

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

### **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.*

**Measurable objectives included under the first three priority resources/climate drivers are examples to start our discussion.**

### **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.
  - i. Conduct a needs assessment for datasets, geospatial layers and other information related to water temperature and changes in water quantity across the geographic range of the NPLCC that will inform near-term conservation and management actions and serve as a baseline for ongoing planning and environmental assessment. (percent done across the geography can count as a measurable)
  - ii. To assist with a needs assessment, conduct regional workshops (how many?) with local and regional managers, scientists and other stakeholders to identify decision-relevant information needs associated with this priority resource.
- 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.
  - i. Develop products, tools, models, datasets to address the regional needs identified under (A)(how do we know when we have done enough?)
  - ii. Conduct science-management webinars for at least 75 percent of the NPLCC funded projects related to this priority resource.
  - iii. Work with partners to conduct workshops to transfer information and products to resource managers and other decision-makers that will inform decisions related to increasing adaptive capacity of or increasing the resilience of the identified priority resources.

## **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.
  - i. Conduct a review of literature and synthesis of information to assess how climate-driven temperature and precipitation changes will affect NPLCC forest ecosystems.
  - ii. Conduct a needs assessment for datasets, geospatial layers and other information across the range of the NPLCC that will inform near-term conservation and management actions and serve as a baseline for ongoing planning and environmental assessment. (percent done across the geography can count as a measurable)
- 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.
  - i. Conduct science-management webinars for at least 75 percent of the NPLCC funded projects related to this priority resource.
  - ii. Develop products, tools, models, datasets to address the regional needs identified under (a)(how do we know when we have done enough?)
  - iii. In a targeted geographic area, work with federal, state and tribal forest managers and other natural/cultural resource managers to identify vulnerabilities and develop climate adaptation strategies for valued natural and cultural resources.

## **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.

- i. Conduct a review of literature and synthesis of information throughout the entire LCC to assess where and how sea level rise will affect NPLCC coastal ecosystems.
  - ii. Conduct a needs assessment for datasets, geospatial layers and other information across the range of the NPLCC that will inform near-term conservation and management actions and serve as a baseline for ongoing planning and environmental assessment. (percent done across the geography can count as a measurable)
- 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.
- i. Conduct science-management webinars for at least 75 percent of the NPLCC funded projects related to this priority resource.
  - ii. Provide adaptive learning opportunities by supporting demonstration projects to fully/effectively incorporate current SLR information into management actions (how many and where?)
  - iii. Work with federal, state and tribal land managers and other natural/cultural resource managers in a targeted geographic area on a climate smart landscape conservation design that includes impacts and resource vulnerabilities to sea level rise and/or coastal storms.

#### **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.