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# Reinventing the Everglades: Modeling FIU after its Natural Habitat

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Hello, welcome to our home page. This is the page where our Senior Honors project will be documented. The theme of our project is to make FIU's environment to look more like its original habitat: the Everglades. With the help of the Society for Environmental Actions (SEA) in both funding and volunteers recruitment, we carried out a series of subprojects which would serve to beautify FIU, make it more environmental friendly (especially for the native flora and fauna), and raise public awareness. In the following pages, our plan of action to "Reinvent the Everglades in FIU" will be documented thru a series of Web-based Slide Shows." If you are interested in learning more of what we have done (and continue to do), please go on to read a more detailed [introduction](#), which would lead to the several slide shows of the different subprojects.

We hope you like it, and thanks for visiting!

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## Links

[SEA](#). The home page of the Society for Environmental Action, FIU. This page contain info of the different activities the the SEA arranges.

[Everglades Digital Library](#) is the home site for many Everglades related organizations and research projects, as well as a multitude of links to other sites that has topic related to the Everglades.

[Honors Class home page](#) This is the place where the seed of our project started. Has a lot of information about our class, what we do, and what other don't do ;)

[FIU home page](#) This, of course, is the university that we are attending, and the home theme of our project. The site has more information that you will ever want to know. Unfortunately, there isn't enough information about the natural habitat in which the campus was originally part of.

[About the authors](#) contain some information about the crazy kids behind this project.

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## Disclaimer

The opinions here expressed are entirely those of the authors of the page, and not necessary those of our teachers', SEA's, or God's. Actually, if you find any part offending, we are sure they aren't our views either, they must have been the computer's!!

# INTRODUCTION

The purpose of this project is to enable FIU to enjoy a natural habitat that is representative of its location. The grounds on which FIU makes its home used to be part of the vast expanse of the Everglades, and as such, the flora and fauna found along FIU's campus should be more representative of its natural habitat. Several steps are necessary in order to start the process of "reinventing the everglades" at FIU. This project has been divided into three sub-projects in order to be as thorough as possible in assimilating FIU to its more natural environment. The three sub-projects are 1) getting facilities management to stop spraying the lakes with herbicides, 2) Planting more native species of plants around the campus, and 3) Raising public awareness through the installation of nature signs for significant species, both native and exotic (usually pests).

FIU facilities management had been continually spraying FIU's lakes with herbicides up until last semester when the Society for Environmental Action (SEA) was successful in convincing FIU to stop spraying and search for alternatives. The cycle of using herbicides, which along with killing algae blooms kills most of the microscopic life forms in the lakes, is a disastrous one since the whole food chain is significantly disturbed by the disappearance of the fauna at the bottom of the food chain. This disturbance inevitably leads to the decrease in population of various forms of wildlife including native species of birds such as the Anhinga. The reason that these harmful herbicides are being used in the first place is because of FIU's "golf course" mentality. The management seems to feel that students want FIU to look more like a golf course than its natural habitat, so spraying the grass near the lakes with rich fertilizers down to the lakes edge has been the standard. Unfortunately, these fertilizers have significant run-offs into the lakes thus causing abnormally large mats of algae blooms. Algae blooms are part of a healthy lake system, but when they start to flourish so abnormally they become somewhat of a pest, so under the system of spraying the grasses heavily with fertilizers, the herbicides thus become the easiest (but not eco-friendly) source of algae removal. So our objective in this sub-project, as well as the objective of those members in the SEA, is to allow the grasses to grow with minimal fertilizers and use native species of flora that naturally "suck up" the

excess nutrients from the fertilizers instead of using any kind of herbicides or chemicals to remove excess algae. Follow this link to see a [slide show of lake spraying](#) and get more detail of this subproject.

Now that the lakes have finally stopped being sprayed, our second goal is to plant more native species of flora around FIU's campus, primarily around the lakes edges. With the proper placement of such plants as sagetaria and sawgrass, not only will FIU be beautified, but the lakes will be healthier thus allowing for a greater number of species of fauna to flourish (this means more native birds). With the help of members from SEA and Dr. Stodder, many native species of flora were obtained from soon to be developed areas. Although we have not received permission to plant these species as of yet, they are being taken care of and ready to be replanted. A [slide show of native flora collection](#) and [our collection effort](#) can be found by following this link.

