

**Determine Certainty Program Framework of a Market Based Conservation Initiative for
Longleaf Pine Habitat Improvements in Eastern North Carolina**

**Ecosystem Credit Policy Review
Component Report 6 of 6**

**Michelle Lovejoy, NC Foundation for Soil and Water Conservation
Alison Lund, Texas A&M University's Institute for Renewable Natural Resources**

March 31, 2016

This material is based upon work supported by the Natural Resources Conservation Service, U.S. Department of Agriculture, under number 69-3A75-13-229. Any opinions, findings, conclusions, or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture.

This project proposed to advance the concept of a national streamlined model of endangered and threatened species habitat improvement efforts allowing for a landscape scale approach within the Longleaf Pine Ecosystem. The project was designed to develop innovative data, information, methods, and partnerships to increase the Longleaf pine ecosystem in North Carolina. This ecosystem provides unique ecological benefits, and has been a focus of many cooperative efforts in the last decade. Several factors come into play making this the opportune time to engage in landscape scale ecosystem improvement efforts including; (i) potential land usage changes in eastern North Carolina and private landowner preferences, (ii) an existing market-based project approach to open space conservation coined the Market Based Conservation Initiative, (iii) on-going Longleaf Pine Ecosystem restoration efforts, (iv) nationally recognized habitat exchange systems and (v) state level Certainty Program efforts. All of these efforts have their own sets of merits and weaknesses, but the overarching missing piece is a national streamlined model that can work across an entire ecosystem. This component of our report addresses the policy components of our project that can help advance restoration of key ecosystems on private lands. A complete listing of all sources that were used during drafting is provided at the end of the document.

In the United States, approximately 1,586 plant and animal species are currently listed as either threatened or endangered, and numerous candidate species are under review for listing under the Endangered Species Act (ESA). To achieve future conservation success, working on private lands in an innovative way is needed. Proactive management measures can be initiated by private landowners to assist in the species recovery process while also benefiting themselves through incentives (often regulatory assurances) offered by different conservation programs. To do work in ecosystems supporting threatened and endangered species, actions must fit within the confines of existing federal legislation, below is a summary of the key legislation, the Endangered Species Act.

Endangered Species Act (ESA) – Overarching Legislation

The ESA was adopted in 1973 as a means to protect and recover imperiled species and the ecosystems in which the species depend upon, through listing the species as threatened or endangered. Once listed, the ‘take’ of a species is strictly regulated. The ESA is administered by Interior Department's U.S. Fish and Wildlife Services (FWS) for freshwater and terrestrial species. (Discussions of marine species are excluded from this report.) In addition, the ESA encourages FWS to work with various entities to implement conservation actions for candidate species (i.e., species at risk of being listed as endangered or threatened) so that full protection for the species may become unnecessary. Below is a summary of notable ESA sections;

To review all ESA Sections, please visit: <http://www.fws.gov/endangered/laws-policies/esa.html>

Section 4 describes the listing process, citizens’ petition rights, designation of critical habitat, and recovery of species and delisting. The FWS has one year following the submission of a citizens’ petition to make a decision on the listing status of a species. If the FWS misses the timeline designated by the ESA, then citizens’ have the right to sue in order to enforce the timelines and make sure the species being considered receives adequate and timely protection.

Section 6 offers a variety of tools available to help States and private landowners implement conservation projects to benefit the species. For example, the Cooperative Endangered Species Conservation Fund provides grants to the States and territories that contribute a variety of voluntary conservation projects for candidate, proposed, and listed species. Some programs also provide funding to States and territories for species and habitat conservation actions within private landowners’ property.

Section 7 dictates that all Federal agencies must maintain high standards for their actions, which may adversely affect the critical habitat and overall well-being of an endangered or threatened species, as designated by the ESA.

Section 9 defines prohibited activities that can range from the illegal import and export, take, illegally taken possession of, transport, or sale of endangered or threatened species. Take can also include harming or harassing the species by altering their natural habitat that may indirectly cause a decrease in the population by disrupting crucial behavior patterns such as feeding or breeding.

