Land Conservation Spending in Florida in Relation to the State Wildlife Conservation Strategy

A REPORT PREPARED FOR THE NATIONAL COUNCIL FOR SCIENCE AND THE ENVIRONMENT

WILDLIFE HABITAT POLICY RESEARCH PROJECT

DEFENDERS OF WILDLIFE
TRUST FOR PUBLIC LAND

MaryBruce Alford, Frank Casey, Molly Cheatum, Andrew duMoulin, Mitchel Hannon, Janet Mackey, Katie Theoharides

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I. Introduction

This report describes and analyzes land conservation expenditures in the State of Florida for the 1998-2007 time period. The report constitutes one of five state studies to examine how land conservation expenditures were aligned with each state's wildlife habitat Conservation Strategy (State Strategy) for habitat conservation, and the extent to which these expenditures overlapped with Florida's Critical Lands and Waters Identification Priority (CLIP) Areas 1 and 2 (Priority Areas) that are a component of the Florida State Strategy. The report addresses three topics: a spending efficiency analysis; a financial efficiency analysis of land protection costs; and a policy analysis.

Under federal legislation, each state was required to complete a state wildlife conservation strategy by October of 2005 in order to remain eligible for State Wildlife Grant funds. These strategies were required to address eight congressionally mandated elements which included identifying species and habitats of greatest conservation need. Many states took the opportunity to map Priority Areas that represented the best areas for conservation of multiple species and habitats. The states used various methods to identify Priority Areas. Many states made it clear that the Priority Areas were not intended solely for acquisition and emphasized that the maps illustrate sites of high biological significance and opportunity for a variety of conservation actions. In Florida, Priority Areas are composed of a range of habitat types and land uses, including natural and semi-natural landscapes, agricultural and forestry lands and existing developed or excavated areas. Developed and excavated lands are excluded in this analysis.

The spending efficiency analysis has three primary components: (1) to the degree possible, to describe and analyze public and private land conservation expenditures between 1998-2007; (2) to spatially map expenditures and acreages to determine the amount of geographic overlap with the Priority Areas identified in the State Strategy, and (3) to determine the percentage and amount of total conservation spending and acreage that aligned with the Priority Areas. The financial efficiency analysis examines the relative costs of protecting Priority Areas lands that had not been conserved as of 2007. These costs were estimated by consulting public and private spending data and current cost data associated with public and private land protection programs. Three types of land protection costs are compared: fee-simple purchase; permanent easements, and land rentals. In addition, land management costs associated with fee-simple purchases and transaction costs for easements are included. The policy analysis looks at ways in which the state uses its resources, programs and policies to direct funding towards activities that will achieve the state's land and habitat conservation goals, including the State Strategy. The policy analysis also examines the extent to which a state is guiding conservation spending towards protecting areas defined as important habitat, including the Priority Areas.

The next section reports our findings with respect to spending efficiency in Florida by employing both descriptive and spatial analysis. Section III provides a policy analysis with respect to land conservation expenditures and their alignment with designated Priority Areas in Florida. Section IV provides estimates of what it would cost to protect remaining Priority Areas. The last section offers some preliminary conclusions and recommendations with respect to aligning land conservation funding with the State Strategy, and which financial instruments may be more cost-effective in conserving unprotected Priority Areas.

II. Description and Analysis of Land Conservation Expenditures in Florida

The description and analysis of land conservation spending in Florida is composed of two interrelated topics. First, we provide estimates of the amounts spent and acreages protected by various public and private entities for land conservation in Florida for the 1998-2007 time period. Second, we provide, to the extent possible, a spatial analysis of the alignment of land conservation area and expenditures with the Florida's CLIP Priority Areas 1 and 2, as identified in the State Strategy. It should be noted, however, that the State Strategy was adopted in December of 2005, and the CLIP in 2008, so any overlap with conserved lands from 1998-2007 would be relatively recent. Therefore, the description and analysis of alignment with the Priority Areas really serves more as a baseline rather than as an indicator of how strategic land conservation has been for the purpose of implementing the State Strategy.

A. Conservation Expenditures in Florida, 1998-2007

This section describes public and private land conservation funding sources in Florida and provides data on the size of protected areas, and related expenditures, by source of funding for 1998-2007. Major data sources include The Trust for Public Land's (TPL) Conservation Almanac, and TPL's LandVote database.

We have disaggregated the conservation funding and acreage reported into five categories: state-level sources, Federal programs that are and are not coordinated by state agencies, local funding sources, and private land trusts. Describing and analyzing expenditure data using these categories informs our policy proposals to improve the alignment of conservation funding with Florida's Priority Areas**.**

State Government Land Conservation Expenditures

Since the late 1960's, Florida has had the largest state land conservation program in the United States. This has largely been made possible through the establishment of two state programs: Preservation 2000 (P2000) and Florida Forever. The main source of funding comes from a documentary stamp tax, which collects revenue through real estate transactions. Revenue from the stamp tax is split between general revenue, state and local housing trust funds, land acquisition trust funds and water management trust funds. Land acquisition receives approximately fifteen percent while water management receives approximately six percent of funding (Florida Forever. Title XVIII, Chapter 259.105).[1] In July 2008, the Florida Forever program was extended through 2020 at $300 million a year, the same amount as in previous years.

From 1998 to 2007 the state of Florida spent about $2.7 billion and conserved over 1.2 million acres of land using Florida Forever and P2000 funding (Table 2.1). These data do not include projects that may have been authorized, but not completed at the time of this report. Expenditures and acreages could only be broken out for the six Florida Water Management Districts (Water Districts).

[1] §201.15 (a)

Table 2.1: Florida state land conservation expenditures and acreage (1998-2007)

State Funding Program providing Grants through State Agencies	***Florida State Agency Coordinating the Funding***	***Expenditures (millions $)***	***Acres***
Florida Forever & P2000	Dept. of State Lands, Florida Communities Trust, FL Fish and Wildlife Conservation Commission	$1,752	638,434
Florida Forever & P2000	Northwest Florida Water Management District	$44.1	27,494
Florida Forever & P2000	South Florida Water Management District	$417.9	165,241
Florida Forever & P2000	St. Johns River Water Management District	$177.2	130,737
Florida Forever & P2000	Suwannee River Water Management District	$103.6	171,522
Florida Forever & P2000	Southwest Florida Water Management District	$206.3	102,104
Total		**$2,701**	**1,235,532**

From 1998-2007, about 65% of P2000 and Florida Forever funds were spent by the Department of State Lands, the Florida Communities Trust (FCT), and the Florida Fish and Wildlife Conservation Commission (FWC). The remaining 35% was expended by Florida's six Water Districts, with the South Florida and Southwest Florida Districts combined accounting for about 68% (about $624 million) of the total. With respect to acreage, the Department of State Lands, the FCT and the FWC have protected more than 638,000 acres, or about 51% of the total area under conservation. The Suwannee River and the South Florida Water Districts combined have protected about 56% of the lands acquired by these entities.

Federal Conservation Programs

Federal government funding programs are broken into three categories: 1) federal land conservation programs coordinated solely by state agencies for which a state match may be necessary; 2) programs coordinated by the federal government that work with various partners, including state agencies; and 3) programs operated solely by federal land agencies with no state involvement. An example of federal funds coordinated by the state is the

Coastal and Estuarine Land Conservation Program (CELCP) which issues grants to states for coastal conservation priorities. Individual projects are selected by a designated state agency. Examples of federal programs that involve public and private partners, and are coordinated by the federal government, are the USDA Farm and Ranchland Protection and the Wetland Reserve Programs. Under FRPP, the federal government must approve specific projects before funding is distributed. Lastly, there is federal funding used only by federal land agencies, such as the U.S. Forest Service, to purchase land that add to the public domain and/or implement land management activities.

Federal Conservation Programs Implemented by State Agencies

There are several Federal conservation programs whereby the states play coordinating roles with respect to land conservation activity and expenditures. Table 2.2 summarizes acreage conserved and expenditures for the programs active in Florida for 1998-2007. Overall, these programs accounted for about $26.2 million in expenditures for land conservation. The total associated acreage could not be estimated because of the unavailability of data from the U.S. Fish and Wildlife Service (Table 2.2)

Coastal and Estuarine Land Conservation Program (National Oceanic and Atmospheric Administration)

The Coastal and Estuarine Land Conservation Program (CELCP) provides pass-through grants to states and local governments for land purchases or easements in a state's coastal zone, as provided for in a state's coastal conservation plan. CELCP was created in 2002 in order to "protect those coastal and estuarine areas with significant conservation, recreation, ecological, historical or aesthetic values, or those that are threatened by conversion from their natural state to other uses."

Conserved coastal lands must generally be maintained or restored to their natural state. Public access is a general requirement and the program requires a 1:1 non-federal match, which can be met from various sources, including the value of donated land or restoration. Between 1998 and 2007 Florida spent about $2.8 million through CELCP funds.

Cooperative Endangered Species Conservation Fund (U.S. Fish and Wildlife Service)

Grants offered through the Cooperative Endangered Species Conservation Fund (authorized under section 6 of the Endangered Species Act) support participation in a wide array of voluntary conservation projects for candidate, proposed, and listed species. There are two grant programs, the Habitat Conservation Plan (HCP) and Recovery Lands Conservation Grant.

HCP conservation grants provide funding to states and territories explicitly for land acquisitions that complement approved HCPs. These grants are available only for fee-

Table 2.2: Federal land conservation programs implemented by state agencies (1998-2007)

Program Name	*Florida State Agency*	*Program Spending ($ million 2007)*	*Acres Protected*
Coastal and Estuarine Land Conservation Program (National Oceanic and Atmospheric Administration)	Florida Coastal Management Program, Department of Environmental Protection (DEP)	$2.8	Acres accounted for in Table 2.1 under State Programs
Cooperative Endangered Species Conservation Fund Grants to States and Territories (U.S. Fish and Wildlife Service)	Division of Habitat and Species Conservation, FWC	$4.8	Not available[1]
Forest Legacy Program (U.S. Forest Service)	Division of Forestry, FL Department of Agriculture and Consumer Services	$2.2	3,071
Land and Water Conservation Fund Stateside Program (National Park Service)	Division of Recreation and Parks, DEP	$6.5	1,086
National Coastal Wetlands Conservation Grants (U.S. Fish and Wildlife Service)	Division of Habitat and Species Conservation, FWC	$9.9	Not Available
TOTAL		**$26.2**	**4,157 acres**

[1] The U.S. Fish and Wildlife Service tracks program benefits in terms of species, not number of acres protected.

simple purchases that go above and beyond the conservation responsibilities that non-federal partners already bear under the terms of the HCP. These grants complement but do not replace private mitigation responsibilities contained in HCPs. Protected acres have important benefits for listed, proposed, and candidate species and for the ecosystems that support those species.