Our third sub-project consists of creating public awareness through the installation of nature signs. With the financial help of SEA's funding, we plan to install 10 nature signs around FIU's campus. Each sign will contain a picture of a native specie of flora or fauna as well as a description of that specie and its relevance to the everglades ecosystem. Some of the various species of flora and fauna that are going to have [nature signs](#) can be observed by following this link.

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## ***ACKNOWLEDGEMENT***

Many thanks to SEA members and volunteers who made the project of beautifying FIU possible. We would also like to thanks many of the professors who gave us very valuable guidelines.

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## Lake spraying related photos from SEA:

1. [spraying.1.html](#)

Q: What is the characteristic of a beautiful lawn?

A: One where there is no organism living in it, and there is nothing but a desert of grass.

Above, application of fertilizers in newly placed lawn in the back of the library. Just how much of this do you think will get to the grass, and how much of it will end up in the lake choking the fishes?

2. [sea.1.html](#)

The first necessary step to make FIU a more environmental friendly campus is to reduce the use of biocides and fertilizers to "manage" the campus habitat. In case you wonder why we want facilities management stop spraying, then have a look yourself. This is how the FIU lakes look after they are sprayed for herbicides!

3. [sea.3.html](#)

And here is yet another result from lake spraying!

4. [sea.2.html](#)

According to the aesthetic values of facilities management, a beautiful lawn is one that resembles a golf course. As such, grass should be green, all the way till the very edge of the lakes. With this in mind, they do an excellent job in applying abundant fertilizers to the lawn. Unfortunately, the runoff causes thick mats of periphyton (algae) to accumulate in the lakes. While algae is a good plant that helps in the health of lakes, excessive nutrients from fertilizers cause too much algae to grow. Eutrophication is possible, which may completely change the condition of the lake. Therefore, the overzealous application of fertilizer created the necessity to spray the lakes to keep algae growth in check. One must wonder how much techno fixes we need!

5. [sea.a.html](#)

From this picture we can see the aesthetics that herbicides bring to our lakes. Aside from its unattractiveness, this film on top of the lake prevents the simplest faunal life forms from developing. This prevention leads to an eventual dramatic decrease in the population of most faunal life within the lakes.

6. [sea.4.html](#)

As many would know already, FIU's campus used to be part of the Everglades. Therefore, we strongly believe it is necessary to bring back a wide variety of native plants back to campus. Shown in the photo above is a wetland habitat dominated by cypress in the Big Cypress National Preserve, which is part of the Everglades ecosystem. Indeed, this habitat is very similar to the habitat that FIU used to have before any development was started. Therefore, they serve as a good model example of a healthy wetlands system for FIU.

7. [sea.5.html](#)

Here we see another capture of a healthy pristine system, one in which plants grow freely on the water edge. The plants in the foreground with elongated leaves are called Alligator flags, how appropriate, don't you think?

8. [sea.6.html](#)

Wild flowers would be an aesthetic plus to FIU's lakes, they would be able to grow freely if the grass was not maintained to look like a golf course. The pictured plant is Duck-potato (*Sagittaria lancifolia*).

9. [sea.7.html](#)

Here we see some more beautiful wild flowers: The Pickerelweed (*Pontederia cordata*).

10. [sea.9.html](#)

A complex ecosystem in the Big Cypress National Preserve. Take a close look at how many animals are in the small area captured by this photograph. The most conspicuous animal is the Snowy Egret in the lower right hand corner. But look more carefully, there is also a Great Blue Heron, an Anhinga, a Red-billed Turtle, and even a baby Alligator!

11. [sea.10.html](#)

Wildlife will be more affluent and the ecosystem would be more interesting if FIU's lakes were managed in a more natural way, this is a capture of an otter that emerged 2 minutes later in the same spot captured by the previous photo.

### **Species present in FIU:**

1. [sea.8.html](#)

Of course, FIU does have native species on campus. It is not that we are completely isolated from the Everglades. This photo shows FIU's best display of native plants, in a lake by DM. Here one can observe a wide variety of plants, from Cypress to Pond-apple to Palms. Unfortunately, this is the only lake on campus that has such diverse native species, and many people do not even appreciate this, as can be noted by the ubiquitous accumulation of trash. We aim to correct these problems, as such, our next goal is to bring more native species to campus. With the increased native flora, we also hope to attract more native fauna to campus too. In order to do this, we need everyone's help. This is why we also have another project on raising awareness of the importance of wildlifes to the ecosystem of South Florida. In the slides that follow, more native species that can be found in FIU will be shown.

