

Questions and Answers related to SHC and LCC Form, Function and Operation from the FL SHC Workshop in December 2009 (Revised March/2010) –

Questions were addressed based on the guidance from LCC Information Bulletin #1 – Form and Function (January 2010 and LCC Information Bulletin – Service Allocations FY 2010)

1) Can you further clarify where partners fit into the structure and function of the LCC?

Landscape Conservation Cooperatives (LCCs) are applied conservation science partnerships focused on a defined geographic area. Partnerships include DOI agencies, other federal agencies, states, tribes, non-governmental organizations, universities and others that inform on-the-ground strategic conservation efforts at landscape scales. LCCs will provide scientific and technical support to inform landscape-scale conservation using adaptive management principles. LCCs will engage in biological planning, conservation design, inventory and monitoring program design, and other types of conservation based scientific research planning and coordination. LCCs will play an important role in helping partners establish common goals and priorities, so they can be more efficient and effective in targeting the right science in the right places. Products developed by LCCs will inform the actions of partners and other interested parties in their delivery of on-the-ground conservation.

The principal function of LCCs will be to provide scientific and technical expertise to produce landscape-scale conservation designs. A secondary function of LCCs will be building interdependent partnerships to develop shared conservation goals and satisfy shared science needs. States will be essential partners, along with other federal agencies (especially USGS and other DOI bureaus), tribes, and private organizations.

The role of partners in the structure and function of LCCs needs to be considered within the context of two levels:

- 1) Establishment and operation of the core LCC science and technical support staff (technical working group) and Steering Committee.
- 2) Establishment of landscape-level partnerships and implementation of strategic on-the-ground conservation efforts.

Within each specific geographic area, the Service and interested partners will engage in efforts to implement strategic on-the-ground-conservation efforts through individual and collective partnerships at various scales. Each partner, including the Service plays an important role in determining what its priorities are, what benefits it will realize from participating in such efforts, how it will engage (e.g., providing funding, in-kind services, seeking and implementing projects to restore, protect, manage habitats and associated species, conduct outreach/education activities, etc.). As part of this effort, discussions will also occur through which the Service and these partners identify science and information gaps that prevent effective implementation of these conservation efforts.

DOI Climate Science Centers will work with LCCs to deliver science and adaptive-management strategies for critical landscape level resource issues. The CSCs will synthesize the climate-impact data and management strategies that States and other Federal agencies have developed.

The establishment and operation of core LCC science and technical support staff, and the Steering Committee is intended to address these science and information gaps to make the partners' efforts more efficient and effective – with the goal of restoring and maintaining sustainable fish and wildlife populations and the habitats they rely upon at a landscape-level within and across these geographic areas.

Each LCC will have:

- A technical working group (which includes an LCC Coordinator; a Science and Technology Coordinator; GIS capacity; population modeling capacity; and decision analysis capacity).
- A Steering Committee of executive and management level representatives from partner organizations, which will provide management direction and set priorities for the core science and technical support staff;

Each LCC technical working group will have a dedicated Coordinator who will facilitate the link between science and planning, and facilitate the link between operations, the Steering Committee and partners. The Coordinator's responsibilities, duties, and authorities will be clearly described in a position description and reflected in the LCC's charter.

Each LCC will be self-directed partnerships. Their governance, structure, and operation will be consistent so they function as units of an integrated network. Each LCC will have a Steering Committee, comprised of executive-level and management-level partner representatives. States within the geographic area served by an LCC will be invited to sit on that LCC's Steering Committee. A representative from the regional CSC will be part of the LCC Steering Committee.

Existing Service and partner personnel will play key roles in identifying science priorities and priority species, evaluating LCC products, providing scientific and technical support, designing and implementing research programs, performing management evaluations and in delivering conservation through resources available at their current facilities.

The LCC will provide a forum for information exchange and feedback among the partners involved (States, other Federal agencies, tribes, regional CSCs) and other interested parties (e.g., organizations, scientists, managers and stakeholders). The process for how this information exchange will occur has not been defined. The Steering Committee will establish protocols for how science and information needs are communicated to them, within the context of prioritizing LCC core staff action. The partnership at large will also have an opportunity to identify their desired communication pathways between the LCC (core staff), the Steering Committee, and the partners at large. There is an expectation that there will be tri-directional communication between the various entities within the overall partnership. The LCCs will work with the regional CSCs to coordinate landscape-scale adaptation effort with federal, tribal, state, and local governments, nongovernmental organizations, and private-landowner partners. The CSCs will help the LCC develop a local-to-regional scale response to climate change.

2) Please help me understand a little better how my refuge fits/functions within the LCC.

