Sustainability Leadership

Sustainability Leadership

Class 1:
Prologue: Introduction to the Class
Part 1: Sustainability Leadership
Part 2: Setting up the projects

Prologue: Introduction to the Class

Prologue: Introduction to the Class

Service Learning class:
You will work in small groups on real-world challenges throughout the class.
Each class will have two parts:
(1) theory of sustainability leadership and relevant skills,
(2) working on the projects.

Sustainability leadership part:
- Discuss a number of questions related to different aspects of sustainability leadership part.
- Please, read the listed documents prior to the class.

Question Sets:
- Five sets with seven questions;
- Need to answer five questions for each set.
- Submission on Fridays, 6:00 PM
- Timely submission is crucial.
- Make sure that your document includes your name and the title of the question set.
- In your answers, provide detailed citations of all sources you used to write the answer.
- Preferably, base your answer on peer-reviewed literature.
- At the end of the document, provide a list of the references.
- Insufficient citation or missing list of references will result in subtraction of up to 20 points.

Prologue: Introduction to the Class

Service Learning class:
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Each class will have two parts:
(1) theory of sustainability leadership and relevant skills,
(2) working on the projects.

Service learning projects part:
You will carry out research related to your “real-world challenge”, prepare the fieldwork, and draft the research paper.

Three “real-world challenges” related to the impacts of climate change, sea level rise, and human pressure on the Everglades National Park (ENP) and adjacent National Wildlife Refuges and State Parks.

During the fieldwork week: your will continue the research, prepare a presentation each, further develop the report, and collect material for a brief video.

After the fieldwork: the research paper will be finalized.

Prologue: Introduction to the Class

4+4 Forms will be used to document presence in class
2+2 Learned in class today + Not understood in class today
2+2 This is important/working + This is a challenge/not working

Tools to be added in the next few days:
Get Woke:

- Post it: Make a statement about the class contents
- Ask it: Ask a question to be discussed
- Like it: Point out something you liked in the class or in the class contents

Prologue: Introduction to the Class

You will:

- In each class, submit the 4+4 form.
- Actively contribute to getting woke by posting, asking, liking, …
- Submit five responses to the question sets.
- Contribute to the project research report (two or three chapters).
- Prepare a presentation.
- Make a brief (2 minutes) video.

Recommendation: Put the research paper, presentation, and video into your e-portfolio.

Part 1: Sustainability Leadership

Sustainability Leadership

Principles of sustainability leadership can be done by asking a number of questions.

- What is leadership?
- What is sustainability? *Sustainability is an emerging characteristic of a dynamic system; it is not built into a system by design.*
- How can we define sustainability leadership: *maintaining a system - impacting it - in a way that keeps positive futures open.*
- What systems are we referring to? *We consider biological, social and economic systems, communities, including whatever technical support the community may have developed.*
- What is the underlying concept? *We use the concept of a system being embedded in a life-support system, on which the system under consideration depends.*
- Do we have a core principle? *Principle: sustainability emerges if we meet the needs of the community and its members, while safeguarding the life-support system on which the well-being of the current and future system's members depends.*

Sustainability Leadership

Principles of sustainability leadership can be done b

Leadership is a practical skill encompassing the ability of an individual or organization to "lead" or guide other individuals, teams, or entire organizations.

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There are many definitions of sustainability. We consider sustainability as an emerging property of humanity embedded in the Earth's life-support system (ELSS). Sustainability requires an interaction with the ELSS that meet the needs of the present while safeguarding the ELSS.

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Sustainability Leadership

Sustainability Leadership is based on a variety of principles:

- Think globally and toward the future. Consider what current and future impacts you are making with each decision on other countries, society, oceans, animals, communities, waste, resources, etc…
- Understanding the interconnections of systems. It is vital to recognize how each group of related factors (people, objects, processes, etc…) are connected and impact each other.
- Protect nature and people. Distinguish how actions taken affect people and the environment. Try to make decisions that will reduce the negative impacts on 2nd and 3rd levels of people, processes, the environment, and economies.
- Lead by example in your actions. Be responsible for yourself, your job, your actions, and your organization. Hold the organization accountable to lead by example in its actions. Hold yourself accountable.
- Transform business as usual. Do something different within your span of control. Change habits.