Section 10 explains the course of action that is necessary to receive a permit that will allow the prohibited actions described in Section 9. However, Section 10(a)(1)(A) allows for the removal of a species for scientific reasons or for the means of development and breeding or survival of the species; while Section 10(a)(1)(B) permits incidental take, or the accidental killing or harming of an endangered or threatened species.

Existing ESA Programs Review

Many threatened and endangered species' habitats reside on private landscapes. This fact highlights the importance of landowner involvement for protecting and promoting a species habitat or population. It is necessary for landowners to understand that certain construction and/or other common activities landowners perform may result in the 'take' of a listed species. These actions will require a permit from the FWS, as described in Sections 9 and 10 of the ESA. Landowners are responsible for identifying the banned development and/or activities as designated by the ESA. There are several tools for private landowners when it comes to managing and protecting candidate, threatened and endangered species.

Candidate Conservation Agreements with Assurances (CCAAs) and Candidate Conservation Agreements (CCAs) are widely used to conserve candidate species in order to avoid a later listing. The general thought behind CCAAs and CCAs is that species are easier to recover before they reach endangered status. By implementing voluntary plans (CCAAs on private or State land and CCAs on Federal land) to conserve candidate species, private landowners receive incentives in the form of regulatory assurances. If the species does become listed as endangered or threatened, landowners who participate in a CCAAs and CCAs are protected from further regulations beyond what is listed in their agreement and will receive an *Enhancement of Survival Permit*, allowing incidental take in reference to the management activities identified in the agreement. The first CCAA was implemented for the Robust Redhorse in the Ocmulgee River in Georgia in 2001.

For more information on CCAAs and CCAs, please visit:

CCA- <http://www.fws.gov/endangered/esa-library/pdf/CCAs.pdf>

CCAA - http://www.fws.gov/southwest/es/NewMexico/documents/CCAA_national_factsheet.pdf

Safe Harbor Agreements (SHAs) are similar to the CCAAs and CCAs in that these programs strive to incorporate private landowners' voluntary participation in species conservation in return for regulatory assurances. A big difference between these programs is that CCAAs and CCAs deal specifically with species that are not yet listed, while SHAs work strictly with species that have already been listed with the status of endangered or threatened. SHAs focus on improving (or returning) a species habitat to original and agreed-upon (in the SHA), baseline conditions, even if that means the incidental take of a species will occur. The first SHAs were established to help with the recovery of the red cockaded woodpecker in the Sandhills region of North Carolina in 1995.

For more information on SHAs, please visit: <http://www.fws.gov/endangered/esa-library/pdf/harborga.pdf>

Habitat Conservation Plans (HCPs) are available for landowners including private citizens, Corporations, Tribes, States, and counties who want to develop property inhabited by listed species. This conservation option is often used to balance the economic need for land development with the conservation needs of a listed species. The landowner must determine any likely impacts to the species from the proposed actions as well develop a plan to avoid, minimize and mitigate the negative impacts, and the necessary funding available to carry out the steps. Once approved by FWS, the landowner will receive an *Incidental Take Permit*, which allows landowners to partake in otherwise legal activities that may adversely affect or harm a listed species or its habitat. Although FWS provide guarantees that HCPs will be fulfilled, third parties are permitted to sue if they find the HCP to be inadequate, which can extend the implementation for several years. The first HCP was created for the San Bruno Mountain, California, to benefit the Mission blue butterfly in 1983.

For more information on HCPs, please visit: <http://www.fws.gov/endangered/esa-library/pdf/hcp.pdf>

Conservation Banking has an overarching goal to protect and manage lands that are inhabited by endangered, threatened or candidate species. In return for permanently protecting the land and monitoring it for the safety and survival of these species, the FWS can approve a designated amount of credits that bank owners may sell. These credits are used to offset adverse effects on a particular species from an action that takes place elsewhere. The first wetlands conservation bank was created by The Stream + Wetlands Foundation, formerly the Ohio Wetlands Foundation, in 1992.

