
**SUPPLEMENTAL ENVIRONMENTAL IMPACT
STATEMENT FOR
EMERGENCY CONSERVATION PROGRAM**



**Farm Service Agency
United States Department of Agriculture**

**Final
September 2008**

Final Supplemental Environmental Impact Statement
Expansion of the Emergency Conservation Program
Farm Service Agency
U.S. Department of Agriculture
Abstract

The Emergency Conservation Program (ECP) provides emergency funding to farmers and ranchers who have suffered damage to their agricultural lands as a result of a natural disaster. The goal of ECP is to restore agricultural lands to a normal productive state after a natural disaster and provide assistance to producers to carry out emergency water conservation or enhancing measures in times of severe drought. Under the proposed action, the Farm Service Agency (FSA) would expand ECP eligibility to other types of farmland, namely timberland, farmsteads, roads, and feedlots. To implement the proposed action, FSA would develop a Proposed Rule meant to clarify current regulations and expand upon them to reflect changes to the policy. This final Supplemental Environmental Impact Statement (SEIS) analyzes the impacts of the proposed action on the nation's environmental resources and economy. The no action alternative (continuation of current program) is also analyzed in this statement to provide an environmental baseline.

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EXECUTIVE SUMMARY

S.1.0 BACKGROUND

The Emergency Conservation Program (ECP) provides emergency funding to farmers and ranchers who have suffered damage to their agricultural lands as a result of natural disasters, such as, severe wind erosion, floods, hurricanes, or drought. ECP is permanently authorized by Title IV of the Agricultural Credit Act of 1978 and is administered by the U.S. Department of Agriculture (USDA) Farm Service Agency (FSA).

The goal of ECP is to provide assistance to agricultural producers to restore agricultural lands to a productive state following a natural disaster and to carry out emergency water conservation or water enhancing measures during periods of severe drought. Producers can apply for one-time cost-share and technical assistance for authorized activities under the following emergency conservation (EC) practices:

- (EC 1) Removing Debris From Farmland
- (EC 2) Grading, Shaping, Releveling, or Similar Measures
- (EC 3) Restoring Permanent Fences
- (EC 4) Restoring Conservation Structures and Other Similar Installations
- (EC 5) Emergency Wind Erosion Control Measures
- (EC 6) Drought Emergency Measures
- (EC 7) Other Emergency Conservation Measures
- (EC 8) Field Windbreaks and Farmstead Shelterbelt Emergency Measures

The current ECP and the authorized practices were assessed for potential environmental impacts in accordance with the National Environmental Policy Act (NEPA) in a Programmatic Environmental Impact Statement (PEIS) finalized in March 2003 (USDA 2003). FSA is proposing a change to ECP which requires the preparation of a Supplemental Environmental Impact Statement (SEIS). The proposed change would expand land eligibility to include additional types of agricultural lands beyond pastureland, cropland, and hayland. Changes to the current practices or payment calculations are not being proposed.

S.2.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

Eligibility is currently limited to farmland defined as cropland, hayland, and pastureland. The proposed action would expand that definition to include timberland, farmsteads, feedlots, farm roads, and farm buildings. The purpose of the proposed action is to expand

the eligibility requirements of the current ECP. The need for the proposed change is to better assist producers in recovering from a natural disaster.

S.3.0 CURRENT PROGRAM

ECP was created in 1978 to provide financial and technical assistance to producers for restoring agricultural land to normal production following a natural disaster. Regulatory procedures for implementing ECP are addressed in 7 Code of Federal Regulations (CFR) Part 701 and further outlined in the FSA Handbook for State and County Offices 1-ECP (USDA 2007a).

S.3.1 ELIGIBLE DISASTERS

A producer is eligible for ECP benefits if one of the following natural disasters has occurred:

- Hurricane or typhoon
- Tornado
- High winds, including micro-bursts
- Storms, including ice storms
- Floods
- High water
- Wind-driven water
- Tidal waves
- Earthquakes
- Volcanic eruptions
- Landslides
- Mudslides
- Severe snowstorms
- Drought
- Wildfire
- Other natural phenomenon

Following a disaster event, County Committees (COC) visit the site and make an assessment of the damage to ensure it meets the minimum ECP requirements. The COC then obtains concurrence from the State Committee (STC) before approving the disaster

for cost-share assistance. During periods of severe drought the determination to implement the program is made by the FSA National ECP Manager. The damage must:

- Create new conservation problems which, if not treated, would impair or endanger the land;
- Materially affect the productivity of the land;
- Represent unusual damage that does not occur frequently; or,
- Be so costly to repair that Federal assistance is required to return the land to productive agricultural use.

S.3.2 ELIGIBLE PARTICIPANTS

A producer eligible for ECP must be a farmer or rancher who contributes part of the cost for implementing the approved practice and has an interest in the farm. An agricultural producer is defined as an owner, landlord, tenant, or sharecropper of a farm or ranch that is used to produce crops for food or fiber in a commercial operation that occurs on an annual basis. American Indian tribes or individuals that own eligible land are eligible for ECP benefits. Federal agencies, states, political subdivisions of states, state agencies, and districts with taxing authority are not eligible for ECP benefits.

S.3.3 ELIGIBLE LAND

The land eligible for assistance must be located in the county in which ECP has been implemented, normally used for farming or ranching operations, and expected to have annual agricultural production. Eligible land is broadly defined as cropland, hayland, and pastureland. Additionally, land that is eligible under ECP includes land:

- Protected by levees or dikes built to U.S. Army Corps of Engineers (USACE), Natural Resource Conservation Service (NRCS), or similar standards, that were effectively functioning before the disaster;
- Protected by permanent or temporary vegetative cover;
- Used for commercially producing orchards, citrus groves, and vineyards;
- Used for producing agricultural commodities;
- Where conservation structures are installed, including waterways, terraces, sediment basins, diversions, windbreaks, etc. not funded by other conservation programs;
- In Christmas tree plantations;
- Devoted to container-grown nursery stock if the nursery stock is grown commercially for wholesale purposes and is grown on land in containers for at least one year;

- In field windbreaks or farm shelterbelts where the practice is to remove debris and correct damages caused by the disaster; and
- On which facilities are located in irrigation canals or facilities that are located on the inside of the canal's banks as long as the canal is not a channel subject to flooding.

S.3.4 FUNDING

ECP funds are held in reserve at the national level and allocated after a natural disaster determination has been made authorizing ECP designation. Funds are allocated to states based on an estimate of funds needed to begin implementing the program. The states then allocate funds to the appropriate counties. The funds are distributed to applicants on a first-come, first-serve basis until they run out.

Agricultural producers applying for ECP assistance can receive reimbursement for up to 75 percent of the cost of activities covered under the approved conservation practices. The total cost-share provided to an individual participant per natural disaster can not exceed \$200,000. Financial assistance cannot be provided for activities that receive cost-shares under other FSA emergency or conservation programs.

Provisions are included in ECP to assure that special consideration is given to limited resource producers in order that the most beneficial use of ECP may be obtained. The definition of a "limited resource producer" is any producer: with direct or indirect gross farm sales not more than \$100,000 in each of the previous two years; and has a total household income at or below the national poverty level for a family of four or less than 50 percent of the county median household income in each of the previous two years. Limited resource producers can receive up to 90 percent cost-share for implementing approved practices under ECP.

S.4.0 PROPOSED ACTION

The proposed action is to expand the definition of farmland beyond cropland, pastureland, and hayland to make ECP available for rehabilitating other agricultural lands. Expanding the definition of farmland would add approximately 426 million acres to what is currently eligible (34 percent increase) across the U.S. The proposed action does not include changes to the practices or the funding provisions described in Section S.3.0.

Currently, eligible land for ECP benefits is limited to cropland, pastureland, and hayland. FSA is proposing to expand the eligibility requirement to include timberland, farmsteads, feedlots, farm roads, and farm buildings. This proposed change would allow producers to receive financial assistance for implementing approved practices on these lands to return the farm to normal operating conditions.

A farm requires several buildings and structures to make the farm operational. In addition, multiple roads are required to facilitate worker, equipment, and automotive access to crops, buildings, and fields. Debris resulting from damage to such structures can prohibit access to croplands and damage surrounding land, halting agricultural production and creating significant unexpected financial strain for the producer. Under the proposed ECP, the cost of repair of these structures is not covered, but repair and clearing of the land surrounding these structures would be eligible.

Timberland is forested land that is primarily dedicated to the commercial production of wood and fiber. Areas qualifying as timberland have the capability of producing more than 20 cubic feet per acre per year of industrial wood in natural stands. Natural disasters can cover land with debris, burn or otherwise destroy protective vegetation, contaminate soils, deposit sediment, increase runoff, and create landslides. All of these impacts could severely affect the commercial value of the timber.

FSA solicited comments from the public and agencies on the Draft ECP SEIS. The Draft ECP SEIS evaluated the environmental impacts of the proposed action and the no action alternative. Comments were received only from two Federal agencies and one State agency. FSA compiled and reviewed all of the comments submitted, and all substantive comments were considered in preparation of this Final ECP SEIS.

S.5.0 NO ACTION ALTERNATIVE

Under this alternative, ECP would continue as it is currently administered and described in Section S.3.0. ECP benefits would not be available for lands other than those currently eligible (namely cropland, hayland, and pastureland).

S.6.0 AFFECTED ENVIRONMENT

The geographic scope of the environment potentially affected by ECP encompasses agricultural lands of the U.S. and its territories. As such, the 2003 ECP PEIS (USDA 2003) provided descriptions of the natural environment as well as socioeconomics for all agricultural lands across the U.S. This SEIS focuses descriptions of the affected environment on the proposed expansion of ECP to: timberlands, roads, farmsteads, feedlots, and farm buildings. Since the affected environment for implementation of ECP would be lands where a natural disaster has occurred, a brief review of the effect of natural disasters on each resource is provided in this document. A full description of the effects of natural disasters is provided in the 2003 ECP PEIS (USDA 2003).

Resource areas potentially affected by this proposed action and analyzed in detail in this SEIS include:

- Biological Resources
- Water Resources
- Soil Resources
- Cultural Resources
- Socioeconomics
- Environmental Justice

S.7.0 ENVIRONMENTAL CONSEQUENCES

The environmental consequences from the proposed action and the no action alternative are addressed in this SEIS and summarized in **Table S.1**.

Table S.1 Summary of Environmental Consequences

Resource	No Action (Current Program)	Proposed Action (Expansion)
<p>Biological Resources <i>vegetation, wildlife, and protected species</i></p>	<p>Removing debris, shaping and leveling land, reestablishing vegetation, and restoring conservation structures after a natural disaster would have long term positive impacts to vegetation and wildlife. Reestablishing permanent vegetation and conservation structures would ultimately improve local water quality and wildlife habitat by promoting biological diversity.</p> <p>If protected species are present or suspected of being present, informal consultation with the U.S. Fish and Wildlife Service (USFWS) would occur during the site specific environmental evaluation to ensure the protection of these species. Formal consultation with USFWS would be completed in the event a practice may affect a listed species. If negative impacts to listed species are identified, it is not likely the land would be approved for the ECP. FSA encourages FSA state offices to develop MOUs with USFWS to expedite reviews at the site specific level.</p> <p>Temporary negative impacts could occur with the use of heavy machinery to establish some practices. These effects would be temporary and localized. The disturbance from heavy machinery would not be greater than the disturbance associated with normal agricultural practices. The disturbance associated with certain practices potentially introduces invasive plant species, however, this may be controlled by employing BMPs such as washing equipment before entering and leaving the work area and ensuring seed mixes do not include any invasive or noxious species. Wildlife may be temporarily</p>	<p>Expanding the current program to include timberlands and other areas within the farmstead would have the same long term positive impacts as the current program. With the addition of timberland, there is a higher likelihood for encountering previously undisturbed land. Removing debris, shaping and leveling land, reestablishing vegetation and restoring conservation structures in these areas would promote vegetation growth and wildlife diversity. Wildlife may be temporarily displaced, but suitable habitat may not be nearby, or may already have established wildlife at a capacity that cannot sustain additional animals in the long term.</p> <p>Protected species that occur or have the potential to occur would be protected through informal consultation with the USFWS during the site specific environmental evaluation. If impacts are identified, formal consultation with USFWS would be completed. If negative impacts to listed species are found, it is not likely the land would be approved for the ECP. FSA would continue to encourage FSA state offices to develop MOUs with USFWS to expedite reviews at the site specific level.</p> <p>Temporary negative impacts from the use of heavy machinery could occur with some practices. Establishing access roads and/or restoration of timberland areas would temporarily remove vegetation in the immediate area and has the potential for spreading invasive plant species. This may be</p>

Table S.1 Summary of Environmental Consequences (cont'd.)

Resource	No Action (Current Program)	Proposed Action (Expansion)
Biological Resources <i>vegetation, wildlife, and protected species (cont'd.)</i>	displaced, but suitable habitat may not be nearby, or may already have established wildlife at a capacity that cannot sustain additional animals in the long term.	controlled by employing BMPs that minimize this potential, such as washing equipment before entering or leaving the work area, and ensuring seed mixes do not include invasive or noxious species.
Water Resources <i>surface water, groundwater and aquifers, floodplains, and wetlands</i>	<p>The goal of many of the practices is to restore agricultural land to prohibit further erosion and degradation of local water quality. Positive impacts to surface water quality, groundwater quality, floodplains, and wetlands would be realized from implementation of the practices. Removing debris, restoring vegetation, repairing conservation structures, reestablishing windbreaks, and releveling the land would all provide erosion control and limit runoff potential.</p> <p>The use of heavy machinery could temporarily increase runoff and erosion potential. These impacts would be localized and cease once construction has ended.</p>	<p>Similar to the current program, expanding the program would improve local water quality, floodplains, and improve nearby wetlands for newly eligible areas. Impacts to groundwater within timberlands are not expected since it is unlikely that any of the practices associated with wells would occur in timberlands.</p> <p>The use of heavy machinery in timberlands could temporarily increase runoff and erosion potential. These impacts would be localized and cease once construction has ended.</p>
Soil Resources	<p>Positive impacts to local soils are expected since most practices are designed to increase soil stability. Reestablishing vegetation, windbreaks, wind control measures, and removing gullies all reduce erosion potential.</p> <p>The use of heavy machinery during implementation of some of the practices could compact soils impairing water infiltration and vegetation growth.</p>	<p>Potential impacts to soils in timberlands would be similar to those described for the current program with the exception that practices could be implemented in areas where soils have not been disturbed from routine farming activities. Reestablishing vegetation, wind control measures, and releveling land would all reduce erosion potential and protect the area from soil loss.</p> <p>The use of heavy machinery, especially in timberland areas, could compact soils impairing water infiltration and vegetation growth.</p>

Table S.1 Summary of Environmental Consequences (cont'd.)

Resource	No Action (Current Program)	Proposed Action (Expansion)
Cultural Resources	<p>Removing debris, releveling land, and establishing wind erosion measures on lands with historic significance would have beneficial effects to these areas by restoring access and removing potential contaminants that would threaten the integrity of the site.</p> <p>The use of heavy equipment could negatively affect historic properties through ground disturbance.</p> <p>Site specific environmental evaluation in accordance with 1-EQ would determine the presence of a specific property included or eligible for inclusion on the National Register of Historic Places and provide compliance with Section 106 of the National Historic Preservation Act.</p>	<p>Expanding the program eligibility to timberland, farmsteads and farm buildings would increase the potential for encountering a historic property. Potential beneficial and adverse impacts to these sites would be the same as those described under the current program.</p> <p>Site specific environmental evaluation would determine the presence of a specific property included or eligible for inclusion on the National Register of Historic Places and provide compliance with Section 106 of the National Historic Preservation Act.</p>
Socioeconomics	<p>The program provides financial assistance to producers to restore lands to normal farming production. Without the assistance of the program, these lands might be too costly to repair. The producer and the local economy experience a slightly positive economic impact as a result of the program.</p>	<p>Expanding the eligibility of the program would have similar socioeconomic impacts as the current program. The budgeted amount for the program and the individual operator cap of \$200,000 would remain unchanged. Therefore, increasing the land eligible for cost-share assistance would either (1) allow for higher payment to a producer, not to exceed the cap, or (2) allow more producers to apply for assistance.</p>
Environmental Justice	<p>The program provides funding to a producer at a time when it is most needed and helps to maintain the local economy. A low income producer would benefit the most from the program since they may not be financially able to restore the land without the assistance and are eligible for a higher cost-share. Potential impacts to the natural environment would not be considered significant under the current program, therefore, there are no environmental justice concerns.</p>	<p>Similar to the current program, expanding the eligibility provides funding to producers at a time when it is most needed. Low income producers would continue to be eligible for a higher cost-share. Potential impacts to the natural environment would not be considered significant under the proposed expansion; therefore, there are no environmental justice concerns.</p>

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Acronyms and Abbreviations

AGI	Adjusted Gross Income
ARMS	Agricultural Resource Management Survey
BMPs	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
COC	County Committees
EC	Emergency Conservation Practice
ECP	Emergency Conservation Program
EI	Erodibility Index
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
EWP	Emergency Watershed Protection
FEMA	Federal Emergency Management Agency
FSA	Farm Service Agency
HEL	Highly Erodible Lands
National Register	National Register of Historic Places
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NRCS	Natural Resource Conservation Service
PEIS	Programmatic Environmental Impact Statement
RMA	Risk Management Agency
ROI	Region of Influence
SEIS	Supplemental Environmental Impact Statement
SHPO	State Historic Preservation Officer
STC	State Committee
TCP	Traditional Cultural Properties
USACE	U.S. Army Corps of Engineers
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

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1.0 PURPOSE AND NEED

The environmental impact statement shall briefly specify the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action.

40 CFR 1502.13

1.1 BACKGROUND

The Emergency Conservation Program (ECP) provides emergency funding to farmers and ranchers who have suffered damage to their agricultural lands as a result of natural disasters, such as, severe wind erosion, floods, hurricanes, or drought. ECP is permanently authorized by Title IV of the Agricultural Credit Act of 1978 and is administered by the U.S. Department of Agriculture (USDA) Farm Service Agency (FSA).

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1.2 REGULATORY COMPLIANCE

This SEIS has been prepared by the USDA FSA in accordance with the requirements of NEPA of 1969, the Council on Environmental Quality (CEQ) regulations implementing NEPA, and FSA's implementing regulations 7 Code of Federal Regulations (CFR) 799 Environmental Quality and Related Environmental Concerns – Compliance with the National Environmental Policy Act.

1.3 PURPOSE AND NEED

Eligibility for ECP is currently limited to farmland defined as cropland, hayland, and pastureland. The proposed action would expand that definition to include timberland, farmsteads, feedlots, farm roads, and farm buildings. The purpose of the proposed action is to expand the eligibility requirements of the current ECP. The need for the proposed change is to better assist producers in recovering from natural disasters.

1.4 CURRENT EMERGENCY CONSERVATION PROGRAM

ECP was established in 1978 to provide financial and technical assistance to producers for restoring agricultural land to normal production following a natural disaster. Regulatory procedures for implementing ECP are addressed in 7 CFR Part 701 and further outlined in the FSA Handbook for State and County Offices 1-ECP (USDA 2007a).

1.4.1 Eligibility

In order for ECP to be administered, several specific eligibility requirements must be met. The FSA Handbook (1-ECP) details the requirements and provides multiple tools to assist STC and COC in correctly administering the program. The basic eligibility requirements are reviewed in the following sections.

1.4.1.1 *Eligible Natural Disasters*

A producer may be eligible for ECP benefits if one of the following natural disasters has occurred:

- Hurricane or typhoon
- Tornado
- High winds, including micro-bursts
- Storms, including ice storms
- Floods
- High water
- Wind-driven water

- Tidal waves
- Earthquakes
- Volcanic eruptions
- Landslides
- Mudslides
- Severe snowstorms
- Drought
- Wildfire
- Other natural phenomenon

Following a disaster event, a County Committees (COC) representative visits the site and makes an assessment of the damage to ensure it meets the minimum ECP requirements. The COC then obtains concurrence from the State Committee (STC) before approving the disaster for cost-share assistance. During periods of severe drought the determination to implement the program is made by the FSA National ECP Manager. Disasters may be declared regionally, statewide, by county, or on an individual farm. The damage must:

- Create new conservation problems which, if not treated, would impair or endanger the land;
- Materially affect the productivity of the land;
- Represent unusual damage that does not occur frequently; or,
- Be so costly to repair that Federal assistance is required to return the land to productive agricultural use.

1.4.1.2 Eligible Program Participants

A producer eligible for ECP must be a farmer or rancher who contributes part of the cost for implementing the approved practice, and has an interest in the farm. An agricultural producer is defined as an owner, landlord, tenant, or sharecropper of a farm or ranch that is used to produce crops for food or fiber in a commercial operation that occurs on an annual basis. American Indian tribes or individuals are eligible for ECP benefits. Federal agencies, states, political subdivisions of states, state agencies, and districts with taxing authority are not eligible for ECP benefits.

1.4.1.3 Eligible Land

The land eligible for receiving assistance must be physically located in the county in which ECP has been implemented, nor mainly used for farming or ranching operations, and expected to have an annual agricultural production. Eligible land is broadly defined as

cropland, hayland, and pastureland (refer to the Glossary Section 9.0 for definitions of these terms). Additionally, land that is eligible under ECP includes land:

- Protected by levees or dikes built to U.S. Army Corps of Engineers (USACE), Natural Resource Conservation Service (NRCS), or similar standards, that were effectively functioning before the disaster;
- Protected by permanent or temporary vegetative cover;
- Used for commercially producing orchards, citrus groves, and vineyards;
- Used for producing agricultural commodities;
- Where conservation structures are installed, including waterways, terraces, sediment basins, diversions, windbreaks, etc. not funded by other conservation programs;
- In Christmas tree plantations;
- Devoted to container-grown nursery stock if the nursery stock is grown commercially for wholesale purposes and is grown on land in containers for at least one year.
- In field windbreaks or farm shelterbelts where the practice is to remove debris and correct damages caused by the disaster;
- On which facilities are located in irrigation canals or facilities that are located on the inside of the canal's banks as long as the canal is not a channel subject to flooding.

1.4.1.4 Ineligible Land

Ineligible land can be defined in a broad sense as land that is not considered to be in agricultural production, such as land devoted to stream banks, channels, levees, dikes, native woodland areas, roads, recreational uses, timberland, farmsteads, feedlots, and farm buildings. In addition, land owned or controlled by the U.S., states, state agencies, or other political subdivisions of a state is ineligible for ECP. Land that is subject to frequent damage or flooding, or where poor farming practices have contributed to the damage is not eligible for ECP.

ECP benefits are not approved for areas where implementation of practices would drain or negatively impact the quality of any wetland. To ensure the protection of these sensitive areas, site specific environmental evaluations are done in conjunction with ECP applications as described in the FSA Handbook for Environmental Quality Programs (1-EQ) (USDA 2008).

1.4.2 Emergency Conservation Practices

Natural disasters can be detrimental to the land and by covering the land with debris, destroying or damaging vegetation, contaminating soils, depositing sediment over croplands, increasing runoff, creating landslides, contaminating drinking water supplies, and affecting the local water supply. FSA has developed a group of conservation practices to assist producers in returning their land to agricultural production while maintaining conservation measures to protect or restore the natural environment. Specific activities authorized under each practice are detailed in **Table 1.4-1**. An overview of each practice is provided below.

Debris removal (EC 1) provides cost-share assistance for physically removing debris on the farmland in an effort to return the land to normal agricultural production. Debris remaining after a natural disaster is unsightly and can have a wide range of effects such as, blocking farm roads and field access, burying cropland in a thick layer of sediment, or creating public health and environmental hazards. Debris can be disposed of on site, hauled off-site, or burned. Under this practice, all debris must be disposed of in a way that will not interfere with existing conservation facilities or create a health hazard or environmental problem.

Grading, shaping, releveling, or similar measures (EC 2) allows producers to repair gullies, humps, ridges or depressions created from excessive erosion, scouring rains or flooding, uprooted vegetation, and debris. These changes to the farmland topography may cause water to pond on the ground surface, result in sand and silt deposits, and result in loss of protective vegetation. Restoration may require replanting vegetation in critical areas, mulching or planting hay or pastureland, mechanically smoothing or leveling the land to restore irrigation.

Restoring permanent fences (EC 3) allows producers to restore damaged cross fences, boundary fences, and cattle gates less than 30 years old. The fence material may be reused for fence construction or disposed of as debris. Depending on the type of fence, heavy machinery may be involved with debris removal or construction.

Restoring conservation structures (EC 4) allows producers to replace or repair structures or in stallments that provide irrigation water to fields and crops, vegetation for erosion control, water and waste storage, water source protection, and water supply for livestock and wildlife. These structures are needed to make farmland operational and their destruction can significantly halt farm operations. Restoration of these structures will often require the use of heavy machinery for earth moving activities, and removing sediment deposits and debris.

Emergency wind erosion control measures (EC 5) such as contour or cross slope chiseling and deep plowing to bring subsoil clods to the surface can be applied to farmland

subject to serious wind erosion because of extended periods of drought or inadequate crop residue or stubble. Wind erosion can occur during high winds from severe storms, tornados, drought, and significantly fire damaged farmlands.

Drought emergency measures (EC 6) provides water conservation and enhancement measures to: permit grazing of range, pasture, or forage by livestock; supply emergency water for existing irrigation systems serving orchards and vineyards; and provide emergency water for confined livestock operations. This practice can only be applied in times of drought and includes activities such as the installation of pipelines, wells, water storage facilities for livestock, water collection facilities, and springs or seeps. Installation of these measures requires the use of heavy machinery.

Other emergency conservation measures (EC 7) such as replacing or restoring a conservation or pollution abatement practice damaged by the natural disaster may be approved under ECP. This practice allows for cost-share assistance for those impacts resulting from natural disasters that have not occurred before. These activities must be approved by the ECP Program Manager.

Field windbreaks and farmstead shelterbelts emergency measures (EC 8) restore field windbreaks and farmstead shelterbelts to help stop wind erosion and provide energy conservation. Windbreaks or shelterbelts are linear plantings of trees and shrubs used to protect wind-sensitive crops, reduce wind erosion, and if properly planted around a farmstead can reduce heating and cooling costs and energy use. Typical activities under this practice include removing debris, purchasing tree and shrub seedlings, and planting trees and shrubs to re-establish the damaged windbreak.

Table 1.4-1. Overview of ECP Practices

Code	Practice	Authorized	Not Authorized
EC 1	Debris Removal	<p>Removing debris from farmland that meets all of the following criteria:</p> <ul style="list-style-type: none"> • Materially affects the productive capacity of the land • Prevents carrying out effective conservation measures • Prevents returning the land to productive agricultural use • Is of a magnitude that requires the use of hired or personal: <ul style="list-style-type: none"> ○ Labor not normally required in the operation of the farm or ranch ○ Equipment that would not normally have been required in the operation of the farm or ranch <p>Removing debris from farmsteads and access roadways that could significantly interfere with normal farming operations.</p>	<p>Removing debris that will not interfere with normal farming operations.</p>
EC 2	Grading, Shaping, Releveling, or Similar Measures	<ul style="list-style-type: none"> • Grading, shaping, and filling gullies created by the disaster. • Releveling of previously leveled irrigated farmland. • Removing humps, ridges, or depressions if they cause water to pond on the land surface. • Incorporating sand or silt deposits into the soil. • Re-establishing permanent vegetative cover on areas where all of the following are present: <ul style="list-style-type: none"> ○ Grading and shaping is required for rehabilitation of the area. ○ The pre-existing permanent vegetative cover was destroyed. <p>The area involved would be subject to critical wind or water erosion unless the cover is re-established.</p>	<ul style="list-style-type: none"> • Establishing vegetative cover on land where it did not previously exist, including drainage ways, even though grading and shaping is required to correct damage on the land. • Releveling measures on irrigated farmland that constitute floating or land planing. • Performing measures in connection with normal farming operations. • Repairing and restoring roadways, including field roads if required to correct damage on the land.

Table 1.4-1. Overview of ECP Practices (cont'd.)

Code	Practice	Authorized	Not Authorized
EC 3	Restoring Permanent Fences	<ul style="list-style-type: none"> • Restoring or replacing fences needed to restore the land to productive agricultural use. • Restoring or replacing the lesser of: <ul style="list-style-type: none"> ○ The same type of fence existing before the disaster. ○ Cost-share for the actual cost of the fence restored or replaced. • Cross fences. • Boundary fences. • Cattle gates. 	<ul style="list-style-type: none"> • Fence reconstruction with minor damage when materials from the previous fence are used. • Reuse of material from the fence damaged by the disaster. • Fences surrounding: <ul style="list-style-type: none"> ○ Corrals and feedlots. ○ Ornamental fences. ○ Holding pens. ○ Cattle guards. ○ For the purpose of enclosing or excluding livestock.
EC 4	Restoring Conservation Structures and Other Installations	<ul style="list-style-type: none"> • Dams, ponds, and other water impoundments for agricultural use. • Sod waterways. • Installed open or closed drainage systems. • Diversions or spreader ditches. • Terrace systems. • Structures for the protection of outlets or water channels before the disaster. • Wells. • Springs. • Pipelines. • Buried mainlines. • Ditches and other permanently installed systems. • Permanent vegetative cover including re-establishment where needed in conjunction with: <ul style="list-style-type: none"> ○ Eligible structures. ○ Installations to prevent critical erosion and siltation. • Animal waste lagoons repaired or replaced outside the 100-year floodplain. 	<ul style="list-style-type: none"> • Animal waste lagoons repaired or replaced in areas that flood more frequently than once in 100 years. • Irrigation wells. • Portable pumps. • Motors. • Portable pipe. • Roadways including field roads. • Wheel move systems. • Hand move systems. • Center pivot systems.

7Table 1.4-1. Overview of ECP Practices (cont'd.)

Code	Practice	Authorized	Not Authorized
EC 5	Emergency Wind Erosion Control Measures	<ul style="list-style-type: none"> • Contour or cross slope chiseling. • Chiseling where impractical to perform on the contour or on the cross slope. • Deep plowing or similar measures to bring subsoil clods to the surface. 	Measures considered to be normal farming operations, such as those needed to prepare a seedbed for the next crop.
EC 6	Drought Emergency Measures	<ul style="list-style-type: none"> • Installing pipe to another source of water because the primary source is inadequate. • Storage facilities, including tanks and troughs above ground, if needed to supply water for immediate needs of livestock. • Constructing and deepening wells for livestock water. • Constructing tail water recovery pits for any irrigation system to orchards and vineyards. • Developing springs or seeps for livestock water. • Wells where there is no other source of emergency water available that could be developed at less expense. • Measures to provide emergency water for livestock confinement operations on the farm that were in confinement before the drought. • Permanently installed submersible pump of a size that would address the needs of livestock on hand at time of disaster. • Solar panels to provide power to pump water for livestock and the solar panels are the least costly alternative. 	<ul style="list-style-type: none"> • Constructing pipelines to supply water for vegetable or other short term crops. • Establishing permanent or temporary vegetative cover. • Livestock water facilities primarily for barns, recreation, wildlife, or corrals, except for livestock already in confinement. • Livestock water facilities to make it possible to graze crop residues, field borders, and temporary or supplemental pasture crops. • Water facilities primarily for headquarters. • Livestock water facilities to provide water on land on which the cover will be used for hay, silage, or field chopped and hauled to headquarters for feeding. • Pipe other than well casing in connection with pumps, pumping equipment, and windmills. • Dry well. • Pumps or motors.

Table 1.4-1. Overview of ECP Practices (cont'd.)

Code	Practice	Authorized	Not Authorized
EC 7	Other Emergency Conservation Measures	<ul style="list-style-type: none"> • Replacing or restoring a conservation or pollution abatement practice damaged by the natural disaster. • Restoring the land to its normal agricultural production capacity. • Conserving or enhancing water resources. • Silt removal from water retention structures during drought. • Hauling water to livestock during drought conditions. 	Measures for the solution of conservation or environmental problems existing before the disaster.
EC 8	Field Windbreaks and Farmstead Shelterbelts Emergency Measures	<ul style="list-style-type: none"> • Removing debris from field windbreaks or farmstead shelterbelts. • Replacing damaged field windbreaks or farmstead shelterbelts. • Purchasing tree seedlings or young shrubs used for field windbreaks or farmstead shelterbelts. • Establishing vegetative cover where needed to prevent serious erosion until trees or shrubs are established. • Chemical or mechanical weed control measures: <ul style="list-style-type: none"> ○ Only where needed to establish trees for the windbreak. ○ Only during the first 24 months after planting. 	<ul style="list-style-type: none"> • Windbreaks or shelterbelts that: <ul style="list-style-type: none"> ○ Were not pre-existing. ○ Were not damaged by the disaster. ○ Are in the Conservation Reserve Program. • Planting orchard trees or ornamental plantings.

1.4.3 Funding

ECP funds are held in reserve at the national level and allocated after a natural disaster determination has been made authorizing ECP designation. Funds are allocated to states based on an estimate of funds needed to begin implementing the program. The states then allocate funds to the appropriate counties. The funds are distributed to applicants on a first-come, first-serve basis until they run out.

Between 2002 and 2006, ECP allocated \$617 million in assistance to over 247,000 farms across the country in order to rehabilitate agricultural lands damaged by natural disasters (**Figure 1.4-1 and Table 1.4-2**). Florida received the most funding during this time period (\$77 million); however, the state with the most farms assisted (over 41,000) is North Carolina. From 2002 through 2006, hurricanes resulted in the highest total dollars, highest payout per participant, and highest payout per acre. However, drought has resulted in the highest number of participants (**Table 1.4-3**).

1.4.3.1 Cost-share Specifications

Agricultural producers applying for ECP assistance can receive reimbursement for 75 percent of the cost of activities covered under the approved conservation practices. The total cost-share provided to an individual participant per natural disaster cannot exceed \$200,000. Financial assistance cannot be provided for activities that receive cost-shares under other FSA emergency or conservation programs.