2. [cypress.1.html](#)

This capture is of a Pond Cypress (*Taxodium ascendens*) in the Hennington pond between 8th street and the 117th avenue entrance to FIU. Pond Cypress grows along fresh-water channels and in swamps. They are shorter than Bald Cypress with deciduous leaves more closely angled to the twigs. The cypress is a native to the Everglades and many species of birds enjoy resting upon the branches of the Cypress.

3. [anhinga.1.html](#)

This bird is the Anhinga, also known as the snakebird and water turkey. Because their feather structure is designed to become waterlogged to facilitate diving and movement under water, Aningas must spread their wings to dry when they emerge from the water. This photo is of an Anhinga resting on a cypress branch in the lake between the DM and BA building at FIU. Aningas enjoy such areas as cypress swamps, so this cypress is a good place to see an Anhinga at FIU.

4. [anhinga.2.html](#)

Here is another still of the same Anhinga, his attention seems to be diverted somewhere.

5. [stranglerfig.1.html](#)

Located on the West side of FIU's library is a group of Strangler Figs. The Strangler Fig (*Ficus Aurea*) forms a large, sturdy trunk, often with aerial roots. These unique trees usually start their lives growing off of other trees. Its leaves are dark green, leathery, with yellow midribs. The bud leaves unfold from a rolled-up spike. Strangler Figs can be found in hammocks and woodlands throughout certain regions of the Everglades.

6. [butterfly.1.html](#)

Here is a picture of a butterfly fluttering around in the FIU's preserves, which is an undeveloped area. While many exotic species such as Australian pine, oyster plants, etc, are present in the preserve now, it still give a good idea of how FIU looked like before it was developed. Many beautiful creatures can be found lurking about in the preserves due to the dense vegetation that flourishes.

7. [greatblueheron.1.html](#)

Flying over a lake located at the northwestern end of FIU is the Great Blue Heron (or the more appropriate name of Great Gray Heron as they call it in Europe). This large bird is a native to the Everglades. The Great Blue enjoys a wide variety of habitats, one of those even including urban areas. The Great Blue Heron is one of Florida's most widely distributed and easily observed species in this family of long-legged waders. Most heron readily lose their fear of man and may be seen in wetlands along busy highways as well as in suburban backyards, the above capture is a good example of that.

8. [palm.1.html](#)

Royal Palms (Cuban cultivar). Why do we have so many of them on campus?! Is it to show some great sign of patriotism to the Cuba nationals? Do we really want to look like Stanford? It must be true that Values, Aesthetics, and Authority sets the standards for how a prestigious campus is supposed to look like!! Heck, we want the campus to look like a natural environment, where we can really see wildlife. Not that it is bad to have a few royal palms on campus, but in the opinions of the authors, planting so many royal palms just because it is deemed prestigious is not only a waste of money, it even gives FIU somewhat of a monotonous look.

**Native plants project:**

1. [collection.1.html](#)

Our next project is to collect and plant more native species around campus. This is a photo of one of the collection sites we went, which is in the border of the Everglades National Park, by Tamiami Trail past Krome Avenue by the 2nd flood gate/bridge structure. Well, how much do you think we can accomplish when we start out with beautiful ladies

posing as supermodels instead of really getting dirty and doing the job?

2. [collection.2.html](#)

Here is another collection site that we went to, this one by NE 127 Avenue and 6 Street. In this site, a church will be built on it. The developer was nice to us, and allowed us to extract any plants that we wanted. The site, being lower than surrounding developed areas, is often flooded. Therefore, we were able to collect some valuable wet-habitat native plants, such as Duck-potato, sawgrass, etc.

3. [collection.3.html](#)

A while ago we allowed you to question our ability to collect plants. Well, the photo above should remove all your doubts. After some 4 hours of collection, when it was finally dark, we have already filled up two trucks worth of plants!

4. [repository.1.html](#)

To give a better idea of how many plants we have collected, here are some baby plants sitting in buckets by the green house. As you can see, we have a lot of Sawgrass and *Sagittaria*.

5. [repository.2.html](#)

Another picture of the plants in the green house repository. If you are a plant expert, you can probably recognize them as Duck-potato (*Sagittaria lancifolia*) and Pickerelweed (*Pontederia cordata*).

6. [planting.1.html](#)

Of course, we did not just collect the plants and let them die in the buckets! After a long waiting period, when the FIU executives forced Facilities Management to yield the management of 3 important lakes to the SEA, we started planting ASAP.

