
URBANIZED NATURE

ETH Studio Basel
Contemporary City Institute
Andrea Linke, Ruth Schmutz

Prof. Roger Diener, Prof. Marcel Meili
Mathias Gunz, Rolf Jenni, Milica Topalovic
Christian Mueller Inderbitzin

Spring Semester 2011

DRAFT

© ETH Studio Basel

URBANIZED NATURE

CONFLICT AND DEPENDANCY

Competing growth: Urban development and nature protection
Wetlands: The most important resource

NATURE CONSERVATION DEVELOPMENT

Nature conservation development in comparison: USA and Switzerland
Floridas natural resources
Nature managers

STATE ACTOR STRATEGY

The Green Swamp
Area of Critical State Concern
State agencies as managers of the ecosystem
Nature conservation land aquistition: The past strategy?
Conservation easements : The future strategy?

LOCAL ACTOR STRATEGY

Cypress Creek Preserve
Connecting green- and waterways
The influence of the financial crisis on nature protection
Strategies with a small budget

PRIVATE ACTOR STRATEGY

Hatchineha Ranch
The limits to growth?
Management of a mitigation bank
Nature banking

AN URBANIZED NATURE

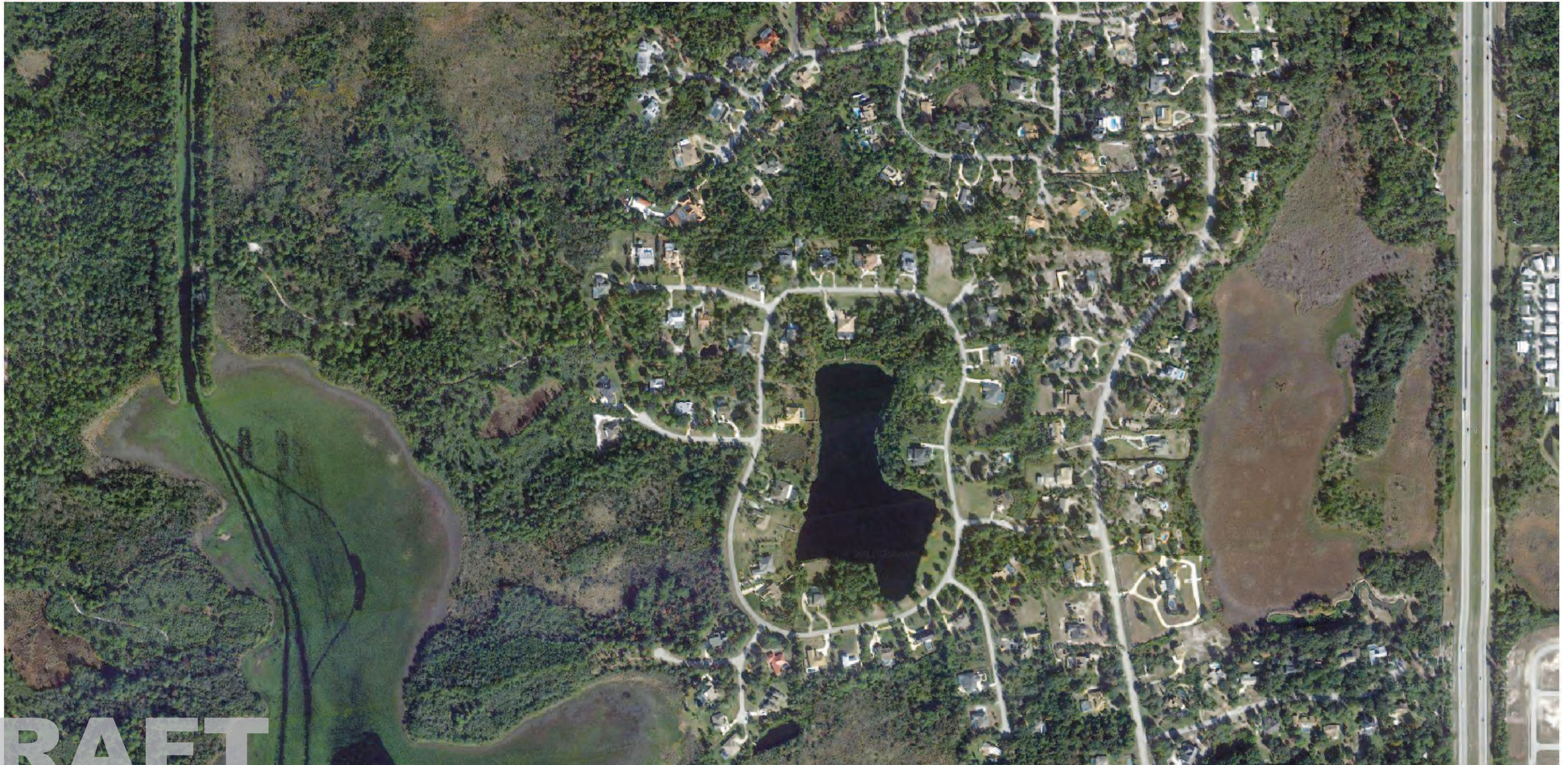


DRAFT

© ETH Studio Basel

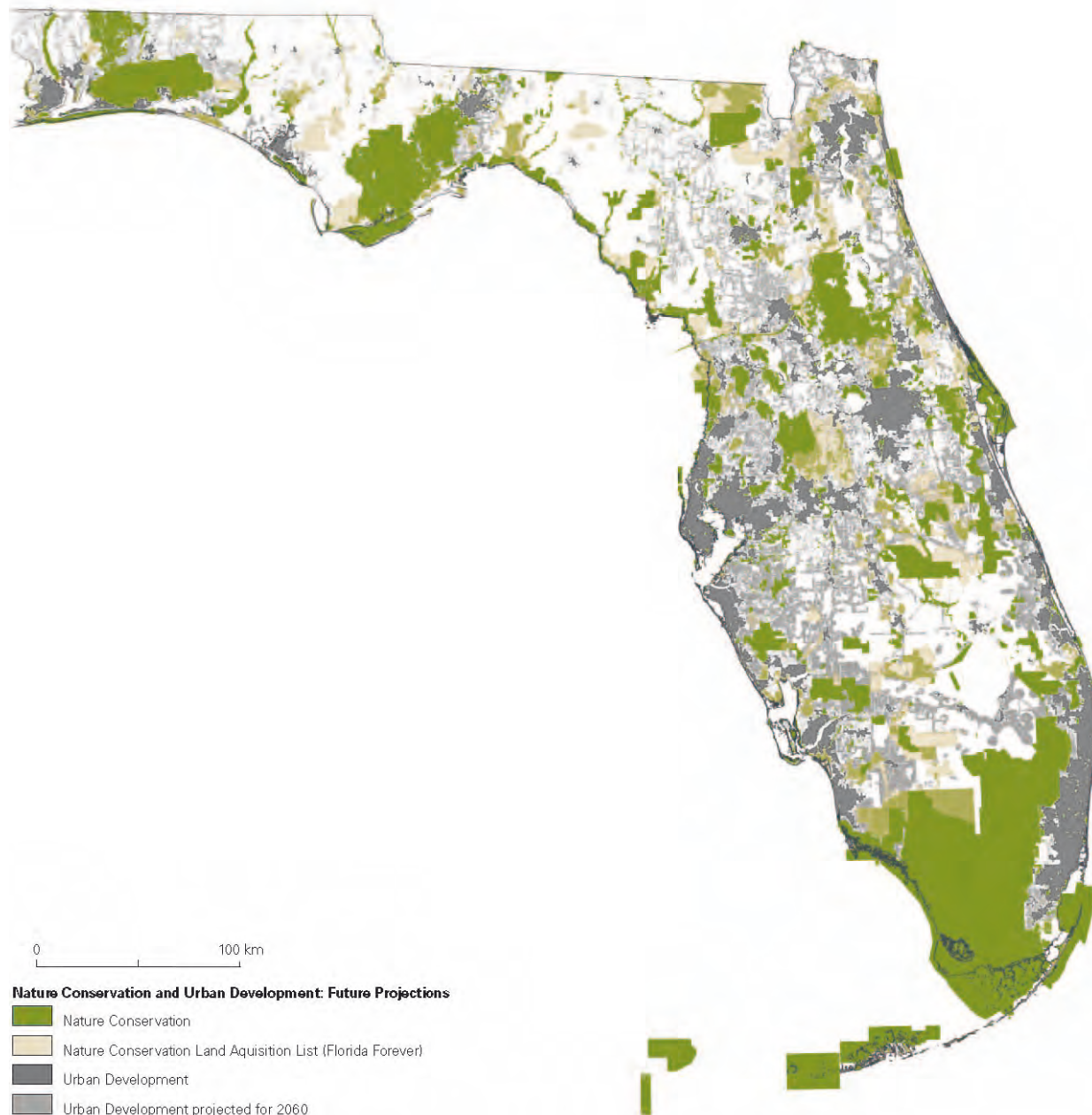
CONFLICT AND DEPENDANCY

At a first glance, urban development and nature conservation appear as conflicting aspects. Looking at the urbanization processes, both urban development and nature conservation need their own space and have their own important values. They are more than two separate units, they are highly connected systems.



DRAFT
© ETH Studio Basel

St Johns River, Fox Lake and I 95



Competing growth: Urban development and nature protection

Looking at the future of Florida's urban and nature protection development, a lot of conflict zones can be seen, especially in Central Florida. The same areas are affected by the future prognosis of urban development for 2060 and environmentally sensitive areas, which are on the nature conservation acquisition list.

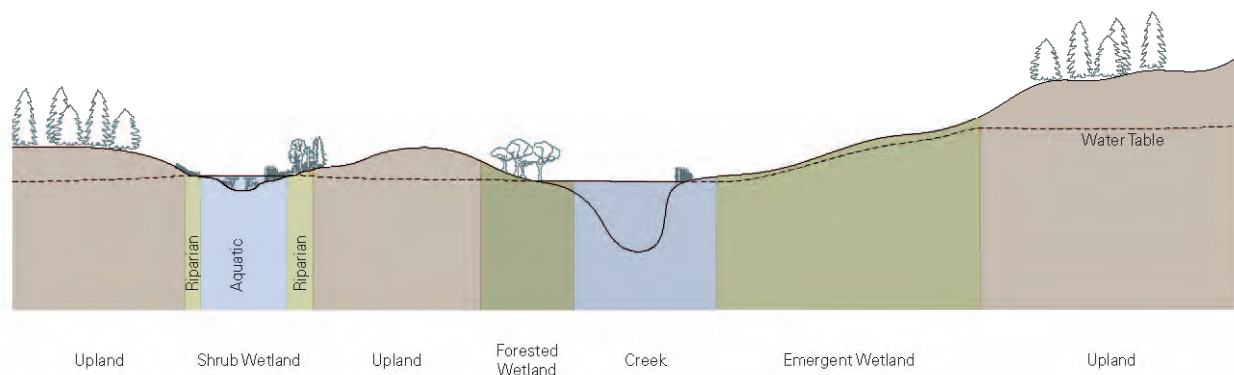


Urban development

Florida is higher developed in coastal regions, where less and smaller nature conservation areas are found. Areas which are under higher development pressure exist predominantly in the backcountry and are considered the future conflict areas.

Nature protection

Today, the American Nature Conservancy has two different levels of protection. One focuses on site protection and is supported by different conservation land acquisition programs. The second one is a task-oriented protection, which for example is concerned with endangered species and wetlands, which are not necessarily connected to a protected location.



Typical section through wetlands



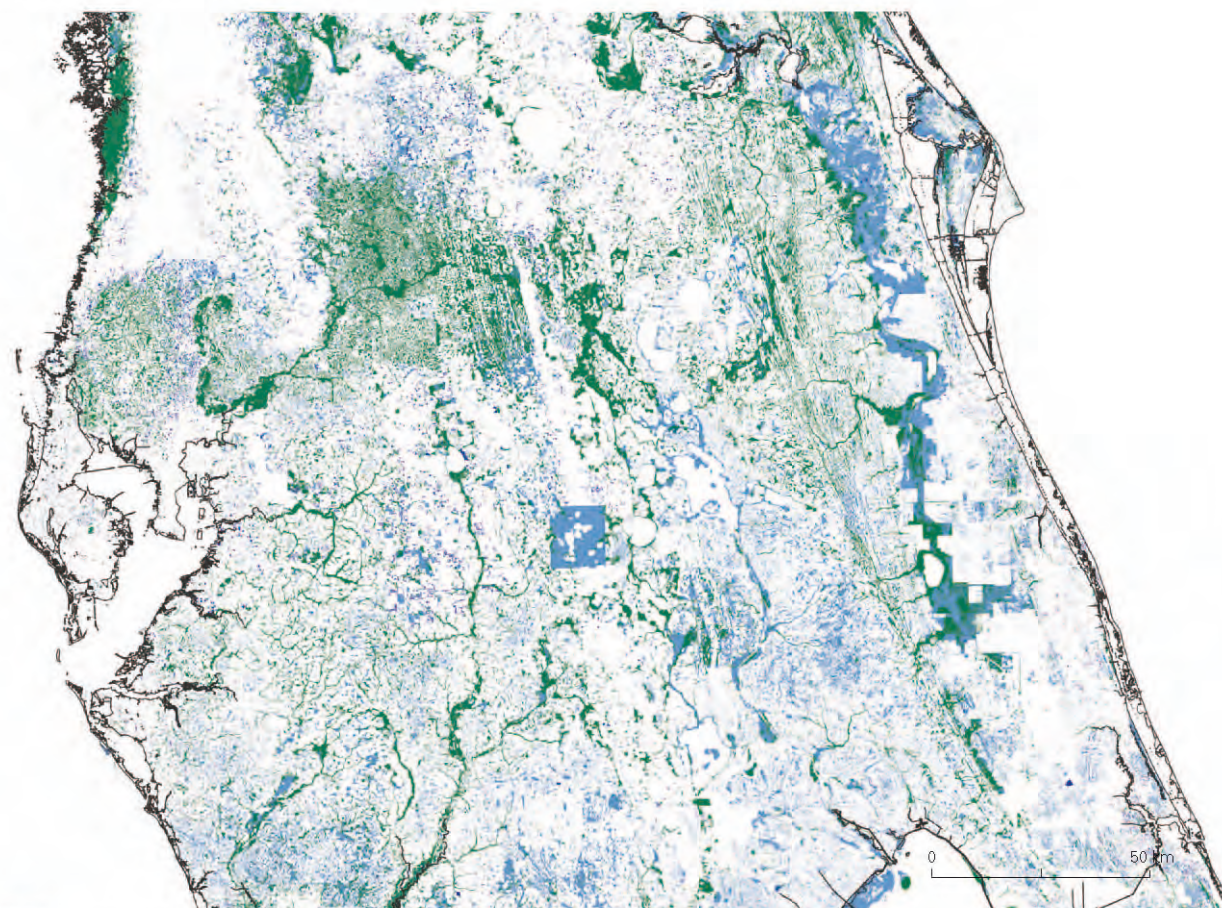
Emergent Wetland



Shrub Wetland



Forested Wetland



■ Freshwater Emergent Wetland
 ■ Freshwater Forested/Shrub Wetland
 ■ Other

Wetlands: The most important resource

The most protected resource in Florida are the wetlands. Their protection started in the 1960s, due to flood problems and bad water quality which were caused by the ongoing destruction of wetlands through the urbanization processes.

