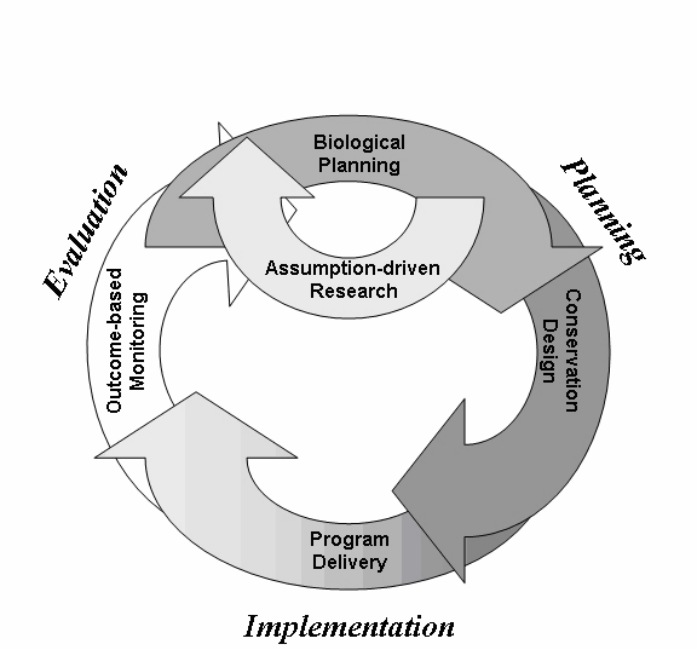
A Brief Overview of SHC Roles, Responsibilities and the Scales At Which They Apply

All conservation actions, e.g., acquiring a wetland easement, selective tree cutting, private lands grassland restoration, etc., occur at a site scale; however, a fundamental presumption of the conservation enterprise is that they collectively contribute to attaining biological objectives expressed at broader spatial scale.



The purpose of Strategic Habitat Conservation framework is to ensure that we use the best process to make decisions about these local conservation actions (what we do and where we do it) to achieve broad-scale objectives as efficiently as possible.

Because the Service is charged with the conservation of species (migratory birds, T&E species, inter-jurisdictional fish, marine mammals and populations that reside on Refuges), our objectives are normally expressed in terms of a population size or response.

A fundamental principle of SHC is that every site has a unique management potential for every trust species. Thus, asking where the best areas are in Region 3 for conservation is a meaningless question without the guiding context of explicit objectives. Deciding what that potential is is a primary purpose of SHC, and issues of scale are essential to achieving this purpose.

When applied to SHC, the term scale can mean at least two different but inseparable concepts: (1) organizational scale; or (2) geographic scale. Generally, the higher the organizational scale, the coarser the information they can provide and the coarser and the larger the geographic information it is applicable to, that is, it is unreasonable to expect a team of people looking at the range-wide distribution of a widely distributed species to make predications about the effects of conservation at a particular site. This may be explained using the following example.

Broad Scale: Golden-winged warblers (GWWA) breed in the northeastern US, Appalachian Mountains, Great Lakes and upper Midwest, encompassing parts of at least 6 major ecoregions. Some group with a continental (range-wide) perspective must look at these various ecoregions and determine which support the greatest abundance and density of GWWA, and where limiting factors on GWWA populations are most severe. Some ecoregions will inevitably be more important to conserving continental GWWA populations than others.

Partners-in-Flight has this continental perspective on land birds and the Service and others look to them for information on range-wide population objectives and which ecoregions are most critical to GWWA conservation. Other bird initiatives provide the same information for other groups of birds, the Service's Endangered Species Program provides this information on Federal T&E species, etc., etc.

Intermediate Scale: Within a major ecoregion, the next step is to determine the sites where GWWA can be conserved most efficiently. This is usually done by a dedicated team of biologists with expertise in biological planning. They may bring in outside experts on GWWA population-habitat relationships to help construct a model. This model is in turn applied to spatial data using GIS techniques to identify the best existing GWWA habitat for protection and where GWWA habitat can be most efficiently restored. Every site in the ecoregion will be assessed based on its current habitat and landscape context.

Thus the intermediate scale process of site-scale assessment is the essential link between a continental (range-wide) population objectives and determining where and how to manage habitats to attain that objective most efficiently.

Local-scale: Local-scale management is what makes the outcomes of broad and intermediate scale assessments meaningful. A field manager takes the decision support tools that result from applying models to spatial data in the intermediate-scale planning process and uses them to help form decisions about where to do certain things to make the greatest possible contribution to GWWA populations. Note that broad and intermediate-scale assessments help ensure that an individual habitat manager is focused on the right species and the right management actions to best enable the Service to meet its full trust mandate (obviously we're interested in many more species than just GWWA – which of the plethora of species should a manager be concerned about in their area of responsibility).

Field managers and their staff have other essential roles in the SHC framework as well. At the broad and intermediate scales, assumptions are made about limiting factors and how a species like GWWA will respond to a particular type management action. It is up to these individuals to determine if their actions are having the predicted consequences on habitat and populations at the site scale. This information must be fed back into the assessment occurring at the broad and intermediate scales to make future management recommendations at the broad and intermediate scales more reliable. Thus field managers are responsible for both directly affecting populations and learning about how a species responds to changes in its habitat.

This local scale process of predicting the outcome of a management action and then evaluating actual outcomes is commonly called adaptive resource management (ARM). Most often when we think of ARM we are thinking about evaluating management outcomes on a refuge or other small tract of land, a wetland, etc.; however, hopefully, the preceding description of the inter-relationship of scales in the SHC framework makes it clear that through the iterative cycle of assessment (biological planning and conservation design) at broad and intermediate scales, and learning at the local scales feeding back into the process, it is apparent that the entire SHC framework is a form of ARM even at the continental scale.

Note that there is no expectation than any single office or field station will do all facets of SHC. SHC is a Service-wide approach to conservation with each program, field station, and individual playing an essential role.