After a morning of work, we planted Pickerelweed (*Pontederia chordata*), Duck-potato (*Sagittaria lancifolia*), Spike rush (*Eleocharis cellulosa*), Sawgrass (*Cladium mariscus* ssp. *jamicensis*), and Water Lily (*Nymphaea* spp.) in the Eastern end of the Hennington pond (by the 8th street entrance).

7. [planting.2.html](#)

In the afternoon, we moved to the western end of the Hennington pond. This site is by the corner entrance between 8th street and 117th avenue, where we planted lot of Duck-potato (*Sagetaria lacifolia*) and Pickerelweed (*Pontederia chordata*) around each cypress.

8. [planting.3.html](#)

Here is one of the finishing products of our planting efforts. The critical analyst may be saying we did a horrible job, the site looks more like a swamp than a beautiful garden. But that is exactly what we wanted! The Everglades is a wet land habitat, filled by black mucky soil with half submerged plants. If you are like one of those "critical analyst," then you probably want to break away from the traditional set of Values, Aesthetics and Authorities, because we are about the change all the rules and remake FIU the Everglades again!

9. [planting.4.html](#)

When we said we wanted to make fiu look more like the Everglades, we really meant it! If you have been living in South Florida for any length of time, you should have heard of the enormous amount of money spent in restoring the Everglades. Part of the money is in exotic and harmful species removal.

In the photo above, we are removing cattails, not by using chemicals or machinery, but by manual labor. The task was so tedious that the vice president of SEA, Ian, was quoted saying: "Damn, we really should spray the lake and kill all these cattails!"

## Nature Sign project:

1. [sign.duck.html](#)

The Muscovy duck (*Carina moschata*) is one of the most loved exotic pest in South Florida. People like them as pets, thus both children and adult feed them a lot. This friendly environment have contributed to the excessive increase in duck population. When there are too many ducks, the nutrient level in the lakes increases dramatically. This can cause excessive algae growth, as well as cattail growth, which in turn hampers the growth of other important native organisms such as duck-potatoes, alligator-flags, and many others. Furthermore, the Muscovy also competes with other birds, such as Coots and Moorhens, which are much more environmental friendly species (i.e. their excrement contains less nutrients and therefore causes less disturbance in the ecosystem).

If you are environmental friendly, then  
**DO NOT FEED THE DUCKS!!**



The above is a sample nature sign that will be placed around campus. Facilities Management may provides the funding for the signs, while SEA, thru the Student Organization Council, may provides the funding for the posts. Furthermore, we are also waiting approval from the Space Committe to actually place the signs.

2. [signmap.sm.html](#)

The above is a map of the FIU University Park campus where we plan to place our first 10 nature signs (click on the map itself to see a larger image; this map, due to its small size, does not have all the room for the signs listed below). The location and the signs that we are considering are:

1. Bridge by Business Administration: A sign about the Muscovy ducks and encourage people not to feed them.
2. Lake behind the DM building: Anhinga.
3. Again in the lake behind the DM building: Bald Cypress.
4. Northern end of FIU Preserve, near the Golden Panther Arena: Dade County Slash Pine.

5. English Language Institute: Cabage Palm.
  6. South of the VH building: Strangler Fig.
  7. Small pond on the eastern side of ECS: Common Moorhen.
  8. Southern border of Hennington pond, by the 8th Street entrance: Spike Rush (*Eleocharis cellulosa*).
  9. Northeast corner of the Hennington pond, behind the Golden Maidique Arch of Knowledge: Sawgrass.
  10. Lake by Graham Center: Soft-shell Florida Turtle.
3. [signmap.medium.html](http://signmap.medium.html)

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Click here to go back to the [page with a smaller map](#).

4. [last-slide.html](http://last-slide.html)

Thank you for visiting! You have reached the end of our web-based slide show presentation. Hope you have enjoyed. If you have any comment, we welcome them. See the about the authors for info on how to contact us.

Have a pleasant day!

#### **New Photos Not Placed in Slide shows:**

- [australianpine.1.html](http://australianpine.1.html)  
australian pine . 1
- [brazilianpepper.1.html](http://brazilianpepper.1.html)  
brazilian pepper in ecs
- [cypress.2.html](http://cypress.2.html)  
cypress.2
- [gumbolimbo.1.html](http://gumbolimbo.1.html)  
gumbolimbo

**Other Photos:**

- [All photos](#)(including many that have not been used in the slide show.) Note: file with sm in the name represent a smaller version of the big brother. of the regular photos.

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