the climate-related stressors that act on those resources in determining the five *Priority Topics* that are the current focus of the *Science and Traditional Ecological Knowledge Strategy* of the NPLCC. Each of the five Priority Topics addresses both a Resource and a climate change-related Stressor. In identifying these Priority Topics hundreds of resource-stressor pairs were considered and prioritized based on four factors: (1) importance of information about the relationship for informing decision-makers, (2) the breadth of need for information about the relationship across NPLCC stakeholders, (3) the importance of NPLCC-level participation, and (4) the timing of the information need. Thus the Priority Resources listed below should be understood to reflect priorities with respect to improving understanding of the effect of specific stressors on each Priority Resource in order to enable more informed conservation and sustainable resource management decisions regarding that resource. Their identification as “priority resources” is not intended to be a statement about the inherent “value” of these resources, but rather a statement about the importance of [promoting the development, coordination & dissemination of science or information about the impact of a climate-related stressor on the resource to inform landscape-level conservation & sustainable resource management](#).

Priority Resource	Significant climate related stressor	Priority Topic
Rivers, Streams, and Riparian Corridors (and associated biota)	Hydrologic regime shifts	Effects of hydrologic regime shifts on Rivers, Streams, and Riparian Corridors
Forests (and associated biota)	Change in air temperature and precipitation	Effects of changes in air temperature and precipitation on forests
Marine shorelines, the Nearshore, and Estuaries (and associated biota)	Changes in sea level and coastal storms	Effects of changes in sea level and coastal storms on marine shorelines, nearshore, and estuaries
Anadromous fish	Hydrologic regime shifts	Effects of changes in the hydrologic regime on anadromous fish
Biological communities*	Diseases, pest, and invasive species	Invasive species, diseases, and pests and their effects on biological communities

\* Biological communities was defined as an emergent attribute of an ecosystem, including species composition and interactions: degree of co-evolution, predation, competition, biodiversity, mutualism, vegetative cover alterations, etc.

## **Primary Goals and Supporting Objectives**

### **Overall Conservation and Sustainable Resource Management Goal**

Increase the likelihood that the NPLCC region will continue to support its ecosystems, important species identified by NPLCC partners, and the cultures and livelihoods that depend on these. We [the NPLCC partners] will accomplish this by managing in ways that consider current and projected future climate conditions, thereby contributing to sustainable ecologically-connected landscapes.

### **Draft Conservation and Sustainable Resource Management Goals for each NPLCC Priority Topic**

In support of the overall conservation and sustainable resource management goal for the NPLCC and the seven NPLCC-wide goals identified in the NPLCC Charter ([link](#)), a set of related conservation and sustainable resource management goals for each Priority Topic is proposed. A primary goal with two supporting objectives is identified for each Priority Topic.

#### **1) Effects of hydrologic regime shifts on rivers, streams, and riparian corridors**

Inform policy, management decisions, and actions of resource managers to support ecosystem functions and provide for conservation and sustainable cultural, subsistence, recreational and commercial use of rivers, streams, and riparian corridors in light of projected changes in hydrologic regimes. This will be accomplished through two supporting objectives:

- a) Identify decision-relevant information needs associated with understanding how changes in hydrologic regimes will affect food webs, aquatic species population dynamics, ecosystem processes, riparian vegetative communities, and hydrologic and geomorphic conditions.
- b) Where appropriate, develop, support, and/or provide that information to decision-makers in a manner that will be useful for promoting and informing decisions that: 1) consider landscape-scale climate-related changes in hydrologic systems: and 2) reduce risk to, increase adaptive capacity of, and increase the resilience of rivers, streams, riparian corridors and their associated biota to those changes..

#### **2) Effects of change in air temperature and precipitation in forests**

Inform policy, management decisions, and actions of resource managers to support ecosystem functions and provide for conservation and sustainable cultural, subsistence, recreational, and commercial use of forest-related resources in light of projected climate-related changes in air temperature and precipitation. This will be accomplished through two supporting objectives:

- a) Identify decision-relevant information needs associated with understanding how climate-driven temperature and precipitation changes will affect forest plant and animal species, including community level attributes such as trophic webs, keystone relationships, and distribution of co-evolved plant species.
- b) Where appropriate, develop, support, and/or provide that information to decision-makers in a manner that will be useful for promoting and informing management decisions that: 1) consider landscape-scale climate-related changing forest conditions" and 2) reduce risk to, increase adaptive capacity of, and increase the resilience of forest ecosystems to those changes.

### **3) Effects of changes in sea levels and storms on marine shorelines/nearshore/estuaries**

Inform policy, management decisions, and actions of resource managers to support ecosystem functions and provide for conservation and sustainable cultural, subsistence, recreational and commercial use of coastal resources in light of projected changes in sea level and storm conditions. This will be accomplished through two supporting objectives:

- a) Identify decision-relevant information needs associated with understanding how changes and regional variability in sea levels and coastal storms will affect marine shorelines, nearshore and estuarine processes, habitats, and species.
- b) Where appropriate, develop, support, and/or provide that information to decision-makers in a manner that will be useful for promoting and informing management decisions that: 1) consider projected future sea levels, coastal storms, and coastal erosion changes; and 2) reduce risks to, increase adaptive capacity of, and increase the resilience of coastal marine environments to those changes.

### **4) Effects of the changes in the hydrologic regime on anadromous fish**

Inform policy, management decisions, and actions of resource managers to support healthy populations of anadromous fish species and provide for conservation and sustainable cultural, subsistence, recreational, and commercial use of those resources in light of projected changes in hydrologic regimes. This will be accomplished through two supporting objectives:

- a) Identify decision-relevant information needs associated with understanding how changes in hydrologic regimes will affect anadromous fish habitats, life histories, and population dynamics.
- b) Where appropriate, develop, support, and/or provide that information to decision-makers in a form that will be useful for promoting and informing management decisions that: 1) consider landscape-scale climate related changes in hydrologic systems; and 2) reduce risk to, increase adaptive capacity of, and increase the resilience of anadromous fish populations to those changes.

### **5) Invasive species, diseases, pests and their effects on biological communities**

Inform policy, management decisions, and actions of resource managers to support healthy biological communities and provide for conservation and sustainable cultural, subsistence, recreational and commercial use of those resources in light of projected climate- related expansion of invasive species, diseases, and pests. This will be accomplished through two supporting objectives:

- a) Identify decision-relevant information needs associated with understanding understand how projected climate-related changes in invasive pathogens, parasites, plant or animal or species will affect aquatic and terrestrial biological communities.
- b) Where appropriate, develop, support, and/or provide that information to decision-makers in a manner that will be useful for promoting and informing decision that: 1) consider climate-related changes in invasive species, diseases, and pests; and 2) reduce risk to, increase adaptive capacity of, and increase the resilience of biological communities to those changes.