

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

**Longleaf Pine Credit Demand Component
Component Report 4 of 6**

Damien Singh¹, Fred Cabbage¹, Michelle Lovejoy², Nils Peterson¹

¹North Carolina State University

²N C Foundation for Soil and Water Conservation

31 March 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.

Introduction

This USDA Conservation Innovation Grant (CIG) project was designed to examine “Market Based Conservation Initiative for Longleaf Pine Habitat Improvements in Eastern North Carolina.” This report is a summary of that project with the component of assessing the possible demand for conservation credits to support Longleaf pine habitat. To draw on the proposal this report examines potential credit purchasers and their motivations.

Environmental credit markets can only function if there is sufficient demand from public and private sector actors who seek to offset environmental damages, fulfill program mandates, achieve investment returns or conduct positive public relations activities. Therefore, a survey was conducted of government agencies, non-profit organizations (NPOs), cooperatives, private companies, developers, utilities and credit certification systems to observe how they engage in environmental issues, regulations and other credit markets and whether they anticipate needing credits (including those to promote Longleaf pine habitat) in the future. Our results suggest prospective buyers are impacted by environmental regulations and familiar with and/or participate in credit markets. In addition, an ability to monitor and enforce credits and their standards are important to prospective buyers.

Methods

The survey consisted of 18 questions (17 open ended and one multiple choice) designed to elicit information on the participant’s previous, current and prospective knowledge, participation and engagement with land management regulations/requirements, certifications and credit programs as they relate to wetlands, endangered species, water pollution and other environmental issues. Approximately 50 public and private sector entities were notified of the survey by three emails (one initial and two follow up). The survey was administered online by surveymonkey.com and remained open between September 14, 2015 and December 21, 2015. Of those contacted, seven government agencies, two NPOs, one agricultural cooperative and two private companies from around the United States completed the survey.

Responses were collected, analyzed and reported here in narrative format due to the open-ended nature of the questions. The results section provides each question along with a description of survey participant responses.

Results

Would you classify your organization as a: (a) government agency (b) non-profit organization (c) real estate developer (d) investment firm (e) consulting firm (f) private company/corporation and/or (g) other (please specify).

Of those who participated in the survey, seven were from government agencies, two from NPOs, two from private companies and one from an agricultural cooperative.

Do you perform or fund land management practices that are limited by wetlands, endangered species, water pollution, or other environmental regulations? If so, what are those land management practices and their requirements?

Six out of the seven government agencies that participated in the survey performed and/or funded land management practices that were limited by wetlands, endangered species, water pollution or other environmental regulations. While three reported being impacted by the Endangered Species Act (ESA), each agency appears to be affected by different regulations that include the Clean Water Act (CWA), NC Prescribed Burning Act and California Environmental Quality Act.

Four agencies specified involvement with conducting forest and/or water management activities, including abiding by forest practice guidelines for harvesting timber, mid-rotation forest management, repairing or removing roads on nonfederal forestlands that deliver sediment to streams with listed salmonid species, improving in-stream habitat for salmonid species (placement of large logs or root wads in streams), thinning forest stands to reduce fire, reducing insect and disease susceptibility, increasing climate change resilience, increasing growth of retained trees, improving reforestation of fire damaged or understocked areas, providing stream bank stabilization using natural channel design principles, and providing wetland restoration and wetland habitat enhancement. Such activities have received various state and federal funding from cost-share programs such as Forest Development Program (FDP), Southern Pine Beetle Prevention Program (SPBPP) and various others from the California (CA) Department of Fish and Wildlife, CA Department of Forestry and Fire Protection and CA State Water Board.

One agency specified that in addressing impacts associated with streams and wetlands, the program was limited to in-kind mitigation per federal agency requirements and this has restricted the program's ability to implement practices.

The agricultural cooperative performed land management practices that were limited by environmental regulations. One NPO indicated they acquired land for conservation agencies and managed that land until it was transferred to an appropriate agency. One private company financed land clearing and construction activities that were limited by wetland requirements and the other performed all aspects of forest management activities including harvesting, site preparation, and fertilization. The agricultural cooperative, NPOs and private companies did not specify which environmental regulations affected them.

