Policies and Programs that Affect Ecosystem Health in the Wildland-Urban Interface

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Policies and regulations are designed by legislative and administrative bodies to help resolve or prevent problems. Policies may lead to the development of programs that aim to provide individuals or entities with some type of assistance, protection, or enhanced services. A variety of policies, regulations, and programs created by government and agencies affect ecosystem health in the interface both positively and negatively. In addition, voluntary practices that are not dictated by regulations also affect natural resources. This fact sheet describes some policies, programs, and voluntary practices that influence natural resources or resource management at the federal, state, local, and neighborhood levels. Please note the list of acronyms in Table 1.

Federal Laws, Regulations, and Policies

The federal government has created many policies to regulate the use of natural resources. The implementation of several of these policies falls to the state government.

The United States Clean Air Act (CAA) is regulated by the United States Environmental Protection Agency (EPA) in partnership with state and local governments. It sets minimum standards for air quality (U.S. EPA 2005). States designate specific air-quality control regions and create State Implementation Plans that enable regions to stay below federal limits for ambient concentrations of specific pollutants (Kundell, Myszewski, and DeMeo 2003). The primary goal of the CAA is the protection of public health, but it is also intended to protect the environment.

The Clean Water Act (CWA) is regulated by the EPA in partnership with state and local governments. The CWA is the principal law governing environmental standards of lakes, rivers, estuaries, and coastal waters in the United States. It sets minimum standards for water quality. The CWA provides for area-wide land-use planning to address pollution from nonpoint sources. It was originally created in 1948 as the Federal Water Pollution Control Act and was completely revised by amendments in 1972, and renamed the Clean Water Act (U.S. EPA 2005).
The Coastal Zone Management Act (CZMA) was enacted by the U.S. Congress in 1972 to encourage state involvement in managing coastal areas of the United States. The act fosters the development of state Coastal Zone Management Programs administered at the federal level. These federally funded programs create management plans tailored to each state's specific needs, aiming to minimize adverse impacts of development in coastal areas (Kundell, Myszewski, and DeMeo 2003).

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as Superfund), implemented by the EPA, was created to clean up hazardous waste sites and, when possible, hold those responsible liable for cleanup costs. It authorizes a tax on the chemical and petroleum industries and gives the EPA the authority to respond to releases of hazardous substances that may endanger public health or the environment. Tax monies go to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites (U.S. EPA 2005).

The Endangered Species Act (ESA) is regulated by the U.S. Fish and Wildlife Service (FWS) and the National Marine Fisheries Services, over which the Secretary of Agriculture also has some authority. It provides protection for species of animals and plants that are listed as threatened or endangered in the United States or elsewhere. The act makes it illegal to “take” a listed species, which includes harassing, harming, killing, trapping, or attempting to engage in any such conduct (U.S. EPA 2005). The ESA defines criteria for listing species, provides recovery plans, and designates critical habitat for listed species. Because it can greatly restrict land-use options for landowners, ESA has been controversial. Some believe such restrictions constitute the “taking” of private property without compensation and are therefore unconstitutional. ESA also enables the United States to comply with the Convention on International Trade in Endangered Species of Wild Fauna and Flora, commonly known as CITES (U.S. FWS 2004).

The 2002 and 2008 Farm Bills reauthorize a variety of agricultural programs for six years and address loan rates, target prices, and direct payments for covered commodities. The bills also significantly increased funding for conservation programs promoting soil and water conservation, wetlands restoration, and wildlife protection. They also created the Conservation Security Program and the Grasslands Reserve Program, added a new energy title to support the production of bioenergy (USDA Economic Research Service 2003) and added a Community Forest and Open Space Program (2008) to preserve open space in developed areas. The 2008 Farm Bill also sets new national private forest conservation priorities. The farm bills provide financial and ecological assistance to farmers and forest landowners in a number of different ways.

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) is regulated by the EPA and provides federal control of pesticide registration, distribution, sale, and use. The EPA requires pesticide users to register and take certification exams in order to purchase and apply certain pesticides. FIFRA also requires that all pesticide chemicals used in the United States be licensed by the EPA (U.S. EPA 2005).

