

This document is an internal discussion draft. The U.S. Fish and Wildlife Service is now in the process of soliciting employee feedback on this document, as well as the draft Strategic Plan. Once we have integrated comments from employees, we will also provide opportunity for comment from partners and the public. Both documents will not be final until these processes are completed and the documents are published in final form, which we expect to occur in late-summer or fall of 2009.

Until finalized, this draft document does not represent the official position of the Service, nor commit the agency to implement any proposed actions.

INTERNAL DISCUSSION DRAFT

5-Year Action Plan

for implementing the

Strategic Plan for Responding to Accelerating Climate Change in the 21st Century



U.S. Fish and Wildlife Service

December 12, 2008

This draft action plan is an internal discussion draft. It is intended to give Service employees an opportunity to provide feedback concerning the draft plan's content, direction and organization. After Service personnel have provided input, the Service will provide external partners and audiences an opportunity to help shape this plan.

Introduction

Climate change is an immense, serious, and sobering challenge — one that will affect fish and wildlife profoundly. To address this challenge, the U.S. Fish and Wildlife Service (Service) has developed a strategic plan for responding to accelerating climate change in the 21st century. “Rising to the Urgent Challenges of a Changing Climate” establishes a basic framework within which the Service and our employees will work with the larger conservation community to help ensure the sustainability of fish, wildlife and their habitats in the face of climate change. It looks broadly at how climate change is affecting fish, wildlife and their habitats; what our role will be in the conservation community as it addresses climate change; and what we will contribute to that community and its campaign to ensure the future of fish and wildlife.

We have developed a series of actions we will undertake over the next five years to implement the goals and objectives of our Strategic Plan. This Action Plan details those actions for Fiscal Years 2009 through 2013, organized in chronological sequence according to the Goals and Objectives in the Strategic Plan. Considered as a whole, these actions will allow us to address the most pressing near-term climate change challenges to fish and wildlife while at the same time lay the foundation for the Service’s long-term response to climate change.

Adaptation

Goal 1 - We will develop and apply capacity for biological planning and conservation design to drive conservation at broad landscape scales.

Objective 1.1 - Develop a National Fish and Wildlife Adaptation Strategy

Pending climate legislation in both the U.S. Senate and House of Representatives mandates a national strategy for assisting fish and wildlife in adapting to climate change. We view this as the most consequential and crucial conservation endeavor of the 21st Century. In anticipation of this, we commit ourselves to an intensive 5-year collaboration to develop a National Fish and Wildlife Adaptation Strategy (NFWAS). The NFWAS will be our nation’s shared blueprint to guide wildlife adaptation partnerships over the next 50-100 years. Achieving this will require unprecedented collaboration among private, state, tribal, federal, and international organizations.

The NFWAS will cover terrestrial, coastal, estuarine, and marine habitats across the entire United States, and will include transboundary areas with Canada and Mexico, and more distant areas in the Western Hemisphere that are associated with many of our migratory species (e.g., Central and South American wintering areas of migratory songbirds). Resource management agencies and organizations from around the country and internationally will be fully integrated into the process of developing the NFWAS. The Service will help inspire,

organize and facilitate a collaborative process bringing diverse interests together to develop this Strategy.

FY 2009

- The Science Advisor and RD for Region 6 will assemble staff and resources necessary to develop a white paper exploring alternative administrative structures and processes associated with developing a National Fish and Wildlife Climate Change Adaptation Strategy. This white paper will be developed with partner input, will incorporate concepts of shared responsibility and funding and be completed by September 30, 2009. (Action 1.1.1)

FY 2010

- The Science Advisor, in consultation with ADs, RDs, and the Association of Fish and Wildlife Agencies (AFWA), will sponsor a “Climate Summit” of the States, Tribes, land management agencies, NGOs, and others from around the country to discuss development of the NFWAS. From that Summit, a multi-organizational team will be formed to develop the NFWAS. (Action 1.1.2)

FY 2011-13

- The NFWAS will be developed over a 5-year period. Through the NFWAS the conservation community will:
 - (1) identify and monitor fish and wildlife resources that are critically vulnerable to climate change;
 - (2) set strategic priorities and guide tactical efforts to achieve resilience, representation, and redundancy of fish, wildlife and plant populations and habitats;
 - (3) identify and prioritize key ecological processes that must be protected or restored to sustain fish and wildlife populations over this century;
 - (4) identify reactive and anticipatory approaches to facilitate adaptations by fish and wildlife.
 - (5) use landscape conservation approaches that identify key areas that must be conserved to account for climate change impacts;
 - (6) identify water management capabilities and needs for wildlife conservation across the nation; and
 - (7) address interactions among climate and non-climate stressors (e.g., invasive species, wildfires) in priority landscapes. (Action 1.1.3)

Objective 1.2 – Acquire Regional Climate Science and Modeling Expertise

Successful conservation strategies will require an understanding of climate change; the ability to predict how that change will affect fish and wildlife at multiple scales; and the skill to translate this understanding into useful tools for landscape-level conservation design. We need access to a broad expertise in climate data and modeling, and in forms that are useful for landscape-scale biological planning and conservation design. In some Service Regions, this expertise will be found within relatively few organizations, such as the United States Geological Survey (USGS) or universities. In other Regions, this expertise will be more widely dispersed. We will provide employees and partners with access to this expertise by facilitating development of Regional Climate Science Partnerships.

FY 2009

- By September 1, 2009, each RD will assess existing and needed capacities for, potential benefits of, and complete a report with recommendations for establishing a regional climate science partnership in FY 2010. (Action 1.2.1)
- The Science Advisor will work with the U. S. Geological Survey (USGS), in particular its National Climate Change and Wildlife Science Center, the National Oceanic and Atmospheric Administration (NOAA), and others to identify existing and needed climate science and modeling capability at the national level. The Science Advisor will prepare a report on this assessment. (Action 1.2.2)
- By January 1, 2010, using information and recommendations compiled under Action 1.2.1, the Office of the Science Advisor will provide an overarching national and international assessment of the identified needs for regional climate science partnerships as a key science capacity for the Service (Action 1.2.3)

FY 2010

- The National Climate Team (see objective under “Leadership and Management to Implement Our Strategic Plan”), working with the Science Advisor and RDs, will consolidate the regional and national reports and provide the Directorate a single report describing gaps in the collective climate science and modeling expertise available to the Service and identifying priorities for acquiring the necessary expertise. (Action 1.2.4)
- The Science Advisor will work with the USGS, in particular its National Climate Change and Wildlife Science Center, and NOAA to establish working relationships among climate science and modeling efforts at national, regional, and landscape scales. (Action 1.2.5)
- Each RD, in coordination with the Science Advisor, will work with partners to begin acquiring the necessary regional expertise identified in the national recommendation. The needed expertise may be drawn from existing or new Service staff, staff from other agencies, and staff from nongovernmental

organizations and universities hired on a contract basis. The experts will be remotely-located but will work together in a virtual network (called a “Regional Climate Science Partnership”). (Action 1.2.6)

FY 2011-13

- RDs will monitor the effectiveness of the Regional Climate Science Partnerships in accomplishing the defined goals and objectives on an annual basis. Each RD will recommend any necessary changes to the organizational structure and identify any additional capacity needed. (Action 1.2.7)

FY 2013

- The Science Advisor, in consultation with the National Climate Team, will work with partners to examine the progress, role, and function of the Regional Climate Science Partnerships to date. (Action 1.2.8)

Objective 1.3 – Acquire Biological Planning and Conservation Design Expertise

To promote species adaptation, we need the capability to develop, test, and implement conservation strategies responsive to dynamic landscape changes resulting from accelerating climate change. These strategies must be model-based and spatially explicit, allowing us to apply emerging climate knowledge, predict habitat and species changes, and target conservation to address climate change impacts. To accomplish this, we will develop biological planning and conservation design expertise across the Service, and among diverse partners, as defined in our Strategic Habitat Conservation framework. This expertise will assemble climate, land-cover, land-use, hydrological and other relevant data, in spatially-explicit contexts. It will apply population-habitat and ecological models, statistical analysis, and conservation biology to assemble strategies to drive conservation delivery at landscape scales. This expertise already exists, in some measure, in partnerships like the Lower Mississippi Valley Joint Venture. However, in most areas we will need to build new or expand existing partnerships if we are to successfully support fish and wildlife adaptations to changing climate. So, we will work with partners to develop Landscape Conservation Cooperatives (LCCs or cooperatives), as shared networks of expertise.

FY 2009

- By August 1, 2009, each RD will develop a prioritized list of new LCCs needed in 2010, 2011, and beyond, and AIA will review and recommend similar capacities necessary to support international conservation efforts. They should consider resource needs and priorities, strength of existing partnerships, existing technical capacity, and the opportunity and need to cross regional boundaries in conservation delivery. (Action 1.3.1)
- By January 1, 2010, using information and recommendations compiled under Action 1.3.1, the Office of the Science Advisor will provide an overarching

national and international assessment of the identified needs for LCCs as a key science capacity for the Service (Action 1.3.2)

- Each RD will work with partners and will pursue development of at least one field-level Landscape Conservation Cooperative. (Action 1.3.3)

FY 2010

- Each RD will prioritize existing programs that have local biological planning and conservation design expertise, and will add key staff to the highest priority programs to ensure that they can function fully as an LCC. (Action 1.3.4)
- Each RD will establish at least one new Landscape Conservation Cooperative in a priority landscape. (Action 1.3.5)

FY 2011-13

- Each RD will establish at least two new Landscape Conservation Cooperatives. (Action 1.3.6)
- Each RD will monitor the progress of LCCs and will enhance capabilities and develop expertise in new areas as needed, as well as ensure integration of local and regional biological planning and conservation design. (Action 1.3.7)

FY 2013

- The Science Advisor, in consultation with the National Climate Team, will work with partners to examine the progress, role, and function of the LCCs to date. (Action 1.3.8)

Objective 1.4 - Conduct Species and Habitat Vulnerability Assessments

In order to establish priorities for species and landscape conservation we must understand which species and habitats are most vulnerable to accelerated climate change. We will work with partners to develop and test methodologies, and assess species and habitat vulnerability. Assessments will identify the climate and non-climate factors that are the principal causes of vulnerability, including water quantity and quality for aquatic species.

