U.S. Fish & Wildlife Service
Appalachian Landscape Conservation Cooperative
Northeast Region

Frequently Asked Questions – on Surrogate Species

What is a surrogate species?

A surrogate species is one used to represent other species or aspects of the species' environment (e.g., water quality, pine savannah, grasslands, etc.). The habitat requirements of surrogate species are used for comprehensive conservation planning that supports multiple species and habitats within a defined landscape or geographic area.

Why use surrogate species in our landscape-scale conservation planning?

Because surrogate species are selected to represent other species or aspects of the environment, these species are used for comprehensive conservation planning that supports multiple species and habitats within a defined landscape or geographic area. Such an approach can result in more systematic and effective management because it emphasizes the commonalities of species' conservation needs. The surrogate species approach is not intended to be used to identify, change or merge established priorities or set biological outcomes for any partner agency or organization.

What is the goal for selection of surrogate species?

The goal is to identify a subset of surrogate species for designing conservation and management strategies for larger suites of species, and thereby more effectively manage most fish and wildlife populations at desired levels in the face of land use change, climate change, and other stressors. Selection of surrogate species is considered a necessary planning and design shortcut to facilitate more detailed planning, conservation design and evaluation on fewer species.

Surrogate species should collectively occur over a large geographic area in the region and represent a wide range of habitat types. Others factors to consider include:

- Level of sensitivity to landscape configuration (area, dispersal, or resource limited), disturbance (fire, hydrologic regime, forest management, invasive species, etc.), or management
- Feasibility of monitoring
- Life history and population dynamics are sufficiently "known" to allow direct or indirect estimates of relative abundance and spatial distribution
- The species' ecological relationships and responses to ecological processes are sufficiently "known" to allow development or refinement of species-habitat models of species distribution and their response to environmental change.

What about rare endemics and state or federally listed species?

Conservation planning and actions will also likely need to plan for stand-alone species that have unique habitat or ecosystem function; to prioritize management actions; or to help achieve a more comprehensive suite of species for biodiversity conservation. Species that have unique habitat requirements or management needs that cannot be adequately represented by other species will be recognized, and their needs will be incorporated individually into landscape conservation strategies or addressed by stand-alone strategies.

How are surrogate species different from representative or priority species?

Priority species are those that, because of legal status, management need, vulnerability, geographic areas of importance, financial or partner opportunity, political sensitivity, or other factors, demand extra time and resource efforts to conserve them. Priority species are a subset of the universe of species that we are responsible for.

Surrogate species is a commonly used term for species-based conservation planning. It includes various categories (focal, umbrella, representative, keystone, indicator, flagship), and its use is well documented in the scientific literature. As used in technical guidance, a surrogate species is used to represent other species or aspects of the environment. Selecting a suite of surrogate species can help represent the habitat and/or management needs of larger groups of species.

What if the species I work on isn't a surrogate species? Does that mean it's not a priority?

No. The conservation and management needs of priority species will remain unchanged and must be addressed either through the surrogate species approach or individually. The identification of surrogate species will not replace or supersede our other species responsibilities; it will help us do landscape conservation more effectively and efficiently for many of the species of interest to the Service and our partners.

Is this approach being used elsewhere?

Yes, the North Atlantic LCC currently has a contract with the University of Massachusetts to implement landscape planning based on the surrogate species approach.

> ***Case Study***: The Northeast Region sponsored a project with the University of Massachusetts Amherst that considered several hundred candidates to serve as surrogate species.
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> The species consisted primarily of: (a) Federal Trust Species, and (b) Species of Greatest Conservation Need identified by at least six states in the region.
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> Given the diverse ecosystems of the region, surrogate species were identified for each of three subregions: northern New England and New York, southern New England and New York, and mid-Atlantic.
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> At 2010 workshops in each of the three sub-regions, Service scientists and other experts selected a total of 87 terrestrial and wetland surrogate species.
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> This list will be refined and a subset tested for utility in multi-species landscape design in three geographies in the North Atlantic LCC.

What if the selected surrogate species don't represent all the species for which my organization is responsible?

Surrogate species selected cannot represent all needs of all species on the landscape. The Service is responsible, first and foremost, for conserving Federal trust species. As such, it is imperative that we select surrogate species that best represent as many of our trust species as possible. State fish and wildlife agencies, however, share many of the Service's priorities and have additional species priorities within the same landscapes. A collaborative effort is needed to accommodate as many species as possible in landscape conservation strategies to ensure that the States and Service together are meeting the public's expectations for all the Nation's fish and wildlife resources.