Figure 1.4-1. Total Cost-Share Allocated by ECP from 2002 to 2006.

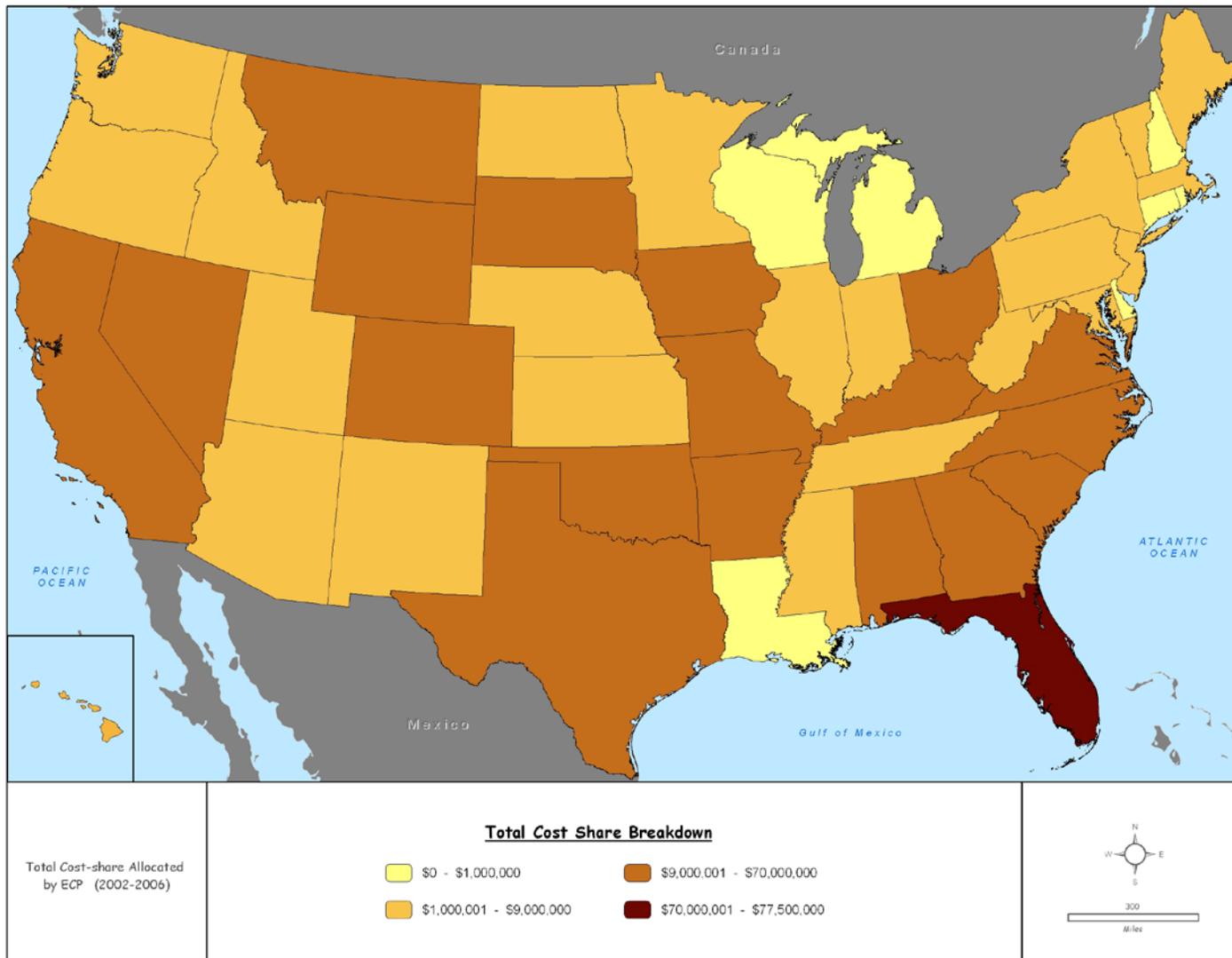


Table 1.4-2. Summary of ECP Cost-share Assistance per State from 2002-2006.

State	Cost-share Assistance	Farms Assisted	Average Cost-share per Farm	% Utilization of the Program
Alabama	\$43,108,680	19,639	\$2,195	6.9895%
Arizona	\$3,021,630	1,671	\$1,808	0.4899%
Arkansas	\$9,864,051	5,106	\$1,932	1.5993%
California	\$12,603,714	1,145	\$11,008	2.0435%
Colorado	\$13,439,304	3,421	\$3,928	2.1790%
Connecticut	\$729,429	113	\$6,455	0.1183%
Delaware	\$1,920	3	\$640	0.0003%
Florida	\$77,489,379	12,277	\$6,312	12.5639%
Georgia	\$53,390,847	11,983	\$4,456	8.6567%
Hawaii	\$4,839,693	344	\$14,069	0.7847%
Idaho	\$8,402,577	1,916	\$4,385	1.3624%
Illinois	\$3,260,007	1,450	\$2,248	0.5286%
Indiana	\$1,091,406	658	\$1,659	0.1770%
Iowa	\$11,129,011	5,558	\$2,002	1.8044%
Kansas	\$1,337,160	658	\$2,032	0.2168%
Kentucky	\$15,595,596	8,138	\$1,916	2.5286%
Louisiana	\$295,140	98	\$3,012	0.0479%
Maine	\$1,308,519	567	\$2,308	0.2122%
Maryland	\$2,443,524	820	\$2,980	0.3962%
Massachusetts	\$2,699,490	555	\$4,864	0.4377%
Michigan	\$335,238	40	\$8,381	0.0544%
Minnesota	\$5,691,268	1,903	\$2,991	0.9228%
Mississippi	\$1,303,356	1,247	\$1,045	0.2113%
Missouri	\$22,569,615	9,321	\$2,421	3.6594%
Montana	\$27,835,311	6,869	\$4,052	4.5131%
Nebraska	\$5,092,852	2,256	\$2,257	0.8257%
Nevada	\$10,101,867	895	\$11,287	1.6379%
New Hampshire	\$723,915	202	\$3,584	0.1174%
New Jersey	\$4,263,912	154	\$27,688	0.6913%
New Mexico	\$4,069,500	1,027	\$3,963	0.6598%
New York	\$6,065,874	2,456	\$2,470	0.9835%
North Carolina	\$54,521,949	41,160	\$1,325	8.8400%
North Dakota	\$1,604,223	850	\$1,887	0.2601%
Ohio	\$13,337,196	8,983	\$1,485	2.1625%
Oklahoma	\$22,204,555	12,604	\$1,762	3.6002%
Oregon	\$4,073,118	854	\$4,769	0.6604%
Pennsylvania	\$5,456,826	2,611	\$2,090	0.8848%
Rhode Island	\$33,975	6	\$5,663	0.0055%
South Carolina	\$13,444,824	13,913	\$966	2.1799%
South Dakota	\$55,518,579	19,684	\$2,820	9.0016%
Tennessee	\$7,259,535	4,363	\$1,664	1.1770%

Table 1.4-2. Summary of ECP Cost-share Assistance per State from 2002-2006 (cont'd.)

State	Cost-share Assistance	Farms Assisted	Average Cost-share per Farm	% Utilization of the Program
Texas	\$16,340,175	7,174	\$2,278	2.6494%
Utah	\$7,838,205	2,827	\$2,773	1.2709%
Vermont	\$2,633,289	945	\$2,787	0.4270%
Virginia	\$32,434,485	21,172	\$1,532	5.2588%
Washington	\$8,610,636	1,444	\$5,963	1.3961%
West Virginia	\$7,001,295	4,379	\$1,599	1.1352%
Wisconsin	\$372,657	81	\$4,601	0.0604%
Wyoming	\$9,971,412	2,278	\$4,377	1.6167%
U.S.	\$616,760,719	247,818	\$2,489	100.0000%

Table 1.4-3. ECP History by Major Disaster Type (2002 – 2006)

Type of Disaster	No. Counties Receiving ECP Assistance	Total Acres Served	Total Number Participants	Total Dollars Paid for Disaster	Average Payout per Participant	Average Payout per Acre
Drought	1,672	20,286,511	24,565	\$71,189,147	\$2,898	\$4
Flood	581	1,397,327	6,629	\$20,406,602	\$3,078	\$15
Hurricane	608	2,056,387	13,307	\$74,544,498	\$5,602	\$36
Tornado	292	416,676	3,504	\$10,343,057	\$2,952	\$25
Other	343	8,019,500	11,125	\$29,398,550	\$2,643	\$4

1.4.3.2 Limited Resource Producer

Provisions are included in ECP to assure that special consideration is given to limited resource producers in order that the most beneficial use of ECP may be obtained. The definition of a “limited resource producer” is any producer: with direct or indirect gross farm sales not more than \$100,000 in each of the previous two years; and has a total household income at or below the national poverty level for a family of four or less than 50 percent of the county median household income in each of the previous two years. Limited resource producers can receive 90 percent cost-share for implementing approved practices under ECP.

2.0 PROPOSED ACTION AND ALTERNATIVES

This section is the heart of the environmental impact statement. Based on information and analysis presented in the sections on the Affected Environment (1502.15) and the Environmental Consequences (1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining issues and providing a clear basis for choice among options by the decisionmaker and the public.

40 CFR 1502.14

The proposed action is to expand the definition of farmland beyond cropland, pastureland, and hayland to make ECP available for rehabilitating other agricultural lands. The no action alternative, required by the CEQ will serve as the analytical environmental baseline against which other alternatives will be evaluated. The proposed action does not include changes to the approved practices described in Section 1.4.2 or the funding provisions described in Section 1.4.3. A comparison of the Proposed Action and No Action Alternatives are provided in **Table 2.0-1**.

Table 2.0-1. Alternatives Comparison

Program Components	No Action (Current Program)	Proposed Action (Expansion)
Cost-Share Specifications	75% for approved practices 90% for limited resource producer \$200,000 per person per disaster limit	No Change
Approved Practices	EC 1 Debris removal EC 2 Grading and shaping EC 3 Fence restoration EC 4 Restoring conservation structures EC 5 Emergency wind erosion control EC 6 Water conservation EC 7 Other conservation measures EC 8 Field windbreaks and shelterbelts	No Change
Eligible Land	Cropland Pastureland Hayland	Expand definition to include: Timberland Farmsteads Feedlots Farm roads Farm Buildings

2.1 NO ACTION (CURRENT PROGRAM)

Under this alternative, ECP would continue as it is currently administered and described in Section 1.4. ECP benefits would not be available for lands other than those currently eligible (namely cropland, hayland, and pastureland).

2.2 PROPOSED ACTION (EXPANSION)

Currently, eligible land for ECP benefits is limited to cropland, pastureland, and hayland. FSA is proposing to expand the eligibility requirement to include timberland, farmsteads, feedlots, farm roads, and farm buildings. This proposed change would allow producers to receive financial assistance for implementing approved practices on these lands to return the farm to normal operating conditions.

A farm requires several buildings and structures to make the farm operational. In addition, multiple roads are required to facilitate worker, equipment, and automotive access to crops, buildings, and fields. Debris prohibiting access to croplands and damage to the land surrounding important facilities during a natural disaster can halt agricultural production and create significant unexpected financial strain for the producer. Under ECP, the cost of repair of these structures is not covered, but repair and clearing of the land surrounding these structures would be eligible.

Timberland is forested land that is primarily dedicated to the commercial production of wood and fiber. Areas qualifying as timberland have the capability of producing more than 20 cubic feet per acre per year of industrial wood in natural stands. Natural disasters can cover the land with debris, destroy or burn protective vegetation, contaminate soils, deposit sediment, increase runoff, and create landslides. All of these impacts could severely affect the commercial value of the timber.

Expanding the definition of farmland would add approximately 426 million acres to what is currently eligible (34 percent increase) across the U.S. (**Table 2.2-1, Figure 2.2-1**). Making ECP available to these additional acres of land represents a large increase in coverage of the program, however, a review of ECP funding data from 2002 through 2006 indicated that utilization of the program by individual states has varied from less than 0.001 percent (Delaware) to 12.5 percent (Florida) across the U.S. (refer to **Table 1.4-2**).

Table 2.2-1. Currently Eligible Land and Proposed Expansion

State	Currently Eligible (acres)			Proposed Increase (acres)			% Change
	Cropland	Pastureland and Rangeland	Total	Timberland (Non-Federal)	Farmsteads, roads, feedlots, buildings ¹	Total	
Alabama	3,732,751	1,514,500	5,247,251	22,059,000	477,879	22,536,879	81
Alaska	98,131	730,478	828,609	7,114,000	29,862	7,143,862	90
Arizona	1,261,894	23,240,467	24,502,361	1,089,000	2,051,766	3,140,766	11
Arkansas	9,576,047	1,977,177	11,553,224	15,558,000	579,619	16,137,619	58
California	10,994,161	13,987,763	24,981,924	7,651,000	1,415,619	9,066,619	27
Colorado	11,530,700	17,341,749	28,872,449	3,587,000	875,657	4,462,657	13
Connecticut	170,673	21,988	192,661	1,689,000	37,262	1,726,262	90
Delaware	457,201	6,540	463,741	376,000	22,610	398,610	46
Florida	3,715,257	3,400,193	7,115,450	13,035,000	813,694	13,848,694	66
Georgia	4,676,567	1,173,187	5,849,754	22,416,000	608,777	23,024,777	80
Hawaii	211,120	852,626	1,063,746	700,000	119,068	819,068	44
Idaho	6,152,611	4,522,883	10,675,494	4,227,000	512,562	4,739,562	31
Illinois	24,171,260	770,995	24,942,255	3,774,000	831,932	4,605,932	16
Indiana	12,909,002	427,190	13,336,192	3,969,000	568,699	4,537,699	25
Iowa	27,153,291	1,735,421	28,888,712	1,900,000	1,504,026	3,404,026	11
Kansas	29,542,022	15,504,008	45,046,030	1,438,000	1,495,286	2,933,286	6
Kentucky	8,412,354	1,613,681	10,026,035	11,484,000	706,045	12,190,045	55
Louisiana	5,071,537	1,194,963	6,266,500	12,984,000	546,227	13,530,227	68
Maine	536,839	40,967	577,806	16,899,000	89,407	16,988,407	97
Maryland	1,487,218	120,419	1,607,637	2,346,000	113,367	2,459,367	60
Massachusetts	207,734	31,279	239,013	2,596,000	68,666	2,664,666	92
Michigan	7,983,574	254,062	8,237,636	16,024,000	681,085	16,705,085	67
Minnesota	22,729,158	1,187,082	23,916,240	12,704,000	1,620,535	14,324,535	37

Table 2.2-1. Currently Eligible Land and Proposed Expansion (cont'd.)

State	Currently Eligible (acres)			Proposed Increase (acres)			% Change
	Cropland	Pastureland and Rangeland	Total	Timberland (Non-Federal)	Farmsteads, roads, feedlots, buildings ¹	Total	
Mississippi	5,822,786	1,403,451	7,226,237	17,046,000	607,266	17,653,266	71
Missouri	18,884,920	4,854,438	23,739,358	11,804,000	1,354,103	13,158,103	36
Montana	18,315,514	38,241,382	56,556,896	6,679,000	854,945	7,533,945	12
Nebraska	22,520,874	21,940,679	44,461,553	850,000	1,059,412	1,909,412	4
Nevada	940,295	4,974,195	5,914,490	99,000	372,444	471,444	7
New Hampshire	129,388	19,848	149,236	3,961,000	29,175	3,990,175	96
New Jersey	547,668	41,579	589,247	1,822,000	66,406	1,888,406	76
New Mexico	2,575,107	39,136,229	41,711,336	1,530,000	550,368	2,080,368	5
New York	4,841,367	550,225	5,391,592	15,307,000	619,792	15,926,792	75
North Carolina	5,472,128	605,860	6,077,988	17,191,000	480,895	17,671,895	74
North Dakota	26,506,477	10,984,441	37,490,918	413,000	1,568,034	1,981,034	5
Ohio	11,424,499	796,078	12,220,577	7,348,000	676,651	8,024,651	40
Oklahoma	14,843,357	15,732,765	30,576,122	5,791,000	818,958	6,609,958	18
Oregon	5,417,387	8,855,459	14,272,846	9,637,000	641,175	10,278,175	42
Pennsylvania	5,120,685	526,723	5,647,408	15,355,000	518,099	15,873,099	74
Rhode Island	23,506	5,080	28,586	336,000	7,661	343,661	92
South Carolina	2,270,084	448,140	2,718,224	11,420,000	276,731	11,696,731	81
South Dakota	20,318,036	22,025,971	42,344,007	543,000	1,205,047	1,748,047	4
Tennessee	6,992,992	1,948,445	8,941,437	12,978,000	401,601	13,379,601	60
Texas	38,657,710	83,402,865	122,060,575	11,105,000	2,165,910	13,270,910	10
Utah	2,067,437	9,007,771	11,075,208	1,097,000	323,136	1,420,136	11
Vermont	567,509	89,095	656,604	4,196,000	65,101	4,261,101	87
Virginia	4,194,158	1,412,483	5,606,641	13,759,000	350,456	14,109,456	72

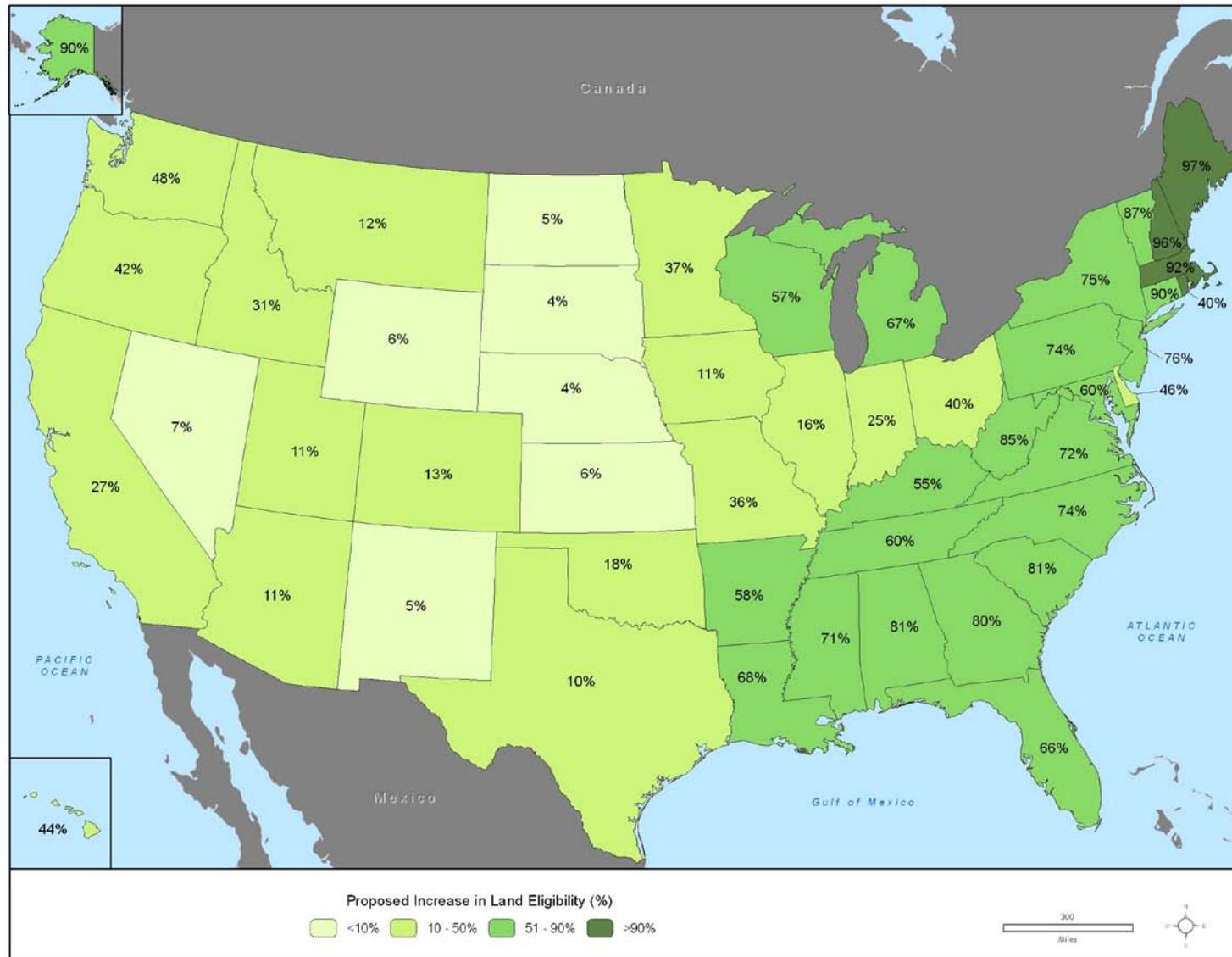
Table 2.2-1. Currently Eligible Land and Proposed Expansion (cont'd.)

State	Currently Eligible (acres)			Proposed Increase (acres)			% Change
	Cropland	Pastureland and Rangeland	Total	Timberland (Non-Federal)	Farmsteads, roads, feedlots, buildings ¹	Total	
Washington	8,038,469	4,847,324	12,885,793	11,244,000	499,421	11,743,421	48
West Virginia	1,173,032	754,045	1,927,077	10,868,000	175,524	11,043,524	85
Wisconsin	10,728,655	777,616	11,506,271	14,181,000	1,055,779	15,236,779	57
Wyoming	2,989,804	30,247,024	33,236,828	1,647,000	443,328	2,090,328	6
U.S.	434,164,946	395,278,829	829,443,775	393,823,000	32,957,068	426,780,068	34

Source: USDA 2002.

¹Acreage for “land in house lots, ponds, roads, wasteland, etc.” from USDA 2002 is used to represent these categories.

Figure 2.2-1. Proposed Increase in Land Eligibility



2.3 DEVELOPMENT OF ALTERNATIVES

The purpose of the scoping process is to determine the scope of issues to be addressed in the SEIS and to identify significant issues relating to the action being proposed. The lead agency is required to invite input from Federal, state, and local agencies, affected Indian tribes, project proponents, and other interested parties.

2.4 PUBLIC INVOLVEMENT

2.4.1 Scoping

Public meetings scoping the proposed action were held in Mobile, Alabama; Naples, Florida; Atlanta, Georgia; Columbia, Missouri; Amarillo, Texas; Franklinton, Louisiana; and Dixon, California to solicit public input on the proposed changes to ECP prior to development of the SEIS. In order to reach a majority of interested parties, FSA performed ECP participation density modeling to determine those areas that utilized the program the most or received the most ECP funding since 2002 and meetings were planned for those seven states.

Announcements of the scoping meetings were posted in the Federal Register, state and County FSA offices, and local newspapers in those seven states prior to the meeting to generate public interest and increase meeting participation. In addition, a public website was created that offered program information, dates and the locations of and driving directions to each of the meetings, and an electronic form for submitting comments via the internet. A presentation was given at each meeting and the public was given an opportunity to comment and ask questions. All meetings were attended by the FSA National Environmental Compliance Manager, National ECP Program Specialist, and State Environmental Coordinator, and were recorded by a court reporter.

All comments received during the scoping process were recorded and categorized based upon environmental resource area. The comments were evaluated by FSA to determine the scope and significance of each issue, and the depth at which it would be analyzed in this SEIS. ECP received few comments during the scoping meetings and the comment period. Positive feedback supporting the program was provided by those producers who attended the meetings. Copies of the scoping comments received are provided in **Appendix A**.

2.4.2 Comments on Draft SEIS

FSA also solicited comments from the public and agencies on the Draft ECP SEIS. The Draft SEIS evaluated the environmental impacts of the Proposed Action and the No Action Alternative. Comments were received only from two Federal agencies and one State agency. FSA compiled and reviewed all of the comments submitted, and all substantive

comments were considered in preparation of this Final ECP SEIS. The comments received and FSA's responses are provided in **Appendix B**.

2.5 ALTERNATIVES ELIMINATED FROM FURTHER ANALYSIS

During the development of alternatives, FSA considered expanding eligibility to land supporting horses used for recreation, commercial or other purposes (such as race horses). This alternative was eliminated from further consideration because it would require a statutory change.

Under the current program, COC determine if a disaster is eligible for ECP assistance. FSA considered changing the program so that ECP would only be available to those counties that have been declared disaster areas by the President or Secretary of Agriculture. This would streamline the administrative process and make the application of the program more consistent across the U.S. However, records of disasters that are declared only by COC and not the President or Secretary of Agriculture do not exist. Therefore, it was eliminated from the SEIS due to insufficient information to perform a meaningful analysis.

Another option considered was combining ECP and Emergency Watershed Protection (EWP) into a single program. Currently EWP is administered by the NRCS while ECP is administered by FSA. The purpose of EWP is to undertake emergency measures for runoff retardation and soil erosion prevention to safeguard lives and property from floods, drought, and the products of erosion on any watershed damaged by a natural disaster. A combination of these programs is outside the scope of this SEIS and was therefore eliminated from analysis.

2.6 APPROACH TO ENVIRONMENTAL ANALYSIS

This EIS provides supplemental analysis from the 2003 PEIS (USDA 2003) for ECP and addresses only the potential impacts associated with the proposed expansion of the definition of farmland. The affected environment for the SEIS is the same as that described in the 2003 PEIS and is summarized in this document.

ECP is a voluntary program and specific acreages that may be enrolled for financial assistance in response to a natural disaster is not known. The potential impacts are addressed on a regional level. Site specific environmental evaluation is required when a producer applies for financial assistance under ECP. This evaluation determines if protected resources occur on the property and if they have the potential to be affected. Protected resources include: wetlands; floodplains; sole source aquifers; threatened and endangered species and their critical habitat; cultural resources; coastal barriers; coastal zone; and national natural landmarks. The site specific environmental evaluation process

and definitions of protected resources are provided in the FSA Handbook for Environmental Quality (1-EQ) (USDA 2008).

2.7 RESOURCES ELIMINATED FROM FURTHER ANALYSIS

The potential environmental impacts from implementing the proposed action must be addressed on a regional level to ensure adequate NEPA coverage for the program. As such, the potential impacts on some environmental resources are no different than what was analyzed in the 2003 PEIS (USDA 2003) which utilized the same approach for analysis. Applicants would still be required to complete site specific environmental evaluations prior to receiving assistance. This evaluation will ensure protection of sensitive environmental resources protected by environmental laws, regulations, and executive orders. Resources that have been eliminated from further analysis in accordance with CEQ 1508.8 in this SEIS include:

Air Quality

The proposed action would not result in impacts to air quality outside of the scope of the 2003 PEIS (USDA 2003). The potential effects to air quality would be associated with implementation of the practices, which are not proposed for change under the SEIS. Therefore, the impacts discussion in the 2003 PEIS is sufficient for both alternatives.

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3.0 AFFECTED ENVIRONMENT

The environmental impact statement shall succinctly describe the area(s) to be affected or created by the alternatives under consideration.

40 CFR 1502.15

The geographic scope of the environment potentially affected by ECP encompasses agricultural lands of the U.S. and its territories. As such, the 2003 ECP PEIS (USDA 2003) provided descriptions of the natural environment as well as socioeconomics for agricultural lands across the U.S. This SEIS focuses descriptions of the affected environment on the proposed expansion of ECP: timberlands, roads, farmsteads, feedlots, and farm buildings. Since the affected environment for implementation of ECP would be lands where a natural disaster has occurred, a brief review of the effect of natural disasters on each resource is provided in this document. A full description of the effects of natural disasters is provided in the 2003 ECP PEIS.

Resource areas potentially affected by this proposed action and analyzed in detail in this SEIS include Biological Resources, Water Resources, Soil Resources, Cultural Resources, Socioeconomics, and Environmental Justice.

3.1 BIOLOGICAL RESOURCES

3.1.1 Definition of Resource

Biological resources include plant and animal species and the habitats in which they occur. For this analysis, biological resources are divided into the following categories: vegetation, wildlife, and protected species. Vegetation and wildlife refer to the plant and animal species, both native and introduced that characterize a region. Protected species refers to federally threatened and endangered species and their designated Critical Habitat, both of which are protected under the Endangered Species Act (ESA).

3.1.2 Effects of Natural Disaster on Resource

The primary effect of natural disasters on biological resources is modification of the existing habitat as described in the 2003 ECP EIS. Alteration of habitat has negative impacts to natural or planted vegetation and wildlife using or inhabiting the area. In the forest environment strong winds, fires, floods, landslides or mudslides, and earthquakes can uproot trees and shrubs creating disaster debris. This debris reduces wildlife food sources, cover, and security.

In the aquatic environment, such disasters can destabilize stream banks and accelerate erosion. Increased sedimentation from erosion prohibits sunlight from reaching bottom

dwelling plants and animals. Debris can also create gullies and dams which can become new aquatic habitat. Flooding of agricultural fields increases runoff of chemicals (pesticides, herbicides, and fertilizers) degrading aquatic habitat.

3.1.3 Affected Environment

3.1.3.1 Vegetation and Wildlife

Vegetation is often described in terms of ecoregions, areas of relatively homogenous soils, vegetation, climate and geology (Bailey et al. 1995). There are four levels of ecoregions: domain, division, province and section (also called subregion). There are three domains in the continental U.S. which are large scale areas of similar climates: Humid Temperate, Dry, and Humid Tropical. Within domains, there are a number of divisions, delineated by finer-scale climatic differences. Divisions are subdivided into provinces which are differentiated based on vegetation (**Table 3.1 -1**). Each ecoregion is characterized by wildlife common to that habitat. A description of each division and the associated vegetation and wildlife is provided in **Appendix C**.

The Humid Temperate Domain covers part of central U.S. to the east coast, and the outer west coast (California, Washington, and Oregon) (**Figure 3.1 -1**). The climate of this domain is governed by both tropical and polar air masses. This domain experiences pronounced seasons, with strong annual cycles of temperature and precipitation. The variable importance of winter frost determines six divisions: warm continental, hot continental, subtropical, marine, prairie, and Mediterranean (Bailey et al. 1995).

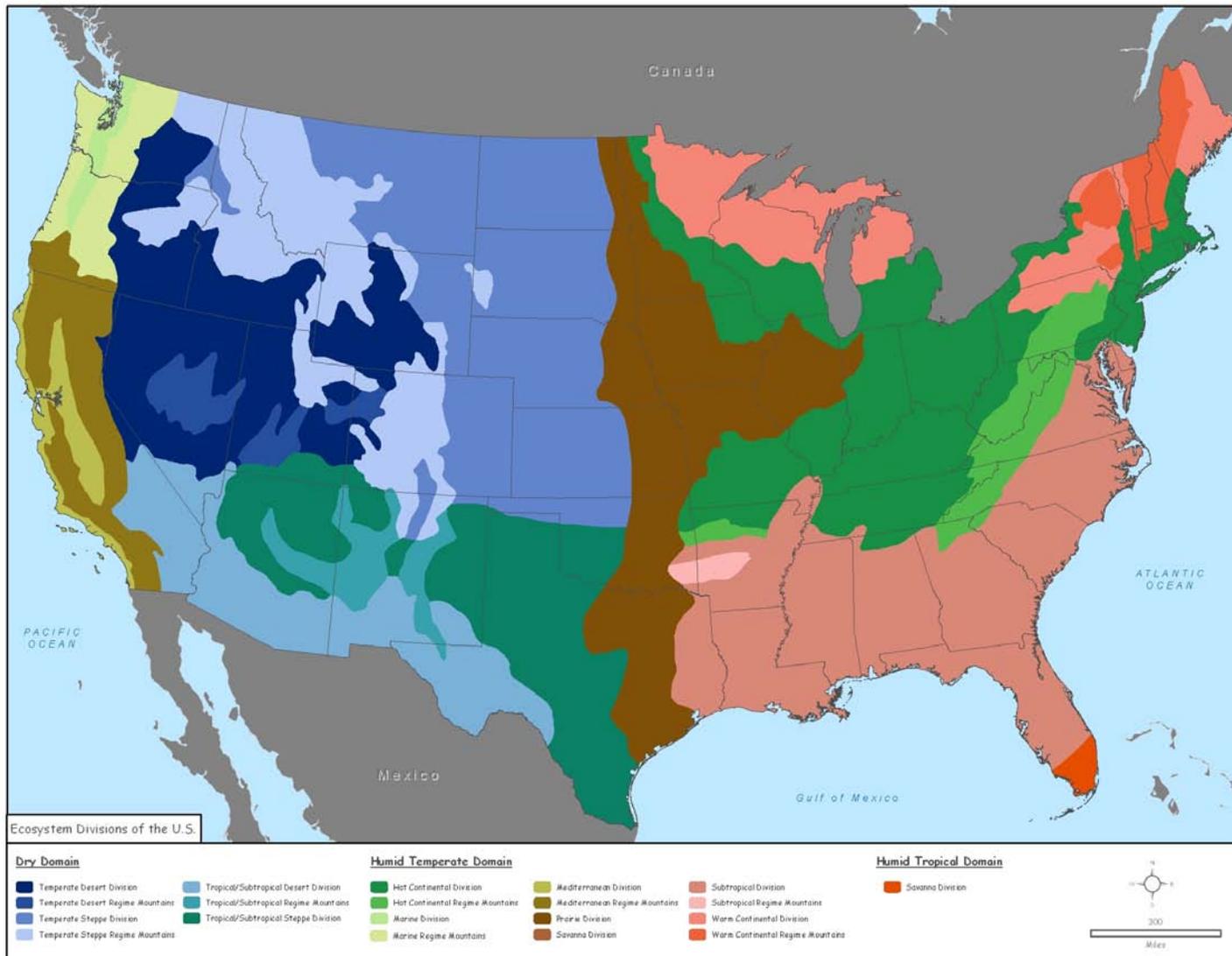
The Dry Domain covers the central U.S. where annual losses of water through evaporation exceed annual water gains from precipitation (**Figure 3.1 -1**). Dry climates are the most extensive of all climatic groups covering a quarter or more of the earth's land surface. Two types of dry climates are commonly recognized: the arid desert, and the semiarid steppe. Generally, the steppe is a transitional belt surrounding the desert and separating it from humid climates. Divisions found within this domain include: tropical/subtropical steppe; tropical/subtropical desert; temperate steppe; and temperate desert (Bailey et al. 1995).