Do you currently have any "green" certification or sustainability ranking programs that you participate in or require for your loans and investments? If so, what are those programs?

Of those who indicated participating in any green certification or sustainability ranking programs, one government agency identified the Forest Stewardship Program (FSP) and American Tree Farm System (ATFS), two NPOs indicated Sustainable Forestry Initiative (SFI) and Forest Stewardship Council (FSC) and one private company indicated SFI. One of the non-profits helps develop SFI forest certification guidelines.

Do any environmental regulations or constraints require permits for your management or development actions? If so, please explain.

Six government agencies that responded were affected by varying regulations/constraints. These include permits for wetlands, sediment and erosion control, CWA (including section 401/404), open burning and streambed and lake alteration. In addition, they conducted hydrology studies for Flood Insurance Flood Map (FIRM) map revisions, Endangered Species Act (ESA) consultations and surveys, and silvicultural exemption under CWA Section 404(f). The agricultural cooperative stated environmental regulations constrained their lending practices, particularly regarding poultry and livestock, but did not specify which ones. Finally, the private companies indicated having a general permit for herbicide applications and that for those projects funded by the Farm Bill Programs and the Farm Service Agency (FSA), wetland issues could be a deal breaker.

Are you familiar with wetlands banking?

All government agencies, one NPO and both private companies indicated being familiar with wetland banking. One government agency purchased credits from existing wetland banks and one NPO operated a number of mitigation banks across the US (but none in North Carolina).

Are you familiar with conservation credit systems?

Six government agencies, one NPO, one private company and the agricultural cooperative were familiar (three indicated somewhat familiar) with conservation credit systems.

Do you currently buy, sell or require any wetland bank or conservation credits?

Three government agencies and one private company bought, sold and/or required wetland bank or conservation credits during the study. One government agency and the one private company sold wetland bank credits.

Do you anticipate a need to buy, sell, or require any wetland bank or conservation credits?

Two government agencies and one NPO anticipated a need to buy, sell or require wetland or conservation credits. The NPO mentioned that North Carolina has a relatively mature mitigation market with a number of successful private bankers already participating. In addition, the NPO stated that the General Assembly continues to consider policies that weaken state protections of wetlands, streams and riparian buffers, and thus makes future investments uncertain and risky.

Do you anticipate a need to purchase endangered species credits?

One government agency foresaw a future need/benefit for purchasing endangered species credits (though not within its existing programs) while another indicated it uses its existing programs to accomplish this need. While both NPOs indicated no, one was interested in developing species banks.

Do you anticipate a need to purchase water pollution credits?

Nearly every participant indicated that they do not anticipate a need to purchase water pollution credits. One government agency said “potentially” and one NPO mentioned that while nutrient trading was a good idea, regulatory uncertainty and high nutrient caps make it difficult and risky.

Do you anticipate a need to purchase other conservation credits? If so, please specify.

Every participant responded that they did not anticipate a need to purchase other conservation credits (one government agency responded “not at this time” and another “not beyond those mentioned above”).

What sort of land tenure terms (contracts vs. easements) and lengths (10, 15, 20, 30 years to permanent) arrangements would you participate in?

Five government agencies participated in land conservation programs, three of which used permanent/perpetual easements and two of which used 10-year contracts. The programs specifically cited were Forest Legacy, FDP, California Forest Improvement Program and Fire Protection. One agency supported efforts to keep lands in uses that were compatible with the state’s military presence and mission. This agency did not own land but funded conservation land treatment and easement projects that could be credit worthy. One NPO expressed interest in permanent over term easements as they viewed the latter as too expensive (the other NPO does not own or manage land). One of the private companies indicated a length of 10-years while the other stated that they had two permanent conservation easements, but would be much more likely to participate in term easements.

Would various certification systems and products be an attractive part of the conservation credit package? If so, which systems or products?

Two government agencies indicated certification systems and products would be an attractive part of the conservation credit package. They expressed interest in mitigation activities, bundling/stacking compliance-grade credits, the need for a robust tracking system to ensure

credits are functioning as intended and implementing checks and balances to ensure standards are met. One NPO would require land trust alliance standards and practices. Another NPO suggested SFI because it has a standing mechanism for tracking and verification and has been tested in the marketplace and for actions on the ground (they went on to state that conservation credit assurances could reach further, but SFI certification could provide fundamental verification of certain conservation and sustainability actions).