Recovery Land grants provide funds to states and territories for the acquisition of habitat, through both fee-simple purchase and easement, in support of federally listed threatened and endangered species recovery. Funds must contribute to the implementation of a finalized and approved recovery plan for at least one listed species under the Endangered Species Act.

The Cooperative Endangered Species Conservation Fund was used in Florida frequently. The state expended $4.8 million from the fund between 1998 and 2007. The U.S. Fish and Wildlife Service measures program accomplishments in terms of benefits to species, and not acres. Additionally, the number of acres conserved is not reported because of the sensitivity of identifying specific locations where endangered species exist.

Forest Legacy Program (U.S. Forest Service)

The Forest Legacy Program was established in 1990 to provide federal funding to states to assist in securing conservation easements on forestlands threatened with conversion to non-forest uses. Fee simple purchases are also allowed. Florida entered the program by submitting an Assessment of Need (AON) to the Secretary of Agriculture. The AON was approved in April of 2005. State plans establish the lead state agency, the state's criteria for Forest Legacy projects, and Forest Legacy Areas within which proposed projects must be located. Once the AON is approved, the state lead agency can submit up to three grants each year for projects within Legacy Areas. The federal government may fund up to 75 percent of project costs, with at least 25 percent coming from private, state or local sources.

Florida started receiving funding for the Legacy Program in 2005. Since then, $2.2 million has been spent on conserving 3,071 acres.

Land and Water Conservation Fund (National Park Service)

The Land and Water Conservation Fund provides a 50 percent match to states for planning, developing and acquiring land and water areas for natural resource protection and recreation enhancement. Funds are distributed to states based on population and need. Once the funds are distributed, each state selects projects, with the approval of the National Park Service. Eligible grantees include municipalities, state agencies and tribal governments, each of whom must provide at least 50 percent matching funds in either cash or in-kind contributions, and develop a detailed project implementation plan. Between 1998 and 2007, the Florida Division of Forestry and the Florida Department of Agriculture and Consumer Services spent about $6.5 million of Conservation Fund monies to conserve nearly 1,086 acres.

National Coastal Wetlands Conservation Grant Program (U.S. Fish and Wildlife Service)

Established by the Coastal Wetlands Planning, Protection, and Restoration Act of 1990, the National Coastal Wetlands Conservation (NCWC) Grant Program is a matching grant program administered by the U.S. Fish and Wildlife Service to acquire, restore, and enhance wetland ecosystems of coastal states and territories. Projects in states bordering the Atlantic, Gulf of Mexico, Pacific, and Great Lakes are eligible for funding of up to $1 million per year. The exception is the state of Louisiana, which has its own coastal wetland program administered under the Act. Projects are given priority if they are consistent with the criteria and considerations outlined in the National Wetlands Priority Conservation Plan, are located in states with dedicated funding programs to acquire coastal wetlands and open spaces, are located in maritime forests on barrier islands, benefit endangered species, encourage cooperative efforts among diverse partnerships and/or benefit other conservation efforts.

In Florida, the NCWC grant program is administered by the Florida Division of Habitat and Species Conservation. From 1998 to 2007, Florida spent $9.9 million from NCWC funding. Acreage acquired is not reported because there are often both restoration and enhancement components associated with land purchaces, making it impossible to determine which portion of the funding has gone specifically to acquisition.

National Scenic Byways Program and the Recreational Trails Funds (U.S. Department of Transportation, Federal Highway Administration)[2]

The National Scenic Byways Program and the Recreational Trails Funds are coordinated by the Department of Transportation's Federal Highway Administration. Under the Byways program, the U.S. Secretary of Transportation recognizes specific roads as "National Scenic Byways" or "All-American Roads" based on significant archaeological, cultural, historic, natural, recreational, and scenic qualities." Discretionary grants are also provided for scenic byway projects to aid in planning, designing and developing a State scenic byway program.

Funding for Recreational Trails is derived from the Federal Highway Trust Fund, which is sustained in part through a portion of the motor fuel excise tax collected from non-highway recreational fuel use (i.e. fuel used by snowmobiles, all-terrain vehicles, off-highway motorcycles, off-highway light trucks). Funding is provided to States to develop and maintain recreational trails and facilities for all types of trail use, some of which include hiking, bicycling, in-line skating, equestrian, and snowmobiling.[3] There is no available acreage or expenditure data for this program in Florida.

Federal Land Conservation Programs with Partners

There are four federal land conservation programs active in Florida which are managed by Federal government authorities, but involve an array of partners. These Federal agencies are within the Departments of Agriculture, Interior, and Defense (Table 2.3). All programs require state matching funds. In the case of agriculture, land conservation programs involve individual crop and livestock producers as partners. Overall, federal partner land conservation programs accounted for over $162 million in expenditures to protect about 62,000 acres from 1998 to 2007.

[2] This National program is not included in Table2.2 because acreage and expenditure data were not available.
[3] http://www.nttp.net/FHWAnttp.html

Table 2.3: Federal and partner land protection programs in Florida (1998-2007)

Federal Program	***Program Spending ($ million)***	***Acres Protected***
Farm and Ranch Lands Protection Program	$11.9	14,176
Grasslands Reserve Program	$0.816	852
North American Wetlands Conservation Act	$1.5	Accounted for in Table 2.1
Readiness and Environmental Protection Initiative	$0.805	5,171
Wetlands Reserve Program	$147.3	42,171
TOTAL	**$162.3**	**62,370**

Farm and Ranch Lands Protection Program (USDA / National Resource Conservation Service)

The USDA Farm and Ranch Lands Protection Program (FRPP) provides matching funds for the purchase of development rights to keep productive farm and ranchland in agricultural uses. FRPP works with state, tribal, or local governments and non-governmental entities. Grants are awarded by the Natural Resource Conservation Service (NRCS) to states, local governments and non-governmental entities on a competitive basis, according to national and state criteria. The program requires up to a 50 per cent non-NRCS match to cover the cost of an easement. Up to 25 per cent of donated land value can be counted as the match. Between 1998 and 2007, $11.9 million was spent on FRPP easements that protected over 14,000 acres.

Grasslands Reserve Program (USDA)

The NRCS, the Farm Services Agency (FSA) and the U.S. Forest Service coordinate the Grasslands Reserve Program (GRP). The GRP is a voluntary program offering landowners an opportunity to protect, restore, and enhance grasslands on their property through the use of rental agreements or easements (term and permanent).

In Florida, about 852 acres were protected through GRP up to 2007, with a federal cost of $816,414. However, all this acreage is under 30-year rental agreements, and not permanently protected. The location information for these rentals is incorporated into the spatial analysis, but due to confidentiality issues the protected parcels cannot be shown by year.

Wetlands Reserve Program (USDA/National Resource Conservation Service)

The Natural Resource Conservation Service (NRCS) administers the Wetlands Reserve Program (WRP), a voluntary program offering landowners the opportunity to "address wetland, wildlife habitat, soil, water, and related natural resource concerns on private lands in an environmentally beneficial and cost-effective manner."[4] The WRP offers agricultural landowners a choice of entering into either 30-year or permanent conservation easements and also provides cost-share assistance.

Between 2002 and 2007, approximately 42,171 acres were conserved under WRP through permanent easements in Florida. Another 18,627 acres were protected under 30-year easements between 1998 and 2007. Expenditure data is not available prior to 2002. The total amount spent for permanent and term easements combined was approximately $147.3 million. Location information is not included in the spatial mapping analysis due to confidentiality reasons, and therefore affects the overall percentage of conservation activity that may align with the Florida's Priority Areas (see Section 2B).

Readiness and Environmental Protection Initiative to Buffer Installation Encroachment (Department of Defense)

The Readiness and Environmental Protection Initiative (REPI) allows military installations to work with conservation groups and state and local governments to support defense readiness, to conserve lands or limiting incompatible development and to preserve biodiversity. By conserving land for environmental, agricultural and recreational uses, the military and its partners are able to protect training areas critical to national defense.

In 2002, as part of the National Defense Authorization Act, Congress authorized Section 2684a of Title 10 United States Code,[5] which allows military services to enter into agreements with private conservation organizations or with state and local governments to protect wildlife habitat. These agreements allow the services to cost-share acquisition of conservation/restrictive-use easements and other interests in land from willing sellers.

Since 2002 the REPI program has spent $805,000 to assist Florida in the acquisition of nearly 5,200 acres.

North American Wetlands Conservation Act (U.S. Fish and Wildlife Service)

The North American Wetlands Conservation Act (NAWCA) was passed in 1989 to provide matching grants for the acquisition, restoration, and enhancement of wetland ecosystems for the benefit of waterfowl and other wetland dependent migratory species. Administered by the U.S. Fish and Wildlife Service, grants are available to nonprofit organizations, state and local agencies, tribes, and private individuals in the U.S., Canada, and Mexico. Two types of

[4] Natural Resource Conservation Service United States Department of Agriculture – Farm Bill 2002, Wetlands Reserve Program, Key Points - http://www.nrcs.usda.gov/Programs/WRP/2007_ContractInfo/2007WRPKeyPoints.pdf

[5] 10 U.S.C. § 2684a

grants are awarded; small grants for up to $75,000 and standard grants for up to $1 million. There is a 1:1 non-federal match requirement for each grant although the average match of successful proposals is over 2:1. Between 1998 and 2007, about $1.4 million of NAWCA funds were spent in Florida. The acreage protected is accounted for in the state expenditures table (Table 2.1), with the majority being allocated to the Kissimmee Prairie Ecosystem.

Land Conservation by Federal Land Management Agencies

The land conservation activities described in this section pertains to Federal agencies that protect land solely through their own agencies, with no involvement by the state of Florida or private partners. These agencies include the Bureau of Land Management, the Bureau of Reclamation, the National Park Service, the U.S. Fish and Wildlife Service, and the U.S. Forest Service. Annual funding and acreage figures could not be obtained from the Bureaus of Land Management or Reclamation. The Bureau of Land Reclamation (BLR) is administered by the U.S. Department of the Interior and buys and owns land to build dams, power plants, and canals. However, expenditure and acreage data pertinent to these lands was not included because of their uncertain status as conserved lands. Overall, the federal agencies listed conserved about 95,000 acres at a cost of almost $113 million between 1998 and 2007 (Table 2.5).

Table 2.4: Land conservation programs managed by federal agencies (1998-2007)

Source of Funding	***Program Spending ($ millions)***	***Acres Protected***
National Park Service	$50.9	72,195
U.S. Fish and Wildlife Service	$38.7	5,804
U.S. Forest Service	$23.1	16,876
TOTAL	**$112.7**	**94,875**

Bureau of Land Management (U.S. Department of Interior)

The Bureau of Land Management (BLM) was established in 1946 through the consolidation of the General Land Office and the U.S. Grazing Service. The BLM is responsible for a variety of programs for the management and conservation of resources on 258 million surface acres, as well as 700 million acres of subsurface mineral estate. These public lands make up about 13 percent of the total land surface of the United States and more than 40 percent of all land managed by the federal government. However, the Bureau of Land Management has not acquired land in Florida.