For more information on Conservation Banks, please visit:
http://www.fws.gov/southwest/es/Documents/R2ES/conservation_banking.pdf

Recovery Credit Systems are a tool for federal agencies to benefit threatened and endangered species on non-federal lands by creating a ‘bank’ of credits. The federal agency may develop and store conservation credits on private lands that are used to offset temporary or permanent negative impacts to the species habitat on federal lands. Private landowners provide these credits through maintaining or improving the species habitat on their land. This program offers incentives to the landowner through tax deductions, regulatory assurances and/or possible payments, as determined by the program. The first Recover Credit System was designed for the Golden Cheeked Warbler in Fort Hood, Texas in 2005.

For more information on Recovery Crediting, please visit:
<http://www.fws.gov/home/feature/2007/EndangeredspeciesRecoveryQsandAsVF1107.pdf>

Grants for States and Territories, offered through the Cooperative Endangered Species Conservation Fund, benefit voluntary conservation projects for candidate, proposed and listed species. These funds can be awarded to private landowners and groups for conservation projects. Funded activities include habitat restoration, species status surveys, public education and outreach, species reintroduction, nesting surveys, genetic studies and development of conservations management plans.

For more information on Grants, please visit: <http://www.fws.gov/grants/> and http://training.fws.gov/courses/csp/csp3115/resources/ESA_Folder/grants.pdf

Working Lands for Wildlife – An Ecosystem Success Story

Working Lands for Wildlife (WLW) rolled out in the 2014 Farm Bill and was based on previous work under the Wildlife Habitat Incentive Program (WHIP). WLW’s purpose is to restore declining species, provide regulator certainty to participants, and strengthen rural economies by benefiting agriculture and forestry production capacity. Regulatory assurances are provided through a variety of legal mechanisms such as informal agreements, conference opinions, biological opinions, CCAs, SHAs, and HCPs. Multiple federal, state, and local partners target resources to a species in which the declining population trends can be reversed and the overall program benefits additional secondary species (1).

Species that are selected have habitat needs that are critical on private lands and the needs are compatible with traditional agriculture and forestry production practices. The species also has a viable core habitat that can be protected and where partners identify opportunities for additional habitat recovery. Current ESA tools are used to provide the regulatory certainty of some best management practices causing an “incidental take”; participants can be provided with 30 year+ exemptions (2, 3).

WLW currently focuses on seven key species; bog turtles, lesser prairie-chickens, gopher tortoise, New England cottontail, golden-winged warbler, southwestern willow flycatcher, and the greater sage grouse. Through a variety of efforts from multiple partners the following successes are being achieved, as noted below:

- The **Sage Grouse Initiative**, started in 2010 by the USDA Natural Resources Conservation Service, achieved conservation success in 2015. The partnership brought together ranchers, government agencies (including conservation districts), universities, non-profits and businesses to support wildlife conservation across 11 western states. The partnership deployed proactive voluntary conservation measures and substantial public-private collaboration in protecting and establishing sagebrush habitat at a landscape scale approach. The Greater Sage Grouse was determined by the FWS to not face a risk of extinction now or in the foreseeable future, in 2015.

To learn more about the initiative visit <http://www.sagegrouseinitiative.com/>

- A ***Gopher Tortoise Pilot Program*** is allowing landowners to manage for longleaf pine habitat but not necessarily have species identified on site and still be eligible for selling or banking acreage for credits. A CCA was drafted in 2006 by fish and wildlife state agencies, Department of Defense representatives, and related nonprofit organizations across 4 southeastern states. By 2012, the Gopher Tortoise Candidate Conservation Marketplace was established, allowing the US Army to work with partners to manage proactively habitat before ESA federal listing becomes necessary (4).
- The ***Southwestern Willow Flycatcher Restoration Program*** is taking a habitat approach within the species range since the bird is a key species and its habitat needs benefit multiple species. A diverse group of conservation partners came together in 2005 to implement a comprehensive conservation plan for the species. By 2013 the work of the partnership paid off when the FWS ruled that almost 75 miles of Rio Grande riparian habitat was excluded from critical habitat designation.