Table 3.1-1. Divisions and Provinces within the Continental U.S.

Division	Province
Humid Temperate Domain	
Warm Continental	Laurentian Mixed Forest Adirondack-New England Mixed Forest – Coniferous Forest – Alpine Meadow
Hot continental	Eastern Broadleaf Forest (Oceanic) Eastern Broadleaf Forest (Continental) Central Appalachian Broadleaf Forest – Coniferous Forest – Meadow Ozark-Broadleaf Forest – Meadow
Subtropical	Southeastern Mixed Forest Outer Coastal Plain Mixed Forest Lower Mississippi Riverine Forest Ouachita Mixed Forest – Meadow
Marine	Pacific Lowland Mixed Forest Cascade Mixed Forest – Coniferous Forest – Alpine Meadow Pacific Coastal Mountains Forest – Meadow Pacific Gulf Coastal Forest – Meadow
Prairie	Prairie Parkland (Temperate) Prairie Parkland (Subtropical)
Mediterranean	California Coastal Chaparral Forest and Shrub Province California Dry Steppe California Coastal Steppe, Mixed Forest, and Redwood Forest Sierran Steppe – Mixed Forest – Coniferous Forest – Alpine Meadow California Coastal Range Open Woodland Shrub – Coniferous Forest – Meadow
Dry Domain	
Tropical/Subtropical Steppe Division	Great Plains Steppe and Shrub Colorado Plateau Semidesert Southwest Plateau and Plains Dry Steppe and Shrub Arizona-New Mexico Mountains Semidesert – Open Woodland – Coniferous Forest – Alpine Meadow
Tropical/Subtropical Desert Division	Chihuahuan Semidesert American Semidesert and Desert
Temperate Steppe Division	Great Plains – Palouse Dry Steppe Great Plains Steppe Southern Rocky Mountain Steppe – Open Woodland – Coniferous Forest – Alpine Meadow Middle Rocky Mountain Steppe – Coniferous Forest – Alpine Meadow Northern Rocky Mountain Forest Steppe – Coniferous Forest – Alpine Meadow Black Hills Coniferous Forest
Temperate Desert Division	Intermountain Semidesert and Desert Intermountain Semidesert Nevada-Utah Mountains Semidesert – Coniferous Forest – Alpine Meadow
Humid Tropical Domain	
Savanna Division	Everglades

Source: Bailey et al. 1995

Figure 3.1-1. Ecoregion Divisions



The Humid Tropical Domain is found in the very southern tip of Florida where the climate is largely controlled by equatorial and tropical air masses. There is an average monthly temperature above 64F with no winter season. The savanna division is the only division of this domain found in the continental U.S. (Bailey et al. 1995).

3.1.3.2 Protected Species

The U.S. Fish and Wildlife Service (USFWS) is the lead agency governing threatened and endangered species. Federal agencies proposing activities that could potentially affect a protected species must consult with the USFWS. Protected species often have very specific living conditions based on their reproductive requirements. This section focuses on the protected species that may occur in a timberland (or forestland) environment. **Appendix D** provides a full list of protected species that occupy forestlands and should be used during site specific environmental evaluation.

Within the continental U.S. there are 120 protected species that could potentially occur within forestland habitat (**Table 3.1-2**). **Appendix D** provides scientific and common names of these species, their listing status, states in which they are listed, and descriptions of their forestland habitat.

Table 3.1-2. Protected Species within the Continental U.S.

	Total Number of Protected Species	Number of Protected Species with Forestland Habitat
Birds	89	11
Mammals	81	33
Amphibians	23	6
Reptiles	37	4
Insects/Arachnids	69	6
Clams/Snails	145	3
Plants	744	57

Source: USFWS 2008.

3.2 WATER RESOURCES

3.2.1 Definition of Resource

The Clean Water Act, the Safe Drinking Water Act, and the Water Quality Act are the primary Federal laws that protect the nation's waters including lakes, rivers, aquifers, and wetlands. For this analysis, water resources include surface water, groundwater and aquifers, wetlands, and floodplains.

Surface water includes streams and rivers, lakes, and reservoirs. Surface runoff, the part of the precipitation, snow melt, or irrigation water that appears in uncontrolled surface

streams, rivers, drains or sewers (U.S. Geological Survey [USGS] 2005a), can affect surface water quality by depositing sediment, minerals, or contaminants into surface water bodies. Surface runoff is influenced by meteorological factors such as rainfall intensity and duration, and physical factors such as vegetation, soil type, and topography.

Groundwater refers to subsurface hydrologic resources that are used for domestic, agricultural, and industrial purposes. Groundwater is stored in natural geologic formations called aquifers. In areas with few or no alternative sources to the groundwater resource, an aquifer may be designated as a sole source aquifer by the Environmental Protection Agency (EPA), which requires EPA review of any proposed projects that are receiving Federal financial assistance within the designated areas (EPA 2006b).

Wetlands are defined by the USACE as areas which are characterized by a prevalence of vegetation adapted to saturated soil conditions (USACE 1987). Wetlands can be associated with groundwater or surface water and are identified based on specific soil, hydrology, and vegetation criteria defined by USACE.

Floodplains are defined by the Federal Emergency Management Agency (FEMA) as those low lying areas that are subject to inundation by a 100-year flood, a flood that has a 1 percent chance of being equaled or exceeded in any given year. Federal agencies are required to avoid, to the extent possible, adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development.

3.2.2 Effects of Natural Disaster on Resource

Natural disasters can affect water resources in several ways. Severe weather may cause damage to farm structures and systems (for example, broken dams, sediment filled diversions, broken pipes, and water protection structures) thereby affecting water quality. Debris and eroded sediment caused by high winds may be deposited into surface water bodies, which can also affect water quality. Eroded sediment containing pesticides and other chemicals could impair wetland function.

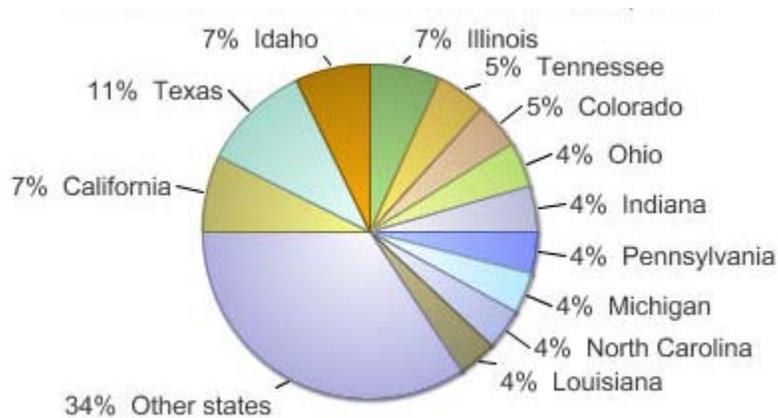
Droughts would likely cause a decrease in surface water flows, causing sediment buildup from erosion; pumping from the surface water bodies could therefore affect turbidity. Droughts may also require a greater reliance on groundwater as surface water supplies decrease. New wells may be installed or existing wells deepened that could affect aquifer and water table levels. Long term droughts would not allow groundwater levels to recharge sufficiently, which could affect future water supplies.

3.2.3 Affected Environment

3.2.3.1 Surface Water

Surface water in rivers, streams, creeks, lakes, and reservoirs supports everyday life through uses such as drinking water and other public uses, irrigation, and industrial uses. Of all the water used in the U.S. in 2000 (about 408 billion gallons per day), about 64 percent came from fresh surface water sources (USGS 2005a). **Figure 3.2-1** shows surface water withdrawals throughout the U.S.; Texas uses the greatest amount of surface water relative to all other states.

Figure 3.2-1. Total Fresh Surface Water Withdrawals, 2000



Source: USGS 2005a

Because of the large dependency on surface water for everyday use, surface water quality is of great importance. Runoff from farmlands may contain sediment, pesticides and fertilizers that can flow to surface waters, adversely affecting the water quality needed to support beneficial uses of the water body such as aquatic ecosystems, human uses of the water, and agriculture.

The Clean Water Act helps maintain water quality by giving the EPA authority to implement pollution control programs and by setting water quality standards for all contaminants in surface waters (EPA 2006a).

3.2.3.2 Groundwater

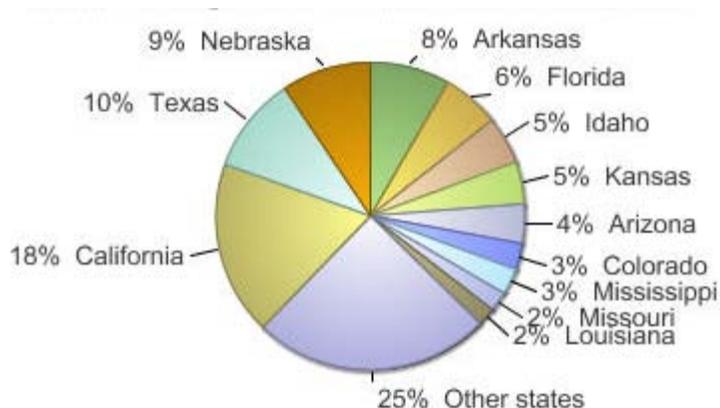
Groundwater is an important resource as it supplies water to people in areas with insufficient surface water. In 2000, approximately 70 billion gallons of groundwater were consumed daily (USGS 2005a). The majority of groundwater withdrawals, 68 percent,

were used for irrigation; 19 percent were used for public purposes, mainly to supply drinking water (USGS 2005b).

Figure 3.2-2 shows groundwater withdrawals throughout the U.S.; California uses the greatest amount of groundwater relative to all other states.

Groundwater is also ecologically important because it supplies water to wetlands, and through groundwater-surface water interaction, groundwater contributes flow to surface water bodies.

Figure 3.2-2. Total Fresh Ground Water Withdrawals, 2000



Source: USGS 2005b

Groundwater levels vary seasonally and annually depending on hydrologic conditions. If withdrawals are greater than recharge, groundwater levels may decline. Maintaining groundwater levels at a sustainable level is an important management issue throughout the country.

3.2.3.3 Wetlands

EPA Regulations (40 CFR 230.3(t)) define wetlands as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas."

Regional and local differences in soils, topography, climate, hydrology, water chemistry, and vegetation determine wetland type. Wetlands are grouped into two general categories: coastal or tidal wetlands and inland or non-tidal wetlands (EPA 2006c).

Coastal wetlands are found along the Atlantic, Pacific, Alaskan, and Gulf coasts. They are closely linked to our nation's estuaries, where sea water mixes with fresh water to form an environment of varying salinities.

Inland wetlands are most common on floodplains along rivers and streams, in isolated depressions surrounded by dry land, along the margins of lakes and ponds, and in other low-lying areas where the groundwater intercepts the soil surface or where precipitation sufficiently saturates the soil. Certain inland wetlands are common to specific regions:

- Bog and fens – northeastern and north central states and Alaska
- Wet meadows/wet prairies – Midwest
- Inland saline and alkaline marshes and riparian wetlands – arid and semiarid west
- Prairie potholes – Iowa, Minnesota, and the Dakotas
- Alpine meadows – west
- Playa lakes – southwest and Great Plains
- Bottomland hardwood swamps – south
- Pocosins and Carolina Bays – southeast coastal states
- Tundra wetlands – Alaska

Wetlands support plant and animal life, provide flood protection, improve water quality as water filters through the wetland, and store carbon in plants and soil helping reduce effects of global climate change.

3.2.3.4 Floodplains

Floodplains are flat or nearly flat land that border rivers, streams, oceans, lakes, or other bodies of standing water and experience periodic flooding. Floodplains are an important resource because they provide flood and erosion control, help maintain water quality, and contribute to sustaining groundwater levels. Floodplains also provide habitat for plant and animal species, recreational opportunities, and aesthetic benefits.

Although floodplains provide benefits, development within floodplains can result in structural damage. The National Flood Insurance Program regulates development in mapped floodplains based on the 100-year flood (a flood magnitude that has a one percent chance of occurring in a given year).

3.3 SOILS

3.3.1 Definition of Resource

Soil resources for this analysis include lands that are used for the normal production of agricultural commodities and livestock. These soils are formed mainly by the weathering of rocks, the decaying of plant matter, and the deposition of materials such as chemical and biological fertilizers, that are derived from other origins. Soils are differentiated based on characteristics such as particle size, texture and color, and classified taxonomically into

soil orders based on observable properties such as organic matter content and degree of soil profile development (Brady and Weil 1996).

Soil resources are greatly influenced by factors such as climate, soil properties, vegetative cover, and erodibility potential. Soils susceptible to erosion are identified using the Erodibility Index (EI). The EI provides a numerical expression of the potential for a soil to erode based on factors such as topography and climate. The index value is derived from the Universal Soil Loss Equation for water erosion, and the Wind Erosion Equation for wind erosion. The range is from one, the lowest erosion potential, to eight the highest. Highly erodible lands (HEL) have an index value of eight (USDA 2003, NRCS 2008). The list of soils considered highly erodible are developed and maintained for each soil survey. The 2002 Farm Bill, as amended, contains soil conservation compliance requirements for producers using HEL.

The proposed changes to ECP include making timberlands, farmsteads, farm roads, and farm buildings eligible for the program. Of these proposed additions to land eligibility, timberlands represent relatively undisturbed areas where soil properties and vegetative cover are well established and erosion potential is much lower compared to fields (Patric 1976).

3.3.2 Effects of Natural Disaster on Resource

Natural disasters can alter soil characteristics when large trees are uprooted by excessive winds; flooding, or excessive rainfall, promotes gullies, rills and sheet erosion; and hurricane wind speeds remove seedlings, topsoil, and other soil nutrients. Debris from storms, such as down trees or building materials, can create further erosive conditions during rain events by providing a linear path or trench for water to flow. Erosion naturally occurs when soil particles are transported to other locations. Factors that contribute to the erodibility of soil include climate, soil properties (infiltration capacity and structural stability) slope, and surface cover (Brady and Weil 1996, USDA 2003).

A thorough analysis of the effects of various types of natural disasters to soils, and their erodibility potential in fields was conducted for the 2003 ECP PEIS (USDA 2003).

3.3.3 Affected Environment

Bailey et al. (1995) describes soils typically associated with the ecoregions of North America. Ecoregions of the U.S. are broadly classified by domains which are further defined by divisions. Soils within a division are characterized by latitudinal climate variations and vegetation. **Table 3.3-1** contains descriptions of the soil orders found within Bailey's divisions of the continental U.S. See **Figure 3.1-1** (Biological Resources) for a map of Bailey's divisions of the U.S.

The 2003 ECP PEIS contains a USDA NRCS map depicting HEL with an EI of 8 or more on cropland in the U.S. (USDA 2003). The most highly erodible soils are primarily in the Midwest and northern plain states, in areas that lie within the Mississippi and Missouri rivers watershed. These lands are located in Prairie and Temperate Steppe Divisions (Table 3.3-1, Figure 3.1-1). A description of the environmental and agricultural condition of these regions was provided in the 2003 ECP PEIS. Erodeable soils data for other types of land is provided on a county level by NRCS.

Table 3.3-1. Descriptions of Soil Orders within the Continental U.S.

Domain	Division	Soil Orders	Description
Humid Temperate Domain	Warm Continental Division	Spodosols	Soils have an upper layer of humus in colder regions; are deficient in calcium, potassium, and magnesium; and, generally, acidic.
	Hot Continental Division	Inceptisols, Ultisols, and Alfisols	These soils are rich in humus and have a distinctive leach zone. Ultisols have a clayey horizon as well.
	Subtropical Division	Ultisols	Soils are warm and moist and rich in iron and aluminum but poor in plant nutrients.
	Marine Division	Inceptisols and Ultisols	Soils are generally poor in calcium, sodium and potassium but have large deposits of organic matter.
	Prairie Division	Mollisols	Soils have black organic surface horizons; are very fertile; and have a high content of calcium, sodium and potassium.
	Mediterranean Division	Alfisols and Mollisols	These soils are high in bases and are very fertile when water is available.
Dry Domain	Tropical/Subtropical Steppe Division	Mollisols and Aridisols	These soils contain some humus but are low in moisture.
	Temperate Steppe Division	Mollisols and Aridisols	Soils are rich in bases; have little organic content; and in some regions, have clayey horizons and salts.
	Temperate Desert Division	Aridisols	Soils are low in humus and high in calcium and in low areas develop salt deposits.
Humid Tropical Domain	Savanna Division	Histosols and Inceptisols	Soils are very moist; submerged in the rainy season; and have mud flats of sand and gravel.

Source: Bailey et al. (1995)

3.4 CULTURAL RESOURCES

3.4.1 Definition of Resource

Cultural resources include prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activities. Cultural resources can be divided into three major categories: archaeological sites (prehistoric and historic), architectural resources, and traditional cultural properties (TCP). Archaeological sites are locations and objects from past human activities. Architectural resources are those standing structures that are usually over 50 years of age, and can include farmsteads, bridges, irrigation canals, and other man-made structures. TCPs are places of importance or significance to the traditional culture of American Indians or other ethnic or community groups. Such resources include traditional locations to gather food or materials such as reeds for baskets or clay for pottery, locations to host traditional dances, mountain tops where ceremonies are performed, or places where religious events take place. Some cultural resources are significant; others are not. Significant cultural resources are those that are listed in or eligible for listing in the National Register of Historic Places (National Register) and are called *Historic Properties* under the National Historic Preservation Act (NHPA), as amended (16 U.S.C. 470 et seq.).

To be eligible for inclusion in the National Register, an Historic Property should possess integrity of location, design, setting, materials, workmanship, feeling, and association. A historic-age building with numerous modern additions and little of its original materials would be determined, in most cases, to no longer possess integrity. In addition to integrity, the National Park Service also requires that a Historic Property meet one of four criteria:

- Association with events that have made a significant contribution to the broad patterns of our history;
- Association with the lives of persons significant in our past;
- Have distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded or may be likely to yield, information important in prehistory or history.

Evaluating the potential impacts to such resources relative to Section 106 of the NHPA, the American Indian Religious Freedom Act, the Archaeological Resources Protection Act, Native American Graves Protection and Repatriation Act, and EO 13007 is considered a part of the NEPA process. The regulations and procedures in 36 CFR 800, which implements Section 106 of the NHPA, requires Federal agencies to consider the effects of

proposed actions on properties listed in or eligible for listing in the National Register. Many cultural resources have been identified in advance of construction projects, particularly since the passage of the NHPA. However, many areas, especially in regions that have rural agricultural communities, have never been inventoried to determine what cultural resources are present.

3.4.2 Effects of Natural Disaster on Resource

Cultural resources are affected by natural disasters in much the same manner that modern man-made properties are affected. Archaeological sites that are partly or wholly above ground can be buried by debris or mud slides. Floods that slowly inundate the landscape may not have an adverse effect on any sites present, but those floods that arrive with great force can scatter the archaeological materials from their original locations essentially destroying the site. Buried archaeological sites, commonly found on land that has been repeatedly flooded over centuries, usually have a natural protection of soil that is from a few inches to several feet thick. However, those buried near or on a riverbank that is subject to erosion during natural disasters will be lost to the erosion process just as the arable land will be lost from further agricultural pursuits.

Architectural resources over 50 years of age can be subject to great damage from natural disasters, depending on the severity of the disaster and the nature of the resource. Farmsteads, silos, barns and other structures can be destroyed by hurricanes, tornadoes, floods, heavy snowstorms, and many of the other types of disasters covered by the ECP. Even when not completely destroyed, architectural resources can be impacted and their integrity affected. For example, a bridge built 80 years ago may have withstood a flood but have its piers cracked rendering it unsafe for traffic. TCPs that are part of the built environment—such as a rural meeting hall—can be adversely affected by natural disasters in the same way as architectural properties are affected. Other traditional cultural properties, such as places where ceremonies are held outdoors, will not likely be adversely affected by most natural disasters. For these traditional cultural properties, the people are returning to a place, not a structure. Snow storms, floods, tornados, mud slides, and other natural disasters can cover the place, perhaps even adding a new layer of soil to it, but the place itself will remain and the people can return in the future. Exceptions could be disaster events that remove the place, such as erosion, or remove access to the place as could happen during a volcanic eruption.

3.4.3 Affected Environment

3.4.3.1 Archaeological Sites

People have occupied most regions of the U.S. for the last 13,000 years and during that time, the residue from their camps, homes, and activities are contained in the thousands of

archaeological sites that exist in each state. Types and numbers of sites vary through time and from one region of the U.S. to another. The earliest sites, known as Paleoindian sites, are the fewest in number, both because they are the oldest and the residues at their sites have not preserved well, and because their populations were generally small. Paleoindian people lived relatively mobile lifestyles, moving to new camps when game to hunt or other resources such as plant foods, wood, or water around their existing camps were nearly exhausted. This general hunter-gatherer lifestyle persisted in some regions of the U.S. through historic times although food preferences, forms of shelter, language, and other aspects of individual groups varied. Its longevity as a way of life indicates that this was a successful lifestyle. The residue in the campsites or special activity areas (i.e., areas where plant bulbs were cooked, reeds gathered for baskets, etc.) of the sites of hunters and gatherers is often limited indicating groups were usually small and limited to one or a few families. Larger campsites of hunters and gatherers are known, however. Some large campsites represent places where people came together either for events or for a season; others represent hunters and gatherers who lived in large communal groups. During the eighteenth century, Spanish visitors to Comanche camps in the Texas Panhandle reported small camps with a few tipis but camps with several hundred tipis and over a thousand people present were more frequently seen (Kavanagh 1986). Although the Comanche moved their campsites with some frequency, the hunters and gatherers who occupied the coasts of the Pacific Northwest resided in relatively permanent villages beginning as early as 1800 years ago. The fish, game, and plants along the coast and in the inland valleys of the Northwest provided ample food to allow them to reside in one place.

Prehistoric villages were common in many other parts of the U.S. The people in these villages still hunted, but they largely relied on cultivated crops of corn, squash, beans, and native plants they encouraged to grow near their fields. Some villages were small, consisting of only a few houses, while others, such as Cahokia—a large mound and village site located eight miles east of St. Louis where 10,000 people resided—were quite large. When Europeans arrived in North America, they documented people living in camps of Native American hunters and gatherers as well as villages. Over time, as the U.S. grew, farmers, ranchers, traders, miners, and others left their residue in campsites, homesteads, mines, battlefields, and settlements. Those that were abandoned are today's historic archaeological sites.

While historic and prehistoric sites are found in all environmental settings, they are often found close to dependable water sources. Cahokia, for example, was built on the terrace above Cahokia Creek, a tributary of the Mississippi, and many other villages and towns were built in similar terrace settings. In the dry Southwest, pueblos and villages are also often situated along river terraces or near seeps, springs, or other places where water could be obtained. The large Comanche camps seen in the 18th century were situated along

reliable water sources to provide adequate water for both humans and horses. Early historic settlement patterns tended to mirror the Native American patterns until modern techniques of well drilling, canal systems, and other technologies allowed settlement away from water bodies.

3.4.3.2 Architectural Resources

Architectural resources refer to the built environment including houses, barns, outbuildings, silos, bridges, roads, irrigation systems, canals, dams, and other man-made structures. Generally, these resources must be at least 50 years of age to be considered eligible for inclusion in the National Register. Older architectural resources may no longer be used for their original purpose. Bridges that were once part of a county or state road system may now be located in a pasture or field and used by a farmer, and a structure that was once a horse barn may now be used for storage. Like archaeological sites, architectural resources are found in all environmental settings.

3.4.3.3 Traditional Cultural Properties

TCPs that are eligible for inclusion in the National Register are those associated with the beliefs or cultural traditions of an existing community. Such beliefs or traditions are part of the history of the community and they are important in holding the community together. When places or structures are seen by the community to embody those traditions, those places are traditional cultural properties and may be eligible for listing on the National Register. They include, but are not limited to, locations to host traditional dances, mountain tops where ceremonies are performed, or an African Methodist Episcopal church on a country road that is a place of gathering for the rural community.

3.5 SOCIOECONOMIC RESOURCES

3.5.1 Definition of Resource

Socioeconomic analyses generally include detailed investigations of the prevailing population, income, employment, and housing conditions of a community or a area of interest. The socioeconomic conditions of a region of influence (ROI) could be affected by changes in the rate of population growth, changes in the demographic characteristics of a ROI, or changes in employment within the ROI caused by the implementation of the proposed action.

Socioeconomic resources within this document include total population, rural population, farms receiving government payments, and farms receiving government disaster payments by states and for the entire U.S. These areas identify the components essential to describe the broad-scale demographic and economic components of the national agricultural operator population.

3.5.2 Effects of Natural Disaster on Resource

The general social effect of a natural disaster is that some level of stress is placed on the economic, social, or physical infrastructure of a given community. Either this stress results through the direct damage or destruction of a resource, or through the creation of a continuing threat to property or other resources. The effects of a natural disaster for producers include damage or loss of cropland, rangeland, or timberland, as well as potentially increased mortality rate for livestock or wildlife. Damages to cropland may affect productivity for several years and may significantly increase a producer's expenses to keep the farm in production. The loss of farm income can indirectly affect the local community through reduced agricultural sales and employment (USDA 2003).

3.5.3 Affected Environment

Between 1997 and 2006, the number of farms in the U.S. increased 8.99 percent; of this between 1997 and 2002, the number of farms increased 11.36 percent, while a decline in the number of farms was recorded between 2002 to 2006 (2.13 percent). **Table 3.5-1** illustrates data on population, rural population, total number of farms and average government payment per farm for each state.

Table 3.5-1. 2002 Farms, Average Government Payments by State

Location	Population ¹	Rural Population ¹ (#)	Rural Population (%)	Farms (#) ²	Average Government Payment/Farm ²
Alabama	4,447,100	1,981,427	44.56%	45,126	\$6,058
Alaska	626,932	215,675	34.40%	609	\$24,516
Arizona	5,130,632	607,097	11.83%	7,294	\$38,127
Arkansas	2,673,400	1,269,221	47.48%	47,483	\$30,544
California	33,871,648	1,881,985	5.56%	79,631	\$23,340
Colorado	4,301,261	668,076	15.53%	31,369	\$12,376
Connecticut	3,405,565	417,506	12.26%	4,191	\$14,492
Delaware	783,600	155,842	19.89%	2,391	\$14,009
Florida	15,982,378	1,712,358	10.71%	44,081	\$8,543
Georgia	8,186,453	2,322,290	28.37%	49,311	\$7,642
Hawaii	1,211,537	103,312	8.53%	5,398	\$7,841
Idaho	1,293,953	434,456	33.58%	25,017	\$13,234
Illinois	12,419,293	1,509,773	12.16%	73,027	\$8,622
Indiana	6,080,485	1,776,474	29.22%	60,296	\$8,372
Iowa	2,926,324	1,138,892	38.92%	90,655	\$8,544
Kansas	2,688,418	767,749	28.56%	64,414	\$8,375
Kentucky	4,041,769	1,787,969	44.24%	86,541	\$4,121
Louisiana	4,468,976	1,223,311	27.37%	27,413	\$16,345
Maine	1,274,923	762,045	59.77%	7,196	\$6,965
Maryland	5,296,486	737,818	13.93%	12,198	\$9,825
Massachusetts	6,349,097	547,730	8.63%	6,075	\$10,284
Michigan	9,938,444	2,518,987	25.35%	53,315	\$7,984
Minnesota	4,919,479	1,429,420	29.06%	80,839	\$7,984
Mississippi	2,844,658	1,457,307	51.23%	42,186	\$11,751
Missouri	5,595,211	1,711,769	30.59%	106,797	\$6,097
Montana	902,195	414,317	45.92%	27,870	\$17,011
Nebraska	1,711,263	517,538	30.24%	49,355	\$10,858
Nevada	1,998,257	169,611	8.49%	2,989	\$9,845
New Hampshire	1,235,786	503,451	40.74%	3,363	\$10,648
New Jersey	8,414,350	475,263	5.65%	9,924	\$7,630
New Mexico	1,819,046	455,545	25.04%	15,170	\$15,466
New York	18,976,457	2,373,875	12.51%	37,255	\$11,139
North Carolina	8,049,313	3,199,831	39.75%	53,930	\$7,935
North Dakota	642,200	283,242	44.10%	30,619	\$12,266
Ohio	11,353,140	2,570,811	22.64%	77,797	\$6,843
Oklahoma	3,450,654	1,196,091	34.66%	83,300	\$6,166
Oregon	3,421,399	727,255	21.26%	40,033	\$11,757
Pennsylvania	12,281,054	2,816,953	22.94%	58,105	\$7,155
Rhode Island	1,048,319	95,173	9.08%	858	\$10,145

Table 3.5-1. 2002 Farms, Average Government Payments by State (cont'd.)

Location	Population ¹	Rural Population ¹ (#)	Rural Population (%)	Farms (#) ²	Average Government Payment/Farm ²
South Carolina	4,012,012	1,584,888	39.50%	24,541	\$6,280
South Dakota	754,844	363,417	48.14%	31,736	\$10,617
Tennessee	5,689,283	2,069,265	36.37%	87,595	\$3,694
Texas	20,851,820	3,647,539	17.49%	228,926	\$12,530
Utah	2,233,169	262,825	11.77%	15,282	\$8,928
Vermont	608,827	376,379	61.82%	6,571	\$18,809
Virginia	7,078,515	1,908,560	26.96%	47,606	\$5,939
Washington	5,894,121	1,063,015	18.04%	35,939	\$18,244
West Virginia	1,808,344	975,564	53.95%	20,812	\$3,093
Wisconsin	5,363,675	1,700,032	31.70%	77,131	\$6,659
Wyoming	493,782	172,438	34.92%	9,422	\$11,986
U.S.	280,849,847	59,061,367	21.03%	2,128,982	\$9,251

¹ Source: USCB 2002

² Source: USDA 2002

USDA Agricultural Resource Management Survey (ARMS) data indicates that approximately 44.3 percent of all farms in 2006 received at least one type of government payment as associated with agriculture. Table 3.5-2 illustrates the average government payment per farm by region. Only farms receiving government payments in Appalachia had an adjusted gross income (AGI) less than the national mean household income (\$66,570) in 2006. All other regions, excluding Mountain and Pacific had AGI less than \$200,000 in 2006 for farms receiving government payments. Average government payments ranged from a low of \$7,163 in the Appalachia region to a high of \$23,192 in the Pacific region. In 2006, the average disaster and emergency assistance payments per farms receiving government payments were less than \$1,000 in all regions, except the Southeast.

Table 3.5-2. 2006 Farms Receiving Government Payments by Production Region

	All	Northeast	Lake States	Corn Belt	Northern Plains	Appalachia	Southeast	Delta	Southern Plains	Mountain	Pacific
Farms receiving government payments	923,636	37,696	123,053	233,509	140,960	149,099	32,977	39,409	94,895	48,297	23,743
Percent of all farms (%)	44.3	32.1	55.6	60.2	77.9	48.1	21.7	32.7	31.1	36.4	15.3
Average gross cash income (\$)	154,835	196,556	144,517	148,896	171,384	64,743	138,489	122,864	135,966	258,821	607,644
Average government payments (\$)	12,687	12,908	10,587	13,396	13,932	7,163	18,746	16,023	12,303	16,586	23,192
Percent of gross cash income (%)	8.2	6.6	7.3	9.0	8.1	11.1	13.5	13.0	9.0	6.4	3.8
Combined Average Government Payment by Program (\$)											
Direct payments	4,691	2,630	3,886	5,565	6,392	1,172	5,525	7,778	4,800	4,536	9,129
Counter-cyclical payments	3,024	2,509	2,554	3,923	2,589	923	6,211	4,592	3,923	2,659	3,342
Loan deficiency payments	547	343	824	453	734	416	1,058	192	263	770	642

Table 3.5-2. 2006 Farms Receiving Government Payments by Production Region (cont'd.)

	All	Northeast	Lake States	Corn Belt	Northern Plains	Appalachia	Southeast	Delta	Southern Plains	Mountain	Pacific
Milk income loss contract payments	434	2,728	1,284	100	78	150	131	89	66	446	1,996
Disaster and emergency assistance payments	364	336	122	42	648	1	2,247	881	643	406	753
Conservation Program payments	2,626	3,282	1,603	3,179	3,271	718	1,462	2,251	2,338	6,044	6,018
Tobacco Transition Program payments	594	120	21	33	0	3,212	1,356	0	0	105	233
Other Federal program payments	238	116	229	66	149	373	287	165	185	860	857
State and local program payments	169	845	63	34	72	197	468	75	86	760	221

Table 3.5-3 illustrates only those farms receiving disaster and emergency assistance payments in 2006. In 2006, approximately three percent of all farms in the U.S. received disaster assistance with an average payment of \$5,367. Rural residence farms receiving disaster assistance received approximately \$1,900 per farm, intermediate farms received \$3,750 per farm, and commercial farms received on average \$20,434 in 2006. Disaster assistance accounted for approximately 61 percent of the government payments that rural residence farms received in 2006; approximately 46 percent for intermediate farms; and approximately 48 percent for commercial farms.