National Park Service (U.S. Department of Interior)

The National Park Service (NPS) was created in 1916 and now comprises 390 areas covering more than 84 million acres in every state (except Delaware), the District of Columbia, American Samoa, Guam, Puerto Rico, and the Virgin Islands. These areas include national parks, monuments, battlefields, military parks, historical parks, historic sites, lakeshores, seashores, recreation areas, scenic rivers and trails, and the White House. Between 1998 and 2007, the NPS spent about $50.9 million and protected approximately 72,195 acres in Florida through the Land and Water Conservation Fund. Most of these acquisitions fell within the Everglades.

U.S. Fish and Wildlife Service (U.S. Department of Interior)

The National Wildlife Refuge System of the U.S. Fish and Wildlife Service (FWS), established over 100 years ago, has grown to nearly 95 million acres nationwide. It now includes 540 refuges and more than 3,000 waterfowl production areas spread across the 50 states and several U.S. territories. From 1998 to 2007, $38.7 million was spent by the FWS in Florida, conserving over 5,800 acres.

U.S. Forest Service (U.S. Department of Agriculture)

The U.S. Forest Service (USFS) was established in 1905 and is an agency of the Department of Agriculture. At present, it is comprised of 155 national forests, 20 national grasslands, five national monuments, the National Tallgrass Prairie, and six land utilization projects. These units are located in 44 states, Puerto Rico, and the Virgin Islands, and encompass over 192 million acres. From 1998 to 2007, the USFS spent about $23 million in Florida for the conservation of over 16,800 acres.

Land Conservation Expenditures through Local Governments

Local governments in Florida, such as counties and cities, have bonding/taxing authority for the purposes of land conservation. Between 1998 and 2007, 41 local governments passed 47 conservation finance measures generating almost $2.2 billion in funds for new land acquisition, including land for wildlife habitat. Due to project time and funding constraints, and the fact that Florida has several very active local governments conserving land across the state, we selected 5 counties to analyze in depth and chose them on the basis of geographic diversity and land cover type. These counties include Lee, Leon, Osceola, Putnam and Sarasota. Thus, our figures for land conservation expenditures and acreages at the local government level are under-estimated. Of these five counties, only Putnam did not have a dedicated source of public funding for land conservation.

It should be noted that not all dollars expended through these programs are used to acquire conservation land. Funds may be used for restoration and/or management of habitat, or for the acquisition of urban parkland, which may have minimal impact on wildlife habitat. The degree of impact of this program on wildlife habitat is a topic for further research. These programs also fund non-conservation related projects such as roads and transportation.

Table 2.6 shows the amount of funding and acres conserved through these five entities between 1998 and 2007. Table 2.6 also depicts the funding mechanism used and the year that funds were approved by local voters. For the 1998-2007 period, the five counties, combined with other local governments within these counties, conserved about 51,000 acres and expended almost $355 million on land conservation (Table 2.5).

Table 2.5: Local land acquisition funding programs (1998-2007)

Local Government	***Program Spending on Conservation***	***Acres Protected***	***Funding Mechanism***	***Year Approved***
Lee County	$ 172,215,246	18,756	Property Tax	1996
Leon County/Tallahassee	$ 13,549,375	528	Sales Tax	2000
Osceola County	$ 27,762,560	2,510	Bond/Property Tax	2004
Sarasota County	$ 125,184,345	27,297	Bond/Property Tax	1999/2005
Putnam County	$ 471,190	37	Appropriation	N/A
Other local governments within these counties	$ 15,755,783	2,350		
Total	**$ 354,938,499**	**50,838**		

Because many local governments, including those listed above, take advantage of state and federal conservation funding we run the risk of double counting acres acquired. The same acquired parcel may appear on local, state and federal government ledgers, simultaneously. To avoid double-counting, credit for parcel acquisitions is given to the entity providing the majority of funding for that parcel.

Private Land Conservation

Private funding sources consist of various land trusts and/or private donors throughout the state. Here, we present land conservation expenditures and acres by private land trusts only for the five counties included in the local government section described above. In Florida, The Nature Conservancy was the most active private entity in our five county study area for private land conservation. Contact with smaller land trusts in these counties showed them providing important technical assistance to the county, but minor conservation spending. Conservation activity for TPL was not included because it does not use organization dollars to acquire land for easement or purchase. Acres that TPL helps protect have likely been captured in other program and/or agency data. Acres and dollars that we were able to identify solely as land trust acquisitions are provided in Table 2.6.

Table 2.6: Private conservation expenditures and acres protected (5 Counties, 1998-2007)

Conservation Organization	*Program Spending ($ million)*	*Acres Protected*
TNC, Florida Chapter	$ 4,290,000	7,782
Calusa Land Trust (Lee County)	$ 120,000	Acres accounted for under Lee County (Table 2.6).
Total	**$ 4,410,000**	**7,782**

Summary of Land Conservation Expenditures in Florida

Overall, we estimate that approximately $3.3 billion were spent on conserving about 1.4 million acres in Florida from 1998 to 2007 (Table 2.7). Land conservation programs involving the federal government accounted for 9% of all expenditures and about 11% of all acres protected.

Table 2.7: Summary of land conservation funding in Florida (1998-2007)

Source of Funding	*Program Spending ($millions)*	*Program Spending as a % of Total*	*Acres Protected*	*Acres Protected as a % of Total*
State Funding	$2,701	80%	1,235,532	85%
Federal Funding with State Coordination	$26.2	1%	4,157	.29%
Federal Funding with Partners	$162.3	5%	62,370	4%
Federal Agency Only	$112.7	3%	94,875	7%
Local	$354.9	11%	50,838	3%
Private	$4.4	<1%	7,782	1%
TOTAL	**$3,362**		**1,455,554**	

State funding, primarily through the documentary stamp tax funds, accounted for 80% of all land conservation expenditures and about 85% of all conserved lands. Private entities, such

as land trusts, which are vital to providing technical assistance to facilitate land conservation, accounted for less than 1% of all expenditures and only 1% of the acreage protected. Seventy four percent of the total acres conserved were through fee simple purchase.

Due to the lack of data for some funding sources, both expenditures and acres protected are underestimated. For example, we only requested expenditures from five local government areas in Florida and could not obtain annual land conservation expenditures or acreages from the USFWS. Similarly, our estimates of acres protected are low due to not having acquisition data for lands protected by some land trusts, the federal Cooperative Endangered Species Fund, National Coastal Wetland Conservation Program, or the Coastal and Estuarine Land Conservation Program.

It is interesting to note that a large percentage of funding came from local governments (11%), even though this accounts for only five counties in the state. Inclusion of additional counties, and private land trusts, would no doubt show a larger percentage of expenditures and protected acreage for the state as a whole. Within the category of federal funding with partners, the predominant land protection programs are the USDA Farm and Ranchland Protection Program (14,176) and the USDA Wetland Reserve Program (42,171 acres). Within the category of direct federal agency land protection, the National Park Service accounted for over 72,000 acres of the almost 95,000 acres protected over the 1998-2007 time-frame. The next section of this report provides a spatial analysis of the expenditures and acreages reported in Table 2.7 *that could be mapped*. We describe and analyze the extent to which acreages and expenditures align with Priority Areas 1 and 2 identified in the Florida CLIP.

B. Spatial Analysis of Florida Conservation Expenditures

One of the major goals of this study is to assess the spatial efficiency of land conservation in Florida with respect to goals outlined in the Florida Wildlife Legacy. We measure spatial efficiency as the geographic alignment between Florida's Critical Lands and Waters Identification Project Priority Areas 1 and 2 (*Priority Areas*) with land conservation expenditures from 1998-2007. This section provides (1) a description of the Priority Areas and the analytical methods we used, and (2) an analysis of the alignment of expenditures and acres conserved with respect to Florida's Priority Areas.

While many states have one map associated with their state strategy depicting important lands for conservation, the state of Florida is rich in spatial data and did not designate one single priority area map in their strategy. Instead, the Florida Century Commission, the University of Florida, the FWC and their partners embarked on a project called the Critical Lands and Waters Identification Project (CLIP). The goal of the CLIP is to assess and organize available GIS data for identifying statewide areas of importance for protecting biodiversity, water resources, ecosystem services and other natural resources (Hoctor, Oetting and Beveler, 2008). The available data used to inform the CLIP product were collected and assessed with a team of science advisors. Version 1.0 was released in 2008 and is considered to be a work in progress.

The CLIP database can be used as a decision support tool to identify lands and waters with important natural resource attributes of state and regional significance. The database

includes 15 core data layers that are organized into 5 categories: Biodiversity, Surface Water, Landscape, Marine and Groundwater. Currently the Marine and Groundwater resource categories are placeholder categories until sufficient data has been collected. The overall combined model of CLIP priorities uses a "tiered rule-based approach," to assign five overall priority classes. This approach to mapping was intended to emphasize a range of resource values across the state, rather than assigning an in or out status to any particular geographic location. For the purposes of our assessment, we used the two highest CLIP priorities (1 and 2), depicted in Map 2.1. For a full description of lands covered in these priority levels refer to Hoctor, Oetting, and Beyeler (2008). Map 2.1 also shows the protected status of the lands that fall into Priority Areas 1 and 2.

Map 2.1 Protected and unprotected Critical Lands and Waters Identification Project Priority Areas 1 and 2

In order to overlay land acquisitions with the CLIP Priority Areas a digital spatial dataset was created that delineated the boundaries of properties acquired through fee simple purchase and as easements. The cost, date of completion, type of purchase, management authority, total amount of funding and funding by level of government were recorded for each

property. Assembling this database required a variety of approaches due to structural differences in the spatial data provided by land management entities and the ease with which a spatial data record could be matched to its corresponding transactional data.

Spatial data representing boundaries of acquired properties were provided by the Environmentally Sensitive Lands Protection Program in Sarasota County, the Environmental Lands Conservation Program in Osceola County, Greenspace and Environmentally Sensitive Lands program in Leon County, the Conservation 20/20 program in Lee County, Putnam County, the Florida Forever program (which covers all state agencies and water management districts) the U.S. Fish and Wildlife Service, the U.S. Forest Service and The Nature Conservancy. We were *not* able to obtain spatial data for CELCP, CESCF Grants (Section 6), FLP, National Coastal Wetlands Conservation Grants, FRPP, GRP, WRP, NAWCA, and REPI programs.