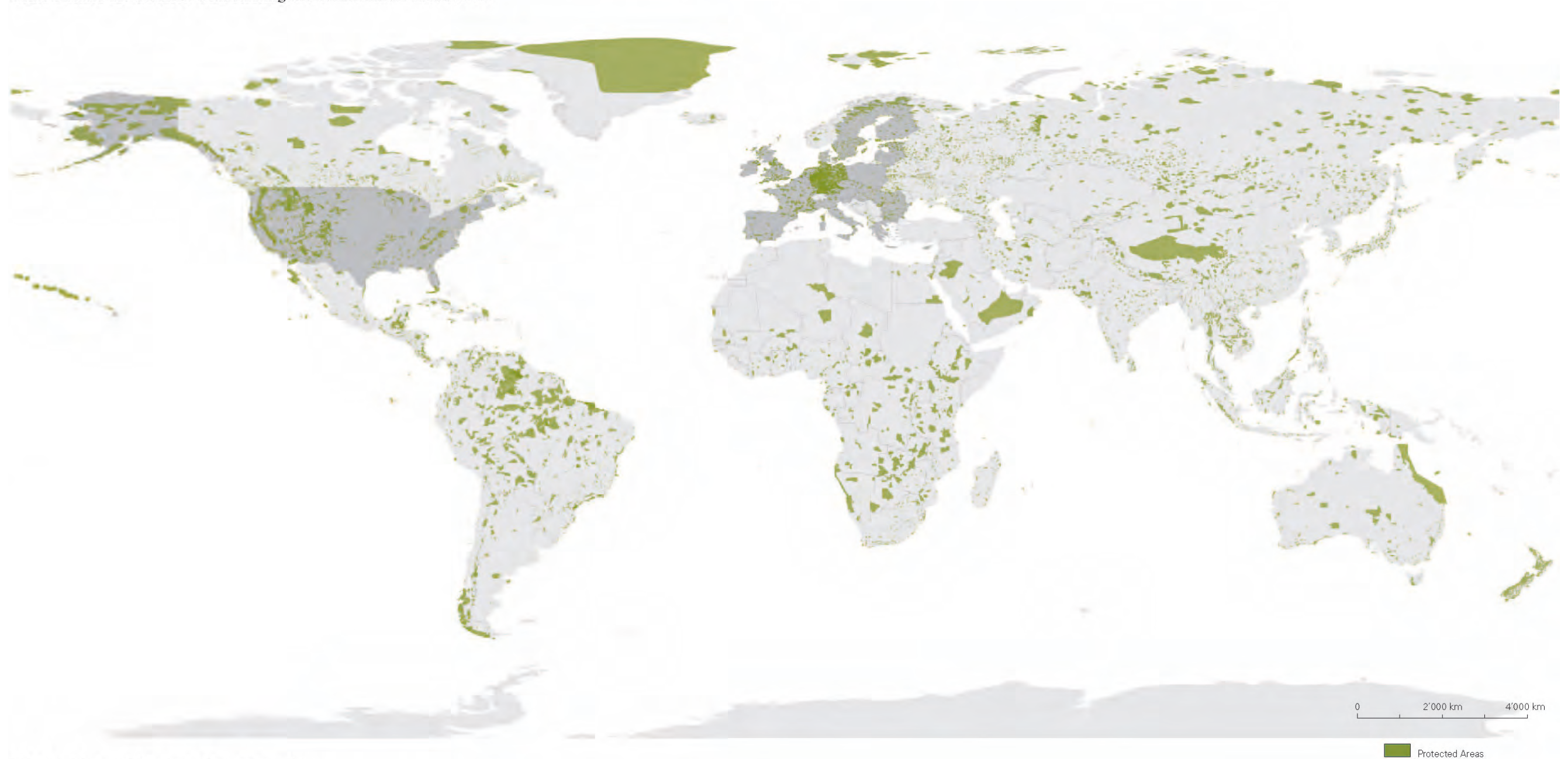
Different kinds of wetlands

Wetlands naturally hold water. But the amount of water in a wetland varies based on the amount of rainfall that occurs in an area. Water levels in wetlands typically rise during the rainy season and decline during the dry season. wetlands help purify and filter water that passes through them.

Source: South West Florida Water Management District

NATURE CONSERVATION DEVELOPMENT

The nascent conservation movement slowly developed in the 19th century, starting first in the scientific forestry methods pioneered by Prussia and France in the 17th and 18th centuries. While continental Europe created the scientific methods later used in conservationist efforts, British India and the United States are credited with starting the conservation movement.

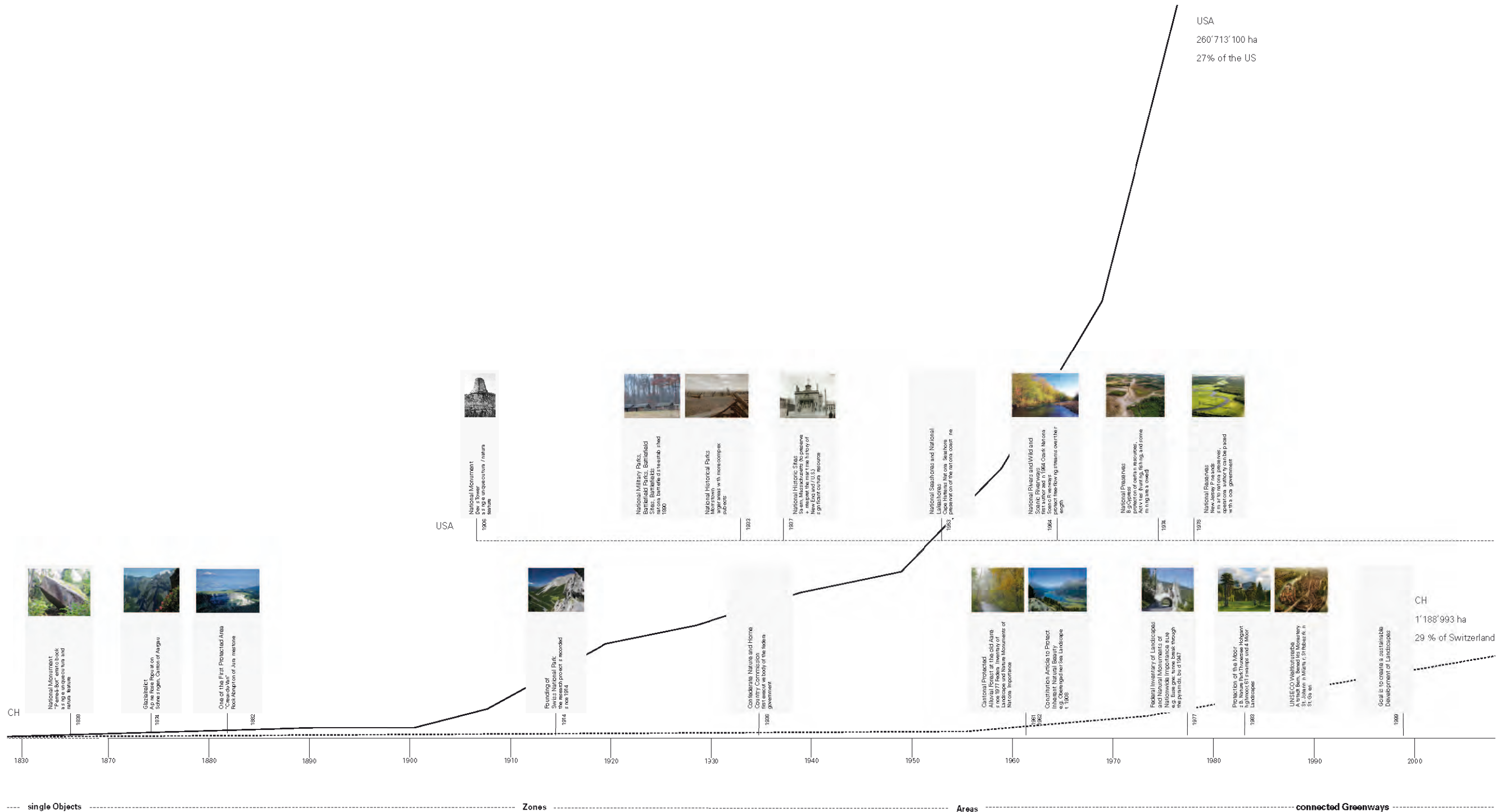


World Map of Nature Conservation

This map contains nationally designated protected areas with IUCN (International Union for Conservation of Nature)

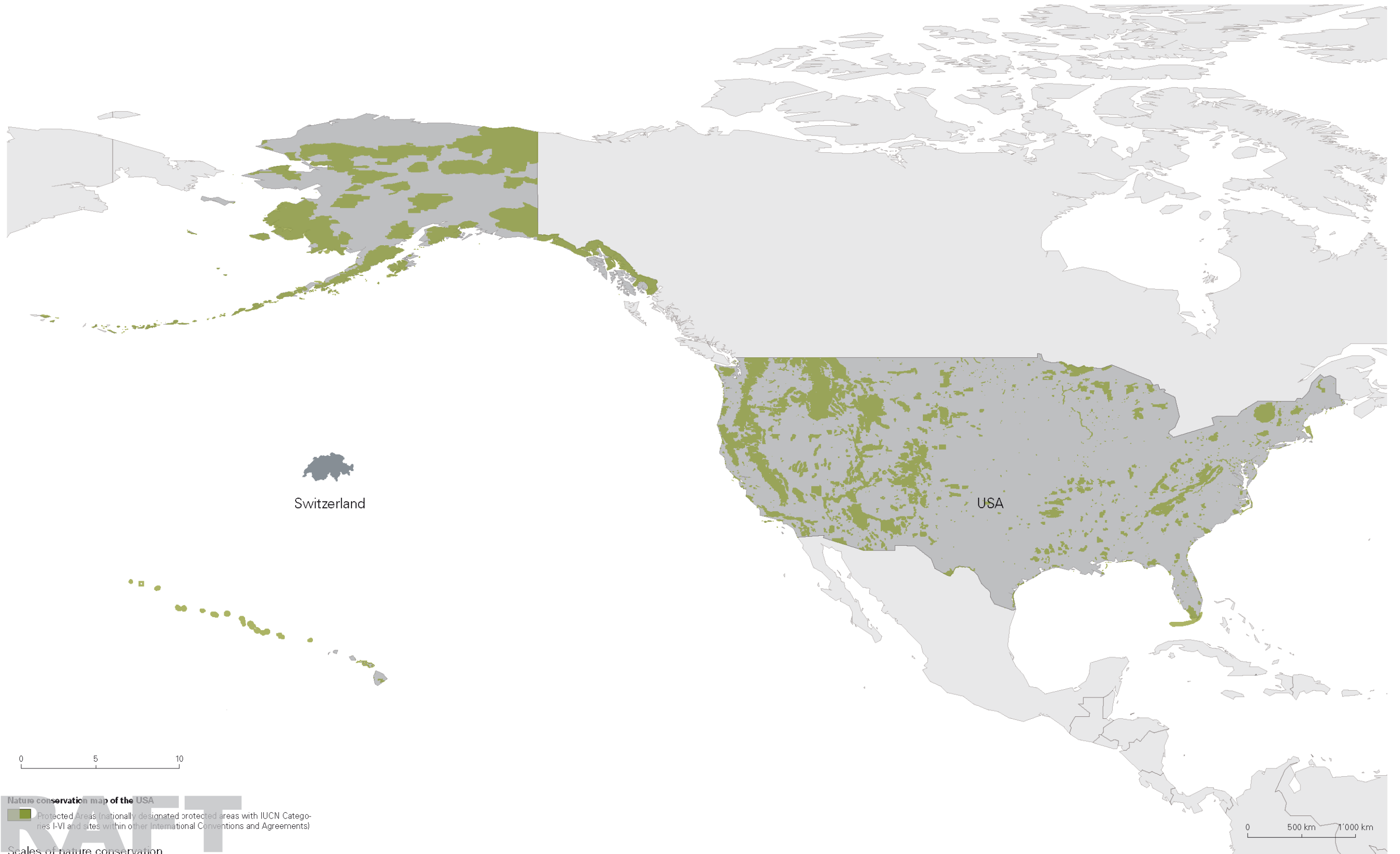
Categories I-VI and sites within other International Conventions and Agreements.

Source: World Conservation Monitoring Centre



Nature conservation development in comparison: USA and Switzerland

The history of the development of nature conservation is young. Over the time, the philosophies on what should be protected changed a lot. At first conservation movements focused on specific objects, after the focus changed to natural areas and finally the connected ecosystems gained center stage.



Nature conservation map of the USA
Protected Areas (nationally designated protected areas with IUCN Categories I-VI and sites within other International Conventions and Agreements)
Scales of nature conservation
© ETH Studio Basel

0 500 km 1'000 km



0 100 km

Swiss categories of nature protection

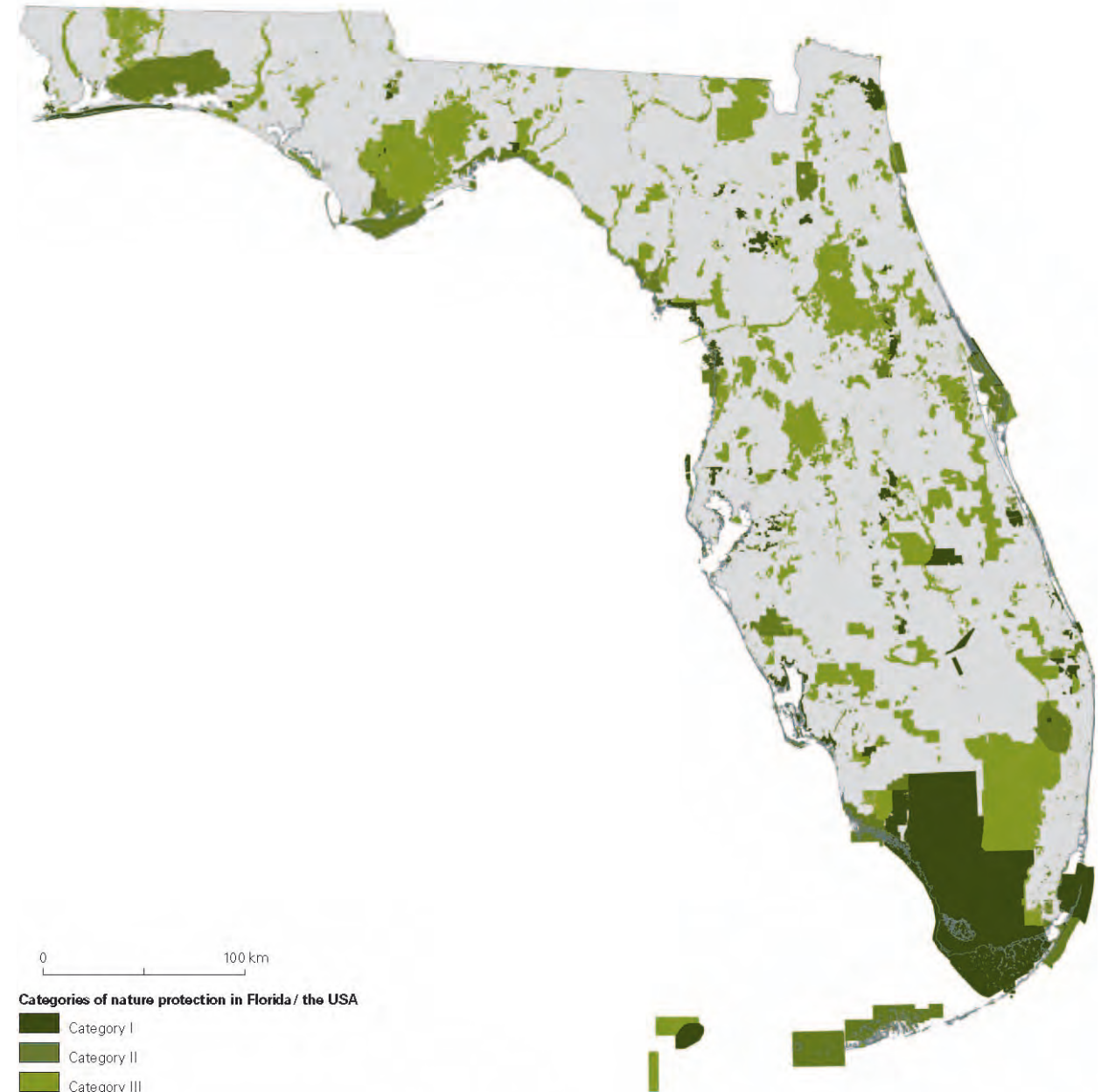
- Swiss National Parks; Category I
- Biosphere reserve; Category I
- Parks; Category II
- UNESCO World Heritage Category III
- Landscapes and Nature Monuments; Category III

Categories of nature conservation: Switzerland

Category I is the highest level of nature protection. The Swiss National Park, Alluvial Forest and Moor Landscapes are fixed in this level. The category II comprise objects like the UNESCO World Heritage and the federal controlled parks. The Communal and Cantonal Nature Parks applied to the categorie III. In this case the Canton Zürich is pictured. The biggest amount of protection areas are detemend

by categorie II. The most growing parksystem since 1992 is the categorie I. A lot of protected areas overlap. Some conservation areas are made for visitors, some are to protect the enviroment. A lot of parks located in commercial unattractiv places.