The National Environmental Policy Act (NEPA) is the basic national charter for environmental protection regulated by the EPA. It established the Council on Environmental Quality and requires all federal agencies to consider the environmental consequences of decisions that could be “major federal actions.” NEPA requires federal agencies to prepare a detailed statement known as an Environmental Impact Statement (EIS) for each major action and project that may have an effect on
the environment. The EIS requirement creates an opportunity for public participation in the federal agency decision-making process. Local and state governments and nongovernment organizations may be required to meet NEPA requirements when taking actions that may affect the environment, if they are funded partially or fully with federal money. NEPA also enables citizens to file lawsuits against federal agencies to require them to prepare an EIS for any activity that might have a significant environmental impact (U.S. EPA 2005).

**The Resource Conservation and Recovery Act** (RCRA) was created in 1976 and gives the EPA the authority to control hazardous waste “from cradle to grave.” This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also provides a framework for managing nonhazardous wastes. Some of RCRA’s amendments focus on underground storage tanks for hazardous materials (U.S. EPA 2005).

**The Robert T. Stafford Disaster Relief and Emergency Assistance Act** (Stafford Act) was enacted by the U.S. Congress to address the loss of life and income, human suffering, and damage or destruction of property that occur during disasters. It enables the Federal Emergency Management Agency (FEMA) to provide supplementary federal assistance to individuals, state and local governments, and certain private nonprofit organizations to assist in recovering from the devastating effects of major disasters (U.S. FEMA 2005).

**The Safe Drinking Water Act** (SDWA) aims to protect public health by regulating the nation’s public drinking water supply through protecting its sources: rivers, lakes, reservoirs, springs, and groundwater wells. The SDWA does not regulate private wells that serve fewer than 25 individuals (U.S. EPA 2005).

**The Toxic Substances Control Act** (TSCA) gives the EPA the authority to regulate the production of new chemicals that might present unreasonable risk to public health or the environment. TSCA also enables the EPA to require testing of old and new chemical substances and authorizes it to regulate the manufacturing, processing, import, and use of chemicals (U.S. EPA 2005).

**Federal Programs**

**The Conservation Reserve Program** is administered by the Farm Service Agency in the USDA with assistance and technical support from the Natural Resource Conservation Service, state forest and wildlife agencies, local extension offices, soil and water conservation districts, and the U.S. Fish and Wildlife Service. It provides financial and technical assistance to farmers and ranchers for conservation practices including erosion and sedimentation reduction, water quality improvement, wildlife habitat enhancement, and tree planting (USDA NRCS 2005).

**Conservation Technical Assistance** is provided by the USDA NRCS for decision-makers, farmers, citizen groups, and other people interested in conserving, maintaining, and improving natural resources. Assistance typically focuses on soil erosion control, water conservation, wildlife habitat development, soil survey interpretations, and data collection and interpretation (USDA NRCS 2005).

**The Cooperative National Forest Products Marketing Program**, of the USDA Forest Service, provides cost-share grants and technical assistance to states. This program supports state and regional forest products marketing programs to help improve alternative markets for forest products (USDA FS 2005).

**The Economic Action Program** (Rural Community Assistance) of the USDA FS provides financial and technical assistance to rural communities for developing action plans. These plans are for assessing options for increasing economic well-being. Action plans guide and focus the types of economic development that a specific community decides are important (USDA FS 2005).

**Emergency Reforestation Assistance** (a USDA FS program) provides financial assistance and seedlings to eligible landowners who lose 35 percent or more of a commercial tree stand to damaging weather or wildfire (USDA FS 2005).

**The Environmental Quality Incentives Program** (EQIP) provides technical and financial assistance and education from the USDA NRCS and Archival copy: for current recommendations see http://edis.ifas.ufl.edu or your local extension office.
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the FSA. EQIP aims to help farmers and ranchers address soil, water, and related natural resource concerns on their lands in an environmentally beneficial and cost-effective manner. EQIP also assists farmers and ranchers in complying with federal, state, and local environmental regulations (USDA NRCS 2005). The 2008 Farm Bill increases funding for EQUIP and improves the application process.