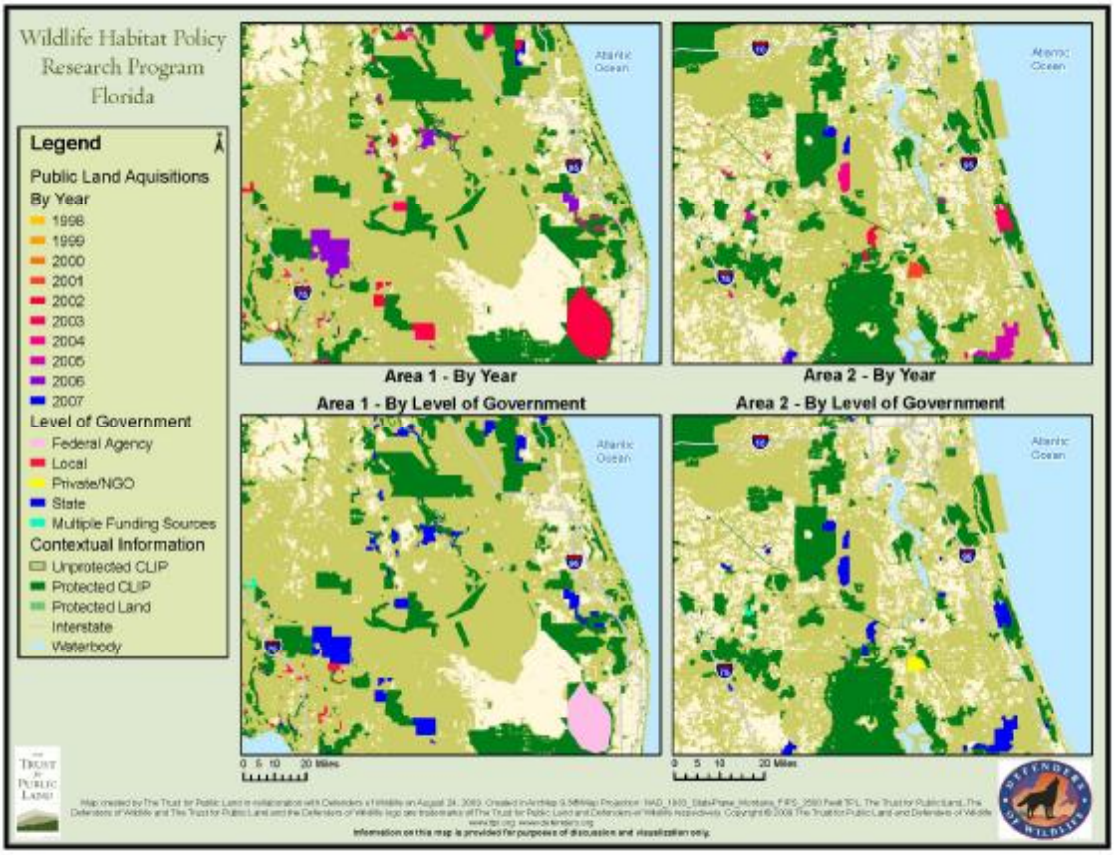
Once the shapefiles (geospatial vector dataset used to delineate boundaries of the lands acquired) for the spatial database were compiled, all corresponding cost data were entered into an attribute table of the spatial database. A quality control process was implemented to ensure there were no duplicate information records from our various contacts. The quality control process consisted of using the GIS "select by location tool" to identify any overlapping project areas and duplicate records were removed and noted in a work log.

The spatial database was then used to determine how conservation lands acquired in Florida overlapped with the Priority Areas. Map 2.2 shows land conservation activity from 1998-2007 (in red), the Priority Areas, protected status, and highlights two areas that will be examined in more detail in Map 2.3.

Map 2.2 Protected and unprotected Priority Areas with land conservation activity from 1998-2007 and two areas highlighted for detailed analysis

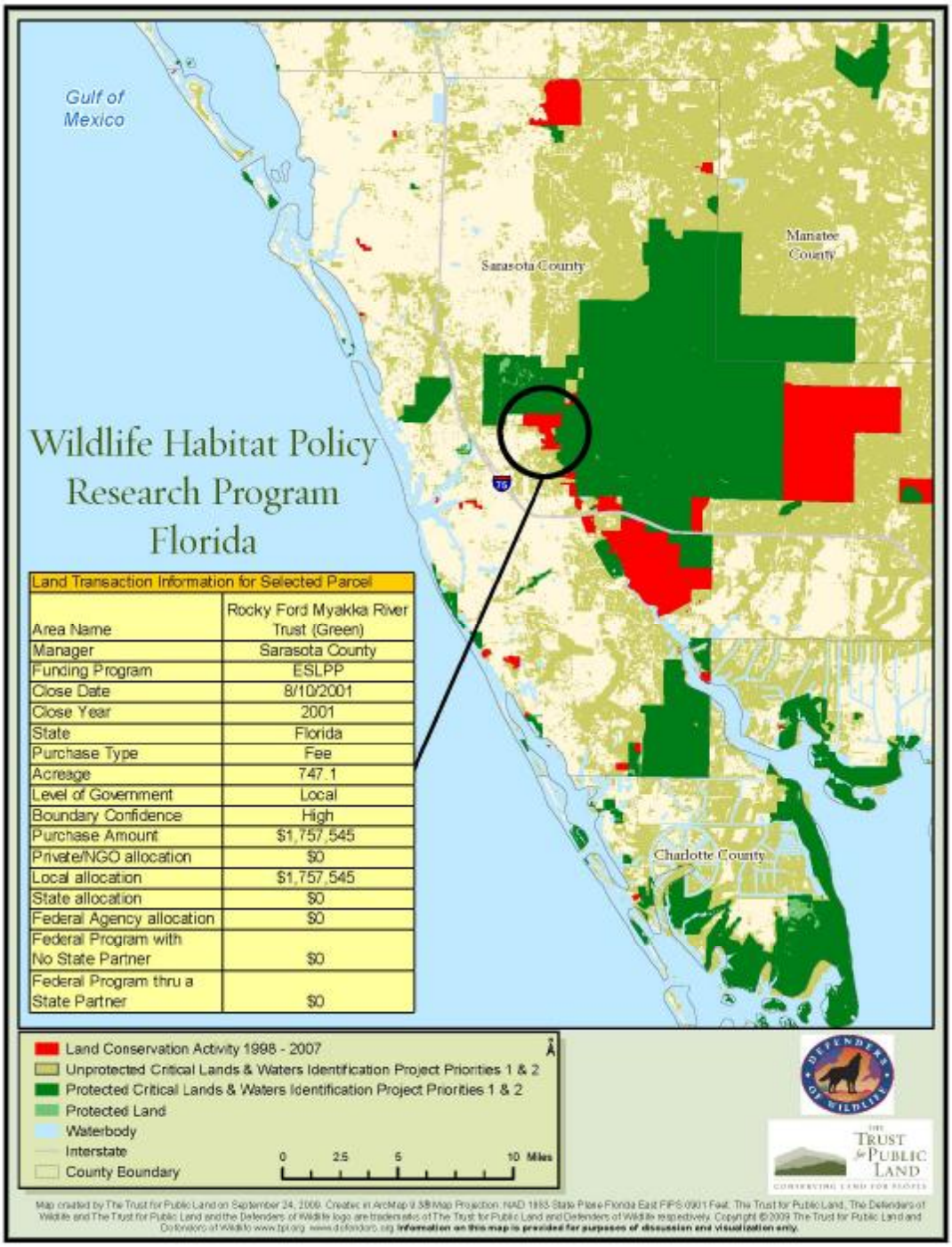
To determine the percent of total acres conserved between 1998 and 2007 that overlap with the Priority Areas, we completed a spatial intersect analysis in GIS. We used the intersect tool, which allows the user to calculate the acreage of land conserved (in red in Maps 2.2. and 2.3) that overlap Priority Areas 1 and 2. It is important to note that the State Strategies

were not completed until 2005 and that the first composite CLIP Priority areas were identified in 2008. Thus, there is no a priori reason to expect that conservation spending and Priority Areas will align. Furthermore, Florida has a number of maps depicting priorities areas for various conservation objectives, including green infrastructure, wildlife conservation, water protection, and recreational space. It is likely a diversity of objectives, priorities and opportunities have determined the spatial pattern of conservation in Florida between 1998 and 2007. Land acquisition through easements and fee simple purchases may have occurred in these areas for a number of reasons including prior recognition that these areas were important for conservation, landowner donation or interest in easement programs, or other conservation interests. There are always many factors that go into land acquisition decisions at federal, state and local levels.



Map 2.3 Land conservation activity (fee-simple acquisitions and easements) by year overlaid with protected and unprotected Priority Areas and the level of government that provided funding

We analyzed the percentage of total acreages protected and dollars spent on land acquisitions within the Priority Areas (between 1998 and 2007) by funding source. Funding sources were categorized as private sector/NGO, local government, state agency or program, federal agency budget, a federal program with no state partner, and a federal program with a state partner. All information on funding source, management agency, purchase type, etc was recorded as attribute information for each parcel recorded in the GIS database (Map 2.4).



Map 2.4 An example of a representative acquisition parcel and the attribute information that is recorded for each parcel.

We recorded 1,455,554 acres protected between 1998 and 2007 in Florida through fee-simple purchases and permanent easements (Table 2.8). Of these acres we were able to map approximately 46% of the total (674,431 acres). Of the acres that could be spatially mapped, 630,983 acres or 94% overlap with the CLIP Priority Areas. When more spatial data is

available to track land acquisitions it is likely that this alignment may further increase. For the federal acreage, we could only map 24% of all acquisitions. There was no spatial information available for federal funding either thru the state category or partnerships. Forty-seven percent of all state acquisitions could be mapped. Local and private acquisitions had spatial data for nearly all of their acquisitions, at 99% and 80%, respectively.

In Florida, the data collected on acquisitions show that the state acquired the largest number of acres with 1,235,532 acres, followed by federal agencies with 161,452 acres acquired. Because the scope of the study only allowed us to collect data for local and private entities in 5 counties we cannot compare these data to state and federal data which were collected across the state. Nonetheless, for our sample of five counties, nearly all of the land acquisitions that could be mapped fell within Florida's Priority Areas. For acquisitions made by the state, 92% of the mapped acres (538,228 acres) were aligned with the Priority Areas. Ninety-nine percent of the *mapped* land acquisitions made by federal agencies for which we had data aligned with the Priority Areas (Table 2.8), but this only includes federal lands acquired by federal agencies.