In order to establish priorities for species conservation we must understand which species are most vulnerable to accelerated climate change. To do this, we will work with partners to develop and test assessment methodologies and then conduct the assessments for priority species.

FY 2009

- By January 31, 2010, AES and RD for Region 8 will develop and test climate change risk and vulnerability assessment methodologies for fish and wildlife species. They will collaborate with organizations possessing appropriate

expertise (e.g., USGS, Nature Serve, and IUCN) and will issue a report and recommendations by July 31, 2010. (Action 1.4.1)

- ANWRS and AFHC will develop and test risk and vulnerability methodologies for refuges and hatcheries, including vulnerabilities to climate-driven water shortages and excesses, to identify units that are most vulnerable to climate change and to prioritize adaptations. They will issue a report by July 31, 2010. (Action 1.4.2)
- In the FY 2009 allocation proposal, ANWRS and AFHC will identify funding and a timetable to complete SLAMM analyses for coastal Refuges. (Action 1.4.3)

FY 2010

- The AES, AMB, and each RD will collaborate with USGS, States, and non-governmental organizations (NGOs) to initiate vulnerability assessments for species and habitats at risk from climate change (with an initial focus on threatened and endangered species, migratory birds, and interjurisdictional fish). (Action 1.4.4)

FY 2011-13

- The AES, AMB, and RDs will continue vulnerability assessments, with review and refinement as necessary. (Action 1.4.5)

Objective 1.5 – Incorporate Climate Change into all Service Activities and Decisions

We will consider actual and predicted climate change impacts to fish and wildlife populations in all Service planning, management, and restoration efforts. Planning efforts will include both resource planning (e.g., Recovery Plans, Fish Habitat Plans, Migratory Bird Plans, and Comprehensive Conservation Plans), operations planning (e.g., facility maintenance, construction, and equipment and fleet management) and administrative planning (e.g., workforce planning, and information technology management planning).

FY 2009

- By December 15, 2008, the Director will issue an employee directive requiring that climate change impacts will be explicitly assessed and addressed in all planning efforts initiated from that date forward. The Science Advisor will prepare this directive, working through the Directorate Climate Change Working Group. (Action 1.5.1)
- By March 31, 2009, each AD and RD will: (a) develop a list of the highest priority existing plans requiring revision to assess and address the impacts of climate change; and (b) develop a 5-year schedule, to commence no later than September 31, 2009, for incorporation of climate change impacts into the

complete list of plans identified above, either by full revision or addendum. (Action 1.5.2)

FY 2010-13

- ADs and RDs will implement the above order to incorporate climate change into new plans, and report annually on progress achieved. (Action 1.5.3)
- ADs and RDs will implement the schedule to incorporate climate change into priority existing plans. (Action 1.5.4)

Objective 1.6 - Provide requested support to State and Tribal Managers to address climate change issues that affect FWS Trust resources

Many states are already working to address climate change in their State Wildlife Action Plans and other management plans. Tribes are likely to consider management changes as well. We will work collaboratively with states and tribes to provide information and support to incorporate climate change considerations into State Wildlife Action Plans (SWAPS) and other appropriate state and tribal fish and wildlife management plans and programs.

FY 2009

- By December 15, 2008, the AWSR and RD for Region 3, will identify representatives to participate in the AFWA chartered Climate Change/Wildlife Action Plan Workgroup. This Workgroup will develop a guidance document with recommendations on how States may better address the impacts of climate change in revisions to their State Wildlife Action Plans (SWAPs). Service participation in this Workgroup will include recommendations of potential sources for planning and implementation funds. (Action 1.6.1)

FY 2010-13

- Through an existing interpersonnel agreement, the Service will provide a staff person to AFWA who will help coordinate efforts to integrate climate change considerations into SWAPs. (Action 1.6.2)
- National and Regional Native American liaisons will work with Tribal partners to incorporate climate change considerations into Tribal fish and wildlife conservation efforts. (Action 1.6.3)
- ADs and RDs will continue outreach to States and Tribes to encourage them to incorporate climate change into their planning and management. (Action 1.6.4)

Objective 1.7 - Evaluate Legal, Regulatory, and Policy Framework to Identify Barriers and Opportunities for Successful Implementation of Climate Change Actions

We will review, identify, and work to revise all elements of the Service's legal, policy, and regulatory framework necessary to support effective adaptive responses to changing climate. We will place particular focus on developing necessary new policies (e.g., assisted colonization) and needed revision of existing policies (e.g., what constitutes native, invasive, or exotic species?). We will also identify laws, regulations, policies, guidance, and other protocols necessary to provide incentives or eliminate barriers to mitigating climate change.

FY 2009

- By March 31, 2009, each RD will transmit to the appropriate AD their highest priority recommendations for legal, regulatory or policy framework changes. (Action 1.7.1)
- By July 31, 2009, each AD will transmit to the Office of the Science Advisor (as the overall coordinator for the National Climate Change Team) their highest priority recommendations for legal, regulatory or policy framework changes. (Action 1.7.2);
- By January 1, 2010, the National Climate Change Team will issue a report, including a timeline, outlining comprehensive priorities for changes in the Service's legal, regulatory and policy framework. (Action 1.7.3)

FY 2010-12

- The Directorate will begin the process of revising and developing legal, regulatory or policy frameworks identified as priorities. This may involve holding workshops or convening small "think tanks" to work on specific regulations or policies (e.g., assisted colonization). We envision any substantial changes will involve a public involvement process requiring Service outreach. (Action 1.7.4)

FY 2013

- The Directorate will evaluate the status of the above revisions to the legal, regulatory, and policy framework to determine if adjustments are needed. (Action 1.7.5)

Objective 1.8 - Revise Service Grant Criteria to Incorporate Climate Change Considerations

We will review all Service grant programs and modify grant criteria as necessary to direct greater amounts of funding to projects that specifically address climate change adaptation, mitigation, or education.

FY 2009

- Working in partnership with States, Tribes, and other grant recipients, AEA, AIA, ANWRS, AFHC, AMB, and AWSR will evaluate and, where appropriate with the funding source, develop new criteria for grant selection that specifically addresses climate change adaptation, mitigation or education. Each AD will provide their report to the Director by September 30, 2009. (Action 1.8.1)
- By January 1, 2010, the Office of the Science Advisor, with assistance from the National Climate Team, will develop a Director's Order as may be necessary to support implementation of AD recommendations, to the extent practicable apply the revised criteria during FY 2010, and require application of the revised criteria during the selection and approval process for appropriate grants in FY 2011 and beyond. (Action 1.8.2)

FY 2010-13

- ADs will apply the revised criteria during the selection and approval process for appropriate grants in FY 2011 and beyond. (Action 1.8.3)

Goal 2 - We will plan and deliver landscape conservation that supports climate change adaptations by fish, wildlife, and plant populations of ecological and societal significance.

While our long-term response to climate change will be determined over the next 5 years as we work collaboratively in developing the National Fish and Wildlife Adaptation Strategy, there will be many near-term actions we can take to begin the process of managing fish and wildlife adaptation to climate change. Near-term conservation delivery will apply vulnerability assessments and focus on (1) protecting acutely vulnerable species, such as ice-dependent or sky island species; (2) reducing habitat fragmentation and building connectivity by means such as habitat corridors; (3) acquiring key water rights and flows; (4) managing genetic resources; (5) reducing susceptibilities to disease, pathogens, and contaminants; (6) addressing coastal and marine resource issues; (7) addressing key ecological processes; (8) reducing non-climate stressors; and (9) fostering international efforts on climate change.

Objective 2.1 - Take Conservation Action for Climate-Vulnerable Species

We must place high priority on taking near-term action to identify and conserve climate-vulnerable species. Timely identification of climate-vulnerable species and their habitats may allow us to take “pre-emptive” action to conserve species, thereby avoiding the need to list them under the Endangered Species Act (ESA). In other instances, identifying climate vulnerable species will provide the basis for listing them as endangered or threatened and designating critical habitat under the ESA as early as possible in order to provide more flexibility in developing regulatory and recovery efforts. Novel conservation and recovery actions, such as assisted colonization, will be developed and implemented to protect acutely climate-vulnerable species.

FY 2010

- AES, AMB, and AFHC will use the initial results of the species/habitat vulnerability assessments conducted under Objective 1.4 to develop a more comprehensive list of climate vulnerable species and habitats, and to prioritize conservation actions to sustain these species and habitats. (Action 2.1.1)
- ADs will approve and RDs will implement the highest priority conservation actions identified in Action 2.1.1. (Action 2.1.2)
- The AMB will adjust harvest models as needed to incorporate climate change effects. (Action 2.1.3).

FY 2011-13

- The Science Advisor will ensure that the results of the vulnerability assessments are spatially integrated with recommendations for landscape-scale habitat connectivity (Objective 2.2) in order to provide a landscape-level overview of opportunities for climate-vulnerable species to migrate and colonize new habitats. (Action 2.1.4)
- AES, AMB, and AFHC will implement the highest priority conservation actions identified in Action 2.1.3, and will re-assess priorities annually as vulnerability become further refined. (Action 2.1.5)

Objective 2.2 – Promote Habitat Connectivity

Climate change will interact with non-climate stressors such as land-use change, fire, and habitat fragmentation from urban, suburban and agricultural development. Protecting contiguous and unfragmented habitat and enhancing connectivity between protected areas using linkages and corridors will facilitate the movement of fish, wildlife, and plant species in response to climate change. Through conservation design, we will work with partners to identify needed habitat protection and landscape-scale habitat linkages and corridors. By joining the habitat protection and management capacities of the Service (e.g., National Wildlife Refuge System, Partners for Fish and Wildlife Program, and North American Wetlands Conservation Act) with those of partners, we will help build this connectivity within and between landscapes.

