**Crosswalk between National Fish, Wildlife and Plant Climate Adaptation Strategy (NFWPCAS) and North Atlantic LCC Objectives, Strategies and Actions (LCC)**

**NFWPCAS**

**GOAL 1: Conserve habitat to support healthy fish, wildlife and plant (FWP) populations and ecosystem functions in a changing climate.**

**Strategy 1.1: Identify areas for an ecologically‐connected network of terrestrial, freshwater, coastal, and marine conservation areas that are likely to be resilient to climate change (CC) and to support a broad range of FWP under changed conditions.**

**Strategy 1.4: Conserve, restore, and as appropriate and practicable, establish new ecological connections among conservation areas to facilitate fish, wildlife, and plant migration, range shifts, and other transitions caused by CC.**

**North Atlantic LCC**

Conservation Design:

**Objective:** Develop provide and translate maps, tools and information to guide decision makers and inform conservation actions to more effectively address threats, limiting factors and uncertainties and efficiently achieve objectives; ensure functional natural systems under current and predicted future conditions; and link site-scale actions to landscape and regional scale goals.

* Conservation Design Strategy: Develop conservation design tools building on existing ecological planning efforts.
	+ Action 5: Use predicted impacts of climate change, urban growth, and other stressors with population-habitat models to assess impacts to ecological processes, future capacity of habitats to support populations under different scenarios and adjust population objectives if needed based on current and likely future habitat capacity;
	+ Action 6: Develop tools (e.g., population-habitat models, decision support models) to guide on-the-ground habitat conservation to efficiently achieve objectives including the identification of priority areas;
	+ Action 7: Assess existing areas and habitat types under protection and management in the LCC and identify gaps in protection;
	+ Action 8: Develop landscape designs that assess greatest contribution of each part of the landscape to achieve objectives for multiple species and accommodate human uses; and complementary landscape designs that utilize coarse-filter approaches including ecological integrity, connectivity and geophysical attributes (e.g., geology, landforms, elevation, latitude)

**NFWPCAS**

**GOAL 2: Manage species and habitats to protect ecosystem functions and provide sustainable cultural, subsistence, recreational, and commercial use in a changing climate.**

**Strategy 2.1: Update current or develop new species, habitat, and land and water**

**management plans, programs and practices to consider CC and support adaptation.**

**North Atlantic LCC**

Ecological Planning

**Objective:** Compile, organize and provide information from existing partners and partnerships on status, trends, current and emerging threats and limiting factors for priority fish, wildlife and plant species and cultural resources; agree on regional objectives for these species and resources; and assess their relationship to limiting factors, ecological processes, habitats and landscapes to provide a scientific basis for conservation actions.

* Ecological Planning Strategy: Conduct ecological planning steps at landscape and regional scales to provide a scientific basis for conservation actions
	+ Action 4: Compile best available information on threats and limiting factors constraining population size and distribution and management options to address these factors;
	+ Action 5: Conduct regional climate change vulnerability assessments for species, habitats and cultural resources;
	+ Action 6: Develop and apply models that relate populations to habitat, ecological processes and other limiting factors; and

Science Delivery

Synthesize, organize and make available conservation planning information at scales and formats needed by partners.

* + Action: Synthesize spatial data on species and habitats to provide regional information and context for State Wildlife Action Plan updates for all states in the Northeast Region.

**NFWPCAS**

**GOAL 3: Enhance capacity for effective management in a changing climate.**

**Strategy 3.1: Increase the CC awareness and capacity of natural resource managers and enhance their professional capacity to design, implement, and evaluate FWP adaptation programs.**

**Strategy 3.2: Facilitate a coordinated response to CC at landscape, regional, national, and international scales across state, federal, and tribal natural resource agencies and private conservation organizations.**

**North Atlantic LCC**

Conservation Adoption and Delivery

**Objective:** Assist partners with use of science and tools and work with partners to implement actions designed to test, validate and improve scientific information and tools developed by the LCC to enhance the ability of our lands and waters to sustain fish, wildlife, plant and cultural resources.

* Conservation Adoption Strategy: Assist partners with use of science and tools
	+ Action 1: Provide products of biological planning and conservation design including maps and decision support tools that inform the delivery of conservation programs;
	+ Action 2: Host workshops, webinars and other forums for conservation delivery partners to educate state and local partners on availability and uses of science and tools; and
* Demonstration Projects Strategy: Support demonstration projects that link science and tools to delivery
* Action 3: Work with partners to implement demonstration projects that test, validate and improve scientific information and tools developed by the LCC at a variety of sites including climate change adaptation.