Table 3.5-3. Government Disaster and Emergency Assistance by Farm Typology (2006)

	All	Rural residence farms	Intermediate farms	Commercial farms
Farms receiving disaster and emergency assistance payments	62,680	26,364	27,326	8,990
Percent of all farms (%)	3.0	2.0	4.9	4.1
Average gross cash income (\$)	147,651	40,973	83,179	656,477
Average government payments (\$)	10,993	3,142	8,094	42,829
Percent of gross cash income (%)	7.4	7.7	9.7	6.5
Average disaster and emergency assistance payments (\$)	5,367	1,905	3,750	20,434
Percent of government payments (%)	48.8	60.7	46.3	47.7

Table 3.5-4 illustrates the estimated per farm average for emergency payments by state in 2006. These estimates are based on the percentage of farms receiving government payments by production region. The states receiving the highest average emergency payments in 2006 were Florida, Louisiana, and Mississippi.

Table 3.5-4. Estimated Per Farm Average for Total Government Payments and ECP Payments (2006)

State	Production Region	Total Farms	Average Percent Farms Receiving Government Payments	Total Government Payments (\$,000)	Average Per Farm (\$)	Farms Receiving ECP Payments	ECP Payments	Average Per Farm (\$)
Alabama	Southeast	43,000	21.7%	\$219,263	\$23,498.37	9,127	\$20,226,777	\$2,216.15
Alaska	n/a	640	n/a	\$3,383	\$5,285.90	0	\$0	\$0.00
Arizona 1/	Mountain	10,000	36.4%	\$109,088	\$29,969.09	726	\$1,129,719	\$1,556.09
Arkansas	Delta	46,500	32.7%	\$515,613	\$33,909.64	72	\$133,812	\$1,858.50
California	Pacific	76,000	15.3%	\$530,193	\$45,596.26	416	\$6,045,723	\$14,532.99
Colorado	Mountain	30,700	36.4%	\$244,612	\$21,889.65	410	\$2,033,253	\$4,959.15
Connecticut	Northeast	4,200	32.1%	\$9,430	\$6,994.55	4	\$34,110	\$8,527.50
Delaware	Northeast	2,300	32.1%	\$22,093	\$29,924.28	0	\$0	\$0.00
Florida	Southeast	41,000	21.7%	\$140,767	\$15,821.86	6,369	\$40,449,648	\$6,351.02
Georgia	Southeast	49,000	21.7%	\$483,093	\$45,433.37	4,612	\$22,908,069	\$4,967.06
Hawaii	n/a	5,500	n/a	\$3,796	\$690.22	132	\$1,886,745	\$14,293.52
Idaho	Mountain	25,000	36.4%	\$140,790	\$15,471.40	128	\$558,348	\$4,362.09
Illinois	Corn Belt	72,400	60.2%	\$1,045,199	\$23,980.81	140	\$398,424	\$2,845.89
Indiana	Corn Belt	59,000	60.2%	\$541,283	\$15,239.67	236	\$350,091	\$1,483.44
Iowa	Corn Belt	88,600	60.2%	\$1,252,368	\$23,480.19	1,502	\$3,159,375	\$2,103.45
Kansas	Northern Plains	64,000	77.9%	\$648,182	\$13,001.08	44	\$68,049	\$1,546.57
Kentucky	Appalachia	84,000	48.1%	\$494,867	\$12,247.98	1,143	\$1,861,002	\$1,628.17
Louisiana	Delta	26,800	32.7%	\$340,987	\$38,909.47	34	\$141,591	\$4,164.44
Maine	Northeast	7,100	32.1%	\$14,948	\$6,558.88	75	\$97,014	\$1,293.52
Maryland	Northeast	12,000	32.1%	\$67,445	\$17,509.04	100	\$160,779	\$1,607.79
Massachusetts	Northeast	6,100	32.1%	\$12,709	\$6,490.28	8	\$27,000	\$3,375.00
Michigan	Lake States	53,000	55.6%	\$247,643	\$8,403.79	20	\$167,619	\$8,380.95
Minnesota	Lake States	79,300	55.6%	\$767,576	\$17,408.99	199	\$715,554	\$3,595.75

Table 3.5-4. Estimated Per Farm Average for Total Government Payments and ECP Payments (2006) (cont'd.)

State	Production Region	Total Farms	Average Percent Farms Receiving Government Payments	Total Government Payments (\$,000)	Average Per Farm (\$)	Farms Receiving ECP Payments	ECP Payments	Average Per Farm (\$)
Mississippi	Delta	42,000	32.7%	\$633,490	\$46,125.70	251	\$334,584	\$1,333.00
Missouri	Corn Belt	105,000	60.2%	\$510,223	\$8,071.87	504	\$2,015,502	\$3,999.01
Montana	Mountain	28,100	36.4%	\$275,301	\$26,915.34	626	\$2,382,054	\$3,805.20
Nebraska	Northern Plains	47,600	77.9%	\$812,068	\$21,900.19	531	\$1,255,395	\$2,364.21
Nevada	Mountain	3,000	36.4%	\$8,620	\$7,894.22	214	\$3,332,652	\$15,573.14
New Hampshire	Northeast	3,400	32.1%	\$7,558	\$6,925.35	0	\$0	\$0.00
New Jersey	Northeast	9,800	32.1%	\$17,869	\$5,680.20	77	\$2,131,956	\$27,687.74
New Mexico /1	Mountain	17,500	36.4%	\$82,608	\$12,968.35	117	\$575,130	\$4,915.64
New York	Northeast	35,000	32.1%	\$127,873	\$11,381.65	844	\$2,075,343	\$2,458.94
North Carolina	Appalachia	48,000	48.1%	\$738,423	\$31,982.98	12,169	\$17,752,212	\$1,458.81
North Dakota	Northern Plains	30,300	77.9%	\$453,076	\$19,195.14	12	\$23,718	\$1,976.50
Ohio	Corn Belt	76,200	60.2%	\$441,641	\$9,627.60	2,325	\$3,675,201	\$1,580.73
Oklahoma	Southern Plains	83,000	31.1%	\$243,297	\$9,425.38	117	\$248,106	\$2,120.56
Oregon	Pacific	39,300	15.3%	\$118,215	\$19,660.19	88	\$622,641	\$7,075.47
Pennsylvania	Northeast	58,200	32.1%	\$134,499	\$7,199.32	944	\$1,749,774	\$1,853.57
Rhode Island	Northeast	850	32.1%	\$2,576	\$9,440.69	0	\$0	\$0.00
South Carolina	Southeast	24,600	21.7%	\$184,247	\$34,514.78	5,648	\$3,811,161	\$674.78
South Dakota	Northern Plains	31,300	77.9%	\$411,846	\$16,890.90	4,209	\$12,813,069	\$3,044.21

Table 3.5-4. Estimated Per Farm Average for Total Government Payments and ECP Payments– 2006 (cont'd.)

State	Production Region	Total Farms	Average Percent Farms Receiving Government Payments	Total Government Payments (\$,000)	Average Per Farm (\$)	Farms Receiving ECP Payments	ECP Payments	Average Per Farm (\$)
Tennessee	Appalachia	81,000	48.1%	\$326,258	\$8,373.97	389	\$760,995	\$1,956.29
Texas	Southern Plains	230,000	31.1%	\$1,507,639	\$21,077.02	254	\$652,593	\$2,569.26
Utah	Mountain	15,100	36.4%	\$40,184	\$7,310.90	674	\$2,106,615	\$3,125.54
Vermont	Northeast	6,300	32.1%	\$19,844	\$9,812.47	19	\$45,048	\$2,370.95
Virginia	Appalachia	46,800	48.1%	\$172,422	\$7,659.53	7,675	\$7,752,609	\$1,010.11
Washington	Pacific	34,000	15.3%	\$196,466	\$37,767.39	334	\$2,666,175	\$7,982.56
West Virginia	Appalachia	21,200	48.1%	\$16,188	\$1,587.48	760	\$1,690,653	\$2,224.54
Wisconsin	Lake States	76,000	55.6%	\$414,088	\$9,799.50	0	\$0	\$0.00
Wyoming	Mountain	9,100	36.4%	\$37,299	\$11,260.33	426	\$2,113,176	\$4,960.51
U.S.		2,088,790	44.3%	\$15,789,146	\$17,063.19	64,704	\$175,139,064	\$2,706.77

USDA 2006.

3.6 ENVIRONMENTAL JUSTICE

3.6.1 Definition of Resource

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires a Federal agency to “make achieving environmental justice part of its mission by identifying and addressing as appropriate, disproportionately high human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.” A minority population can be defined by race, by ethnicity, or by a combination of the two classifications.

According to CEQ, a minority population can be described as being composed of the following groups: American Indian or Alaska Native, Asian or Pacific Islander, Black, not of Hispanic origin, or Hispanic and exceeding 50 percent of the population in an area or the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population (CEQ 1997). The U.S. Census Bureau (USCB) defines ethnicity as either being of Hispanic origin or not being of Hispanic origin. Hispanic origin is further defined as “a person of Cuban, Mexican, Puerto Rican, South or Central America, or other Spanish culture or origin regardless of race” (USCB 2001).

Each year the USCB defines the national poverty thresholds, which are measured in terms of household income and are dependent upon the number of persons within the household. Individuals falling below the poverty threshold are considered low-income individuals. USCB census tracts where at least 20 percent of the residents are considered poor are known as poverty areas (USCB 1995). When the percentage of residents considered poor is greater than 40 percent, the census tract is considered an extreme poverty area.

3.6.2 Effects of Natural Disaster on Resource

The effects of a disaster on minority or low-income populations are the same as those described under socioeconomics, that is, a natural disaster creates some level of stress on the economic, social, or physical infrastructure of a given community. The effects of a natural disaster for producers include damage or loss of cropland, rangeland, or timberland, as well as potentially increased mortality rate for livestock or wildlife. Damages to cropland may affect productivity for several years and may significantly increase a producer’s expenses to keep the farm in production. The loss of farm income can indirectly affect the local community through reduced agricultural sales and employment (USDA 2003). The economic impacts to a low-income producer may be so great that they do not return to agricultural production.

3.6.3 Affected Environment

Minority Principal Operators

In 2002, there were more than 2 million principal operators on farms in the U.S., including Puerto Rico. Of this, there were 61,603 principal operators that claimed they were one or more minority races in the U.S. (2.8 percent of principal operators) (USDA 2002). The 2002 Agriculture Census also found that 50,592 principal operators were of Spanish, Hispanic, or Latino origin (2.3 percent of principal operators) (USDA 2002). Additionally, 237,819 principal operators of farms were women (10.7 percent of principal operators) (USDA 2002). **Table 3.6-1** illustrates the number of minority operators by race and ethnicity as determined through the 1997 and 2002 Agriculture Census.

Table 3.6-1. 2002 and 1997 Minority Principal Operators by Race and Ethnicity

State	Black or African American			American Indian or Alaska Native			Asian, Native Hawaiian or Other Pacific Islander*			Spanish, Hispanic or Latino Origin		
	2002 Principal Operators	1997 Principal Operators	% Change	2002 Principal Operators	1997 Principal Operators	% Change	2002 Principal Operators	1997 Principal Operators	% Change	2002 Principal Operators	1997 Principal Operators	% Change
Alabama	2,350	2,251	4.40%	349	288	21.20%	27	26	3.80%	451	229	96.90%
Alaska	1	1	0.00%	32	19	68.40%	2	N/A	N/A	8	6	33.30%
Arizona	41	23	78.30%	291	321	-9.30%	49	44	11.40%	761	495	53.70%
Arkansas	982	780	25.90%	424	213	99.10%	72	40	80.00%	586	326	79.80%
California	278	396	-29.80%	977	676	44.50%	3,780	3,746	0.90%	7,711	5,347	44.20%
Colorado	47	39	20.50%	256	156	64.10%	71	87	-18.40%	1,747	988	76.80%
Connecticut	5	7	-28.60%	5	13	-61.50%	3	3	0.00%	72	36	100.00%
Delaware	22	9	144.40%	9	10	-10.00%	23	17	35.30%	35	15	133.30%
Florida	1,068	807	32.30%	317	168	88.70%	481	276	74.30%	2,588	1,326	95.20%
Georgia	1,988	1,487	33.70%	180	102	76.50%	92	53	73.60%	406	390	4.10%
Hawaii	12	8	50.00%	30	18	66.70%	2,514	3,212	-21.70%	241	176	36.90%
Idaho	8	22	-63.60%	160	139	15.10%	86	112	-23.20%	920	382	140.80%
Illinois	59	123	-52.00%	61	65	-6.20%	21	34	-38.20%	366	312	17.30%
Indiana	55	61	-9.80%	93	105	-11.40%	26	22	18.20%	349	265	31.70%
Iowa	31	40	-22.50%	61	66	-7.60%	27	30	-10.00%	380	362	5.00%
Kansas	116	122	-4.90%	203	174	16.70%	17	23	-26.10%	437	338	29.30%
Kentucky	687	593	15.90%	168	143	17.50%	38	43	-11.60%	668	433	54.30%
Louisiana	1,856	1,580	17.50%	106	103	2.90%	32	25	28.00%	456	286	59.40%
Maine	N/A	N/A	N/A	17	13	30.80%	9	6	50.00%	143	48	197.90%
Maryland	239	219	9.10%	56	26	115.40%	35	19	84.20%	118	94	25.50%
Massachusetts	23	22	4.50%	19	8	137.50%	20	13	53.80%	143	47	204.30%
Michigan	184	133	38.30%	146	120	21.70%	43	35	22.90%	828	315	162.90%
Minnesota	16	36	-55.60%	111	123	-9.80%	46	45	2.20%	502	268	87.30%
Mississippi	5,145	3,925	31.10%	78	74	5.40%	39	32	21.90%	388	216	79.60%
Missouri	205	219	-6.40%	450	354	27.10%	72	58	24.10%	703	508	38.40%
Montana	5	8	-37.50%	924	836	10.50%	20	19	5.30%	324	209	55.00%

Table 3.6-1. 2002 and 1997 Minority Principal Operators by Race and Ethnicity (cont'd.)

State	Black or African American			American Indian or Alaska Native			Asian, Native Hawaiian or Other Pacific Islander*			Spanish, Hispanic or Latino Origin		
	2002 Principal Operators	1997 Principal Operators	% Change	2002 Principal Operators	1997 Principal Operators	% Change	2002 Principal Operators	1997 Principal Operators	% Change	2002 Principal Operators	1997 Principal Operators	% Change
Nebraska	9	73	-87.70%	83	70	18.60%	14	37	-62.20%	295	266	10.90%
Nevada	7	3	133.30%	85	123	-30.90%	8	2	300.00%	140	119	17.60%
New Hampshire	2	N/A	N/A	17	2	750.00%	9	1	800.00%	59	19	210.50%
New Jersey	66	46	43.50%	23	20	15.00%	53	68	-22.10%	162	123	31.70%
New Mexico	56	27	107.40%	403	448	-10.00%	23	8	187.50%	4,499	4,160	8.10%
New York	70	62	12.90%	85	49	73.50%	57	64	-10.90%	413	265	55.80%
North Carolina	1,686	2,212	-23.80%	455	707	-35.60%	95	78	21.80%	615	366	68.00%
North Dakota	N/A	N/A	N/A	205	208	-1.40%	2	2	0.00%	175	148	18.20%
Ohio	168	165	1.80%	192	145	32.40%	40	43	-7.00%	804	361	122.70%
Oklahoma	840	889	-5.50%	4,546	3,982	14.20%	64	41	56.10%	1,498	635	135.90%
Oregon	28	32	-12.50%	410	247	66.00%	324	261	24.10%	1,028	628	63.70%
Pennsylvania	62	46	34.80%	70	65	7.70%	39	49	-20.40%	349	275	26.90%
Rhode Island	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	28	8	250.00%
South Carolina	1,929	1,949	-1.00%	83	54	53.70%	25	19	31.60%	273	138	97.80%
South Dakota	9	8	12.50%	639	530	20.60%	11	4	175.00%	192	185	3.80%
Tennessee	1,054	1,201	-12.20%	236	185	27.60%	68	59	15.30%	649	452	43.60%
Texas	5,979	5,561	7.50%	1,501	952	57.70%	357	244	46.30%	15,104	9,903	52.50%
Utah	4	4	0.00%	91	43	111.60%	36	63	-42.90%	351	141	148.90%
Vermont	2	7	-71.40%	18	9	100.00%	13	1	1200.00%	153	55	178.20%
Virginia	1,583	1,456	8.70%	112	61	83.60%	52	53	-1.90%	371	273	35.90%
Washington	43	58	-25.90%	426	377	13.00%	324	395	-18.00%	1,107	974	13.70%
West Virginia	37	31	19.40%	43	40	7.50%	6	9	-33.30%	177	100	77.00%
Wisconsin	27	31	-12.90%	102	153	-33.30%	76	93	-18.30%	523	308	69.80%
Wyoming	6	3	100.00%	146	108	35.20%	17	5	240.00%	296	131	126.00%
U.S.	29,090	26,785	8.60%	15,494	12,911	20.00%	9,358	9,620**	-2.70%	50,592	33,450	51.20%

Source USDA 2002. Adapted from Counting Diversity in American Agriculture.

Limited Resource Producers

A limited resource producer is defined in the ECP handbook as a producer with gross farm sales of no more than \$100,000 in each of the two years prior to the disaster, with a total household income below the National poverty level or less than 50 percent of the county median income.

Tables 3.6-2 and 3.6-3 illustrate data on total number of farms, farms with sales less than \$100,000, and median household income from the 1997 and 2002 Agriculture Census.

The number of farms with farm sales less than \$100,000 per year increased at a faster rate than the total number of farms between 1997 and 2002 (16.1 percent). Additionally, the percentage of farms with sales less than \$100,000 when compared to the total number of farms increased 3.5 percent from 81.9 percent of farms in 1997 to 85.4 percent of farms in 2002. Based on data from the 2000 Decennial Census, the average median household income amongst the region varied from 95.3 percent of the U.S. median household income to 74.6 percent of the U.S. median household income. The median U.S. household income was \$41,994 in 2000.

The average poverty rate in the regions varied from 9.8 percent in the Midwest to 15.5 percent in the South Central. The U.S. poverty rate in 2000 was 12.4 percent.

Table 3.6-2. 1997 Census of Agriculture Farm Sales Less Than \$100,000 and Poverty Rate by Region

Parameter	Region						
	Midwest	Northeast	Northern Plains	South Central	Southeast	West	All Regions
Total Farms (#) ¹	574,206	143,202	236,614	337,480	417,616	202,705	1,911,823
Farms with Sales <\$100,000 (#) ¹	442,406	117,475	174,846	299,960	369,998	161,154	1,565,839
Farms with Sales <\$100,000 (%) ¹	77.05%	82.03%	73.90%	88.88%	88.60%	79.50%	81.90%
Average Median Household Income ²	\$38,035	\$40,028	\$33,639	\$31,309	\$33,473	\$37,817	\$35,288
Percent of US Median Household Income	90.57%	95.32%	80.10%	74.56%	79.71%	90.05%	84.03%
Total Population ²	58,247,862	60,831,654	11,493,963	31,444,850	56,408,043	57,297,140	247,423,512
Total Population Below Poverty Threshold	5,688,270	6,599,864	1,160,539	4,871,734	7,515,701	7,453,228	33,289,336
Average Poverty Rate ²	9.77%	10.85%	10.10%	15.49%	13.32%	13.01%	13.45%

¹ Source: USDA 1997

² Source: USCB 2002 and USCB 2006

Table 3.6-3. 2002 Farms and Farms with Sales <\$100,000 by State

Location	Farms (#) ²	Sales < \$100,000 (#) ²	Sales < \$100,000 (%)	Median household income ¹
Alabama	45,126	40,455	89.65%	34,135
Alaska	609	538	88.34%	51,571
Arizona	7,294	6,102	83.66%	40,558
Arkansas	47,483	38,969	82.07%	32,182
California	79,631	60,046	75.41%	47,493
Colorado	31,369	27,439	87.47%	47,203
Connecticut	4,191	3,752	89.53%	53,935
Delaware	2,391	1,367	57.17%	47,381
Florida	44,081	38,974	88.41%	38,819
Georgia	49,311	43,039	87.28%	42,433
Hawaii	5,398	4,913	91.02%	49,820
Idaho	25,017	21,124	84.44%	37,572
Illinois	73,027	53,553	73.33%	46,590
Indiana	60,296	49,935	82.82%	41,567
Iowa	90,655	63,240	69.76%	39,469
Kansas	64,414	53,395	82.89%	40,624
Kentucky	86,541	81,422	94.08%	33,672
Louisiana	27,413	23,988	87.51%	32,566
Maine	7,196	6,517	90.56%	37,240
Maryland	12,198	10,099	82.79%	52,868
Massachusetts	6,075	5,384	88.63%	50,502
Michigan	53,315	46,824	87.83%	44,667
Minnesota	80,839	62,297	77.06%	47,111
Mississippi	42,186	37,829	89.67%	31,330
Missouri	106,797	97,381	91.18%	37,934
Montana	27,870	22,843	81.96%	33,024
Nebraska	49,355	33,571	68.02%	39,250
Nevada	2,989	2,408	80.56%	44,581
New Hampshire	3,363	3,110	92.48%	49,467
New Jersey	9,924	8,865	89.33%	55,146
New Mexico	15,170	13,582	89.53%	34,133
New York	37,255	30,804	82.68%	43,393
North Carolina	53,930	45,139	83.70%	39,184
North Dakota	30,619	21,790	71.16%	34,604
Ohio	77,797	68,929	88.60%	40,956
Oklahoma	83,300	76,850	92.26%	33,400
Oregon	40,033	35,846	89.54%	40,916
Pennsylvania	58,105	48,508	83.48%	40,106
Rhode Island	858	746	86.95%	42,090

Table 3.6-3. 2002 Farms and Farms with Sales <\$100,000 by State (cont'd.)

Location	Farms (#) ²	Sales < \$100,000 (#) ²	Sales < \$100,000 (%)	Median household income ¹
South Carolina	24,541	22,881	93.24%	37,082
South Dakota	31,736	22,070	69.54%	35,282
Tennessee	87,595	83,747	95.61%	36,360
Texas	228,926	214,262	93.59%	39,927
Utah	15,282	13,695	89.62%	45,726
Vermont	6,571	5,404	82.24%	40,856
Virginia	47,606	43,685	91.76%	46,677
Washington	35,939	29,344	81.65%	45,776
West Virginia	20,812	20,117	96.66%	29,696
Wisconsin	77,131	63,201	81.94%	43,791
Wyoming	9,422	7,615	80.82%	37,892

¹ Source: USCB 2002

² Source: USDA 2002

The USDA also provides data through the ARMS (07 December 2007, last update) for 2006. In 2006, approximately 83.8% of total farms had sales less than \$100,000 (1,764,725 farms) (USDA 2007b). Only 666,387 farms with sales less than \$100,000 in 2006 received some form of government payment (38.2 percent of all farms of this sales class) (USDA 2007c). Farms with sales less than \$100,000 in 2006 accounted for 72.1 percent of all farms receiving government payments (USDA 2007c).

Table 3.6-4 illustrates data by farm type and by region for the number of farm households, the average total household income, percentage of income from off-farm sources, and percentage of farms with negative household income. Only households classified as very large farms receive less than 50 percent of their household income from off-farm sources. All other farm types in all regions receive the majority of household income from off-farm sources, such as a primary occupation other than agriculture or income from another family member. Only Retirement farms had average total household income below the average U.S. household income.

The NRCS estimated that the number of limited resource producers in the U.S. was approximately 312,000 based on data from the 2002 Agriculture Census and the 2000 Decennial Census (NRCS 2005). The NRCS estimated that there are on average 9.9 limited resource producers in each county in the U.S., with a minimum being 0 per county and a maximum estimate being 1,158 per county.

Table 3.6-4. 2006 Farm Household Income by Farm Typology and by Region

Parameter	Region					
	Atlantic	South	Midwest	Plains	West	All Farms
Retirement						
Number of Farm Households	108,299	54,611	118,431	82,628	39,944	403,914
Average Total Household Income (\$)	55,708	41,597	63,519	57,615	67,939	57,690
Household Income from Off Farm Sources (%)	98.8	105.4	94.4	98.2	97.8	97.8
Average U.S. Household Income (%)	83.7	62.5	95.4	86.5	102.1	86.7
Farm Households Negative Household Income (%)	7.5	4.8	2.5	3.5	3.5	4.4
Residential/Lifestyle						
Number of Farm Households	194,260	130,877	254,615	210,175	114,903	904,831
Average Total Household Income (\$)	81,602	80,158	76,461	97,032	90,082	84,608
Household Income from Off Farm Sources (%)	103.0	104.6	107.8	105.9	110.3	106.2
Average U.S. Household Income (%)	122.6	120.4	114.9	145.8	135.3	127.1
Farm Households Negative Household Income (%)	0	1.5	0.9	1.4	2.1	1.7
Farming Occupation - Lower Sales						
Number of Farm Households	77,416	48,906	118,185	115,757	70,189	430,454
Average Total Household Income (\$)	47,361	51,049	56,114	46,714	57,192	51,612
Household Income from Off Farm Sources (%)	108.1	96.8	95.0	102.7	95.3	99.3
Average U.S. Household Income (%)	71.1	76.7	84.3	70.2	85.9	77.5
Farm Households Negative Household Income (%)	8.8	8.9	10.1	13.3	8.5	10.3
Farming Occupation - Higher Sales						
Number of Farm Households	18,217	9,919	47,182	31,340	18,573	125,230
Average Total Household Income (\$)	56,405	53,455	70,544	54,683	79,194	64,447
Household Income from Off Farm Sources (%)	50.3	66.5	58.9	64.1	68.2	61.1
Average U.S. Household Income (%)	84.7	80.3	106	82.1	119	96.8
Farm Households Negative Household Income (%)	8.2	14.7	14.2	16.3	13.3	13.8

**Table 3.6-4. 2006 Farm Household Income by Farm Typology and by Region
(cont'd.)**

Parameter	Region					
	Atlantic	South	Midwest	Plains	West	All Farms
Large Farms						
Number of Farm Households	11,590	9,291	34,149	19,129	12,023	86,182
Average Total Household Income (\$)	79,761	96,592	100,311	131,945	98,135	103,864
Household Income from Off Farm Sources (%)	54.3	57.2	51.4	71.8	54.0	58.4
Average U.S. Household Income (%)	119.8	145.1	150.7	198.2	147.4	156
Farm Households Negative Household Income (%)	16.4	13.2	14.1	18	21.6	16.2
Very Large Farms						
Number of Farm Households	10,270	12,509	22,016	13,202	13,893	71,890
Average Total Household Income (\$)	228,058	200,334	228,071	222,264	371,088	249,815
Household Income from Off Farm Sources (%)	20.1	25.7	20.2	25.5	16.9	20.9
Average U.S. Household Income (%)	342.6	300.9	342.6	333.9	557.4	375.3
Farm Households Negative Household Income (%)	11.2	14.4	14.2	15.7	18.8	15

Source: USDA 2007b

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4.0 ENVIRONMENTAL CONSEQUENCES

This section forms the scientific and analytic basis for the comparisons under (Chapter 2.0).

40 CFR 1502.16

This chapter describes the potential direct and indirect environmental impacts associated with the proposed changes to ECP as compared to the current program. With the proposed action, the available practices under ECP have not changed, rather where these practices can be implemented. The proposed action redefines eligibility to include land devoted to timberland, farmsteads, roads, feedlots, and farm buildings. **Table 4.0-1** provides a summary of the potential impacts on each resource associated with continuing the current program and implementing approved ECP practices within the proposed eligible areas.

Table 4.0-1. Environmental Impacts Summary

Resources	No Action (Current Program)	Proposed Action (Expansion)
<p>Biological Resources <i>vegetation, wildlife, and protected species</i></p>	<p>Removing debris, shaping and leveling land, reestablishing vegetation, and restoring conservation structures after a natural disaster would have long term positive impacts to vegetation and wildlife. Reestablishing permanent vegetation and conservation structures would ultimately improve local water quality and wildlife habitat by promoting biological diversity.</p> <p>If protected species are present or suspected of being present, informal consultation with the USFWS would occur during the site specific environmental evaluation to ensure the protection of these species. Formal consultation with USFWS would be completed in the event a practice may affect a listed species. If negative impacts to listed species are identified, it is not likely the land would be approved for the ECP. FSA</p>	<p>Expanding the current program to include timberlands and other areas within the farmstead would have the same long term positive impacts as the current program. With the addition of timberland, there is a higher likelihood for encountering previously undisturbed land. Removing debris, shaping and leveling land, reestablishing vegetation and restoring conservation structures in these areas would promote vegetation growth and wildlife diversity. Wildlife may be temporarily displaced, but suitable habitat may not be nearby, or may already have established wildlife at a capacity that cannot sustain additional animals in the long term.</p> <p>Protected species that occur or have the potential to occur would be protected through informal consultation with the USFWS during the site specific environmental evaluation. If</p>

Table 4.0-1. Environmental Impacts Summary (cont'd.)

Resources	No Action (Current Program)	Proposed Action (Expansion)
<p>Biological Resources <i>vegetation, wildlife, and protected species(cont'd.)</i></p>	<p>encourages FSA state offices to develop MOUs with USFWS to expedite reviews at the site specific level.</p> <p>Temporary negative impacts could occur with the use of heavy machinery to establish some practices. These effects would be temporary and localized. The disturbance from heavy machinery would not be greater than the disturbance associated with normal agricultural practices. The disturbance associated with certain practices potentially introduces invasive plant species, however, this may be controlled by employing BMPs such as washing equipment before entering and leaving the work area and ensuring seed mixes do not include any invasive or noxious species. Wildlife may be temporarily displaced, but suitable habitat may not be nearby, or may already have established wildlife at a capacity that cannot sustain additional animals in the long term.</p>	<p>impacts are identified, formal consultation with USFWS would be completed. If negative impacts to listed species are found, it is not likely the land would be approved for the ECP. FSA would continue to encourage FSA state offices to develop MOUs with USFWS to expedite reviews at the site specific level.</p> <p>Temporary negative impacts from the use of heavy machinery could occur with some practices. Establishing access roads and/or restoration of timberland areas would temporarily remove vegetation in the immediate area and has the potential for spreading invasive plant species. This may be controlled by employing BMPs that minimize this potential, such as washing equipment before entering or leaving the work area, and ensuring seed mixes do not include invasive or noxious species.</p>
<p>Water Resources <i>surface water, groundwater and aquifers, floodplains, and wetlands</i></p>	<p>The goal of many of the practices is to restore agricultural land to prohibit further erosion and degradation of local water quality. Positive impacts to surface water quality, groundwater quality, floodplains, and wetlands would be realized from implementation of the practices. Removing debris, restoring vegetation, repairing conservation structures, reestablishing windbreaks, and releveling the land would all provide erosion control and limit runoff potential.</p> <p>The use of heavy machinery could temporarily increase runoff and erosion potential. These impacts would be localized and cease once construction has ended.</p>	<p>Similar to the current program, expanding the program would improve local water quality, floodplains, and improve nearby wetlands for newly eligible areas. Impacts to groundwater within timberlands are not expected since it is unlikely that any of the practices associated with wells would occur in timberlands.</p> <p>The use of heavy machinery in timberlands could temporarily increase runoff and erosion potential. These impacts would be localized and cease once construction has ended.</p>

Table 4.0-1. Environmental Impacts Summary (cont'd.)

Resources	No Action (Current Program)	Proposed Action (Expansion)
Soil Resources	<p>Positive impacts to local soils are expected since most practices are designed to increase soil stability. Reestablishing vegetation, windbreaks, wind control measures, and removing gullies all reduce erosion potential.</p> <p>The use of heavy machinery during implementation of some of the practices could compact soils impairing water infiltration and vegetation growth.</p>	<p>Potential impacts to soils in timberlands would be similar to those described for the current program with the exception that practices could be implemented in areas where soils have not been disturbed from routine farming activities. Reestablishing vegetation, wind control measures, and releveling land would all reduce erosion potential and protect the area from soil loss.</p> <p>The use of heavy machinery, especially in timberland areas, could compact soils impairing water infiltration and vegetation growth.</p>
Cultural Resources	<p>Removing debris, releveling land, and establishing wind erosion measures on lands with historic significance would have beneficial effects to these areas by restoring access and removing potential contaminants that would threaten the integrity of the site.</p> <p>The use of heavy equipment could negatively affect historic properties through ground disturbance.</p> <p>Site specific environmental evaluation in accordance with 1-EQ would determine the presence of a specific property included or eligible for inclusion on the National Register of Historic Places and provide compliance with Section 106 of the National Historic Preservation Act.</p>	<p>Expanding the program eligibility to timberland, farmsteads, and farm buildings would increase the potential for encountering a historic property. Potential beneficial and adverse impacts to these sites would be the same as those described under the current program.</p> <p>Site specific environmental evaluation would determine the presence of a specific property included or eligible for inclusion on the National Register of Historic Places and provide compliance with Section 106 of the National Historic Preservation Act.</p>

Table 4.0-1. Environmental Impacts Summary (cont'd.)

Resources	No Action (Current Program)	Proposed Action (Expansion)
Socioeconomics	The program provides financial assistance to producers to restore lands to normal farming production. Without the assistance of the program, these lands might be too costly to repair. The producer and the local economy experience a slightly positive economic impact as a result of the program.	Expanding the eligibility of the program would have similar socioeconomic impacts as the current program. The budgeted amount for the program and the individual operator cap of \$200,000 would remain unchanged. Therefore, increasing the land eligible for cost-share assistance would either (1) allow for higher payment to a producer, not to exceed the cap, or (2) allow more producers to apply for assistance.
Environmental Justice	The program provides funding to a producer at a time when it is most needed and helps to maintain the local economy. A low income producer would benefit the most from the program since they may not be financially able to restore the land without the assistance and are eligible for a higher cost-share. Potential impacts to the natural environment would not be considered significant under the current program, therefore, there are no environmental justice concerns.	Similar to the current program, expanding the eligibility provides funding to producers at a time when it is most needed. Low income producers would continue to be eligible for a higher cost-share. Potential impacts to the natural environment would not be considered significant under the proposed expansion, therefore, there are no environmental justice concerns.

