its refuge-specific, regional, national, and international programs, the Service contributes to the conservation of biological diversity by directly protecting habitats and managing for the recovery of fish and wildlife populations that are threatened or endangered. The Service also restores habitats, conducts environmental clean ups, monitors ecological integrity, and provides technical assistance to private landowners. The Service has learned that it cannot work alone to accomplish these efforts because conservation of biological diversity requires coordination among many public agencies, private organizations, landowners, and citizens across different landscapes, societies, and cultures.

A.3.2 Landscape Conservation Cooperatives

Two decades of ecosystem management, combined with the realities of accelerating climate change, have made it clear to the Service that conservation must be coordinated on a landscape-level basis. In September 2009, DOI issued Secretarial Order No. 3289 (amended February 2010) to address the impacts of climate change on the nation's waters, lands, and other natural and cultural resources. Section 3(c) of the order states: "Interior bureaus and agencies, guided by the Energy and Climate Change Council, will work to stimulate the development of a network of collaborative 'Landscape Conservation Cooperatives.' These cooperatives … will work interactively with the relevant DOI Climate Science Center(s) and help coordinate adaptation efforts [in response to climate change] in the region."

A Landscape Conservation Cooperative (LCC) is an applied conservation partnership that provides scientific and technical support for conservation at a landscape scale. The fundamental role of the LCC is to help address conservation science needs within a broad geographic area such as the entire range of a species, population, or groups of species of fish or wildlife. Although the LCC concept was initially motivated by climate change, the role of these partnerships is to help improve the collective ability of the conservation community to address a wide variety of environmental stressors and conservation challenges within entire landscapes, including management response to climate change.

Implementing the LCC concept includes bringing partners together to identify what they can collectively agree on in terms of conservation interests and science needs. The partners will then work toward collectively addressing those interests and needs. The intent of LCC partnerships is to accomplish a conservation mission that no single agency or organization could accomplish alone.

A.3.3 National Management Plans

Nature is not constrained by the administrative boundaries that are used to determine ownership or management of specific areas of land. Without physical barriers, and with available habitat, fish and wildlife will freely roam through lands and waters regardless of ownership or management. To ensure the conservation of the many species that migrate over political and administrative lines, there are several national efforts designed to monitor and protect these species. These plans were reviewed during the revision of the Refuge Plan to ensure that the revised management direction is consistent with these national conservation plans.

A.3.3.1 Strategic Habitat Conservation

The Strategic Habitat Conservation report (U.S. Geological Survey and Service 2006) and technical implementation handbook (Service 2008) combine to create a framework rooted in the principles of adaptive natural resource management. Adaptive management incorporates new information learned from research and monitoring into future management actions. Strategic Habitat Conservation provides a guiding tool for setting and achieving conservation objectives at multiple scales based on the best available information, data, and ecological models.

Implementation of Strategic Habitat Conservation involves the integration of four elements that occur in an adaptive management feedback loop. These are biological planning, conservation design, delivery of conservation actions, and monitoring and research. Information learned from implementing Strategic Habitat Conservation is used to help a refuge determine what contribution(s) it can make for meeting conservation priorities at the landscape level. Project leaders and planning teams consider Strategic Habitat Conservation together with other Federal policies and guidance when developing goals and objectives for refuge comprehensive conservation plans.

A.3.3.2 Strategic Plan for Responding to Accelerating Climate Change

In 2010, the Service completed a strategic plan for responding to the effects of accelerating climate change (Service 2010b). The primary purpose of the Service's strategic plan is to provide a vision and direction for the agency by defining its role within the context of the larger conservation community as both the Service and the larger community respond to global climate change on a landscape-level basis. Another key component of the Service's strategic plan is close coordination with the regional Climate Science Centers that are being established by the U.S. Geological Survey and other DOI agencies as they implement Secretarial Order No. 3289, as amended.

Rooted in the mission of the Service, the strategic plan outlines goals, objectives, and actions organized under three major strategies: adaptation, mitigation, and engagement. Adaptation is helping fish, wildlife, and their habitats adapt to climate change. The Service's strategic plan establishes applied science partnerships for conservation (i.e., LCCs) through the adaptation section of the document. Mitigation is reducing levels of greenhouse gasses in the earth's atmosphere. Engagement is reaching out to and communicating with existing partners and others to join forces with them in seeking solutions to the challenges and threats to fish and wildlife conservation posed by climate change. Project leaders and planning teams consider these strategies, together with other Federal policies and guidance, when developing goals and objectives for refuge comprehensive conservation plans.

A.3.3.3 Centennial Legacy

Between 2000 and 2003, in preparation for the 100th anniversary of the Refuge System, the Service planned numerous events and developed a number of publications to mark the centennial. The planning was in response to the National Wildlife Refuge Centennial Act of November 1, 2000. The celebration was intended to serve as a vision to provide resources for the Refuge System over the next 100 years. Materials developed for the centennial and beyond prioritized and addressed the Refuge System's most pressing needs in three main categories: essential staff, mission-critical projects, and major maintenance.