Using GAP Data in State Comprehensive Wildlife Management Plans

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KEEPING COMMON SPECIES COMMON

In exchange for the funding they receive through state wildlife grants, state wildlife programs are required to create Comprehensive State Wildlife Conservation Strategies. Land cover and vertebrate data available from the USGS Gap Analysis Program (GAP) may be a useful component in developing three of the eight elements required for these plans.

Element 1. Information on the distribution and abundance of wildlife species.

What data does GAP have?
On a statewide basis, GAP offers digital species distribution maps and predictive habitat affinity models in digital GIS format showing the predicted distribution of each vertebrate species.

GAP predicted distribution maps are constructed using complex habitat affinities models developed for each species. Models include information such as: all known, probable, and possible occurrences of the species in the state; and all possible GIS coverages of features or conditions to which vertebrates can be associated, based on published literature and expert input.

How could these data be used?
South Carolina will use terrestrial GAP data to determine habitat-species associations and possible "hot spots" for conservation action. Kentucky used GAP predicted animal distribution data as one layer in the model they created to assign a relative rarity score to each vertebrate species. The resulting layer was used to help identify conservation targets in the state.

Element 2. Descriptions of locations and relative condition of key habitats and community types.

What data does GAP have?
Digital Land Cover Maps – These maps are produced from 30-meter satellite imagery, in digital GIS format, showing dominant vegetation types. GAP maps vegetation to the floristic level of the National Vegetation Classification using Landsat Thematic Mapper raw and hypercluster imagery from the Eros Data Center Multi-Resolution Land Characteristics program. Land cover is used as an indicator of overall biological diversity because plant structures and composition significantly affect species-level interactions.

Digital Land Stewardship Maps — These maps indicate different categories of ownership, managing authority, and management status for conservation, in digital GIS format. GAP assigns a stewardship ranking of 1 (greatest protection of biodiversity) to 4 (lowest level of protection) for land parcels. This allows the identification of biodiversity gaps and can be used in analysis to identify strategies for filling them. A gap is defined as a cover type or species distribution not adequately "represented" in protected status, or those lands ranked as level 1 or 2.

State Project Reports: These reports offer detailed descriptions of methodology as well as analyses of the conservation status for each species and natural community, in digital form with graphic versions of all GIS maps, and predicted distribution maps. These analyses of the representation of vertebrate species and vegetation alliances on status 1 and 2 lands are the final result of the GAP process. In these analyses, maps showing animal and plant community distributions are intersected with stewardship maps to create tables of representation for each element. The types of analyses are wide-ranging. They include:
- A comparison of ownership/managing entities to biodiversity management status;
- Inclusiveness of the protection;
- Type of management program and degree that it is mandated or institutionalized;
- A comparison of land cover types to stewardship; and
- A comparison of animal species distributions to stewardship.

How could these data be used?
According to the International Association of Fish and Wildlife Agencies' Comprehensive Wildlife Conservation Strategies State Progress Report #2, some states are already using GAP's habitat and vegetation classification systems and data. For example, Georgia is reviewing GAP land cover data set as a tool for conservation planning.

Element 8. Broad Public Participation is an essential element of developing and implementing these plans and the resulting projects.

GAP can assist states in fostering public participation through its outreach component, NatureMapping. The emphasis of NatureMapping is community participation and the documentation of species' location information by non-professionals. NatureMapping programs involving students, community members, and natural resource professionals are active in 10 states. Such programs could be used to facilitate involvement of the public in developing and monitoring the results of State Wildlife Conservation Strategies. Data collected in NatureMapping can be used for scientific inquiry, to foster a sense of stewardship, and to teach biological concepts such as species distributions and habitat associations.

Other Applications of GAP Data
Other pieces of the GAP data set can also be used by states in the development of their comprehensive strategies. For example: Louisiana used the LA_GAP Final Report's study area description verbatim in its plan. "The Study Area description for Louisiana in the LAGAP is very comprehensive and provides a good, short description of the state's geography and geology," said Stephen Sorensen, Louisiana State Wildlife Grant Coordinator.

How to Get GAP Data
GAP data is available on CD from the National Operations Office in Moscow, ID, and on the GAP Web site at <gapanalysis.nbii.gov>. Additional information may be available from the State Gap Project offices in each state; the contact information for these offices is also available from the Web.

For More Information
To learn more about how GAP data may help in the preparation of State Comprehensive Wildlife Management Plans, contact:

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