Individual agency field stations will play multiple roles within the larger LCC partnership, including assisting in identifying science priorities and priority species, evaluating LCC products, providing scientific and technical support, designing and implementing research programs, performing management evaluations and in delivering conservation through resources available at their current facilities. Within the construct of the core LCC infrastructure, field stations will feed their specific science needs through their management chains to the LCC Steering Committee for consideration, prioritization, and possible action.

It is important to note that, due to the physical limitations of the LCC core science and technical staff and available resources, it will not be possible to address all science needs immediately. As a result, the LCCs will necessarily need to identify priorities (e.g., species, habitats) upon which they will engage in biological planning, conservation design, inventory and monitoring program design, and other types of conservation based scientific research planning and coordination. These priority species/habitats will be selected based on a number of factors, including species status, range, management need and efficacy, agency priorities and the like; ideally, they should represent a suite of species with similar habitat requirements – such that the priorities focus on providing the greatest conservation benefit with the limited resources available. It will be imperative that conservation designs developed for these priority species/habitats be evaluated to determine whether or not the assumptions included are valid. Similarly,

the process Migratory Birds utilizes is conducting landscape/habitat assessments; look at existing habitat under protection, management, enhancement or restoration; develop decision support tools to target specific management actions; develop habitat objectives linked to population objectives; and finally integrates multiple species objectives into the process. Field stations will, through implementation and monitoring of their conservation efforts, provide feedback to the LCCs regarding the effectiveness of the conservation designs developed to ensure appropriate adaptive management occurs, and to determine whether additional efforts are needed to ensure species needs are addressed. Field stations may also be asked to assist in various tasks associated with development of biological plans, conservation designs, and other efforts being developed by the LCCs.

3) What will LCC's mean for conservation delivery for refuges on the ground?

The principal function of the LCCs is to provide scientific and technical expertise to produce landscape-scale conservation designs. A secondary function of LCCs will be building interdependent partnerships to develop shared conservation goals and satisfy shared science needs. Through these functions, the LCCs will provide the information, decision-support tools, and assist in developing partnerships capable of assisting field stations and partners at all levels understand how they fit within the landscape context, and help them manage, protect, and restore the resources for which they are responsible more efficiently and effectively. Additionally, it would help field stations understand how their management actions are affecting the resources in a measurable way and how their field station contributes to the achievement of the identified landscape conservation objectives.

Each field station, be it a refuge or fisheries field station, will operate under program specific objectives in addressing priority species. Delivery actions, tools and management actions will be evaluated to anticipate the affect on priority species abundance.

4) How much input can field staff and partners expect to have in defining what the LCC will look like?

Field staff and partners will play a large role in defining what the LCC will look like. It is through the identification of the science, information, and management needs that field stations require doing their jobs more efficiently and effectively, that will inform what specific needs the LCCs will address – what skills, expertise, and tools are needed. Existing Service and partner personnel will play key roles in identifying science priorities and priority species, evaluating LCC products, providing scientific and technical support, designing and implementing research programs, performing management evaluations and in delivering conservation through resources available at their current facilities.

5) Will land management and other field staff be represented on the LCC Steering Committee, or will this be strictly a scientific and upper management function?

The LCC Steering Committee will be comprised of executive and management level partner representatives, and their role is to provide management direction and set priorities for the core science and technical support staff. States within the geographic area served by an LCC will be invited to sit on the LCC's Steering Committee. A representative from the regional CSC will be part of the LCC Steering Committee. The Steering Committee will establish protocols for how science and information needs are communicated to them, within the context of prioritizing LCC core staff action. The partnership at large will also have an opportunity to identify their desired communication pathways between the LCC (core staff), the Steering Committee, and the partners at large. Land management and other field staff will identify their science, information, and management needs through their management chains to be provided to the Steering Committee for prioritization and action as appropriate

What types of products are envisioned to be developed by the LCC to be used by the field for conservation delivery?

