

THE FLORIDA SURVEYOR

February 2024
Volume XXXII, Issue 2



IN THIS ISSUE

Impact of A.I. On PLS

Flexing the Environmental Muscle

The Witchery of Archery





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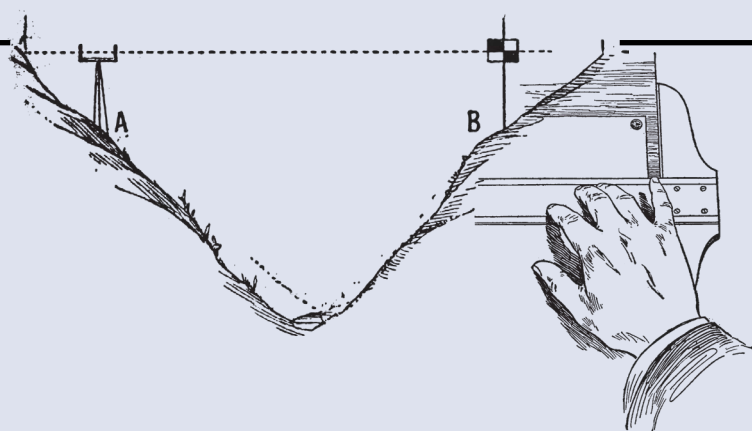
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THE FLORIDA SURVEYOR is the official publication of the Florida Surveying and Mapping Society, also known as FSMS. It is published monthly for the purpose of communicating with the professional surveying community and related professions who are members of FSMS. Our award winning publication informs members eleven months out of the year about national, state, and district events and accomplishments, as well as articles relevant to the surveying profession. In addition, continuing educational courses are also available.

PRESIDENT'S Message

February 12th, 2024



Dear Members of FSMS,

As we move through the first quarter of the year, I am delighted to share with you some exciting developments and upcoming events within our esteemed society. National Surveyors Week is March 17th-23rd, and Global Surveyors' Day will be celebrated on March 21st. Email all of your proclamations to communications@fsms.org for them to be featured in *The Florida Surveyor*. In addition, you are all invited to participate in Surveyors Proclamation Week at St. Lucie County Board of County Commissioners on Tuesday, March 19th, at 9 am.

This time is a crucial period for us as we gear up for our strategic planning session and board meeting April 11-12, at the Austin Cary Forest Campus in Gainesville, FL. The strategic planning session is a pivotal moment where we will collectively lay the groundwork for attainable goals, and is an opportunity to assign tasks that will shape our direction for the coming years. Your active participation and valuable insights during this session will play a crucial role in steering our society towards success. [Click Here to reserve your room by March 22nd with our discounted Group Rate.](#)

Looking ahead to the Annual Conference, I am thrilled to highlight three exceptional classes that are sure to attract professionals from various disciplines, offering a unique platform for learning and networking.

Firstly, after a hiatus of two decades, we are reintroducing a class on Riparian Rights. This 6-hour seminar will feature two lawyers, two surveyors, and two representatives from the Department of Environmental Protection.



President
Howard Ehmke
(561) 360-8883
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PRESIDENT'S Message

Another featured class will delve into the vital role of title in government land acquisition. This session will explore various title products available and review recent case studies with solutions on how to move projects forward with distinctive issues.

Lastly, on Saturday, a GIS panel seminar will be offered for our 6-hour course option. This session will focus on the intersection of Surveyors and Geographic Information Systems (GIS). It's high time we engage in a meaningful dialogue about our role in the process and identify the key areas that surveyors need to focus on in this ever-evolving landscape.

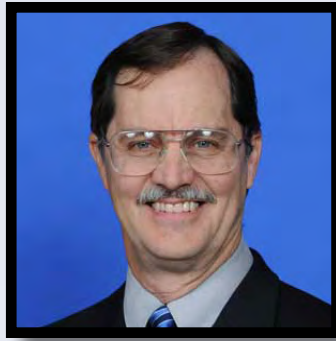
I encourage each of you to mark your calendars for these upcoming events and actively participate. Your involvement not only enriches your professional knowledge, but also contributes to the collective strength of our society.