Table 2.8: Protected acreage and overlap with Florida CLIP Acreage (1998-2007)

Source of Funding	***Protected Acreage***	***Protected Acreage with Spatial data***	***Percent Protected Acreage with Spatial Data***	***Mapped CLIP Acreage Protected***	***Percent CLIP Acreage Mapped***
Fed thru State	4,157	0	0%	N/A	N/A
Fed with Partners	62,370	0	0%	N/A	N/A
Fed Agency	94,875	37,965	40%	37,620	99 %
Total Federal	**161,452**	**37,965**	**24%**	**37,620**	**99 %**
State	1,235,532	579,719	47%	538,228	92 %
Local	50,838	50,516	99%	48,944	97 %
Private	7,782	6,231	80%	6,191	99 %
TOTAL	**1,455,554**	**674,431**	**46%**	**630,983**	**94%**

Expenditures and acres conserved were calculated using the GIS Intersect tool to identify the segments of each property that overlapped with the Priority Areas. The overlap percentage was then used to calculate the percent of the total cost of the property which

aligned with the Priority Area. For example, if 100% of a property was designated as a wildlife habitat Priority Area, then the entire project cost was credited to that property However, if only 50% of the property fell within a Priority Area, then only 50% of the project costs were applied. The dollars spent on Priority Area conservation were then calculated by year and by type of conservation organization.

Applying acreages by type of conservation organization was more difficult, as many projects received funding from multiple types of organizations. In this analysis, we applied project acreages to the largest funding entity. For example, if 100 acres were protected using funds from a private donor that gave $50,000, and the state allocated $100,000, then the 100 acres were credited to the state. If two funding programs provided equal funding, then the acres were credited to the more local level government entity, as local dollars were required in order for a state match.

Table 2.9 shows the total amount of expenditures by source of funding over the 1998-2007 period, and the percent of that funding that we were able to map and include in our spatial analysis. Table 2.9 also shows the alignment of funding that could be mapped with Florida Priority Areas. For land conservation expenditures recorded in the state ($3.6 billion) between 1998 and 2007, about 55% (about $1.845 million) could be mapped. Of those expenditures that could be mapped, 92% (about $1.7 million) fell within the CLIP Priority Areas.

Table 2.9: Conservation spending and overlap with Florida CLIP Priority 1 and 2 Areas (1998-2007)

Source of Funding	*Total Spent ($ millions)*	*Spending with Spatial Data ($millions)*	*Percent Spending with Spatial Data*	*Expenditures with Spatial Data in CLIP*	*Percent CLIP Expenditures with Spatial Data*
Fed thru State	26.2	0.1	.3%	0.09	.3%
Fed Partners	162.3	0	0%	N/A	N/A
Fed Agency	112.7	78.5	70%	72.1	91.9 %
Total Federal	**301.2**	**78.6**	**26%**	**72.2**	**91.8 %**
State	2,701	1,485	55%	1,396	88.6 %
Local	355	351.4	99%	27.3	21 %
Private	4.4	4.4	100%	4.38	99.4 %
TOTAL	**3,361.6**	**1,844.55**	**55%**	**1,707.5**	**92%**

For all types of federal programs combined, we recorded over $300 million in expenditures, but only about 26% of those could be mapped. This was mostly due to either the unavailability or the inaccessibility of spatial information from federal conservation programs that were implemented by state agencies or in which the federal government partnered (e.g. the NRCS conservation programs or those programs administered by the US Fish and Wildlife Service (See Tables 2.2 and 2.3, respectively).

Of the $2.7 billion dollars spent by the state of Florida between 1998 and 2007 on land acquisition, we were able to spatially depict the location of spending for about $1.5 billion, or 55 percent. Of this amount, nearly $1.4 billion dollars (88%) of state funding was used to acquire land in the CLIP Priority Areas (Table 2.9).

All conservation spending within the private and local government categories had spatial data which could be mapped. However, whereas nearly all the mapped expenditures by the private sector fell with Florida's Priority Areas 1 and 2, only 21% of the land conservation expenditures by the sample of local entities aligned with these Priority Areas.

III. Policy Analysis of Florida State Land Conservation

A key component of land conservation is the way in which states use policies and programs to direct funding towards activities that will achieve their conservation goals. In this section, we examine Florida's land conservation policies and programs to help explain the spatial patterns of land protection that was described in Section IIB. We seek to determine the degree to which the policies are used to align expenditures for land acquisition in Florida with protection of key habitats identified in Florida's Comprehensive Wildlife Conservation Strategy. We examine whether the state is guiding spending towards protecting the areas it considers the most important habitat areas.

Florida has had active land conservation programs for decades, and the Wildlife Strategy is just one input into state's overall acquisition strategy for conservation lands. We recognize that Florida's acquisition strategy is more advanced than many states' and incorporates many conservation priorities in addition to benefits to wildlife habitat, including support for ecosystem services, landscape level conservation, groundwater protection, and carbon sequestration. To have consistency across the states in this study, we have analyzed land acquisitions against the strategic habitat conservation areas identified in Florida's CLIP Priority Areas 1 and 2 rather than against the broader conservation priority areas in the Florida Forever program.

We examine Florida's conservation policy environment in terms of a policy framework that considers funding, land protection approaches, land selection approaches, the level of engagement of the state with non-state funding programs, and management of land conservation information. Each of these topics is discussed below.

A. Funding

Florida has made a long-term commitment to identify and protect conservation in lands across the state, and it has backed this commitment with consistent and substantial funding. The state began programs to acquire land for conservation in the 1960s. High rates of population growth and land development led to the loss of open space and had serious impacts on natural resources. Experiencing rapid environmental degradation and recognizing that the natural environment was critical to the state's economy as the basis of the tourism industry, the state set up programs to address the issue of land conservation.

Florida's state land protection programs were large from the start, which may indicate how important land conservation was recognized to be. As early as 1972 voters authorized $200 million in bonds to purchase environmentally endangered lands and an additional $40 million for recreation. The state programs operating during the period of this study (1998-2007), Preservation 2000 and Florida Forever, were both funded at $300 million per year. These programs were set up for multiple years and approved by the voters which ensured consistent funding. However, as land prices escalated over time, a steady funding level has meant declining purchasing power.

Florida funds its state land conservation programs with a portion of the documentary stamp tax assessed on legal papers such as those tied to real estate transactions. This ties a major driver of conservation problems, namely development, to a solution, namely land

conservation. The voters approved this dedicated funding for conservation as a constitutional amendment that first created the Preservation 2000 program and then the amendment to create Florida Forever. The state has authority to issue $300 million of bonds per year under Florida Forever and the bond service costs are paid with the documentary stamp tax.

When the state first established a land conservation program, Florida tried assessing a sales tax on outdoor clothing and equipment to pay for it. The logic was that those who used recreational and conservation lands should pay for them. That tax was very unpopular and was replaced with the documentary stamp tax. Florida also funded the Conservation and Recreational Lands (CARL) program with a severance tax on mineral extraction, particularly phosphorus, which yielded between $15 and $45 million per year but was not sufficient to meet all land acquisition costs.

Today, Florida is developing ways to provide incentives to private landowners, through the Cooperative Conservation Blueprint (CCB) Initiative, to bring their properties in line with natural resource needs, recognizing that the state will not be able to purchase all the land that needs to be conserved in Florida. The CCB took affect after the period of analysis used for this study, but it is important to emphasize as a trend in future land conservation and funding efforts.

Although Florida has spent more than any other state on land conservation, the state's spending level has not increased in 18 years. At the same time, land costs in the state have skyrocketed. This means that the state has faced decreased purchasing power over time. Bonding authority for Preservation 2000 was set at $300 million per year in 1990 and Florida Forever retained that bonding level when it was approved in 1999.

Along with establishing a flat funding level, the Florida Forever legislation included two significant changes that reduced the amount of money available for acquiring conservation lands. First, the legislation stopped use of money from a variety of state trust funds that had previously funded acquisitions and puts limits on the use of funds for land management. Trust funds had provided tens of millions of dollars for acquisitions in a few of the years during our study period.

The second change was that Florida Forever money was allowed to be used for things other than land acquisition. Under Preservation 2000, the bond proceeds could only be used to purchase land. Under Florida Forever the money can be used for other conservation and recreational activities, such as invasive species removal or land management planning. In addition, the type of programs funded was expanded to include groundwater recharge and development of recreational facilities. The result of these changes is that less of the $300 million is actually available to acquire conservation land than was at the beginning of the study period.

Several state officials commented that there seemed to be a disconnect between the high level of support by the public for spending to conserve land and political will in the legislature to do so. There is a concern that legislators recognize that they dare not eliminate the Florida Forever program, but they constrain it (through flat funding levels and expanding the program's mission) rather than embrace and expand it.

B. Land Protection Approaches

The state has found it more beneficial to purchase conservation lands as fee simple transactions rather than to purchase conservation easements. Although the legislature put greater emphasis on easements in the Florida Forever legislation than under Preservation 2000, the state has not purchased very many easements using Florida Forever funds since the Acquisition and Restoration Council (ARC) established the easement program in 1999. The Water Management Districts have purchased easements on more acres than have state agencies, though the acreage may not be directly related to protecting wildlife habitat alone.

Florida is less enthusiastic about easements than some other states in part because of the cost of land. The state has found easement costs near developing areas approach 80% of the fee-simple cost. Some local governments used to argue against the state purchasing private land for conservation because they saw it as a loss of property tax. More frequently today, however, local governments recognize that development does not pay for itself and that they incur many costs associated with public services when land is developed. Instead they prefer the increase in value they find to tax-paying properties when a neighboring property is conserved. Frequently easements do not permit public access, particularly if the easement is on a working ranch or forest property where the public could be at risk or could disrupt operations. Some argue against paying large amounts for properties that won't allow public access because they see little public benefit. (It should be noted that many conservationists disagree with this argument because they believe that the conservation values being preserved provide sufficient public benefit.)

The unattractiveness of easements in Florida often revolves around land management issues. Easements generally freeze the condition of the property as it is. The state cannot do the work that may be needed to restore conservation values if it does not own the property. Similarly, if the property needs active management, such as fire-dependent landscapes do, the state prefers to own the land rather than try to make a landowner manage it properly. There also are concerns about who will oversee management planning on conservation land if it is privately owned. The state is actively involved in management planning on state-owned lands through ARC, but doesn't have much influence over how private properties are managed.

There are a number of arguments in favor of easements, most of which relate to costs. Easements cost less than outright purchases and the state does not incur management costs or oversight requirements. Working lands can continue their economic activities and contribute to the local economy, even with an easement on the property. Lands with easements remain on the property tax roles, which alleviates a concern of local governments. (In 2008, however, voters passed a constitutional amendment that allows landowners to be exempt from taxes on easement properties. This will not go into effect until the legislature implements the amendment).

Florida does not choose to use eminent domain for conservation lands, so if the owner of a property of conservation interest to the state does not want to sell, acquiring an easement may be the only way to ensure that conservation values are retained. Nevertheless, there is not as much sentiment in Florida for keeping private lands in private hands as there is in

western states. In Florida, the state owns about 15% of all land and the federal government owns about 11%, a much lower portion than many states in the west.

