United States Department of Agriculture

NRCS Natural Resources Conservation Service

Healthy Forest Reserve Program
Interim Final Rule
Environmental Assessment

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BACKGROUND

I. Introduction

The Natural Resources Conservation Service (NRCS) is promulgating an interim final rule to implement the Healthy Forest Reserve Program (HFRP), authorized by the Healthy Forest Restoration Act of 2003 (2003 Healthy Forest Act) (Pub. L. 108-148, 117 Stat. 1877 (December 3, 2003)). The National Environmental Policy Act of 1969 (NEPA) requires that Federal agencies prepare Environmental Impact Statements (EIS's) for major federal actions significantly affecting the quality of the human environment. In addition, the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 CFR Parts 1500-1508) require Federal agencies to prepare Environmental Assessments (EA's) to assist them in determining whether they need to prepare an EIS for actions that have not been categorically excluded from NEPA. The CEQ has defined "major federal action" to include activities over which Federal agencies have control, including promulgation of regulations in which they exercise discretion.

NRCS regulations implementing the provisions of NEPA state that an EIS is normally required for "broad Federal assistance programs administered by NRCS when the environmental evaluation indicates there may be significant cumulative impacts on the human environment." (7 CFR 650.7 (a)(3).) The environmental evaluation indicates that, when focusing on the significant adverse impacts that NEPA is intended to help decision makers avoid, minimize and mitigate, it is unlikely there will be significant cumulative impacts on the quality of the human environment because of implementing the HFRP. However, NRCS has developed this EA to review the effects of the proposed program and to assist in determining whether implementing the HFRP will significantly affect the quality of the human environment such that NRCS must prepare an EIS.

The proposed action under consideration here involves rulemaking, and no site-specific or ground-disturbing actions will occur as an immediate result of implementing the proposal. Additional environmental review at subsequent stages of program implementation will be undertaken consistent with NEPA requirements and NRCS regulations.

II. HFRP Statutory Requirements

The HFRP is a voluntary program which the Secretary of Agriculture is to carry out in coordination with the Secretaries of Interior and Commerce, the purpose of which is to restore and enhance private forest ecosystems to

- promote the recovery of threatened and endangered species;
- improve biodiversity; and
- enhance carbon sequestration.

The only private forest land eligible for enrollment in the HFRP is that which will restore, enhance or otherwise measurably

- increase the likelihood of recovery of a species listed as endangered or threatened under section 4 of the Endangered Species Act of 1973 (ESA); or
- improve the well-being of species that are not listed as endangered or threatened under section 4 of the ESA but are
    - candidates for listing under section 4 of the ESA,
    - State-listed species, or
    - special concern species.

Moreover, the legislation establishes specific priorities for enrollment. The highest priority is to enroll land that provides the greatest conservation benefit to species listed as endangered or threatened under section 4 of the ESA, and the next priority is to enroll land that provides the greatest conservation benefit to species that are candidates for listing under section 4 of the ESA, State-listed species, or special concern species. However, the Secretary is also required to consider the cost-effectiveness of each agreement or easement, and associated restoration plans, so as to maximize the environmental benefits per dollar expended. In addition, if the land meets the basic eligibility criteria, the Secretary of Agriculture is also directed to give additional consideration to land which will improve biological diversity; and increase carbon sequestration.

There are three enrollment options available, and land will be enrolled in each according to the approximate proportion of landowner interest shown in each enrollment method. Land may be enrolled in HFRP through 10-year cost-share agreements; 30-year easements; or 99-year easements. A maximum of 2 million acres may be enrolled in the program nationwide, regardless of the length of enrollment.

A habitat restoration plan is required for all land enrolled in the HFRP. The plan is developed jointly by the landowner and the Secretary of Agriculture or its designee, in coordination with the Secretaries of Interior and Commerce. The restoration plan must include any restoration practices or measures necessary to protect, restore and enhance habitat for species listed as endangered or threatened under section 4 of the ESA and animal or plant species that are candidate, State-listed species, and special concern species.

Landowners who enroll their private forest land in a HFRP easement of not more than 99 years will receive two types of payments—one for the easement itself, and another for a share of the cost to implement conservation practices. The payment for the easement will be for a minimum of 75 percent, and no more than 100 percent of: the fair market value of the enrolled land during the period the land is subject to the easement, less the fair market value of the land encumbered by the easement. The cost-share payment will be for a minimum of 75 percent, and no more than 100 percent, of the actual costs of the approved conservation practices and measures, or the average cost of approved practices/measures carried out on the land during the period in which the land is subject to the easement.

Landowners who enroll their private forest land in HFRP under a 30-year easement will also receive these two types of payments. However, the payment for the easement may not exceed 75 percent of: the fair market value of the land, less the fair market value of the land encumbered by

the easement. The cost-share payment for implementing conservation practices and measures under a 30-year easement may not exceed 75 percent of the actual costs of the approved conservation practices/measures or 75 percent of the average cost of approved practices/measures, as determined by NRCS.

Landowners who enroll private forest land in a HFRP ten-year agreement will receive cost-share payments only, and the cost-share may not exceed 50 percent of the actual costs of the approved conservation practices or measures, or 50 percent of the average cost of approved practices/measures, as determined by NRCS.

The provisions of the HFRP also allow the Secretary of Agriculture to accept and use contributions of non-Federal funds to make HFRP payments.

Landowners enrolled in the HFRP are also entitled to receive technical assistance to assist them in complying with the terms of the plans that are incorporated in their HFRP agreements or easements. In addition, the Secretary of Agriculture may use the services of certified technical service providers to develop and implement the HFRP.

When conservation activities on land enrolled in the HFRP result in a net conservation benefit for listed, candidate, or other species, the legislation provides that the landowner will receive safe harbor or similar assurances and protection under ESA section 7 or section 10(a)(1). If additional necessary measures are identified after the HFRP restoration plan has been agreed to, the landowner may also receive HFRP cost-share assistance to implement those practices.

In carrying out HFRP, the legislation states that the Secretary of Agriculture may consult with

- non-industrial private forest landowners;
- other Federal agencies;
- State fish and wildlife agencies;
- State forestry agencies;
- State environmental quality agencies;
- other State conservation agencies; and
- non-profit conservation organizations.

NEED FOR ACTION

The need for which NRCS is responding by proposing action is the need to implement the HFRP as authorized and in a manner that efficiently and effectively achieves the purposes for which Congress established the program, including:

- restoring and enhancing forest ecosystems to promote the recovery of threatened and endangered species;
- improving biodiversity; and
- enhancing carbon sequestration.

All fish and wildlife species do not use forest ecosystems in the same way, for the same purpose, or at the same time. They may have different space or home range requirements, and may use forest ecosystems at different life stages or to meet different life requisites. In addition, the U.S. has a wide variety of forest ecosystem types, and the environmental and social concerns associated with those systems vary. There are also many different types of State, Tribal and local conservation programs available that may be used to further the efficient and effective implementation of the HFRP. Thus, NRCS State Conservationists must have flexibility to determine how best to implement HFRP within each State so the program achieves its purposes.

ALTERNATIVES

Alternative 1, "No Action"

Under the No Action alternative, the HFRP would not be implemented. This alternative is analyzed, in part, to provide a baseline against which the effects of the proposed action and other alternatives can be compared.