DRAFT
© ETH Studio Basel



0 100 km

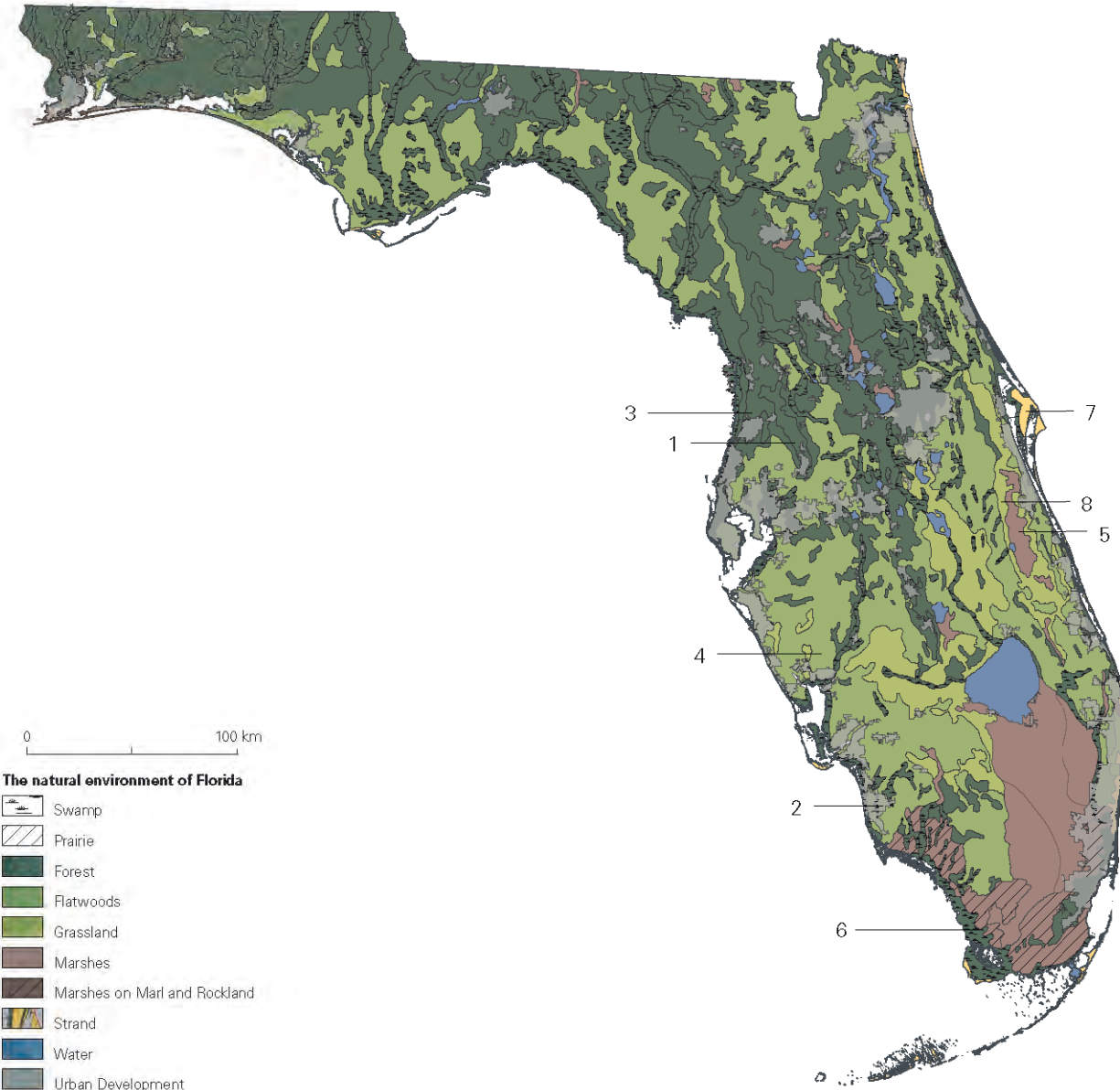
Categories of nature protection in Florida/ the USA

- Category I
- Category II
- Category III

Categories of nature conservation: Florida

The three categories show the protection status of the conservation area. Category I is the highest protection and reserved for lands that are specifically and judiciously managed for biodiversity protection. Category II applies to lands that are generally managed for their natural values but that

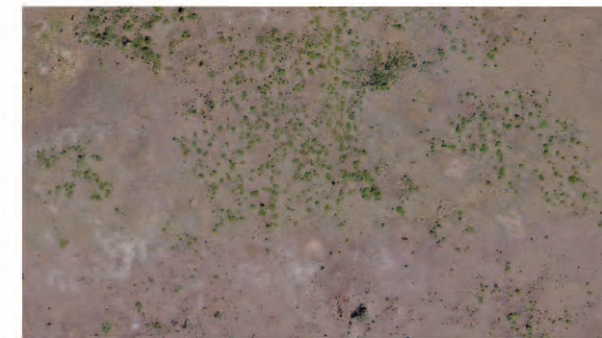
may incur additional uses such as habitat manipulation for game species and/or some recreation infrastructure. Category III correspond to lands maintained for multiple uses, including consumptive or recreational values, and not specifically or wholly dedicated to biodiversity conservation.



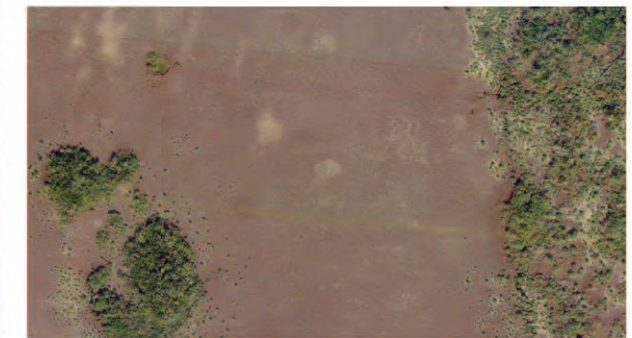
1 Swamp



5 Marshes



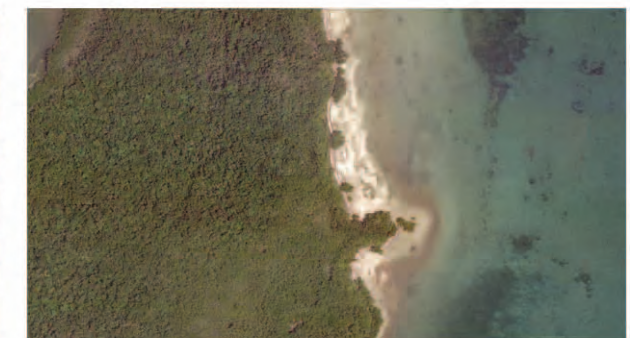
2 Prairie



6 Marshes on marl and rockland



3 Forest



7 Strand



4 Flatwoods

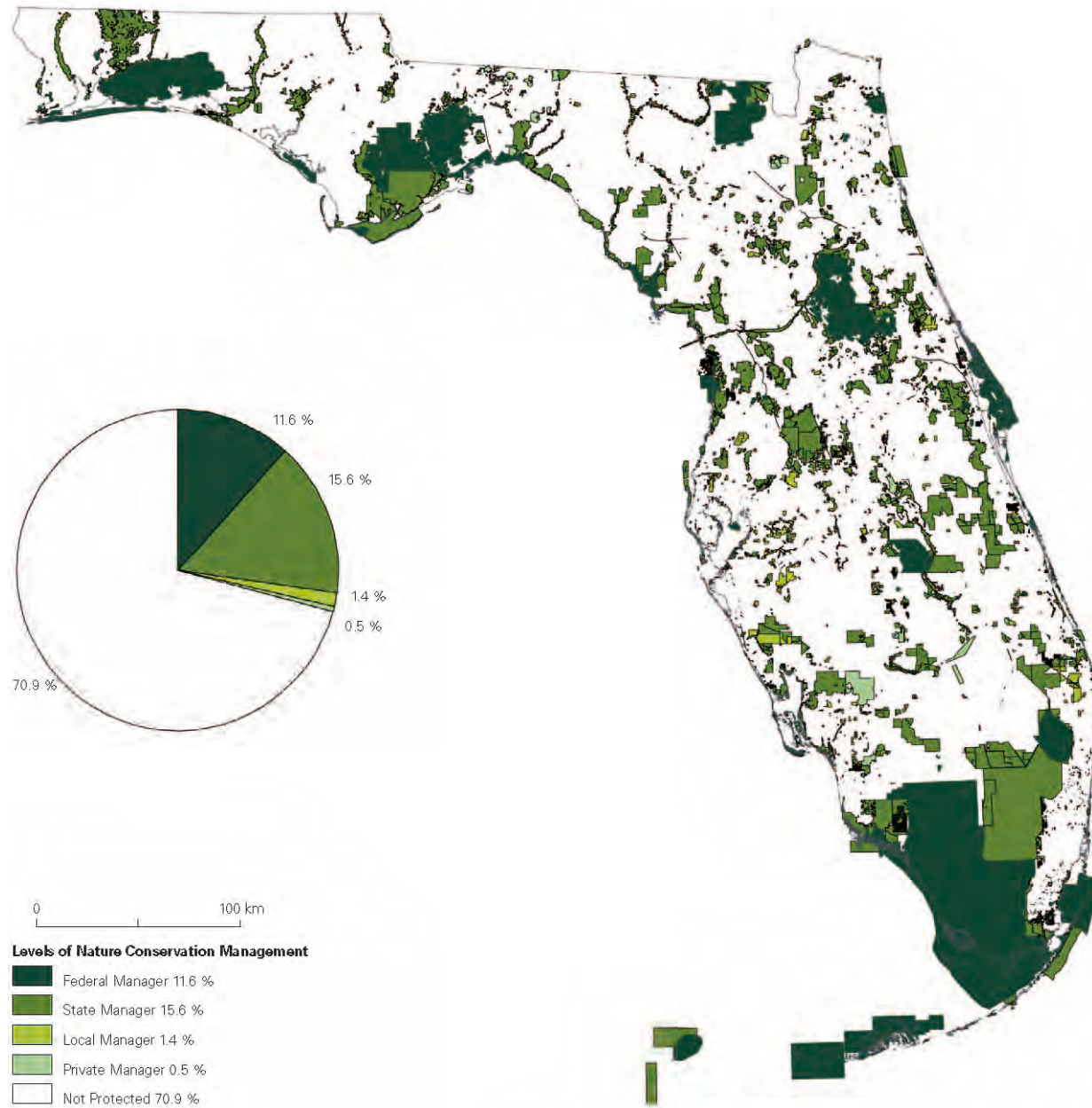


8 Grassland

Floridas natural resources

Beside resource water, connected to the wetlands, Florida has 1,800 miles of coastline, including 1,200 miles of sandy beach. It is the only state to have an extensive shallow coral reef system near its coast. Mangroves, seagrass, and salt marsh are critical to the health of estuaries. Floridas forests are vital for clean air, wildlife habitats and wood production. The state has the widest variety of trees in the continental United States, making forest preservation even more important. Trees found in Florida include the pine, maple, hickory, oak, ash, magnolia, gum, basswood and locust as well as many tropical varieties.

Source: Office of Response and Restoration



Nature managers

The nature conservation areas in Florida are managed and owned by different governmental authorities and private parties. The most powerful managers are on the federal and state level, followed by local and private managers. The organization and fragmentation of the nature conservation areas are mainly defined by the financial power of their manager, but also by the influence an area has for federal, state, local or private interests.



Federal managers

USDA Forest Service, USDI Fish and Wildlife Service, USDI National Park Service, US Department of Defense, Other Federal Managed Lands



Local manager

Areas Managed by Counties or Municipals of Florida or by different Programs on local Level



State managers

DACS Division of Forestry, DEP Division of Recreation and Parks, Fish and Wildlife Conservation Commission, Water Management Districts, Other State Managed Lands



Private manager

Florida Audubon Society Inc, Tall Timbers Research Inc, The Nature Conservancy, Other Private Organisation, Private Individuals

STATE ACTOR STRATEGY

The biggest part of nature conservatio land is owned by the state managers. These managers are the strongest actors in nature protection and thus are involved in the most important and most sensitive natural areas in Florida. The areas are divided into different State Divisions corresponding to their main focus, e. g. the Water Management District or the Division of Forestry. The divisions are highly specialized on resource management tasks and are powerful partners for local or private nature conservation land actors.



The Green Swamp, looking north on Highway 471 which divides the whole area



The Green Swamp

The 870 square miles of this unique environmental area are located in Central Florida. The Green Swamp is located in the backcountry between Tampa and Orlando and lies almost entirely within the large triangle formed by the Interstates 4 and 75, and the Florida Turnpike. The conservation area is divided into seven tracts, six of them are owned by different state agencies and one of them is privately owned.



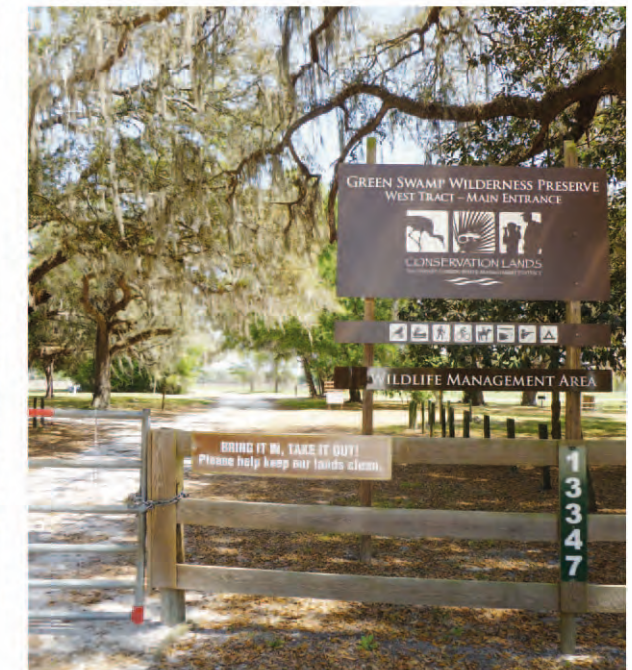
Entrance of the East Tract:
The sign-in sheets are important for the park managers to document the number of visitors.



Entrance of the Colt Creek State Park:
The State Park is the only tract with a little entrance office, a two dollar entrance fee, and a drivable limestone road open to the public. During opening hours the park manager is in the office and provides information about the park's history.

Nature conservation reception

Every entrance has wooden signs and panels with information about what you can do and what you should care about. There is also a guest list for visitors to sign in so the park managers know how frequently the areas are visited. Further, there is a map of each tract showing the trails and



Entrance the West Tract:
The panels provide information about the name of the conservation land, the manager's agency, and the various recreational activities.

facilities open to the public. Almost all the tracts have grass parking areas, wheelchair accessible restrooms, informational kiosks, picnic pavilion, and several picnic tables and grills.



Example of a camping zone which belongs to the Water Management District Tracts. It looks clean and has a lot of infrastructure to offer, such as fire places, non-water toilets, benches, and picnic shelters.

