

THEMATIC AREA:

TERRESTRIAL: OPENLANDS

(grasslands, meadows, balds, shale barrens)

MISSION: *To maintain native habitats and native species in their current locations or support these as they migrate in response to land use and climate changes in the future.*

[Science objective] Inventory significant regional grassland/open land communities and evaluate the condition, importance, and regional threats impacting these communities (in order).

[Management objective] Develop and implement comprehensive regional strategies to conserve and manage natural and non-natural (e.g., restored mine lands) grassland/open land communities across landscape jurisdictions.

[COP Comment: There is a need to define the Theme better. What is open land? How open?]

A. HEADING: REGIONAL LEVEL

1. PROGRAM: Landscape-level Disturbances & System-level Response

Examines major disturbances (includes climate change) as well as the impacts associated with these, regardless of ecological organization (e.g., community, species, population)

(Grouping) – Foundational/Stock-taking Assessment/Classification System

- **Project Description:** Map extent of existing open lands, forest, wetlands, fragmenting features, and developed areas for the entire region, then discriminate between and map the extent of managed/human altered open lands and natural/intact open lands.

(Grouping) – Climate Change Science and Abiotic or Mechanical Aspects

(Grouping) – Climate Change Impacts on Ecological Function and Response to Changes

(Grouping) – Energy and Related Infrastructure and Roads

(Grouping) – Urbanization, Population Growth and (Domestic or Industrial) Water Demands

(Grouping) – Agricultural Expansion and (Ag-related) Water Demands

- **Project Description:** [N] Understand impact of agricultural practices and mine land restoration on grassland/open-land wildlife and communities (and develop BMPs for those systems).

(Grouping) – *Effects of Air Pollution*

- **Project Description:** Assess the effects of atmospheric contaminants and agricultural chemicals on open land habitats.

(Grouping) – *Cumulative Impacts*

- **Project Description:** Document historic distributions, threats to the quality and quantity of existing open land habitats, and the relative importance (i.e. quality as habitat, ecosystem services functions) of natural, restored, and created open habitats for species conservation across the region. [COP Comment: It was suggested that AppLCC develop a matrix of relative rank to be used to focus on most important open land types for conservation; could combine with open wetlands habitats.]
- **Project Description:** [N] Determine effects of stressors (urbanization, energy development, climate change) on open-lands integrity / functionality and associated species.
- **Project Description:** Effects of resource extraction on open land habitats.

B. HEADING: HUMAN DIMENSIONS

2. PROGRAM: Social Component

(Grouping) – *Value/Ecosystem Services and Conflict*

(Grouping) – *Recreational, Commercial, Subsistence Use*

(Grouping) – *Public Attitudes*

- **Project Description:** Document and evaluate the attitudes of various stakeholders (e.g., farmers, general public) toward open lands, especially those associated with human land use (for example abandoned agriculture, reclaimed mining operations); determine how these attitudes might affect conservation goals and identify approaches/opportunities for public education.

C. HEADING: SYSTEM LEVEL

3. PROGRAM: Ecological Functions of Managed/Human-Altered Systems

(Grouping) – *Foundational/Stock-taking Assessment/Classification System*

- **Project Description:** Map extent of existing open lands, forest, wetlands, fragmenting features, and developed areas for the entire region, then discriminate between and map the extent of managed/human altered open lands and natural/intact open lands. *[COP Comment #1: A foundational georeferenced database for natural and managed open land habitats across the LCC is a high priority for this Theme, and should include areas of potential recovery as well as areas where recovery has been precluded by urban or other development; COP Comment #2: Emphasis should be on determining resilience/sustainability of this ecotype and not simply on reestablishing habitat in historic areas/distributions.]*

(Grouping) – Dams/Instream Barriers

(Grouping) – Mitigating Ag and Forestry Impacts

(Grouping) – Protection & Restoration Approaches

- **Project Description:** Develop and compile data to help partners and stakeholders better understand techniques that can be used to restore [open land] habitats after they have been degraded.
- **Project Description:** [N] Conduct community-based habitat restoration/rehabilitation and population response modeling.

