

Landscape Conservation Cooperatives

Connecting Science and Management to Sustain America's Natural Resources

We live in an era of monumental conservation challenges, including the loss and fragmentation of habitats, genetic isolation, invasive species, unnatural wildfire and water scarcity. The effects of rapidly changing climate will exacerbate many of these threats. In these circumstances, it is imperative that natural resource management agencies, science providers, conservation organizations and other stakeholders work together to understand the impacts of climate change and other stressors, and determine how best to address these challenges. Landscape Conservation

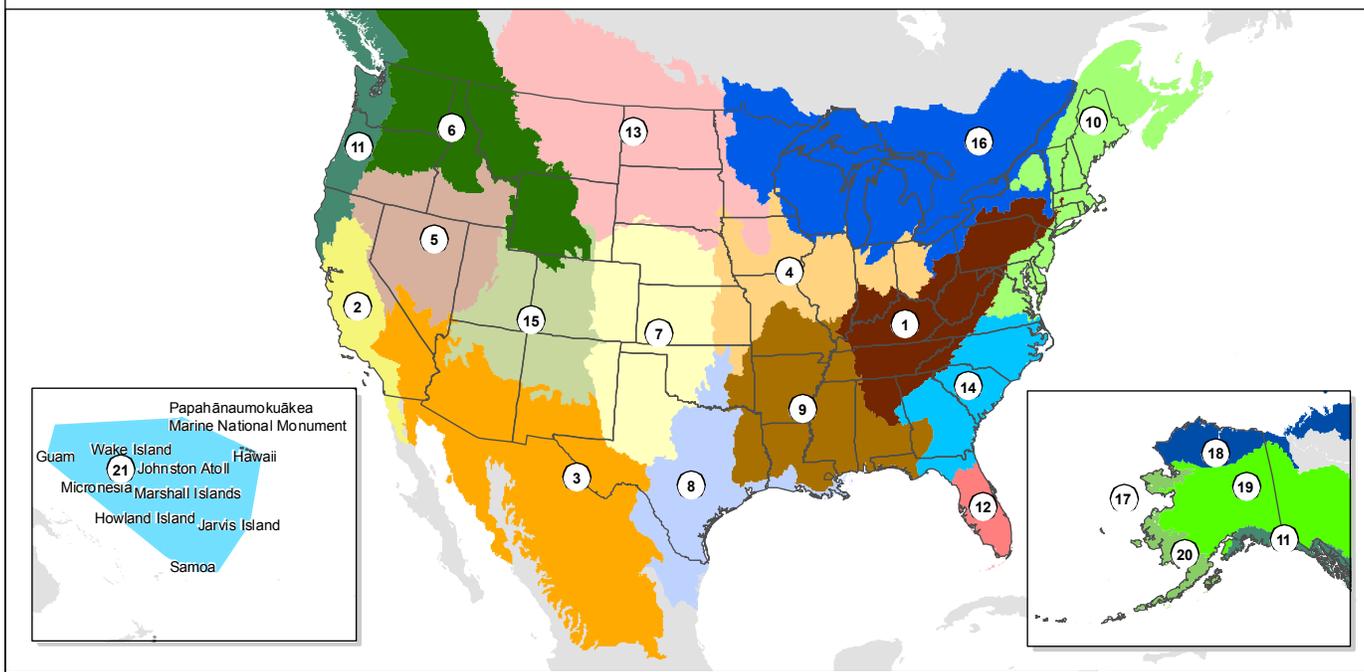
Cooperatives (LCCs) are a bold step in that direction.

LCCs are self-directed partnerships that will link science with conservation actions to address climate change and other stressors within and across landscapes. A cornerstone of the Department of the Interior's (DOI) collaborative, science-based response to climate change, LCCs complement and build upon existing science and conservation efforts—such as fish habitat partnerships and migratory bird joint ventures—as well as water resources, land, and cultural partnerships.