LCC products and services will include:

- Integrated data for seamless spatial modeling of species and habitats, within and across geographic area boundaries;
- Collaborative development of explicit and measurable biological objectives, focusing on population objective variables (e.g., abundance, vital rates, etc.);
- Population models linking fish, wildlife, and plant populations to habitat, other limiting factors, and various ecological processes;
- Identification of areas of converging and overlapping climate and non-climate stressors;
- Application of climate model outputs at scales sufficient to predict effects on fish, wildlife, plants, their habitats, and ecological processes;
- Predicted ranges of native species and invasive species under temperature and precipitation projections;
- Vulnerability assessments for fish, wildlife, plants, their habitats, and ecological processes most susceptible to the impacts of climate change;
- Conservation strategies that spatially integrate biological objectives for populations, species, management practices, and ecological processes;
- Assessing, modeling and predicting the ability of landscapes to support and sustain priority fish, wildlife and plant populations;
- Decision support systems and tools to develop conservation designs that define actions at precise locations on the landscape;
- Quantification of biological consequences (outcomes) of conservation actions and development actions (e.g., housing, civil works, mining, renewable energy);
- Short-term and long-term adaptation approaches at meaningful spatial scales;
- Maps that display potential corridors linking present and future habitats, incorporating considerations of conservation genetics;
- Evaluation of the genetic consequences of habitat fragmentation, population bottlenecks, and small or isolated populations;
- Identification of high priority research and technology needs;
- Protocols and methodologies for coordinated data acquisition to test assumptions of predictive models (i.e., climate effects projections, population/habitat models);
- Protocols and methodologies to evaluate the success of conservation strategies, objectives and actions;
- Shared data platforms facilitating information exchange; and
- Decision analysis tools for complex conservation problems.

7) Demonstrating success of the LCC concept will require a national roll up of the information they produce. What/who is elaborating the “consistent” approach/method for easy access to the data for the WO?

Scientific credibility of LCC products (i.e., data collection) will be subject to peer review through publication in peer-review outlets, such as the *Journal of Fish and Wildlife Management* and *North American Fauna*. Each LCC will have a coordinator that will facilitate the link between science and planning, and facilitate the link between operations and partners. The coordinator will ensure that data is shared with other LCC, field stations, partners, other Federal agencies, etc.

LCC capacities will be designed to be compatible with other LCCs thus ensuring that LCC products, including data platforms, for a wide-ranging species can be used effectively across geographic area boundaries. Data will be shared with partners, other Federal agencies, and other LCCs. Access to data by the Washington Office would be similar to the exchange of information and data between LCCs.

8) Assumption-based Research – While I understand the value of models in dealing with landscape-wide issues, there are many management issues within the landscape that will not be adequately addressed by models. Is FWS limiting the research needs discussions to modeling?

Will the broader landscape management issues be addressed by this approach? Are the science needs identified in other LCC assumption-based?

With a clear focus on modeling, conservation design, decision-support tools and evaluation of monitoring data, LCCs will provide support for effective adaptive management by their partners. LCC products and services will be shared openly among partners and other interested parties. LCC will develop biological plans, conservation designs, research priorities, and monitoring and inventory designs, and will evaluate conservation delivery strategies and activities and the overall success of landscape-level conservation. The LCC products and services will utilize various tools and systems to address management issues within the landscape.

9) How will the LCC's address the needs for shared data platforms across states and agencies?

States, along with other Federal agencies will be essential partners in an LCC. LCC capacities will be designed to be compatible with other LCCs; thus ensuring that LCC products, including data platforms, for a wide-ranging species can be used effectively across geographic area boundaries. Additionally, LCCs will draw upon, and augment, the existing science capacities of partners and partnerships.

Within each specific geographic area, the Service and interested partners will engage in efforts to implement strategic on-the-ground-conservation efforts through individual and collective partnerships at various scales. Each partner, including the Service plays an important role in determining what its priorities are, what benefits it will realize from participating in such efforts, how it will engage (e.g., providing funding, in-kind services, seeking and implementing projects to restore, protect, manage habitats and associated species, conduct outreach/education activities, etc.). As part of this effort, discussions will also occur through which the Service and these partners identify science and information gaps that prevent effective implementation of these conservation efforts. The establishment and operation of core LCC science and technical support staff, and the Steering Committee is intended to address these science and information gaps to make the partners' efforts more efficient and effective – with the goal of restoring and maintaining sustainable fish and wildlife populations and the habitats they rely upon at a landscape-level within and across these geographic areas.

10) Are LCC's meant to be comprehensive in nature or targeted on a subset of key issues or species?

Due to the limited resources of the LCC core science and technical staff and available resources, it will not be possible to address all science needs immediately. As a result, the LCCs will necessarily need to identify priorities (i.e., species, habitats) upon which they will engage in biological planning, conservation design, inventory and monitoring program design, and other types of conservation based scientific research planning and coordination. Priority species/habitats will be selected based on a number of factors, including species status, range, management need and efficacy, agency priorities, etc. They should represent a suite of species with similar habitat requirements – such that the priorities focus on providing the greatest conservation benefits.

11) On page 5 of the LCC information Bulletin #1, the first sentence states "LCC will strive to be self-sustaining." Please explain.