Thank you for your continued dedication to the Florida Surveying and Mapping Society. Together, let's make these initiatives a resounding success, driving our society to new heights.

Respectfully submitted.

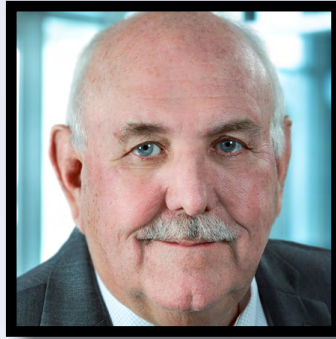
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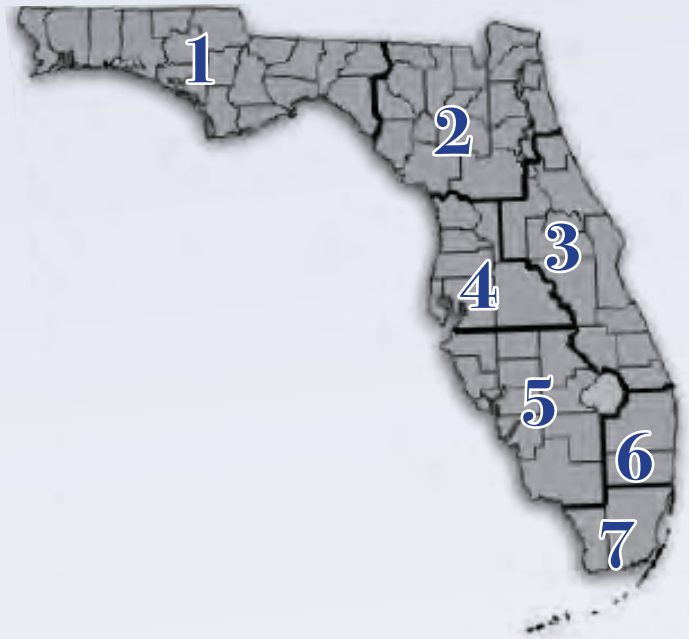
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FAU's Department of Civil, Environmental & Geomatics Engineering provides a unique mixture of traditional & non-traditional students in all their undergraduate & graduate programs. The existing relationship with FAU's very own High school enabled a good number of students to dual enroll in their undergraduate programs & complete their degrees within a year or two after high school graduation.

In that line, Leah Ballou graduated from FAU High in 2022 and finished her Bachelor of Science in Geomatics Engineering (BSGE) in Fall 2023. Leah, FAU's youngest BSGE graduate also successfully passed FS (Fundamentals of Surveying) Exam which is the first step towards becoming a licensed Professional Surveyor and Mapper (PSM) in the State of Florida. Leah was also the president of FAU's Florida Surveying and Mapping Society (FSMS) Student chapter and successfully conducted multiple events during her tenure. We congratulate her exceptional success at FAU & we are sure she will continue to be an inspiration for young women to choose Geomatics Engineering as their profession.

From Leah Ballou:

“My college experience was like a snowball effect. I started off as a highschooler at FAU High taking the undergraduate required courses and ended up being the Florida Surveying and Mapping Society (FSMS) FAU Chapter president, passing the FS exam, and having the highest GPA in my graduating class by the time I graduated at 19.

Holding myself to such a high standard at a young age could be overwhelming, but it is also rewarding. I knew that I would be taking classes with no one my age or demographic, but in a way, this made me work harder. After a few successful semesters, my confidence was built up and I realized that I could take on more roles. In the spring 2022 semester, I started my internship at Avirom & Associates as a CADD technician. In the fall 2022 semester, I held the secretary role of the FSMS FAU Chapter. In the spring 2023 semester, I participated in undergraduate research under [Dr. Madasamy Arockiasamy](#) for the “Maa Experiential Learning Opportunities for South Florida Underserved High School Students” NASA funded project. By fall 2023, I was the president of the FSMS FAU chapter, inviting guest speakers and organizing networking events.

This confidence continued through to my FS exam preparation. I watched review videos provided by [Dr. Hongbo Su](#) and [Dr. Sudhagar Nagarajan](#) and looked over notes I had taken from classes in previous semesters. In the end, passing the FS exam reassured me that hard work and discipline always pays off.