FY 2009

- The ANWRS, AMB, and AFHC will work with the RDs to demonstrate how Service programs can promote habitat connectivity to achieve population objectives. AFHC will provide a progress summary (June 1, 2009) and final report (September 1, 2009) including proposed funding redirections. (Action 2.2.1)

- The RD in Region 7 will continue to develop the Alaskan Wildlife Corridors Initiative and will provide guidance to other RDs on how to start a similar initiative in each region. (Action 2.2.2)
- RDs in Regions 1, 2, 6, and 8 will support and cooperate with the Western Governors Association's Wildlife Corridors Initiative to identify key wildlife corridors and crucial wildlife habitats in the West. (Action 2.2.3)
- RDs in Regions 3, 4, and 5 will support and cooperate with existing, multi-jurisdictional wildlife corridor initiatives and/or will help establish similar wildlife corridor initiatives in their Regions. (Action 2.2.4)
- The Science Advisor will ensure coordination and continuity of initiatives across regions. (Action 2.2.5)

FY 2010-11

- RDs, working through LCCs, will ensure that climate change is addressed in existing on-the-ground projects to promote habitat connectivity among protected areas to achieve objectives through habitat acquisition or restoration. The projects should characterize the carbon sequestration potential of habitat that is conserved or restored. (Action 2.2.6)
- Each RD, working through LCCs, will plan, design and implement one demonstration project to create landscape-level habitat linkages and habitat blocks to facilitate fish and wildlife adaptation within climate-vulnerable landscapes. (Action 2.2.7)

FY 2011-13

- RDs, working through LCCs, will plan, design and implement one or two additional projects annually in each Region to create landscape-level habitat linkages and habitat blocks to facilitate fish and wildlife adaptation within climate-vulnerable landscapes. RDs will use the Service's unique ability to work across boundaries to catalyze these projects. (Action 2.2.8)

Objective 2.3 – Identify and Fill Priority Freshwater Needs

Water is the key to life, and climate change will alter the distribution and abundance of water by affecting precipitation, air and water temperatures, and snowmelt. To meet human needs for water, water supply infrastructure and allocations will be adapted in response to climate change. As these human adaptations are considered, we will work with partners (including water management agencies and other water entities) to ensure water resources of adequate quantity and quality to support biological objectives for fish and wildlife. Within the Service this will be a critical issue for National Wildlife Refuges (NWRs), National Fish

Hatcheries (NFHs), threatened and endangered species, migratory birds, and fish and aquatic species conservation. We will work to ensure that fish and wildlife resources have adequate water by acquiring key water rights and by working with water management authorities to ensure in-stream flows to address priorities determined by vulnerability assessments.

FY 2009

- Each RD will submit to the Director, the single, highest priority regional need related to water quantity or quality, reflecting best available climate change predictions and estimating the anticipated biological outcomes. By June 1, 2009, APBHR will compile the information for Directorate funding decisions in FY 2010 and beyond. (Action 2.3.1)
- The ANWRS, AFHC, and RDs for Regions 4 and 6 will (a) convene eastern and western, intra-agency workgroups to assess Service needs relative to water issues and climate change; and (b) will identify 2 Refuges and 1 Hatchery annually where water quality or quantity is a key climate vulnerability and recommend funding redirections to address those needs and, thereby, provide explicit examples for future needs. The ANWRS will provide a progress summary (April 1, 2009) and a final report (September 1, 2009). (Action 2.3.2)

FY 2010-13

- The ANWRS, AFHC, and RDs will continue vulnerability assessments, with review and refinement as necessary. (Action 2.3.4)
- Using the priority list developed in Action 2.3.1 and refined as in Action 2.3.4, the RDs, working with partners, will develop and implement strategies to address priority water rights, water quality, and water quantity for National Wildlife Refuges, National Fish Hatcheries, endangered species, migratory birds, environmental contaminants, fish and other aquatic resources on a landscape level. (Action 2.3.5)

Objective 2.4 – Manage Genetic Resources

Because many species will have difficulty surviving in the wild in a climate-changing world, we must continue to expand our partnership with states, zoos, botanical gardens, and other partners to develop effective ways to manage genetic resources of fish and wildlife resources, and to build the policy framework and decision support needed to determine when and how to apply these measures in a transparent, responsible, and ethical manner.

FY 2009

- AES, AMB, and AFHC will create a national genetic advisory team (national genetics team) to explore opportunities for participating in existing global, national, and regional genetic management efforts, including captive propagation programs, seed banks, and gene banks. (Action 2.4.1)

FY 2010-11

- The national genetics team, in consultation with AES, AMB, and AFHC, will assess the need for additional genetic expertise within the Service, particularly in the areas of plants, reptiles and amphibians, and birds. (Action 2.4.2)
- The national genetics team, in consultation with the Science Advisor, will develop recommendations for enhancing our genetic expertise to address genetic management issues. (Action 2.4.3)
- The AFHC, in consultation with the national genetics team, will enhance the capability of national fish hatcheries and fish technology centers for genetic management of rare and endangered aquatic species. (Action 2.4.4)

FY 2012-13

- The national genetics team will use vulnerability assessments and consultation with experts to identify those species that are in crisis now and may need intervention in the form of captive genetic management (e.g., in a zoo, a gene bank, or a seed bank). (Action 2.4.5)

Objective 2.5 – Reduce Susceptibility to Diseases, Pathogens, Pests, and Contaminants

Climate induced stress will compromise species resistance to diseases, pests and contaminants, and likely increase mortality. In addition, changing climate will allow pathogens and pests to spread to areas where they are currently climate-limited (e.g., by low temperatures in the winter). Working with our partners we will: (1) improve surveillance and response capabilities; (2) improve predictions of climate change impacts on the biology of wildlife and vector species; and (3) identify and implement management measures to reduce wildlife vulnerabilities to climate change and susceptibility to disease, pathogens, pests and contaminants.

FY 2009

- The Science Advisor, in consultation other Service Programs as appropriate and USGS, will establish a national disease advisory team (national disease team) to coordinate our efforts to identify and reduce wildlife vulnerability to disease, pathogens, pests, and contaminants. (Action 2.5.1)

FY 2010

- The national disease team will develop an approach to increase monitoring and surveillance of wildlife diseases, pathogens, and contaminants through active collection of biological specimens from wildlife species. (Action 2.5.2)

- The national disease team will enhance mortality event response strategies on refuges in concert with USGS National Wildlife Health Center and ANWRS. (Action 2.5.3)

FY 2011-13

- The national disease team will develop and test procedures to identify critical populations and habitats which are most vulnerable to increased disease and pathogen transmission and contaminants as a result of climate change. (Action 2.5.4)
- The national disease team will recommend and draft guidance, policy, regulation, and/or management action plans to help protect wildlife populations from potential effects of infectious diseases and contaminants. (Action 2.5.5)
- The national disease team, working with USGS, will analyze and interpret data relating to wildlife surveys, management activities, and the relation to and impact of wildlife disease and pathogen outbreaks. (Action 2.5.6)

Objective 2.6 – Conserve Coastal and Marine Resources

Coastal habitats are among the most important habitats for fish and wildlife. A large number of our National Wildlife Refuges are along coastlines, and coasts are tremendously important to myriad migratory birds and endangered species such as marine turtles and manatees. Marine ecosystems are among the most biologically diverse in the world. We will make sea-level rise models (e.g., SLAMM) available to all coastal refuges and expand modeling to additional coastal areas including the Coastal Barrier Resources Act (CBRA) units, to determine the relative vulnerability of these areas. In addition, we will assess the vulnerability of our marine NWRs, other protected areas, and other priority marine resources. We will work with partners to develop and implement new strategies for coastal and marine management and restoration. We will work to get more marine protected areas designated, where they are needed to achieve our trust resource population objectives.

FY 2009

- The ANWRS and AFHC will continue to evaluate and improve upon regional sea level rise models, such as SLAMM, and apply those models to predict future impacts to coastal National Wildlife Refuges. We will expand these models to additional coastal areas, including the Coastal Barrier Resources Act (CBRA) units and other important areas. (Action 2.6.1)

FY 2010-12

- The ANWRS, AWSR and AFHC will work collaboratively with partners such as the Environmental Protection Agency (EPA) to assemble Best Management Practices for coastal and estuarine areas. They will also develop and test new

strategies for coastal wetland and estuarine management/restoration and population management, particularly on Land Management and Research Demonstration (LMRD) Refuges. Additional coastal LMRD areas may need to be established for this purpose. (Action 2.6.2)

- The ANWRS, AWSR, AMB, and AFHC will work collaboratively with partners such as NOAA to assemble Best Management Practices for marine areas, and will also develop and test new strategies for marine management/restoration and population management both on and off Service lands. Marine and island LMRD areas may need to be established for this purpose. (Action 2.6.3)
- The ANWRS and AMB will assess the vulnerability of marine refuges and other marine resources to climate change. (Action 2.6.4)
- The ANWRS will do a feasibility study for the establishment of new marine protected areas (refuges). (Action 2.6.5)
- The Science Advisor, in cooperation with USGS, will facilitate a multi-disciplinary partnership consisting of federal agencies such as NOAA, National Aeronautics and Space Administration (NASA), state agencies, academia, and private organizations that will study and monitor climate change effects on marine resources. (Action 2.6.6)

FY 2011-13

- The ANWRS and AFHC will continue vulnerability assessments, with review and refinement as necessary. (Action 2.6.7)

Objective 2.7 - Address Key Ecological Processes

We must develop new and innovative ways of protecting and restoring key ecological processes to sustain fish, wildlife, and plant populations. Among these processes are pollination, seed dispersal, and nutrient cycling. The potential for trophic mismatches must also be understood and considered. In the near-term, this objective will be addressed primarily through research (see Objective 3.4) and demonstration projects, particularly on LMRD Refuges.