4.1 BIOLOGICAL RESOURCES

Impacts to biological resources would be considered significant if protected species or their designated critical habitats were adversely affected or if disturbances caused changes in the population size or distribution of wildlife or native vegetation.

4.1.1 No Action (Current Program)

4.1.1.1 Vegetation

Under the current program, long term positive impacts from the restoration of permanent vegetation within the farmland would be realized through implementation of several ECP practices that allow for restoration of these areas. Under EC 2 farmers can receive cost-share assistance for restoring permanent vegetation once the land has been restored to its

previous grade. EC 4 and EC 8 authorize using permanent vegetated cover in conjunction with eligible structures (water impoundments, sod waterways, drainage systems, field windbreaks, etc.) to prevent critical erosion and siltation.

During implementation of practices, temporary negative impacts to vegetation could occur from the use of heavy machinery (EC 1, EC 2, EC 3, EC 4, EC 6, and EC 7). Heavy machinery compacts soil which ultimately could impair plant growth. Debris removal (EC 1) may also require the creation of an access roadway which would remove existing vegetation in the area. Grading, leveling and reshaping (EC 2) could also impact vegetation in the project area and immediately surrounding the site. Since these practices would be used to return the land to its normal productive state, it is likely that vegetation has already been damaged by the disaster and the impacts associated with establishing these practices would be minor. However, ground disturbance of certain practices have the potential for spreading invasive or noxious plant species. This potential would be minimized by use of BMPs such as washing equipment when leaving and entering the work site, ensuring seed mixes do not contain invasive species, and monitoring for invasive or noxious plants as vegetation becomes re-established.

4.1.1.2 Wildlife

Under the current program, restoring farmland and conservation structures would have positive impacts to wildlife by improving damaged habitat and water sources. Damaged water impoundment structures may increase sedimentation in local waterways during a natural disaster. Restoring these structures (EC 4) would improve water habitat for aquatic species and provide water sources for wildlife in the area. An improperly functioning animal waste lagoon could be detrimental to the aquatic environment and create large fish kills. Restoring these lagoons (EC 4) would improve water habitat. Establishing field windbreaks and farmstead shelterbelts (EC 8) may provide habitat within the farmland. These activities would improve habitats and promote biodiversity in the farmland community.

Temporary disturbances or displacement of wildlife during the use of heavy machinery could occur during implementation of some practices (EC 1, EC 2, EC 3, EC 4, EC 6, and EC 7). Wildlife may not have nearby suitable habitat to relocate to during the use of such machinery, or these areas could already be occupied to capacity by wildlife. However, when this disturbance ceases once the practice was established, it is likely that the wildlife would move back into the area. Grading and leveling (EC 2) is a normal farming activity and should not significantly affect wildlife adapted to farmland.

Damaged fences from a natural disaster may have allowed access to the farmland that was not previously available providing possible food and water sources to local wildlife.

Restoring these fences (EC 3) would prohibit this access. It is likely that these species would relocate to habitat outside of the fenced farmland.

Establishing wind erosion measures (EC 5) would alter existing habitat for farmland wildlife. While the alteration of habitat could displace some wildlife, it would create new types of habitat for other species. Displaced wildlife may migrate to other nearby areas, however, it is possible that no nearby suitable habitat would be available, or suitable habitat is already occupied by wildlife at a capacity that cannot sustain additional animals in the long term.

4.1.1.3 Protected Species

Implementation of practices would have the same potential impacts to protected species as those described for wildlife and vegetation. To protect the sensitive habitats utilized by protected species, FSA requires that site specific environmental evaluation occur prior to approval of cost-share assistance. This evaluation would determine the presence and potential impact to a listed species. If a species is present or suspected to be present, consultation with USFWS would be required to adequately assess the potential impacts to that species. If a potential to impact a protected species is identified, formal consultation with USFWS would be completed, however, if the impacts are determined to be negative, it is not likely the land would be approved for the ECP. FSA encourages FSA State offices to develop MOUs with the USFWS to expedite reviews at the site specific level.

4.1.2 Proposed Action (Expansion)

4.1.2.1 Vegetation

Potential impacts to vegetation associated with the proposed action are similar to those described for the current program with the exception that practices would be implemented in areas potentially undisturbed by farming activity, namely timberland. It is unlikely that native vegetation or wildlife occurs in any of the other newly eligible lands except timberland. Grading, shaping and leveling (EC 2) would allow for the establishment of permanent vegetation once the land has been restored. Other practices that allow for the establishment of permanent vegetation (EC 4 and EC 8) would not likely occur in timberlands.

During implementation of practices, temporary negative impacts to vegetation could occur from the use of heavy machinery (EC 1, EC 2, EC 6, and EC 7) in timberlands. Maneuvering heavy machinery in timberland can destroy herbaceous vegetation and compact soil which ultimately could impair plant growth. These effects would be temporary, and vegetation would grow after activity ceases in the area.

The application of some practices in timberlands may involve creating access roads (EC 1, EC 2, EC 6, and EC 7). Clearing debris from timberlands would likely result in removing

understory vegetation. These activities would allow additional sunlight to reach the understory promoting new forest growth. However, ground disturbance of certain practices have the potential for spreading invasive or noxious plant species. This potential would be minimized by use of BMPs such as washing equipment when leaving and entering the worksite, ensuring seed mixes do not contain invasive species, and monitoring for invasive or noxious plants as vegetation becomes re-established. Composting debris on site would deliver nutrients back to the soil and promote vegetation growth.

In the event of a natural disaster, specifically a hurricane or flood, the integrity and health of the forest has already been compromised and clearing debris may help to reestablish the forest to its original condition.

4.1.2.2 Wildlife

Implementation of EC 4 would have similar positive impacts to wildlife inhabiting nearby timberlands as those described for the current program. Damaged water impoundment structures may increase sedimentation in local waterways during a natural disaster. Restoring these structures (EC 4) would improve water habitat for aquatic species and provide water sources for wildlife in the area. An improperly functioning animal waste lagoon could be detrimental to the aquatic environment and create large fish kills. Restoring these lagoons (EC 4) would improve local water quality and aquatic environments.

Temporary disturbances or displacement of wildlife during the use of heavy machinery could occur during implementation of some practices (EC 1, EC 2, EC 3, EC 4, EC 6, and EC 7). Wildlife may not have nearby suitable habitat to relocate to during the use of such machinery, or these areas could already be occupied to capacity by wildlife. However, when this disturbance ceases once the practice is established, it is likely that the wildlife would move back into the area.

Expanding ECP practices to timberland has the potential to impact relatively undisturbed environments. Clearing the understory and creating access roads (EC 1 and EC 2) would displace ground-dwelling species. It is likely that these species would return after the habitat is restored or relocate to other nearby areas. However, it is possible that no nearby suitable habitat would be available, or suitable habitat is already occupied by wildlife at a capacity that cannot sustain additional animals in the long term. New types of habitat that would result from vegetation clearing associated with debris removal (EC 1) would promote biodiversity.

4.1.2.3 Protected Species

Implementation of practices would have the same potential impacts to protected species as those described for forestland wildlife and vegetation. Since timberlands are more likely to

be previously undisturbed, encountering protected species, especially plants, is more likely. Unlike wildlife that can relocate and avoid disturbance, protected plants could be affected by the use of heavy machinery and the alteration of habitat. As with the current program, a site specific environmental evaluation is required prior to approval of cost-share assistance. This evaluation would identify and protect any species on the endangered species list or critical habitat. If a species is present or suspected to be present, consultation with USFWS would be required to adequately assess the potential impacts to that species. If a potential to impact a protected species is identified, formal consultation with USFWS would be completed, however, if the impacts are determined to be negative, it is not likely the land would be approved for the ECP. FSA encourages FSA State offices to develop MOUs with the USFWS to expedite reviews at the site specific level.

4.1.3 Mitigation

Proper maintenance of heavy machinery to be used during implementation of the practices would limit the possibility of oil and gas leaks which may damage vegetation or wildlife habitats. Use of BMPs such as washing vehicles upon leaving and entering a work area would minimize the potential to spread invasive or noxious plant species. During restoration of fences, avoiding irregular terrain and water crossings could limit the potential impacts on wildlife migration patterns.

Site specific environmental evaluation on the project site in conjunction with either informal or formal consultation with the appropriate USFWS office would protect species included on the endangered species list. If negative impacts of eligible practices on listed species are identified, it is not likely the land would be approved for the ECP. FSA would continue to encourage FSA State offices to execute MOUs with USFWS that would expedite reviews at the site specific level.

4.2 WATER RESOURCES

Impacts to water resources would be considered significant if the proposed activities resulted in changes to water quality or supply, threatened or damaged unique hydrologic characteristics, or violated established laws or regulations.

4.2.1 No Action (Current Program)

4.2.1.1 Surface Water

Under the current program, positive effects on surface water quality would occur with implementation of several practices. Under EC 2 (grading, shaping, and leveling), water quality would improve with better soil drainage. Re-establishment of permanent vegetation would reduce the potential for wind and water erosion that could transport sediment to nearby waterways. Revegetation as part of EC 4 (restoring structures and other

installations), EC 5 (wind erosion control), and EC 8 (field windbreaks) would also improve water quality by reducing sediment runoff.

Negative effects of the practices would generally be temporary and associated with the implementation of the practice. Temporarily installing pipes to an alternative water source (EC 6) could increase the withdrawal of that water body. Construction equipment used for each practice could cause soil erosion or runoff, causing a buildup of sediment, pesticides, and other agriculture-related chemicals in adjacent waterways. Use of heavy machinery under several practices (EC 1, EC 2, and EC 4) could also leak substances such as oil and gasoline that could degrade surface water quality. Proper maintenance of the machinery would limit this effect.

4.2.1.2 Groundwater

Under the current program, EC 1 (debris removal) would remove debris that would be likely to cause ponds to form in fields. Ponds collecting agricultural runoff, including pollutants, could infiltrate into the groundwater; EC 1 would remove debris to prevent this occurrence. Repairing damaged animal waste lagoons (EC 4) would remove potential contaminants that could infiltrate the groundwater supply.

Under EC 4 (restoring structures and other installations) and EC 6 (drought emergency measures) of the current program, restoring wells, or deepening or installing new wells could contaminate groundwater supplies if not constructed properly. An increased use of groundwater, especially during drought when there is little recharge, could decrease aquifer levels, which could affect groundwater supplies. However, because EC 4 would be restoring wells or springs to pre-disaster conditions, no change in groundwater use would occur with implementation of EC 4.

4.2.1.3 Wetlands

Positive effects to wetlands under the current program would occur under EC 1 (debris removal), EC 4 (restoring structures and other installations), EC 5 (wind erosion control), and EC 8 (field windbreaks). EC 1 would remove debris that may be hindering water flow to wetlands. Debris in wetlands, such as downed trees, may degrade habitat; EC 1 would improve conditions within wetlands by removing such debris. EC 4, EC 5, and EC 8 would reduce the amount of sediment reaching wetlands by repairing drainage systems and vegetative cover, thereby reducing erosion.

Construction equipment used for each practice could temporarily affect wetlands. Increased amounts of sediment may be eroded to wetland ecosystems, causing sediment to build up faster than it normally would. Sediment may also carry pesticides and other chemicals that would degrade water and habitat quality, further reducing the function of wetland ecosystems.

4.2.1.4 Floodplains

Under the current program, EC 1 (debris removal) would restore floodplain function by removing disaster-related excess sediment deposited in the floodplain. Revegetation, as part of EC 2 (grading, shaping, and leveling), EC 4 (restoring structures and other installations), EC 5 (wind erosion control), and EC 8 (field windbreaks) would stabilize soils and prevent additional sediment from being deposited in the floodplain.

Removal of vegetation under EC 2 and EC 4 may temporarily increase erosion from floodplain areas, increasing turbidity and input of nutrients from agricultural lands.

4.2.2 Proposed Action (Expansion)

4.2.2.1 Surface water

Potential impacts to surface water associated with the proposed action are similar to those described for the current program. Potential impacts on newly eligible farmsteads, roads, feedlots, and farm buildings would be within farmland and the same as those described for the current program under Section 4.2.1.1. Some practices that are applicable to farms would not likely occur in timberlands (e.g., restoring fences and drought emergency measures). Positive effects to surface water would occur from implementation of EC 1 and EC 2 in timberlands. These practices would remove debris, reshape the land, and revegetate, which would likely reduce the potential of ponding water and erosion. Erosion from timberlands would be greatest if a natural disaster such as a fire or landslide/mudslide destroyed large quantities of trees. Without the root systems to hold the topsoil in place, the soil would be highly susceptible to erosion during future wind and rain events, especially if on a hillside. Revegetation would substantially help to stabilize the soil and lessen impacts, such as turbidity, to surface water from acceptance of the sediment.

In the event of a disaster that deposited debris within a timberland or caused downed trees (e.g., tornado, hurricane, or flood), activities under EC 1 would be used to remove debris. Creating access roads and using heavy machinery could cause soil erosion and affect surface water quality. Use of heavy machinery under several practices (EC 1, EC 2, and EC 4) could also leak substances such as oil and gasoline that could degrade surface water quality. Proper maintenance of the machinery would limit this effect. The proximity of surface water to the timberland and whether the timberland was on sloped or flat terrain would determine the magnitude of potential effects from erosion.

4.2.2.2 Groundwater

Potential impacts to farmsteads, roads, feedlots, and farm buildings would be the same as those described under the current program described under Section 4.2.1.2. It is unlikely that practices on timberlands would have an effect (positive or negative) on groundwater. EC 4, which includes restoring structures such as wells, would return groundwater usage to

pre-disaster conditions. However, it is unlikely that timberlands would be irrigated or that wells would be used in conjunction with timberland harvest. Therefore, no effects on groundwater from the proposed action are anticipated.

4.2.2.3 Wetlands

Potential impacts to wetlands associated with the proposed action are similar to those described for the current program and those described under Section 4.2.2.1, Surface water. In addition to the positive effects listed in Section 4.2.2.1, implementation of EC 7 could restore conservation measures that were in place to protect wetlands prior to the disaster.

Wetlands are protected by Federal law from fill; therefore, if the timberland is currently being harvested, it is likely that best management practices (BMPs) are in place to minimize effects of sediment being deposited in the wetlands from erosion. Continued adherence to existing BMPs during implementation of EC 1, EC 2, and EC 4 would lessen potential effects on wetlands. If the timberland is not being harvested, there may not be access roads and other structural components established; therefore, implementation of EC 1 and EC 2 would cause a greater disturbance within the commercial timberland. Initial clearings may result in large volumes of soil movement with the potential for soil erosion and deposition in nearby wetlands. Establishment and adherence to BMPs would reduce this effect.

4.2.2.4 Floodplains

Potential impacts to floodplains associated with the proposed action are similar to those described for the current program under Section 4.2.1.4. No additional effects on floodplains would be expected from expansion of eligibility.

4.2.3 Mitigation

Proper maintenance of heavy machinery to be used during implementation of the practices would limit the possibility of oil and gas leaks which may degrade surface water quality and wetlands. Implementing BMPs during the establishment of access roads would reduce or eliminate impacts to surface water quality and wetlands.

4.2.4 Permits

Depending on the extent of work conducted under the practices, several permits may be required. The completion of site specific environmental evaluation would determine appropriate permits, in accordance with 1-EQ, which may include:

Section 404 of the Clean Water Act

The USACE regulates the placement of dredged or fill material in waters of the U.S., which includes some wetlands, pursuant to 33 CFR parts 320-3320. Work and structures that are located in, or that affect, navigable waters of the U.S, including work below the ordinary high water in non-tidal waters are also regulated by the USACE.

Section 402 National Pollutant Discharge Elimination System

EPA currently regulates storm water discharges from construction sites that are 1 acre or larger. Documenting project compliance with the National Pollutant Discharge Elimination System general permit involves the preparation of a storm water Pollution Prevention Plan and submittal of a Notice of Intent to Discharge to EPA.

Section 401 Water Quality Certification

Pursuant to Section 401 of the Clean Water Act, Federal permits for projects in wetlands or waterways must be certified by the state licensing or permitting agency to ensure that state water quality standards are met. Projects requiring a Section 404 or Section 402 also need a Section 401 permit.

4.3 SOIL RESOURCES

Impacts to soil resources would be considered significant if proposed activities resulted in increased erosion and sedimentation or affected unique soil conditions.

4.3.1 No Action (Current Program)

The no action alternative would be a continuation of the program as it currently exists: assisting farmers and ranchers in restoring agricultural fields damaged by natural disasters. During implementation of practices in all ecoregions of the U.S, temporary and minor effects to soil resources may occur when soils are compacted from the use of heavy machinery. Compacted soils prevent water infiltration which can increase the soil loss when water flows quickly across soil surface. Debris removal (EC 1) may require the creation of access roads which could remove existing vegetation. The root systems of plants hold soil in place, keeping it moist unlike un-vegetated dry soils that are exposed and susceptible to wind erosion. Other emergency conservation measures (EC 7) can also create erosive conditions if soils are exposed long term or remain in a compacted condition.

Emergency conservation practices are designed to increase soil stability and decrease soil loss from wind and water erosion. Additionally, the impacts to soils, such as compaction and soil loss, from implementing the practices are short term, temporary, and localized and specific to the disaster area. Long term benefits are realized when conservation measures

such as emergency wind control measures (EC 5), and field windbreaks and farmstead shelterbelts emergency measures (EC 8), are implemented. These conservation practices conserve soils by establishing or re-establishing vegetative buffers that “break” the wind from blowing over the fields and reduce wind erosion of soils. Emergency conservation measures are also designed to restore agricultural soils to pre-disaster condition. By removing debris accumulations (EC 1) after flooding events, seeds or saplings may grow quicker. Removing gullies, humps or depressions (EC 2) and returning land to its previous grade can divert water appropriately. Restoring conservation structures such as terrace systems and sod waterways (EC 4) would divert and catch sediment in designated areas.

HEL soils are innately more susceptible to erosion and generally require additional conservation measures to sustain agricultural production. These soils have the potential to erode faster than soils on other agricultural lands if additional erosive conditions are created during implementation of the practices. However, as described above, these lands would be net beneficial in the long term when soil conservation measures are established and agricultural lands can return to normal production.

4.3.2 Proposed Action (Expansion)

Potential impacts to soils associated with the proposed action are similar to those described for the current program with the exception that practices could be implemented in areas where soils have not been disturbed from routine farming activities. Expanding the definition of farmlands to include other agricultural lands such as timberlands, farmsteads, feedlots, farm roads and buildings would increase the number of acres eligible for emergency conservation throughout the U.S. especially in the east (**Figure 2.2-1**). Soil resources would be negatively impacted from the natural disaster and implementing practices would provide long term soil conservation benefits to these areas. Debris can be composted on site (EC 1) to add beneficial organic materials to the soil surface, and grading, leveling, and reshaping (EC 2) where trees have been uprooted would eliminate areas that promote uneven distribution of water. Additionally, emergency conservation practices are designed to restore land to its original condition and tree fall and sediment accumulations could impede regeneration of timberlands.

For HEL, impacts and benefits would be similar to what is described under the current program. HEL would be net beneficial in the long term when soil conservation measures are established and lands can return to their normal condition. Additionally, the impacts to HEL from implementing the practices would be minor since the lands are likely to be substantially disturbed from the impact of the natural disaster.

4.3.3 Mitigation

Additional erosion control practices, such as the ones described below, would be considered appropriate on a site specific basis when implementing the practices, especially on lands designated as HEL. Additionally, a site specific environmental evaluation to determine erodibility potential, and to ensure HEL compliance requirements are met, would be done.

Erosion control measures that may be utilized on a site specific basis:

- Shorten the length of exposure of the erosive surface and prevent sediment from moving offsite by utilizing mulch, silt fences, gravel bags and vegetative barriers that trap sediment
- Clear smaller areas of vegetation at different intervals
- Schedule excavation during low-rainfall periods
- Cover disturbed soils with mulch or vegetation
- Control concentrated water flows that form rills and gullies
- Minimize the length and gradient of slopes
- Inspect and maintain all structural control measures
- Avoid soil compaction by restricting the use of heavy equipment and vehicles to limited areas
- Break up or till compacted soils prior to vegetating

4.4 CULTURAL RESOURCES

A significant effect on cultural resources listed in or eligible for listing in the National Register is one that alters the characteristics that make it eligible for the National Register. Adverse effects are described in 36 C FR 800.45, the regulations for Section 106 of the NHPA. In the case of an archeological site that is eligible for its research value (i.e., for its ability to yield information about prehistory or history), impacts to the site from heavy machinery to build a road or excavate a trench for a new pipeline would be an adverse effect because the impacts would significantly reduce the site's ability to yield new information. If the eligible or listed property is part of the built environment, impacts from heavy machinery that would affect the integrity of the structure or restoration that would alter the structure would be a significant adverse effect. If the eligible or listed property is a TCP that is a place out of doors rather than a structure, a significant adverse effect would be removal of the place (through erosion, barrowing, construction of a berm on it, etc.) or removal of access to the place.

The effects of ECP on cultural resources eligible for or listed in the National Register vary from one practice to another. Although the purpose of this SEIS is to expand the ECP to benefit other lands not previously covered including farmsteads and farm buildings, it should be noted that the practices authorized are not designed to remedy the impacts from disasters to houses, barns, silos, or other outbuildings on agricultural land. ECP seeks to restore agricultural land impacted by natural disasters to production. Thus, architectural resources that consist of farmhouses, barns, silos, or other outbuildings will not be affected by the program.

4.4.1 No Action (Current Program)

Some practices can result in beneficial effects to National Register properties. Debris removed (EC 1) can restore access to a TCP, deter potential harm when debris rests against a structure that is a National Register property, and remove potential contaminants that would threaten the integrity of important archaeological sites. Under EC 2, efforts to fill in gullies where archaeological sites that are National Register properties are present can provide protection for such properties; other efforts authorized under this practice can help to stabilize such sites. TCPs, such as ditches that are ceremonially cleaned by a community but damaged during a natural disaster, can benefit under EC 4 which restores conservation structures. Wind erosion control practices (EC 5) to retard topsoil depletion can also result in beneficial effects for archaeological sites that are National Register listed or eligible properties. Archaeological sites subject to wind erosion are often deflated into a thin layer that greatly reduces their research value. Drought conditions can become sufficiently severe that families abandon their lands to seek other employment. Architectural properties that are present on such lands and listed in or eligible for the National Register would suffer neglect and disrepair. Therefore, EC 6 drought emergency control can provide benefits to such properties by encouraging farmers to remain on their lands and maintain their structures and buildings. EC 8 allows for the re-planting of windbreaks and farmstead shelterbelts that have been uprooted or broken during disasters. If the windbreak or shelterbelt is a contributing element of a farmstead or other property eligible for or listed on the National Register, re-planting would restore the long term integrity of the property.

Negative impacts from ECP can also occur and would cause adverse effects to cultural resources eligible for or listed on the National Register (historic property). An adverse effect is found when a Federal action may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register. ECP authorized activities can cause adverse effects to all three types of cultural resources that are listed in or eligible for the National Register: archaeological sites, TCPs, and architectural properties. Use of mechanical equipment to remove debris (EC 1), grade or re-shape land (EC 2), or restore conservation structures (EC 4) can result in ground

disturbance. If archaeological sites are present and eligible for their research value (i.e., their ability to yield information important in history or prehistory), such ground disturbance is an adverse effect. Similarly, if conservation structures are re-located or new or enhanced water impoundment features are undertaken (EC 4 and EC 6), adverse effects to archaeological sites eligible for or listed in the National Register would occur if they are present in the footprint of the new or enhanced structures.

Deep tilling or chiseling is sometimes authorized under EC 1 (debris removal) and EC 5 (wind erosion control). The practice of deep tilling may or may not have an adverse effect on significant archaeological sites. At times, this practice is authorized when flood deposits cover farmland. The deposits are first leveled and then deep tilling is used to mix the new deposits with old. If the farmland has been repeatedly tilled in the past, the upper deposits of any archaeological site present have already received such impacts and tilling to mix the old and new soils would not represent a significant impact. Moreover, some sites may be sufficiently buried that tilling will not reach them. Only those sites whose cultural materials are contained in the uppermost part of the soils that formerly lay on the surface and had not been tilled in the past would be adversely affected by deep tilling.

Potential adverse effects to TCPs under the ECP authorized activities would only occur to TCPs that represent places where ceremonies or activities take place. Other TCPs are structures or buildings used as focal points for a community. While such properties can be affected by natural disasters, they would not be adversely affected the practices. Four of the practices (EC 1, EC 2, EC 4, and EC 6) can adversely affect TCPs where ceremonies or activities occur. Under EC 1 or EC 2, vegetation may be cleared to provide access to farmlands. If the vegetation removed is part of a TCP (such as the reeds collected by a Tribe to construct traditional baskets), its removal would be considered an adverse effect to the resource. If a conservation structure is relocated under EC 4 and moved to an area used as a TCP, this would restrict the use of the TCP in the future. However, if the conservation structure is buried, it is likely the TCP could continue to be used. Similarly, the measures for drought control (EC 6) include construction of water tanks, troughs, pipelines and wells and enhancement of seeps and springs. If these occur within all or part of a TCP, an adverse effect would result from the visual effects of the structure or it may prevent or restrict the use of the TCP.

EC 3 authorizes the repair or replacement of fences. Fences can be eligible for the National Register usually as part of a larger farmstead, however, the practice is only authorized for fences that are less than 30 years old. Fences less than 30 years old do not meet the age criteria for listing in the National Register and thus, EC 3 would not have an adverse effect on fences that are listed or eligible for listing in the National Register. Structures and buildings eligible for or listed in the National Register can be adversely affected by EC 4 (restoring conservation structures). Conservation structures, including

dams, irrigation systems, ditches, and drainage systems over 50 years of age, can be eligible for or listed in the National Register. If such properties are damaged by natural disasters, replacing them with a new structure, removing them, or repairing them without consideration of their historic fabric will be adverse effects under Section 106 of the NHPA.

Under the no action alternative, the ECP will continue as it presently exists. At present, eligible land is restricted to cropland, hayland, and rangeland/pastureland. Impacts to cultural resources eligible for or listed in the National Register are identified through the procedures described in the 1-EQ Handbook, Section 6 (Cultural Resources). Those procedures follow the requirements for compliance with Section 106 of the NHPA and 36 CFR 800. If the no action alternative is chosen, this process will continue.

4.4.2 Proposed Action (Expansion)

Expanding the definition of farmland would expand the potential for adverse and beneficial impacts to cultural resources eligible for or listed in the National Register. Farmsteads, timberlands, feedlots, farm roads, and farm buildings can either be or can contain a National Register property. Thus, this alternative would expand the range of National Register properties that are affected by practices, but the range of beneficial or adverse impacts are similar to those described for the current program with the exception that practices would be implemented in areas potentially undisturbed by farming activity.

Beneficial effects to National Register properties would still accrue when debris removed under EC 1 restores access to a TCP, removes debris resting against a structure that is a National Register property, or removes contaminants that threaten the integrity of archaeological sites. Under EC 2, stabilizing farmsteads where National Register properties are present can provide protection for such properties. Replanting of windbreaks on farmsteads can have beneficial effects if the windbreak or farmstead is eligible for or listed on the National Register. Replanting would restore the long term integrity of the property.

Negative effects from the expansion of ECP would also occur to all three types of cultural resources that are listed in or eligible for the National Register, and these adverse effects are similar to those that occur with the current program. Use of mechanical equipment (EC 1, EC 2, EC 3, EC 4, or EC 6) can result in ground disturbance that would adversely affect archaeological sites, if present. If new access roads are needed to clear timberland, their construction would impact any sites present. Construction of other types of features needed to restore farmsteads, feedlots, or timberlands to production will also adversely affect any sites present.

Potential adverse effects to TCPs under the expansion of lands eligible for ECP authorized activities would only occur to TCPs that represent places where ceremonies or activities

take place and the potential impacts are similar to those that can occur under the current program. Four practices (EC 1, EC 2, EC 4, and EC 6) can adversely affect these TCPs. Under EC 1, vegetation may be cleared to provide access to farmlands or timberlands. If the vegetation is an element of a TCP, its removal would be an adverse effect to the resource. If a conservation structure is relocated under EC 4 and moved to an area used as a TCP, this would restrict the use of the TCP in the future unless the conservation structure is buried. Similarly, construction of water tanks, troughs, pipelines and wells and enhancement of seeps and springs (EC 6) within all or part of a TCP, would represent an adverse effect to the TCP.

Conservation structures in farmsteads or feedlots over 50 years of age may be eligible for, or listed in, the National Register. If such properties are damaged by natural disasters, replacing them with a new structure, removing them, or repairing them without consideration of their historic fabric would be adverse effects under Section 106 of the NHPA.

4.4.3 Mitigation

The activities authorized under ECP are case-specific responses to natural disasters to aid farmers and ranchers in returning their lands to production. When such a disaster occurs, the COC visits the property to make the initial evaluation. This evaluation is submitted to the STC. The STC, following the 1-EQ Handbook procedures, consults with the State Historic Preservation Officer (SHPO) about whether the proposed funding would affect any cultural resource eligible for or listed in the National Register. In some cases, professional archaeologists or historians may need to visit the property to assist in making the determination whether there are or are not cultural resources eligible for or listed in the National Register that would be affected.

If a cultural resource eligible for or listed in the National Register is present and would be affected by the proposed practice, the STC, SHPO, and other consulting parties would develop project-specific mitigation measures. These may include avoidance, recordation of historic structures or buildings, repair in-kind, data recovery, or other measures to reduce or lessen the adverse effect to the resource. The measures to be followed would be detailed in a project-specific Memorandum of Agreement signed by the FSA, the SHPO, and any consulting party, and submitted to the Advisory Council on Historic Preservation.

4.5 SOCIOECONOMICS

For this analysis, socioeconomic impacts would be considered significant if a large percentage of gross income from farming operations was lost due to program changes or the farming operations were unrecoverable due to financial burdens wholly borne by the farm operators due to program changes.

4.5.1 No Action (Current Program)

As addressed in the 2003 ECP PEIS, ECP provides financial assistance to farmers and ranchers for the restoration of farmlands on which normal farming operations have been impeded by natural disasters (USDA 2003). Without the assistance of ECP these lands might otherwise be too costly to repair. The primary beneficial impact of the program is to provide repair funds and inject necessary capital into the local economy at a time when individual farms and their surrounding communities are under stress as a result of the disaster.

The local community benefits indirectly from the program through the conservation and maintenance of the productive capability of the land and through the money spent locally. With the assumption that ECP reimbursements are spent in the local community, the local trade and service sector of the economy can be expected to experience some effect in terms of the realization of additional income from sales of products and services.

The farming population that receives emergency funding is relatively small. In 2006, only 3% of all farms (over 62,000 farms) received disaster and emergency assistance payments with an average payment per farm of \$5,367 (USDA 2006). Government payments averaged 5.6% of gross income for all farms, with rural residence farms receiving 10.4% of their gross income from government payments.

4.5.2 Proposed Action (Expansion)

The potential impacts associated with the proposed expansion would be similar to those described for the current program. From 2002 through 2006, 247,875 farms received ECP assistance with an average cost-share of \$2,489 (USDA 2007c). Under the proposed expansion, more acreage would be eligible for approved ECP-related activities. This would either increase the number of eligible operators or the number of eligible operators would remain unchanged. Therefore, there would be only slight positive benefits associated with the proposed action. Activities allowed under ECP allow the operator to resume normal farming activities that were interrupted by some form of natural disaster. The expanded program would create an opportunity to spread the dollars spent on total recovery costs from a natural disaster over a greater range of activities with the cost-share assistance.

Under the proposed action, the budgeted amount for ECP outlays would remain unchanged, as well as the individual operator cap of \$200,000. Therefore, individual operators meeting the criteria for ECP payments could either (1) receive additional cost-share funding for increased eligible acreage or (2) the total number of operators utilizing the program would increase. Overall, the effect to the site specific areas would remain similar to the current program.

4.5.3 Mitigation

No mitigation would be required

4.6 ENVIRONMENTAL JUSTICE

Environmental Justice is achieved when everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards and has equal access to the decision-making process. Environmental Justice impacts would be considered significant if any adverse environmental effects occurred that would disproportionately affect minority and low-income populations.

4.6.1 No Action (Current Program)

Under the current program, potential impacts to the natural environment are not considered significant. As evaluated in the 2003 PEIS, the implementation of practices to restore the land to normal farming production would have temporary and minor effects to the natural environment (USDA 2003). The goal of ECP is to restore the land to its condition prior to the natural disaster and these activities would ultimately improve water quality, stabilize soil, and reestablish permanent vegetation. Similarly, ECP provides funding to producers at a time when it is most needed and helps to maintain the local economy. A low income producer would benefit the most from ECP benefits since they may not be financially able to restore the land to production without this assistance. No significant impacts to the natural or human environment are expected to occur through continuation of the current program; therefore, there are no environmental justice concerns.

4.6.2 Proposed Action (Expansion)

The proposed expansion could possibly make ECP assistance available to more producers and help to restore valuable timberland that has been damaged by a natural disaster. Similar to the current program, implementation of practices within timberland areas would have temporary and minor effects to the natural environment. Restoring these lands after a natural disaster would ultimately improve water quality, stabilize soil, and reestablish permanent vegetation. Providing financial assistance in time of a natural disaster to restore lands to normal agricultural production positively affects the producer as well as the local economy. Low income producers would benefit the most from ECP since they may not be financially able to restore the land to production without this assistance. No significant impacts to the natural or human environment are expected to occur with the proposed expansion of the program; therefore, there are no environmental justice concerns.

4.6.3 Mitigation

Mitigation measures discussed within each resource area would be utilized to eliminate or minimize the potential environmental impacts associated with the proposed expansion of ECP eligibility. Disproportionate effects to minority or low-income populations are not expected.