Having to pick the degree I would pursue at 15 years old was definitely an intimidating decision. Looking back at it, I am proud of myself for choosing geomatics engineering here at FAU. Being the first and only FAU High student to complete this degree, I hope more young students decide to be a part of this program. I would like to thank Dr. Hongbo Su and Dr. Sudhagar Nagarajan for giving me several opportunities to better myself academically and to increase my participation within the university and the geomatics profession.”





Board Meeting Dinner from January 25th 2024.

From Left to Right:

- 2002-2003 Past President John Clyatt
- District 4 Director Greg Prather
- 1999-2000 Past President & Chair of the Legal & Legislative Committees Jack Breed
- 2023-2024 President Howard Ehmke
- Communications Director Justin Ortiz
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- 2019-2020 Director Don Elder
- 2016-2017 & 2021-2022 Past President Lou Campanile, Jr.



FSMS FAU & PALM BEACH JOINT MEETING HELD ON JAN. 25, 2024

The meeting was jointly organized by FSMS Palm Beach and FAU Student Chapters. Clyde Mason, PSM and FAU Geomatics Alumni, was invited to give a presentation on "Starting a Small Business in Today's Market."





Please read more details of the joint meeting from the [story map1](#) and [story map2](#) created and shared by Todd Bates, PSM and the current President of FSMS Palm Beach Chapter.

Special Guest, Landon “Alfie” Cross, PSM, Board Member of Florida Professional Surveyors and Mappers, provided an update on the recent status of Professional Board of Surveyor and Mappers and the Fundamentals of Survey Exam (FS) application review committee.



2024 National Surveyors Week March 17-23

Global Surveyors' Day March 21



Download the Volunteer Kit

Get great ideas about activities to try in your region. Visit nsps.us.com and enter volunteer kit in the search bar.

Get Kids into Survey



Distribute posters! We have a variety available - just pay the postage. Order yours today at getkidsintosurvey.com

Distribute Brochures and Stickers

For a supply of surveying brochures and stickers, please email info@nsps.us.com



cstnsps.com

Try This in Your Region

- 1) Have a Survey Day at the Mall
- 2) Sponsor a Trig-Star Test
- 3) Conduct a Boy Scouts Merit Badge event
- 4) Obtain a proclamation from your state or local government
- 5) Organize Geocaching or Benchmark Hunting:
<https://geocaching.com/mark>
- 6) Try Surveying Mark Recon:
oceanservice@noaa.gov/education/for_fun/SurveyMarkHunting.pdf
- 7) Plan GPS Benchmarks:
<https://geodesy.noaa.gov/GPSonBM/>



TRIG-STAR

trig-star.com



Talk About Surveying

- Local civic clubs (American Legion, Elks, Grange, Kiwanis, Lions, Rotary, Ruritan, VFW, etc.)
- Professional organizations (realtors, attorneys, bankers, title agents, etc.)
- Teachers and School Counselors

Email Proclamations to communications@fsm.org for them to be featured in *The Florida Surveyor*



NSPS





National Surveyors Week Volunteer Kit

WHO. WHAT. WHEN. WHERE. WHY.

HOW!

It's all about the HOW.

It's not breaking news that the annual number of retiring surveyors far exceeds the number of those entering the surveying profession. It's up to us to reverse this trend. One of the best ways to do that is to introduce the newest generation to the surveying profession. Show them how interesting your job is and how it relates to their local community.

SECTION 1

How to request a proclamation.

An easy way to bring public recognition to the profession is by obtaining proclamations from local, state, and national governments to recognize the contributions of surveyors.

Contact the state and local government offices from which you would like to request a proclamation to determine the process for each. Most state and local governments need at least 3–4 weeks to complete the request. Sample proclamations are available on the National Surveyors Week website, www.nsps.us.com/page/NSW. Make sure you follow up to confirm receipt of your request and to find out how long it will take to complete it, how you will be notified, and if you can schedule a signing ceremony.