A National Network

Each LCC operates within a specific landscape—21 geographic areas in total. Partners include federal, state, and local governments, tribes, universities, non-governmental organizations, landowners, and other stakeholders. Collectively, LCCs form a network of land, water, wildlife and cultural resource managers, scientists, and interested public and private organizations—within the U.S. and across our international borders—that share a common need for scientific information and interest in conservation. By functioning as a network of interdependent units rather

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| 1. Appalachian | 6. Great Northern | 12. Peninsular Florida | 18. Arctic |
| 2. California | 7. Great Plains | 13. Plains and Prairie Potholes | 19. Northwestern Interior Forest |
| 3. Desert | 8. Gulf Coast Prairie | 14. South Atlantic | 20. Western Alaska |
| 4. Eastern Tallgrass Prairie and Big Rivers | 9. Gulf Coastal Plains and Ozarks | 15. Southern Rockies | 21. Pacific Islands |
| 5. Great Basin | 10. North Atlantic | 16. Upper Midwest and Great Lakes | Unclassified |
| | 11. North Pacific | 17. Aleutian and Bering Sea Islands | |

than independent entities, LCC partnerships can accomplish more than any single agency or organization can accomplish alone. Core functions include:

- Identifying common science and conservation goals and priorities
- Developing science-based tools and solutions to meet shared conservation goals
- Supporting biological planning, conservation design and adaptive management
- Evaluating the effectiveness of scientific information and conservation actions

Key Components

Each LCC will be guided by a steering committee with members from resource management and science agencies (federal, state, tribal and local). Nongovernmental organizations, universities, industry and others may contribute to the cooperative effort and may be part of the steering committee in some LCCs. Participating federal agencies will help facilitate LCC partnerships; support coordination and communications needs; administer funds appropriated for LCC projects; and supply basic staff, including a Coordinator and Science Manager for each LCC. Other staff supported by the partnership could include individuals with expertise in applied science (applying research results to the design, implementation, monitoring, and assessment of conservation actions), as well as geographers, GIS specialists, biometricians, cultural resource specialists and outreach specialists.

LCC products may include: resource assessments, climate model applications to appropriate scale, vulnerability assessments, inventory and monitoring protocols, and conservation plans and designs. Many of these products will be developed collaboratively with DOI Climate Science Centers and other science providers (e.g., USGS Science Centers, Forest Service Research Stations, and universities). LCCs can be a particularly useful resource for states as they revise their State Wildlife Action Plans. States could use the products generated by LCCs to identify priority resource management issues, gaps in scientific knowledge, data sharing needs and strategies for adaptation to climate change and other large-scale landscape stressors.

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Conservation in Action

With an initial federal investment of \$25 million and other funding sources in 2010, nine LCCs have been established across the country. These include the Arctic, Great Northern, Great Plains, North Atlantic, South Atlantic, Pacific Islands, Plains and Prairie Potholes, Gulf Coastal Plains and Ozarks, and California regions.

Across the nation, LCCs are already developing collaborative science projects to inform conservation decisions and actions. Here are a few examples of funded projects:

- In California's San Francisco estuary, climate experts have recently identified habitats most in need of conservation—those supporting the most diverse group of species and that are most vulnerable to impacts of climate change. In 2010, the California LCC will share this information with local conservation practitioners and land use planners in a report depicting those areas where conservation actions and protection will be most beneficial. From this report, a range of online decision tools will be developed, including GIS software.
- In the Northeast, partners have identified the need for conservation design tools that predict changes in stream flow and temperature due

to climate change and the impacts of those changes on fish and wildlife species. The North Atlantic LCC is funding several complementary projects that address these needs and build on research already being conducted by academia, non-government organizations and states in the region. The projects will enable partners to consider climate impacts when identifying priority conservation actions and incorporate them into comprehensive landscape conservation plans.

- Climate change models suggest less summer precipitation and drier conditions in the prairie potholes region of Montana, a key habitat area for migratory birds, including many grassland bird species. The Plains and Prairie Potholes LCC is conducting a multi scaled, spatial analysis linking focal grassland bird populations to specific habitat conditions and management practices.

In the face of accelerating climate change and other 21st-century conservation challenges, LCCs will continually seek out new scientific information, assess the effectiveness of conservation actions and make necessary adjustments as new information becomes available. This recurring feedback process will help scientists and resource managers deal with uncertainties on the landscape and transform new knowledge into more effective conservation plans and actions on the ground.

For more information on the national LCC network, visit <http://www.fws.gov/science/shc/lcc.html> or contact Doug Austen, National LCC Coordinator, U.S. Fish and Wildlife Service at (703) 358-1953 Doug.Austen@fws.gov