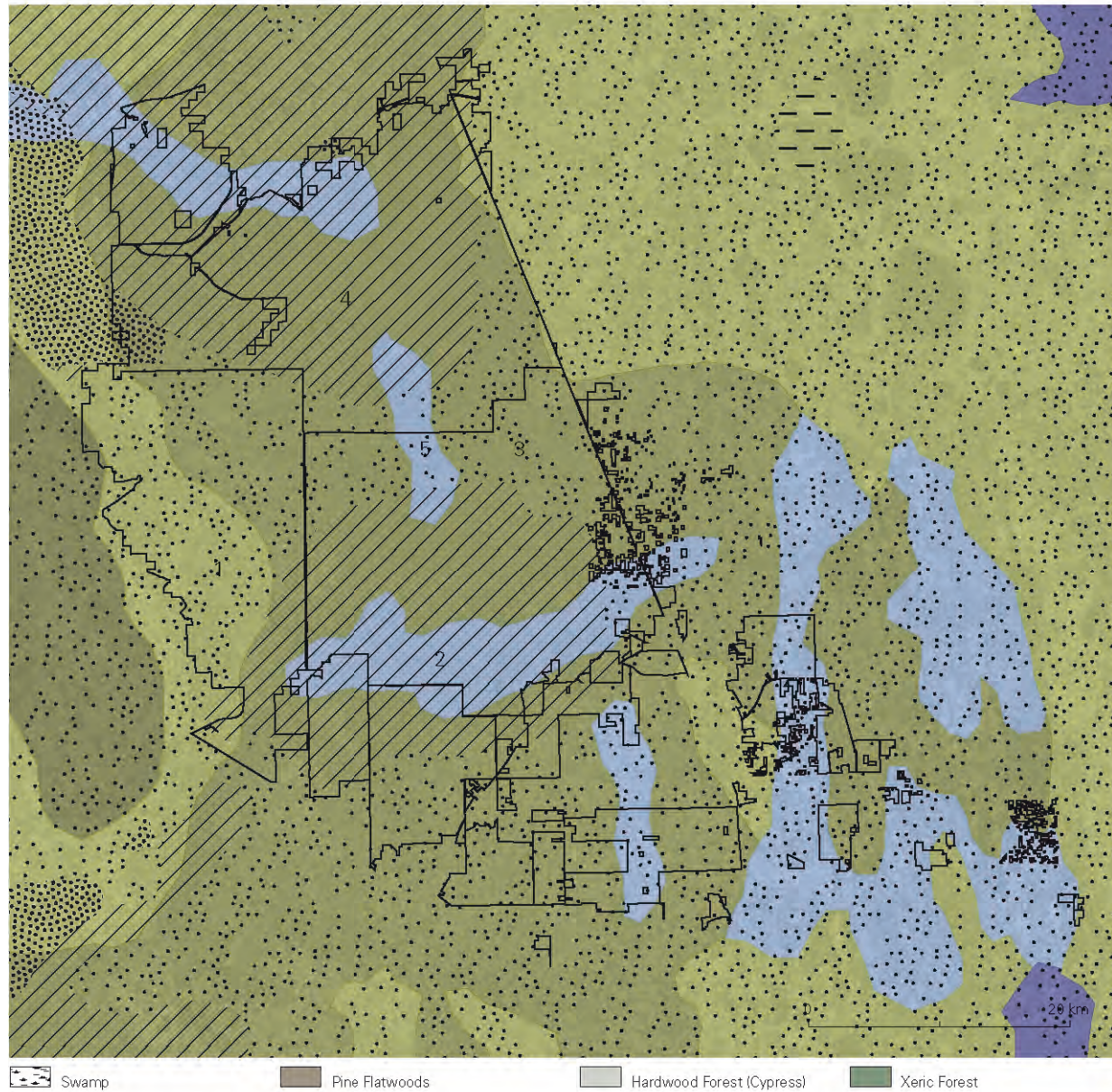


There is a forester's lodge near the entrance of the Green Swamp West Tract. Not only the roads in the conservation zone, but also the buildings were typically built before the land became protected. Today, constructions are allowed for only two reasons, either for recreational purposes or for the maintenance of the park. The law usually allows

one buildings per ten square miles (sometimes even per twenty square miles) in the conservation zone. On weekdays, people typically come to the Green Swamp in the evenings to go for a walk with their dog or to do some sports. The picnic areas and campgrounds are more frequently used on weekends.



On weekdays, people come to the Green Swamp in the evening for a walk with their dog or sports. The picnic areas and campgrounds are more frequently-used on weekends.



Green Swamp Biosphere

The uniqueness of the Green Swamp is characterized by its big size, its natural values, and its composite natural biological systems. The composition of wetlands, flatlands, and uplands creates a distinctive mosaic of natural communities. It is fragmented in 7% uplands, 35% wetlands, 3% open water and 35% disturbed lands, including agricultural

lands. The remaining area of the Green Swamp is primarily made up of natural plant communities and habitats. Thanks to the vegetative variety an estimated 335 species of wildlife reside in the preserve, of which about 30 are threatened or endangered (e.g. black bears).



1 Xeric hardwoods; hammock, sandhills and oak scrub: These forests occur on nutrient-poor, well-drained sandy soils on outwash plains, rivers, terraces and beach ridges.



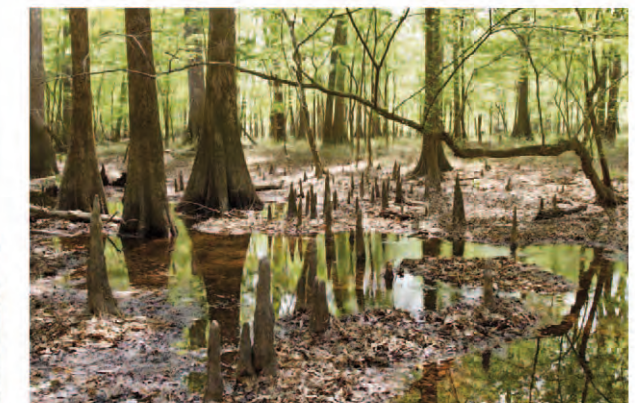
2 Herbaceous wetlands; Wet prairies and marshes: Permanently flooded sites that are usually associated with oxbow lakes, dune lakes, or potholes.



3 Pine Flatwoods; Mesic and xeric: Pinelands grow where the elevation is higher than surrounding land and is characterized by outcroppings of rough limestone and thin soil.



4 Cypress Swamps; Domes and strands: The dominating plants are bald cypress and/or pond cypress trees. The cypress dome refers to the phenomenon that the larger cypress grow in the middle of the dome, and then get progressively smaller as one goes out from the center.



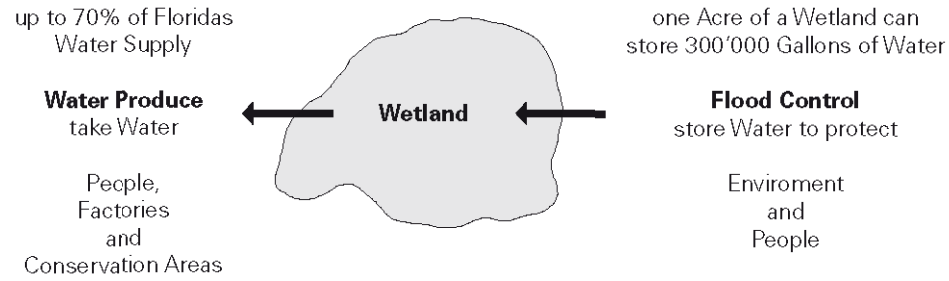
5 Floodplain swamps; Bottomland forest, hydric hammock, bayhead, riverine: Floodplains are associated with rivers and streams. While flood events they are frequently or permanently flooded hydric soils adjacent to stream and river channels and in depressions and oxbows within floodplains



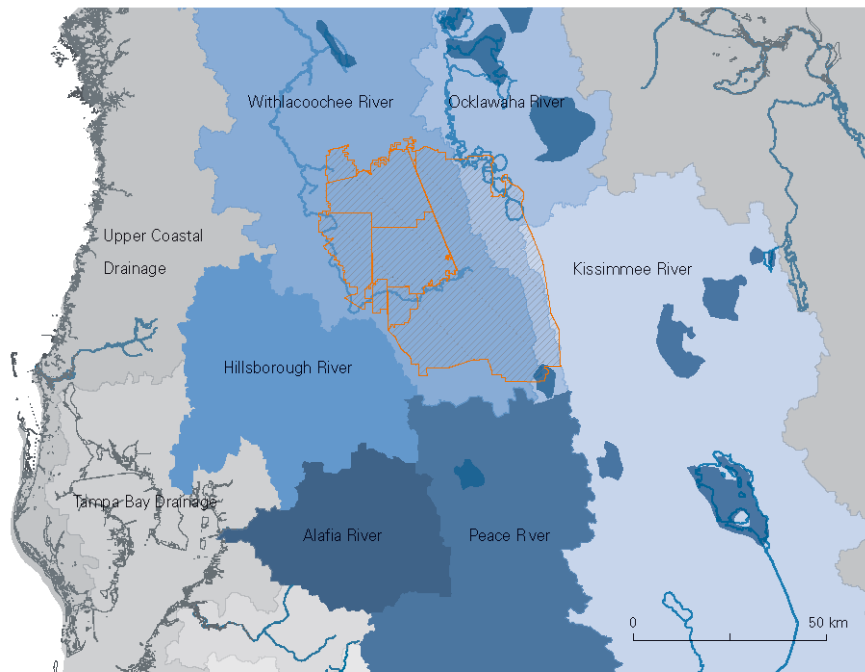
1928 the Cummer Sons Cypress Company began timbering

Area of Critical State Concern

In Chapter 380 of the Florida Statutes “The Area of Critical State Concern” is described as following: areas that contain natural resources of regional or statewide importance, areas that are, or will be, significantly affected by major public facilities, or areas of major development potential. Defined as an Area of Critical State Concern by the State of Florida, the Green Swamp is both an administrative unit and an ecological reality. The interior swamps and marshes contrast sharply with the higher, better drained lands found on the boundary of the nature conservation area. The Green Swamp suffered a loss of sites in the twentieth century due to different developments including drainage, logging, reformation into pasture, pine plantations or citrus groves, and restructuring for mining for sand and peat or for other agricultural activities.



The connection between water production, wetlands and flood control

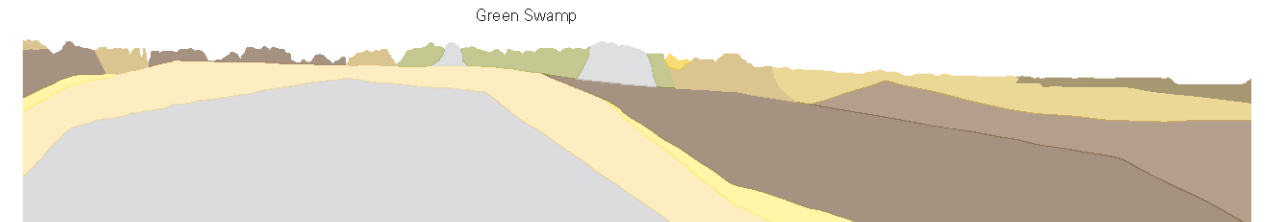


Watersheds of the Green Swamp with marked Area of Critical State Concern

The hydrologic heart of Central Florida

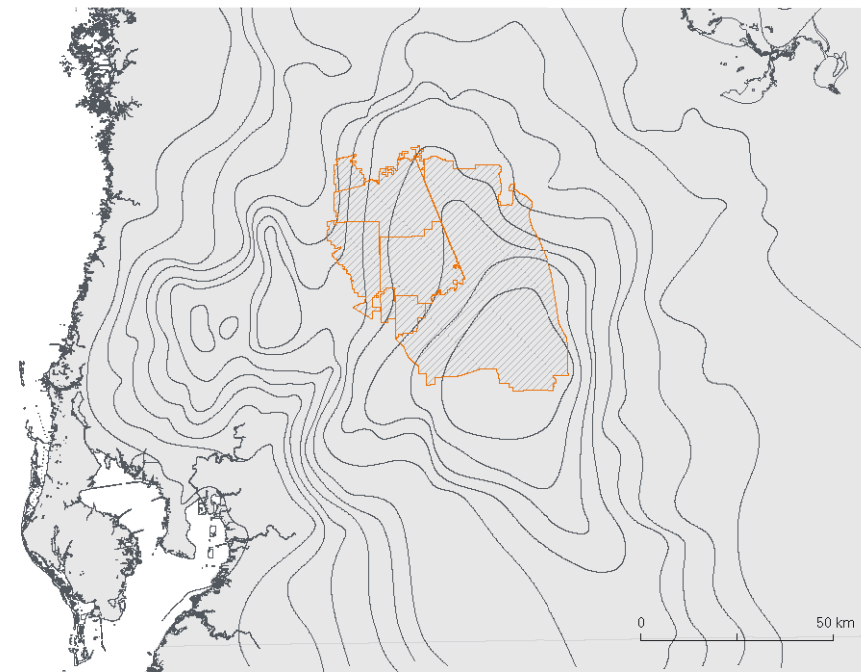
Behind the Everglades, the Green Swamp is Florida's second-largest wetlands system. It covers portions of Polk, Lake, Sumter, Pasco, and Hernando counties. The area is home to the headwaters of four major rivers. Flatter than a pool table, the incredibly gradual slope of its plateau retains annual rains, reduces the flood peaks in rivers,

and allows underlying aquifer layers to recharge over an extended period of time. Due to the long time the swamp's water spends on the surface in the sparsely populated rural center of Florida, it is generally of higher quality than other watersheds.



Geological Section trough the Green Swamp

- | | | | |
|-----------------------|----------------------------|--|--------------------------------|
| Beach Ridge and Dune | undifferentiated Sediments | Miami Limestone | reworked Cypresshead Sediments |
| Cypresshead Formation | Tamiami Formation | Harwthorn Group | Suwannee Limestone |
| Ocala Limestone | Avon Park Formation | Shelly Sediments of Plio-Pleistocene Age | |

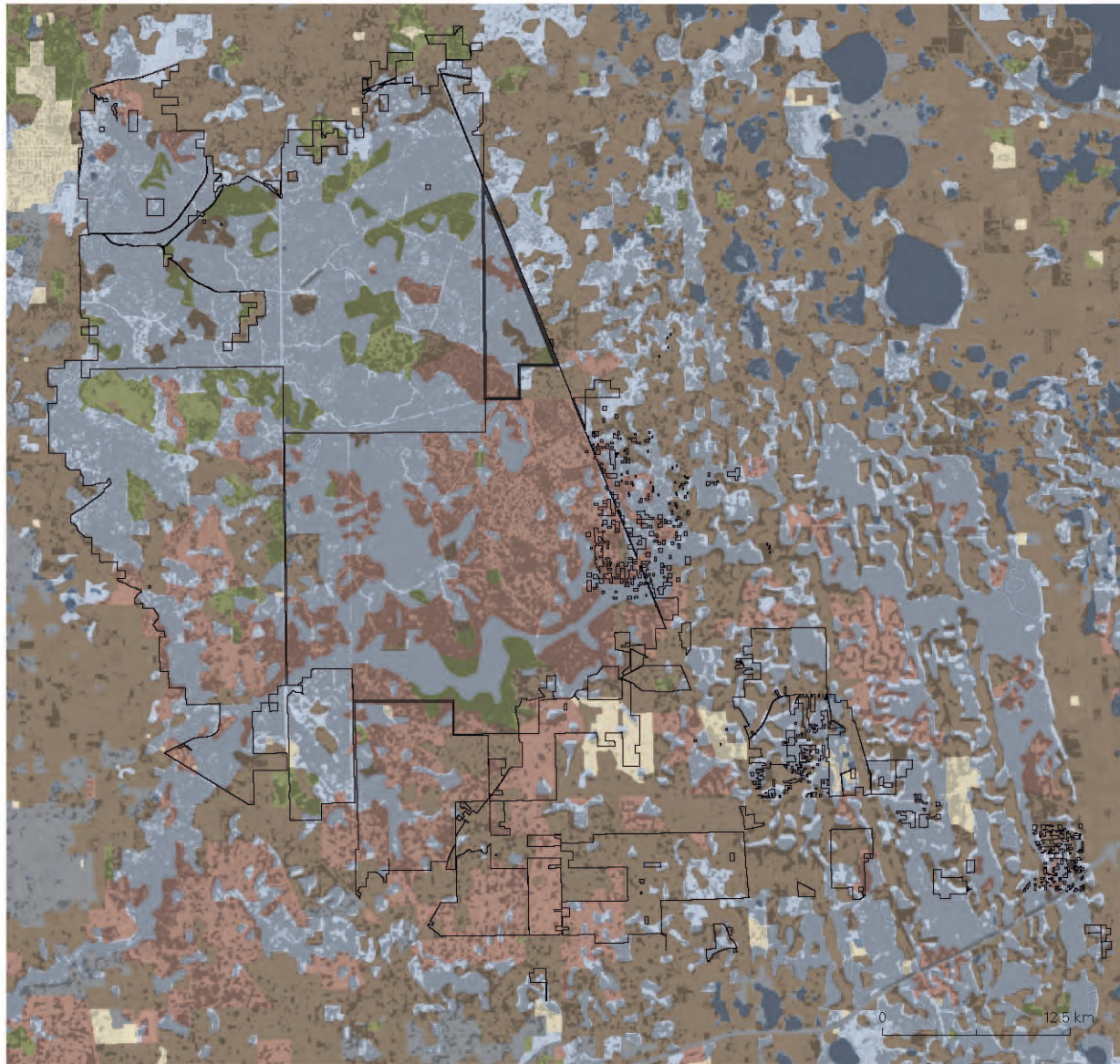


The Green Swamp as natural water tower, map with contour lines and marked Area of Critical State Concern

Central Florida High

The Green Swamp rises up to 132 feet above mean sea level and builds up pressure for a multitude of springs similar to an underground water tower. The functionality as a natural water tower is primarily due to the underlying geology. The pressure of the Green Swamp High and the Floridian aquifer supply fresh water to the majority of

Florida's population. In addition, salt water that intrudes into the aquifer is curbed and fresh water is made accessible for households along the heavily populated coastline.