Alternative 2, "Proposed Action"

Under the proposed action, NRCS proposes to purchase conservation easements from, or enter into restoration cost-share agreements with, eligible landowners who voluntarily cooperate in the restoration and protection of forestlands and associated lands. To participate in HFRP, a landowner must agree to implement a Healthy Forests Restoration Plan, the effect of which is to restore, protect, enhance, maintain, and manage the habitat conditions necessary to increase the likelihood of recovery of listed species under the Endangered Species Act (ESA), or measurably improve the well-being of species that are not listed as endangered or threatened under the ESA but are candidates for such listing, or are State-listed species, or special concern species. NRCS may provide cost-share assistance for the activities that promote the restoration, protection, enhancement, maintenance, and management of forestland functions and values.

The NRCS states in its interim final rule that it will coordinate with the Fish and Wildlife Service and the National Marine Fisheries Service in implementing the HFRP and in establishing program policies. In addition, the rule states that the State Conservationist will consult with the State Technical Committee and other partners on the development of the rates of compensation for an easement, a priority ranking process, and related policy matters, and that NRCS may consult with the Forest Service, other Federal and State agencies, conservation districts or other organizations in program administration. Because the terms "consultation" and "coordination" have different meanings depending on the context in which they are used, NRCS has defined these terms in its interim final rule so their meaning will be clear when used in the context of the HFRP.

- "Consultation" or "consult with" means to talk things over for the purpose of providing information; to offer an opinion for consideration; to meet for discussion or to confer; and
- Coordination means to obtain input and involvement from others while reserving final decision-making authority with NRCS.

NRCS makes it clear in the rule that no determination by the FWS, the NMFS, the Forest Service, a Federal or State agency, conservation district, or other organization will compel the NRCS to take any action which the NRCS determines will not serve HFRP purposes.
The Chief, NRCS, may implement HFRP in any of the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, Guam, the Virgin Islands of the United States, American Samoa, the Commonwealth of the Northern Mariana Islands, and the Trust Territories of the Pacific Islands, depending on the availability of funds and the program priorities. The Chief may also modify or waive provisions of the program that are not required by law if the Chief deems the application of that provision to a limited situation to be inappropriate and inconsistent with the environmental and cost-efficiency goals of the HFRP. This authority will not be further delegated.

The NRCS may enter into cooperative agreements with Federal or State agencies, conservation districts, and private conservation organizations to assist the NRCS with educational efforts, easement management and monitoring, outreach efforts, and program implementation assistance.

Application Process

To implement the HFRP, NRCS will announce certain periods during which applications may be submitted. During those times, forestland owners may submit an Application for Participation in the HFRP. By filing an Application for Participation, the landowner is agreeing to provide information NRCS requests in order to make eligibility determinations and otherwise implement the program. The landowner is also giving their consent to allow an NRCS representative to enter upon their land to determine land eligibility, and conduct other activities related to NRCS making offers of enrollment. The landowner is entitled to accompany an NRCS representative on any site visits.

Eligibility Review

NRCS will determine whether the land is eligible for enrollment and whether the lands may be included in the program based on the likelihood of successful restoration and protection of forest ecosystem functions and values when considering the cost of acquiring the easement and restoration, protection, enhancement, maintenance, and management costs. The land will only be considered eligible for enrollment in the HFRP if NRCS determines, in coordination with FWS and NMFS, that the private land will restore, enhance, or otherwise measurably increase the likelihood of recovery of a species listed species under Section 4 of the ESA, or it will restore, enhance, or otherwise measurably improve the well-being of species that are candidates for listing under Section 4 of the ESA, or which are State-listed species, or special concern species. Eligible land may include the following:

- Riparian areas along streams or other waterways;
- Wetlands, including former and degraded wetland area that will be substantially restored; and
- Land adjacent to the restored forestland which would contribute significantly to the practical administration of the easement area, but not more than the State Conservationist, in consultation with the State Technical Committee, determines is necessary for such contribution;

The following land is not eligible for enrollment in the HFRP:

- Lands owned by a governmental entity;
- Land already subject to an easement or deed restriction that already provides for the protection of wildlife habitat and,
- Lands where implementation of restoration practices would be impracticable due to on-site or off-site conditions.

Ranking Process

After reviewing the applications to ensure basic eligibility requirements are met, NRCS or its designee in coordination with FWS and NMFS, and with input from the State Technical Committee, will rank applications to enroll eligible land based on:

- Estimated conservation benefit to listed species under Section 4 of the ESA;
- Estimated conservation benefit to species not listed as endangered or threatened under Section 4 of the ESA but are candidates for such listing, State-listed species, or special concern species as identified by NRCS;
- Estimated improvement of biological diversity, if enrolled;
- Potential for increased capability of carbon sequestration, if enrolled;
- Availability of contribution of non-Federal funds;
- Significance of forest ecosystem functions and values; and
- Cost-effectiveness of the agreement or easement, and associated restoration plan.

However, the Chief may also choose to allocate HFRP funds for purposes related to cooperative agreements with other Federal or State agencies for program implementation; coordination of easement enrollment across State boundaries; coordination of the development of HFRP restoration plans; or, for other goals of the HFRP. In addition, NRCS may designate areas as priority forest ecosystem areas where environmental concerns are especially pronounced and to assist landowners in meeting species recovery goals and other conservation needs. NRCS may also place enrollment priority on certain regional forest ecosystems where restoration of forestland may better achieve NRCS State and regional goals and objectives.

If, to achieve program objectives, it is necessary to encompass total areas of land that are owned by multiple parties, or it is otherwise necessary to include particular tracts of private forestland, the State Conservationist may enroll eligible lands at any time. Similarly, the State Conservationist may exclude otherwise eligible lands if the participation of the adjacent landowners is essential to the successful restoration of the forest ecosystem and those adjacent landowners are unwilling to participate.

If available funds are insufficient to accept the highest ranked application, and the applicant is not interested in reducing the acres offered to match available funding, USDA may select a lower ranked application that can be fully funded. Applicants may choose to change the duration of the easement or agreement or reduce acreage amount offered if the application ranking score is not reduced below that of the score of the next available application on the ranking list.

Enrollment Process

Based on the priority ranking, NRCS or its designee will notify the landowners that were tentatively accepted into the program. This offer of tentative acceptance does not bind NRCS or the United States to acquire an easement, nor does it bind the landowner to convey an easement or agree to HFRP restoration plan activities. The landowner will have 15 calendar days to sign a letter of intent to continue. When NRCS receives this executed letter of intent to continue, NRCS will present to the landowner an option agreement to purchase. This option agreement will describe the easement area, the easement terms and conditions, and other requirements for participation. After the option agreement to purchase is executed by NRCS and the landowner, NRCS will proceed with the remaining activities necessary for NRCS to purchase an easement, if applicable, and to implement the HFRP restoration plan.

Until the time an easement is executed by NRCS and the landowner and recorded, NRCS may withdraw its offer anytime due to unavailability of funds, inability to clear title, or for other reasons. In addition, the offer to the landowner will be void if it has not been executed by the landowner within the time specified.

By executing the easement, the landowner will be agreeing that

- The landowner will cooperate in the restoration, protection, enhancement, maintenance, and management of the land in accordance with the easement and with the terms of the HFRP restoration plan;
- NRCS will have:
    - A right of access to the easement area;
    - The right to permit compatible uses of the easement area, including such activities as hunting and fishing, managed timber harvest, or periodic haying or grazing, if such use is consistent with the long-term protection and enhancement of the purposes for which the easement was established;
    - The right to specify the amount, method, timing, intensity and duration of the compatible use;
    - The rights, title and interest to the easement area as specified in the conservation easement deed; and
    - The right to perform restoration, protection, enhancement, maintenance, and management activities on the easement area.