Over time it is hoped that LCC partners and staff within the LCC will try to sustain or expand the resources needed to build and maintain its conservation science and conservation planning capacity and activities. LCCs will work with other LCCs to share expertise and tools. Additionally, our State partners and other Federal agencies will bring specific tools to each LCC. Self-sustaining is certainly a goal of each LCC, but the issues of the landscape will determine the overall needs.

12) I understand how SHC can be applied in an area for a species or group of species. I don't understand how LCCs will pick a number of species and have priority management across a large diverse area.

LCCs will necessarily need to identify priorities (i.e., species, habitats) upon which they will engage in biological planning, conservation design, inventory and monitoring program design, and other types of conservation based scientific research planning and coordination. Priority species/habitats will be selected by LCC partners as well as Service employees based on a number of factors, including species status, range, management need and efficacy, agency priorities, etc. They should represent a suite of species with similar habitat requirements – such that the priorities focus on providing the greatest conservation benefits. In management across a large diverse area it is critical that State partners bring to the table the State Comprehensive Wildlife Management Strategies and identify opportunities to develop cooperative capacity for implementation.

13) Comment – Shared priorities should include habitat objectives, not just species population objectives.

LCCs will focus on priority species and habitats identified by LCC partnerships. LCCs will consider many limiting factors that interact to affect populations of fish and wildlife within a landscape. LCC partners will share responsibility for their functions and activities and will establish an equitable distribution of opportunity and responsibility.

14) Negatives: LCC will determine my work station plan; What if I don't want to do what the LCC wants; LCCs will steal best and brightest staff.

Individual field stations will play multiple roles within the larger LCC partnership. Field stations will assist in identifying science priorities and priority species, evaluating LCC products, providing scientific and technical support, designing and implement research programs, performing management evaluations, and in delivering conservation through resource available at their current facilities. Fields stations will be a key component in the operation of the LCC, along with its other partners. Employee and field station input into the process is critical. Service employees will play a key role in identifying science priorities and priority species, evaluating LCC products, providing scientific and technical support, designing and implementing research programs, performing management evaluations and in delivering conservation through resources available at their current facilities. The LCCs will open up opportunities for our employees with the expertise in the areas identified for each LCC. Initial staffing efforts will focus on the most critical core capacities to ensure performance of primary planning and science functions. Capacity will be added strategically over time to enhance each LCC's functions to meet the demand of the members. Staffing will involve a combination of hiring new positions as well as assigning existing staff to LCC positions.

15) How much of a time and travel commitment is expected of existing FWS personnel participating in an LCC?

That is extremely difficult to determine at this time. Ideally, the core staff of an LCC will be co-located at a Service facility, partner's facility, or other location such as a university. Funding for staff will come from the Service and its partners. Time and travel commitments would be dependent upon the skill sets needed to carry out specific landscape conservation inventory and monitoring needs, as well as the overall operational needs of the LCC. Additionally, much of the work will be accomplished by conference calls, video conferencing, and other methods of communication. In today's environment it will become critical to reduce travel whenever possible, particularly when many of our State partners cannot travel out of State.

16) What high points can be shared from the process of determining priorities in the SALCC among its partners?

LCC partners will jointly decide on the highest priority needs and interests of the LCCs. When species range across geographic areas, LCCs from each area will collaborate to ensure consistent and seamless application of methodology. Priorities will be based on everyone working together – Service, State partners, other Federal agencies, NGOs – to determine the priorities of the landscape. Within each specific geographic area, the Service and interested partners will engage in efforts to implement strategic on-the-ground-conservation efforts through individual and collective partnerships at various scales. Each partner, including the Service plays an important role in determining what its priorities are, what benefits it will realize from participating in such efforts, how it will engage (e.g., providing funding, in-kind services, seeking and implementing projects to restore, protect, manage habitats and associated species, conduct outreach/education activities, etc.). As part of this effort, discussions will also occur through which the Service and these partners identify science and information gaps that prevent effective implementation of these conservation efforts. The establishment and operation of core LCC science and technical support staff, and the Steering Committee is intended to address these science and information gaps to make the partners' efforts more efficient and effective – with the goal of restoring and maintaining sustainable fish and wildlife populations and the habitats they rely upon at a landscape-level within and across these geographic areas.

17) How are our partners to benefit from LCCs? Do they provide staff and funds?

Partners of the LCC will work collectively to establish common goals and priorities in their respective geographic areas. Once these are established, they can become more efficient and effective in achieving their resource objectives at a larger landscape scale versus project by project. They will be the beneficiaries of the technical expertise and tools developed within the partnership of the LCC. Products developed by LCCs will inform the actions of partners and other interested parties in their delivery of on-the-ground conservation.