The Federal Excess Property Program was created by the USDA FS to provide additional fire-fighting equipment to state and local governments with surplus property for fire preparedness. This program may be especially useful for communities with wildland-urban interface that are at risk of wildfire (USDA FS 2005).

The Forest Health Protection Program is an organization of specialists from the U.S. Forest Service and Animal and Plant Health Inspection Service (APHIS) who are trained to provide technical assistance to landowners on forest health issues, particularly those related to outbreaks of disturbance agents such as native and non-native insects, pathogens, and plants. The organization is part of the State and Private Forestry (S&PF) Deputy Area of the USDA FS (Gorte 2004).

The Forest Land Enhancement Program (FLEP) is sponsored by the USDA FS as part of the 2002 Farm Bill. FLEP is a voluntary program for non-industrial private forest (NIPF) landowners that provides technical and educational assistance to foster forest sustainability through activities such as tree planting, thinning, and habitat and water quality enhancement. It also provides some cost-sharing opportunities for landowners who qualify (Gorte 2004). A variety of federally funded programs assist forest landowners and promote forest health.

The Forest Legacy Program (FLP) is a program of the USDA FS in partnership with states. It supports state efforts to protect environmentally sensitive forest lands. FLP is a voluntary program that supports property acquisition and efforts to acquire donated conservation easements. FLP-funded acquisitions serve public purposes that are identified by the state and agreed to by the landowner (USDA FS 2005).

The Forest Stewardship Program (FSP) was authorized by the Cooperative Forestry Assistance Act of 1978 and sponsored by the USDA Forest Service to provide assistance to non-industrial private forest (NIPF) owners who are interested in managing their lands sustainably. The FSP helps landowners develop management plans for watershed protection, wildlife habitat, and recreational opportunities and other amenities. It also assists state forestry programs that further support NIPF owners with planning and management efforts including the improvement of tree and seedling production, and landowner education programs. The FSP has a Rural Forestry Assistance component that supports tree planting and timber stand improvement projects on nonfederal forest land (Gorte 2004).

The Resource Conservation and Development Program (RC&D) is directed by the USDA NRCS, the FS, and the Cooperative State Research, Education, and Extension Service (CSREES). It provides technical assistance to develop and implement drought mitigation plans for rural communities, among other things (USDA FS 2005).

The Tree Assistance Program (TAP) is sponsored by the USDA Commodity Credit Corporation and the Farm Service Agency (FSA). The TAP provides financial assistance for eligible landowners who must replant or rehabilitate eligible trees or vines destroyed or damaged by natural disasters (Farm Service Agency 2005).
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The Urban and Community Forestry Program is directed by the USDA Forest Service and state forestry agencies, in partnership with national and local organizations to foster the stewardship of urban trees and forest resources. This program provides funding and assistance for planning, education, research, tree planting, and maintenance of forests in order to help communities and individuals with urban forestry issues and to support community forests (Gorte 2004).

The Wetlands Reserve Program (WRP) is operated by the USDA NRCS, the U.S. DOI, and the USFWS in partnership with the USDA FS, the FSA, and state wildlife agencies. It provides technical assistance to landowners for protecting and restoring wetlands. The WRP also assists landowners in evaluating options for wetland protection and wildlife habitat including conservation easements (USDA NRCS 2005).

The Wildlife Habitat Incentives Program (WHIP) is sponsored by the USDA NRCS in partnership with the DOI’s FWS, and state wildlife agencies. The WHIP provides landowners with technical and financial assistance in the form of cost-share payments to develop wildlife habitat on private land. Agreements generally last from five to ten years (USDA NRCS 2005).

State Policies

Best Management Practices (BMPs) are typically nonregulatory principles for private and public landowners that are intended to protect natural resources such as water, wildlife, and soil. BMPs are usually dynamic guidelines that recommend methods for forestry, agriculture, petroleum drilling, road building, and other land-use practices to reduce environmental damage. All states in the southern United States have BMPs of some kind, and some states are considering making them regulatory. Some states penalize forestry practices that contribute to water pollution with warnings, fines, sanctions, license probation or revocation, public reprimand, and operation shutdowns (Virginia DOF 2002). In many states, violators are reported to state environmental protection agencies for enforcement action.