If you are able to schedule a signing ceremony,

- Arrange to have several surveyors present
- Promote the day and time of the ceremony on community calendars and in local news publications
- Be sure to take pictures during the event so that you can include a photo with any news releases, and post them on your website and other social media that you use.
- Provide information and photos about signing ceremonies to NSPS (info@nsps.us.com)

SECTION 2

How do I talk to kids about surveying?

HOW do I start?

Identify potential groups within your local community. Your list should include local elementary and middle schools, after-school care programs, Boy Scout and Girl Scout troops, Boys and Girls Clubs, and other area youth groups.

HOW do I set up a visit?

Contact NSPS (240-439-4615 or info@nsps.us.com) for give-away items. Look at your list and see if you have a personal connection to any of the groups. Do you have a daughter who is a Girl Scout? Is your neighbor an elementary school teacher?

SECTION 2

(continued)

Once you've identified a group to work with,

- Reach out to them and explain that you are interested in visiting the group and to lead a hands-on activity related to surveying
- Answer any questions they may have
- Ask if they have a volunteer policy
- Schedule and confirm a date and time for the visit

HOW do I explain surveying to kids?

Hands-on activities are the best way to engage the group and illustrate basic surveying principles. You can bring some of your equipment and demonstrate how and why you use it. Additionally, you can use programs like Get Kids Into Survey (GKIS). Since 2017, GKIS has been working internationally to educate young students about the world of surveying. Through the development of online resources, school, and career-day events and through the production of engaging and exciting learning materials, children all over the world have already learned a great deal about geospatial work. GKIS has a variety of resources that you can use when speaking to young students, including coloring sheets, lesson plans, posters, quizzes, and a comic book. In addition to using these free resources online, you can also become a brand ambassador or sponsor of GKIS. Visit getkidsintosurvey.com for more information.

HOW do I get kids excited about the profession?

Use phrases like making a difference and problem solving. Avoid phrases and terms that make it sound difficult to become a surveyor. Ask them about their interests, and see if any of them relate to the profession. Do they like to work with computers? If so, tell them how you use computers and other advanced technology in surveying. Are they interested in history? Tell them about the historical significance of the profession and boundaries. Demonstrate the technology you use every day especially today's high-tech data gathering/processing equipment.

HOW do I prepare for my visit?

7–10 days before the visit

Decide which of your favorite activities you'd like to share with the group, and gather the necessary materials. If you don't have a favorite activity or would like some new ideas, visit the National Surveyors Week website via www.nsps.us.com/page/NSW and download a free copy of GPS Adventures. This easy-to-follow guide provides sample GPS-related hands-on activities that are easily adapted to include basic surveying principles.

Day of visit

Make sure you wear something that you would typically wear to work. If you often work in the field, consider wearing your outdoor attire and gear. Students are usually quick to recognize a surveyor when he or she has on a hard hat and other outdoor gear. And remember, relax, smile, and have fun!

Day after visit

Follow up with the teacher or leaders of the group to thank them for the opportunity and to make sure they know where to find more information. Ask for feedback on the session and activity.

SECTION 3

Global Surveyors Day - March 21 annually

Global Surveyors Day (www.globalsurveyorsday.com) was created in 2018 through a collaboration among worldwide surveying organizations to recognize the role of Surveyors.

March 21 was chosen as the date for GSD so that the event will always fall within the dates for National Surveyors Week in the US which is celebrated each year during the week in March following the 3rd Sunday.

SECTION 4

Surveying Merit Badge

HOW can I help a Boy Scout earn the Surveying Merit Badge?

Helping a Boy Scout earn the surveying merit badge has never been easier. Start by visiting the Boy Scouts of America website (www.scouting.org) to download the current badge requirements. Then visit the NSPS website (www.nsps.us.com/page/BSmeritbadge) for step-by-step instructions on how to complete the requirements and tutorials.

After reviewing the requirements, identify local Boy Scout troop leaders in your community. Reach out to them and offer to help their scouts complete the badge requirements. Completing all of the requirements for the badge can take approximately 6–7 hours.

Find out if there is a “Scouts Day” or similar event in your area and contact the hosting organization regarding participation.

SECTION 5

Trig-Star

HOW can I get involved in the Trig-Star Competition?

Trig-Star is an annual competition for high school trigonometry students. It connects what students are learning in the classroom with a profession that requires those skills.