What kind of "certainty" requirements would you require to participate in prospective conservation credit programs? For example, these can include no new regulations after enrollment (no green creep); safe harbor/habitat conservation plan protections; exemptions from future administrative changes; hold harmless clauses; and/or payment guarantees despite budget cuts.

Only one government agency indicated a specific requirement. It expressed a need for assurance that alternative conservation credit methods could be applied for stream and wetland functional impacts and an up-front multi-agency agreement as to the number of conservation credits that could be applied for an identified impact. Two other agencies mentioned that, while they do not participate in credit purchases, certainty and assurances are helpful and "no green creep" or safe harbor protections will become increasingly difficult to sustain in California given both political and dynamic biophysical realities. One NPO stated certainty is critical when analyzing risk and financing. The other NPO stated third party verification, as employed by forest certification programs, would go a long way toward such assurances and that continued evolution of program requirements, done systematically and periodically, would ensure conservation actions keep pace with current knowledge and understanding.

Would you be interested purchasing conservation credits that managed Longleaf pine on private lands in North Carolina for wildlife habitat?

Every survey participant indicated they would not be interested in purchasing conservation credits that managed Longleaf pine on private lands in North Carolina for wildlife habitat. One government agency expressed interest in helping to facilitate/support its market development and one NPO showed interest in selling conservation credits.

Are there any specific outcomes or land management practices you would prefer to have included in a conservation credit for Longleaf pine and wildlife habitat management? If so, please explain.

One government agency identified native ecosystem restoration (including habitat functions) as a specific outcome or land management practice to include for Longleaf pine and wildlife habitat management. Another agency provided more detail and recommended prescribed burning every 3-5 years, the majority of credits be given to areas already providing good habitat or areas that can more easily and quickly be improved to provide good habitat (restoring existing mixed pine stands with a Longleaf component rather than establishing new plantations, especially plantations on old agricultural fields) and restrictions on the frequency of pine straw harvest (if allowed).

One NPO indicated SFI and FSC certification would help program development and the other stated it would be good to ensure the ability of land managers to manage for a variety of products and recognize the value of long-rotations in Longleaf for both economic and conservation reasons (it went on to say that various species associated with Longleaf are well-known and should be accounted for and that "embedded" microhabitats, such as pitcher-plant bogs, should be protected). One private company expressed concern that the emphasis on Longleaf detracts from the enormous potential for managing existing loblolly stands in an open stand condition with a fire regime as it creates the understory conditions that the majority of the endangered species need.

Do you have concerns, criticisms, or reservations about conservation credit systems and their liability? If so, please explain.

Two government agencies expressed concern, one regarding the length of time (60 or more years) it takes for Longleaf pine ecosystems to mature and become viable habitat for certain species and the other the need to ensure proper organizational structures and oversight to ensure integrity of the system—which while not specified, could refer to both biological and administrative structures. One of the NPOs believed we're missing opportunities to engage private landowners and private capital in conserving working lands and conservation lands.

Longleaf Pine ecosystems provide habitat for several endangered species including the Red Cockaded Woodpecker (RCW). If you anticipate needing to purchase RCW credits, approximately how many would you demand per each price listed below: \$10,000, \$25,000, \$50,000, \$75,000, \$ 100,000, \$125,000, \$150,000, \$175,000, \$200,000, \$225,000, \$250,000, \$275,000 and \$300,000.

None of the survey participants answered this question.

Discussion and Conclusions

Our survey obtained a considerable amount of information about the prospects for Longleaf credit demand programs. We had a small sample of 12 respondents, but received thorough and conscientious answers. All the respondents were familiar with and engaged in some current conservation credit programs – wetlands, water, endangered species, or other ecosystem goods. To date, there was little perceived need for an expanded Longleaf Pine Conservation Credit program. The larger population of all private companies and government organizations may have more current interest, but we could not ascertain that from our sample.