The forestry BMPs of many southern states share common characteristics. Sediment is the nonpoint source water pollutant of greatest concern in southern forest management. All 13 southern states have adopted silviculture BMPs and work to educate loggers, forestry practitioners, and landowners. Kentucky instituted a regulatory timber harvesting program in 2000, and North Carolina has a set of mandatory forest management standards (Wear and Greis 2002).

BMPs tend to be more effectively implemented if there is professional assistance available. Thus, nonregulatory programs require constant educational efforts aimed at the ever-changing audiences who own and manage southern forests. Natural resource professionals can provide landowners with appropriate information and guidance about BMPs and can also advise policy makers about the effectiveness of current BMPs and help develop new BMPs.

Sedimentation and erosion prevention/river protection acts may require riparian buffer protection for all streams and rivers. Often there are minimum standards to which local comprehensive plans must adhere.

Regulatory ordinances are state-level ordinances that aim to conserve natural resources. They include the regulation of forestry and/or agriculture activities near water and watersheds.

Local Policies

Comprehensive plans are regional or local tools for future development. They are often based on a vision developed with stakeholder input. Most comprehensive plans provide land-use specifications such as zoning ordinances. The more often they are changed by a vote of the local governing body on the request of a landowner, the weaker they may become as a conservation tool.

Greenspace or open space policies are often included in land-use plans to ensure that land is left undeveloped for recreation, aesthetics, ecosystem services, or resource conservation.
Invasive/exotic plant and animal policies are ordinances that aim to control the planting of non-native invasive plants and the transport of non-native invasive animals or plants in order to protect native ecosystems.

Land Development Regulations (LDR) implement comprehensive plans at the local level, specifying protocols and procedures for development.

Land-use planning enables communities to create a vision of what will protect natural resources and meet future growth needs. Planning helps communities determine where they are now, where they want to end up, and how they might get there.

Sedimentation and erosion prevention/river protection ordinances are typically zoning ordinances developed to protect water quality and riparian ecosystems. The ordinances often require riparian buffers and are intended to help local governments meet state-mandated standards (North Georgia Storm Water Ordinance 2003).

Stormwater management ordinances can include provisions for stormwater management requirements (both water quantity and quality) for development decisions, erosion and sediment control, the prohibition of discharges (except stormwater) to municipal storm sewers, and other strategies for preventing nonpoint source pollution (North Georgia Stormwater Ordinance 2003).

Topography ordinances regulate what topographical features are appropriate for development. These ordinances are often used to protect mountainsides, prevent erosion, and preserve vistas.

Tree ordinances can be used to control tree removal in developments in the wildland-urban interface. Such regulations give resource managers jurisdiction to protect habitat or require tree replacement.

Zoning laws and restrictions enable local governments to separate and organize conflicting land uses. Zoning, however, can also be modified to create a conglomerate of land uses in one area, for instance, encouraging growth to remain in a downtown area rather than spread to the interface (Myszewski and Kundell 2005).

Neighborhood Policies

Clothesline regulations are used by many homeowners' associations to restrict the use of clotheslines in an effort to protect aesthetics and property value. With the recognition of the need for energy conservation, more neighborhood policies may begin promoting clotheslines, rather than discouraging them.

Herbicide/pesticide regulations aim to reduce the use of herbicides and pesticides in order to prevent runoff pollution and protect water quality.

Neighborhood regulations/subdivision restrictions are often created by homeowner associations to protect certain qualities that they value within the development and to promote safety, sustainability, property value, or other characteristics.

Native plant ordinances are neighborhood-level policies that promote the use of native plants in landscaping to conserve water, enhance wildlife habitat, and reduce the threat of non-native invasive plants to native ecosystems.

Feral pet regulations prohibit some or all pets from unrestricted movement. Local-level programs may aim to capture or sterilize feral cats to reduce populations and protect wildlife.