Sustainability Leadership - Decision-Making Skills

Developing leaders to become better decision makers is a major challenge. Here are a few ways to build decision-making skills:

- Secondment: experience in diverse organizational roles, such as international assignments. This broadens the exposure of leaders to other environments, which expands their knowledge and understanding, leading to more informed decision making.
- Mentoring: access to a more senior leader who can guide, advise, and recommend a leader in decision making.
- Shadowing: working alongside another leader in an unfamiliar role to add learning and understanding of different roles and responsibilities.
- Case studies: practicing decision making using a classroom scenario and receiving feedback from experts on the quality of decision making.
- Projects: tackling a specific assignment that requires collaboration and action to develop decision-making behaviors.
- Learning: expanding the cognitive and emotional intelligence of leaders through formal and informal learning.
- Methodologies: establishing formal methodologies such as project management, change management, and strategic planning can all lead to better, more collaborative decision making.

Leadership development initiatives need to incorporate these elements to be effective. There is a need for context, real work, considering mindsets, and measuring results, as the best environment for building such initiatives.

Sustainability Leadership - Five important competencies

1. Systems thinking: Connected, holistic thinking. Understanding the context behind a problem and its relationship to trends in broader environments. For example, a sustainability leader grasps the system of relationships in which the system under consideration is embedded: Flows in and out, surrounding and interconnected systems, interactions between human and non-human systems. Requires multidisciplinary backgrounds combining technical and creative fields. Expertise and knowledge in principles of systems management such as resilience and managing for emergence.

2. External collaboration: Work with entities beyond the own organization. Significant environmental impact may be found in collaboration. Collaboration helps organizations build social capital, explore new opportunities and shape the contexts in which they operate. Investing in partnerships between governmental organizations, NGOs and businesses.

3. Social innovation: The magnitude of sustainability challenges demands a fundamental reengineering of societal processes. Leaders with social innovation competence view this challenge as a growth opportunity. Social innovators find ways to redesign processes that create social value. They question the status quo and treat constraints as transformable. Within organizations, innovative leaders encourage social entrepreneurship among employees and prioritize interdisciplinary teams.

4. Sustainability literacy: Sustainability-literate leaders are aware of emerging environmental and social trends, and the risks and opportunities they create for society. Fundamentally, they understand the changing roles of sectors, organizations and groups in society. They see the need for conducting environmental and social cost accounting, or using tools for scenario planning, back-casting, and hot spot analyses.

5. Active values: A leader with active values is mindful of emotions and motivations and sensitive to those of others. Mindful leaders can view themselves and their work as part of a larger purpose, motivating them to harness organizations to improve society.

Sustainability Leadership

Sustainability leadership requires an understanding of the challenges to sustainability and developing viable strategies to meet these challenges and maintain the community embedded in the life-support system. This requires:

- Knowing the system, the members, the life-support system
- Assessing a situation; reflect on own biases that could impact the assessment; understand the biases of others, of the community and the limitations these biases constitute for possible paths of the system.
- Detect and understand threats, analyze vulnerabilities, assess risks.
- Have foresight - and interact with others about the desirable futures.
- Understand the decision making framework, know the stakeholders.
- Work with the community to develop options.
- Implement options and critically assess their impact on the community and its life-support system.

Sustainability Leadership

1. **What type of leadership do we need to make progress toward sustainability?**
2. *Based on Köhler et al. (2018), discuss how modeling sustainability transitions can inform sustainability leadership.*
3. **Is safeguarding the Earth's life-support system a wicked or super-wicked problem? Explain why or why not.**
4. **Can capitalist, growth-focused economy be reconciled with the need to safeguard the Earth's life-support system?**
5. *Based on Ward et al. (2017), does unlimited growth and sustainability fit together or contradict each other? Compare this to the approach of UNEP (2012) based on the summary.*
6. *What are the main characteristics of participatory modeling?*
7. **Provide a sketch for a high-level conceptual model for the interaction of humanity with the Earth's life-support system. Briefly explain your model.**

Part 2: Setting up the Projects

Service Learning Projects

The three “real-world challenges” we will work on as part of the service learning are:

1. **Impacts of climate change and sea level rise on ecosystem services (ESS) in the Everglades National Park (ENP):** Consider the ESS of the ENP, including their economic value, and assess how climate change and sea level rise might impact these ESS.
2. **Effects of sea level rise (SLR) on the part of the Florida Bay inside the ENP and mitigation and adaptation strategies for the American Crocodile**: Assess the morphological and ecological changes future SLR may cause in the Florida Bay and evaluate the impacts on habitats of the American Crocodile. Develop adaptation strategies.
3. **Vulnerability assessments for ENP habitat(s)**: Assess the main vulnerabilities of selected ENP habitats and identify the main threats due to human activities. Consider realistic socio-economic scenarios and propose mitigation and adaptation strategies.

Service Learning Projects

For all three challenges, the time window to be considered should be on the order of 30 to 80 years (2050 to 2100). It will be important to link the three challenges together.

