2012\_ScienceNeedsPortfolio\_(6)\_Openlands\_Restructured.docx

**Thematic Area: Openlands (grasslands, meadows, balds, shale barrens)**

**MISSION:** [To maintain native habitats and endemic aquatic 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]* to 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.

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*

(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 on grassland/open-land wildlife and communities (and development of BMPs for those systems).

(Grouping) – *Effects of Air Pollution*

* **Project Description:** Effects of atmospheric contaminants and agricultural chemicals [on open land habitats.]

(Grouping) – *Cumulative Impacts*

* **[No Focus] Project Description:** Document threats to the quality [and quantity] of [open land] habitats, and the relative importance of those habitats for species conservation within each of the States.
* **[No Focus] Project Description: [N]** [Determine] effects of stressors (urbanization, energy development, climate change) on open-lands integrity/functionality and associated species.
* **[No Focus] 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*

C. Heading: System Level

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

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

(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.

**4. PROGRAM: Ecological Functions of Natural/Intact Systems**

**PROGRAM DESCRIPTION:** [Establishes how these systems are supposed to work, understanding the systems and their interrelatedness/interdependency.]

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

* **Project Description:** Develop and compile data to help partners and stakeholders better understand the types of open land habitats (*Ask COP - does this mean there is a need for a new or better habitat classification scheme, or that they want to better understand “management types”?*) that occur within the LCC, [and the] the distribution and condition of those habitats.
* **Project Description: [N]** Understanding historical vegetation distributions and disturbance regimes in the landscape and the extent to which they can be [advantageously] replicated given existing conditions.

(Grouping) – *Effects of Fire on Ecosystems*

* **Project Description:** Effects of prescribed fire [on open land habitats.]

(Grouping) – *Relationship/ Ecological flows and Nutrient dynamics*

* **Project** – Effects of nutrients [on open land habitats.]
* **Project Description: [N]** Understanding 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 early successional habitats for birds.
* **Project Description:** [Support studies that improve] **u**nderstanding of species and community distributions across the region, their habitat relationships, and migration corridors.

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 species 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.)

(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
* Understanding historical vegetation distributions and disturbance regimes in the landscape and the extent to which they can be replicated given existing conditions.

**Notes:** version posted: 2012-12-18