Figure 3. Neighborhood policies may address ecological concerns related to pets and feral animals. Credits: Larry Korhnak
Wildlife management codes aim to improve wildlife habitat by decreasing speed limits, creating easements for habitat on private property, encouraging butterfly gardens, and managing wild areas.

Summary

A variety of policies, regulations, and programs at neighborhood, local, state, and federal levels are designed to address natural resource issues. These mechanisms can impact natural resources in the wildland-urban interface positively or negatively. Voluntary practices, such as BMPs, also influence how natural resources are used and managed. Understanding the regulatory and non-regulatory policies and programs that influence natural resources in the interface can help natural resource professionals, decision makers, landowners and other stakeholders work within the constructs of these policies, evaluate their effectiveness, and develop new legislation and practices to improve conditions in the interface.

Table 1. Acronym Key

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<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>BLM</td>
<td>Bureau of Land Management</td>
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<td>BMP</td>
<td>Best Management Practice</td>
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<td>CAA</td>
<td>Clean Air Act</td>
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<td>CERCLA</td>
<td>Comprehensive Environmental Response, Compensation, and Liability Act</td>
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<td>CITES</td>
<td>Convention on International Trade in Endangered Species</td>
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<tr>
<td>CSREES</td>
<td>Cooperative State Research, Education, and Extension Service</td>
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<td>CWA</td>
<td>Clean Water Act</td>
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<td>CZMA</td>
<td>Coastal Zone Management Act</td>
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<td>DOI</td>
<td>Department of the Interior</td>
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<td>EIS</td>
<td>Environmental Impact Statement</td>
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<td>EQIP</td>
<td>Environmental Quality Incentives Program</td>
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<td>ESA</td>
<td>Endangered Species Act</td>
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<td>FEMA</td>
<td>Federal Emergency Management Agency</td>
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<td>FIFRA</td>
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<td>FLP</td>
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<td>FSA</td>
<td>Farm Service Agency</td>
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<td>FSP</td>
<td>Forest Stewardship Program</td>
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<td>LDR</td>
<td>Land Development Regulations</td>
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<td>NEPA</td>
<td>National Environmental Policy Act</td>
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<td>NIPF</td>
<td>Non-industrial private forest</td>
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<td>RC&amp;D</td>
<td>Resource Conservation and Development Program</td>
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<td>RCRA</td>
<td>Resource Conservation and Recovery Act</td>
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<td>SDWA</td>
<td>Safe Drinking Water Act</td>
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<td>TAP</td>
<td>Tree Assistance Program</td>
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<td>TSCA</td>
<td>Toxic Substances Control Act</td>
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<td>USDA</td>
<td>United States Department of Agriculture</td>
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<td>USDA ERS</td>
<td>USDA Economic Research Service</td>
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<td>USDA FS</td>
<td>USDA Forest Service</td>
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<td>USDA NRCS</td>
<td>USDA Natural Resources Conservation Service</td>
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<td>US EPA</td>
<td>United States Environmental Protection Agency</td>
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<td>US FWS</td>
<td>United States Fish and Wildlife Service</td>
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<td>WRP</td>
<td>Wetlands Reserve Program</td>
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Related EDIS Resources

Assessment and Management of Hurricane Damaged Timberland by Alan Long, Jarek Nowak, Chris Demers, Rick Williams, Nicole Strong, Jib Davidson and John Holzaepfel:

Comprehensive Planning for Growth Management in Florida by Roy R. Carriker:
http://edis.ifas.ufl.edu/FE642.
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Conservation Options for Private Landowners in Florida by Martin B. Main, Annisa Karim, and Mark E. Hostetler: http://edis.ifas.ufl.edu/uw194.


Improving, Restoring, and Managing Natural Resources on Rural Properties in Florida: Sources of Financial Assistance by Chris Demers, Martin B. Main and Mark E. Hostetler: http://edis.ifas.ufl.edu/FR156.


Total Maximum Daily Loads and Agricultural BMPs in Florida by Kati W. Migliaccio and Brian J. Boman: http://edis.ifas.ufl.edu/AE388.

USDA Farm Service Agency Disaster Assistance by Regina Fegan and Michael T. Olexa: http://edis.ifas.ufl.edu/DH201.

References


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