(1) will provide information ESS in Florida Bay to (2).

(2) will provide information on morphology changes in Florida Bay due to sea level rise to (1) and (3) and also provide scenarios for the American Crocodile population to thee two groups.

(3) will provide socio-economic impact scenarios to (1) so that their relative importance can be compared to climate change and sea level rise impacts.

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- Together, you will produce one joint report.
- In this first class, we will constitute three groups with three students each.
- In each group, you will decide on responsibilities for the challenge-related sections of the various chapters of the project report.
- The report has seven chapters, and each student will be responsible for up a section in up to three chapters of the project report.

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You will form three groups of three students around these challenges.

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You will form three groups of three students around these challenges.

Group 1: Chase, Alissa, Austin
Group 2: Lena, Kayla, Angela
Group 3: Alexa, Fallon, Rachel

Service Learning Projects

- It is required to apply the adaptation science approach to the topic.
- It will be important to distribute the chapters between the students.
- Each of you will contribute to all chapters, but individual students will be leading each chapter.
- Initially, each group will exchange thoughts on how to collect relevant information.
- Each group will assess how they want to approach the topic and distribute the work among the group members.

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Contents:

1 Introduction
2 Hazards
3 Vulnerabilities
4 Foresight
5 Decision-Making & Stakeholders
6 Options
7 Discussion, Summary, Recommendations

Service Learning Projects

Travel: June 9-16, 2018

June 9, 2018: Flight to Miami
Drive to Accommodation
June 10-15, 2018: Fieldwork, stakeholder meetings
June 16, 2018: Drive to airport
Flight to Norfolk

Accommodation: Rental of houses - possibility for preparing meals

Mode of Funding:

- housing, travel: already clarified
- Everybody should have received a ticket
- Checkin your responsibility - make sure you have printable copies of your boarding passes
- After the fieldwork, you will submit a travel claim to receive $25 per day for meals

Service Learning Projects

Saturday, June 9, 2018: Travel to Key Largo
Sunday, June 10, 2018: Reconnaissance and preparation of fieldwork
Monday, June 11, 2018: Group work
Tuesday, June 12, 2018: Group work
Wednesday, June 13, 2018: Group work
Thursday, June 14, 2018: Group work
Friday, June 15, 2018: Stakeholder meeting
Saturday, June 16, 2018: Travel back to Norfolk

Fieldwork preparations

June is a month with extremely high mosquito pressure in the Florida Keys and Everglades National Park, particularly in some areas where fieldwork will be conducted. Therefore it is important that all participants have clothing that protects against mosquito bits. A bug jacket is mandatory and bug pants are recommended. For bug jackets, see for example the bug jacket offered at Amazon.