To date, Florida has not had many problems enforcing easement agreements, due in part to the fact that the easements are fairly new and the properties have not gone through many changes of ownership, which is often when problems arise.

C. Land Selection Approaches

Florida has worked to establish a shared understanding of conservation goals that are used to select land for protection. Habitat protection, as described in the State Wildlife Strategy, is a key part of those goals. Florida has engaged in efforts to develop statewide perspectives on natural resource issues, and development of the Wildlife Strategy fits in with those efforts. The State Wildlife Strategy did not reinvent the wheel. Rather, it built on existing efforts and strove to be inclusive and to pull together people representing a wide range of interests and perspectives. The strategy is embedded in the legislatively-mandated criteria used by ARC, but it is not the driving or only criteria used to guide the acquisition of conservation lands. For example, the Water Districts must use ARC criteria, which reflect the priorities in the Wildlife Strategy, when they use Florida Forever funds for acquisitions. The Water Districts also have taxing authority of their own, though, and can and do use their own funds to acquire land for various purposes. These tax-funded acquisitions are driven by Water District priorities, though they are aware of the state's wildlife conservation goals and the CLIP.

The FWC continues to build on the State Wildlife Strategy work through its Florida Wildlife Legacy Initiative that focuses on creating partnerships to conserve species and habitats. Florida continues to work on conservation issues at a rapid pace, and FWC is a key participant in conservation planning beyond the Wildlife Strategy as part of the state's Century Commission effort to describe a sustainable future for the state. The CLIP is integrating a wide array of statewide spatial data sources and providing decision support tools to encourage a common understanding of conservation priorities. The Wildlife Strategy's strategic habitat conservation areas are one of the data layers in CLIP. FWC also is leading the CCB Initiative with the goal of developing a strategic plan for land and water conservation in Florida and that includes shared priorities. CLIP and CCB were instituted after the end date of our study period (2007).

The state has set up an administrative structure to make sure that science plays a key role in selecting lands to conserve. The state uses ARC, made up of technically-knowledgeable individuals representing diverse interests, to evaluate, select, and rank potential acquisitions by the Florida Forever program. ARC includes representatives of relevant public agencies with access to scientific and technical information and private citizens with environmental backgrounds to provide on-the-ground perspectives. ARC is an advisory body, but the Governor generally delegates decision-making authority to it. Decisions are made in a public forum which provides transparency to the process of land selection and acquisition. When Florida Forever was started, ARC was given combined responsibility both for acquisitions and for management planning for state-owned conservation properties. ARC has served as a model for many local governments to rank and prioritize projects.

Despite the high level of financial investment in land protection, Florida has many billions of dollars of conservation projects that have been identified but have not yet been funded. The state is working to develop a common understanding of its conservation priorities to enable the protection of the most important areas first. The legislature charged the Florida Forever program with providing better acquisition priorities and clearer measures of success than did its predecessors. To meet this requirement, ARC has a set of criteria it uses to evaluate and rank potential acquisition targets. These criteria are fairly static, though they can be changed by an amendment to the Florida Forever statute. For example, there was a 2006 amendment to add military value as a criterion in order to be able to participate in the U.S. Department of Defense Readiness and Environmental Protection (REPI) initiative.

D. Level of Engagement of the State with Non-state Funding Programs

Florida has benefited from a high level of spending by the federal government for land protection in the state. State officials commented that the state used to work more closely with federal agencies than it does today. The state has found that federal programs require substantial administrative requirements, even if the federal government funds only a small portion. As a result, state programs have not pursued federal funds as aggressively as they used to. However, Florida's DEP is now encouraging staff to bring in more federal dollars. State officials were of the impression that federal agencies have not awarded funds to Florida because they believe the state can continue to fund large conservation projects, even though land is very expensive in Florida and there is a need for continuing federal assistance.

The state has been an active partner with the federal Department of Defense for land conservation because Florida has so many military facilities (21 installations and three commands). The state counts military acreage as conservation land and some of the state's high priority resource conservation land is on and around military bases. DEP has a liaison with the military to take advantage of funding through the REPI initiative. REPI's focus is to limit incompatible development near bases and protect natural habitat to keep species populations healthy so the species issues do not compromise the ability of the base to conduct training. REPI provides minor amounts of funds compared to the money coming from state programs – frequently only 10% - but the state has actively pursued the additional funds. TNC has participated actively in REPI projects in Florida, working with landowners and providing initial payment to one landowner while waiting for REPI and state money.

Florida's voters have approved high levels of state funding for conservation lands and they also have approved measures for local land acquisition programs funded by bonds backed by increases in property tax or sales tax. Many local government programs leverage their funds through matching programs at the state or federal level.

Local government acquisition programs have developed administrative structures to ensure effective identification, screening, and selection of conservation land. For example, Lee Country established the Conservation Land Acquisition and Stewardship Committee, modeled on ARC, to evaluate potential projects against established criteria. Depending on what types of matching funds the county may seek for a project, the criteria may reflect those of the partner. Often the county has a requirement to hold title to property purchased with conservation funds, which may prevent it from partnering with the state when the state has a competing requirement to hold title. In the case of the Florida Communities Trust

(FCT), the local government holds title to lands purchased with FCT funds, but title passes to the state if the locality does not manage the land for the purpose for which it was acquired.

One challenge faced by local land conservation agencies is balancing competing demands for the type of land to protect. Counties may focus on acquiring more manageable larger parcels or expanding existing protected areas, but they may receive requests from citizens to protect small parcels, particularly within cities, that are prized by a neighborhood. These small urban properties may have willing sellers and a group of supporters backing the transaction, but fragmented parcels are more difficult to manage for wildlife conservation values. Still, the counties recognize that much of the tax base for the acquisition program comes from urban voters, so they continue to struggle with an appropriate balance.

Indian tribes in Florida are not active participants in acquisition of land for conservation. They have supported some acquisitions by the state in the past, especially if the property had archaeological significance. The tribes have not developed their own land conservation programs as have tribes in some western states using revenues from casino operations.

Land trusts and non-governmental organizations contribute valuable expertise and skills to ensure that high-priority lands are protected in Florida. National NGOs are active in the state and are recognized for their wide ranging roles, including undertaking scientific and technical work to identify areas for conservation, building relationships with landowners, assisting owners with tax and estate planning issues, acting as intermediaries, coordinating among funding entities, writing proposals for grants, negotiating transactions, and taking options on properties or providing bridge funding to hold a property while public entities get their own funding arranged. NGOs also are active in advocacy work and lobbying to influence the legislature to increase funding for land conservation. In Florida, several state officials commented that the NGOs seem to have found areas of specialization rather than compete over overlapping roles.

In general, NGOs do not purchase conservation land in Florida and hold title themselves. TNC used to buy conservation land and hold it, prior to 1990. TNC may purchase a conservation property if the organization wants to ensure that restoration and management requirements are met. TNC also purchases properties to serve as demonstration projects to test management techniques before transferring the property to another entity.

There are a few large land trusts working to preserve land in specific areas of the state, but in general Florida does not have a large active land trust community. This is believed to be due to the fact that state government has been very active in land conservation programs for so many years, and because the state programs provide direct opportunities for individuals to nominate lands for protection.

E. Management of Land Conservation Information

The Florida Natural Areas Inventory (FNAI) administered by Florida State University is the successor to the state's Natural Heritage Program. It is funded by contracts and grants from DEP, FWC, and other state and federal entities. FNAI builds and maintains databases on biological resources in Florida, and it is the primary source of information about

conservation lands in Florida owned by federal, state, and local governments as well as privately-managed areas. Over the years Florida has invested in technical resources such as data collection, modeling tools, and strategic analysis, to understand the conservation challenges as well as costs and benefits associated land conservation.

Although Florida does an excellent job collecting and managing GIS information about protected land, there has not been as much analysis of the level of expenditures associated with these acquisitions. FNAI has begun looking at ways to connect spending amounts and sources with protected parcels, but currently there is no state requirement or a mechanism to track and analyze all land conservation spending by public and private agencies.

IV. Estimated Costs of Conserving Un-Protected Florida Priority Areas

In this section we provide a general (average), statewide cost estimate for conserving lands within Priority Areas 1 and 2 identified in Florida's Critical Lands and Waters Identification Project (CLIP), which, as of the end of FY 2007, had not yet been protected. Because we are not including 2008 and 2009 land conservation activity, the costs reported here may be somewhat overestimated.

To determine the cost of unprotected Priority Areas 1 and 2 we calculated the acreage of protected and unprotected Priority Areas using the Florida Managed Areas (FLMA) database. This GIS database is maintained by the FNAI and includes the boundaries and statistics for more than 1,900 federal, state, local, and private managed areas, all provided directly by the managing agencies. National parks, state forests, wildlife management areas, local and private preserves are examples of the managed areas included. The managed areas shapefile is updated quarterly. This database does not include individualized parcels as the TPL database does, but it is more representative of the overall land conservation activity in the state through 2007. With the FLMA database we completed a GIS overlay analysis and we determined the unprotected acreage within Florida's Priority Areas to be about 10.2 million acres in 2007.

We next determined the land cover of all unprotected Priority Areas in the state. For this analysis we used the Habitat and Landcover database (GFCHAB_03) from the FWC. Published in 2004, this dataset contains plant community and land cover data for the state of Florida derived from Landsat Enhanced Thematic Mapper Satellite imagery from 2003. Total acreage of forests, wetlands, cropland, pastureland, citrus, grassland/shrub land, and mangrove forests were calculated within the unprotected Priority Areas.

We estimate land conservation costs based on three separate investment strategies: fee simple purchase, conservation easements, and land rentals. We estimate the costs associated with these three strategies on both a one-time basis and over a thirty-year time period. For the thirty-year time period we assume that the total amount of acres to be protected are acquired in 30 equal increments and assume a 3% annual increase in land prices over-and-above inflation. For our fee-simple purchase estimates, we add annual management costs. For the easement strategy, we account for up-front, one-time transactions costs. We first discuss the methods used for estimating state wide average prices for the three conservation strategies and then report results.

A. Cost Estimation Methods

Fee-Simple Purchase Acquisitions

Cost data for fee-simple purchase acquisitions comes from three sources: (1) TPL expenditure data collected from federal, state, local, and private sources; (2) data compiled by the National Agricultural Statistics Service (NASS) on private commercial transactions involving crop and pasture land; and (3) data compiled in the 2007 Florida Land Value Survey from the University of Florida (Table 4.1).

The TPL data consists of 947 land acquisitions in Florida between 2006 and 2007, some of which were donated lands that were excluded from our cost estimates. 2006 acquisition costs were adjusted to reflect 2007 price levels.