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5.0 CUMULATIVE EFFECTS ANALYSIS

Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions.

40 CFR 1508.7

5.1 DEFINITION

CEQ regulations stipulate that the cumulative effects analysis consider the potential environmental impacts resulting from “the incremental impacts of the action when added to other past, present and reasonably foreseeable actions regardless of what agency or person undertakes such other actions.” Cumulative effects most likely arise when a relationship exists between a proposed action and other actions expected to occur in a similar location or during a similar time period. Actions overlapping with or in proximity to the proposed action would be expected to have more potential for a relationship than those more geographically separated. Similarly, actions that coincide, even partially, in time tend to have potential for cumulative effects.

The ECP and practices are designed to provide financial aid to constrained producers in returning agricultural lands to production in the wake of a disaster, and implement emergency measures to ameliorate the effects of severe drought. The program scale is national and includes U.S. territories, yet ECP assistance may be granted to a single farm, if warranted. For purposes of this analysis, other USDA and Federal emergency assistance programs are the primary sources of information used in identifying past, present, and reasonably foreseeable future actions.

5.2 OTHER FEDERAL EMERGENCY ASSISTANCE PROGRAMS

In addition to ECP, there are several other Federal programs for disaster aid to farmers and for agricultural recovery activities. A brief overview of the relevant Federal programs is provided in **Table 5.2 -1**. The primary goal of many of these programs is to assist agricultural producers in the event of a natural disaster.

Table 5.2-1. Federal Emergency Assistance Programs

Action Agency	Summary
FEMA Disaster Housing Operation for Individuals and Households	Individuals and households, in areas which have received a Presidential emergency or major disaster declaration, whose primary residence has been damaged or destroyed and whose losses are not covered by insurance are eligible to apply for this program.
FEMA Disaster Housing Assistance Grant	Provides housing assistance, either financial or direct, for the following: 1) temporary housing, 2) home repair, 3) home replacement and 4) permanent housing construction. Assistance not used for the specified purpose will be required to be returned. Other needs assistance may be provided for: 1) medical, 2) dental, 3) funeral, 4) personal property, 5) transportation, and 6) other miscellaneous expenses assistance.
FEMA Disaster Housing Assistance Program	Provides temporary housing assistance and case management for families who were displaced by hurricanes Katrina and Rita. A Disaster Housing Assistance Program would be implemented in the form of a rental assistance program that would continue providing housing subsidies for families for the next 18 months after termination of FEMA's initial temporary housing program. Families are either receiving, or are eligible to receive, rental assistance administered by FEMA.
FEMA Disaster Assistance to Individuals and Households – Other Needs	“Other Needs Assistance” may be provided for the following: 1) medical, 2) dental, 3) funeral, 4) personal property, 5) transportation, and 6) other miscellaneous expenses. Medical disaster caused expenses, and/or paid receipts (bills) for medical treatment; 2) dental disaster caused expenses, and/or paid receipts (bills) for treatment; 3) funeral disaster caused expenses caused expenses, and/or paid receipts (bills) for services; 4) personal property proof of ownership; disaster caused personal damage; 5) transportation proof of ownership; vehicle complies with State laws, disaster caused vehicle damage; and 6) other necessary expenses and serious needs identified the expense or need must be caused by the disaster and approved by FEMA.
FEMA Cora Brown Fund	Payments to individuals from a private fund who have been affected by disaster but do not have insurance and have needs not met by any government program.

Table 5.2-1. Federal Emergency Assistance Programs (cont'd.)

Action Agency	Summary
FEMA Disaster Legal Assistance	Free legal assistance to individuals affected by a federal major disaster, including help with insurance claims.
USDA Risk Management Agency (RMA) Crop Insurance Program	Crop insurance as administered by the USDA RMA is offered to producers who annually decide to buy crop insurance. It covers loss of yield exceeding a deductible amount. Losses must be due to unavoidable perils beyond the farmer's control. Another type covers loss in value due to a change in market price during the insurance period. Farmers who accepted certain other federal benefits must purchase crop insurance or otherwise waive their eligibility for any disaster benefits that might be made available for the crop year.
USDA FSA Crop Disaster Program	Provides benefits to farmers who suffered quantity and quality losses to 2005, 2006, or 2007 crops from natural disasters. Only producers who obtained crop insurance coverage or coverage under the Noninsured Crop Disaster Assistance Program (NAP) for the year of loss will be eligible for CDP benefits.
USDA FSA Non-insured Crop Disaster Program	Provides financial assistance to producers for non-insurable crops when low yields, loss of inventory or prevented planting occur due to natural disasters. Only producers of annual gross revenue less than \$2 million are eligible.
USDA FSA Disaster Debt Set-Aside Program	When a presidential or secretary of agriculture disaster is declared, borrowers who are unable to make their scheduled payments on any FSA debt may be granted set asides of some payments to allow operation to continue.
USDA FSA Emergency Loan Program	FSA provides emergency loans to producers in disasters that will restore or replace essential property, pay production costs associated with the disaster year, pay essential family living expenses, reorganize farming operations and refinance certain debts. FSA must receive a Physical Loss Notification and/or a Quarantine designation.
USDA NRCS Emergency Watershed Protection Program	Administered by the NRCS, this program helps remove threats (watershed impairments) to life and property that remain in the nation's watersheds in the aftermath of natural disasters.

Table 5.2-1. Federal Emergency Assistance Programs (cont'd.)

Action Agency	Summary
USDA Rural Development Direct Housing Natural Disaster Loans and Grants	To assist very-low income owner- occupants to repair or replace damaged property as a direct result of a natural disaster. Property must be in a rural area, the applicant must be 62 yrs of age or older, and funds under FEMA programs are not available.
USDA Rural Development Disaster Loans and Grants	Administered by USDA Rural Development, Single Family Loan Borrowers or Grant Recipients are eligible for moratoriums on payments and re-amortization of loans in declared disaster areas.
Small Business Administration Economic Injury Loans	To assist small business (such as an agricultural cooperative or nursery) suffering economic injury due to disaster. Loans are 30 yrs and no greater than \$1.5 million to address working capital needs for concerns unable to obtain funding elsewhere.
USDA FSA Emergency Forestry Conservation Reserve Program	Helps eligible landowners and operators restore and enhance forestland damaged by 2005 hurricanes Dennis, Katrina, Ophelia, Rita and Wilma. To be eligible merchantable timber loss of 35% or greater must have occurred, trees have a pre-hurricane trunk diameter of at least 6" at 4.5ft above ground, and be on private non-industrial forest land within the declared eligible counties.
USDA FSA Emergency Haying and Grazing Program	Haying and grazing of lands enrolled under the CRP is authorized under certain conditions to provide emergency relief to livestock producers due to natural disasters.

5.3 CUMULATIVE EFFECTS ANALYSIS

All of the programs offered through USDA FSA and other Federal agencies for emergency or disaster assistance are voluntary and enrollment cannot be predicted. These programs provide additional money for local economies which could result in an increase in economic spending in these rural areas. No producer can receive duplicate payments for the same loss or activity and there is typically a cap on the amount one producer can receive for each program; therefore, the slight financial increase to the local economy would not be considered significant. It is also likely that those producers requesting assistance are not generating the income they were before the disaster.

These programs provide financial and other technical assistance to producers to restore the farm to normal agricultural production. Expanding the definition of farmland to include other types of agricultural land would allow more land to be restored under ECP that may

not be covered under another Federal program. The activities associated with repairing damage, cleaning debris, and physically restoring the land to its previous condition could have short-term, localized impacts to the natural environment similar to those described in this SEIS. These impacts would cease once the land has been restored and there would be a long term positive impact on water quality, soils, and wildlife habitat. FSA employees would coordinate with other primary responders to disasters such as FEMA when possible and appropriate. No cumulative effect is expected.

5.4 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irreversible and irretreivable resource commitments are related to the use of nonrenewable resources and the effect that the use of these resources has on future generations. Irreversible effects primarily result from the use or destruction of a specific resource that cannot be replaced within a reasonable time frame. Irretreivable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action. For the proposed action, the use of gasoline for operating heavy equipment would be the only irretreivable resource commitment expected from the implementation of the proposed action.

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6.0 LIST OF PREPARERS

Name	Organization	Experience	Project Role
Susan Miller <i>FSEIS Project Manager</i>	Geo-Marine, Inc.	19 years	Public Involvement, Draft SEIS Comments, Cumulative Analysis
Carol Shé <i>NEPA Analyst</i>	Geo-Marine, Inc.	1 years	Draft SEIS Comments
Tony Cecchi <i>V.P. of Planning</i>	Geo-Marine, Inc.	18 years	Quality Assurance
Nancy Kenmotsu <i>Principal Investigator</i>	Geo-Marine, Inc.	29 years	Cultural Resources
Duane Peter <i>V.P. of Cultural Resources</i>	Geo-Marine, Inc.	30 years	Cultural Resources
Stephanie Breeden <i>Environmental Scientist</i>	Geo-Marine, Inc.	6 years	Soil Resources
Robin Ives <i>Environmental Scientist</i>	Geo-Marine, Inc.	4 years	Research support
Dave Brown <i>Document Manager</i>	Geo-Marine, Inc.	26 years	Document formatting and production
Rae Lynn Schneider <i>Economist</i>	Integrated Environmental Solutions	8 years	Socioeconomics Environmental Justice
Michelle Wilen <i>Environmental Planner</i>	CDM	6 years	Water Resources
Elizabeth Burak <i>Environmental Planner</i>	Consultant	11 years	Quality Assurance

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7.0 PERSONS AND AGENCIES CONTACTED

Name	Agency
<i>Proponent</i>	
Katina Hanson	USDA FSA <i>Emergency Conservation Program Manager</i> Washington, D.C.
Matthew Ponish	USDA FSA <i>National Environmental Compliance Manager</i> Washington, D.C.
Bennett Horter	USDA FSA <i>Federal Preservation Officer</i> Washington, D.C.
<i>Agencies Contacted</i>	
Environmental Protection Agency <i>EIS Filing Section</i> <i>Region 1</i> <i>Region 2</i> <i>Region 3</i> <i>Region 4</i> <i>Region 5</i> <i>Region 6</i> <i>Region 7</i> <i>Region 8</i> <i>Region 9</i> <i>Region 10</i>	Washington, D.C. Boston, MA New York, NY Philadelphia, PA Atlanta, GA Chicago, IL Dallas, TX Kansas City, KS Denver, CO San Francisco, CA Seattle, WA
U.S. Fish and Wildlife Service <i>Region 1</i> <i>Region 2</i> <i>Region 3</i> <i>Region 4</i> <i>Region 5</i> <i>Region 6</i> <i>Region 7</i> <i>Region 9</i>	Portland, OR Albuquerque, NM Fort Snelling, MN Atlanta, GA Hadley, MA Denver, CO Anchorage, AK Washington, D.C.

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9.0 GLOSSARY

Animal Waste Lagoons: An earthen basin or pond used to collect, store, and treat the manure, flush water, and polluted runoff from livestock facilities for future land application.

Boundary Fences: A permanent barrier to fence livestock, wildlife or people to facilitate resource management measures and practices.

Cattle Gates: A cattle gate has a base frame adapted to rest on a ground surface and upright end frames that are secured to a base frame with a spring and chain mechanism to open and close the opening of a fence; allowing vehicles to pass through freely but not cattle.

Contour/Cross Slope Chiseling: Erosion control tillage practices that reduce the length of sloping land where crops are grown to minimize the transport of sediment or other water-borne contaminants.

Cropland: Two subcategories of cropland are recognized: cultivated and noncultivated. Cultivated cropland is land in row crops or close-grown crops, as well as land (e.g. hayland or pastureland) that is in a rotation with row or close-grown crops. Noncultivated cropland includes permanent hayland and horticultural cropland.

Cross Fences: Fences constructed to reduce the size of larger pastures and allow for re-growth for livestock grazing

Diversions/Spreader Ditches: Channels constructed across the slope to divert excess water from one area to another area for use or safe disposal.

Emergency Conservation Practices: A group of conservation practices that assist producers in returning their land to agricultural production while maintaining conservation measures to protect or restore the natural environment.

Hayland: Areas of dominantly perennial grasses, either native or non-native species, planted and/or intensively managed as pure or mixed stands.

Limited Resource Producer: Any producer with direct or indirect gross farm sales not to exceed \$100,000 in each of the previous two years and has a total household income at or below the national poverty level for a family of four or a total household income of less than 50 percent of the county median in each of the previous two years.

Pastureland: Land managed primarily for the production of introduced forage plants for livestock grazing. Pastureland cover may consist of a single species in a pure stand, a grass mixture, or a grass-legume mixture.

GLOSSARY (cont'd.)

Sediment Basins: An earth embankment that captures sediment and water runoff from sloping fields.

Shelterbelts: Single or multiple long, narrow strips of trees and shrubs planted in a variety of patterns to mitigate the movement of wind.

Sod Waterways: Natural or constructed grass waterways established to transport concentrated flow areas at safe velocities without causing erosion.

Tail Water Recovery Pits: A system designed to collect, store, and transport irrigation water that runs off a field for re-use.

Terrace Systems: Earth embankments, channels, or combination of ridges and channels, constructed across a slope to intercept runoff water.

Timberland: A forested land that is primarily dedicated to the commercial production of wood and fiber. Areas qualifying as timberland have the capability of producing more than 20 cubic feet per acre per year of industrial wood in natural stands.

Windbreak: A living barrier of trees, or trees and shrubs, established to protect soil resources, conserve energy or moisture, provide shelter, and reduce wind erosion.

Woodland: Forest land producing trees not typically used as saw timber products and not included in calculations of the commercial forest land.

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APPENDIX A
Public Scoping Comments

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ECP scoping comments

Wednesday, April 23, 2008

11:06:52 AM

ID	Name	Zip Code	State	Comment Date	Affiliation	Area of Concern	Comment
4	Edward O>Magee,Sr	70450	Louisiana	Oct 24 2007	Private citizen	wildlife	First, I thank Mr. Graves and his staff for their efforts in serving the area as best possible. Wildlife is loosing much of their natural habitant due to many reasons. It is alleged that much of the meeting time of the board is devoted to gossip. The no till seed drill project for planting seeds should be reactivated. Communitation dealing with what is available to farmers can be improved. Again thanks. Ed Magee, Sr. Mt. Hermon
3	barb sachau	7932	New Jersey	Oct 24 2007	Private citizen	Proposed Action	attention teresa lasseter - farm service agency noi seis emergency service program re public comment on federal register of 10/24/07 vol 72 #205 pg 60312 corrupt usda program for farm service agency - the corruption at this agency, which is oeprating under I931 laws and refuses to update in any way is massive. they pay dead people. i oppose alternate a. i oppose alternate c. please send me a full paper copy of the present program so that i can comment in more detail please also extend time to comment so the "public" gets fully involved in letting usda know what it thinks. b. schau 1 5 elm st florham park nj 07932
10	Calvin Breland		Alabama	9/13/2007	Other	Proposed Action	has used ECP in past and the funds saved his ranching business.
38	G.A. Gossett		Texas	10/24/2007	Private citizen	water quality	requesting assistance for removing deceased animals from farm instead of burying on farm land. Considers burying carcasses a water quality hazard.
4							

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APPENDIX B
Comments on Draft SEIS

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ECP DRAFT SEIS COMMENTS AND RESPONSES

Summary of Changes to the Draft SEIS

Changes to the Draft SEIS incorporated into the Final SEIS in response to comments received include providing consistency in language on the nature of consultation with the USFWS under ESA, coordination of FSA personnel with those of FEMA in response to disasters, the potential for certain practices to spread invasive plant species, and the potential that wildlife displaced may not have access to suitable habitat.

Agency and Public Comments

The following sections contain the agency and public comments received by FSA during the public review period for the Draft PEIS. Comments are organized as noted below:

Section I. Federal Agency Commenters

Section II. State Agency Commenters



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

JUN 20 2008

OFFICE OF
ENFORCEMENT AND
COMPLIANCE ASSURANCE

Matthew T. Ponish
National Environmental Compliance Manager
USDA/FSA/CEPD
1400 Independence Ave., SW
Mail Stop 0513
Washington, D.C. 20250

Subject: Draft Supplemental Environmental Impact Statement – Expansion of the
Emergency Conservation Program

Dear Mr Ponish:

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), U.S. Environmental Protection Agency (EPA) has reviewed the Farm Service Agency's (FSA's) draft Supplemental Environmental Impact Statement (SEIS) for the "*Expansion of the Emergency Conservation Program*".

The Emergency Conservation Program (ECP) provides emergency financial and technical assistance to farmers and ranchers for restoring agricultural land to normal production following a natural disaster. The ECP also provides assistance to producers to carry out emergency water conservation or enhancing measures in time of severe drought. The ECP is permanently authorized by Title IV of the Agricultural Credit Act of 1978 and is administered by the FSA. Regulatory procedures for implementing the ECP are outlined in 7 CFR Part 701 and further outlined in the FSA Handbook for State and County offices 1-ECP (USDA 2007).

The current ECP was evaluated for potential environmental impacts in a March 2003. At this time, FSA is proposing a change to the ECP, which requires the preparation of this draft SEIS. Specifically, the FSA is proposing a change to the ECP that would expand the definition of eligible farmland beyond pastureland, cropland, and hayland to include timberland, farmsteads, feedlots, farm roads, and farm buildings. This would allow producers to receive financial assistance for implementing approved practices on these lands to return them to normal operating conditions. Authorized activities under the ECP include (EC 1) Removing Debris from Farmland; (EC 2) Grading, Shaping, Releveling, or Similar Measures; (EC 3) Restoring Permanent Fences; (EC 4) Restoring Conservation Structures and Other Similar Installations;

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(EC 5) Emergency Wind Erosion Control Measures; (EC 6) Drought Emergency Measures; (EC 7) Other Emergency Conservation Measures; and (EC 8) Field Windbreaks and Farmstead Shelterbelt Emergency Measures.

EPA concurs with FSA's proposed changes to the ECP. However, we have identified a few issues that we recommend be clarified in both the final rule and final SEIS.

Short-Term efforts vs Long-Term needs: The draft SEIS does not discuss the possibility of, when practicable, addressing long-term needs with short-term disaster relief efforts. For example, it may be possible for a drought emergency measure to address the short-term need of providing water to livestock along with the long-term need of facility maintenance. We suggest FSA consider revisions to the ECP that allow for the balancing of the planning process to address such scenarios.

Collaborative Efforts: Part 5.2 of the draft SEIS discusses other Federal Emergency Assistance Programs under the Cumulative Effects Analysis Section. We note that the Federal Emergency Management Agency (FEMA) was not listed in this discussion. The final SEIS should clarify whether or not FEMA has a role in situations like this and, if so, what measures FSA and FEMA will take to coordinate their disaster relief efforts.

Based on our review of the draft SEIS, we have determined that the proposed changes to the ECP will not cause significant adverse environment impacts. Accordingly, EPA has assigned the draft SEIS a rating of LO ("Lack of Objections"). (See enclosed "Summary of EPA Rating System" for a more detailed definition of the ratings.)

We appreciate the opportunity to review this draft SEIS. If you have any questions, please contact me at (202) 564-2400, or Arthur Totten at (202) 564-7164.

Sincerely,

for 
Susan Bromm
Acting Director
Office of Federal Activities

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements

Definitions and Follow-Up Action*

Environmental Impact of the Action

LO - - Lack of Objections: The Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC - - Environmental Concerns: The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO - - Environmental Objections: The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU - - Environmentally Unsatisfactory: The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 - - Adequate: EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 - - Insufficient Information: The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new, reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 - - Inadequate: EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment February, 1987.

FSA ECP SEIS-Responses to Comments on the Draft SEIS

Comment Summary	Response
<p>The SEIS does not discuss the possibility of addressing long-term needs with short-term disaster relief efforts. For example, it may be possible for a drought emergency measure to address the short-term need of providing water to livestock along with the long-term need of facility maintenance. We suggest FSA consider revisions to the ECP that allow for the balancing of the planning process to address such scenarios.</p>	<p>This suggestion will be taken under consideration by FSA during the development of future policy.</p>
<p>We note that the Federal Emergency Management Agency (FEMA) was not listed in the discussion of other Federal Emergency Assistance Programs. The final SEIS should clarify whether or not FEMA has a role in situations like this and, if so, what measures FSA and FEMA will take to coordinate their disaster relief efforts</p>	<p>A statement is added to the Final SEIS that reflects FSA employees will coordinate with FEMA officials when possible and appropriate.</p>



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Washington, D.C. 20240

ADDRESS ONLY THE DIRECTOR
FISH AND WILDLIFE SERVICE

In Reply Refer To:
FWS/BHR/MAHR/DCN037227

Mr. Matthew T. Ponish
National Environmental Compliance Manager
United States Department of Agriculture
Farm Service Agency
1400 Independence Avenue, SW, Stop 0513
Washington, DC 20250

Dear Mr. Ponish:

This letter responds to your memo of May 7, 2008, requesting the U.S. Fish and Wildlife Service (Service) review and comment on the Farm Service Agency (FSA) Draft Supplemental Environmental Impact Statement (SEIS) for the Emergency Conservation Program (ECP). The Draft SEIS assesses the impacts of expanding the types of farmland eligible for emergency funding through the ECP, which was created to provide financial and technical assistance to producers for restoring agricultural land to normal production following a natural disaster.

The Proposed Action in the Draft SEIS would expand the definition of farmland under ECP to include timberlands, farmsteads, roads and feedlots. This change would add approximately 426 million acres, a 34 percent increase, to land that is currently eligible for ECP (i.e., cropland, hayland and pastureland). The SEIS classifies most of the additional acres that would be eligible under the Proposed Action, approximately 394 million acres, as non-federal timberland. This Draft supplements the Environmental Impact Statement prepared for the ECP in 2003 and focuses appropriately on the potential impacts associated with the expanded definition of farmland to include timberland.

The Service supports the purpose and need for the proposed change, which is to better assist producers in recovering from natural disasters. As indicated in the Draft SEIS, many of the potential impacts to fish and wildlife habitat from restoration practices resulting from expansion of ECP eligibility are expected to be temporary, but some could result in long-term habitat changes. The following comments address specific sections of the Draft SEIS:

The intent of FSA regarding requirements for consultation with the Service pursuant to the Endangered Species Act (ESA) should be clear and consistent throughout the document. Table S.1, Summary of Environmental Consequences and Table 4.0-1, Environmental Impacts Summary both state that protected species (i.e., species listed as Threatened or Endangered under the ESA) would be protected through "informal consultation" with the Service during the FSA's site-specific environmental evaluation process.

Sections 4.1.1.3 and 4.1.2.3 in the Environmental Consequences Section of the Draft SEIS state that if FSA's site-specific evaluation process determines a listed species "...is present or suspected to be present, consultation with USFWS would be required to adequately address the potential impacts to that species. Cost-share is not provided if a potential to impact a protected species is identified."

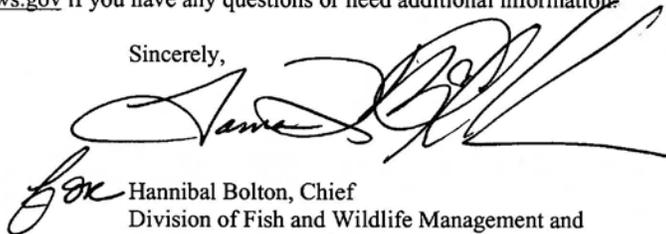
The Service agrees with the need for a site-specific evaluation of potential impacts to listed species and to adequately address those impacts through consultation. However, the Draft SEIS appears to remove the ability to provide cost-share funding if informal consultation determines that implementation of ECP practices may affect a listed species. The identification of potential impacts to listed species may include beneficial impacts. FSA should consider the option of using the formal consultation process at the site-specific level. FSA should also consider consultation at the programmatic level where the identification of practice standards and best management practices can expedite review at the site-specific level.

On pages 4-5, the discussion of wildlife impacts from the No Action alternative suggests that wildlife displaced due to restoration activities could relocate or migrate to other areas. The Draft SEIS should note that this is not always possible since other areas may already be occupied or the habitat may be unsuitable for the displaced species.

The concept of establishment and adherence to best management practices for timber harvest and establishment of access roads (page 4-10) should also apply to best management practices designed to prevent the introduction and spread of invasive species.

The Service appreciates the opportunity to comment on the Draft SEIS and to work with the FSA in assisting producers efforts to implement conservation practices on private lands. Please do not hesitate to contact Dave Walker, the Service's Farm Conservation Programs Coordinator, at 703-358-2310, dave-walker@fws.gov if you have any questions or need additional information.

Sincerely,



Hannibal Bolton, Chief
Division of Fish and Wildlife Management and
Habitat Restoration

cc: ECP SEIS
c/o Geo-marine, Inc.
2713 Magruder Blvd., Suite D
Hampton, VA 23666
Assistant Regional Directors, Ecological Services Regions 1,2,4,5,7
Assistant Regional Director, Conservation Partnerships Region 8
Regional Chiefs, National Wildlife Refuge System Regions 3 and 6

FSA ECP SEIS-Responses to Comments on the Draft SEIS

Comment Summary	Response
<p>The intent of FSA regarding requirements for consultation with the Service pursuant to the ESA should be clear and consistent throughout the document. Table S.1 and Table 4.0-1 both state that protected species would be protected through “informal consultation” during the FSA’s site specific environmental evaluation process. Section 4.1.1.3. and 4.1.2.3 state that if FSA’s site specific evaluation process determines a listed species “...is present or suspected to be present, consultation with USFWS would be required...”</p>	<p>This consistency issue is addressed in the Final SEIS.</p>
<p>The Draft SEIS appears to remove the ability to provide cost-share funding if informal consultation determines that implementation of ECP practices may affect a listed species. The identification of impacts to listed species may include beneficial impacts. FSA should consider the option of using the formal consultation process at the site specific level. FSA should also consider consultation at the programmatic level where the identification of practice standards and best management practices can expedite review at the site specific level.</p>	<p>The option of formal consultation in the event a practice may affect a listed species is added to the Final SEIS. Also added is the sentence, “FSA will encourage FSA State offices to develop MOUs with the USFWS to expedite reviews at the site specific level.”</p>
<p>The discussion of wildlife impacts from the No Action Alternative suggests that wildlife displace due to restoration activities could relocate or migrate to other areas. The Draft SEIS should not that this is not always possible since other areas may already be occupied or the habitat may be unsuitable for the displaced species.</p>	<p>The potential for unavailability of suitable habitat has been noted in the Final SEIS as a limitation.</p>
<p>The concept of establishment and adherence to best management practices for timber harvests and the establishment of access roads should also apply to best management practices designed to prevent the introduction and spread of invasive species.</p>	<p>Language to address this has been added to the Final SEIS.</p>

Wyoming Department of Agriculture

2219 Carey Avenue, Cheyenne, WY 82002 ■ Phone: 307-777-7321 ■ Fax: 307-777-6593 ■ Cust. Serv. Hotline: 888-413-0114 ■ Website: wyagric.state.wy.us ■ Email: wda1@state.wy.us

The Wyoming Department of Agriculture is dedicated to the promotion and enhancement of Wyoming's agriculture, natural resources and quality of life.



Dave Freudenthal, Governor
John Etchepare, Director

June 25, 2008

ECP SEIS
c/o Geo-Marine Incorporated
2713 Magruder Blvd., Suite D
Hampton, VA 23666-1572

RECEIVED
7-1-08

Dear Geo-Marine Incorporated:

Following are the comments from the Wyoming Department of Agriculture (WDA) on the Supplemental Environmental Impact Statement (SEIS) for the Emergency Conservation Program (ECP) with the Farm Service Agency.

Our comments are specific to our mission within state government: dedication to the promotion and enhancement of Wyoming's agriculture, natural resources, and quality of life. As this proposal has major impacts upon our agriculture industry, our natural resources and the welfare of our citizens, we believe it is important that the WDA remain informed of proposed actions and decisions and that we continue to be provided the opportunity to express pertinent issues and concerns.

We appreciate the opportunity to provide our input in support of the expansion of the ECP. The 2006 program paid over \$2 million to farms and ranches in Wyoming. Our state has experienced a number of natural disasters including drought, flooding and severe snow storms. This year alone, our state has experienced a number of tornadoes, one specifically leveled acres of timber in the Black Hills in Northeastern, Wyoming. If some of this timber is owned privately the proposed changes to include timber land will financially assist these landowners to salvage this timber, remove debris and replant before soil erosion or large weed infestations occur.

The list of Eligible Disasters on page ES-2 fails to include insect infestations such as grasshoppers or mountain pine beetles. The mountain pine beetle has devastated thousands of acres of lodgepole, ponderosa, whitebark, limber and white pine stands in the Rocky Mountain West. While many of these acres are publicly owned, there are still thousands more privately owned. The killed trees are not only a threat to the economy, but also to public safety. Wildfire is likely to ravage the West, which is one of the listed disasters, but we do not support waiting for this to occur to receive compensation.

We reviewed the comments provided as an appendix in the SEIS. One comment referred to the removal of livestock carcasses instead of burying them due to ground water contamination. Wildfires, snow storms, floods and tornadoes can kill thousands of livestock. Removing dead livestock is expensive and often difficult. We support and strongly encourage the ECP include the removal of carcasses as "debris."

BOARD MEMBERS

Juan Reyes, District 1 ■ Jack Corson, District 2 ■ Jim Mickelson, District 3 ■ Jim Bennage, District 4 ■ Joe Thomas, District 5 ■ David J. Graham, District 6 ■ Gene Hardy, District 7

YOUTH ADVISORY BOARD MEMBERS

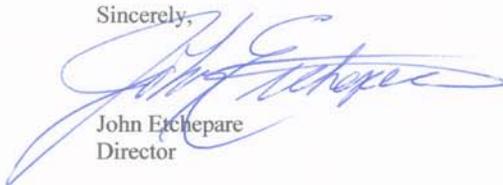
Patrick Zimmerer, Southeast ■ Dalin Winters, Northwest ■ John Hansen, Southwest ■ Bridget Kukowski, Northeast

6/25/2008
SEIS for FSA
Page 2

Finally, we want to support the inclusion of damaged buildings, equipment and storage facilities in the ECP. Feedlot facilities, grain elevators, barns and other buildings necessary for farm and ranch operations are expensive to disassemble, remove and replace. We appreciate this change, which could potentially help a number of farmers and ranchers.

We appreciate the opportunity to provide our comments and support of the changes incorporated in the SEIS. We are interested in receiving future drafts of the EIS.

Sincerely,

A handwritten signature in blue ink, appearing to read "John Etchepare", is written over a light blue circular stamp or watermark.

John Etchepare
Director

JE/jw

Cc: Governor's Planning Office
WDA Board of Agriculture
Wyoming Stock Growers Association
Wyoming Wool Growers Association
Rocky Mountain Farmers Union
Wyoming Association of Conservation Districts
Wyoming Farm Bureau Federation
Wyoming State Grazing Board

FSA ECP SEIS-Responses to Comments on the Draft SEIS

Comment Summary	Response
<p>This list of eligible disasters on page ES-2 fails to include insect infestations such as grasshoppers and mountain pine beetle. The mountain pine beetle has devastated thousands of acres of lodgepole, ponderosa, white bark, limber, and white pine stands in the Rocky Mountains West. While many of these acres are publicly owned, there are still thousands more privately owned. The trees are not only a threat to the economy, but also to public safety. Wildfire is likely to ravage the west, which is one of the disasters listed, but we do not support waiting for this to happen to receive compensation.</p>	<p>This suggestion will be taken under consideration by FSA during the development of future policy.</p>
<p>We received the comments provided as an appendix in the SEIS. One comment referred to the removal of livestock carcasses instead of burying them due to groundwater contamination. Wildfires, snow storms, floods, and tornados can kill thousands of livestock. Removing dead livestock is expensive and often difficult. We support and strongly encourage the ECP include the removal of carcasses as “debris.”</p>	<p>This suggestion will be taken under consideration by FSA during the development of future policy.</p>
<p>We want to support the inclusion of damaged buildings, equipment and storage facilities in the ECP. Feedlot facilities, grain elevators, barns and other buildings necessary for farm and ranch operations are expensive to disassemble, remove and replace.</p>	<p>ECP supports emergency measures implemented only to address new conservation problems as well as drought conditions.</p>

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APPENDIX C
Descriptions of Ecoregion Divisions

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Division	General Description	Vegetation Species	Animal Species	
Humid Temperate Domain	<i>Warm Continental Division</i>	Part of the humid temperate domain, this division is located from the continental interior to the east coast. The New England lowlands have low relief, but rolling and morainic hills, drumlins, eskers and outwash plains are typical of the area. Elevations range from sea level to 2,400 ft.	This area is transitional between boreal and broadleaf deciduous forests. Part of it contains mixed stands of a few coniferous species (white pine, eastern hemlock, and eastern red cedar) and a few deciduous species (mainly yellow birch, sugar maple, and American beech).	Short-tailed weasel (ermine), snowshoe hare, black bear, striped skunk, marmot, chipmunk, jumping mice, beaver, muskrat, badgers, and striped ground squirrels and ptarmigan. Many bird species migrate south during winter. Summer residents include the white-throated sparrow, northern junco, and yellow-bellied sapsuckers.
	<i>>Warm Continental Regime Mountain</i>	The Adirondack Mountains make up the New England Highlands along with broad valleys and numerous swamps and lakes. Elevations range from 500 to 4,000 ft. and a few isolated peaks are higher than 5,000 ft.	Valley regions contain hardwood forest (sugar maple, yellow birch, beech, and hemlock). Low mountain slopes support mixed forest of spruce, fir, maple, beech, and birch. Above the mixed forest, pure stands of balsam fir and red spruce occur. Alpine meadow occurs above the timberline.	This community contains many of the species that occur in the warm continental division. The alpine tundra region has unique fauna such as longtail shrews, boreal (southern) red-backed vole, gray-cheeked thrush, spruce grouse, and gray jay.
	<i>Hot Continental Division</i>	This landscape is south of the warm continental climate in the Humid Temperate Domain. This division includes the Appalachian Plateau, New England Lowlands, Mid-Atlantic Coastal Plain, Piedmont Plateau, East-Central Drift, Ozark Highlands, and the Eastern Interior Uplands and Basins. Low rolling hills, dissected plateaus, and basins are found in Tennessee and Kentucky. Sedimentary formations in the Appalachian Plateau are nearly horizontal, but are so elevated and dissected that the landforms are mostly hilly and mountainous. Elevations range from sea level (Coastal Plain) to 3,000 ft (Appalachian Plateau).	Vegetation in this division is winter deciduous forest, dominated by tall broadleaf trees. The eastern broadleaf province is described as oak-hickory. The Appalachian mountain valleys support mixed oak-pine forest. Above the valley lies the Appalachian oak forest dominated by white and black oak. Above this forest, the northeastern hardwood forest is composed of birch, beech, maple, elm, red oak, basswood, hemlock and white pine. Spruce-fir forest and meadows are found on the high peaks of the Alleghany and Great Smoky Mountains. Lower layers of small trees and shrubs are weakly developed. In spring, a luxuriant ground cover of herbs quickly develops, but is greatly reduced after trees reach full foliage and shade the ground.	Whitetail deer, black bear, bobcat, gray fox, raccoon, gray squirrel, fox squirrel, eastern chipmunk, white-footed mouse, pine voles, shorttail shrew, and cotton mouse. Bird populations are large. Turkey, ruffed grouse, bobwhite, and mourning doves are game birds. The most abundant breeding birds include cardinals, tufted titmouse, wood thrush, summer tanager, red-eyed vireo, blue-gray gnatcatcher, and Carolina wren.