The landowner will have the option to enter into an agreement with governmental or private organizations to assist in carrying out any landowner responsibilities on the easement area.

Payments

The actual easement payment that NRCS offers may or may not equal the fair market value of the interests and rights to be conveyed by the landowner under the easement. However, NRCS will not acquire any easement unless the landowner accepts the amount of the easement payment which is offered by NRCS, and by voluntarily participating in the program, a landowner waives any claim to additional compensation based on fair market value. In addition to payment for the easement itself, after conveyance of the easement is completed, NRCS will reimburse landowners for fair and reasonable expenses they incur for surveying and related costs, if any,

though the State Conservationist, with advice of the State Technical Committee, may establish maximum reimbursement payments. Annual easement payments may be made in no more than 10 annual payments of equal or unequal size, as agreed to between NRCS and the landowner.

In addition to payments for the easements themselves, NRCS may share the cost with landowners of restoring the enrolled land as provided in the HFRP restoration plan. The HFRP restoration plan may include periodic manipulation to maximize wildlife habitat and preserve forest ecosystem functions and values over time and measures that are needed to provide the landowner safe harbor or similar assurances and protections under Section 7(b)(4) or Section 10(a)(1) of the ESA, including the cost of any permit. This cost-share assistance will be based on a percentage of the actual cost of approved conservation practices or the average cost of approved practices. For land that is enrolled subject to:

- an easement of not more than 99 years, NRCS will offer to pay from 75 to 100 percent of the costs;
- a 30-year easement, NRCS will offer to pay not more than 75 percent of the costs; and
- a restoration cost-share agreement without an associated easement, NRCS will offer to pay not more than 50 percent of such costs.

The only payment, for which landowners are eligible when they enroll land in the HFRP under a 10-year restoration cost-share agreement, is the cost-share payment. Any enrolled landowner may seek additional cost-share assistance from other public or private organizations as long as the landowner does not receive an amount which exceeds 100 percent of the total actual cost of the restoration.

Cost-share payments may be made only when NRCS has determined that an eligible practice has been established in compliance with appropriate standards and specifications. Cost-share payments may be made for additional eligible practices, or the maintenance or replacement of an eligible practice, if NRCS determines they are needed to meet the objectives of the HFRP, and the failure of the original practices was due to reasons beyond the control of the landowner.

NRCS may accept and use contributions of non-Federal funds to make HFRP easement or cost-share payments.

HFRP Restoration Plan

In its interim final rule, NRCS has defined "restoration" to mean "implementing any conservation practice (vegetative, management, or structural) that improves the values and functions of forestland (native and natural plant communities)." The "restoration cost-share agreement" is defined as an "agreement between the program participant and NRCS to restore, enhance, and protect the functions and values of forestland."

The foundation of the restoration cost-share agreement is the HFRP restoration plan. It will be developed through an NRCS representative, in consultation with the program participant with coordination of input from the FWS and NMFS, where applicable. The plan will specify the manner in which the enrolled land is to be restored, protected, enhanced, maintained, and managed to accomplish the goals of the program. Eligible restoration practices include land

management, vegetative, and structural practices and measures that will improve habitat conditions for listed species, candidate, State-listed, and other species of concern. The NRCS State Conservationist, in coordination with FWS and NMFS, will determine the conservation practices, measures, payment rates, and cost-share percentages (within statutory limits) that will be available for restoration activities. A list of eligible practices will be available to the public. The specific restoration, protection, enhancement, maintenance, and management activities may be undertaken by the landowner or other NRCS designee.

Safe Harbor Assurances may be made available to landowners enrolled in the HFRP who agree, for a specified period, to restore or improve their land for listed species. These assurances operate with lands enrolled in the HFRP and are valid for as long as the landowner is in compliance with the terms and conditions of such assurances, and any associated permit, the easement, and the restoration cost-share agreement. If the Safe Harbor Assurances, or any associated permit, require the adoption of a practice or measure in addition to the practices and measures identified in the applicable HFRP restoration plan, NRCS and the landowner may incorporate the practice or measure into the HFRP restoration plan as an item eligible for cost-share assistance. These additional measures shall be designed to ensure biodiversity and wildlife benefits, while ensuring protection of the soil and water resources.

The State Conservationist, with input from the landowner and coordination with FWS and NMFS, may approve additional subsequent modifications to the HFRP restoration plan if the modifications are consistent with the easement and applicable law, and do not modify or void provisions of the easement or Safe Harbor Assurances. Any HFRP restoration plan modification must meet HFRP program objectives, and must result in equal or greater wildlife benefits and ecological and economic values to the United States. Modifications to the HFRP restoration plan which are substantial and affect provisions of the easement or Safe Harbor Assurances will require agreement from the landowner, FWS, NFMS, and may require execution of an amended easement and modification to the protections afforded by the Safe Harbor Assurances.

Failure to perform planned management activities can result in violation of the easement, restoration agreement, or the agreement under which safe harbor assurances have been provided. NRCS will work with HFRP participants to plan appropriate management activities.

IMPACTS

Introduction

Forests provide a multitude of ecological benefits. A majority of fresh water in the United States originates in forested areas. Forests slow floodwaters and other water runoff. At the same time, forests filter surface water and allow it to percolate and refill underground aquifers. Forests produce oxygen and absorb carbon dioxide, a major greenhouse gas. Forest soil is rich in the microbes, insects, and fungi that are essential to recycling organic matter. Many animals and birds make the forest their home or use it to meet one or more life requisites.[1]

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[1] Life requisites include food, water, cover (shelter), and reproductive habitat.

In the past, fire was a normal part of the forest ecosystem. Some forests evolved with fire and require fire to keep the ecosystem in its successional stage, or to allow the spread of seeds, as is the case for some trees, such as Jack pines or lodgepole pines. In addition, when trees become too crowded, as can occur when fires are suppressed, there may be an increase in pests and disease, and the quality of wildlife habitat used by forest species may be reduced. This is particularly true for species that require a mosaic of landscape patches that include some limited open areas, some aged trees and some early successional habitat. The existence of such mosaics within a large contiguous forest tends to increase the biodiversity and health of a forest.

Now, fire is often suppressed in order to protect development that is in close proximity, or even within, forests. However, because fire is a normal part of a healthy forest ecosystem, more hazardous fire conditions may be created without fire. "An effective fire-suppression program can allow accumulation of vast amounts of detritus (dead organic material such as leaves, branches, and stems). If this material is not consumed periodically by small fires burning along the forest floor, it will accumulate to the point of providing raw materials for an exceptionally intense fire that can burn tree crowns and destroy the existing forest."[2] However, both increases and decreases in fire frequency can alter an existing ecosystem. Fewer fires "can lead to invasion by fire-intolerant species and eventual loss of the original ecosystem…. In other systems, an increase in fire frequency can also lead to changes in ecosystem structure and function." [3]

There are 747 million acres of forestland in the U.S., representing approximately 32 percent of all U.S. land. Private forestland makes up almost 400 million acres of all the forested land in the United States, Puerto Rico, and the Pacific Basin. Federal, State, Tribal and other governmental entities own the balance of the U.S. forestland. Appendix A shows the number of acres of private forestland in each State, as well as the number of owners, in 1976 and 1994. Appendix B shows the percent of non-federal area in forest land.