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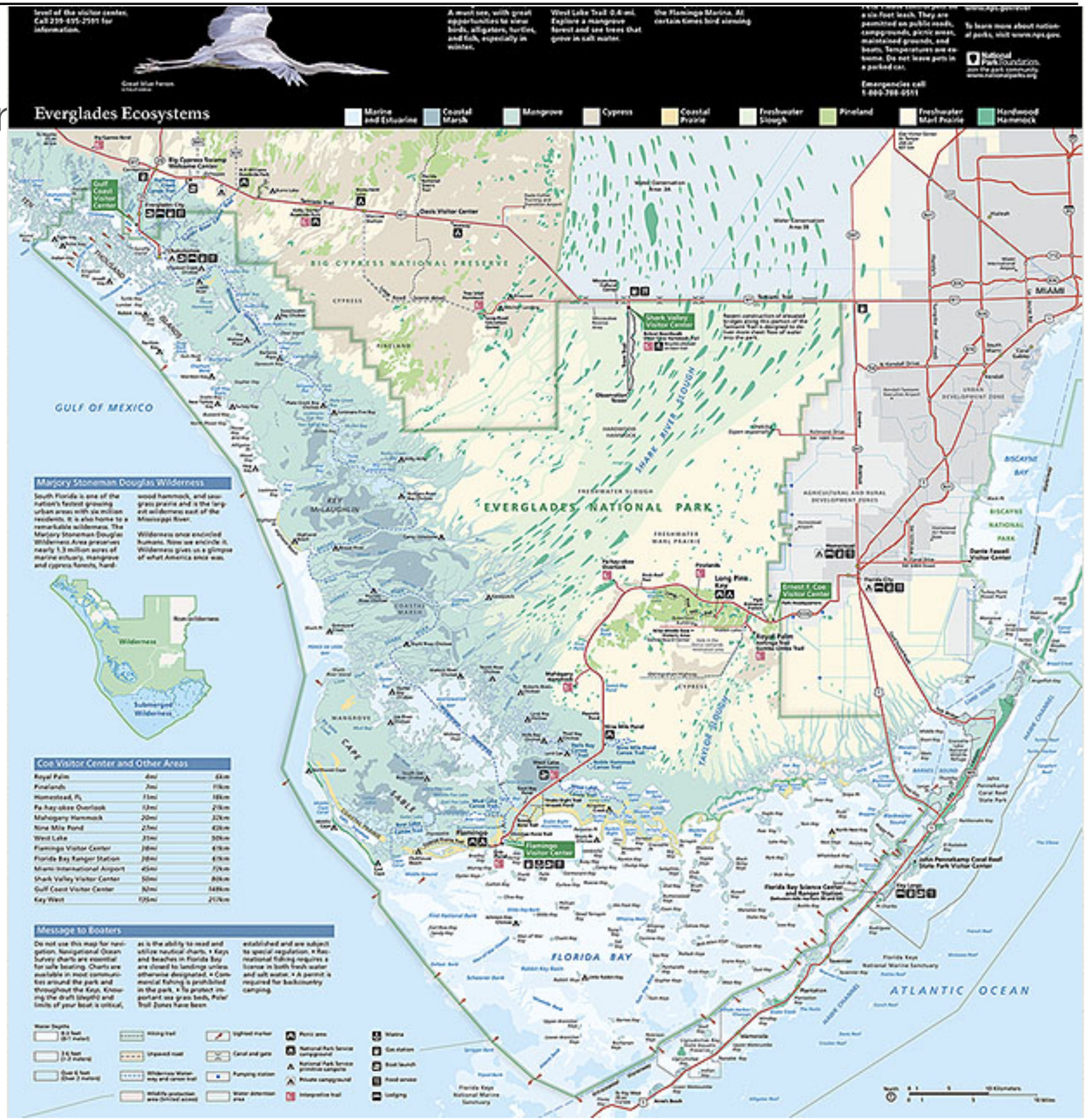

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South Florida is one of the nation's fastest growing urban areas with six million residents. It is also home to a remarkable wilderness. The Marjory Stoneman Douglas Wilderness Area preserves nearly 1.3 million acres of marine estuary, mangrove and cypress forests, hardwood hammock, and sawgrass prairie and is the largest wilderness east of the Mississippi River.

Wilderness once encircled humans. Now we encircle it. Wilderness gives us a glimpse of what America once was.