FY 2009-11

- The Science Advisor will work with partners to identify key ecological processes that are likely to be affected by climate change, including pollination, seed dispersal, and nutrient cycling among others, and the role that the Service can play in maintaining those processes both on and off Service lands. (Action 2.7.1)

FY 2011-13

- The Science Advisor and ANWRS, in coordination with appropriate Service Program areas, will enhance our work on pollinators and seed dispersers by developing research experiments and demonstration projects on Service lands, particularly LMRD areas on Refuges, to develop conservation approaches and techniques. (Action 2.7.2)

Objective 2.8 - Reduce Non-climate Stressors

Successful adaptation strategies for fish and wildlife will require success in understanding and reducing the combined and cumulative effects of climate change and non-climate stressors such as land-use changes (e.g., agricultural conversion, energy development, urbanization), invasive species, wildfire, contaminants, and wildlife crime. Reducing these non-climate stressors is a fundamental objective of many current Service programs and activities; however, the key with climate change will be to target non-climate stressors where they will do the most good in conserving priority species and landscapes. We cannot simply work to reduce non-climate stressors on an ad hoc or opportunistic basis. Our work must be targeted to reduce specific stressors that our predictive tools indicate will be key limiting factors element in an overall adaptation strategy for priority species or landscapes. Thus, working with partners to reduce these key non-climate stressors will be an important component of our landscape conservation strategies.

FY 2010-11

- Each RD, working across all programs and in conjunction with LCCs, will compile the best available information on non-climate and anthropogenic stressors on habitats and ecosystems, with emphasis on priority landscapes that are most vulnerable to climate change. Particular emphasis will be placed on changes in land-use (e.g., agricultural conversion, energy development, urbanization), marine dynamics, invasive species, wildfire, pollution, and other disturbance processes. Access to the best information available will require partnerships with states, socio-economic demographers, geographers, and others. These stressors will be compiled in regional and national databases, facilitated by regional climate teams, Regional Climate Science Partnerships, and LCCs. (Action 2.8.1)

FY 2011-13

- Facilitated through the regional climate coordinator (see Objective 10.1) and in consultation with the Regional Climate Teams and Regional Climate Science Partnerships, LCCs will use the best information available to model: (1) areas within priority landscapes where non-climate stressors are likely to exacerbate climate change impacts; and (2) anticipated changes in anthropogenic stressors in the near term. Specific habitats and locations that are vulnerable to non-climate stressors should be identified and prioritized. (Action 2.8.2)

- The National Climate Team, in conjunction with RDs and the Science Advisor, will refine existing or develop new policies and guidelines intended to help reduce the critical non-climate and anthropogenic stressors on key habitats and priority species identified above. (Action 2.8.3)
- RDs, in conjunction with LCCs, will develop and implement targeted actions to increase the resilience of habitats in priority landscapes to non-climate stressors, such as reducing or eliminating invasive plants and managing fuel loads to prevent destructive wildfires. Each RD will develop a process to monitor the effects of these management actions within an adaptive management feedback loop. (Action 2.8.4)
- Each RD will develop a process to monitor information about non-climate stressors and track management actions taken to ameliorate these stressors. (Action 2.8.5)
- The ANWRS and AFHC, in consultation with LCCs, will continue to assess the vulnerability of Service lands and priority landscapes to non-climate stressors. (Action 2.8.6)

Objective 2.9 - Foster International Coordination for Landscape Conservation

We will foster international landscape conservation on the North American continent, working through the Trilateral Committee and the Western Hemisphere Migratory Species Initiative (WHMSI). More broadly throughout the world, we will work through our Wildlife Without Borders and Migratory Birds programs to promote landscape conservation to reduce climate change effects on priority species and landscapes, particularly migratory and cross-border species.

FY 2009

- By September 30, 2009, AIA and RDs for Regions 2 and 7 will produce a framework and strategy for engaging key countries to: (1) share and acquire state-of-the-art knowledge on climate change adaptation, mitigation and education; and (2) facilitate international exchange of personnel (Action 2.9.1)

FY 2010-13

- Working through our Wildlife Without Borders and Multinational Species programs, Trilateral Committee, WHMSI, Migratory Bird programs, and other conventions, treaties and MOUs, AIA will take the lead in engaging decision-makers and natural resource agency managers in foreign countries to adopt landscape conservation as a key approach to wildlife adaptation to climate change. We will establish regional training centers in Latin America, Africa, India and the Caribbean to deliver assistance to other nations with their climate

change adaptation goals (as well as mitigation and education goals – see respective sections on Mitigation and Education). These centers will, among other things, provide information, technical assistance and funding for other nations to identify key areas that are vulnerable to climate change, connect Protected Areas with corridors, expand buffer zones around Protected Areas, and establish transboundary corridors for the safe passage and movement of wildlife between countries. (Action 2.9.2)

- Working through our training centers, AIA will take the lead in providing information, technical assistance and funding to help foreign countries identify coastal areas that will face the greatest impact from climate change and sea level rise, help ensure that coastal habitats are available for key species, and help ensure that nesting habitat is available for species such as marine turtles. (Action 2.9.3)

Objective 2.10 - Implement National Fish and Wildlife Adaptation Strategy as the Service's Long-term Adaptive Response to Climate Change

Our long-term adaptive response to climate change will be guided by the National Fish and Wildlife Adaptation Strategy (NFWAS), a coordinated, multi-organization plan for landscape conservation across the United States, portions of Mexico and Canada, and certain, more-distant areas within Central and South America. Implementation of the bulk of NFWAS is likely to occur after 5 years, and therefore, is largely beyond the scope of the 5-year Action Plan that implements this Strategic Plan.

As it is developed, we will work to ensure that the NFWAS (1) embraces the philosophy that fish and wildlife population and ecosystem sustainability are interdependent goals; (2) recognizes appropriate roles for both reactive and anticipatory adaptation approaches; (3) reflects the goal that, over time, we will be better able to make anticipatory adaptations; (4) addresses species and habitat priorities that reflect scientific assessments and risk-based predictions of vulnerability to changing climate; and (5) identifies key ecological processes and methods to conserve them. Finally, we expect the NFWAS will include a national strategy for monitoring of species and habitats that are most vulnerable to climate change, and one that will support and encourage adaptive resource management strategies as a keystone in our response to climate change. As we implement near-term actions, we will evaluate success and failure and use this information to inform development of the NFWAS.

FY 2012-13

- The Directorate, as part of the process of developing the NFWAS, will work with other Federal natural resource management agencies (primarily U.S. Forest Service, DOD, and DOI bureaus) to develop and sign a national memorandum of agreement to work together to identify and designate landscape-level habitat linkages and wildlife corridors across these federal lands. (Action 2.10.1)

- The Directorate will work with governors, State wildlife management agencies, and NGOs to develop and sign parallel memoranda of agreement to designate landscape-level habitat linkages and corridors across non-federal lands. (Action 2.10.2)
- The Science Advisor, working with the National Climate Team, will identify staffing and funding needs and timeframes to implement the NFWAS (Action 2.10.3)

Goal 3 – Monitoring and research partnerships will make available complete and objective information to plan, deliver, evaluate, and improve actions facilitating fish and wildlife adaptations to accelerating climate change.

Objective 3.1 - Develop a National Biological Inventory and Monitoring (I&M) Partnership

Biological inventory and monitoring is an essential tool to understand the status and trends of fish, wildlife, and plant populations and their habitats, as well as to help determine large-scale patterns of ecosystem health. To address this need, we will advocate and lead efforts to develop a national, integrated inventory and monitoring (I&M) partnership to monitor continental changes in key populations and biological diversity. Our efforts will be driven by the inventory and monitoring priorities developed by Landscape Conservation Cooperatives, as well as priorities developed collaboratively among many agencies within the NFWAS. We will leverage our efforts with those of existing Federal monitoring programs with proven track records and relevancy to climate change (e.g., the Forest Service's Forest Inventory & Analysis Program (FIA), EPA's Environmental Assessment and Monitoring Program (EMAP), and the USGS-sponsored National Phenology Network). We will incorporate new monitoring approaches as necessary and practical, including complete plant and vertebrate species inventories and inventories of select subsets of invertebrate species for all Service lands within 10 years.

FY 2009

- AMB, ANWRS, and RD for Region 7 will assemble staff and resources necessary to develop a white paper exploring alternatives for the Service to best contribute to national inventory and monitoring needs, and long-term understanding of the effects of changing climate on fish and wildlife, including efforts like the National Phenology Network. This assessment will be completed and AMB will take the lead in producing a report by September 30, 2009. (Action 3.1.1)

FY 2010-13

- ANWRS will develop and implement a pilot I&M Program on NWR lands in different regions around the United States. To the extent possible, this I&M Program will build on existing programs with proven track records (e.g, the Forest Service's Forest Inventory & Analysis Program (FIA), the EPA's Environmental

Assessment and Monitoring Program (EMAP)). It will also utilize an expanded LMRD program. (Action 3.1.2)

Objective 3.2 - Promote Physical Science and Remote-sensing Monitoring Programs

Remote sensing of abiotic and biotic change will be a key component of any comprehensive monitoring program, particularly for larger landscapes. We will work with partners and experts such as USGS, NOAA, and NASA to define remote-sensing monitoring priorities. We will continue to support existing physical science and remote-sensing monitoring programs that have proven track records and are relevant to climate change (e.g., Remote Automated Weather Stations, Interagency Monitoring of Protected Visual Environments).