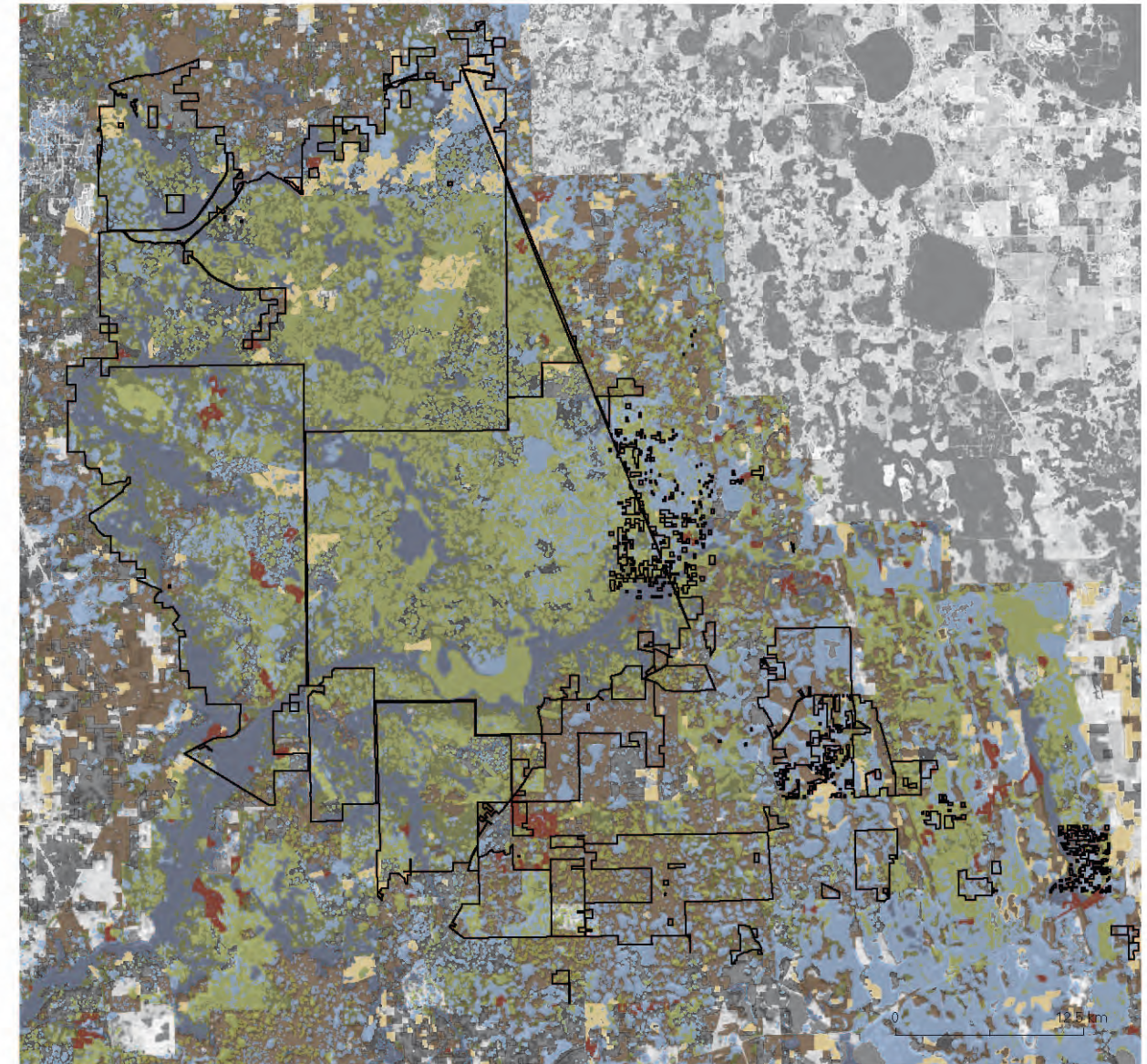


Urbanization
 Agriculture
 Rangeland
 Open Land
 Forest
 Tree Plantations
 Cypress Swamp
 Wetland
 1974

Historic land usage

Decades ago, when the Green Swamp was first settled, much of its original cypress and pine forests were clear-cut. Eventually trees began to reestablish themselves and other agricultural crops, cattle ranching, and small scale sand, peat and limerock mining joined the logging industry as the basis of local economies. Since much of the swamp was saturated with water, ditches were dug to drain wetlands.

All together, land clearing, and alterations for pasture, citrus groves, and development have impacted at least 41 percent of the non-wetland area of the Swamp.

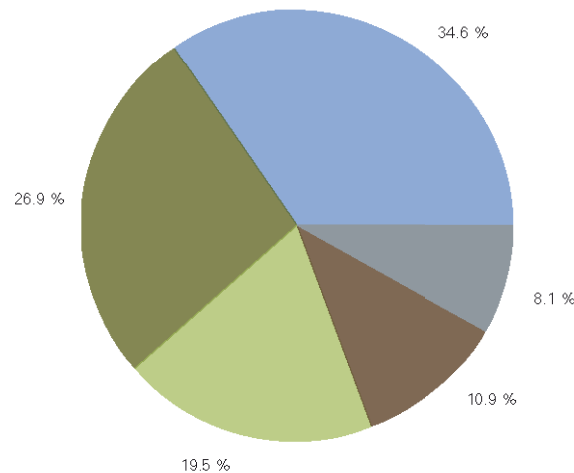


2010

Land usage today

After the big flood in 1960, the U.S. Army Corps of Engineers developed a plan to reduce flooding in the Tampa Bay region by purchasing a big piece of land within the Green Swamp and constructing a series of dams and retention areas. But controversies regarding the disruption of natural systems convinced the District to take a non-structural approach to flood control. The pattern of north-south remaining dunes and swales which were dominated by cypress did not represent a banded arrangement of uplands and

wetlands. Most of this land is now in public ownership. The disturbed lands are mostly privately - owned and have been converted to agricultural or low-density residential areas. Today, the land use is predominantly managed by the Water Management District, their sub managers, and contractors.



State managed nature conservation lands, percentage of owned conservation lands

- Water Management Districts 34.6 %
- Fish and Wildlife Conservation Commission 26.9 %
- DACS Division of Forestry 19.5 %
- DEP Division of Recreation and Parks 10.9 %
- Other State Managed Lands 8.1 %

Lead Agency: Water Managent District

Task:
Regulating, protecting, preserving, restoring, use water resources and land resources, water storage during hurricanes and storm events, land maintenance, use of natural trails, provide public infrastructure and accessibility

Finances:
Basically founded through taxes, secondary income from Water Permits: Enviromental Resource Permit (ERP), Water use Permit (WUP), Well construction Permit

DEP Division of Recreation and Parks

Tasks:
Maintains inventories that provide details regarding the existing parks, recreation areas, open spaces and other outdoor recreation sites, outdoor recreation, environmental education of the people, preserve historical sites

Finances:
Basically founded through taxes, secondary income from entrance fees

State agencies as managers of the ecosystem

The four biggest nature conservation state managers are involved in managing the Green Swamp. They are all managers of important natural resources: Water, timber, animals, plants, and recreation. By putting the important resource land into governmental control, the state managers effectively protect these resources from the free market system.

DACS Division of Forestry

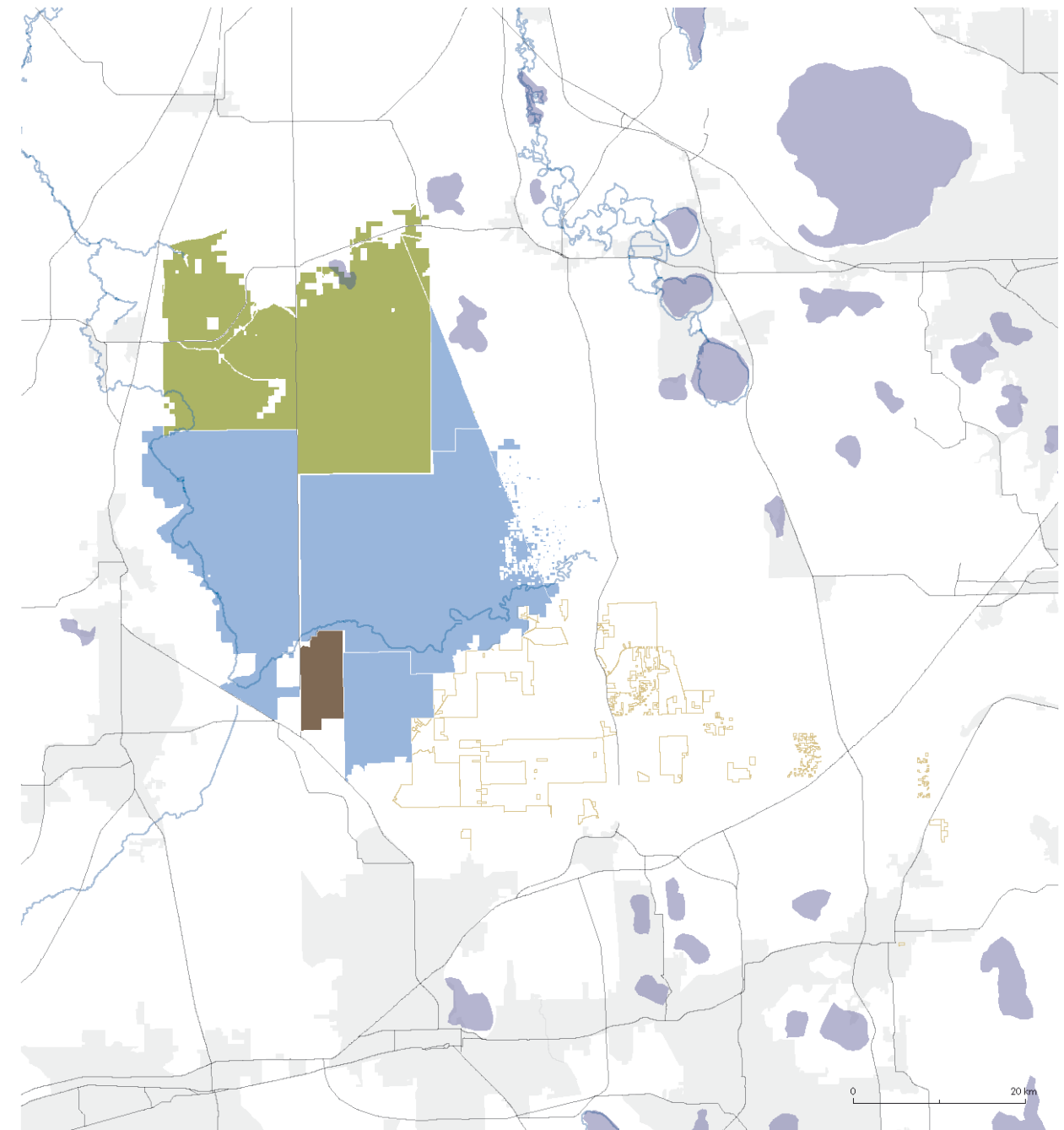
Task:
Oversees the forested lands, wildlife emergency plans, prescribed burns, keep waterways safe, and cooperate with other law enforcement agencies providing homeland security, help when natural disasters occur, birding classes and outdoor recreation classes

Finances:
Basically founded through taxes, secondary income from sales of ressources like timber and seedlings

Fish and Wildlife Conservation Commission

Tasks:
Enforcement of state laws pertaining to wildlife, concerned health and natural balance, public hunt, monitoring of wildlife and the control of exotic species, forestry assistance for landowners, timber management, ecological restoration and outdoor recreation

Finances:
Basically founded through taxes, secondary incomes from licenses, permits for hunting and fishing, boating and waterways

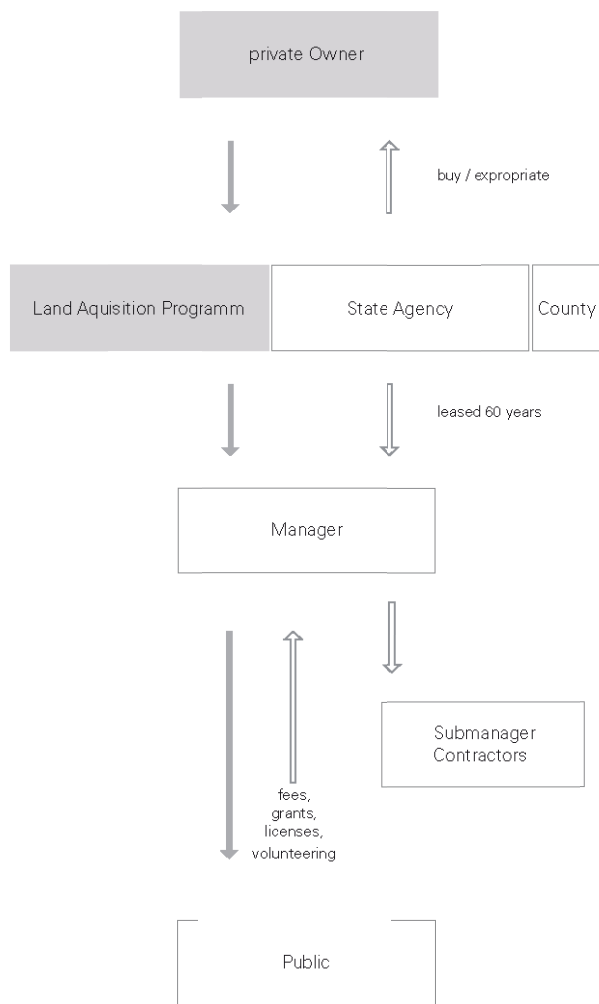


- Green Swamp; Wilderness Preserve (Water Management District)
- Green Swamp; Withlacoochee State Forest (Division of Forestry)
- Green Swamp; Colt Creek State Park (Division of Recreation and Parks)
- Green Swamp; Conservation Easements (Private Owners)

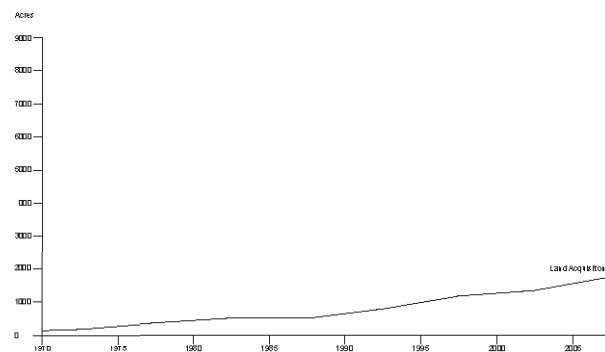
Green Swamp Managers

The coordination of the Green Swamp requires many different agencies and organizations. Land management activities in the preserve include prescribed burning, resource monitoring, natural systems restoration, mowing, exotic species control, security patrol, public use, recreational development and, maintenance.

The Water Management District owns the biggest part of the Green Swamp, the Division of Forestry and the Division of Recreation and Parks both have their own areas. The Fish and Wildlife Conservation Commission is just involved as co-manager.



Organigramm of the acquisition process



Nature conservation land acquisition trend

Nature conservation acquisition: The past strategy?

Florida has a long history of purchasing land to conserve its natural and cultural resources. The first established conservation land acquisition program was founded in 1963. Until today, several programs with different philosophies followed, like the Conservation and Recreation Lands Program (CARL), Save our Rivers (SOR), Preservation 2000, Florida Communities Trust, and the Florida Forever Program. The funding of the latest programs is directly linked to the real estate market and thus to taxes on real estate stamps. Florida has one of the most aggressive US land acquisition programs and is often criticized to buy more land than it can manage. Today, the Florida Forever Program is totally frozen. It lost its funding when the housing market crashed.



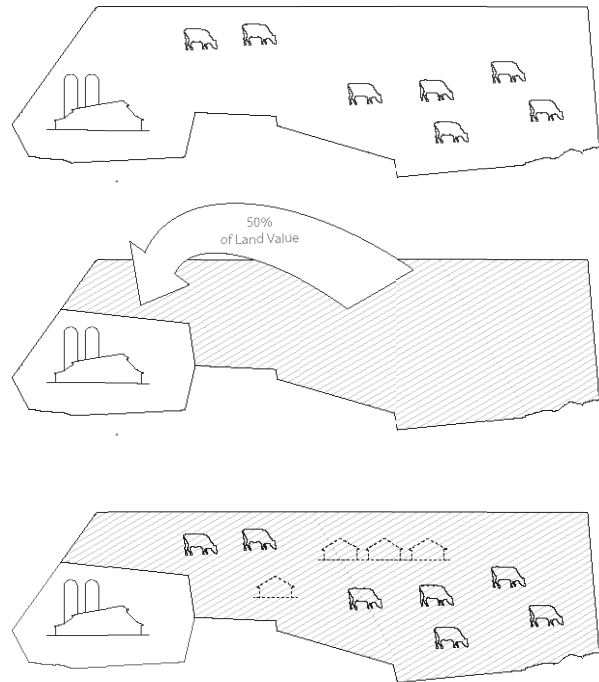
One of the managing activities: The control of invasive species and exotics, like "Old World Climbing Fern".