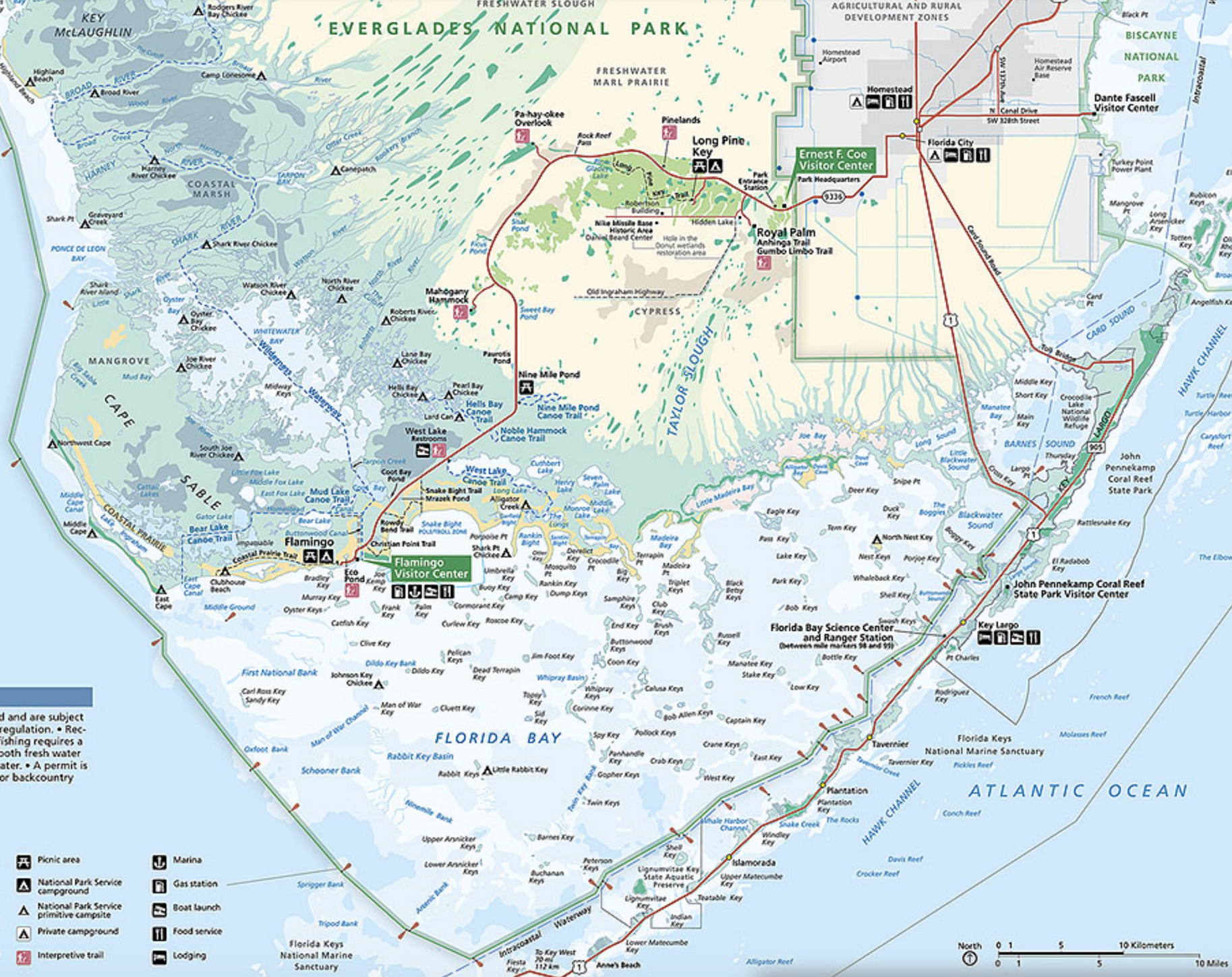
Coe Visitor Center and Other Areas

Royal Palm	4mi	6km
Pinelands	7mi	11km
Homestead, FL	11mi	18km
Pa-hay-okee Overlook	13mi	21km
Mahogany Hammock	20mi	32km
Nine Mile Pond	27mi	43km
West Lake	31mi	50km
Flamingo Visitor Center	38mi	61km
Florida Bay Ranger Station	38mi	61km
Miami International Airport	45mi	72km
Shark Valley Visitor Center	50mi	80km
Gulf Coast Visitor Center	92mi	148km
Key West	135mi	217km

Message to Boaters

Do not use this map for navigation. Navigational Ocean Survey charts are essential for safe boating. Charts are available in most communities around the park and throughout the Keys. Knowing the draft (depth) and limits of your boat is critical, as is the ability to read and utilize nautical charts. • Keys and beaches in Florida Bay are closed to landings unless otherwise designated. • Commercial fishing is prohibited in the park. • To protect important sea grass beds, Pole/Troll Zones have been established and are subject to special regulation. • Recreational fishing requires a license in both fresh water and salt water. • A permit is required for backcountry camping.

Water Depths
- 0-3 feet (0-1 meter)
- 3-6 feet (1-2 meters)
- Over 6 feet (Over 2 meters)
- Hiking trail
- Unpaved road
- Wilderness Waterway and canoe trail
- Wildlife protection area (limited access)
- Lighted marker
- Canal and gate
- Pumping station
- Water detention area
- Picnic area
- National Park Service campground
- National Park Service primitive campsite
- Private campground
- Interpretive trail
- Marina
- Gas station
- Boat launch
- Food service
- Lodging



Service Learning Projects

Service Learning Projects

Upper Keys (Acres by SLAMM Land Cover Type)

	Current	1 Foot	2 Feet	3 Feet	4 Feet
Developed Dry Land	6,541.1	5,677.5	5,074.9	4,234.2	3,468.4
Undeveloped Dry Land	6,296.7	5,891.0	5,074.3	4,207.1	3,453.0
Swamp	15.2	4.6	1.3	0.8	0.6
Inland Freshwater Marsh	10.9	10.4	4.9	0.4	0.1
Transitional Saltmarsh	733.5	625.6	331.3	127.8	52.7
Regularly Flooded Saltmarsh	774.0	464.6	336.9	38.8	5.8
Mangrove	24,126.0	24,741.3	20,730.1	12,162.7	6,722.9
Tidal Flat	6,420.0	940.2	713.3	822.3	795.7
Ocean Beach	23.5	175.1	307.9	530.5	704.5
Rocky Intertidal	13.0	9.4	4.0	1.9	0.8
Irregularly Flooded Saltmarsh	70.5	69.7	33.7	1.3	0.4