FY 2010-13

- The National and Regional Climate Teams will identify and expand support for existing physical science and remote-sensing monitoring programs that have proven track records and are relevant to the Service's climate change-related actions (e.g., Remote Automated Weather Stations (RAWS), Interagency Monitoring of Protected Visual Environments (IMPROVE)). (Action 3.2.1)
- The National Climate Team, working with the Regional Climate Teams and Regional Climate Science Partnerships (see Objective 1.2), will collaborate with USGS, NOAA and NASA to develop a remote-sensing program for monitoring Service lands and priority landscapes. This program will complement land-based monitoring programs developed in Actions 3.1.1 and 3.1.3. (Action 3.2.2)

Objective 3.3 - Develop Research and Monitoring Capability for Use In Landscape Conservation

Monitoring and research are key components of adaptive management as outlined in the Service's Strategic Habitat Conservation framework. By measuring the effect of conservation efforts against explicit predicted outcomes, managers can learn from both success and failure, thereby increasing the probability of success in future actions. We will develop appropriate research and monitoring programs to ensure that the adaptation efforts we undertake are evaluated and that key uncertainties are identified, prioritized and targeted for research. We will provide relevant education and training opportunities to Service managers, and ensure that this component is incorporated into all of our landscape conservation efforts.

FY 2010-11

- In coordination with the SHC national team, NCTC will develop training courses and materials in appropriate monitoring and evaluation approaches to ensure that the landscape conservation efforts we undertake as part of SHC are effective and successful. (Action 3.3.1)

- ANWRS will coordinate the development and implementation of pilot studies on LMRD areas to showcase assumption-driven research and monitoring used in strategic landscape conservation. (Action 3.3.2)

FY 2011-13

- In coordination with the SHC national team, NCTC will train Service managers in the fundamentals of assumption-driven research and monitoring, and ensure that this component is incorporated into all of our landscape conservation efforts. (Action 3.3.3)

Objective 3.4 – Further Develop Collaborative Research Partnerships

We will enhance existing and develop new collaborative partnerships to conduct research related to fish and wildlife adaptation to climate change. We will enhance our use of existing Federal research capability (e.g., USGS-FWS Science Support Partnership, Cooperative Research Units) and develop new partnerships with universities and university consortiums (such as Cooperative Ecosystem Studies Units) in designing and implementing a climate research program in conjunction with Landscape Conservation Cooperatives. In addition, we will designate areas that are long-term sites for integrated research on climate change (e.g., Research Natural Areas, and NWRS LMRDs).

FY 2009-10

- The Science Advisor will continue to be a major participant in the Steering Committee for the USGS National Climate Change and Wildlife Science Center, to ensure that the Center continues to focus on its principal end users—DOI natural resource management agencies. (Action 3.4.1)
- The Science Advisor will conclude Memoranda of Understanding with NOAA and NASA for all climate change and remote sensing work. (Action 3.4.2)
- The Science Advisor will actively encourage new collaborations on climate change issues with Cooperative Ecosystem Studies Units. (Action 3.4.3)

FY 2010-11

- The Science Advisor will appoint a facilitator to manage a multi-disciplinary partnership of NOAA, NASA, state agencies, academia, and private organizations that will focus on research and monitoring of climate change effects on marine resources. (Action 3.4.4)
- ANWRS will work with other partners to designate Research Natural Areas on Service lands that are within modeled climate refugia as long-term sites for integrated research on climate change impacts. (Action 3.4.5)

- ANWRS will expand the LMRD program by designating more LMRD sites on Refuges and providing greater funding for the programs. ANWRS will encourage collaborating institutions to undertake long-term research and experimental management projects on LMRD areas on refuges. (Action 3.4.6)
- The Science Advisor will develop and administer a competitive research grant program specific for climate change needs identified by the Service. The program will only be open for proposals submitted by Service scientists (Action 3.4.7).

Mitigation

Goal 4 – We will achieve carbon neutrality by 2020.

Objective 4.1 - Reduce the Carbon Footprint of the Service’s Facilities, Vehicles, and Work Force

To achieve carbon neutrality by 2020, we must reduce the energy use and carbon footprint of our buildings, facilities, vehicle fleet, and workforce to the maximum extent possible. We have ongoing efforts to inventory, monitor, evaluate, and reduce our energy usage. By expanding these efforts and embarking upon new and innovative efforts across the Service we anticipate success in reducing our carbon footprint by approximately 10 percent annually between now and 2020.

FY 2009

- By January 31, 2009, the ABMO and RD for Region 1 will establish and charter a national “Carbon Neutral Team.” (Action 4.1.1)
- The Carbon Neutral Team will:
 - Begin immediately reducing Service GHG emissions.
 - By June 30, 2009, complete a rigorous and transparent assessment of the Service’s carbon footprint, using accepted and documented methodology.
 - By July 31, 2009, present a Director’s Order for signature, implementing the Service’s carbon neutral goal, including requirement to analyze renewable energy alternatives for all construction, and any maintenance project costing \$500,000 or more (including salary, equipment, and partner contributions of cash or in-kind service);
 - Identify barriers and recommend and prioritize options to increase the efficiency of our vehicle fleet by no less than 10 percent per year through 2019, including purchase of hybrid vehicles and alternative fuel infrastructure;
 - Prioritize options to reduce the carbon footprint of the Service’s workforce no less than 10 percent per year through 2019 (e.g., increase energy

- efficiency of Service facilities and office space, expanding mass transit subsidies, carpooling, telecommuting, video conferencing, coordinating meetings and conferences, green purchasing, etc.);
 - Outline a process and timetable for applying the National Renewable Energy Laboratory FRESA screening tool to determine opportunities to apply renewable energy alternatives in all existing facilities and buildings; and
 - Issue its report no later than September 30, 2009. (Action 4.1.2)
- No later than January 31, 2010, the ABMO and ANWRS will modify the 5-Year Fleet Plan to reflect the findings and recommendations of Action 4.1.2. (Action 4.1.3)
 - Each AD and RD will ensure that all offices and field stations complete energy audits in FY 009. (Action 4.1.4)

Objective 4.2 - Reduce the Service's Land Management Carbon Footprint

The Service's land management activities (e.g., farming, water pumping, prescribed burning) have an associated carbon footprint. To achieve carbon neutrality, we must assess and reduce this footprint to the maximum extent possible. Our understanding of the carbon footprint associated with our land management activities is rudimentary, and significant effort must be invested in inventory, monitoring, and evaluation of that footprint. We must then determine how to reduce that footprint while continuing to achieve the Service's highest mission priorities. This will involve evaluating alternatives and trade-offs, and making difficult choices.

FY 2009

- The Carbon Neutral Team will identify and initiate rigorous procedures to inventory Service operations, and land and water management practices to quantify sources and sinks of GHGs. The Team will issue its report no later than September 30, 2009. (Action 4.2.1)

FY 2011-13

- The Carbon Neutral Team, working with pertinent Regional and program staff, will identify options and policy needs that would reduce the carbon footprint of our field operations consistent with accomplishing the Service's mission. The options will consider fully information generated in Goals 1 and 2. The options and policy needs will be presented to the Directorate. (Action 4.2.2)

Objective 4.3 - Offset the Remaining Carbon Balance

After minimizing the carbon footprint of the Service's facilities, vehicles, work force and land management activities, a residual carbon footprint will remain. We will offset our residual

carbon footprint, through carbon sequestration and other measures, in order to become carbon neutral by 2020.

FY 2011

- The Carbon Neutral Team, in coordination with pertinent programs, the Regional Green Teams, and others, will develop a comprehensive review of options for the Service to offset the remaining balance of the Service's carbon footprint. The review will include a description of the considerations and costs associated with a range of viable options, legislative and regulatory constraints, and policy needs. Options will include consideration of information generated in Goal 4 and will consider options both domestically and internationally (e.g., restoring tropical forests, protecting or restoring wintering habitats for migratory birds) to sequester the Service's residual carbon footprint. These options will be presented to the Directorate for review and approval. (Action 4.3.1)

FY 2012-13

- The Carbon Neutral Team, ADs and RDs, in conjunction with the relevant programs, will begin to implement the options identified by the Directorate for offsetting the Service's residual carbon footprint. (Action 4.3.2)

Objective 4.4 - Evaluate Efforts to Become Carbon Neutral

To judge the success of our efforts and adjust them as necessary, we will regularly evaluate our actions to avoid, reduce, and offset our carbon footprint.

FY 2011

- The Carbon Neutral Team, in coordination with Regional and field Green Teams, will develop a comprehensive plan to evaluate the effectiveness of the Service's actions to avoid, reduce, and offset our carbon footprint to become carbon neutral. (Action 4.4.1)

FY 2012-13

- The Carbon Neutral Team, in coordination with Regional and field Green Teams, will implement the plan to evaluate the effectiveness of the Service's actions to avoid, reduce, and offset our carbon footprint to become carbon neutral. (Action 4.4.2)

Goal 5 – We will build capacity to understand, apply, and share terrestrial carbon sequestration science, and work with partners to sequester atmospheric GHGs while conserving fish and wildlife habitat at landscape scales.

Objective 5.1 – Develop Terrestrial Carbon Sequestration Expertise

Terrestrial carbon sequestration has the potential to simultaneously accomplish adaptation and mitigation objectives. For example, by reforesting a corridor between two protected areas with an appropriate mix of native trees, we not only sequester carbon, we create viable habitat as well. When the restored habitat contributes to attainment of explicit population objectives for climate-vulnerable species or species assemblages, then we are achieving both mitigation and adaptation goals. Landscape Conservation Cooperatives will provide the basic scientific and technical capabilities and expertise needed to accomplish this vision. But we will also need to develop specific expertise in terrestrial carbon sequestration in order to address the tasks outlined in Objectives 5.2 through 5.5.