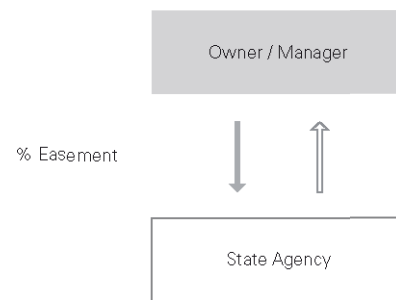
One of the managing activities: Prescribed burnings, to ensure the security of the cities, biodiversity and soil quality



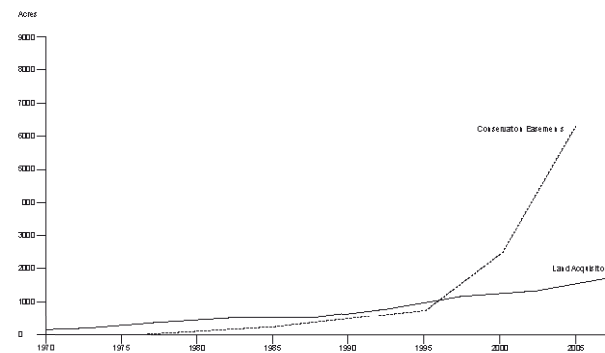
One of the managing activities: Construction and planting of a wetland to restore the lost wetland amount



The conservation easement process, sale of the development rights



Organigramm of the conservation easement process, focused on land and money

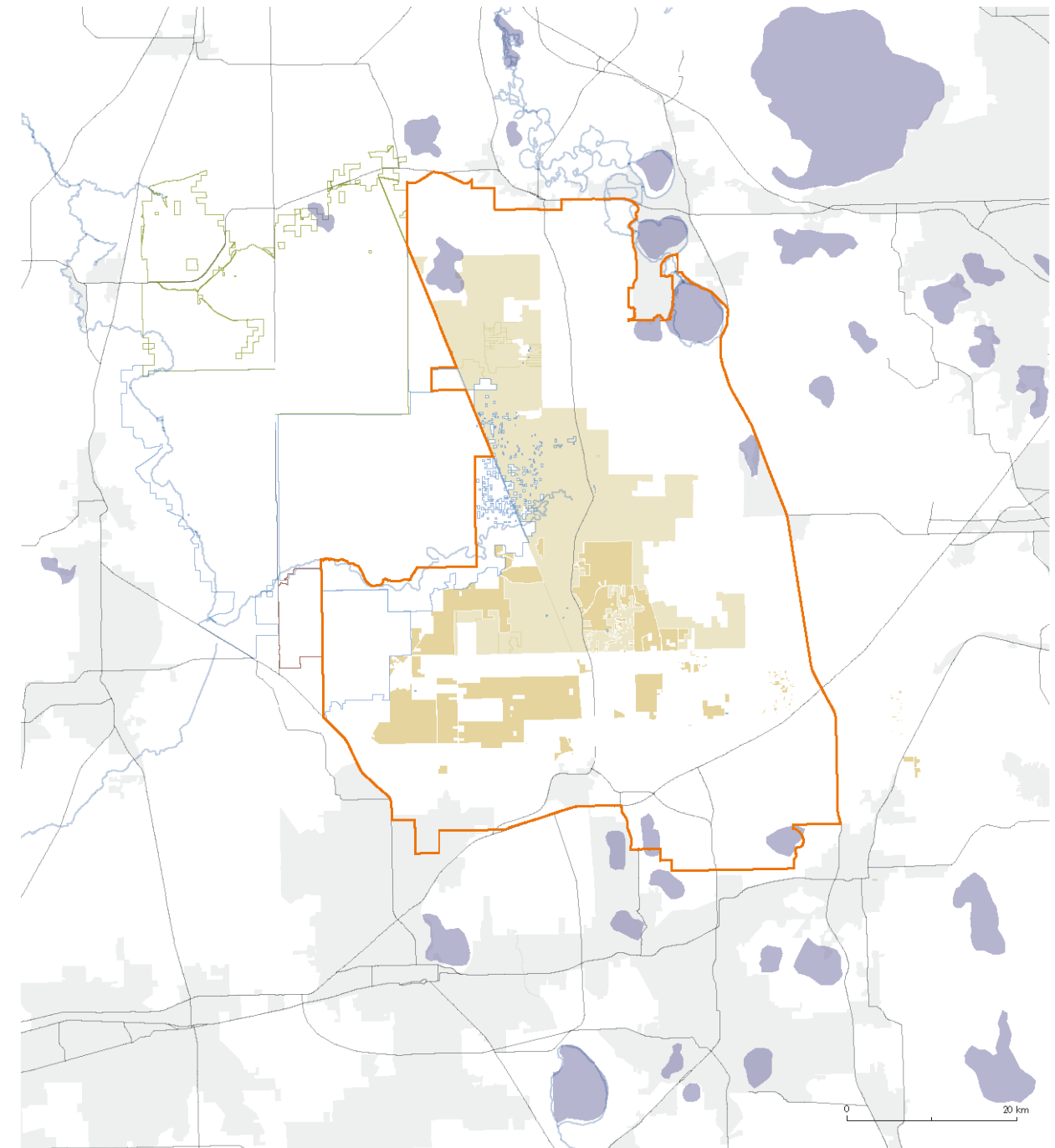


Nature conservation land acquisition and conservation easement trend

Conservation easements : The future strategy?

Conservation easement, a new strategy for purchasing land was developed after the conservation acquisition program was struggling. The problems of the program started when it was not possible to manage all the acquired land. Later the program suffered from financial losses due to the financial crisis. These problems lead to the creation of conservation easement.

A conservation easement is a voluntary, legally binding agreement between a landowner and a governmental or non-governmental conservation organization that keeps land in agricultural and/or open space uses. The agreement is customized to meet the landowner's objectives and, in most cases, is perpetual. It is obvious, that there are more private landowners who are willing to put a conservation easement on their property than ones who sell their property completely to land conservation.



Green Swamp; Conservation Easements (Private Owners)
 Florida Forever Conservation Land Acquisition List
 Area of Critical State Concern
 Green Swamp; State Managers

Green Swamp Easements

The most recent extensions for the protection of the Green Swamp were achieved with two individual conservation easements for over 1.2 million dollars. The Green Swamp Land Authority (1995-1999) and the Florida Department of

Environmental Protection secured land protection agreements or conservation easements on 40,000 acres of privately owned lands.

LOCAL ACTOR STRATEGY

Just about 5 % of the whole nature conservation land of Florida is owned by local managers. They are in charge of the counties, municipals and different conservation land acquisition programs on a local level and care about sensitive natural regions from a more local point of view. Wetlands and waterways are still very important, but the local managers focus on providing natural places for the public. In order to do so they need the support of the local people since the funding of the nature conservation programs comes from taxes.



DRAFT
Cypress Creek Preserve, West Entrance
© ETH Studio Basel



Cypress Creek Preserve

This nature protection site is located north of Tampa in Hillsborough county. The area is enclosed by housing development used for residential, agricultural, and institutional purposes. The Cypress Creek river, which crosses the Preserve, is a state designated Outstanding Florida Water. It is a major tributary of the Hillsborough River, which is the primary source of drinking water for the City of Tampa.



Visitor information sheet at the main entrance; It seems like there is not a lot of control over the activities taken place in the preserve.

A hidden Park

The Cypress Creek preserve is hard to find. There are no road signs which lead possible visitors and local people don't know a lot about the preserve. The entrances are just marked with small paper sheets or plates. This is not a gewollter fact, but rather the ausdruck of the local managers small budget.



The preserves opening hours schedule near a secondary walk-thru entrance.



A sign showing the park rules and the managers contact information.



Residential building right beside the preserves boundary

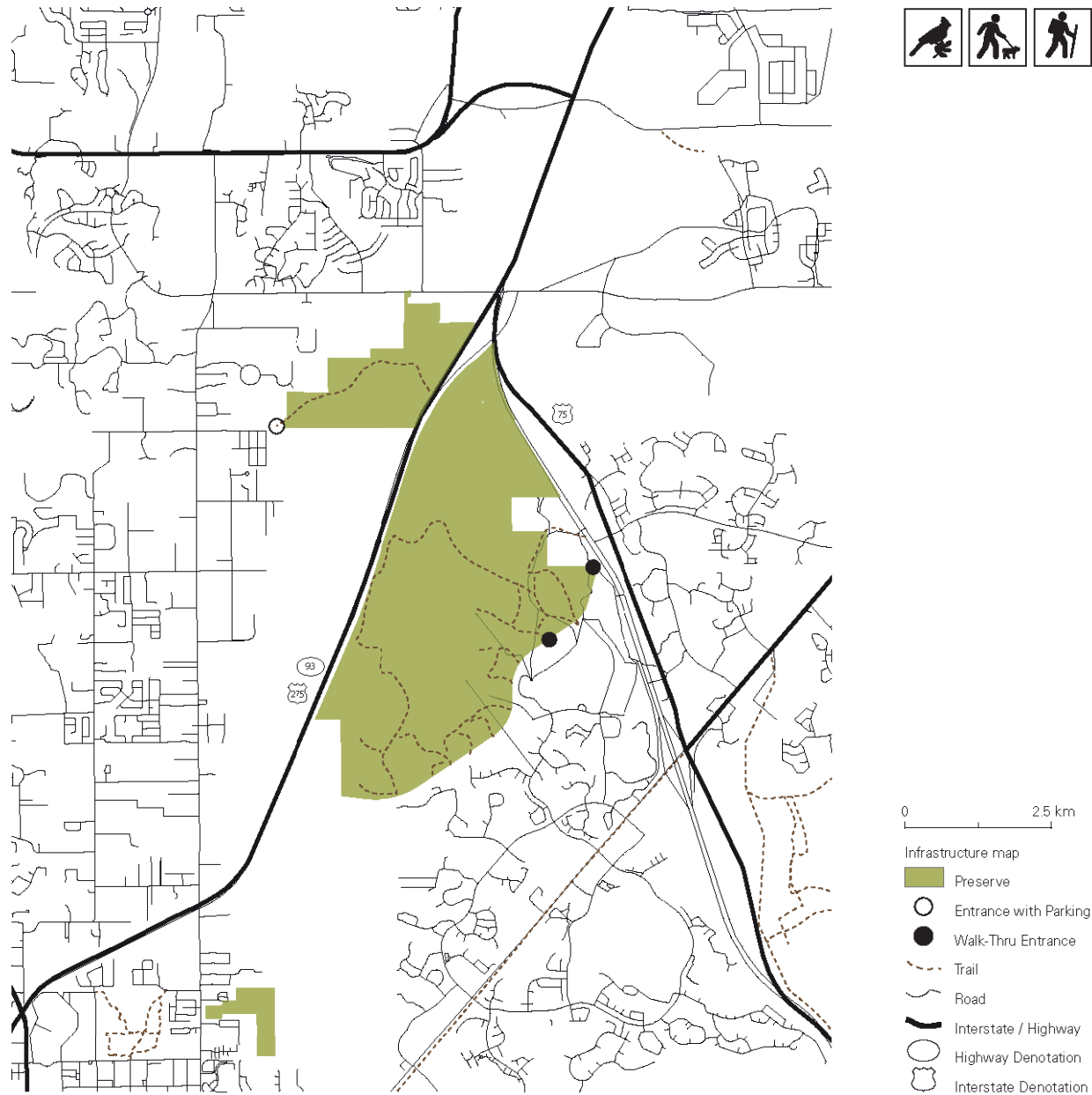


A fence marking the Cypress Creek Preserve boundary

Behind the Fence

The whole Cypress Creek Preserve is fenced in order to protect the area and secure it from violators. The residential area around the Preserve has low to medium density with some backyards facing the Cypress Creek Preserves

boundary. Near the main entrance there are some restoration sites, which look well-kept compared to the private lands behind the fence.



Public infrastructure

Compared with the state managed conservation lands, the Cypress Creek Preserve has not a lot of infrastructure and is not in very good condition. There are some trails for hiking and a total of three entrances, of which just one has good accessibility and a small parking area for about two cars. For the future, the creation of some more trails, parking lots and picnic areas are planned at the southern part of

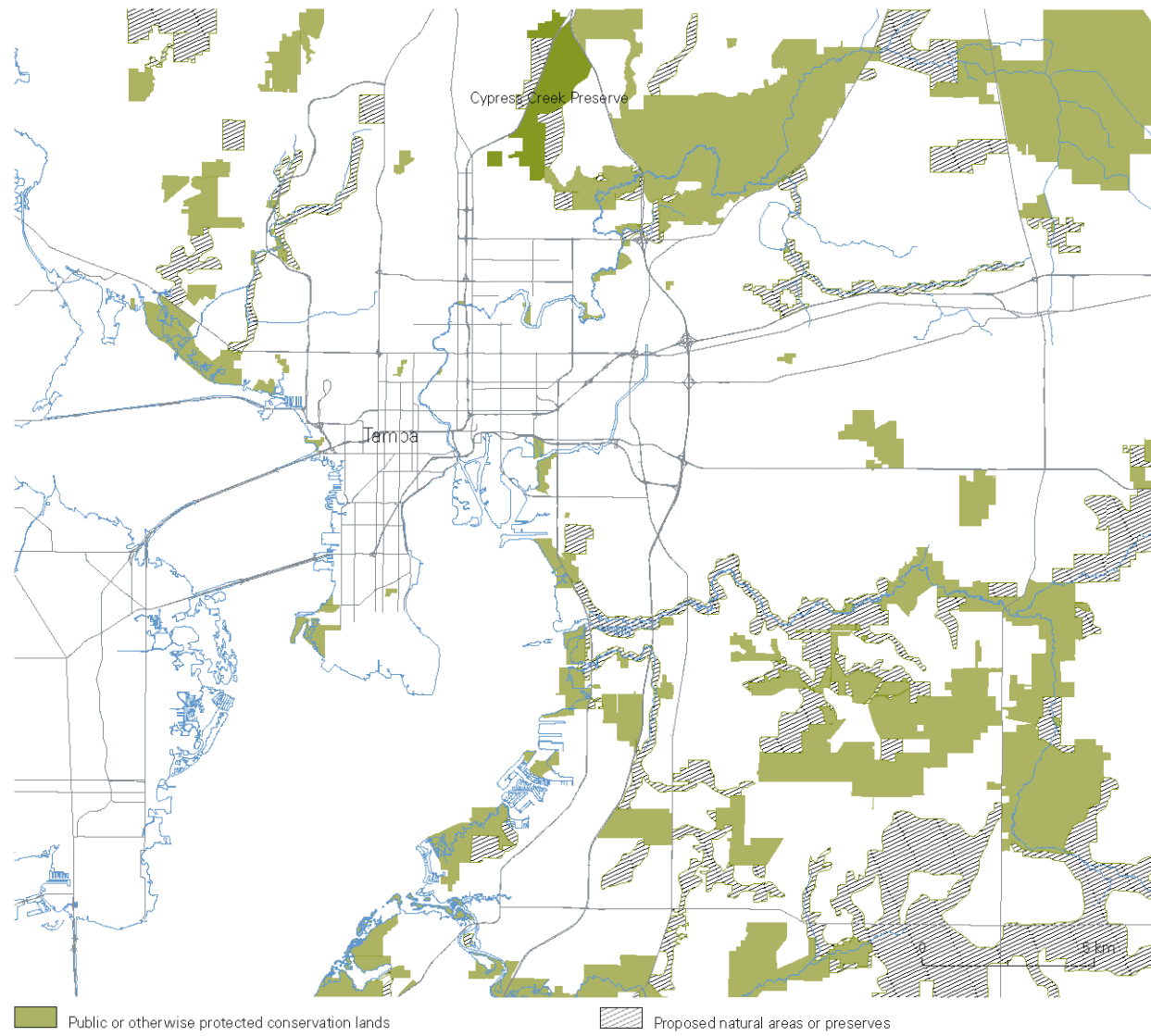
the Preserve. This restructuring is important to attract more people and make the preserve more public, so it will eventually reach a better protection status. The infrastructure planning map is an essential aspect for a positive acquisition decision by the governmental Environmental Land Acquisition and Protection Program (ELAPP).



The main entrance is marked by a few little signs, which look old and are damaged. The gate is dimensioned to walk-thru..



The pathways are overgrown with grass and just for hiking purposes.