Volunteers are needed to assist in administering the exams and presenting information to the students about the surveying profession. Contact your state coordinator and let them know that you are interested in volunteering. Visit www.trig-star.com for more information and for a list of state coordinators.

Winners from the state competitions (typically 35-40) participate in the annual National Trig-Star Competition.

All students who participate in Trig-Star are eligible to apply for the Trig-Star Scholarship upon proof of enrollment in a college surveying curriculum.

Impact of Artificial Intelligence on Professional Land Surveyor

By: Stacey D. Lyle, PhD, RPLS

Note: Portions of this paper was written with ChatGPT.

Of course, you should be using ChatGPT to help you with your work. We have moved from the handsaw to the chainsaw in our application of tools to increase our productivity and reduce our risk, but some would say a chainsaw is riskier. When used properly, with the correct safety processes in place a chainsaw greatly increases our productivity. The same can be said for using ChatGPT, it is only a tool of our profession now. As an advanced language model developed by OpenAI, ChatGPT possesses the ability to understand and generate human-like text, making it a powerful tool for communication and problem-solving. ChatGPT is expected to revolutionize various aspects of professional surveying, including document investigation, legal descriptions, education, and communication. The integration of ChatGPT into surveying workflows is likely to streamline processes, enhance plat communication, and foster a new era of intelligent digital twins.

ChatGPT is a language Artificial Intelligence tool. Artificial Intelligence (AI), refers to the development of computer systems that can perform tasks that typically require human intelligence. AI aims to create systems that can mimic certain aspects of human intelligence or, in some cases, surpass human capabilities in specific domains by utilizing a large body of digital knowledge. AI can find patterns using techniques of analyzing, predicting and simulating processes.

Key components and techniques within AI include:

- **Machine Learning (ML):** ML is a subset of AI that involves the development of algorithms and statistical models that enable systems to learn from data. It includes supervised learning, unsupervised learning, and reinforcement learning.
- **Deep Learning:** Deep learning is a type of machine learning that uses neural networks with many layers (deep neural networks) to analyze and process data. It has been particularly successful in tasks such as image and speech recognition.
- **Natural Language Processing (NLP):** NLP focuses on enabling computers to understand, interpret, and generate human language. It is integral to applications like language translation, chatbots, and sentiment analysis.

- **Computer Vision:** Computer vision involves giving machines the ability to interpret and make decisions based on visual data. This is essential for tasks like image and video recognition.

As AI continues to advance, ethical considerations, responsible development, and ensuring transparency become crucial aspects of its integration into society.

ChatGPT, built on the GPT-3.5 architecture, is a state-of-the-art language model designed to understand and generate coherent text. Its capabilities extend beyond simple conversation to complex problem-solving, making it a potentially disruptive technology in engineering and surveying domains. This includes the interpretation of textual descriptions, contextual understanding of

survey reports, and extraction of valuable insights, ultimately expediting data processing to produce legal descriptions. Surveyors can utilize ChatGPT in data analysis, surveyors can enhance the accuracy and reliability of their results. The model's ability to comprehend complex data sets can contribute to more robust quality assurance processes in professional surveying. Professional surveying often involves interdisciplinary collaboration. ChatGPT's capacity for interpreting technical language can aid in effective communication and collaboration between



surveying teams with diverse expertise. We will see Surveyors leveraging ChatGPT for real-time decision support during fieldwork as it is incorporated into our surveying equipment and software.

One example of ChatGPT is it being used to assist surveyors in drafting a legal description. ChatGPT is a powerful language model that can generate human-like text based on the input it receives. When creating a legal description, you can input relevant information, such as details about the property, boundaries, and other legal considerations, and ChatGPT can generate a descriptive passage. ChatGPT can read all the publicly available legal descriptions to start to build a language model of how to best construct these documents. Currently, ChatGPT can not be handed a plat and asked to write a legal description. The version of ChatGPT available to the public, including ChatGPT on platforms like OpenAI's ChatGPT website, does not learn or improve from individual user feedback, but it will eventually have this ability as it grows and we contribute to as surveyors.