FY 2009

- By February 27, 2009, ANWRS and the RD for Region 4 will establish and charter a multidisciplinary Carbon Sequestration Working Group. The Working Group will develop expertise in terrestrial carbon sequestration in order to address the tasks outlined in Objectives 5.2 - 5.5. The Task Force will coordinate with the National Climate Team. (Action 5.1.1)

Objective 5.2 – Develop Standards, Guidelines, and Best Management Practices for Terrestrial Carbon Sequestration

Our carbon sequestration expertise will identify scientific approaches, standards, guidelines, and Best Management Practices (BMPs) for terrestrial carbon sequestration activities, both domestically and internationally, and provide optimal fish and wildlife habitat through strict requirements for use of native vegetation. This information will be shared, domestically and internationally, to encourage large-scale partnership in science-driven terrestrial carbon sequestration supporting fish and wildlife adaptation to climate change.

FY 2009

- The Working Group will compile and share scientifically sound approaches, standards, guidelines, and BMPs for terrestrial sequestration activities in the context of landscape-scale fish and wildlife conservation, including strict requirements for use of native vegetation; will provide up-to-date science relative to GHG mitigation and sequestration; and will issue a report by September 1, 2009. (Action 5.2.1)
- By May 1, 2009, the RD for Region 4 will publish a report on carbon sequestration projects that the Service has implemented to date, detailing the various projects and providing recommendations and best practices for future projects as elements of landscape conservation strategies. (Action 5.2.2)
- The Working Group will develop a protocol to assess potential terrestrial sequestration opportunities on Service lands so that we are prepared to respond to

an emerging carbon market, and will issue a report by September 1, 2009. (Action 5.2.3)

- By January 31, 2010, AD-NWRS will issue a report assessing carbon storage capacities on Service lands, related market opportunities, and priorities to promote refuge-based sequestration projects that support landscape-scale conservation efforts and achievement of population objectives. (Action 5.2.4)

FY 2010

- The Working Group will begin to distribute, within the Service and to partners, the compilation of approaches, standards, guidelines, and BMPs for carbon sequestration for integration into project planning and implementation. (Action 5.2.5)

FY 2011

- The Working Group will develop and present to the Directorate a report on the results of the assessment of carbon sequestration capacity on Service lands called for in Action 5.2.3. (Action 5.2.6)

Objective 5.3 - Conduct Carbon Sequestration Research

Our carbon sequestration experts and managers will work with others to identify and fill information gaps regarding terrestrial carbon sequestration techniques.

FY 2009

- The Working Group will identify research to fill priority information needs and will issue a report by September 1, 2009 (Action 5.3.1)

FY 2010

- The Working Group will work with others to develop a plan, including specific research items, who will conduct the research, where the research will be conducted, and due dates, to meet identified research associated with carbon sequestration (Action 5.3.2)
- The Service will evaluate the potential for designating LMRD areas on refuges specifically for conducting carbon sequestration research. (Action 5.3.3)

FY 2011

- The Working Group will work with others to integrate new research findings into carbon sequestration approaches. (Action 5.3.4)

Objective 5.4 – Integrate Carbon Sequestration Activities into Landscape Conservation Approaches

We will ensure that terrestrial carbon sequestration activities, whether initiated by the Service or others, are implemented within an adaptive, landscape conservation context, including biological planning and conservation design, on-the-ground delivery, and research and monitoring to evaluate success. Applying our landscape conservation framework will help us, in our work with partners, to determine where, when, how much, and what habitat types should be conserved, protected, and enhanced in a given area to achieve both species and carbon sequestration objectives.

FY 2010-13

- Each RD will integrate and apply the standards, guidelines, and BMPs developed in Objective 5.2 to identify and implement carbon sequestration projects both on and off Service lands in ways that benefit fish and wildlife. (Action 5.4.1)

FY 2011

- The Working Group, working with the SHC national team, will develop a plan to incorporate carbon sequestration approaches into Strategic Habitat Conservation, and will monitor efforts to sequester carbon in a strategic landscape context. (Action 5.4.2)
- The ANWRS, in coordination with the Task Force, will monitor and track on a regular basis the use of Service lands for carbon sequestration purposes and any associated carbon credits. (Action 5.4.3)

Objective 5.5 - Facilitate International Carbon Sequestration

One of our most important roles in carbon sequestration may well be to facilitate carbon sequestration activities internationally. By working with international partners and stakeholders to help reduce deforestation rates in key areas (e.g., tropical forests) and by providing technical assistance and funding for carbon sequestration through reforestation, we will help preserve key areas for biodiversity conservation and help with GHG mitigation. We will work through our Wildlife Without Borders and Multinational Species Programs to provide funding and technical assistance to increase carbon sequestration, restore habitat, and increase connectivity.

FY 2009

- The Working Group will facilitate international partnership to reduce key deforestation rates (e.g., tropical forests), and provide technical assistance and funding for restoration efforts, and will issue a report by September 1, 2009. (Action 5.5.1)

FY 2010-13

- Working through our international training centers, AIA will take the lead in providing information, technical assistance and funding to help foreign countries increase efforts to sequester carbon, restore habitat, and establish corridors to facilitate movement of wildlife and to make additional funds available to implement high priority activities. (Action 5.5.2)
- The AIA and NCTC Director will provide additional theoretical training and field-based training for foreign scientists and resource managers on methods to create wildlife habitat while also sequestering carbon. (Action 5.5.3)
- Working through our Wildlife Without Borders and Multinational Species Programs and field partners, the Working Group will identify ways that local communities in foreign countries can obtain carbon credits to support their involvement in protecting and enhancing Protected Areas. (Action 5.5.4)
- Working through our Wildlife Without Borders and Multinational Species Programs and field partners, the Working Group will identify ways to use funds generated from carbon credits to provide continued support for Protected Areas in foreign countries. (Action 5.5.5)
- The AIA, assisted by Directorate members, will use regional training centers established in Latin America, Africa, India and the Caribbean to deliver assistance to other nations with their carbon sequestration efforts. (Action 5.5.6)

Objective 5.6 - Evaluate Geologic Sequestration

We will participate in Department of the Interior geologic sequestration efforts to minimize potential impacts to fish, wildlife, and plants.

FY 2009-13

- The Working Group will support Interior Department efforts evaluating and implementing geologic sequestration to minimize impacts and maximize benefits to fish and wildlife. (Action 5.6.1)

Goal 6 – We will ensure that fish and wildlife conservation is considered as America strives to achieve sustainable energy security.

Objective 6.1 - Objective 6.1 – Facilitate Balanced Renewable Energy Development

As wildlife management professionals, we believe that renewable sources of energy are a key element in attaining a national goal of sustainable energy security, and in mitigating emissions of GHGs, which are the root of the climate crisis and its consequences for fish and

wildlife. While we understand that the expansion of renewable energy development will contribute to the nation's energy needs with lower net atmospheric release of GHGs per unit of energy (as compared to nonrenewable sources), we recognize that such development will result in impacts to fish and wildlife. Therefore, it will be our goal and obligation to facilitate balanced renewable energy development by providing timely and effective information on impacts to fish and wildlife. We will consider renewable energy project proposals in the context of effects to fish and wildlife populations, habitats, and human uses of those fish and wildlife resources, applying the shared expertise within Landscape Conservation Cooperatives, and we will be an objective source of information on avoiding, minimizing, and off-setting those effects. We will work with industry, agencies, and other stakeholders to facilitate siting, construction, operation and maintenance of renewable energy projects that explicitly evaluate, and avoid or otherwise mitigate, significant impacts to fish and wildlife.

FY 2009

- By February 27, 2009, AD-FHC will work with the Regions to establish and charge an Energy Working Group. This Working Group will –
 - Develop tools and approaches to facilitate review of renewable energy proposals, including (a) a review, and update if necessary, of the Service's Mitigation Policy; (b) identification of needed workforce skills; (c) tools for risk assessment; (d) workload prioritization tools; and (e) communication strategies.
 - Issue a progress report by September 1, 2009 to AFHC. (Action 6.1.1)
- The National Climate Team will establish relationships with appropriate federal agencies, including the Departments of Energy and Agriculture and the Environmental Protection Agency, to ensure a role for the Fish and Wildlife Service in development of new regulations and policies that are designed to promote ecologically sound alternative energy development. (Action 6.1.2)
- By September 30, 2009, the RD for Region 3 will work with the Regions and Programs, AFWA, and other partners to provide:
 - defensible and objective scientific information about renewable and non-renewable energy development, including (a) up-to-date science about the implications of energy development and policy on landscape scale fish and wildlife conservation; (b) identify priority research needs; and (c) develop a strategy for developing best management practices; and
 - a report on the Service's ongoing efforts to promote balanced alternative energy development, detailing the various projects and providing recommendations and best practices for future projects as elements of landscape conservation strategies. (Action 6.1.3)

FY 2010-13

- The AFHC, AMB, and RDs will participate in existing collaborative efforts (e.g., National Wind Coordinating Collaborative), and initiate new national, regional (e.g., Great Lakes Wind Collaborative), and local collaborative efforts among key partners and stakeholders to facilitate development of sustainable renewable energy development that fully considers the needs of fish and wildlife. (Action 6.1.4)
- The AFHC and AMB, in coordination with the RDs and pertinent programs, will step down pertinent products from the National Wind Coordinating Collaborative and integrate them into Service directives, protocols, guidelines, and approaches for review and siting of wind power projects to avoid and/or compensate for project impacts. (Action 6.1.5)
- The AFHC and RDs will provide technical assistance to project developers and federal, state, and local regulatory authorities to ensure fish, wildlife, and plants are fully considered in priority renewable energy regulatory decisions. (Action 6.1.6)
- The AFHC, working with the Regions and pertinent programs, will estimate projected workloads associated with development of renewable energy and will, if necessary, increase staffing levels to address high priority renewable energy development projects. (Action 6.1.7)
- The AFHC, working with the Regions and pertinent programs, will identify potential programmatic, as opposed to project-by-project, approaches for ensuring fish and wildlife are considered fully in renewable energy development. (Action 6.1.8)
- The AFHC in coordination with pertinent programs and RDs will begin to apply the results of the Wind Turbine Guidelines Advisory Committee to Service directives protocols, guidelines, and approaches for review of wind power projects. (Action 6.1.9)
- The AFHC, in coordination with the Regions and pertinent programs, will develop a plan for and begin to implement scientifically sound and defensible approaches to address gaps in knowledge of impacts of energy development on fish and wildlife, impact assessment techniques, and approaches to avoid, minimize, and compensate for impacts identified. New information will be continuously integrated into related Actions. (Action 6.1.10)