**NFWPCAS**

**GOAL 4: Support adaptive management in a changing climate through integrated observation and monitoring and use of decision support tools.**

**Strategy 4.1: Support, coordinate, and develop distributed but integrated inventory, monitoring, observation, and information systems to detect and describe climate impacts on FWP and ecosystems.**

**Strategy 4.2: Identify, develop, and employ decision support tools for managing under uncertainty (e.g., vulnerability and risk assessments, scenario planning, strategic habitat conservation approaches, and adaptive management evaluation systems) via dialogue with scientists, managers (of natural resources and other sectors), and stakeholders.**

**North Atlantic LCC**

Monitoring and Evaluation

**Objective:** Facilitate monitoring of populations, resources, habitats and landscapes and tracking of conservation actions designed to assess the effectiveness of conservation actions, assess progress towards common goals and inform future planning and actions based on the results.

* Population Monitoring Strategy: Utilize and build on existing programs and partnerships to monitor populations to evaluate and support conservation planning and delivery
	+ Action 1: Work with existing partnerships to analyze and improve consistency, validity, applicability and coordination of existing population surveys for supporting ecological planning, evaluating effects of conservation actions on priority populations and testing model assumptions;
	+ Action 2: Identify priority monitoring needs currently not met by existing programs and partnerships for evaluating effectiveness of conservation actions, and work with partners to design scale-appropriate surveys to meet those needs;
	+ Action 3: Coordinate closely National Park Service, National Wildlife Refuge System and other Inventory and Monitoring Programs to integrate monitoring needs identified through the LCC with their monitoring networks;
* Habitat Inventory and Monitoring Strategy: Develop and implement habitat and landscape monitoring to assess net change
	+ Action 4: Develop habitat and landscape monitoring parameters that will be inventoried and monitored over time and the expected process (e.g., remote sensing) and time interval for data collection; assess net change in LCC landscape conditions and habitat types (e.g. land cover, wetlands, urban growth) at regular intervals at multiple scales to support conservation design efforts;
* Inform Planning Strategy : Use results of monitoring to adapt future planning
	+ Action 7: Regularly assess the results of monitoring to inform Ecological Planning and Conservation Design steps.

**NFWPCAS**

**GOAL 5: Increase knowledge and information on impacts and responses of fish, wildlife and plants to a changing climate.**

**Strategy 5.1: Identify knowledge gaps and define research priorities via a collaborative process among federal, state, and tribal resource managers and research scientists working with the National Science Foundation (NSF), USGCRP, NCA, USDA Extension, Cooperative Ecosystem Study Units (CESUs), CSCs, LCCs, JVs, and RISAs.**

**Strategy 5.2: Conduct research into ecological aspects of climate change, including likely impacts and the adaptive capacity of species, communities and ecosystems, and their associated ecosystem services, working through existing partnerships or new collaborations as needed (e.g., USGCrP, NCA, CSCs, RiSAs, and others).**

**Strategy 5.3: Advance understanding of CC impacts and species and ecosystem**

**responses through modeling.**

**North Atlantic LCC**

Research

**Objective:** Facilitate the pursuit and support of priority research activities based on needs identified and prioritized by partners and partnerships that test key assumptions in planning and inform future planning and delivery; provide guidance to Climate Science Centers on climate science needed by the LCC; and work with partners to coordinate ongoing research initiatives on priority conservation issues.

* Overall Research Coordination and Funding Strategy: Work with partners and partnerships to identify and support priority applied research
	+ Action 1: Work cooperatively with partners, partnerships, universities, Cooperative Ecosystems Studies Units, Cooperative Fish and Wildlife Research Units, and other research consortiums the northeast to identify and prioritize applied research needs for conservation within the LCC area and maintain list on website;
	+ Action 2: Leverage and coordinate LCC funding for priority applied research projects with partner contributions and competitive grant programs such as USGS Science Support Partnership and Quick Response Funding, National Fish and Wildlife Foundation, Multistate Conservation Grant Program, and Northeast Regional Conservation Needs Program;
	+ Action 3: Work with the Northeast Climate Science Center (CSC) to identify annual research priorities of the LCC that are appropriate for CSC support.

