Handout 13a **North Atlantic Landscape Conservation Cooperative Common Science Needs by Rank**

Common Science Need	System	Taxonomic Group	Component	Specific Needs/Projects	Overall Rank	System Rank
Vulnerability of coastal wetlands and beaches to sea level rise and other anthropogenic stressors	Coastal	All	Conservation Design	Assessment of the current state and greatest needs for sea level rise models related to coastal wetlands and beaches; comprehensive assessment of tidal wetlands that unifies existing work.	1	Highest
General vulnerability assessments to northeastern fish and wildlife habitats and species	All	All	Ecological Planning, Conservation Design	Assessment of the impacts of climate change on northeastern fish & wildlife habitats and species through expert-driven model; complement expert-driven approach with data, models and maps.	2	High
Specific vulnerability assessments of northeastern amphibians and reptiles	All	Amphibians and Reptiles	Ecological Planning	Identification of highest priorities and gaps in distribution data for amphibians; vulnerability assessments including vernal pools, migratory barriers, sea level rise.	3	Moderate
Specific vulnerability assessments of cold water stream habitats and species including brook trout	Aquatic	Fish, Invertebrates	Ecological Planning	Bring together multiple approaches to assessing habitat and population factors for brook trout and other coldwater species including: habitat modeling to predict distribution; vulnerability assessments to altered stream temperature and hydrology; identification of resilient habitat; barrier identification in headwater streams; population genomics.	4	High/Moderate
Habitat mapping and modeling of marine bird distributions and coastal migration of birds and bats	Coastal	Birds	Ecological Planning	Spatial mapping of nearshore and offshore marine bird hotspots in the Atlantic Flyway and migration routes and distributions of birds and bats along the Atlantic Coast.	5	Moderate
Species-habitat modeling and mapping of aquatic species	Aquatic	Fish, Invertebrates	Ecological Planning	Refine tools to classify and map aquatic habitat including hydrology, temperature and connectivity; develop habitat occupancy models; identify priority areas for conservation.	7	High
Species habitat modeling and mapping of terrestrial and wetland species	Terrestrial	All	Ecological Planning, Conservation Design	Model and map the current and predicted future distributions and extents of representative habitats and species.	8	High
Assessment of forest condition and management	Terrestrial	All	Conservation Design	Assessment of the influence of forest condition and forest management on regional habitat capability and connectivity.	9	Moderate
Climate model downscaling	Aquatic	All species	NA	Climate model downscaling at scales useful for stream flow and temperatures	10	Moderate

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Common Science Need	System	Taxonomic Group	Component	Specific Needs/Projects	Overall Rank	System Rank
Assessments of landscape connectivity	Terrestrial	All	Conservation Design	Assess the current and future status of connectivity and regional and local scales.	11	Moderate
Analysis of recent landscape change	Terrestrial	All	Monitoring	Contemporary land-cover change in the North Atlantic LCC for guiding management decisions.	12	Moderate
Identifying focal areas for conservation	Terrestrial	Amphibians and Reptiles	Conservation Design	Advancing landscape-scale conservation for Northeastern herpetofauna through support of the Priority Amphibian and Reptile Conservation Area (PARCA) system.	13	Moderate
Best management practices	Terrestrial	Amphibians and Reptiles	Conservation Design and Delivery	Developing conservation and management strategies for vernal pool dependent herpetofauna of the northeast induding best management practices and model regulations.	14	Moderate
Detecting changes in species distribution	Coastal	Invasive spp.	Monitoring	Rapid assessment and response to coastal marine invasive species .	15	Moderate
Adaptation planning pilot projects	Terrestrial & Coastal	All	Demonstratio n Projects	Project the impacts of climate change and Identify adaptation options at specific pilot sites; e.g., Chincoteague National Wildlife Refuge/Assateague National Seashore Complex.	16	Moderate
Aquatic Habitat Modeling	Aquatic	All species	Conservation Design	Identification of resilient habitat characteristics for aquatic habitats.	17	High
Hydrological Modeling	Aquatic	All species	Monitoring, Conservation Design	Consistent stream flow estimator tools across region.	18	High
Vulnerability to Coastal Wetlands	Coastal	Eelgrass	Ecological Planning	Evaluating eelgrass population resilience to disturbance and climate change in northeastern U.S.	19	High
Habitat mapping and modeling at NALCC scale	All	All	Conservation Design	A characterization and "GAP" analysis of the LCC.	20	Moderate
Adaptive Management Frameworks for Representative Species	Coastal	American Black Duck	All	Developing an adaptive management framework for American black duck habitat conservation in the LCC.	21	Moderate

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Information Management Needs

Information Management Need	Specific Needs/Projects	Overall Rank
Long-term data management system	Overall project; Phase 1: Data needs assessment; Phase 2: Technical alternatives assessment; Phase 3: Pilot database	1
Managed Lands Database Development	Consistent/updated habitat management database for Northeast Region.	2
Consistent/updated secured lands database	Consistent, annually updated secured lands data for the Northeast Region.	3
Online tool for accessing the most recent conservation designs	Spatial database of conservation designs; RCN and LCC projects have a rapidly growing need for dissemination of spatial data products; would be part of overall data management needs but is highly feasible as a separate component to be integrated into future comprehensive database.	4