Environmental credit markets will only function if there is sufficient demand from public and private sector actors. This analysis assessed demand as it related to supporting Longleaf pine habitat by looking at how agencies, organizations, companies and cooperatives understood and engaged in environmental issues, regulations and other credit markets. We sent the survey to a wide range of entities. Those that participated were largely government agencies so the sample does not reflect many private organizations that might buy credits at some point in the future. Nonetheless, we received many useful and insightful responses, which do a good job of capturing the key issues and opportunities for Longleaf pine system restoration.

The survey results suggest nearly every participant is affected and/or limited to some degree by environmental regulations ranging from the national level (ESA and CWA) to more local policies (for instance, NC Prescribed Burning Act) that often require permits, studies and/or consultations to ensure proper management and development actions. The analysis also indicates environmental credit markets are fairly well understood and used moderately. While survey participants did not express interest in purchasing credits to promote Longleaf pine habitat yet, this may be due to the dominance of government agencies among the respondents, which would be more likely to be helping develop and administer programs, not actually market participants.

In addition, wetland bank, conservation and species credit markets are driven by mostly by regulatory requirements, which do not exist specifically for Longleaf pine habitat. However, the substantial requirements for threatened and endangered species protection have created markets for ESA species and habitats, such as many discussed in other sections of our report. The California Air Resources Board (CARB) credits follow a similar pattern of the state regulatory law prompting a national market for carbon credits. If such requirements existed for Longleaf pine habitat demand would presumably increase.

In addition to regulatory mandates, voluntary credit markets also could be developed in anticipation of future regulatory requirements, or used for corporate social responsibility (CSR) and good will efforts by companies. By setting aside critical habitat, or purchasing credits on other private lands, public or private organizations could demonstrate their commitment to environmental quality and biodiversity. For example, the American Forests Global ReLeaf program has many voluntary corporate sponsors seeking to support planting forests and environmental benefits throughout the world. One of their recent 2016 projects even includes restoring Longleaf pine on Tyndall Air Force base (see <http://www.americanforests.org/blog/restoring-the-Longleaf-pine-on-tyndall-air-force-base/>).

Our survey also provides insight into how a Longleaf pine habitat credit market could be designed. An ability to track, monitor and enforce credits and their standards was important to prospective buyers. Certification systems such as SFI and FSC can help provide a solution given their popularity and strong framework. Interestingly, preference for land tenure terms and lengths appeared varied with roughly an equal amount taking part in temporary and permanent contracts/easements. Certainty requirements may also be a useful tool as they provide needed assurances that landowners who supply credits do not become subject to increasing regulations over time.

One survey respondent did note the political support to regulate environmental goods and services is more limited in North Carolina, and there are some limits to the amount of scarce land available. Nonetheless, national ESA mandates for listing and protecting endangered species are increasing substantially. For example, a recent ESA federal court settlement has required the Fish and Wildlife Service to consider whether to list about 1700 species in the U.S., which could increase regulatory demand dramatically. Requirements to protect the gopher tortoise and the Red cockaded woodpecker already have prompted substantial regulatory desire for military lands to protect those species, and private land development also could be affected in the future.

Voluntary credit market systems for forest carbon or tree planting, or broad conservation program initiatives, including the farm Bill, North Carolina Forest Development Program, will continue to offer considerable opportunities for providing funds for the demand for Longleaf Pine restoration and maintenance, as they have in the last decade.

Overall, we would conclude that Longleaf Pine Conservation Credit Demand in North Carolina is still in a nascent state. Military and National Forest lands already protect RCWs and establish and manage Longleaf habitat, as does the North Carolina Forest Service and North Carolina Wildlife Resources Commission. The previous report on Longleaf supply indicated that for reasonable subsidy prices, Longleaf pine could be economically attractive for private forest landowners. The voluntary Farm Bill programs for Longleaf and the North Carolina Forest Development Program Longleaf programs also have usually been fully subscribed, spending all the funds available for the Longleaf components.

The Supply report also indicated that while land may appear scarce, there are millions of acres of suitable forest and farm lands that could enroll in providing supply. It does not appear that more state level regulations to force Longleaf conservation are likely, but federal mandatory offsets are still quite possible. These interacting demand and supply factors will probably continue to prompt a slow expansion in Longleaf pine establishment and restoration in North Carolina rather than a quantum leap that might be prompted by a regulatory program such as the Non Net Loss of Wetlands policy created in 1990.