Funding for core staff will come from the Service and other partners. Reflecting the cooperative nature of LCCs, all staff positions, including the LCC Coordinator, may be supported by, or through any LCC partner, or shared among partners. Substantial resources from multiple partners will be required to establish and maintain LCCs. Initial staffing efforts will focus on the most critical core capacities to ensure performance of primary planning and science functions. Capacity will be added strategically over time to enhance each LCC's functions to meet demands of members for additional products and services. Staffing will likely involve a combination of hiring new positions as well as assigning existing staff to LCC positions.

Some partners will provide funding and some will not. Partners can contribute to the LCC in staffing, funds, or in-kind support which would add to the technical capabilities of the LCC. However, not all partners will have the capability of providing funds or staff, but they will participate as viable partners. Provision of funding or in-kind services will not be a requisite for participation in an LCC.

18) With drought a major concern for our landscape, why weren't watersheds given greater consideration in the creation of LCC geographic areas? The FL LCC could include parts of GA. How were LCC geographic areas drawn?

Watersheds were considered in the process of developing the map. The team was charge by the Executive Oversight Committee with aggregating Bird Conservation Regions (BCRs) while giving consideration to the needs of aquatic species. In creating the LCC areas, the team considered aquatic ecoregions (using Freshwater Ecoregions of the World as a standard unit—the same framework adopted by the National Fish Habitat Action Plan) and watersheds, as well as existing ecological units (Omernick's Level II) to account for a variety of terrestrial species' needs. The team recognized that no aggregation process will address needs for all species and landscapes equally. Thus, coordination with adjacent LCCs will be critical to ensure that cross boundary issues are addressed.

19) If LCC's focus on planning and design versus on the ground work, how can this funding support the concept of adaptive management?

With a focus on modeling, conservation design, decision-support tools and evaluation of monitoring data, LCCs will provide support for effective adaptive management by their partners. LCC products and services will be shared openly among partners and other interested parties. LCCs will develop biological plans, conservation designs, research priorities, and monitoring and inventory designs, and will evaluate conservation delivery strategies and activities. These activities will be critical elements of adaptive management.

20) Where are funds to come from for delivering conservation on the ground?

Future budget requests and base funding will continue to support delivering conservation on the ground by Service programs. The Service's many programs (i.e., fish passage projects, fish habitat projects, partner for fish and wildlife, etc.) will still deliver projects on the ground based on Service priorities and landscape conservation needs. The Service and partners have some discretion in their current conservation delivery target actions and may modify or enhance those activities from the support of new technical information from the LCC.

21) Given that we received \$10 million this FY, what progress has been made to "stand up" the LCC's? We need to show success to keep the dollars coming!

In Region 4 for FY2010, we have received \$2.2 million for science studies and standing up one LCC--the South Atlantic LCC. Our efforts to date include, establishing coordinator detailees, employee advisory group, and regular briefings to partners. We have had two detailees serving as Interim LCC Coordinators for the South Atlantic; there is an advisory group of internal service project leaders to guide the development of an operational plan and identify key staff for the LCC; several meetings with partners on the local and landscape level. Additionally, at least seven positions will be funded as an investment in the startup of this new LCC. They are identified at this time as the LCC Coordinator, Science Coordinator, 2 Refuge funded biologists and 3 Refuge field biologists. Workshops are planned for 2010 to complete employee in-reach on Strategic Habitat Conservation within each LCC in Region 4. Funding awards for new science projects are also planned within the new SALCC for 2010 and 2011. Regional Directors may establish additional LCCs using a portion of these allocations (Climate Change Planning Allocation) or other funds available to them and partners. In Region 4, some funding has been made available to support the Gulf Coastal Plains and Ozarks LCC. Additionally, Regional Directors may apply allocations (Climate Change Adaptive Science Capacity Allocations) as flexible funds primarily to conduct or purchase the science needed by LCCs to perform core functions.

22) Funding initiative seem focused on "standing up" LCC's by hiring staff for LCC core to do planning and design. But how/when will funding be provided to "stand up" refuges to enhance their capacity to deliver conservation and implement inventory and monitoring to support SHC/AM?

Funding in 2010 is primarily focused on technical staff for the LCC. However, the Refuges program has been funded \$12 million for building a national inventory and monitoring program. For Region 4, the South Atlantic LCC will be provided 5 permanent staff (biological expertise) to complete inventory and monitoring activities to support the priorities of the LCC. An additional Biologist position will be established to provide oversight for implementing a region-wide inventory and monitoring program. Future dollars are expected in 2011 and beyond to build the inventory and monitoring program.