As the information in Appendix A shows, the total number of private forestland acres increased from 1976 to 1994. However, the large contiguous areas of forest that existed before settlement are becoming increasingly fragmented by roads, development, intensive forest harvesting, and agriculture. Studies also show that there are increasing numbers of private forestland owners and that the parcels they own are becoming smaller as large and medium size forest tracts are being subdivided into smaller parcels. Nationwide in 1976, nearly 7.8 million private individuals and entities owned an average of 43 acres each; in 1994, nearly 10 million individuals and entities owned an average of 40 acres each. This pattern makes it more difficult to maintain the continuity of forest ecosystems and can be a factor contributing to fragmentation of forest habitat.

Table 1 shows the ownership units in 1993, by size class and form of ownership, and Table 2 shows the number of acres of forestland at that time, by size class and form of ownership. This information indicates that about 58 percent of all private forestland owners in 1993 owned tracts of one to nine acres. Tracts of this size, however, represented only 4 percent of all the privately-

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[2] Keeland.
[3] Ibid.

owned forest land. Thirty one percent of all the privately owned tracts of forest land had 5000 or more acres in 1993; that acreage was owned by .06 percent of all private forest land owners. Thus, a very small number of individuals, corporations, and other private entities owned nearly a third of all the private forestland in the U.S. Presumably, the trend toward ownership of increasingly smaller tracts has continued since 1993. Moreover, the problem may be greater in the East. Private forest acreage "in the heavily populated East is four times that of public forest, but in the less crowded West there are three times more acres of public (mostly Federal) forest than private. This means that private forests are more likely than forests in other ownerships to be located closer to human population centers, making them more threatened by development."[4]

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[4] U.S. Forest Service. Wildland Waters. Summer 2004. U.S. Dept. of Agriculture Forest Service, Forest Stewardship Program, Washington, D.C., at p. 5.

Table 1. Estimated number of ownership units, by size class and form of ownership, national total, 1993[5]

Size class (acres)	Ownership Class						
	Individual	Percent	Corporation	Percent	Other	Percent	Total
			(In owners)				
1-9	5,583,100	60	39,600	25	172,600	41	5,795,300
10-19	1,169,500	13	23,300	15	57,700	13	1,250,500
20-49	1,396,200	15	32,000	20	83,400	20	1,511,600
50-99	646,800	7	21,100	13	49,300	11	717,200
100-199	325,600	3	16,200	10	29,300	7	371,100
200-499	153,700	2	13,200	8	20,900	5	187,800
500-999	28,900	w	5,600	3	6,800	1	41,300
1000-4999	12,300	w	3,900	2	4,400	1	20,600
5000+	3,300	w	2,200	1	800	w	6,300
Subtotal over 10	3,736,300	40	117,500	75	252,600	59	4,106,500
Total	9,319,400	100	157,100	100	425,200	100	9,901,700

Table 2. Estimated number of acres of forestland, by size class and form of ownership, national total, 1993[6]

Size class (acres)	Ownership Class						
	Individual	Percent	Corporation	Percent	Other	Percent	Total
			(In thousands of acres)				
1-9	15,847	7	214	w	568	1	16,629
10-19	14,812	6	340	w	671	1	15,823
20-49	41,368	18	776	1	2,467	5	44,611
50-99	42,521	18	1,330	1	3,341	6	47,193
100-199	39,952	17	2,104	2	3,757	7	45,813
200-499	37,185	16	3,741	3	4,894	9	45,821
500-999	17,015	7	3,523	3	3,949	7	24,488
1000-4999	17,051	7	7,699	7	6,567	12	31,337
5000+	6,596	3	87,401	81	27,677	51	121,673
Subtotal over 10	216,502	93	106,915	100	63,343	99	376,760
Total	232,348	100	107,129	100	53,911	100	393,389

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[5] Birch, 1996, at 30.

[6] Ibid.

The reason forestland owners hold their land is important in predicting the future use of that land. This is important for purposes of the HFRP because the future use of the forest can affect wildlife and ecosystem processes. Based on the information in Table 3, 2.7 percent of all private forestland owners are holding approximately 29 percent of the acres primarily for timber production. About 2.6 percent of private forestland owners, who own approximately 9 percent of the private forestland, are holding their land for timber production as a secondary purpose. Approximately 9 percent of owners are holding 10 percent of the forestland primarily as an investment; 5 percent of private forestland owners, who own nearly 9.5 percent of private forestland, state that they are holding the land secondarily as an investment. An additional 84 percent of private forestland owners, who have about 60 percent of the private forestland, indicate they are holding the land primarily for other reasons, such as aesthetic enjoyment, or as part of a farm, residence or estate. However, only 14 percent of those holding private forestland are doing so primarily for aesthetic enjoyment, and they own only 7 percent of private forestland. Those who own forestland either for timber production or for investment are quite likely to allow their timber to be cut in the future, and for economic reasons are likely to harvest many of their trees. Those in other categories may do so, as well, but it is not as likely. It is only those who claim they are holding the land for aesthetic reasons that are clearly not likely to harvest their trees for economic reasons.

Cutting swaths of trees, particularly large swaths, increases the amount of "edge" [7] habitat. Some wildlife species thrive when there is an increase in the amount of edge habitat, but other species, in order to thrive, require the forest interior. Too much exposure to edge habitat can leave these species more susceptible to predators, and the microclimates associated with edge habitat can also be warmer, windier and drier than in a forest interior, and therefore not as suitable for them. Other species just have large ranges, and when the forest becomes too fragmented, they are forced into smaller and smaller areas and quickly become overcrowded. That is why, as forests become more fragmented and edge habitat increases, the composition of associated wildlife changes.

In most cases, careful forest management is preferred over allowing natural ecosystem processes to occur, because natural processes include fires which can damage neighboring communities if allowed to burn out of control. In part because of the increase in fragmentation and the changes in the role of fire within the forest ecosystem, forests are now home to a multitude of declining species, including many listed under the ESA as threatened or endangered. A report of the National Academy of Sciences states that:

> "Nonfederal forests provide habitat for important threatened and endangered species. Of 712 listed species, 609 (86 percent) have their habitat on private individual or corporate property, much of which is forested. Public nonfederal lands provide habitat to 516 species (72 percent), while nonprofit-owned land and tribal land provide habitat to 181 and 61 species (25 and 9 percent), respectively. Fifty-two species are found on other nonfederal lands (GAO 1994a). Considering all ownerships, forests provide approximately half the habitat for the nation's threatened and endangered species (USDA Forest Service 1994d). More than 90 percent of these listed species have some or all of their habitat on nonfederal

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[7] "Edge" is the area where the forest abuts to fields, development, or other open areas.

lands, although not necessarily on forested lands (GAO 1994a). Nearly three-quarters have at least 60 percent of their habitat on nonfederal lands; 37 percent are completely dependent on nonfederal lands."[8]

Table 3. Estimated number of ownership units and acres of forest land, by primary and secondary reason for owning forest land, national total, 1993[9]