**NFWPCAS**

**GOAL 6: Increase awareness and motivate action to safeguard FWP in a changing climate.**

**Strategy 6.2: Engage the public through targeted education and outreach efforts and stewardship opportunities.**

**North Atlantic LCC**

Conservation Design

**Objective:** Develop provide and translate maps, tools and information to guide decision makers and inform conservation actions to more effectively address threats, limiting factors and uncertainties and efficiently achieve objectives; ensure functional natural systems under current and predicted future conditions; and link site-scale actions to landscape and regional scale goals.

* Conservation Design Strategy: Develop conservation design tools building on existing ecological planning efforts.
	+ Action 1: Work with managers and conservation decision makers to assess what information and tools are needed to support their decision-making;
	+ Action 10: Work with developers of science and tools to ensure that they are effectively explained and translated for use by a variety of audiences.

Conservation Adoption and Delivery

**Objective:** Assist partners with use of science and tools and work with partners to implement actions designed to test, validate and improve scientific information and tools developed by the LCC to enhance the ability of our lands and waters to sustain fish, wildlife, plant and cultural resources.

* Conservation Adoption Strategy: Assist partners with use of science and tools
	+ Action 1: Provide products of biological planning and conservation design including maps and decision support tools that inform the delivery of conservation programs;
	+ Action 2: Host workshops, webinars and other forums for conservation delivery partners to educate state and local partners on availability and uses of science and tools; and
* Demonstration Projects Strategy: Support demonstration projects that link science and tools to delivery
* Action 3: Work with partners to implement demonstration projects that test, validate and improve scientific information and tools developed by the LCC at a variety of sites including climate change adaptation.

Information Management

**Objective:** Compile, synthesize, organize and make available information, data and tools developed by partners and partnerships and the LCC in scales and formats needed by partners.

* Assessment and Development of Information Management Needs Strategy: Assess information needs and work collaboratively to develop tools to address those needs
	+ Action 2: Based on needs assessment, work with team and database developer to design database(s) and/or portal(s) or refine existing databases; develop pilot database/portal to test and refine the structure; develop full database/portal; regularly assess effectiveness of database(s) and refine as needed;
* Database Development Strategy: Compile or link to existing databases; assess need for, develop and maintain new specific databases to address priority unmet database needs
	+ Action 3: Make conservation design databases and tools (e.g., decision support models) available on the web, catalogued, easily accessible and in appropriate scales and formats to assist partners in assessing conservation priorities at various scales; and

**NFWPCAS**

**GOAL 7: Reduce non‐climate stressors to help FWP and ecosystems adapt to a changing climate.**

**Strategy 7.1: Slow and reverse habitat loss and fragmentation.**

**Strategy 7.2: Slow, mitigate, and reverse where feasible ecosystem degradation from anthropogenic sources through land/ocean‐use planning, water resource planning, pollution abatement, and the implementation of best management practices.**

**North Atlantic LCC**

Ecological Planning

* Ecological Planning Strategy: Conduct ecological planning steps at landscape and regional scales to provide a scientific basis for conservation actions
	+ Action 4: Compile best available information on threats and limiting factors constraining population size and distribution and management options to address these factors;
	+ Action 6: Develop and apply models that relate populations to habitat, ecological processes and other limiting factors; and
	+ Action 7: Determine any immediate priorities based on emerging threats (triage).

Conservation Design

* Conservation Design Strategy: Develop conservation design tools building on existing ecological planning efforts.
	+ Action 3: Use population-habitat models to assess the existing capacity of habitats to support populations using consistent habitat data layers;
	+ Action 4: Estimate the amount of habitat needed to achieve population objectives;
	+ Action 5: Use predicted impacts of climate change, urban growth, and other stressors with population-habitat models to assess impacts to ecological processes, future capacity of habitats to support populations under different scenarios and adjust population objectives if needed based on current and likely future habitat capacity;
	+ Action 6: Develop tools (e.g., population-habitat models, decision support models) to guide on-the-ground habitat conservation to efficiently achieve objectives including the identification of priority areas;
	+ Action 7: Assess existing areas and habitat types under protection and management in the LCC and identify gaps in protection;
	+ Action 8: Develop landscape designs that assess greatest contribution of each part of the landscape to achieve objectives for multiple species and accommodate human uses; and complementary landscape designs that utilize coarse-filter approaches including ecological integrity, connectivity and geophysical attributes (e.g., geology, landforms, elevation, latitude);

Conservation Adoption and Delivery

* Conservation Adoption Strategy: Assist partners with use of science and tools
	+ Action 1: Provide products of biological planning and conservation design including maps and decision support tools that inform the delivery of conservation programs;