It's important to note that while ChatGPT can provide assistance, the generated content should be carefully reviewed and verified by a professional surveyor. Legal descriptions need to be accurate, precise, and compliant with applicable laws and regulations. Relying solely on an AI model, even a sophisticated one like ChatGPT, may introduce the risk of errors or oversights.

While ChatGPT can be a useful tool in the drafting process, the ultimate responsibility for the accuracy and legality of the legal description lies with the person creating the document and legal professionals involved in the review process.

A New York lawyer was recently sanctioned for using fake ChatGPT cases in a legal brief. Judge P. Kevin Castel of the U.S. District Court in Manhattan required Steven Schwartz, Lawyer and Peter LoDuca, Lawyer and their law firm Levidow, Levidow & Oberman to pay a \$5,000 fine because the lawyer acted in bad faith and made "acts of conscious avoidance and false and misleading statements to the court." OpenAI has other models, like WebGPT, which are designed to interact with the web and pull in information. However, the specifics of these models might be different, and it's essential to refer to the documentation for each model to understand its capabilities and limitations. Where there is a lack of evidence or public material ChatGPT will use static models that generates responses based on the patterns it learned during training, and it doesn't have the capability to pull in new information from the internet. So, in essence,

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INSPIRED FLIGHT

dji ENTERPRISE

WATTS
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AUTEL
ROBOTICS

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FREEFLY

ChatGPT will makeup context using the patterned models.

You can ask ChatGPT a wide range of questions on various topics. The model is designed to understand and generate human-like text, so it can provide information, explanations, creative content, and more. Here are some types of questions you can ask:

1. General Knowledge Questions:

"What is the capital of Arkansas?"

"Who wrote the 'Mona Lisa'?"

2. Explanation and Clarification:

"Can you explain the concept of GNSS?"

"What is the role of a professional land surveyor?"

3. Creative Writing and Ideas:

"Write an email to complain about a late invoice."

"Can you come up with a creative name for a new Surveying Company?"

4. Programming and Technical Questions:

"Write python code to inverse between to point coordinates"

"Explain what is a geoid for an 8th grader"

5. Language Translation:

"Translate 'Hello, how are you?' into French."

"What does 'arigato' mean in English?"

6. Problem Solving:

"Solve the equation $x^2 - 4 = 0$."

"How can I troubleshoot a computer that won't start?"

7. Ethical and Philosophical Questions:

"What are the ethical implications of artificial intelligence?"

"Is it ok to steal land from another person?"

8. Practical Advice:

"Can you suggest some tips for effective time management?"

"What are some ways to improve productivity at work?"


```
def swap_coordinates(point1, point2):  
    """  
    Swap the coordinates of two points.  
  
    Parameters:  
    - point1, point2: tuples representing the points with (x, y) coordi  
  
    Returns:  
    - Tuple of swapped points.  
    """  
    return point2, point1  
  
# Example usage:  
pointA = (3, 5)  
pointB = (8, 2)  
  
pointA, pointB = swap_coordinates(pointA, pointB)  
  
print("Swapped Coordinates - Point A:", pointA)  
print("Swapped Coordinates - Point B:", pointB)
```

Figure 1.0 ChatGPT generated python code of an inverse problem.

9. Fun and Entertainment:

"Tell me a joke about lawyers."

"What can I buy my 12 year old daughter for her birthday?"

10. Learning and Education:

"Explain FEMA Flood Certificates"

"What are the key principles to geodesy?"

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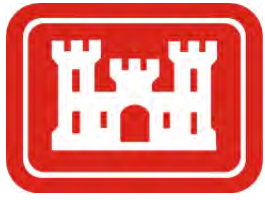


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ChatGPT can be integrated into various software applications to enhance user interaction, provide natural language understanding, and facilitate intelligent responses. Just like the slide rule, calculator, computer, EDM, GPS, LiDAR, etc. has been quickly adopted and utilized by surveyors, so will ChatGPT. ChatGPT has the potential to make us more productive by acting as a powerful tool that complements human capabilities rather than making us lazier. Surveyors will be able to utilize ChatGPT to expand their capabilities, reduce potential errors, and provide more time for critical thinking. ChatGPT does not possess true critical thinking abilities in the way humans do. While it is a powerful language model capable of generating human-like text based on patterns learned from data, it lacks genuine understanding, consciousness, and the ability to independently analyze complex problems. However, ChatGPT can simulate aspects of critical thinking to some extent. It can provide reasoned responses, analyze information, and generate logical conclusions based on its training data. It excels at pattern recognition, language understanding, and generating contextually relevant text. Human oversight and interpretation are essential to ensure the accuracy and appropriateness of the generated content in critical or nuanced situations.