Division	General Description	Vegetation Species	Animal Species
<p>>Hot Continental Regime Mountains</p>	<p>Low mountains and open valleys make up the central Appalachian Highlands. Elevations range from 300-6,000 ft and are higher to the south. The Ozark Highland is an area of low dissected mountains with altitudes up to 2,000 ft. Valleys are narrow, with steep sides and gradients.</p>	<p>The valleys of the southern Appalachian Mountains support a mixed oak-pine forest that resembles its counterpart on the coastal plain. Appalachian oak forest lies above the valley and is dominated by a dozen species each in the black and white oak group. Above the oak forest is a northeastern hardwood forest, composed of birch, beech, maple, elm, red oak, and basswood. The Ozark Highlands support and oak-hickory forest with overstory species of red oak, white oak, and hickory. Shortleaf pine and eastern red cedar inhabit disturbed sites, shallow soils, and south and west facing slopes.</p>	<p>The southern limit of distribution of many northern forest mammals coincides with the boundaries of this regime. Many species are limited to scattered areas at higher elevations due to spruce-fir die-off. Black bear and white-tail deer are common. Abundant populations of several species of birds occupy the upper elevations of the boreal and hardwood forests. Areas with understory components of azaleas and rhododendrons host worm-eating warblers.</p>
<p>Subtropical Division</p>	<p>Part of the Humid Temperate Domain, this division occupies the Southeastern US, Atlantic and Gulf Coast plains, and the lower Mississippi floodplains. Flat or gentle sloping plains encompass 50-80% of the Piedmont and Gulf Coastal Plains. In the Outer Coastal Plain over 50% of the area is gently sloping. The region contains numerous streams, marshes, swamps, and lakes.</p>	<p>Climax vegetation of the southeast is medium-tall broadleaf deciduous and needleleaf evergreen trees. At least 50% of the stands are made up of loblolly pine, shortleaf pine, and other pine species. Common associates include oak, hickory, sweetgum, blackgum, red maple, and winged elm. The temperate rainforest of the outer coastal plain has climax vegetation of evergreen-oak and magnolia forest. Bald Cypress and gum dominate inland swamps and lakes. Pecan, eastern sycamore, American elm and roughleaf dogwood inhabit the Mississippi River floodplains. Much of the sandy coastal region of the US is covered by second-growth forests of longleaf, loblolly, and slash pines. The West Gulf Coast is bordered by salt marshes characterized by the marsh grass <i>Spartina</i>. Lianas and epiphytes are common.</p>	<p>Fauna vary with the age and stocking of timber stands, percent of deciduous trees, proximity to openings, and presence of bottom-land forest types. Whitetail deer, cottontail rabbits, raccoon and fox are widespread. The eastern wild turkey, bobwhite, and mourning dove, warblers, white-eyed vireo, wood duck, yellow-billed cuckoo, and Louisiana waterthrush occur throughout. Nine-banded armadillos are frequently encountered in this region.</p>
<p>>Subtropical Regime Mountains</p>	<p>This division is comprised of the Ouachita Mixed Forest - Meadow Province/Ouachita Highlands. Sedimentary rocks were compressed to form folds with ridges with maximum elevation of 2,700 ft. The folds and the mountains trend east-west.</p>	<p>This area supports oak-hickory-pine forests. Primary overstory species are southern red oak, black oak, white oak, and hickories. Shortleaf and loblolly pine provide 40% of the cover. Hardwoods populate the rich bottom lands of the valleys while pines populate the poorer lands.</p>	<p>Bird and mammal species are similar to those found in the surrounding southeastern mixed forest. One amphibian, the Ouachita dusky salamander, is found exclusively in the province's rocky, gravelly streams.</p>

Division	General Description	Vegetation Species	Animal Species
<i>Marine Division</i>	Situating on the Pacific coast between latitudes 40 and 60 N. The Pacific lowland mixed forest occupies a north-south depression between the Coast Ranges and the Cascade Mountains. Elevations range from sea level to 1,500 ft. The province includes isolated hills and low mountains.	Principal trees are western red cedar, western hemlock, and Douglas fir. In interior valleys, the coniferous forest is less dense along the coast where maple, ash, and black cottonwood are located. Prairies support open stands of oak broken up by Douglas fir. Indicator species are Oregon white oak and Pacific madrone.	Mule deer are the most common mammal. Chief predators are the mountain lion and bobcat. Gray squirrels, wood rats, rabbits and fox. Ruffed grouse are found in thickets. Periodically abundant acorn crops attract flocks of band-tailed pigeons, acorn woodpeckers, and mountain quail.
<i>>Marine Regime Mountains</i>	The Cascade Range rises 5,000 ft above sea level along the coast and from 8,000-9,000 ft in the interior. The mountain range is dominated by a volcano that reaches higher elevations. The area is bordered by a narrow coastal plane.	Conifer forests of Douglas fir, western red cedar, western hemlock, grand and silver fir, Sitka Spruce, and Alaska cedar. Shrubs grow exceptionally well and are impenetrable in some places. Conifers dominate the region except in riparian zones where broadleaf species such as black cottonwood and red alder. Timberline varies from 7,700 - 10,000 ft and above this is an alpine zone covered with shrubs and herbs.	Common large mammals include elk, deer, mountain lion, bobcat, and black bear. Typical small mammals include mice, Douglas squirrels, Townsend chipmunks, red tree voles, and wood rats. A variety of birds and the Pacific tree frog and Pacific giant salamander live in the region's moist and cool forests.
<i>Prairie Division</i>	Part of the humid temperate domain, prairies are typically associated with continental, mid-latitude climates that are designated as subhumid. This division occupies a broad belt extending from Texas northward to southern Alberta and Saskatchewan. Temperature characteristics correspond to those of adjacent humid climates, forming the basis for two types of prairies: temperate and subtropical.	Forest and prairie mix in a transitional belt on the eastern border of the division. Grasses dominate prairie vegetation with the most prevalent being bluestem. Vegetation in temperate prairie is forest-steppe, characterized by intermingled prairie, groves, and strips of deciduous trees. Trees are commonly found near streams and on northfacing slopes. Cottonwoods are found in floodplains. The subtropical prairie parkland is dominated by medium to tall grasses and a few hardy tree species. Post oak and blackjack oak dominate the cross timbers regions of Oklahoma and Texas.	Mink and river otter are indicative of riverine forests. Thirteen-lined ground squirrels and blacktail prairie dogs are commonly seen on the prairie. Birds of riverine forest include the belted kingfisher, bank swallow, spotted sandpiper, and green-backed heron. Upland birds include the horned lark, eastern meadowlark, and mourning dove. White-tailed deer and nine-banded armadillo are abundant.

Division	General Description	Vegetation Species	Animal Species
<i>Mediterranean Division</i>	Located on the Pacific coast between latitudes 30 and 45 N. the Mediterranean division is the transition zone between the dry west coast desert and the wet west coast. The land area includes the discontinuous coastal plain, low mountains, and interior valleys adjacent to the Pacific Ocean from San Francisco to San Diego.	The coastal plain and valleys of southern California have sagebrush and grassland communities. The central valley of California is composed of introduced annual grasses after overgrazing, farming, and fire destroyed native species. The redwood is characteristic on seaboard slopes in northern California.	Intensive agricultural development has changed the fauna of the grasslands. Larger species have been eliminated or pushed into the hills. Small rodents and rabbits remain and mule deer live in bushy areas. Streams and rivers are used by anadromous fish. The spotted owl can be found in old-growth and second-growth redwood forest. A variety of shore birds and waterfowl occur in the coastal part of the province.
<i>>Mediterranean Regime Mountains</i>	This area in California and Oregon covers the southernmost portions of the Cascade Mountains, the northern Coast range, the Klamath Mountains, and the Sierra Nevada. The western slope of the Sierra Nevada's rises gradually from 2,000 - 14,000 ft. The eastern slope drops abruptly to the Great Basin floor. The mountains of southern California are steep; elevations range from 2,000 - 8,000 ft.	Most low hills are covered by chaparral or close growing evergreen shrubs. On higher slopes digger pine and blue oak dominate. The montane zone lies between 2-6 thousand ft in the Cascades, 4-7 thousand ft in the central Sierras, and 5-8 thousand ft in the south. The most important species are ponderosa, Jeffrey, Douglas fir, sugar pine, white fir, red fir, and incense cedar. Vegetation in the California coastal range is dominated by chaparral and sclerophyll forest.	The common large mammals in this division are mule deer, mountain lion, coyote and black bear. Common rodents mentioned previously occur here. Small mammals peculiar to chaparral are Merriam chipmunk, California Mouse, and kangaroo rats. Common birds are mountain quail, Cassin's finch, Hammond's flycatcher, Lincoln's sparrow, Audubon's warbler, pine siskin, Oregon junco, blue goose, sapsuckers and wild chickadees. Screech owls, pygmy owls, gray owls and Cooper's hawk are common birds-of-prey.
Dry Domain	<i>Tropical/Subtropical Steppe Division</i>	Part of the Dry Domain, this division contains shrub-steppe, plateaus, and plains located from the horn of Texas, through Oklahoma and inland to the four corners region. Generally, steppes are transition zones between deserts and semiarid landscapes.	Vegetation composition is conspicuous with arid grasslands and xeric shrubs at lower elevations and pygmy forests at higher elevations. Vegetation at lower elevations grows in clumps or open stands, but seldom covers the ground completely leaving many bare areas. Several pinion and juniper species are found at middle elevations surrounded by vegetation found at lower elevations (sagebrush, yucca, saltbush, rabbitbrush and more). Ponderosa pine and Douglas fir carpet moist canyons and cottonwood dominates riparian areas.

Division	General Description	Vegetation Species	Animal Species
<i>>Tropical/Subtropical Steppe Regime Mountains</i>	The majority of this landscape contains steep foothills and mountains, but some deeply dissected high plateaus occur here. Elevations range from 4,500 - 10,000 ft, with some mountain peaks reaching 12,600 ft. In many areas, relief is higher than 3,000 ft. Isolated volcanic peaks rise to considerable heights in the northwest.	Lower elevations are characterized by mixed grasses, chaparral bush, oak-juniper and pinion-juniper woodlands. At about 7,000 ft open forests of ponderosa pine appear with pinion and juniper occupying southern slopes. Douglas fir replaces pinion and juniper at about 8,000 ft. Aspen and limber pine are also common in this area.	The most common large mammal is the mule deer. Predators include mountain lions, coyotes, and bobcats. Deer mice, longtail weasels, porcupine, golden-mantled ground squirrel, Colorado chipmunk, red and Abert squirrels, wood rats, pocket gophers, longtail voles, and cottontail rabbits. Common bird species are the northern pygmy owl, olive warbler, red-faced warbler, hepatic tanager, mountain bluebird, pygmy nuthatch, white-breasted nuthatch, Mexican junco, Steller's Jay, red-shafted flicker and Rocky Mountain sapsuckers. Goshawks and red-tail hawks are present. Short-horned lizards are the only lizards found here.
<i>Tropical/Subtropical Desert Division</i>	Parts of the Dry Domain, located south of the Arizona-New Mexico Mountains are the continental deserts. Deserts including the Chihuahuan, Mojave, Colorado, and Sonoran are characterized by plains from which isolated mountains and buttes rise abruptly. The Rio Grande, Pecos, and Colorado Rivers, and their larger tributaries, are the only perennial water sources available.	The region is characterized by dry-desert vegetation, a class of xerophytic plants that are widely dispersed and provide negligible ground cover. In dry periods, visible vegetation is limited to small hard-leaved or spiny shrubs, cacti, or hard grasses. Many species of small annuals may be present, but they appear only after the rare but heavy rains have saturated the soil. In the Mojave-Sonoran Deserts (American Desert), plants are often so large that some places have a near-woodland appearance. Well known are the treelike saguaro cactus, the prickly pear cactus, the ocotillo, creosote bush, and smoke tree. However, much of the desert of the Southwestern United States is in fact scrub, thorn scrub, savanna, or steppe grassland. Parts of this region have no visible plants; they are made up of shifting sand dunes or almost sterile salt flats. Some isolated mountains are high enough to carry a belt of pinion, juniper, Douglas fir, and white fir.	Pronghorn antelope and mule deer are the most widely distributed game animals. Whitetail deer inhabit parts of Texas. The collared peccary or javelina resides in southern parts of the area. Predators include coyote, bobcat, and several hawk, eagle, and owl species. Blacktail rabbits, desert cottontails, kangaroo rats, wood rats and other small rodents compete with domestic herbivores for browse. Common birds include: black-throated sparrows, roadrunners, thrashers and raven. Several quail species occupy the area. Reptiles include numerous species of snakes and lizards.

Division	General Description	Vegetation Species	Animal Species
<i>Temperate Steppe Division</i>	Located in the Dry Domain, this division contains the Rocky Mountain Piedmont, Upper Missouri Basin Broken Lands, Palouse grassland of Washington and Idaho, and the High Plains and Central Lowlands between the Prairie Parkland and the 104th meridian, from the Canadian Border through Oklahoma.	The vegetation transitions from mixed tall and short grass prairie in the east to mainly short grass in the west. The Great Plains grasslands east of the Rockies have scattered trees and shrubs. Many species of grasses and herbs grow in the Prairies. The Palouse grasslands resemble the Great Plains, but contain no shrubs. Woody vegetation is rare except in cottonwood floodplains.	Pronghorn is the most abundant large mammal, but mule and whitetail deer are common. Lagomorphs, prairie dogs, and other small rodents are preyed upon by coyote and other avian predators. The thirteen-lined ground squirrel and prairie dogs are preyed upon by badgers. Two bird species are unique to short grass prairies east of the Rockies; the mountain plover and McCown's longspur.
<i>>Temperate Steppe Regime Mountains</i>	Located in the dry domain, this regime is in the southern, middle and northern Rocky Mountains. The Rocky Mountains are as high as 14,000 ft. Several sections have intermontane depressions ("parks") with floors as low as 6,000ft. Ranges in central Idaho are formed by granite intrusions called the Idaho Batholith, with altitudes ranging from 3,000 to 7,000 ft. The Black Hills have domal uplifts with an exposed core of Precambrian rock.	The Rocky Mountains are tallest in the southern region. They are characterized by the absence of trees in the tundra and dominated directly below by Englemenn spruce and subalpine fir. At lower elevations lies the montane zone with its characteristic ponderosa pine and Douglas-fir. At lower elevations the foothills have a growth of shrubs, of which, mountain-mahogany and several scrub oak species are conspicuous. In the middle Rocky Mountains below the subalpine zone Douglas firs are the climax dominant, with grand fir associates west of the continental divide. Below this, ponderosa pine is the dominant with lodgepole pines and grasses growing in basins. Sagebrush-steppe dominates the lower slopes of the mountains. In the northern Rocky Mountains, mixed evergreen-deciduous forest predominates, with Douglas fir and cedar-hemlock-Douglas fir being the two types of forest.	Large mammals in this division include black bear, deer, elk, mountain lion, and bobcat. Smaller mammals include squirrels, mice, rats, and lagomorphs. Familiar birds are hawks, jays, chestnut-backed chickadees, red-breasted nuthatches and owls. Harney Peak, in the Black Hills province is inhabited by mountain goats recently introduced into the region.

Division	General Description	Vegetation Species	Animal Species
<i>Temperate Desert Division</i>	The Temperate deserts are located in the intermountain regions between the Pacific coast and Rocky Mountains. Temperate deserts climates support sparse xerotypical shrubs such as sagebrush. Recently, semi desert shrub vegetation has invaded areas of the western US that were formerly grasslands.	Sagebrush dominates at lower elevations, but other important plants are antelope bitterbrush, shadscale, saltbush, rabbitbrush, blackbrush, and Gambel oak. Greasewood and saltgrass are the only plants that grow in salt-saturated environments. In plots protected from fire, grasses typical of the Palouse grassland or mixed-grass steppe become dominant. Above the sagebrush belt lays a woodland area dominated by Pinion and Juniper. Wet valley bottoms and riparian areas contain willows and sedges, cottonwood, and non-native tamarisk.	Common large mammals that live here are pronghorn, mule deer, mountain lion, bobcat and badgers. Sagebrush provides ideal habitat for pronghorn and white-tailed prairie dogs. Small rodents (squirrels, mice, rats) and jackrabbits are common. Bird species range from common species like Jays and owls to specialized species such as the sage sparrow and sage thrasher. Reptiles include sagebrush lizard, horned lizard, and prairie rattlesnake.
<i>>Temperate Desert Regime Mountains</i>	This province covers the highest areas of the Great Basin and Colorado Plateau. No perennial lakes occur; streams are rare and usually ephemeral. Ranges rise steeply and are mainly composed of folded and faulted sedimentary rock. Many linear mountain ranges reach altitudes of 13,000 ft.	Sagebrush dominates at lower elevations, but other important plants are antelope bitterbrush, shadscale, saltbush, rabbitbrush, horsebrush, and Gambel oak. All tolerate salt to some extent, but greasewood and saltgrass are the only plants that grow in salt-saturated environments. Pinion and juniper woodlands occupy lower mountain slopes. Ponderosa pine lies on exposed slopes above the pinion and juniper woodlands. Douglas fir typically grows in sheltered locations. Engelmann spruce are in subalpine landscapes.	Sagebrush shrublands provide ideal habitat for pronghorn antelope and whitetail prairie dog. Many species of birds are found in sagebrush ranging from burrowing owls to sage sparrow and sage thrasher. American kestrel, ferruginous hawk, and golden eagle prey on jackrabbits. Collared lizards are also common.
Humid Tropical Domain	<i>Savanna Division</i>	Part of the Humid Temperate Domain this divisions covers the landscape in Southern Florida and the Florida Keys. Elevation ranges from sea level - 25 ft. The low coastal plain contains large areas of swamps and marshes, with low beach ridges and dunes. Streams, canals and ditches drain directly into the ocean. Hammocks rise a few feet above the surrounding area in the interior.	Twenty percent of the area is covered by tropical moist hardwood forest. Cypress forests are extensive and mangrove is widespread along the eastern and southern coasts. Within grasslands, hammocks contain groves of medium to tall broadleaf evergreen trees. Mahogany, redbay, and several palmettos are common.

	Division	General Description	Vegetation Species	Animal Species
	<p>><i>Savanna Regime Mountains</i></p>	<p>Located in Puerto Rico, the easternmost peaks of a partly submerged mountain range is composed of Cretaceous and older rocks with granite intrusions. East-west ridges and peaks form the backbone of the island. Local relief is considerable with steep slopes. Elevations range from sea level to the highest peak in the Cordillera Central at 4,400 ft.</p>	<p>Most of Puerto Rico is under cultivation, but some rainforest remains. Forest trees include mahogany, ebony, mamey, tree ferns, tree ferns, sierra palm and mango.</p>	<p>Puerto Rico does not have any large wild animals. Along with native bats and lizards, the introduced mongoose and rats compose the majority of the island's vertebrates. The coqui is a distinctive frog. Considerable coral and sport fishes abound in coastal waters.</p>

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APPENDIX D

Protected Species

- D-1 Animals**
- D-2 Plants**

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C-1. Protected Species – Animals

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
Purple Bankclimber	Elliptoideus sloatianus	Clams	AL, GA, FL	T	Yes	Riparian forest removal in southeastern streams and subsequent sedimentation has been shown to be detrimental to fish communities. Particularly affected were benthic-dependent species (e.g., darters, benthic minnows, sculpins), which were found to decrease in abundance with longer deforested patches of riparian area.
Chittenango ovate amber snail	Succinea chittenangoensis	Snails	NY	T	No	Cliff, Forest/Woodland. Inhabits the wet cliff walls and talus in a ravine at the base of Chittenango Falls (a 167 foot waterfall). The ravine ledges comprise an early successional sere that is periodically rejuvenated to a bare substrate by floodwaters. It has also been found in the vegetation both within the saturated spray of the falls, and surrounding a nearby springfed area. The species requires a substrate rich in calcium carbonate and appears to prefer green vegetation such as the various mosses, liverworts, and other low herbaceous vegetation found within the spray zone adjacent to the falls.

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
Noonday snail	Mesodon clarki nantahala	Snails	NC	T	No	Known from only about 2 miles of high cliffs within the Nantahala Gorge. The cliffs in this region are very wet and intersected by many small streams and waterfalls. The forest is mature, with many large trees and a diverse plant community. The forest floor has a thick, rich humus layer, and the area has many exposed calcareous (rich in calcium) rocks. Calcium, which is generally scarce in other cliffs in the
American burying beetle	Nicrophorus americanus	Insects	Eastern States south to FL, west to SD and TX)	E	No	Conifer and Hardwood Forests
Karner blue butterfly	Lycaeides melissa samuelis	Insects	IL, IN, MA, MI, MN, NH, NY, OH, PA, WI	E	Yes	Conifer Woodland.
Mount Hermon June beetle	Polyphylla barbata	Insects	CA	E	No	Shrubland/chaparral, Woodland - Conifer

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
Schaus swallowtail butterfly	Heraclides aristodemus ponceanus	Insects	FL	E	No	Forest - Hardwood, Woodland - Hardwood
Zayante band-winged grasshopper	Trimerotropis infantilis	Insects	CA	E	Yes	Conifer woodland. Habitat is open sparsely vegetated sandy parklands among chaparral or ponderosa pine stands on the Zayante sand hills.
Spruce-fir moss spider	Microhexura montivaga	Arachnids	NC,TN	E	Yes	Conifer forests. Lives in high-elevation spruce-fir forest communities on moist but well-drained moss mats growing on rocks and boulders in well-shaded locations. It is known from conifer forests dominated by red spruce and Fraser Fir.
Copperbelly water snake	Nerodia erythrogaster neglecta	Reptiles	IL, IN, KY, MI, OH	T	No	Forested wetland and hardwood forests. Swampy woodlands, river bottoms. Lowland swamps, oxbow lakes in floodplains, brushy ditches, and other warm, quiet waters; wooded lakes, streams, or other permanent waters; and wooded corridors between these habitats. Willow-buttonbush or cypress swamps adjacent to wooded cover for access to permanent wetlands and to wooded upland hibernation sites. Seeks

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						permanent wetlands when woodland swamps seasonally begin to dry, or may stay near shallow swamp or move throughout surrounding woodland. May become difficult to find in mid-summer and early fall when active mainly in the terrestrial brushy part of the habitat. About 500-600 acres of continuous swamp-forest is needed to sustain a viable population (about 50 individuals with 12 breeding pairs).
Eastern indigo snake	Drymarchon corais couperi	Reptiles	AL, FL, GA, MS, SC	T	No	Conifer, hardwood, and mixed forests. Habitat includes sandhill regions dominated by mature longleaf pines, turkey oaks, and wiregrass; flatwoods; most types of hammocks; coastal scrub; dry glades; palmetto flats; prairie; brushy riparian and canal corridors; and wet fields (Matthews and Moseley 1990, Tennant 1997, Ernst and Ernst 2003). Occupied sites are often near wetlands and frequently are in association with gopher tortoise burrows. Pineland habitat is maintained by

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						periodic fires. Viable populations of this species require relatively large tracts of suitable habitat. Refuges include tortoise burrows, stump holes, land crab burrows, armadillo burrows, or similar sites.
New Mexican ridge-nosed rattlesnake	Crotalus willardi obscurus	Reptiles	AZ, NM	T	Yes	Primarily at high elevations in pine-oak woodland and pine-fir forest but also found in foothill canyons in pinion-juniper woodland. Inhabits canyon bottoms with canopies of alder, box elder, and maple. Hides in leaf litter among cobbles and rocks; frequently climbs into trees and shrubs.
Plymouth red-bellied turtle	Pseudemys rubriventris bangsi	Reptiles	MA	E	Yes	Deep, permanent ponds with nearby sandy areas for nesting; surrounding vegetation consists of pine barrens or mixed deciduous forest. Wanders on land, fall and spring. Inactive at pond bottom in winter. Eggs are laid in nests dug in soft soil in open areas usually within 100 yards of water. Often nests in tilled or disturbed soil.
Arroyo toad	Bufo californicus	Amphibians	CA	E	Yes	On sandy banks in riparian woodlands (willow,

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
	(microscaphus)					cottonwood, sycamore, and/or coast live oak) in California.
Cheat Mountain salamander	Plethodon nettingi	Amphibians	WV	T	No	Conifer, hardwood, and mixed forests. Primarily in red spruce-yellow birch or spruce-dominated forests; occasionally collected in mixed deciduous hardwoods. Bryophytes and downed logs are usually common. Occurs under rocks and in or under logs during day; sometimes among wet leaves. Active on forest floor at night; may climb lower portions of tree trunks. Eggs have been found in and under rotting logs, and under rocks.
Flatwoods salamander	Ambystoma cingulatum	Amphibians	AL, FL, GA, SC	T	Yes	Forested wetlands and conifer forests. Post-larval individuals inhabit mesic longleaf pine (<i>Pinus palustris</i>)-wiregrass (<i>Aristida stricta</i>) flatwoods and savannas. The terrestrial habitat is best described as a topographically flat or slightly rolling wiregrass-dominated grassland having little to no midstory and an open overstory of widely scattered longleaf pine. Low-growing shrubs, such as saw palmetto (<i>Serenoa</i>

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						<p>repens), gallberry (<i>Ilex glabra</i>) and blueberries (<i>Vaccinium</i> spp.), co-exist with grasses and forbs in the groundcover. Groundcover plant diversity is usually very high. The underlying soil is typically poorly drained sand that becomes seasonally inundated. Slash pine flatwoods is often cited as the preferred terrestrial habitat of the flatwoods salamander. In addition, slash pine now dominates or co-occurs with longleaf pine in many pine flatwoods communities as a result of fire suppression and preferential harvest of longleaf pine. Historically, however, fire-tolerant longleaf pine dominated the flatwoods, whereas slash pine was confined principally to wetlands. Post-larval individuals are fossorial (live underground) and occupy burrows. Presumably, they remain underground during the lightning-season (May through September). Adults are rarely encountered under cover</p>

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						objects at or near breeding sites.
Houston toad	Bufo houstonensis	Amphibians	TX	E	Yes	Conifer and hardwood forests. Restricted to areas with soft sandy soils; pine forest, mixed deciduous forest, coastal prairie. Extant populations occur in sandy forested areas with pine. When inactive, occupies burrows in soil or seeks refuge in leaf litter or under objects.
Mississippi gopher frog	Rana capito sevosa	Amphibians	AL, FL, LA, MS	E	No	Forested wetland. Habitat includes both upland sandy habitats historically forested with longleaf pine and isolated temporary wetland breeding sites imbedded within this forested landscape.
Red Hills salamander	Phaeognathus hubrichti	Amphibians	AL	T	No	Hardwood forests. Slopes of mesic, shaded ravines dominated by hardwood trees (big-leaf magnolia and southern magnolia with mountain laurel and oak-leaf hydrangea). Often in moderately steep areas with a northern exposure. Most often on high, steep, uncut slopes with high soil moisture content and full tree canopy. Lives in burrows that often

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						open in leaf-litter-free areas near base of tree or under siltstone outcroppings. Eggs are laid probably in cavities inside burrows.
Bachman's Warbler	Vermivora bachmanii	Birds	Southeastern U.S.A.	E	No	Forested wetlands and hardwood forests. Moist deciduous woodland and swamp. In migration and winter also open woodland, pine, and scrub. Apparently adapted to swampy canebreaks or bamboo thickets. Variously has been regarded as a bird of virgin bottomland forests and swamp forests, and as a second-growth species.
Bell's Least Vireo	Vireo bellii pusillus	Birds	CA	E	Yes	Dense brush, mesquite, willow-cottonwood forest, streamside thickets, and scrub oak, in arid regions but often near water; moist woodland, bottomlands, woodland edge, scattered cover and hedgerows in cultivated areas. Willow-dominated riparian woodlands. Open woodland, brush in winter.
California Condor	Gymnogyps californianus	Birds	AZ, CA, OR	E	Yes	Woodland - Conifer, Woodland - Hardwood, Woodland - Mixed

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
Golden-Cheeked Warbler	Dendroica chrysoparia	Birds	TX	E	No	Mixed forests. BREEDING: Old-growth and mature regrowth Ashe juniper-oak woodlands in limestone hills and canyons, 180 to 520 meters elevation. Edges and open mosaics of Ashe juniper-scrub oak association in broken terrain in canyons and slopes; closed canopy stands with plenty of old junipers and a sufficient proportion of deciduous oaks in the canopy. occupied sites contain junipers at least 40 years old. May occupy habitat patches as small as perhaps 50 ha (larger if close to urban areas). NESTING: Nests usually in upright fork of mature juniper, about 1.5-9 m above ground. Depends on sloughed juniper bark for nesting material. Both males and females tend to return to the same territory to breed. NON-BREEDING: In migration and winter, occurs mainly in montane pine or pine-oak association; recently recorded also in broadleaf associations in lower montane wet and tropical forest.

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
Ivory-billed Woodpecker	Campephilus principalis	Birds	Southcentral and Southeastern	E	No	Conifer, hardwood, and mixed forests. In U.S.: swampy forests, especially large bottomland river swamps of coastal plain and Mississippi Delta and cypress swamps of Florida, in areas with many dead and dying trees.
Marbled Murrelet	Brachyramphus marmoratus	Birds	AK, CA, OR	T	Yes	Conifer Forest. In central California, visited old-growth forest nesting areas (8-9 km from ocean) year-round; fall and winter visitation of nesting areas occurs regularly in other areas of North America as well; perhaps attendance in Nonbreeding season is important in maintenance of pair bonds and nest sites. Nests often are in mature/old growth coniferous forest near the coast: on large mossy horizontal branch, mistletoe infection, witches broom, or other structure providing a platform high in mature conifer (e.g., Douglas-fir, mountain hemlock). Most nesting occurs in large stands of old growth. Nest sites generally have good overhead protection.