State Level Certainty Programs

For an ecosystem crediting program to be successful, private landowners will need regulatory assurances, these assurances that can mirror the existing Certainty Program framework. Certainty Programs are created at the state or multi-state level to provide regulatory certainty for current and future state and federal regulations. As defined in a National Association of Conservation Districts whitepaper, Certainty Programs are voluntary programs on private lands that provide confidentiality to participants while also requiring verification to prove implementation actions taken. Four types of Certainty Programs exist; carbon sequestration, water quality trading, habitat improvements, and general ecosystem services, with most of the recent programs focusing on water quality issues. In addition to participants receiving regulatory certainty, in some cases they are given additional ranking consideration in other conservation programs at the state or national level. In other cases, enrollment in the program opens up specific ecosystem marketing opportunities by providing a streamlined verification process that the participant is a good environmental steward (5, 6, 7). Below is a listing of some existing programs:

- Ohio was the first state to create a state to federal water quality agreement, in 2012, involving private entities such as utility companies and water treatment facilities. The ***Ohio Water Quality Trading Program*** is a multi-state program which relies on local soil and water conservation districts to identify local priorities and confirm adopted targets are being met (8).
- The ***Willamette Partnership*** in Oregon created tools to determine the value of ecosystem services. One accomplishment was their ability to leverage Conservation Reserve Enhancement Program resources for river buffer plantings to cool streams allowing utilities to meet water temperature requirements (8).

- The ***Louisiana Master Farmers Program*** established a farmer certification process through a streamlined training approach. Participants install best management practices in accordance with a conservation plan that meet specific environmental enhancements. The overarching goal is to obtain high participation rates so that future water quality and other environmental regulations are not necessary. Rice growers that participate can receive crop premiums from Kellogg (5).
- The ***Michigan Agriculture Environmental Assurance Program*** was established to provide an educational venue for producers. The voluntary process provides training and streamlines documentation of practices that minimize agriculture nonpoint source pollution. The participant can use the label as a marketing tool to demonstrate sound environmental stewardship (5).
- The ***New York Agriculture Environmental Management*** program was established to create a whole watershed planning effort while tailoring the process to the needs of the enrolled farms and their specific natural resource base. The voluntary process provides farmers access to a certified planner that inventories current activities and assets, develops a conservation plan, and assists with plan implementation and post evaluation. Enrolled farmers can document their environmental stewardship actions in a streamlined manner (5).

Ecosystem Credit Program Policy Recommendations

At the time this project was undertaken, the above Working Lands for Wildlife success stories were still unfolding. Project partners encourage the continuation of this new trend to consider species recovery from a habitat approach and not just a single species approach. This new trend coupled with the 10.7.15 Executive Order for federal agencies to consider ecosystem services values in relation to proposed federal actions, leads project partners to understand that existing federal regulations allows for a habitat approach to species protection thereby benefiting multiple species (9). However, additional state level regulations should be considered when establishing an Ecosystem Credit Program.

Present Use Valuation is a reduced property tax program offered in some form in every state in the nation. Its intent is to provide lower taxes for rural properties in order to prevent them from being converted to higher and more expensive land uses. Properties developed in agriculture and forestry production or managed for habitat conservation are assessed at a lower property tax value as opposed to highest and best use property tax values. In return, counties receive production and economic development benefits and/or the ecosystem benefits of working lands and open space acreage. These programs have focused on providing tax relief for working farm and forest lands in the past, and are slowly being extended to provide ecosystem benefits as well (10).