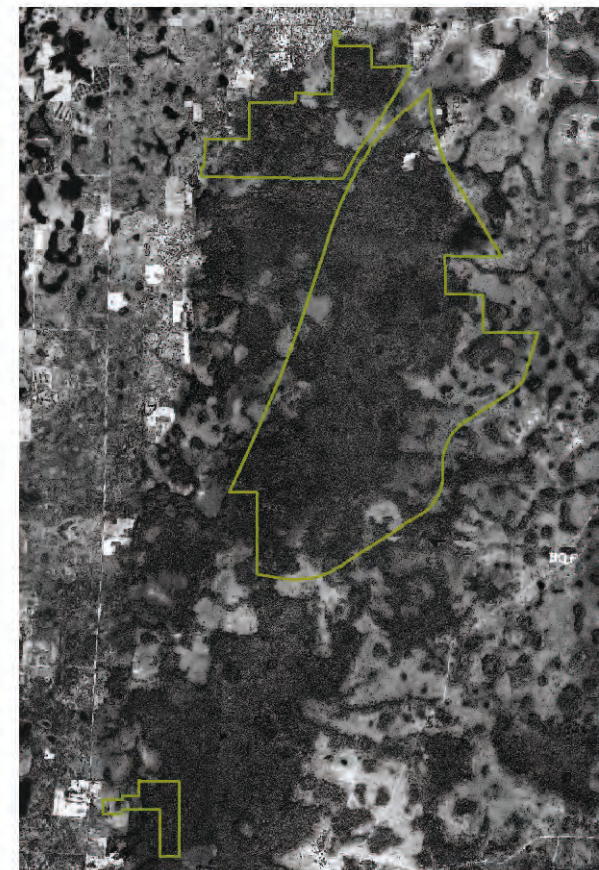


Nature conservation map of Hillsborough County

Connecting waterways

Hillsborough County is a typical Floridan coast area. Characteristic is its high density of housing development and the sparse left over natural environment. The efforts to acquire nature conservation land over the last 20 years have been strong. The goal was to protect and conserve the left over land pieces. The focus of the land acquisition lied and still lies on water regions since they are essential for the water supply of Tampa and Plant City.

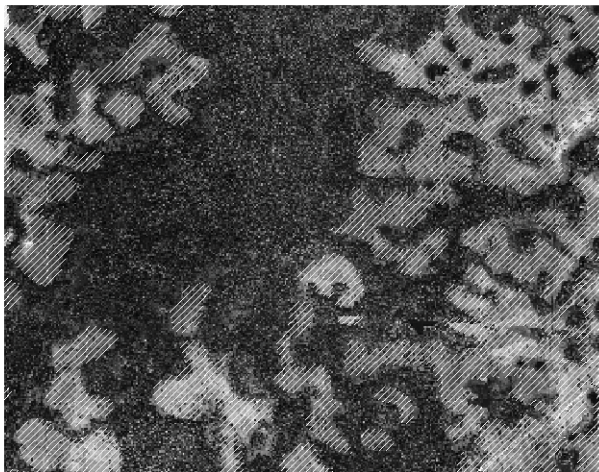
DRAFT
 © ETH Studio Basel



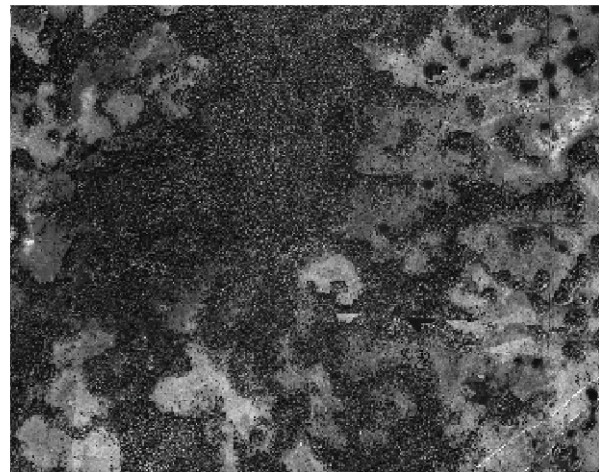
Aerial image of 1938 with the future preserve boundary: Farmers logged the forest to get timber and grazing land for their cattle.



Aerial image of today with preserve boundary and new approved conservation land. Cypress Creek Preserve is now enclosed by housing development and cut in pieces due to street construction.



Before the urbanization process: Wetlands and uplands form a diverse mosaic of vegetations.



Aerial image of 1938: Farmers logged the pine trees around the cypress swamps and wet areas.

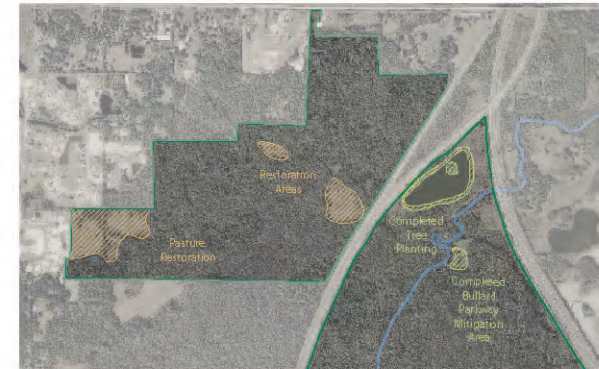
Urban shaping of a Landscape

The historical agricultural land use and Florida's natural conditions had a strong influence on the appearance of today's landscape. When the first farmers began to use the land, they started to cut off all the pine trees and dried out the wetlands. They formed a camouflage looking pattern of forest, wetland and grassland. With the population growth,

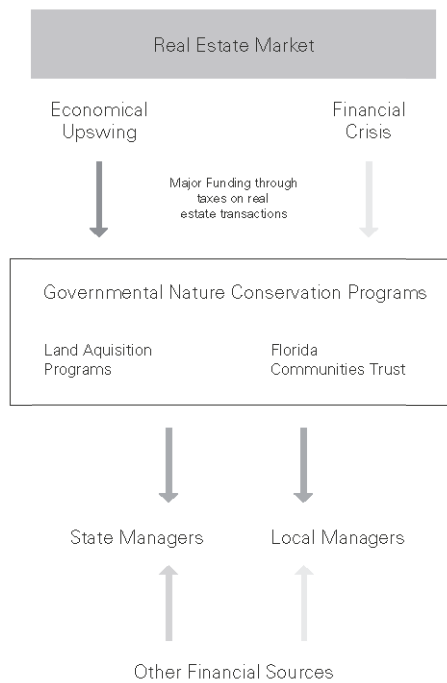
housing developments started to replace the agricultural land. Some of the new structures are built into this old agricultural pattern and still avoid the wetland parts, due to their high protection and negative condition for constructions. Inside the nature conservation area, the grassland is restored into the original natural look.



Aerial image of today showing the preserve boundary: The grassland pieces inside the conservation land were restored back into pine flatwoods, the development structures were built into the old pattern.



Restoration Sites of Cypress Creek Preserve



Local Nature Conservation mechanism, focused on money flows

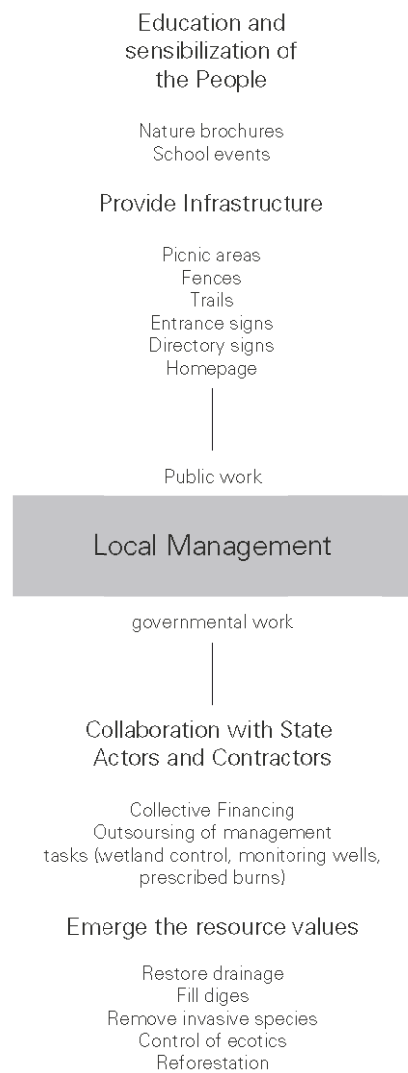
The influence of the financial crisis on nature protection

Due to their strong dependency on the real estate market, the current financial condition of especially local (but also state) nature conservation programs is not good. They are funded through taxes on real estate transactions. This means that with the financial crisis, no money can be raised for new land acquisition. Otherwise, there is no development, which could impact important, not yet protected natural areas.

A valuable Nature Conservation Site

Local managing tasks are nearly the same as state ones. These tasks include prescribed burns, the control of invasive species and exotics, the restoration of logged forests or drained wetlands, and the construction of infrastructure for public use. Some of these tasks are outsourced to con-

tractors or state agencies due to governmental hierarchy or the small budget of local managers. This is especially true for topics related to water and wetlands, which are monitored and controlled by the water management district not only on state but even on local lands.



Find different ways

The local actor strategies are the mirror images of the local managers' small budgets and their lower political power. Local managers try to find other ways to raise money for land acquisitions and to reach higher protection for their lands. For example, local managers try to involve state actors in acquisition and managing processes in order to achieve a better nature conservation status for their lands. In contrast to state actors, local managers have to be more flexible to find alternative money sources and they have to compromise. In order to reach their goals, local managers also have to put a lot of effort in public education about the importance of nature conservation.



Monitoring well of the South West Florida Water Management District in the Cypress Creek Preserve

PRIVATE ACTOR STRATEGY

By owning less than 2 % of all nature conservation areas, the private managers possess the least of the protected land. The private actors sometimes have different conservation philosophies than the government of Florida, but they often work together with state or local agencies for financial or managing reasons. The biggest private landowners are nature conservatory organizations; the Florida Audubon Society, The Nature Conservancy, and the Tall Timber Research Incorporation. All of them are financed by private donors.



DRAFT

View on Hatchineha Ranch from Hatchineha Lake

© ETH Studio Basel



Hatchineha Ranch

The property encompasses approximately 4,786 acres and is located west of Lake Hatchineha in Polk County, Florida. The property is adjacent to the existing Catfish Creek Preserve, which provides a regionally significant habitat restoration and enhancement project for creating and preserving an expansive wildlife corridor.

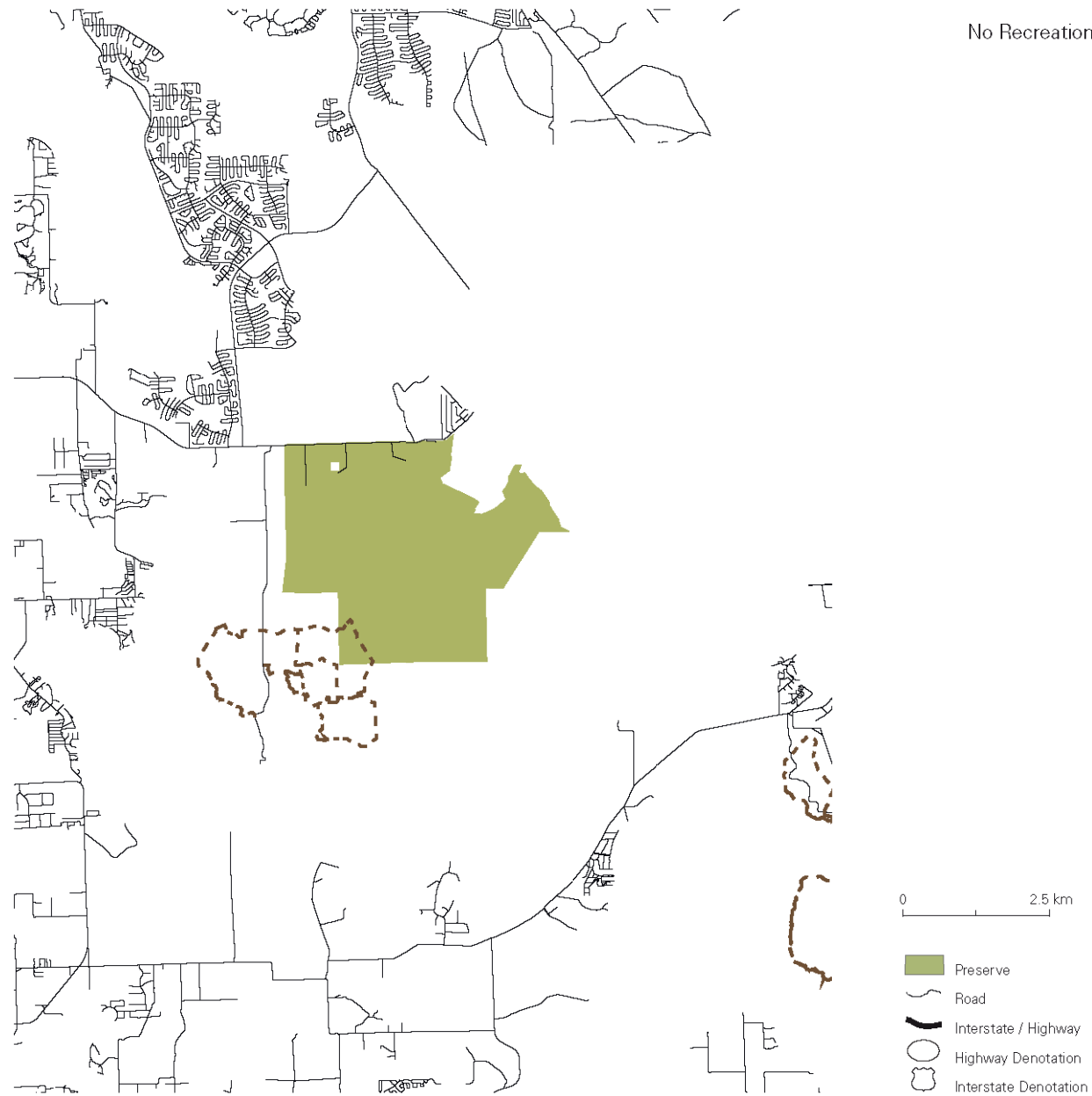
DRAFT
© ETH Studio Basel



View on the fenced and gated preserve Hatchineha Ranch

A temporarily locked property

The Hatchineha Ranch is currently closed to the public due to nature conservation restoration work. The property became a conservation land in 2008. Protection of Hatchineha Ranch contributes substantially to ongoing efforts to restore the watershed of the Kissimmee River and the Everglades.



No public Infrastructure

The Hatchineha Ranch is not accessible to the public. There are some small roads leading into the Ranch, but they are gated. Inside the preserve there is a private property. Because the owner of the property was not willing to sell it to conservation, it was going to remain private and

unprotected. When the restoration work is finished, there will be some public infrastructure provided by the involved state agencies. Existing roads and an existing buildings will be rebuilt and used for recreational and park supporting activities.



A small road with a "No Trespassing" sign leads into Hatchineha Ranch



Development plan for Hatchineha Ranch; The forested wetland areas define the boundaries of the planning.



Development plan for Hatchineha Ranch, planned by Hatchineha Ranch LLC.



The wetland parts of Hatchineha mark the amount of credits incorporated into the property.

The limits to growth?

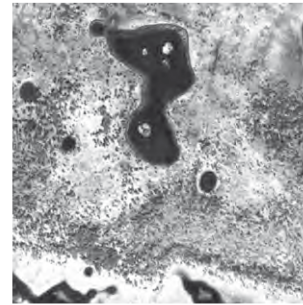
The Hatchineha Ranch has been the proposed site of nearly 5,000 single- and multi-family homes and a golf course. It was and is still owned by Hatchineha Ranch LLC. Despite the minimal planned wetland impacts, the public authorities denied the application for development. The reason for denial was the important role the property has for natural resources, especially the wetlands with the threatened and endangered species. After some negotiations, in which the Nature Conservancy was involved, the private owner could eventually be convinced to put his property into conservation.

Hatchineha becomes a mitigation bank

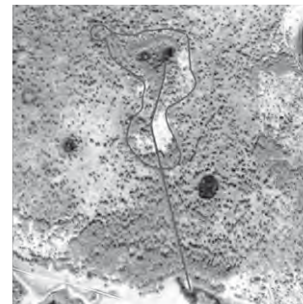
There were three reasons that made the property owner, who is a building developer, change his mind: Troubles in getting the property permitted, some interest in nature conservation, and lastly the possibility to make money

through the mitigation banking process, a kind of certificate trading with wetlands or protected species.