FY 2011-13

- The AFHC and RDs will identify and pursue innovative, market-based approaches to promote development of sustainable renewable energy, e.g., wind

power certification program for projects that adequately consult with and address Service concerns. (Action 6.1.11)

- The AFHC, working with each RD, will identify pertinent climate change considerations that the Service will transmit to those who propose renewable energy developmental projects. (Action 6.1.12)

Objective 6.2 – Provide Technical Assistance for Nonrenewable Energy Development

Nonrenewable energy development will continue to be a large part of the United States' energy sector for years to come. We have ongoing efforts to help avoid, minimize, and compensate the adverse effects to fish and wildlife of nonrenewable energy development, and will be called upon to expand our effort significantly in the near future. We must work closely with industry and other Federal land management agencies (e.g., Forest Service, Bureau of Land Management) as they site, construct, operate, and maintain nonrenewable energy projects. We will consider such proposals in the context of their suspected cumulative impacts to populations, applying the shared expertise within Landscape Conservation Cooperatives, and we will be an objective source of information on avoiding, minimizing, and compensating those effects.

FY 2010-13

- The AFHC and RDs will provide technical assistance to project developers and federal, state, and local regulatory authorities to ensure fish, wildlife, and plants are fully considered in priority nonrenewable energy regulatory decisions. (Action 6.2.1)
- The AFHC, working with the Regions and pertinent programs, will estimate projected workloads associated with development of nonrenewable energy and will, if necessary, increase staffing levels to address high priority nonrenewable energy development projects (i.e., projects that are likely to have the greatest impact on fish and wildlife). (Action 6.2.2)
- The AFHC, working with the Regions and pertinent programs, will identify and potentially apply programmatic (as opposed to project-by-project) approaches for ensuring fish and wildlife are considered fully in energy development. (Action 6.2.3)

FY 2011-13

- The AFHC, working with the Regions and pertinent programs, will identify pertinent climate change considerations that the Service will transmit to those who propose nonrenewable energy developmental projects. (Action 6.2.4)

Education

GOAL 7 – We will provide educational and training opportunities for Service employees regarding the implications and urgent nature of climate change as it relates to the Service mission and will engage them in seeking solutions.

Objective 7.1 - Provide Educational and Training Opportunities to Service Employees

Our workforce and field structure are core strengths in addressing changing climate. Building awareness and expertise within our employees is a priority. The Assistant Director, External Affairs and the Director of the National Conservation Training Center (NCTC), will establish and co-chair a Service Climate Education and Training Team. The team will develop and oversee implementation of a comprehensive plan addressing internal education and communication toward the goal of preparing and inspiring Service employees to address climate change. It will ensure that every Service employee understands basic climate change science, the urgency of climate change to our mission, and the need to accept personal responsibility by being involved in mitigation, adaptation, and education.

Working through NCTC, the team will develop materials, curricula, and train employees in methods to address climate change in their day-to-day activities. We will also provide our employees with tools that allow them to serve as a resource for our partners and the public in dealing with climate change adaptation and mitigation for fish, wildlife and plants. Specifically, NCTC will develop, and within one year begin to implement, a climate change curriculum designed to educate Service employees regarding climate change and engage them in solutions. NCTC will also incorporate climate change into all appropriate courses.

FY 2009

- The AEA and NCTC Director will form a Climate Change Education Team (Education Team) that will be charged with developing a comprehensive plan addressing internal education, communication, and outreach. The Team will also be responsible for implementing the contents of the plan. (Action 7.1.1)
- The AEA with the Education Team will develop an internal climate change communication plan, providing the basics of climate change science, the urgency of addressing climate change to fulfill our mission, Service actions to address climate change, and the need for employees to take personal responsibility by being involved in adaptation, mitigation, and education (by March 31, 2009). (Action 7.1.2)
- By October 1, 2009, the NCTC Director will begin implementing a climate change curriculum, including incorporates climate change modules into appropriate existing courses, to educate employees regarding climate change and engage them in solutions. (Action 7.1.3)

FY 2010-13

- The NCTC Director and AIRTM will develop and deliver several satellite broadcasts to educate Service employees on climate change and climate change information management. (Action 7.1.4)
- The Education Team will initiate annual climate change forums to share current information and science. (Action 7.1.5)
- The NCTC Director will begin to deliver the climate change curriculum, including training courses and workshops specifically on climate change, to help Service employees develop additional skills necessary to manage organization change and address climate change. (Action 7.1.6)
- The NCTC Director, as part of the Service Leadership Development Program, will host a “Young Leaders Forum” to energize these employees in developing innovative solutions to natural resource challenges, including climate change. (Action 7.1.7)
- The Directorate will ensure that scholarships are available for current Service employees to broaden their technical expertise and increase Service capacity to meet challenges associated with climate change. (Action 7.1.8)
- The National Climate Team and the NCTC Director will develop a plan to expand the use of student programs (e.g., Student Career Experience Program (SCEP), Student Temporary Employment Program (STEP), student interns) to support additional students annually to enable the Service to recruit graduates with advanced degrees in landscape ecology, landscape conservation, climate change science, or other relevant fields. (Action 7.1.9)
- The AEA and Director of NCTC will review the internal education and communication plan on an annual basis to ensure that it contains the most up-to-date information available on climate change science, and also accurately reflects Service climate change plans and actions. (Action 7.1.10)

Objective 7.2 – Obtain Staff Support for New Approaches to Conservation

Climate change is ushering in a new era of conservation for the Service, involving novel ways of thinking and bold innovations. We will view all of our endeavors through the filter of climate change, be willing to question the status quo, re-examine priorities and make difficult choices regarding where we can make a difference and where we cannot. We will develop and implement a near-term strategy to communicate plans for institutional changes addressing climate change. Every employee must be engaged and prepared to embrace change.

FY 2009

- The Education Team will develop a short-term change management strategy to engage Service employees about the Climate Change Strategic Plan and Action Plan and its consequences for the agency. (Action 7.2.1).

GOAL 8 – We will inform American citizens about the implications and urgent nature of climate change for fish and wildlife and what actions they can take to assist fish and wildlife adaptation and to minimize their carbon footprint

Objective 8.1 - Provide Educational and Training Opportunities for External Audiences

The Climate Education Team will develop and implement an education and communication plan for external audiences. The plan will educate external audiences about the effects of accelerating climate change on fish and wildlife, and what they can do to minimize their carbon footprint and conserve fish and wildlife.

We will develop education materials and provide education and training opportunities for outside audiences (e.g., partners, other stakeholders, the public), and use Refuge visitor centers as a primary means of communication with the public. NCTC will develop climate change materials for use in Refuge visitor centers, web sites, and employee presentations for educational purposes.

FY 2009

- By June 30, 2009, AEA with the Education Team will approve and begin implementing a communications plan for external audiences, including international audiences, which will identify target audiences, objectives, key messages, core communications products and the programs with responsibility to produce and distribute those products. (Action 8.1.1)

FY 2010-11

- AEA will incorporate climate change related outreach in other Service communications products. (Action 8.1.2)
- The Education Team will identify opportunities to collaborate with other organizations, particularly utility and public service companies, to piggy-back on mass-mailings to distribute information to help others better understand the urgency of climate change and how they can be more active in mitigation, adaptation, and education. (Action 8.1.3)
- The Director will engage non-traditional partners (e.g., American Association of Retired Persons, U.S. Department of Education) and traditional partners (e.g., National Rifle Association, Boy and Girl Scouts of America) to identify additional ways of helping all Americans understand the urgency of climate

change and how they can be more active in mitigation, adaptation, and education. (Action 8.1.4)

- The Education Team and AIRTM will establish electronic means of posting and sharing lessons learned, Service success stories, and other information related to implementing mitigation, adaptation and education activities. They will explore all avenues of communication in order to reach all age groups, and in particular children and young adults (e.g., Facebook, YouTube). (Action 8.1.5)
- The Education Team and NCTC Director will develop web-based, interactive courses to educate the public about the causes and consequences of accelerating climate change and how they can mitigate the effects of climate change. These courses will be made available on the FWS Climate Portal website (Action 8.1.6)
- The Education Team and ANWRS will develop displays and interactive materials that can be used at NWR Visitor Centers and in Refuge naturalist programs to inform the public about climate change, its effects on fish and wildlife, and things that members of the public can do to reduce their carbon footprint. (Action 8.1.7)

FY 2011-13

- At least one NWR per year in each region will develop a climate change program, with visitor center displays and informational publications, as part of its education/interpretation program. (Action 8.1.8)

Objective 8.2 - Provide Domestic Technical Assistance

We will provide technical assistance to public and private landowners, conservation organizations, industry, and non-governmental organizations to help them understand and address impacts caused by climate change and inspire and assist them in undertaking mitigation, adaptation, and education efforts.

FY 2009-13

- The Education Team will engage the Natural Resources Conservation Service of the Department of Agriculture and the Cooperative Extension System regarding the incorporation of climate change messages into extension service publications and programs related to wildlife. (Action 8.2.1)
- The Education Team will engage universities, colleges, and NGOs to develop dynamic courses that involve interdisciplinary approaches for students from different fields to provide on the ground conservation that addresses accelerating climate change stressors. (Action 8.2.2)

Objective 8.3 - Learn From Others

To become a better, more-informed partner, we will actively seek knowledge from State, Federal, Tribal, and local agencies; non-governmental organizations; individuals; and industry already engaged in climate change.