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
Mexican Spotted Owl	Strix occidentalis lucida	Birds	AZ, CO, NM, TX, UT	T	No	Conifer, hardwood, and mixed forests. Highest densities occur in mixed-conifer forests that have experienced minimal human disturbance. In the southwestern U.S., most common where unlogged closed canopy forests occur in steep canyons; uneven-aged stands with high basal area and many snags and downed logs are most favorable. In Arizona, occurs primarily in mixed-conifer, pine-oak, and evergreen oak forests; also occurs in ponderosa pine forest and rocky canyonlands. In Arizona, generally foraged more than or as frequently as expected (based on availability) in virgin mixed-conifer and ponderosa pine forests, and less than expected in managed forests; roosted primarily in virgin mixed-conifer forests; both foraging and especially roosting sites had more big logs, higher canopy closure, and greater densities and basal areas of both trees and snags than did random sites. In southern Utah, commonly used

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						<p>mesa tops, benches and warm slopes above canyons in fall and winter; relatively cool canyons were the primary summer habitat. In New Mexico, breeding and roosting occurred in mixed-conifer forests that contained an oak component more frequently than expected by chance; generally did not use pinyon pine-alligator juniper woodlands for nesting or roosting; selected roost and nest sites in forests characterized by mature trees with high variation in tree heights and canopy closure greater than 75%. Basically intolerant of even-age forest management practices. Requires cool summer roosts near canyon bottoms, in dense forests, on shady cliffs or in caves. Sometimes occurs in deep canyons in areas that lack extensive forests. Sometimes may winter in comparatively open habitats at lower elevations. Breeding formerly occurred in desert riparian habitat, but occurrences are rare in this habitat today. In</p>

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						<p>general, foraging habitat requirements are not well known.</p> <p>Nests on broken tree top, cliff ledge, in natural tree cavity, or in tree on stick platform, often the abandoned nest of hawk or mammal; sometimes in cave. In Utah and Colorado, most nests are in caves or on cliff ledges in steep-walled canyons; elsewhere, nests apparently most often are in trees, especially Douglas-fir. Exhibits high level of nest site fidelity. Typically selects cool, shady sites with high canopy closure and at least a few old-growth trees, usually on moderate to steep slopes. In New Mexico, 61% of nest structures were on clumps of limbs caused by dwarf mistletoe infections; nest trees averaged 164 years old and 60.6 cm in diameter.</p>
Mississippi Sandhill Crane	Grus canadensis pulla	Birds	MS	E	Yes	Wetlands along edges of pine forests; associated trees and shrubs include longleaf pine, slash pine, bald cypress, gallberry, wax myrtle, black gum, sweet bay, and yaupon

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
Northern Spotted Owl	Strix occidentalis caurina	Birds	CA, WA	T	Yes	Standing snag/hollow trees in mixed and conifer forests. Typical habitat characteristics include: "moderate to high canopy closure; a multilayered, multispecies canopy dominated by large overstory trees; a high incidence of large trees with large cavities, broken tops, and other indications of decadence; numerous large snags; heavy accumulations of logs and other woody debris on the forest floor; and considerable open space within and beneath the canopy." Generally these conditions are found in old growth (at least 150-200 years old), but sometimes they occur in younger forests that include patches of older growth; in Washington and Oregon, conifer forests begin to develop conditions suitable for spotted owls about 80-120 years after clearcutting; coastal redwood forests are exceptional in that stands that are 50-80 years old or so may provide suitable conditions. Can tolerate some degree of habitat fragmentation (e.g., as on BLM

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						<p>lands in western Oregon) (Thomas et al. 1990). In southwestern Oregon, almost all owls consistently selected old forest for foraging and roosting (Carey et al. 1992). In northwestern California, nest and roost sites had more old-growth and mature forest and were less fragmented than were random sites (Hunter et al. 1995).</p> <p>Recent landscape-level analyses in portions of the California Klamath and Oregon Coast Province suggest that a mosaic of mid-seral and late-successional nesting habitat interspersed with other seral conditions may result in high fitness for spotted owls (see USFWS 2007), but other studies have not found that correlation (e.g., Dugger et al. 2005).</p> <p>Nests on broken tree top, cliff ledge, in natural tree cavity, or in tree on stick platform, often the abandoned nest of hawk or mammal; sometimes in cave. In western Oregon, the</p>

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						proportion of old-growth and mature forest was significantly greater at nest sites than at random sites (Ripple et al. 1991). Pairs tend to occupy the same nesting territories in successive years, as long as habitat remains suitable (Thomas et al. 1990).
Red-cockaded Woodpecker,	Picoides borealis	Birds	Southcentral and southeastern U.S.A.	E	No	Conifer woodlands. Habitat consists of open, mature pine woodlands, rarely deciduous or mixed pine-hardwoods located near pine woodlands. Optimal habitat is characterized as a broad savanna with a scattered overstory of large pines and a dense groundcover containing a diversity of grass, forb, and shrub species. Midstory vegetation is sparse or absent.
Southwestern Willow Flycatcher	Empidonax traillii extimus	Birds	AZ, CA, CO, NM, TX, UT	E	Yes	Riparian, forested wetland.
Thick-billed Parrot	Rhynchopsitta pachyrhyncha	Birds	AZ, NM	E	No	Standing snags/hollow trees in mixed and conifer forests. Highland pine-oak forest, foraging less frequently in pine forest at low elevations or in

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						deciduous forest. Nomadic in response to variations in cone crop; requires extensive areas of suitable habitat. Roosts in densely crowned trees or on cliffs. In Arizona, the conifer species of the greatest importance include Chiricahua, Ponderosa, and Arizona pines. Nests usually in a cavity (natural or abandoned by woodpecker) in a standing dead tree or live pine; some nests as close as 2 m apart in same tree; nests 8-28 m above ground in trees 12-35 m tall.
Wood Stork	Mycteria americana	Birds	CA, AZ, TX, to Carolinas	E	No	Forested Wetland. Habitat includes both upland sandy habitats historically forested with longleaf pine and isolated temporary wetland breeding sites imbedded within this forested landscape.
American black bear	Ursus americanus	Mammals	USA	SAT (Similarity of Appearance, Threatened)	No	Forest - Conifer, Forest - Hardwood, Forest - Mixed, Woodland - Conifer, Woodland - Hardwood, Woodland - Mixed
Canada lynx	Lynx canadensis	Mammals	AK, CO, ID, ME, MI, MN, MT,	T	Yes	Generally occurs in boreal and montane regions dominated by

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
			NH, NY, OR, UT, VT, WA, WI, WY			<p>coniferous or mixed forest with thick undergrowth, but also sometimes enters open forest, rocky areas, and tundra to forage for abundant prey. When inactive or birthing, occupies den typically in hollow tree, under stump, or in thick brush. Den sites tend to be in mature or old growth stands with a high density of logs.</p> <p>Three primary habitat components for lynx in the Pacific Northwest: (1) foraging habitat (15-35-year-old lodgepole pine) to support snowshoe hare and provide hunting cover, (2) denning sites (patches of >200-year-old spruce and fir, generally less than 5 acres, and (3) dispersal/travel cover (variable in vegetation composition and structure).</p>
Carolina northern flying squirrel	Glaucomys sabrinus coloratus	Mammals	NC, TN	E	No	Prefers coniferous and mixed forest, but will utilize deciduous woods; riparian woods; optimal conditions: cool, moist, mature forest with abundant standing and down snags. Occupies tree cavities, leaf nests, and

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						underground burrows. Prefers cavities in mature trees as den sites. Small outside twig nests sometimes used for den sites. Will use nest box.
Columbian white-tailed deer	Odocoileus virginianus leucurus	Mammals	WA, OR	E	No	Mixed Forests
Delmarva Peninsula fox squirrel	Sciurus niger cinereus	Mammals	Delmarva Peninsula to southeastern Pennsylvania	E	No	Mature, open parklike stands of deciduous or mixed deciduous-pine forest, especially near farmland; upland and bottomland locations. Most often among loblolly pines; restricted to larger groves along streams, bays, or salt marshes; prefers ecotones where forest grades into scrub or grasslands. Utilizes certain agricultural lands readily, and found in relatively small woodlots on occasion. Prefers dens in hollow trees, but also uses outside nests constructed of twigs and leaves, located in tree crotches, in tangles of vines in trees, or toward the ends of larger branches, 10-15 m above ground. More terrestrial than is the gray

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						squirrel. Young are born in a tree cavity or leaf nest.
Florida panther	Puma (Felis) concolor coryi	Mammals	LA and AR east to SC and FL	E	No	<p>Hardwood and wetland forests. Generally occurs in heavily forested areas in lowlands and swamps, also upland forests in some parts of range; areas with adequate deer or wild hog population. Habitats include tropical hammocks, pine flatwoods, cabbage palm forests, mixed swamp, cypress swamp, live oak hammocks, sawgrass marshes, and Brazilian pepper thickets; depends on large contiguous blocks of wooded habitat, though interspersed fields and early successional habitats may be beneficial through their positive effect on prey populations; day-use sites typically are dense patches of saw palmetto surrounded by swamp, pine flatwoods, or hammock. Strong selection for pine stands burned within one year.</p> <p>Young are born in dense thickets or fallen timber, or in other sites providing adequate</p>

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						cover.
Gray bat	Myotis grisescens	Mammals	Central and southeastern U.S.A.	E	No	Forested areas along the banks of streams and lakes provide important protection for adults and young. Young often feed and take shelter in forest areas near the entrance to cave roosts. Do Not feed in areas along rivers or reservoirs where the forest has been cleared. Roost sites are nearly exclusively restricted to caves throughout the year though only a few percent of available caves are suitable. Winter roosts are in deep vertical caves with domed halls. Large summer colonies utilize caves that trap warm air and provide restricted rooms or domed ceilings; maternity caves often have a stream flowing through them and are separate from the caves used in summer by males.
Gray wolf	Canis lupus	Mammals	North America	E	Yes	Conifer, hardwood, and mixed forests. No particular habitat preference. In Minnesota and Wisconsin, usually occurs in areas with few roads, which increase human access and

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						incompatible land uses, but apparently can occupy semi-wild lands if ungulate prey are abundant and if not killed by humans. Minimum of 10,000-13,000 sq km (with low road density) might be necessary to support a viable population; a single pack does not constitute a "minimum viable population".
Gulf Coast Jaguarundi	Herpailurus (Felis) yagouaroundi cacomitli	Mammals	TX	E	No	Forest - Hardwood, Savanna, Shrubland/chaparral, Woodland - Hardwood. Thick brushlands (patchy or continuous). Habitat near water is favored. Spends most of time on ground, though climbs well. Sleeping and birthing occur in a den in a hollow log, treefall, or thicket.
Hualapai Mexican vole	Microtus mexicanus hualpaiensis	Mammals	AZ	E	No	Meadows of grasses, sedges, and forbs within ponderosa pine forests on steep mountain slopes; occurs in moist areas around springs and seeps but may be capable of occupying drier sites where ground cover is suitable. Associated with sites supporting pinyon/juniper and pine/oak vegetation. When inactive, occupies nest in clump

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						of vegetation, under log, in depression on ground, or underground. Young are born in a grass nest.
Indiana bat	Myotis sodalis	Mammals	Eastern and Midwestern U.S.A	E	Yes	Myotis sodalis hibernates in caves; maternity sites generally are behind loose bark of dead or dying trees or in tree cavities. Foraging habitats riparian areas, upland forests, ponds, and fields, but forested landscapes are the most important habitat in agricultural landscapes.
Jaguar	Panthera onca	Mammals	AZ, CA, LA, NM, TX	E	No	Hardwood and mixed forests. Habitat includes a wide variety of situations, such as tropical and subtropical forests, lowland scrub and woodland, thorn scrub, pampas/llanos, desert, swampy savanna, mangrove swamps, lagoons, marshland, and floating islands of vegetation. At the southern extreme of the range, this cat inhabits open savanna, flooded grasslands, and desert mountains; at the Northern extreme it may be found in chaparral and timbered areas. Young are born in a sheltered

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						place such as a cave or thicket, under an uprooted tree, among rocks, or under a river bank.
Key deer	Odocoileus virginianus clavium	Mammals	FL	E	No	Conifer, hardwood, and mixed forests. Islands with fresh water; prefers pinelands, then hardwood hammocks and mangroves.
Key Largo cotton mouse	Peromyscus gossypinus allapaticola	Mammals	FL	E	Yes	Hardwood forest. Mature tropical hardwood hammock, trunks of dominant trees with dbh of 10 inches or more; more mice in more mature hammocks. Nests in burrows, tree hollows, crevices in limestone rock, and in or under logs.
Key Largo woodrat	Neotoma floridana smalli	Mammals	FL	E	Yes	Mature, undisturbed subtropical hardwood (hammock) forest. Optimal habitat: dominant trees must be at least 25-30 cm in diameter. Rat abundance increases with hammock maturity. Builds and nests within a large stick house on the ground; houses may remain in use for many years and often are built around a stump, log, boulder, or other similar object;

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						may occupy old buildings.
Lesser long-nosed bat	Leptonycteris curasoae yerbabuena	Mammals	AZ, NM	E	No	Cliff, Desert, Forest - Hardwood, Forest/Woodland
Louisiana black bear	Ursus americanus luteolus	Mammals	LA, MS, AR	T	Yes	Conifer, hardwood, mixed and wetland forests.
Margay	Leopardus (=Felis) wiedii	Mammals	TX	E	No	Hardwood forests. Prefers heavily forested areas (evergreen and deciduous). Arboreal and terrestrial. Probably dens in thickets or other protected areas.
Mexican long-nosed bat	Leptonycteris nivalis	Mammals	NM, TX	E	No	Habitats include desert scrub, open conifer-oak woodlands, and pine forests in the Upper Sonoran and Transition Life Zones, generally arid areas where agave plants are present. Colonies roost in caves (or similar mines and tunnels), sometimes in culverts, hollow trees, or unused buildings. Roosting habitat requirements are Not well known.
Mount Graham red squirrel	Tamiasciurus hudsonicus grahamensis	Mammals	AZ	E	Yes	Conifer forests. Higher elevation stands of mature Engelmann spruce and corkbark fir; also inhabits Douglas-fir or white fir forests at slightly lower elevations. Prefers to

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						nest in tree cavities, but will also construct leaf nests and even use ground burrows.
Northern Idaho ground squirrel	Spermophilus brunneus brunneus	Mammals	ID	T		Compared to the southern subspecies, the northern Idaho ground squirrel is found in higher elevation areas with shallow reddish parent soils of basaltic origin. The northern subspecies is associated with shallow rocky soils in xeric meadows surrounded by ponderosa pine and Douglas-fir forest. It may occur on slopes and rarely on ridges. It digs burrows (entrances often are under rocks and logs) and burrows extensively in shallow rocky soils, but nest burrows are located in adjacent areas with deeper (>1 m) well-drained soils.
Ocelot	Leopardus (Felis) pardalis	Mammals	AZ, TX	E	No	Hardwood and wetland forests. Habitats with good cover; when active by day, tends to keep hidden in dense brush. Inhabits dense chaparral thickets in Texas. Elsewhere, occurs in humid tropical forests, mangrove forests, swampy savannas, brushland, and

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						riverine scrub in deserts. Where Not hunted, adapts well to disturbed habitats around villages; often uses man-made trails. Mainly terrestrial but climbs, jumps, and swims well. Dens are in caves, hollow trees, thickets, or the spaces between the closed buttress roots of large trees; rarely climbs but sometimes may sleep on tree branch.
Ozark big-eared bat	Corynorhinus (Plecotus) townsendii ingens	Mammals	MO, OK, AR	E	Yes	Uses caves (or mines/other subterranean areas) for hibernation, roosting, and maternity colonies in locations dominated by mature hardwood forests of hickory, beech, maple, and hemlock.
Point Arena mountain beaver	Aplodontia rufa nigra	Mammals	CA	E	No	Riparian forests. Gulches and North-facing slopes within narrow coastal valleys.
Puma (=mountain lion)	Puma (Felis) concolor (all subsp. except coryi)	Mammals	Canada to South America	SAT	No	Conifer, mixed, and hardwood forests. Now associated generally with mountainous or remote undisturbed areas. May occupy wide variety of habitats: swamps, riparian woodlands, broken country with good cover of brush or woodland. Habitat areas of at least 2200 sq km are

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
						needed to ensure long-term population persistence; protection of corridors for immigration is highly desirable. Young are born in secluded places among rocks or dense vegetation.
Red wolf	Canis rufus	Mammals	SE U.S.A., west to central TX	E	No	Conifer, hardwood, and mixed forests. Forested wetlands. Suitable habitat for this habitat generalist includes upland and lowland forests, shrublands, and coastal prairies and marshes; areas with heavy vegetative cover. Young are born in a den in a hollow log, in a burrow, or in similar secluded sites.
Riparian brush rabbit	Sylvilagus bachmani riparius	Mammals	CA	E	No	Riparian forest with a dense shrub layer; dense thickets (e.g., wild rose, willows, blackberries) close to the San Joaquin River.
Riparian woodrat	Neotoma fuscipes riparia	Mammals	CA	E	No	Hardwood forests. Wooded riparian areas.
Sinaloan Jaguarundi	Herpailurus (Felis) yagouaroundi tolteca	Mammals	AZ	E	No	Forest - Hardwood, Savanna, Shrubland/chaparral, Woodland - Hardwood. Sight record from Arizona was made in semidesert grassland

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						intermixed with scattered Emory oaks (Hoffmeister 1986). Young are born in a den in a hollow log, treefall, or thicket.
Virginia big-eared bat	Corynorhinus (Plecotus) townsendii virginianus	Mammals	KY, NC, WV, VA	E	Yes	Uses caves (or mines/other subterranean areas) for hibernation, roosting, maternity colonies and parturition in locations dominated by mature hardwood forests of hickory, beech, maple, and hemlock.
Virginia northern flying squirrel	Glaucomys sabrinus fuscus	Mammals	VA, WV	E	No	Conifer, hardwood, and mixed forests. Spruce, fir, spruce-hardwood, and northern hardwood forests, with well-developed understory. Occurrence in hardwood forest generally is associated with nearby spruce/fir forest. Mostly in moist forest with widely spaced mature trees and an abundance of snags. Prefers cavities in mature trees as den sites. Small outside twig nests sometimes used for den sites. Will use nest box.

Common Name	Scientific Name	Species Group	States Where Listed	Listing Status	Critical Habitat*	Forest Habitat
Wood bison	Bison bison athabasca	Mammals	Northwestern U.S.A	E	No	Wood bison use different habitats depending on the season. In summer, they can be found in small willow pastures and uplands where they feed on sedges, forbes and willows. In winter, they move to frozen wet sedge meadows and lakeshores where they feed on sedges. In the fall, they can be found in the forest where they feed on lichens.
Woodland caribou	Rangifer tarandus caribou	Mammals	AK, ID, ME, MI, MN, MT, NH, VT, WA, WI	E	No	Conifer Forest

Sources:

NatureServe Explorer. Accessed February 2008

States Fish and Wildlife Service

USFWS Online Services. Accessed March 2008

C-2. Protected Species – Plants

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
Alabama streak-sorus Fern	Thelypteris pilosa var. alabamensis	Ferns and Allies	AL	T	No	Danger to the fern could come from logging of the bluff woodlands, this admitting too much light, reducing humidity, thus generally contributing to a drying out and destruction of the habitat (Kral 1983).
American Hart's-tongue Fern	Asplenium scolopendrium var. americanum	Ferns and Allies	AL, MI, NY, TN	T	No	Most occur in shady hardwood woodlands where sun flecks provide sufficient sunlight and where moisture is adequate. Most populations are associated with the cool, well-shaded, moist microclimates of woods, ravines, and steep north-facing hillsides.
Gowen cyprus	Cupressus goveniana ssp. goveniana	Conifers and Cycads	CA	T	No	Closed-cone pine forests with an understory of heaths on poorly drained, acidic soils.
Santa Cruz cyprus	Cupressus abramsiana	Conifers and Cycads	CA	E	No	Associated with coastal chaparral communities above the fog belt at 300-760 m. Some groves contain yellow pine and closed-cone pine forest elements.

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
American Chaffseed	Schwalbea americana	Flowering Plants	AL, CT, DE, FL, GA, LA, MA, MD, MI, MS, NC, NJ, NY, SC, TN, VA	E	No	Acidic, sandy or peaty soils in open pine flatwoods, pitch pine lowland forests, seepage bogs, palustrine pine savannahs, and other grass- and sedge-dominated plant communities. Frequently grows in ecotonal areas between peaty wetlands and xeric sandy soils. <i>Schwalbea americana</i> is primarily a Coastal Plain species of the Atlantic and Gulf coasts, with historic locations ranging from Massachusetts to Florida to east Texas.
Apalachicola Rosemary	Conradina glabra	Flowering Plants	FL	E	No	Formerly occurred in the grassy understory of the upland longleaf pine-wiregrass vegetation, as well as steephead edges. Currently found on dry, sandy, well-drained soils of road edges, in planted pine plantations and along their cleared edges, and along the edges of ravines. It is an understory plant in open woodlands of pine and oaks or in small clearings therein. Wilson Baker suggested that <i>Conradina</i> may have naturally grown in the ecotone between the sandhills and the densely forested ravines; it spread into the sandhills only after their disturbance by the

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
						establishment of pine plantations in the late 1950's.
Ash-grey paintbrush	Castilleja cinerea	Flowering Plants	CA	T	Yes	Known from pine forests, dry sagebrush scrublands, and other habitats. 1800-2800 m elevation.
Bear Valley sandwort	Arenaria ursina	Flowering Plants	CA	T	Yes	These are sparsely vegetated; they occur as openings in the surrounding forest at 1800-2300 m elevation.
Brooksville Bellflower	Campanula robinsiae	Flowering Plants	FL	E	No	Pond margins in wet prairies or in seepage areas of adjacent hardwood forests.
Clara Hunt's milk-vetch	Astragalus clarianus	Flowering Plants	CA	E	No	Openings in manzanita and oak woodlands, on thin, rocky clay soils derived from volcanic materials or on serpentine substrates. 75-225 m elevation.
Cooley's meadowrue	Thalictrum cooleyi	Flowering Plants	FL, NC	E	No	Sunny, moist places such as open, savanna-like forest edges and clearings, wet savannas over calcareous clays, and ecotones between wet savannas and non-riverine swamp forests. Soils are basic, sandy loams. Also on roadsides and power line rights-of-way in former savannas.
Cooley's water-willow	Justicia cooleyi	Flowering Plants	FL	E	No	Mesic hardwood hammocks and hardwood pine forests.
Crenulate lead-plant	Amorpha crenulata	Flowering Plants	OR, CA	E	No	Pine rocklands
Dwarf Lake iris	Iris lacustris	Flowering	MI, WI	T	No	While it has been found in full sun

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
		Plants				and nearly complete shade, optimal sexual reproduction appears to occur in partially shaded or sheltered forest edges. It is most often associated with coniferous forest dominated by northern white-cedar (<i>Thuja occidentalis</i>) and balsam fir (<i>Abies balsamea</i>).
Dwarf-flowered heartleaf	Hexastylis naniflora	Flowering Plants	NC, SC	T	No	Acidic soils on moist to rather dry north-facing slopes of ravines and along bluffs and hillsides in boggy areas next to streams. Vegetation is typically oak-hickory-pine forests of the Piedmont.
Few-flowered navarretia	Navarretia leucocephala ssp. pauciflora (=N. pauciflora)	Flowering Plants	CA	E	No	Vernal pools with a volcanic ash substrate in chaparral, grassland, or mixed coniferous forest communities.
Furbish lousewort	Pedicularis furbishiae	Flowering Plants	ME	E	No	The banks of a river (the St. John), mostly in a steep, highly diverse shrub- or forb-dominated zone between open river cobbles and boreal forest. The habitat is notable for the high frequency and the severity of disturbance by ice scour and vertical river bank slumping. (The St. John drains one of the largest watersheds in the northeast, yet it has relatively little headwater

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
						storage, making it subject to dramatic seasonal and longer-term fluctuations in water level and to severe ice-jams.) The zone in which <i>P. furbishiae</i> occurs bears the brunt of the ice scour - tree establishment does not occur here and vegetation cover tends to be moderate. Disturbances vary over time and are typically "patchy" in both large and small spatial scales.
Haha	Cyanea remyi	Flowering Plants	AL, AR, FL, GA, LA, MO, MS, NC, SC	E	Yes	Seeping or saturated substrates in wet forests and shrublands.
Hairy rattleweed	Baptisia arachnifera	Flowering Plants	GA	E	No	It is now persisting in intensively managed slash and loblolly pine plantations, powerline right-of-ways, roadsides and a few small natural areas.
Harperella	Ptilimnium nodosum	Flowering Plants	AL, AR, GA, MD, NC, SC, WV	E	No	Typically occurs in two habitat types: rocky or gravelly shoals of clear, swift-flowing streams (usually in microsites that are sheltered from rapidly moving water); and the edges of intermittent pineland ponds or low, wet savannah meadows on the Coastal Plain. (The only known extant population in the state of Georgia occurs in a third habitat type - a granite outcrop seep.) In all habitat-types, the species occurs in a narrow

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
						range of water depths; it is intolerant of deep water and of conditions that are too dry. However, the plants readily tolerate periodic, moderate flooding - something to which few potential competitors are adapted. In both major habitat types, <i>P. nodosum</i> seeds generally germinate during short-duration spring floods and the plants have completed their life cycle by late summer or fall, just as water levels are lowest and competing species are moving in.
Hickman's Potentilla	Potentilla hickmanii	Flowering Plants	CA	E	No	Coastal bluff scrub and closed-cone pine forest. Freshwater marshes, seeps and streamlets in open forested areas near the coast, 0-75 m.
Indian Knob mountain balm	Eriodictyon altissimum	Flowering Plants	CA	E	No	Maritime chaparral and oak woodlands, mostly on sandstone ridges.
Island bedstraw	Galium buxifolium	Flowering Plants	GA, TN	E	No	Sea cliffs, bluffs, and dry, rocky slopes in coastal sage scrub and closed-cone pine forest vegetation.
Knieskern's beaked-rush	Rhynchospora knieskernii	Flowering Plants	CA	T	No	Restricted to early successional habitats in pitch pine lowland forests within pine barrens.
Lakeside daisy	Hymenoxys herbacea	Flowering Plants	CA	T	No	Occurs nearly exclusively on alvars or on bare rock, in openings of a forest matrix.
Large-fruited	Abronia	Flowering	FL	E	NO	Post-Oak Woodlands

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
sand-verbena	macrocarpa	Plants				
Maguire daisy	Erigeron maguirei	Flowering Plants	UT	T	No	Formations in mountain shrub, Douglas-fir, ponderosa pine, and lower limits of juniper woodland communities between 5,400 and 7,100 feet elevation.
Mariposa pussypaws	Calyptridium pulchellum	Flowering Plants	FL, SC	T	No	Sandy soils of decomposed granite, primarily in foothill oak woodlands. 400-1100 m elevation.
McDonald's rock-cress	Arabis mcdonaldiana	Flowering Plants	CA	E	No	In dry open woods or brushy steep slopes or ledges. Usually at elevations of about 1200 m.
Miccosukee Gooseberry	Ribes echinellum	Flowering Plants	DE, GA, MD, NC, NJ, NY, SC, VA	T	No	Ribes echinellum is associated with a deciduous, mixed hardwood forest with an overstory canopy dominated by species of oak and hickory.
Michigan monkey-flower	Mimulus glabratus var. michiganensis	Flowering Plants	MI	E	No	Muck-covered sand in flowing water with summer temperatures no higher than 16.6 degrees Celsius. Full sun. The necessary combination of full sunlight and cold, clear, flowing water is found in aquatic habitats along forest edges and in small openings along streams and lakeshores.
Minnesota dwarf trout lily	Erythronium propullans	Flowering Plants	MN	E	No	The major populations occur on the slopes of the Straight and Cannon rivers near Faribault, Minnesota. The preferred habitat is the lower parts of wooded north-facing slopes that rise 15 to 27 m above streams

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
						or abandoned stream channels. Plants also grow on floodplains and less frequently near the tops of slopes. They occasionally inhabit northeast or northwest slopes, and rarely east or west slopes.
Mohr's Barbara button	Marshallia mohrii	Flowering Plants	AL, GA	T	No	Moist to wet prairie-like openings in woodlands (e.g. pine woods), along shale-bedded streams, and in meadows. Woodland clearings may be natural or artificial. Other populations are located in swales on roadside rights-of-way. Also found in Ketona dolomite glades. It prefers full sunlight or partial shade. The soils are sandy clays, which are alkaline, high in organic matter and seasonally wet. Common associates include various grasses, sedges, and prairie species. The surrounding forest type is mixed hardwoods with Shumard oak, willow oak, and pine.
Monterey clover	Trifolium trichocalyx	Flowering Plants	AL, IL, KY, MS, TN	E	No	Openings in and edges of Monterey pine forest. Ephemeral: plants persist for a few years following fire or other vegetation removal, but are shaded out or outcompeted after that. Soils are poorly drained, coarse loamy sands. < 100 m elevation.
Morefield's	Clematis	Flowering	AL	E	No	It occurs in patches on limestone

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
leather flower	morefieldii	Plants				bluffs within open red cedar-hardwood forests, and near springs, seeps and ephemeral streams in rocky limestone woods (USFWS 1994).
Many-flowered Navarretia	Navarretia leucocephala ssp. plieantha	Flowering Plants	CA	E	No	Margins of vernal pools and lakes with a volcanic ash substrate, and wet ground in forest openings.
No common name	Stenogyne angustifolia var. angustifolia	Flowering Plants	OR, WA	E	No	Found in xeric, upper forest habitat in Hawaii.
No common name	Mariscus pennatiformis	Flowering Plants	IL, MI, OH	E	Yes	On Laysan: dry sand dunes. On the main Hawaiian Islands: moist and wet forests and grasslands.
No common name	Poa siphonoglossa	Flowering Plants	CA	E	Yes	Shaded banks in moist forests on gulch slopes.
No common name	Hesperomannia arbuscula	Flowering Plants	AL	E	Yes	Slopes and ridges in mesic to wet forest.
No common name	Alsinidendron trinerve	Flowering Plants	CA	E	Yes	Slopes or ridges in wet forest or wetter portions of diverse mesic forest. Also found in drier forests.
Northern wild monkshood	Aconitum noveboracense	Flowering Plants	IA, NY, OH, WI	T	No	The northern wild monkshood is commonly associated with species typical of eastern deciduous forest, and marsh and swamp wetlands.
Okeechobee gourd	Cucurbita okeechobeensis ssp. okeechobeensis	Flowering Plants	CA	E	No	Originally found in swampy forests and hammocks on muck soils. Today, this species is restricted to disturbed areas that are not cultivated, such as ditch banks and wet road shoulders.

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Persistent trillium	Trillium persistens	Flowering Plants	GA, SC	E	No	Deciduous or mixed hemlock-pine-deciduous forests, typically on steep slopes near rhododendrons (<i>Rhododendron maximum</i> or <i>R. minus</i>).
Pondberry	Lindera melissifolia	Flowering Plants	CA	E	No	Seasonally flooded wetlands, such as floodplain hardwood forests and forested swales and (in coastal areas of the Carolinas) along the margins of sinks, ponds and depressions in pinelands. Usually in shade, but tolerates full sun.
Relict trillium	Trillium reliquum	Flowering Plants	AL, GA, SC	E	No	<i>T. reliquum</i> is a species of mesic hardwood forests. The forests can be on slopes of various aspects and inclinations or on bottomlands and floodplains.
Rock gnome lichen	Gymnoderma lineare	Lichens	NC,TN	E	No	It is primarily limited to vertical rock faces, where seepage water from forest soils above flows at (and only at) very wet times, and large stream side boulders, where it receives a moderate amount of light but not high-intensity solar radiation. Threatened by habitat change especially due to loss of Fraser-fir forests and by heavy recreational use of its habitat.
Round-leaved chaff-flower	Achyranthes splendens var. rotundata	Flowering Plants	CA	E	No	Scattered in low elevation, open, dry forest remnants and open thickets, on talus or rocky slopes,

Common Name	Scientific Name	Species Group	States where listed	Listing Status	Critical Habitat *	Forest Habitat
						and on coralline plains with numerous sinkholes.
San Bernardino Mountains bladderpod	Lesquerella kingii ssp. bernardina	Flowering Plants	CA	E	Yes	Dolomite substrates, typically on open, gentle to moderate slopes within pine-juniper woodlands and fir forests at 2100-2700 m elevation. Soils typically have little accumulation of organic material. Tolerant of light disturbance: found on old roads and undeveloped lots.
San Francisco Peaks groundsel	Senecio franciscanus	Flowering Plants	AZ	T	Yes	Alpine tundra areas on sparsely vegetated loose talus slopes, at 3350-3750 m; usually just above southwestern montane spruce-fir or bristlecone pine (<i>Pinus aristata</i>) forests.
Schweinitz's sunflower	Helianthus schweinitzii	Flowering Plants	NC, SC	E	No	Clearings in, and edges of, upland oak-pine-hickory woods and piedmont longleaf pine forests in moist to dryish sandy loams. Requires the full to partial sun of an open habitat, which was formerly maintained over the species' range by wildfires and grazing by herds of bison and elk. Now most occurrences are confined to roadsides and powerline clearings.
Small whorled Pogonia	Isotria medeoloides	Flowering Plants	CT, DC, DE, GA, IL, MA, MD, ME, MI, MO, NC, NH, NJ, NY, PA, RI,	T	No	Acidic soils, in dry to mesic second-growth, deciduous or deciduous-coniferous forests; typically with light to moderate leaf litter, an open herb layer (occasionally dense

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			SC, TN, VA, VT, WV			ferns), moderate to light shrub layer, and relatively open canopy (Flora of North America 2002).
Springville clarkia	Clarkia springvillensis	Flowering Plants	TX	T	No	Primarily on open sites, including roadbanks, in blue oak woodland communities. 360-910 m elevation
Stickseed showy	Hackelia venusta	Flowering Plants	WA	E	No	In openings within the Ponderosa pine and Douglas-fir forests which are maintained by occasional wildfires.
Swamp pink	Helonias bullata	Flowering Plants	DE, NJ	T	No	Restricted to forested wetlands that are groundwater influenced and are perennially water-saturated. These habitats include hummocks in Atlantic white cedar (<i>Chamaecyparis thyoides</i>) swamps, headwater seepage wetlands, red maple (<i>Acer rubrum</i>) swamps, and (rarely) black spruce-tamarack (<i>Picea mariana-Larix laricina</i>) bogs.
Texas Trailing Phlox	Phlox nivalis ssp. texensis	Flowering Plants	TX	E	No	Deep, sandy soils in fire-maintained openings in upland longleaf pine (<i>Pinus palustris</i>) savannahs or post oak-bluejack oak (<i>Quercus stellata-Q. incana</i>) woodlands.
Virginia round-leaf birch	Betula uber	Flowering Plants	VA	T	No	The only known natural population was found along the floodplain of a creek at an elevation of about 1160 m. The site is within a narrow strip of second-growth forest that includes many sweet and yellow birches (<i>B. lenta</i> and <i>B.</i>

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						alleghaniensis). The band of forest is nearly surrounded by agricultural land.
Western lily	Lilium occidentale	Flowering Plants	FL	E	No	Pacific coastal wetlands. Mostly restricted to the edges of early successional, wet sphagnum bogs and forest or thicket openings along the margins of ephemeral ponds and small streams. Also in coastal scrub and prairie, and other poorly drained soils near the ocean where fog is common.
Yadon's Pimpernia	Pimpernia yadonii	Flowering Plants	CA	E	Yes	Monterey pine forest and maritime chaparral communities, primarily on poorly drained sandstone and sandy soils.

Sources:

NatureServe Explorer. Updated February 2008

USFWS Environmental Conservation Online Services, accessed March/April 2008

States Fish and Wildlife Service. Accessed March/April 2008

Notes:

* "Yes" under Critical Habitat describes either a final or proposed rule for Critical Habitat.