Participants in present use valuation are usually required to demonstrate actual production occurring on the property and in most cases are required to follow a management or conservation plan, and may incur withdrawal penalties if they drop out of a program. Land must stay enrolled in the tax relief program for a specified time range, ranging up to 15 years in some cases such as Georgia, and face back penalties of all tax reductions or savings plus interest if they are converted to other uses.

In North Carolina, landowners who own productive agriculture or forestland when a property is taken out of the program the current owner pays current year and three years back taxes for the difference in value. North Carolina's primary PUV program provides reduced tax assessments based on land productivity, and applies to working farms and forest that exceed varying minimum acreage levels, starting at 10 acres for farms and 20 acres for forests. A new North Carolina wildlife reduced use tax valuation program was passed in 2008, but has limits of a maximum of 100 acres, and has only been used for a few properties to date.

By requiring program participants be enrolled in Present Use Valuation, an extra level of program enforcement is in place. Project partners recommend each state carefully consider not capping enrolled acres per landowner per county to allow for maximizing the ecosystem benefits.

Voluntary Agriculture Districts are voluntary land use designations existing in some states for agriculture and forestry production at the county level. Participants are also likely eligible for additional ranking considerations for state and federal conservation programs. Some programs are established with voluntary opting out clauses whereas other enhanced programs place a 10-year enrollment requirement. By requiring participants be in designated Voluntary Agriculture Districts, an extra level of program enforcement is in place and a secondary benefit of more land base connectivity may occur.

Adaptive Management is a process by which programmatic changes are adopted as better science is developed. A time mechanism should be in place to reassess habitat needs and required management techniques. Habitat needs may change temporally as the impacts of climate change are noted. Better best management practices may come online as more of these programs and specific species habitat needs are studied.

However, adaptive management can go against the grain of regulatory assurances, requiring a delicate balancing act. If program enrollees are being asked to do additional management practices, then they should have the right to re-negotiate their contract terms, specifically the level of incentive payments. Or a process could be developed to allow "older" management plans to be grandfathered in as is and only place adaptive management practices on newer program enrollees' plans. A consensus building process that includes all stakeholders should be adopted to determine adaptations, carefully weighing the needs of the species and the economic impact of any potential changes.

Topics Needing Further Evaluation

Project Partners explored other topics through stakeholder discussions, but additional research is needed before policy recommendations could be offered to address the identified issues.

Prescribed Burn Implementation is one of the most limiting factors to Longleaf Pine restoration in North Carolina. The practice is limited by the number of implementation days, the site's proximity to roads and other development, institutional policies limiting the number of burn permits, the lack of qualified specialists, and liability concerns. Some state and federal partners are able to implement the practice on acreage within the confines of their jurisdiction, but it is very difficult for private landowners to overcome implementation obstacles. Other groups are seeking ways to overcome these obstacles with research being conducted by NC State University and project partners are hopeful that this issue can be resolved in the coming years.

Cost Evaluation of Term Contracts versus Permanent Easements is another unresolved issue that project partners were unable to fully evaluate under this project. For any program working with older growth ecosystems, the value of adding a "first right of refusal" clause to a term contract should be evaluated as an opportunity to continue the investment.

When the eastern North Carolina pilot project Market Based Conservation Initiative was implemented to test alternative tools to keeping lands in compatible uses under existing military training routes, a cost analysis was conducted. That study indicated that term limited conservation performance based contracts outperform conservation easements on a 5:1 basis. For example, if contracts were secured for \$20/acre/year, with three years of funding at \$2,000,000 per year, ~10,000 acres could be placed under contract for 30 years. During the same time, only 1923 acres could be secured using permanence conservation easements if the average cost per acre tracked with 2010 USDA Grasslands Reserve Program (\$3120/acre FY 2010; range \$1564 to \$4837) for Virginia, South Carolina, Tennessee, and North Carolina.