Reason	Primary reason		Secondary reason	
	Number	Percent	Number	Percent
	(In owners)			
Land investment	920,000	9	496,000	5
Recreation	874,500	9	667,900	7
Timber production	272,200	3	258,700	3
Farm and domestic use	816,400	8	749,200	8
Esthetic enjoyment	1,392,400	14	1,467,500	15
Part of farm	1,189,600	12	464,800	5
Part of residence	2,641,500	27	1,060,500	11
Estate	992,000	10	1,143,800	12
Other	448,900	5	106,800	1
No secondary reason given			3,132,500	32
No answer	354,100	3	354,100	4
Total	**9,901,700**	**100**	**9,901,700**	**100**

Reason	Primary reason		Secondary reason	
	Number	Percent	Number	Percent
	(In thousands of acres)			
Land investment	39,253	10	37,193	9
Recreation	37,868	10	40,949	10
Timber production	113,220	29	34,764	9
Farm and domestic use	35,778	9	27,565	7
Esthetic enjoyment	28,699	7	31,685	8
Part of farm	38,637	10	15,359	4
Part of residence	32,620	8	19,387	5
Estate	26,407	7	35,066	9
Other	34,572	9	11,932	3
No secondary reason given			132,975	34
No answer	6,334	2	6,334	2
Total	**393,389**	**100**	**393,389**	**100**

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[8] National Academy of Science, at p. 40.
[9] Birch, 1996, p. 11.

Throughout time, some species have declined and even gone extinct, while others have increased or even developed into new species. Sometimes, there have been changes "in the overall character of the ecosystem. A key feature to stand out in the 5,000-year chronology is that current rates of change are about 10 times higher than pre-settlement rates. Human intervention in one form or another is now the principal agent of change."[10] The map (Exhibit 1) identifies the range in the number of species listed under the ESA in each county, and overlays information on the number of acres of private forestland in that county. While many species are listed in counties that have little or no privately-owned forestland, where there is a correlation between heavily forested areas and listed species, it is likely that some of those species are dependent on forested areas for their some of their life requisites.

Moreover, unless the owner is following a management plan that takes a multitude of wildlife into account, timber harvest is likely to prevent the formation of snags[11] and reduce the presence of dead, rotting logs, on which endangered species such as the Red-cockaded woodpecker depend.

Forest management plans generally prescribe practices that allow the harvest of some trees while maintaining ecosystem health and providing for the needs of important species. However, as shown in Table 4, in 1994, nearly 67 percent of the owners of private forestland did not have management plans. Three-fifths of all privately-owned forestland was not covered by a management plan. While some of these landowners no doubt have obtained plans in the ten years that have since elapsed, it is likely that a large majority of those acres are still not covered by a management plan. These forests may be more susceptible to ecosystem degradation, and may be contributing to species decline.

Table 4. Estimated number of private ownership units and acres of forest land owned, by whether a written management plan had been prepared, United States, 1994

	Owners		Acres	
Management plan preparation	**Thousands**	**Percent**	**Millions**	**Percent**
Owners with written plans:	531.2	5.3	153.6	39.0
Forest Industry	*2.4*	*0.5*	*65.5*	*42.6*
NIPF owners	*526.6*	*99.5*	*66.1*	*57.4*
Owners with no written plan	8,594.1	66.6	226.2	57.5
No answer	764.9	7.9	13.6	3.5
Total	9,901.7	100	393.4	100

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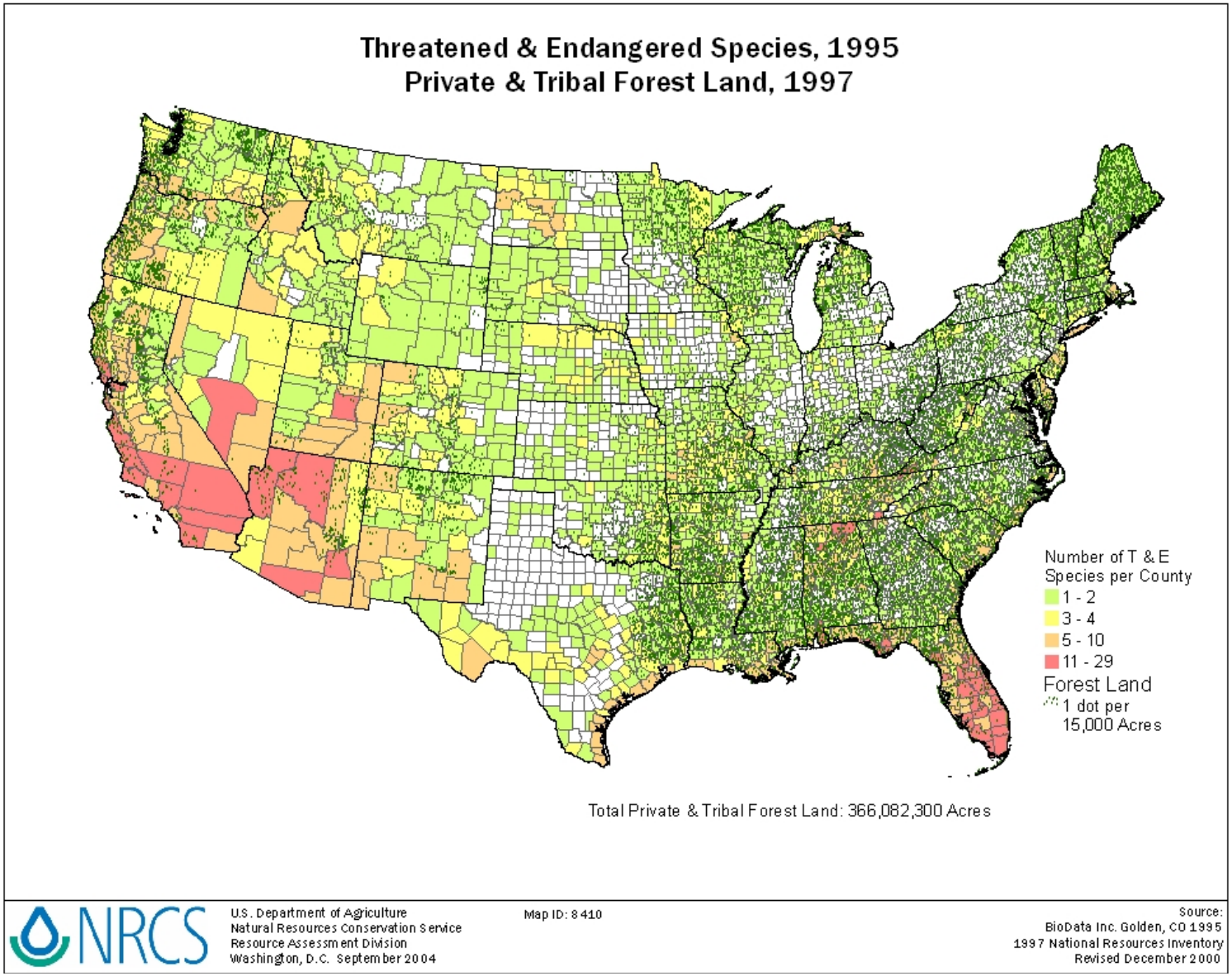
[10] Keeland.

[11] Snags are dead trees that are still standing and which provide shelter and contain insects that provide food for certain species.