Wetland restoration process:



Wetland prior to draining



Wetland 40 years after draining



Wetland one year after restoration



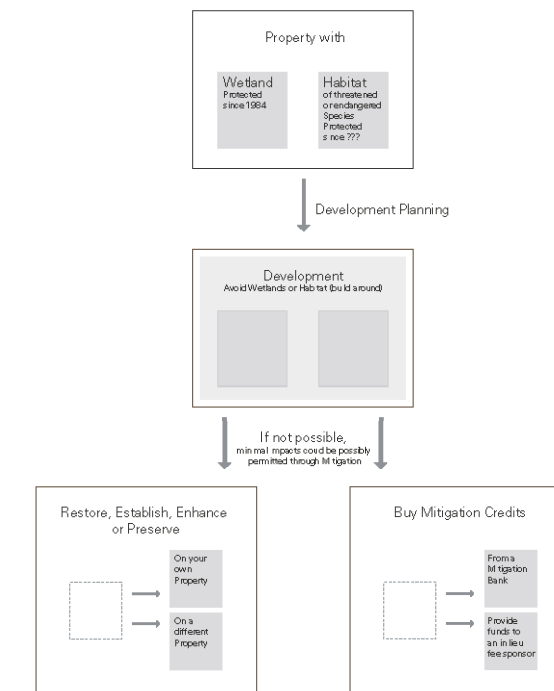
Organigramm of a mitigation bank

Management of a mitigation bank

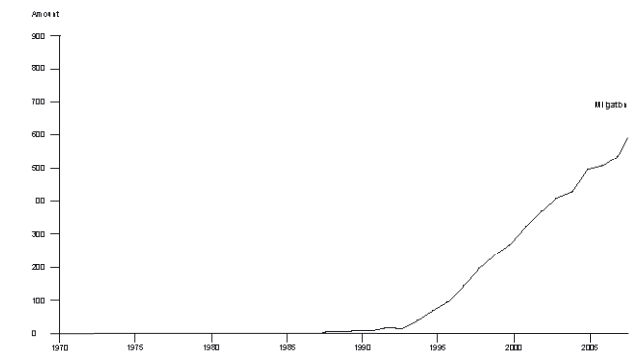
Mitigation banking is a practice in which an environmental enhancement and preservation project is conducted by a public agency or private entity ("banker") to provide mitigation for unavoidable impacts on wetlands or protected species within a defined region (mitigation service area). The bank is the site itself, and the currency sold by the banker to the impact permittee is a credit, which represents the ecological value equivalent to the complete restoration of one acre of wetland or habitat. The number of potential credits permitted for the bank and the credit debits required for impact permits are determined by the permitting agencies.

This form of "third-party" compensatory mitigation, in which the responsibility for compensatory mitigation implementation and success is assumed by a party other than the permittee, has been a very attractive feature.

Source: Florida Department of Environmental Protection



Mitigation process including onsite and offsite mitigation, and mitigation banking



Mitigation banking is the youngest tool for nature conservation. The growth of the mitigation market is significant for the success of this new strategy.

Nature Banking

In 1992 there were only 46 banks permitted, almost all of which were publicly-sponsored singleuser banks, in which entities such as state agencies or large corporations stockpile wetland credits for their own later use. In 2005, an inventory by the Corps' Institute for Water Resources estimated a total of 450 approved mitigation banks (59 of which have sold out of credits) and an additional 198 banks in the proposal stage

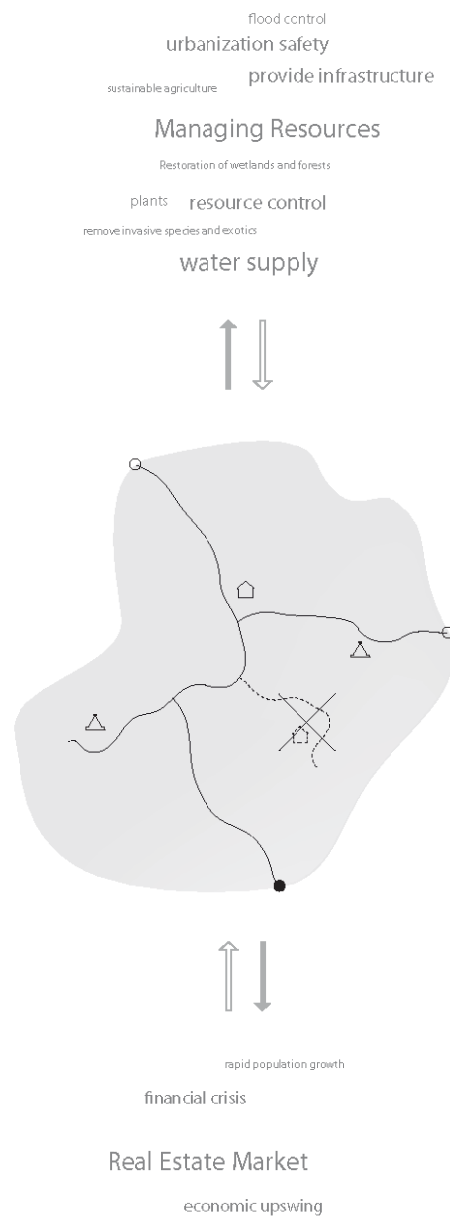
Source: Florida Department of Environmental Protection

AN URBANIZED NATURE

Despite Florida's very young urbanization history, all his nature is a property in an urban system, which is defined in a regular master plan. It is hardly possible to find any square meter of original, self regulating, and original nature.



DRAFT
The housing development "Harmony" in Florida
© ETH Studio Basel



No original nature
 Urbanized nature is a highly controlled and managed, rather than self-regulating or abandoned system.

Conservation of the natural basis of life
 Urbanized nature is existential for every urban system and raises its qualities.

Urbanization forms natural areas
 The appearance of urbanized nature is defined through the interaction with other urban systems.

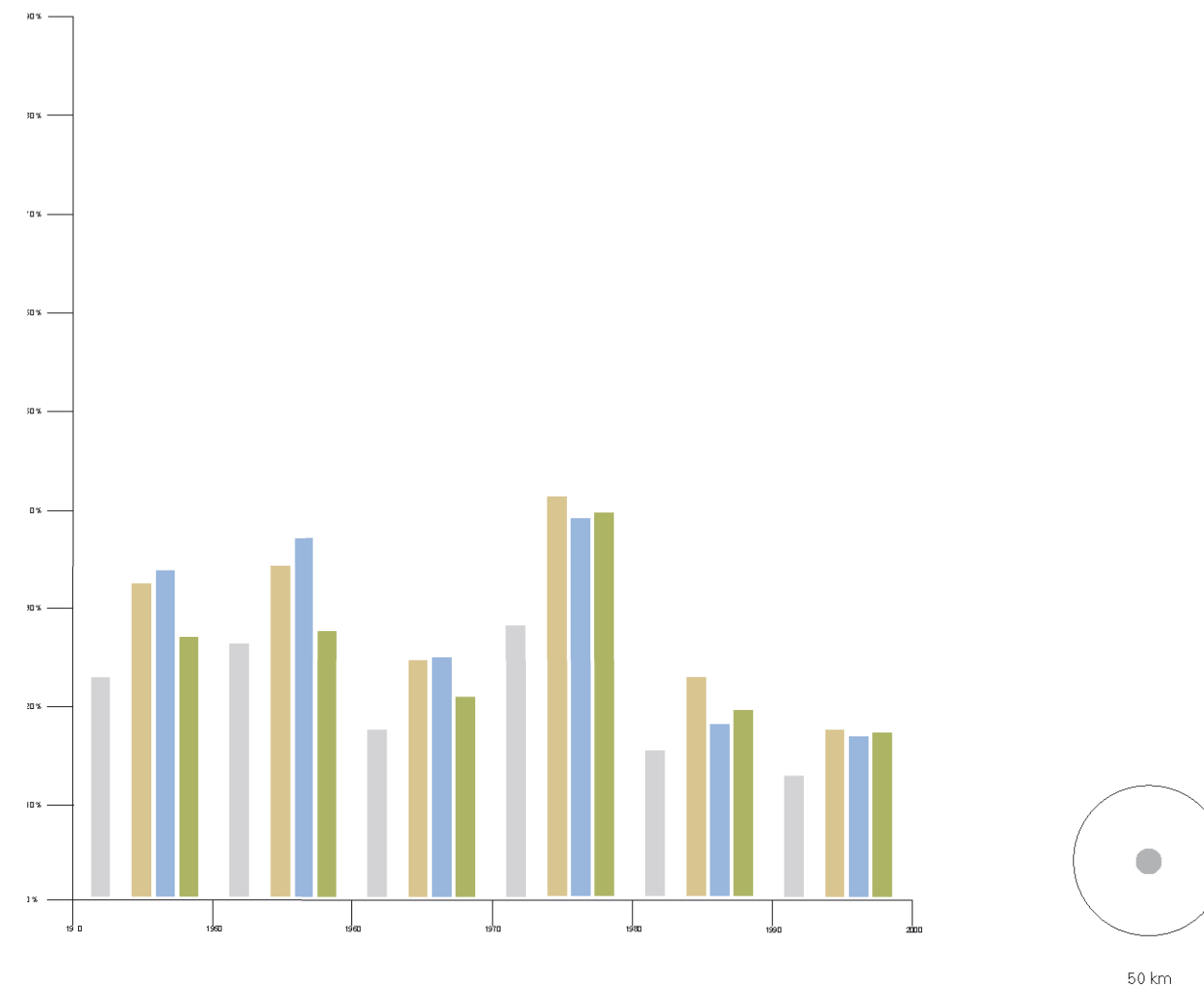
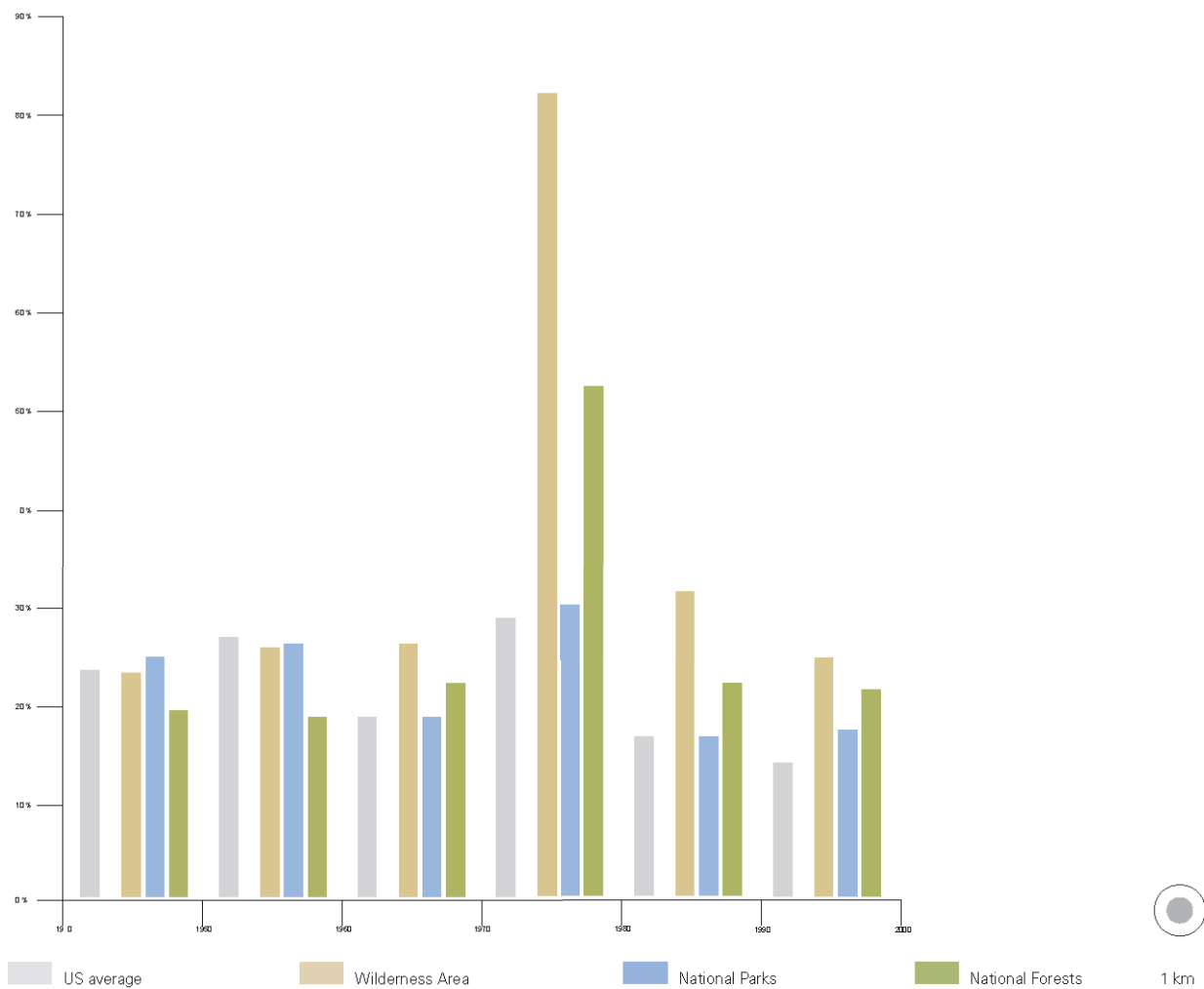
Nature depends on the Market
 The quality and size of urbanized nature are linked to economical growth.

A lot of natural philosophies
 Different levels of urbanized nature provide different strategies for the protection and management

What is an urbanized nature?

Urban activities in nature conservation lands such as water resource development projects, water supply projects, storm water management projects, linear facilities, sus-

tainable agriculture, forestry, forest management projects, and recreation uses proof their urban reality.



Housing growth rates:
One km beside a nature conservation area

Housing growth rates:
50 km beside a nature conservation area

Urban systems with a high quality

The increase in housing construction near nature conservation areas is an evidence for the need of urbanized nature in every urban environment.

SOURCES

BOOKS

„Restoring our natural habitat / World Environmental and Water Resources Congress 2007“, May 15–19, 2007, Tampa, Florida, USA ; American Society of Civil Engineers

The economics of Everglades restoration : Missing pieces in the future of South Florida / Richard Weisskoff, 2005

Transport, land-use and the environment / ed. by Yoshitsugu Hayashi and John Roy, 1996

PAPERS

„Restoration of aquatic systems“, [Electronic Data] / Robert J. Livingston, 2006

MAPS

www.fnai.org
Central Florida Regional Planning Council
The Nature Conservancy

INTERVIEWS

Jennifer Codo Salisbury, Planning Director, Central Florida Regional Planning Council

CC Bishop, former Planning Director, Central Florida Regional Planning Council

Sheryl Bowman, Conservation Service of Hillsborough County

Colleen Kruk, Land Resource Department, Southwest Florida Water Management District

Chris Reed, Sr. Land Management Specialist, Southwest Florida Water Management District

Patty Fesmire, Senior Environmental Analyst, Tampa Bay Water

Scott G. Spaulding, Park Manager, Colt Creek State Park

Paul Elliot, Park Manager, Green Swamp East Tract

Tricia Martin, The Nature Conservancy, Hatchineha Ranch

INTERNET

<http://www.dep.state.fl.us>
<http://www.sfwmd.gov>
<http://www.cfrpc.org>
<http://www.www.nature.org>
<http://www.dpr.dc.gov>
<http://www.unep-wcmc.org>
<http://www.myfwc.com>
<http://www.hillsboroughcounty.org>
<http://maps.google.com>

IMAGE CREDITS

All graphics and photos by Andrea Linke and Ruth Schmutz, students of ETH Studio Basel FS11, except where noted.

P. 2/3

Central Florida Regional Planning Council

P. 6/7

<http://maps.google.com/>

P. 10/11

Southwest Florida Water Management District

P. 21

<http://maps.google.com/>

P. 24/25

Central Florida Regional Planning Council

P. 35

Paul Elliott, Park Manager of the Green Swamp

P. 43

<http://maps.google.com/>

P. 55

Sheryl Bowman, Hillsborough County

P. 56/57

<http://maps.google.com/>

P. 62/63

Tricia Martin, The Nature Conservancy

P. 68/69

<http://maps.google.com/>

P. 70

Tricia Martin, The Nature Conservancy

P. 72/73

<http://maps.google.com/>

ACKNOWLEDGMENTS

PERSONS

Jennifer Codo Salisbury
CC Bishop
Sheryl Bowman
Colleen Kruk
Chris Reed
Patty Fesmire
Scott G. Spaulding
Paul Elliot
Tricia Martin
Laura Badraun
Julia and Stefanie Marty

INSTITUTIONS

University of Florida