Evidence further suggests that term limited conservation performance based contracts serve as a gateway to longer term or permanent conservation. For example, the North Carolina Conservation Reserve Enhancement Program, a river buffer program, has witnessed a significant increase in both number of agreements and acres enrolled in permanent easements since its inception in 1999. As landowners have grown more familiar with the program, permanent easement enrollment has increased from less than 20% of the program enrollment to over 70%. The majority of the first 10-year agreement enrollees that decided to re-enroll opted for a permanent conservation easement.

Conservation Benchmarks were not determined during project evaluation. Before implementing a true program, greater analysis would be needed on threshold limits of allowing for destruction of isolated Longleaf Pine stands and the aggregation of restored Longleaf Pine stands. The overall species net benefit of habitat trading across the landscape would need to be determined.

Policy Review Conclusions

Project partners feel that an ecosystem crediting program is possible within the existing regulatory framework. The following guiding principles are recommended:

- All programs should be created through a stakeholder driven consensus building process with representative organizations that support habitat conservation, control existing habitat, or benefit from functioning ecosystems. Locally led conservation actions have a long tradition of effectively bringing together a community, state, or region to establish proactive environmental solutions to natural resource degradation.
- Framework future programs similar to the Working Lands for Wildlife Program where voluntary incentives are utilized, habitat practices benefit multiple species, and regulatory agencies allow habitat improvements to count towards delisting or preclude listing of species of concern.
- Regulatory certainty is key to private landowner participation in an ecosystem crediting program. The Certainty Program framework is a viable model to adopt, leading to certified program participation in a streamlined manner. Standardized practices will ensure that habitat improvements will be obtained. Program enrollment transparency allows for both private landowners and regulators to know that obligations are being met in a uniformed manner.
- Project partners support consideration of Present Use Value taxation and Voluntary Agriculture Districts enrollment for ecosystem credit program supply participants. Both tools provide an added layer of enforcement by providing enrollees additional benefits while also applying penalties for program noncompliance.
- Project partners support adaptive management processes to be incorporated into an ecosystem crediting program. As technologies advance and better science is established, a process allowing for future programmatic changes needs to be in place for the program to succeed.

Additional Information Sources

1. USDA Natural Resources Conservation Service. Working Lands For Wildlife. May 2012.
2. USDA Natural Resources Conservation Service. 2014 Progress Report Working Lands for Wildlife: Conservation Beyond Boundaries. April 2015
3. Todd Fearer and Hannah Ryan. 2014 Farm Bill Field Guide to Fish and Wildlife Conservation. North American Bird Conservation Initiative. 2015
4. Todd Gartner. “Candidate Species” Marketplace Can Help Protect Gopher Tortoise Habitat. WRI Insights. World Resources Institute. 2.13. 12
5. National Association of Conservation Districts. Certainty Programs for Landowners and Producers: An NACD Review of Four State Programs. 2012
6. USDA Natural Resources Conservation Service memo to State Conservation Directors. ECS – Water Quality Certainty. 9.6.12
7. National Association of Conservation Districts. Is A Water Quality Certainty Program In Your State’s Future? A primer to help you decide.
8. National Association of Conservation Districts. Ecosystem Services Markets Under Construction: Conservation Districts are on the Crew. 2013
9. Tamara Dickinson, Timothy Male, Ali Zaidi. Incorporating Natural Infrastructure and Ecosystem Services in Federal Decision – Making. The White House Memorandum. 10.7.15
10. Brandon King and Robert Bardon. Woodland Owner Notes: Protecting Working Forests with Voluntary Agriculture District Programs. NC Cooperative Extension. 2008.

Timothy Male. Less is More; Using critical habitat exclusions to encourage more wildlife conservation. Mission: Wildlife. 2014

Lydia Olander, Robert J. Johnston, Heather Tallis, Jimmy Kagan, Lynn Maguire, Steve Polasky, Dean Urban, James Boyd. Lisa Wainger, and Margaret Palmer. Best Practices for Integrating Ecosystem Services into Federal Decision Making. Durham: national Ecosystem Services Partnership, Duke University. 2015