EXHIBIT 1


Threatened & Endangered Species, 1995
Private & Tribal Forest Land, 1997
Number of T & E Species per County
1 - 2
3 - 4
5 - 10
11 - 29
Forest Land
1 dot per 15,000 Acres
Total Private & Tribal Forest Land: 366,082,300 Acres
NRCS
U.S. Department of Agriculture
Natural Resources Conservation Service
Resource Assessment Division
Washington, D.C. September 2004
Map ID: 8410
Source:
BioData Inc. Golden, CO 1995
1997 National Resources Inventory
Revised December 2000

Alternative 1, No Action

Under the "No Action" alternative, NRCS would expect current trends of forestland fragmentation and ecosystem degradation to continue. This alternative would result in no additional short or long-term protection for forest habitats, or financial or technical assistance for private forest landowners. While this alternative is not viable if Congress appropriates funds for HFRP, it is included as a baseline against which to compare the effects of the proposed action alternative.

The HFRP legislation requires development of a forest restoration plan that takes into account ecosystem health and the needs of declining species on up to two million acres of private forestland. Two million acres out of the nearly 400 million acres of private forestland nationwide is a very small number of acres. However, if the HFRP were not implemented, there would be two million fewer acres of forestland that would likely not be optimally managed, or would be converted to development or used for timber without regard to forest ecosystem health. This could increase soil erosion, runoff, and stream sedimentation, and reduce wildlife habitat even further.

The FWS TESS database at this time shows 32 species of wildlife listed in the State of Mississippi as threatened or endangered under the ESA. There were 4 additional plants listed. Of these, seven species of wildlife and all the plants are directly affected by forest management, and at least another four are indirectly affected. A majority of the others were declining as a result of water quality issues, including stream sedimentation from development and timber harvest. Sixty-one percent of Mississippi's land is forested and nearly 90 percent of that land is privately-owned.[12] The situation is similar throughout much of the forested portions of the U.S. This example suggests that if forest resources are not protected, the recovery of all species protected under the ESA will not be as successful as if those resources are managed with the recovery of species in mind.

Alternative 2, Proposed Action

The HFRP legislation currently authorizes enrollment of 2 million acres, so it has the potential to affect about one-half of one percent of privately-owned forestland. HFRP easements and restoration agreements in themselves do not alter the physical environment. However, landowners shall be required by their HFRP easement and restoration agreements to apply conservation practices to restore and enhance forest ecosystems to promote the recovery of threatened and endangered species, to improve biodiversity, and in certain situations, to enhance carbon sequestration. In such cases, the conservation practices that are applied will affect the environment. Thus, this EA focuses on the effects of the conservation practices NRCS is most likely to require landowners to apply, either as a condition of the easement or restoration agreement.

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[12] Mississippi Forestry Association. Mississippi Forestry Facts. 2000. Available at http://www.msforestry.net/forestryfacts.html.

While nearly 40 percent of all private forestland is managed under some type of plan developed by a forester or resource professional, the majority of privately owned forestland is not. The harvesting of timber products from NIPF is often a once-in-a-lifetime experience for the landowner and often is done without professional services that would better protect both the landowner's economic interest and the natural resources. Only a small number of private forestland owners – estimates range from about 5 to 10 % – have management plans. This means that most harvesting on private lands occurs to meet a landowner's immediate financial need rather than harvesting being a planned silvicultural practice that will improve the health of the forest stand as well as provide financial return. It is estimated that nearly 15 million acres of the NIPF will be subject to a timber harvest within the next ten years and may be eligible for cost-share assistance to assist the landowners to carry out proper forest management techniques.[13]

Agro-forestry technology has become much more advanced in recent years. Practices are now available to address many resource concerns. This greatly increases the opportunity for these practices to both address conservation needs and income diversification for landowners. The new agro-forestry practices and systems such as Silvo-pasture, and Riparian Forest Buffer are important elements of the HFRP.

Forested buffers in riparian areas serve as important forested systems in themselves, but also contribute to the connectivity of fragmented upland forest systems important to many species. Special applications of silvo-pasture systems offer open stands in shorter time frames that mimic mature stands important in the recovery of some species such as red-cockaded woodpecker and gopher tortoise in the longleaf pine forest type.

Landowners will employ silvicultural and agro-forestry practices, such as tree planting or forest stand improvement, to modify a site to achieve their management objectives and the objectives of HFRP. These silvicultural and agro-forestry practices are broad, allowing for local adaptation and more site-specific development of standards. These practices can be used singularly or in combination as a system to achieve the deserved objectives along with wildlife habitat conservation practice standards. As a result, it is anticipated that up to 15 of NRCS's established conservation practices will most frequently be used in program implementation. When used in combination, it is expected that those practices for HFRP (as adapted to address unique local conditions) will provide the flexibility to meet both the purposes of this program and the objectives of the landowners.

Habitat Improvement through HFRP

Some species may satisfy certain phases of its life requisites within a forest habitat and other requisites from areas outside a forest habitat. For example, a species may rely on forest habitat for its cover and reproduction needs, but may seek its food from open areas. In such cases, HFRP may not provide for restoration of all of a species life requisites. However, there are certain forestry practices that are most likely to be used to restore forest health while meeting habitat needs of targeted species.

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[13] Birch, 1996

The following table identifies the conservation practices used most frequently across the U.S. to improve the quality of the NIPF.

Table 5: Most Frequently Used Forestry Practices

Practice Name	Practice Number[14]
Firebreak	394
Forest Harvest Trails and Landings	655
Forest Site Preparation	490
Forest Stand Improvement	666
Prescribed Burning	338
Forestry System (Prescribed Forestry)	409
Riparian Forest Buffer	391
Silvo-pasture	381
Tree/Shrub Establishment	612
Tree/Shrub Pruning	660
Upland Wildlife Habitat Management	645
Use Exclusion	472
Wetland Enhancement	659
Wetland Development or Restoration	657
Wetland Wildlife Habitat Management	644

Forestry systems under SFM (sustainable forest management) include practices used: 1) on forest land to primarily generate forest products and enhance fish and wildlife habitat, and 2) on agricultural land to control or trap excess pollutants (e.g., sediment, nitrates), improve aesthetics and wildlife habitat, and diversify products.

Effects of Forestry Activity

On forestland, the primary practices that are employed, include: *Forest Site Preparation*, *Tree/Shrub Establishment*, *Forest Stand Improvement (thinning), Forest Trails and Landings* (with NRCS's *Access Road* practice as a supporting element), *Prescribed Burning* and *Forest Stand Improvement (harvest)*. *Riparian Forest Buffer*s are utilized on land adjoining water bodies, water courses and wetlands. Silvo-pasture can be established in currently forested land or on grazing land capable of growing trees.

Direct effects of forestry systems on forest land include the establishment and growth of woody vegetation that quickly alters the characteristics of habitat on a spatial and vertical basis, accumulates marketable wood fiber in the boles of trees, and sequesters large amounts of carbon in biomass and the soil profile.

If and when a forest stand is harvested, roads, trails, landings and cutover areas are created which can permanently or temporarily alter local hydrology, affect wildlife movement, favor different

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[14] Practice numbers are assigned by NRCS for ease of reference and are found in the NRCS National Handbook of Conservation Practices.

types of wildlife, change forage growth and accessibility, and alter risk of wildfire. Various practices are employed to mitigate any direct and indirect effects from harvesting considered to be adverse, e.g., *Firebreak, Critical Area Planting, Sediment Basin,* and *Structure for Water Control*. Other effects such as forage growth and accessibility may stimulate the use of livestock and trigger the use *Prescribed Grazing* and related practices. Wildlife effects can include fewer "closed canopy" species and more "open habitat" species with species richness being augmented by the increase of "edge effect" from a mosaic of harvested, regenerated and older forested areas being in close proximity.