FY 2009

- By December 31, 2009, the Science Advisor and RD for Region 5, working with the National and Regional Climate Teams, will publish a summary report identifying climate change conservation strategies of government, private, and non-government organizations, and mechanisms to integrate these strategies with those of the Service. (Action 8.3.1)
- The Science Advisor, in consultation with the National Climate Team, will work with the ADs to develop a national forum (e.g., a workshop/symposium or series of workshops/symposia) with partners to explore and implement mechanisms to coordinate climate change wildlife conservation strategies. (Action 8.3.2)

FY 2009-13

- The National and Regional Climate Teams and other interested Service employees will actively participate in symposia, meetings, workshops and other forums sponsored by State, Federal, Tribal, and local agencies; NGOs; industry; and other nations. The Science Advisor and RDs will make funding available to those individuals who attend meetings to give formal presentations on the Service's climate change program. (Action 8.3.3)

Goal 9 – We will work with international partners and other nations to share information, tools and technical assistance on climate change, and to influence international climate change and related policies.

Objective 9.1 – Exchange Information and Influence Policy Internationally

Working principally through our International Affairs and Migratory Birds programs, we will engage other countries in sharing state-of-the-art knowledge on climate change adaptation, mitigation, and education strategies. We will seek to learn from their experiences, and will share our experiences with them, to achieve a common understanding and common ground for moving forward together on climate change policy and action. We will also seek ways to address climate change more effectively through the U.N. Framework Convention on Climate Change (UNFCCC), international conventions such as the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and the Ramsar Convention on Wetlands, and other international agreements.

FY 2009

- The AIA and AMB, in consultation with the National Climate Team and other programs, will engage countries in sharing state-of-the-art knowledge on climate change adaptation, mitigation, and education strategies, including personnel exchanges. (Action 9.1.1)
- The AIA and RDs for Region 2 and 7 will identify ways to engage the Service more effectively in the U.N. Framework Convention on Climate Change, and other appropriate international forums. (Action 9.1.2)

FY 2010-13

- The AIA and AMB will work with international partners to establish and support Decision Makers' courses at strategic locations worldwide to help policy-makers better understand the causes and consequences of accelerated climate change, and assist these nations in their efforts to accomplish their adaptation, mitigation and education goals. (Action 9.1.3)

Objective 9.2 - Provide International Assistance for Outreach and Education

By working with international partners and national governments to educate their citizens about the causes and consequences of climate change, we have an opportunity to create support for minimizing deforestation, creating new habitat through carbon sequestration efforts, and helping local communities get involved in carbon markets to assist conservation. In this way, we can have a substantial impact on international efforts on wildlife adaptation and climate change mitigation.

FY 2010-13

- The Director will provide funding to support a clearinghouse that will assist other nations by supplying tool kits, handbooks, and electronic links to projects that have successfully addressed climate change in developing countries. (Action 9.2.1)
- The AIA, assisted by Directorate members, will use regional training centers established in Latin America, Africa, India and the Caribbean to deliver assistance to other nations with their adaptation, mitigation and education goals as they relate to climate change. (Action 9.2.2)

Leadership and Management to Implement Our Strategic Plan

Establish National and Regional Climate Teams

We need national and regional capability to develop a cohesive approach to climate change. Creating a National Climate Team will ensure leadership and management of climate

change activities, including: budget and performance; policy development and implementation; landscape conservation design, delivery, and evaluation; internal and external partnership development; Congressional assistance; education and communication; and science direction. Creating Regional Climate Teams will ensure the step down of national policies and guidance to the regional and field levels, and will ensure on-the-ground implementation of our adaptation, mitigation, and education goals and objectives.

FY 2009

Before March 1, 2009, the Service will establish the following capacity:

- A National Climate Team providing overall direction in response to climate change. (Leadership and Management (LM) Action 1.1).
- Two full-time, senior professionals dedicated to leadership and management of climate change activities with the Office of the Science Advisor. By December 19, 2008, that Office will develop a cost estimate to implement this action. (Action L.M 1.2)
- Each AD (unless exempted, in writing, by the Deputy Director based upon lack of need) will identify at least one employee who will work full-time as a National Climate Team member with the senior staff in the Office of the Science Advisor (see Action LM1.1). (Action LM1.3)
- Each RD will establish or designate one position providing leadership and management of climate change activities in the regions, and serving as the regional member on the National Climate Team. (Action LM1.4)
- Each RD will establish a Regional Climate Team, with specific staff assignments reflecting programmatic representation. (Action LM1.5)
- Each RD and AD will issue guidance to supervisors and employees, encouraging support of, participation in, and leadership for the various teams, workgroups and products called for in FY 2009. (Action LM1.6)

FY 2010

- The Science Advisor, in consultation with the National Climate Team, will work with partners to build a shared capacity to evaluate and design land-use (e.g., transportation, agriculture, forestry, fire management, invasive species) and energy policies and plans that fully consider climate change (e.g., Green infrastructure). (Action LM1.7)
- AIRTM will work with the National Climate Team to determine data management and data sharing needs. AIRTM will develop an information management plan, which identifies roles and responsibilities, and present it to the

Directorate. Upon approval, AIRTM will develop an implementation plan. The Directorate will assign appropriate responsibilities regarding the information management plan to AIRTM, the NCTC Director, Public Affairs, and AIA. (Action LM1.8)

Show Leadership on Climate Policy

We will establish Service capability to be a leader in climate policy discussions and to effectively represent Service conservation interests in discussions relating to climate legislation. We will work to achieve climate change legislation that reflects our Guiding Principles and our Strategic Plan in its provisions related to wildlife adaptation. Within the Department of the Interior, we will immediately begin efforts to develop a transition strategy to introduce fish and wildlife adaptation to the new administration as an essential facet of climate policy.

FY 2009

- The Director and AEA will immediately begin efforts to develop a transition strategy to help position the new administration to respond effectively to climate change and move promptly to implement wildlife adaptation, mitigation and education. (Action LM2.1)

FY 2009-13

- By June 30, 2009, the AEA will approve and begin implementing a plan to provide timely information to Congress to promote understanding of climate change, consequences to fish and wildlife, and the Service's unique roles and responsibilities and scientific capabilities to respond to those impacts. (Action LM2.2)
- The National Climate Team will work with the Office Congressional and Legislative Affairs (CLA) to provide the Congressional Research Service (CRS) with the best available information about the climate change and its implications for the Service's mission. (Action LM2.3)

FY 2010

- The CLA and Office of Public Affairs will each hire one full-time staff devoted to climate change issues to draft internal, external, and Congressional communication strategies. (Action LM2.4)
- The Director will work with the Executive Director of AFWA and leaders of conservation organizations to encourage Congress to establish a climate change caucus in the United States Congress to focus attention on climate change and expand and solidify support for mitigation, adaptation and education. (Action LM2.5)

Recognize Leadership

We will recognize and reward Service employees, programs, or offices that demonstrate leadership by taking substantive actions on Climate change adaptation, mitigation, or education.

FY 2009

- The Director will appoint a small committee (“climate rewards committee”) to explore internal and external options for recognizing and rewarding climate change leadership across the Service. (LM3.1)
- The climate rewards committee will provide a written report to the Directorate that summarizes options for rewarding climate leadership and includes recommendations for a public venue (e.g., the annual AFWA meeting) for the Director to speak about Service actions regarding wildlife adaptation to climate change. (Action LM3.2)

FY 2010

- The climate rewards committee will develop criteria by which to recognize leadership, solicit candidates, and select those to be recognized by the Director. (Action LM3.3)

FY 2011-13

- The climate rewards committee will continue the rewards program on an annual basis, and revise selection criteria as needed. (Action LM3.4)

Monitor Implementation of the Strategic Plan

We will monitor and evaluate our effectiveness in implementing the Strategic Plan and this 5-year Action Plan. We will develop reporting mechanisms for Regions and Programs to assess implementation, and will publish written annual assessments. The assessments will evaluate the Service’s performance in meeting the goals and objectives of the Strategic Plan. The Directorate will use this report as the basis for taking appropriate actions to ensure the Service remains true to the intent of the Plan.

FY 2009-13

- The Director and Deputy Director, working through APBHR, will ensure that all requirements, reports, timelines and other responsibilities enumerated in this Action Plan are incorporated, by specific reference, in the 2009 SES performance plans of the identified responsible officials, and the 2009 performance plans for all responsible subordinates. (Action LM4.1)
- The Science Advisor, in concert with the National and Regional Climate Teams, will report every two years to the Director concerning the Service’s success in implementing this plan and will highlight major accomplishments and identify

major needs for staffing, funding and additional capacity. This report will include discussion of the Service's capacity to respond rapidly to new information and formulate appropriate science-based and partnership-driven decisions. (Action LM4.2)

- The AIRTM, in concert with the National and Regional Climate teams and Science Advisor, will report every two years to the Director concerning the Service's success in implementing the information management plan and recommend actions necessary to meet goals and objectives of that plan. (Action LM4.3)

FY 2013

- After three years of implementation, the Directorate will seek independent review of our climate change efforts. (Action LM4.4)

Meeting the Challenge

Climate change must become our highest priority; consequently, we will deploy our resources, creativity and energy in a long-term campaign to reduce emissions of greenhouse gases and safeguard fish, wildlife and their habitats. Our strategic plan commits us to reaching inward to every part of our organization and reaching outward to the larger conservation community to tackle climate change as a community venture and build the philosophies, relationships and capabilities we need to succeed. With the steps laid out in this Action Plan, we will move forward enthusiastically in working across the conservation community to nurture a new philosophy and era of interdependent conservation that will sustain fish, wildlife and their habitats in the face of climate change.