Table 4.1: Fee-Simple costs per acre in Florida ($ 2007)

Data Source	***Cost per Acre***
TPL spending data	$5,317
NASS cropland data	$9,480
NASS pastureland data	$8,350
Florida Land Value Survey cropland data	$8,441
Florida Land Value Survey pastureland data	$6491
Florida Land Value Survey citrus	$11,900

Calculating Statewide Fee-Simple Costs

We estimated statewide average per acre fee-simple costs by weighting costs of different land cover types found within the unprotected Priority Areas, as described above. The cost per acre for cropland, pastureland, and citrus was calculated by averaging the data collected in Table 4.1. We determined the cost per acre for forests, wetland, mangroves, and grassland/shrub land by overlaying the TPL land acquisition parcels from 2006 and 2007 with the CLIP Priority Areas and used the subset of parcels that fell within Priority Areas 1 and 2. We then determined the land cover for each parcel using the Habitat and Landcover database described above. Spending data was only collected from acquisitions that had over 65 percent of one land cover type. We consolidated all other land cover categories into an "other" category and used the average cost per acre of the TPL spending data, since the majority of acquisitions had mixed land cover.

The land cover percentages used to weight land costs were following: cropland at 3.79%[6]; pastureland at 14.61%[7]; citrus at 2.44%; forest at 54.56%[8]; grassland and shrub land at 11.62%[9]; mangrove at 0.62%[10]; wetland at 12.21%[11]; and "other" at 0.15%[12] (Table 4.2).

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[6] This includes 3 different types of GIS land cover sugar cane, row/field crops, and "other" agriculture.
[7] This includes 2 different types of GIS land cover improved and unimproved pastureland.
[8] This includes 12 different types of GIS land cover data sandhill, mixed pine-hardwood forest, hardwood hammocks and forest, pinelands, cabbage palm-live oak hammock, tropical hardwood hammock, cypress swamp, cypress/pine/cabbage palm, mixed wetland forest, hardwood swamp, hydric hammock, and bottomland hardwood forest
[9] This includes 5 different types of GIS land cover data xeric oak scrub, sand pine scrub, dry prairie, shrub and brushland, and grassland
[10] This includes 2 different types of GIS land cover data mangrove swamp and scrub mangrove.
[11] This includes 6 different types of GIS land cover data freshwater marsh and wet prairie, sawgrass marsh, cattail marsh, shrub swamp, bay swamp, and salt marsh
[12] This includes 3 different types of GIS land cover data coastal strand, sand/beach, and tidal flat. The cost per acre in Table 4.2 is not meant to reflect costs associated with coastal land cover types.

Table 4.2: Florida weighted fee-simple costs ($ 2007)

Land Cover	*Percentage*	*Acres*	*Cost per Acre*	*Total Cost*
Cropland	3.79%	387,346	$8,960	$3,470,620,160
Pastureland	14.61%	1,495,176	$7,420	$11,094,205,920
Citrus	2.44%	250,002	$11,900	$2,975,023,800
Forest	54.56%	5,581,945	$19,894	$111,047,213,830
Grassland and Shrub Land	11.62%	1,188,541	$19,488	$23,162,287,008
Mangrove	0.62%	63,318	$60,547	$3,833,700,383
Wetland	12.21%	1,248,775	$1,813	$2,264,341,269
Other	0.15%	15,726	$5,317	$83,615,142
Total	**100.00%**	**10,230,829**	**$15,437**	**$157,931,007,512**

Across all land types, we estimated the average cost for fee-simple land purchase in Florida to be about $15,400 per acre.

Management Costs in Florida

We define management costs as all practices/investments which contribute to the overall integrity of the habitat protected, including site construction, biotic surveys, habitat restoration, habitat maintenance, public services, reporting, office maintenance, field equipment, operations, as well as contingency and administration (unforeseen costs and overhead)[13].

To estimate habitat management costs we contacted land trusts, local governments, state agencies, and the National Wildlife Refuge System. Table 4.3 shows per acre cost estimates from various public and private land conservation organizations. Due to time and budget constraints, we could not conduct an in-depth analysis of every cost involved in managing fee-simple purchases. As a result, we relied on readily available data such as annual budgets and management plans. Some land management entities, however, could not provide management cost data either because (1) they did not keep track of these types of costs as separate from other expenditures; (2) management costs varied significantly from one property to another for a variety of reasons (i.e. land cover, organization's goals); or (3) the available data only represented the portion of the properties' total management cost that a particular entity funded.

We estimate the average statewide management costs by weighting the costs reported by each organization by the total acreage managed by that organization. Based on these calculations, the average annual cost of managing fee-simple purchases were estimated at about $15/acre (Table 4.3).

[13] Personal communication. Joanne Rodriguez. Center for Natural Lands Management. August 2005

Table 4.3: Management costs of land acquired through fee-simple purchases in Florida ($ 2007)

Data Source	*Total Costs*	*Total Managed Acres*	*Cost per Acre*
National Wildlife Refuge System[1]	$8,872,674	971,624	$9.13
Fish and Wildlife Conservation Commission[2]	$20,016,978	1,412,783	$14.16
Southwest Florida Water Management District[3]	$7,106,861	297,992	$23.85
Northwest Florida Water Management District[4]	$3,927,292	206,943	$18.98
Suwannee River Water Management District[5]	$3,565,652	159,323	$22.38
St. John's River Water Management District (SJRWMD)[6]	$4,8764504	413,000	$11.81
Nokuse Plantation[7]	$1,181,576	48,714	$24.26
Conservation 20/20[8]	$1,000,000	22,000	$45.00
The Nature Conservancy[9]	$2,415,000	69,000	$35.00
Total Cost per Acre	**$52,963,789**	**3,601,379**	**$14.71**

[1]Personal Communication. Genevieve La Rouche. NWRS Office of Budget, August and September 2008.
[2]Personal Communication. David Johnson. Florida Fish & Wildlife Conservation Commission, February 2009.
[3]Personal Communication. Cheryl Hill. SWFWMD. February and March 2009. The range of management costs varied from $6.33 / acre for Green Swamp consisting of 77.400 acres to $132.77 / acre for Prairie/Shell Creek Tract consisting of 609 acres.
[4]Personal Communication. Carol Bert and Tyle Macmillan. NWFWMD. February 2008. This figure represents about 98 percent or more of their true management costs.
[5]Personal Communication. Bob Heeke. SRWMD. March 2009.
[6]Personal Communication. Ray Bunton. SJRWMD. March 2009.
[7]Personal Communication. Matt Aresco. Nokuse Plantation. February 2009. The Nokuse Plantation is a private land conservation effort in the Florida Panhandle
[8]Personal Communication. Cathy Olson. Conservation 20/20. April 2009.
[9]Personal Communication. Walt Thomson. The Nature Conservancy. April 2009.

It should be noted that these costs are the amount of money budgeted or expended for land management, not necessarily the amount required to adequately protect conservation values.

According to the FWC, which currently can only allocate an average of $14/acre for management, the actual management cost requirement is estimated at between $39 to $89/acre to cover all costs, depending on the amount and type of habitat restoration required[14]. A report by the Nature Conservancy, Florida Chapter estimated that the amount necessary to adequately manage conservation lands, not including visitor services, should be $45/acre, or $90/acre for lands with significant public use (2006). In Table 4.3, reported management costs range from about $9 to $45/acre.

For nearly all sources in Table 4.3, estimated costs are adjusted to 2007 dollars. Some of the costs, however, could not be associated with a particular year and were not adjusted.

While the illustrated management costs provide adequate estimates necessary to manage habitat in Florida, there are other factors to consider. First, the level of detail for management costs varied significantly from one organization to another. Some organizations provided general management costs with little or no detail. Other organizations provided a very detailed breakdown of the costs of funded activities. There is little uniformity between the information sources, making it difficult to compare costs. Table 4.4 shows the range of management cost activities/investments for the organizations listed in Table 4.3. A second factor is that some organizations may exclude certain activities, which are necessary for proper habitat management, or they include activities and expenditures which are not directly related to habitat conservation.

[14] Personal. Communication. David Johnson. Florida Fish & Wildlife Conservation Commission. February 2009.

Table 4.4: Types of management activities/investments by land conservation organizations in Florida

Data Source	*Form of Data*	*Management Activities/Investments*
National Wildlife Refuge System	Estimated Base Budget and Permanent Positions for Refuge Complexes/Refuges in Florida. Also included special accounts for fire and maintenance	- Refuge Complex's Base Budget and Staff
Fish and Wildlife Conservation Commission	Total amount expended on managing the Wildlife Management Area System (only counted the lands they manage as lead agency), as well as the total acreage in the system.	- On-the-ground land management (e.g., prescribed burning, invasive control, timber management, public access) - Management planning
Southwest Florida Water Management District	The average cost per acre that the District spent in FY 2008 to manage its lands.	- On the ground management costs - Capital improvement (e.g., renovating visitor centers) - Heavy equipment purchase - Research studies - Computer models (e.g., GIS)
Northwest Florida Water Management District	FY 2006-2007 management costs and acres for each fee-owned water management area.	Did not break down the management costs by activity.
Suwannee River Water Management District	Costs per acre to manage District lands for FY 2008	Did not break down the management costs by activity (although costs do include recreation infrastructure).
St. John's River Water Management District (SJRWMD)	Average annual land management cost per acre for District lands	Did not break down the management costs by activity
Nokuse Plantation	Average annual land management and restoration cost per acre.	Did not break down the management costs by activity
Conservation 20/20	Average annual budget for land management and restoration.	Did not break down the management costs by activity
The Nature Conservancy	Average annual budget for land management and restoration.	- Site security (e.g. fences) - Maintenance (e.g. roads, buildings, bathrooms) - Education (e.g. signs) - On the ground land management (e.g. prescribed burning, restoration) - Liability

Cost of Establishing Conservation Easements

Cost data for establishing conservation easements is based on expenditure data that TPL collected from federal, state, local, and private sources. There were no GRP or FRPP easements established in 2006 and 2007. In the TPL data set, there were fifty eight non-donated easements in 2006 and 2007 (Table 4.5). We calculated the average cost for conservation easements by weighting the total cost of easements for each organization by the total acreage of land protected. The average cost of an easement is estimated to be approximately $3,415/acre (Table 4.5).

Table 4.5: Conservation easement costs in Florida ($ 2007)

Data Source	*Number of Easements*	*Total Acreage*	*Total Cost*	*Cost per Acre*
Wetlands Reserve Program (WRP)	18	24,210	$73,087,210	$3,019
Sarasota County	1	12,376	$52,803,488	$4,267
FL Forever Program	37	16,320	$54,111,324	$3,316
US Forest Service	2	1,686	$6,444,425	$3,822
Total	**58**	**54,592**	**$186,446,447**	**$3,415**

Easement Transaction Costs in Florida

We define transaction costs as all those practices involved in the establishment of a conservation easement. These include initial site visits/pre-closure "walk through"; landowner negotiations; appraisals; project planning, coordination, and documentation; agency coordination; title evaluation; escrow; legal assistance: drafting and recording of the easement; and an initial baseline property report[15].