Effects of Agro-forestry Activity

Effects of agro-forestry practices on agricultural land are similar to forestry/forestland effects but are more pronounced for increasing wildlife habitat ("oasis" effect) and less so for generating wood-fiber products (tree/shrub areas are proportionally of small extent in the overall agricultural landscape). In addition, mitigation of wind, water, and farm-related pollutants are a primary focus of agro-forestry systems.

General Effects Associated with both Forestry and Agro-forestry Activities

Effects from both forestry and agro-forestry systems lead to cumulative effects such as income stability for farmers and communities, water quality, habitat suitability and environmental health. These effects occur when the systems and practices are applied within the same region on many forests, farms or fields, as might be expected when the SFM program is implemented over a period of years. Without the proper application and organization of forestry and agro-forestry practices, cumulative effects would weigh strongly toward environmental degradation.

NRCS has developed network diagrams depicting the chain of effects resulting from the application of potentially key practices. Each of the diagrams first identifies the typical setting to which the practice is applied. This includes identification of the predominating land use and the concerns that trigger use of the practice. The diagrams then identify the practice used to mitigate the resource concerns that trigger use of an identified practice. Immediately following the practice, there is a description of the immediate on-the-ground actions that occur to implement the practice. From there, the diagrams depict the occurrence of the direct, indirect and cumulative effects of the practice. Effects are qualified with a "+" or a "-" which denotes and increase ("+") or decrease ("-") in the effect. Pluses and minuses do not equate to good and bad or positive and negative. Only the general effects that are considered to be the most important ones from a national perspective are illustrated. A photo and information about each of these practices is found in Appendix C, including identification of the resource concern the practice is intended to mitigate.

The method of allocating HFRP will result in different, site-specific groupings of practices into management systems in and among participating states. Therefore, the number of acres receiving treatment under each alternative may vary, depending on the decisions made at the state level for work within the Program. The effects of the practices may vary somewhat, as well, depending on the types of species in the area. However, nationwide, it is anticipated the HFRP could be used on about 1 million acres a year, based on costs of practices under other conservation programs. While effects on these resources may be described in general terms at the national level, most must be addressed at the state or local level. This is particularly true for

endangered and threatened species, historic preservation, essential fish habitat and other resources that are protected by special requirements that involve consultation. NRCS will consult on a state or site-specific level as needed and appropriate to ensure actions do not adversely affect essential fish habitat, cultural resources, or any other protected resource.

For example, to ensure compliance with the Endangered Species Act, representatives of the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Service (NMFS), as applicable, shall be invited to be members of the State Coordinating Committee and invited to be involved in the development of state level program criteria. NRCS will also conduct additional programmatic consultations with FWS and NMFS as needed to ensure implementation of the HFRP is not likely to adversely affect species listed as endangered or threatened or species proposed for listing as endangered or threatened or designated critical habitat.

Such consultation will also be used to identify ways the HFRP might further the recovery of protected species and identify situations in which no site-specific consultation would be needed.[15] In addition, site-specific consultation will also be conducted as needed to avoid adversely affecting any protected species or habitat.

It is NRCS policy to avoid, minimize or mitigate to the extent feasible, any adverse effects to protected resources and this policy will apply to actions carried out under HFRP to the extent feasible.

Effects on Endangered Species in Implementation Areas

Initial implementation of the HFRP will focus on restoration and enhancement of forested ecosystems that also provide habitat to species that are of Federal interest. These species include, but are not limited to, the Red-cockaded Woodpecker (Picoides borealis), the Gopher Tortoise (Gopherus polyphemus) and the Canadian Lynx (Felinae canadensis).

For example, the Red-cockaded Woodpecker is a species listed as endangered under Section 4 of the ESA in AL, AR, FL, GA, LA, MS, NC, OK, SC, TX, and VA. "Highly fragmented woodland areas diminish the proportion of interior to edge habitat and alter the balance of species. Greater exposure of once-sheltered trees to "edges" may cause them to dry out and become prey to invaders." (Dept of State) "As these natural patches become smaller and more isolated, their ability to maintain healthy populations of many plant and animal species is reduced (Harris 1984). As individual species are lost from each fragment, the community changes and both species and ecosystem diversity are reduced. Thus, large numbers of natural ecosystems are now in danger."[16] Habitat fragmentation results in loss of both nesting and foraging habitat stressing individuals of the species and leading to population reductions.

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[15] In addition to situations in which NRCS has determined there would be no adverse effect on protected species or habitat, site-specific consultation should not be needed when NRCS and FWS or NMFS agree a category of proposed actions is not likely to adversely affect a protected species or its habitat.

[16] Keeland, B.D. (National Biological Service, Lafayette, LA). Terrestrial Ecosystems. Raymond J. Boyd, Science Editor (Bureau of Land Management Service Center, Denver, CO), available September 24, 2004 at http://biology.usgs.gov/s+t/noframe/m1291.htm.

HFRP will allow owners of private forestland to develop forest management plans and these forested lands are the primary objectives of this program. Agro-forestry and wildlife practices also used in this program will enhance forest health and the objectives of the program.

By improving the extent, quality, and connectedness of forest lands, birds and mammals alike will have greater range of movement, as well as horizontal and vertical complexity within the forest that promotes habitat diversity and increased biodiversity."[17]

NRCS expects that forest management plans established under HFRP will promote improvement in those elements of habitat critical to survival of the bird and mammal species of interest including those endangered species above. Consultation with FWS and establishment of appropriate instruments under Safe Harbor regulations are expected to provide program participants with assurances associated with incidental take or other potential effects that might be associated with easement expiration.

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[17] Ibid.

LIST OF PERSONS AND AGENCIES CONSULTED

USDA-NATURAL RESOURCES CONSERVATION SERVICE

Andrée A. DuVarney, National Environmental Specialist, Ecological Sciences Division, Washington, D.C.

Douglas E. Williams, National Forester, Ecological Sciences Division, Washington, D.C.

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USDA Forest Service, Cooperative Forestry, Forestry Incentives Program. Helping Private Landowners Develop and Maintain Their Forests. (http://www.fs.fed.us/spf/coop/fip.htm)

USDA Forest Service, Cooperative Forestry, Stewardship Incentives Program. Providing Financial Assistance to Private Landowners to Carry Out Their Stewardship Plan. (http://www.fs.fed.us/spf/coop/sip.htm)

USDA Forest Service, Cooperative Forestry, Forest Stewardship Program. Helping Private Forest Landowners Develop Plans for the Sustainable Management of Their Forests. (http://www.fs.fed.us/spf/coop/fsp.htm)

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List of Appendices

Appendix A. Estimated number of private ownership units and acres of forest land owned, by state, sub-region, and region, United States, 1976 and 1994[18]