(Grouping) – Effects of Fire on Ecosystems

- **Project Description:** Assess the effects of prescribed fire on open land habitats. *[COP Comment: Could be combined with bullet above that calls for development and compilation of data on management techniques.]*

4. PROGRAM: Ecological Functions of Natural/Intact Systems

PROGRAM DESCRIPTION: *Establish how these systems are supposed to work, understanding the systems and their interrelatedness/interdependency. [COP Comment: Critical Program – as we have worked on some projects with Golden-winged Warbler and bald eagles for example. The interplay of the content, elevation, landscape extent, size and other factors can really confound efforts for restoration, control of invasives.]*

(Grouping) – Foundational/Stock-taking Assessment/Classification System

- **Project Description:** Update and refine the regional classification for natural open lands, bringing together quantitative data (plots) on community structure and composition and experts from the entire region to perform statistical analysis and hold workshops to validate, revise, and fill gaps in the U. S. National Vegetation Classification (USNVC). *[COP Comment: Could be combined with similar assessments for forests and wetlands.]*

- **Project Description:** Map extent of existing open lands, forest, wetlands, fragmenting features, and developed areas for the entire region, then discriminate between and map the extent of managed/human altered open lands and natural/intact open lands.
- **Project Description:** Develop and compile data to help partners and stakeholders better understand the types of open land habitats that occur within the LCC, and the distribution and condition of those habitats. *[COP Comment #1: An important first step is standardizing terminology; COP Comment #2: My interpretation of this task is to better understand/inventory of the current extent and types of openlands in the LCC landscape, not a better classification scheme.]*
- **Project Description:** [N] Understand historical vegetation distributions and disturbance regimes in the landscape and the extent to which they can be advantageously replicated given existing conditions. *[COP Comment: This project and previous one could be joined; highest priority should be placed on scrub barrens, balds, and native grasslands.]*

(Grouping) – Relationship/Ecological Flows and Nutrient Dynamics

- **Project Description:** Assess the effects of nutrients on open land habitats.
- **Project Description:** [N] Understand the dynamics and extent of potential carbon sequestration for grassland/open land systems.

(Grouping) – Ecosystem Integrity/Resiliency

D. HEADING: COMMUNITY LEVEL

5. PROGRAM: Community Level (Description and Function or Basic Community Ecology)

(Grouping) – Basic Ecology/Ecological Relationships

- **Project Description:** [N] Determine carrying capacity of open land habitats for birds. *[COP Comments: This work should be done by the bird JVs.]*
- **Project Description:** Conduct studies that improve understanding of community distributions across the region, their habitat relationships, and migration corridors.
- **Project Description:** Understand habitat selection of communities within a shifting mosaic of open lands with spatial and temporal variations in availability.

E. HEADING: SPECIES/POPULATION LEVEL

6. PROGRAM: Basic Biological Understanding (Species-level)

PROGRAM DESCRIPTION: *Work with partners and stakeholders to develop and compile information about species within the LCC, their habitat requirements, and changes in the distribution of those species and habitats to facilitate the regional management of those resources.*

(Grouping) – *Basic Biological Information*

(Grouping) – *At-Risk Species/Populations & Endemics*

- **Project Description:** Develop and compile information about the LCC’s terrestrial endemic species; work with partners to better estimate their current degree of imperilment, and coordinate the development of regional management strategies that will help conserve these species in the face of changing land-use and climatic conditions.
- **Project Description:** [N] Assess vulnerability of priority conservation areas to stressors (e.g., climate change).

(Grouping) – *Contaminants/Pollutants Effects on Species/Populations*

(Grouping) – *Invasive Organisms Effect on Species and Populations*

- **Project Description:** Determine community impacts from invasive species (Note: Coordinate with Aquatic Nuisance Panels.) and most efficient ways to combat this threat.
- **Project Description:** Determine nutritional and energetic impacts of invasive plant species for migratory birds in open land stopover habitats.

(Grouping) – *Effects of Disease (on a Species or Taxonomic Group)*

F. HEADING: “HOW THE LCC SHOULD DO BUSINESS”

- Develop BMPs for grassland/open-land community restoration and creation - need to develop BMPs for scrub barrens, meadows, and native grasslands and plan for persistence after initial management / disturbance. Need to synthesize work done to date first, and gain consensus on habitat labels/nomenclature.
- For almost all of the “develop and compile” types of projects, I question whether they should be listed as projects. To me, they all seem more like a data gathering exercise than a formal project - more appropriate for Working Group or similar ad-hoc committee of LCC partners?