Two other types of easement-related costs to consider are a stewardship endowment and enforcement costs. A stewardship endowment is the amount of money necessary to insure that easement lands will be managed for stated conservation objectives in the future. Many land conservation organizations will not consider holding an easement if there is not a proper endowment. Enforcement costs are incurred when a dispute or violation of an easement agreement arises. According to the Land Trust Alliance a land conservation organization should set aside a minimum of $50,000 for a legal defense fund to effectively enforce approximately fifteen easements. An additional $1,500 to $3,000 is needed for every easement above this (Doscher, 2007). While our analysis does not consider stewardship endowments or enforcement costs, these *are* significant factors to consider in maintaining easement viability.

Transaction costs associated with establishing conservation easements were obtained by contacting land trusts and federal conservation programs. As with management costs, some

[15] Personal Communication. Joanne Rodriguez. Center for Natural Lands Management. August 2008.

land trusts could not provide transaction cost data either because they did not keep track of these types of costs as separate from other expenditures, or because costs varied significantly from one property to another due to their characteristics. Thus, an "average" cost would be misleading. Table 4.6 illustrates transaction costs per project provided by some conservation organizations.

Table 4.6: Transaction Costs per Easement in Florida ($ 2007)

Organization	***Costs per Easement***
Sarasota County Government and the Southwest Florida Water Management District[1]	$88,659
Southwest Florida Water Management District[2]	$59,446
St. John's River Water Management District[3]	$20,000
Conservation Trust for Florida[4]	$40,000 - $50,000
Average Transaction Cost per Easement in Florida	**$52,026 - $54,526**

[1]Personal Communication. Brook Elias. Sarasota County. December 2008. Easement costs were split equally between the Sarasota County Government and the Southwest Florida Water Management District.
[2] Personal Communication. Cheryl Hill. SWFWMD. February 2009.
[3] Personal Communication. Ray Bunton. SJRWMD. March 2009.
[4] Personal Communication. Ellen Huntley Dube. Conservation Trust for Florida. November 2008.

We calculated the statewide transaction cost per easement by adding up the costs provided by each organization and then dividing it by the number of these organizations. When necessary, we adjusted costs to 2007 dollars. Although there is a large range in the estimated transactions costs that were provided ($20,000 to $88,000) average per easement transactions costs are estimated to be between about $52,000 and $54,500.

Our original intent was to identify transaction costs on a per acre basis. However, the majority of agents with whom we spoke indicated that there is little relationship between the acreage of an easement property and associated transaction costs. Most organizations provided an average cost or range of costs *per project*. While several factors influence the level of transaction costs (relationship with the landowners, permitted rights, distance of property from office, how extensive the baseline survey is, to name a few) overall costs tend to be within the same range for each project within an organization. Because of the difficulty in estimating per acre transaction costs, the figures reported in Table 4.6 are not incorporated into our overall cost estimate of conserving unprotected Priority Areas via the easement strategy. However, it should be noted that transaction costs per easement property can be substantial and should be recognized as an additional cost element.

Table 4.7 shows the types of activities and administrative requirements associated with preparing easements, as identified by the different organizations.

Table 4.7: Types of easement transaction activities and costs in Florida

Data Source	*Form of Data*	*Management Activities/Investments*
Sarasota County Government	Memo with cost information on a 2002 Conservation Easement	- Survey and Appraisal - Environmental Assessment - Settlement/Closing Fees - Abstract - Title Exam Fee, Title Insurance Premium - Recording easements, etc. - Miscellaneous contracting
Southwest Florida Water Management District	Cost breakdown of a "typical" easement acquired in 2007 by the SWFWMD	- Salaries - Boundary Survey - Recording and Documentary Stamps - Appraisals - Environmental site assessment - Baseline Inventory
St. John's River Water Management District	Average transaction costs per easement	Did not break down transaction costs by activity.
Conservation Trust for Florida	Transactions costs from two sample properties	- Salaries and Wages for negotiation of easement and administration - Legal and Accounting fees, Legal Certified Survey - Baseline Documentation - Environmental Assessment - Title Search and Commitment - Certified Appraisal Costs
Division of State Lands[1]	Explanation of conservation easement preparation by the Division	- Site Visits and Project Planning - Mapping and Survey - Title Searches and Appraisals - Negotiations - Baseline documentation reports - Environmental site assessments - Recording of easements

[1]Personal communication. Jim Farr, Mike Herran, Patrick Cowen, and Steve Kellogg. Division of State Lands. November 2008. Division of State Lands provided detailed accounts of activities associated with preparing an easement.

Cost of Rental/Lease Agreements

Rental/lease rates for Florida were estimated using data compiled by the NASS on private commercial cropland rental rates, from the USDA Conservation Reserve Programs, and a University of Florida 2007 Florida Land Value Survey (Table 4.8). The CRP data is specifically for General Sign-up enrollment in Fiscal Year 2007.

Table 4.8: Florida land rental / lease rates ($ 2007)

Source	***Rental rate $/acre***	***Type of Land Use***
NASS	40.00	Cropland / Non-Irrigated
	24.00	Pastureland
Conservation Reserve Program	37.70	Not Applicable
Florida Land Value Survey	36.00	Improved Pastureland / Northern Region
	27.00	Unimproved Pastureland / Northern Region
	51.00	Non-Irrigated Cropland / Northern Region
	33.00	Improved Pastureland / Southern Region
	20.00	Unimproved Pastureland / Southern Region
Average	**$33.59**	

Comprehensive data on the land area rented by land use type was not available. As a result, a weighted average statewide rental rate based on land cover type could not be estimated. Our overall estimate represents an average rental rate for a limited number of Florida land use types. Information on Florida land rental rates is limited to agricultural lands, and does not, for the most part, include other land cover types such as forestlands, wetlands, etc. As a result, the statewide average rental rate may be biased toward the cost of renting crop and pasture lands. We estimated an average rental/lease rate at about $33.60/acre.

B. Estimated State Wide Land Protection Costs for Florida

Table 4.9 summarizes the estimated per acre and total costs for conserving currently unprotected Priority Areas in Florida. The figures in the second column represent the estimated cost of the Priority Areas if they were all purchased, had an easement, or were rented in *one year*. The figures in the third column represent the estimated cost of protecting these areas over a 30-year period. For the 30-year costs, we assume that the total acreage to be protected is divided into 30 equal annual increments. With the exception of the base year, we also assumed a 3% annual increase in land costs and that all protection strategies are equally viable in all parts of the state.

Table 4.9: Costs per acre and total costs by protection strategy in Florida ($ 2007)

Protection Strategy	***Cost per Acre***	***Total One-Time Cost (Million $s)***	***Total 30-Year Costs (Millions $)***
Fee-Simple Purchase	$15,437	$220,135	$250,454
Management Costs	$14.71	$210	$333
Purchase + Management Costs	$15,451	$220,345	$250,787
Conservation Easement	$3,415	$48,703	$77,236
Rental Agreements	$33.59	$479	$760

The estimated 30-year cost for protecting all currently un-protected Priority Areas through fee-simple acquisitions (including management costs) is the most expensive option at approximately $251 billion. Conservation easements would cost about $77 billion and rental agreements $760 million over 30 years. However, rental costs would continue to be incurred after the 30-year time period. In contrast, land protected through fee-simple purchases and perpetual conservation easements require no further payments, with the exception of the cost of land management. The least-cost option would be to pay existing landowners to manage for biodiversity values. Management costs, over a 30-year period, would be approximately $333 million. Factors which may lead to high cost estimates include using 2007 as the base year (when land values were higher than today), and that the amount of land requiring protection has not been adjusted for any 2008/2009 acquisitions. One factor that may influence our cost estimate on the low side is the relatively low values used for land management costs after acquisition.

V. Policy Recommendations

Based on our analysis of Florida's spending and spatial data, as well as the state's policy environment, we offer the following recommendations with respect to directing more funding towards protecting high priority habitat. Given that Florida has moved beyond just a habitat focus towards a consensus perspective on conservation priorities, we have formulated our recommendations for the state with that in mind. Florida has made a significant investment in the creation of its Comprehensive Wildlife Conservation Strategy and continues to invest in implementation of the strategy and its integration into a set of shared conservation priorities. We offer these policy recommendations, focused on all sources of funding available to the state of Florida for land conservation, to help Florida yield greater alignment in the future.

Our first recommendation is that Florida increase funding for land conservation. Although Florida spends more than any other state on land protection, the funding level has not increased. At the same time, development pressure continues to threaten important conservation lands while the cost of land continues to rise. To ensure that critical habitat is protected and other conservation needs met, the state needs to find increased funds and continue to explore innovative mechanisms for accomplishing conservation goals using incentives, such as it is doing with the CCB Initiative to engage private landowners in conserving land for habitat values.

Second, the state may be able to make better use of existing federal conservation programs than it has in the past and attract additional federal funds. The Florida DEP is encouraging staff to seek out federal funding and there may also be opportunities for local governments and non-profit organizations to take advantage of more federal land conservation programs as well.

Third, to leverage federal funding sources, the state may want to integrate analysis of funding levels and funding sources with its data on protected lands. By better understanding what funding sources are used by different levels of government, the state may be able to identify funding opportunities to pursue more aggressively.

Fourth, the conservation community in Florida should continue to work to enhance the legislature's understanding of the importance and the value of the state's investment in conservation land, and the gap between the ongoing requirements and the financial resources available. Florida has a great story to tell about its successful conservation work to date, and it has the support of the voting public. The state also faces a huge amount of unfunded land acquisition projects that will require positive engagement by the legislature.

Fifth, in order to increase the level of spatial representation of land conservation acres and expenditures, the state of Florida and the federal government need to better coordinate data bases and provide more spatial information. Increasing spatial representation can lead to improved strategic use of future land conservation funding. For example, spatial data for federal land conservation programs coordinated by the state and with various public and private partners, representing over 66,000 acres and over $188 million in expenditures, could not be mapped at all. At the state level for land conservation activity from 1998-2007, only about 47% of the total acres protected and 55% of total expenditures could be mapped.

Six, due to resource constraints we could only focus in on land conservation activity by local governments (counties and other government entities within these) and private land trusts within a five county area. Although these five counties represented some of the most active areas for land conservation, the data base we have created for local government and private land trust for acres protected and expenditures needs to be expanded to include the rest of the state.

Lastly, our estimates for the cost of future land conservation efforts show two major findings. The first finding is that the most cost-effective options available to the state, especially in light of decreased or flat funding for land conservation efforts, will be through either conservation easements or paying landowners to manage for habitat values. For the management option, the second finding is that more data is needed on land management costs in order to verify or improve accuracy for the estimates presented in this study.

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