Region, subregion, and states	1976		1994	
	Owners	Acres	Owners	Acres
	Thousands	*Millions*	*Thousands*	*Millions*
Connecticut	95.6	1.329	102	1.553
Maine	241.4	15.696	255.6	17.06
Massachusetts	143.6	2.635	212.6	2.529
New Hampshire	122.3	4.307	63.7	4.144
Rhode Island	12.9	0.123	26.7	0.338
Vermont	53.3	3.926	60.5	3.993
New England	669.1	26.216	761.3	29.617
Delaware	9.5	0.318	17.3	0.346
Maryland	42.2	1.666	130.6	2.272
New Jersey	106	1.283	66.7	1.401
New York	824.6	10.406	475.4	14.367
Pennsylvania	492.6	10.677	513.9	12.506
West Virginia	246.4	9.779	260.4	10.745
Middle Atlantic	1,725.70	34.349	1,486.30	41.64
Northeast	2,394.80	62.567	2,256.40	71.326
Illinois	61	2.66	114.5	3.641
Indiana	46.1	3.74	151.3	3.771
Iowa	11.6	1.724	55.4	1.607
Missouri	60.7	10.63	307.2	11.63
Ohio	133.6	5.42	329.2	7.191
Central	335	24.373	957.7	26.04
Michigan	301.7	11.477	332.7	12.039
Minnesota	62.6	6.51	147.4	7.317
Wisconsin	195.4	9.127	245.6	10.696
Lake	559.7	27.114	725.9	30.254
North Central	694.7	51.466	1,683.60	57.002
North Total	3,289.50	114.054	3,931.20	129.551
Alabama	429	19.76	452.4	20.77
Kentucky	372.3	10.325	306.9	11.424
Mississippi	165	14.101	341.2	15.126
Tennessee	224	13.79	475.9	11.763
Central Gulf	1,210.30	57.665	1,576.40	56.676

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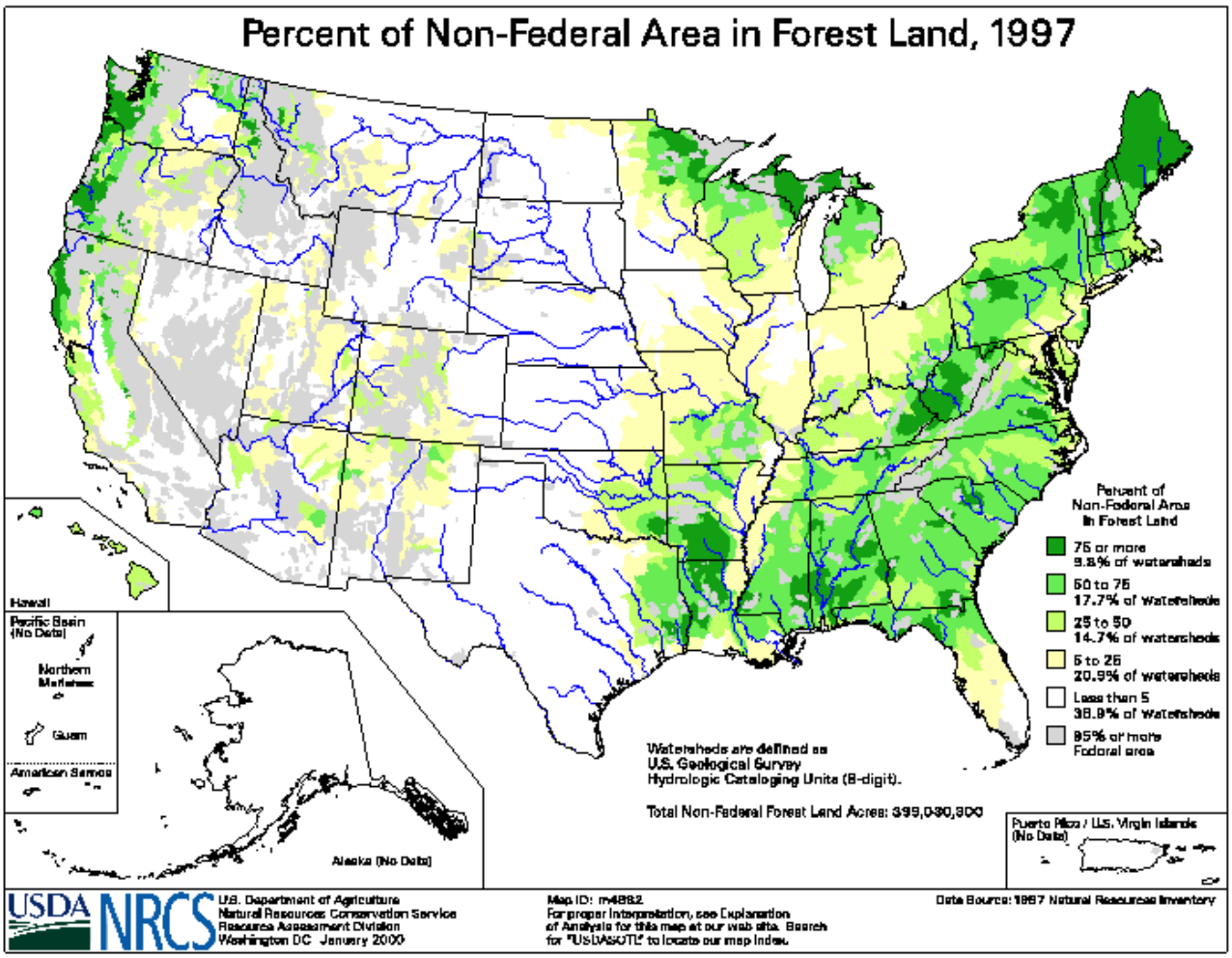
[18] Birch, Table 2 on pp. 12, 13.

Arkansas	306	14.65	296.1	14.51
Louisiana	215	11.67	146.9	12.544
Oklahoma	43	5.37	156	6.926
Texas	165	9.19	319.6	16.269
West Gulf	751	41.06	922.6	52.249
Southern	1,961.30	96.965	2,499.20	111.332
Florida	232.1	11.896	320.8	13.112
Georgia	278	21.48	610.7	21.985
East Gulf	510	33.378	931.5	35.097
North Carolina	693	16.42	704.9	16.774
South Carolina	244	10.61	335.9	11.006
Virginia	442	13.76	4,613.8	13.442
South Atlantic	1,379.00	40.79	1,509.60	41.222
Southeast	1,889.10	74.168	2,441.10	76.319
South Total	3,850.40	173.133	4.940.2	167.651
Kansas	31.6	0.751	39.3	1.291
Nebraska	2.3	0.18	34.2	0.626
North Dakota	1.9	0.33	11.3	0.411
South Dakota	13.8	0.03	28.7	0.609
Great Plains	49.8	1.291	113.5	2.937
Alaska	0	0	16.6	9.881
California	139.1	10.444	345.6	14.476
Hawaii	2.2	0.697	24.8	1.155
Oregon	165	10.13	166.2	10.65
Washington	180	8.5	91.4	9.67
Pacific	486.3	29.771	644.6	45.833
Arizona	0.01	0.004	23.9	6.757
Colorado	53.3	2.407	55.6	3.286
Idaho	21.7	3.11	47.4	3.245
Montana	4.8	5.91	82.7	5.957
Nevada	0.1	0.074	14.8	0.53
New Mexico	0.1	1.489	24.5	4.129
Utah	1.7	1.179	14.6	1.537
Wyoming	0.2	0.671	8.5	1.997
Rocky Mountain	81.9	14.844	272.2	27.416
West Total	618	45.908	1,030.30	76.187
Nation Total	**7,757.90**	**333,094**	**9,901.70**	**393,389**

Appendix B – Percent of Non-Federal Area in Forest Land, 1997



Appendix C

HEALTHY FOREST RESERVE PROGRAM
PRACTICE EFFECTS NETWORK DIAGRAMS