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CHAPTER FIVE

Flexing the Environmental Muscle: The Cross-Florida Barge Canal, the Everglades Jetport, and Big Cypress Swamp

In the late 1960s, environmentalists came to the defense of Everglades National Park and its water needs. Two other controversies in the late 1960s and early 1970s – the proposal to build a jetport in Big Cypress Swamp and the construction of the Cross-Florida Barge Canal – would mobilize and crystallize the environmental movement in Florida to an even greater degree. On their faces, these two skirmishes, which have already been widely discussed by environmentalists, journalists, historians, and political scientists, seem to have little place in a history of the C&SF Project. The jetport, for example, generated little Corps involvement, in part because it had no direct impact on the C&SF Project.¹ The barge canal – although planned and constructed by the Corps – was located in northern Florida, outside of the scope of the C&SF Project. But for several reasons, both of these stories must be told in order to comprehend the full history of water management in South Florida. Both highlighted growing concerns with water quality in Florida in the late 1960s and early 1970s, concerns that would eventually reach an apex with the debate over the Kissimmee River and Lake Okeechobee in the 1970s. Both dealt with how industrial and engineering structures could harm a unique ecosystem, be it Big Cypress Swamp or the Oklawaha River Valley. Perhaps most importantly, both showed the increasing influence of the environmental movement in Florida in water management matters. In both instances, environmentalists were able to focus national attention on the controversies, forcing both the legislative and executive branches of the federal government to become involved. The jetport controversy and the debate over the Cross-Florida Barge Canal thus foreshadowed how environmentalists would handle water management issues in South Florida in the 1980s and 1990s.

In the 1960s, environmentalism became an established force in the United States. The conservation movement of the late 1800s and early 1900s provided a greater awareness of the environment, but it was not until the 1960s that an actual movement – “concerted, populous, vocal, influential, active” – coalesced.² Several factors contributed to this, including the expansion of the nation’s economy in the 1940s and 1950s, which created a more affluent society and increased the number of college educated, middle-class Americans who had time to think about and work for a better quality of life.³ This was significant, as it focused citizens more on a holistic view of the environment and the importance of environmental quality, rather than just wise use, efficiency, and the use of technology to help humans get the most from natural resources.

Likewise, the acceptance of environmental causes as a legitimate aspect of the liberal agenda, the grass roots activism of middle-class women and men, and an infusion of energy by the United States’ counterculture played a large role in heightening concern for the environment. Democratic politicians, for example, saw environmental preservation as a worthwhile cause. President John F. Kennedy sponsored a White House Conference on Conservation in 1962 and appointed environmental enthusiast Stewart L. Udall as his secretary of the interior, while

President Lyndon B. Johnson pushed the environmental agenda even further as part of his “Great Society” plan, in part because of the influence of his wife, Lady Bird Johnson. Indeed, women were an essential part of the expanding environmental movement, just as they had been an important component of the conservation movement. Many women protested environmental degradation in the 1960s as part of their domestic sphere responsibilities: poor water quality or contaminated milk could affect the health of their children. Other women found the environmental cause liberating and a way to become more involved in politics and economics. Finally, many young activists in America embraced environmentalism as a part of their war against authority, consumerism, and large corporations, especially in the late 1960s. “Hippies” founded communes based on becoming one with the earth, while student radicals equated the use of chemical defoliants in the Vietnam War with oil spills and other environmental destruction in the United States. The vigor of these activists infused the environmental movement with necessary energy.⁴

As evidence of environmental destruction, environmentalists turned to ecologists for support. Ecology (a term first used by German zoologist Ernst Haeckel in 1866) had slowly evolved in the nineteenth and early twentieth centuries into a stand-alone scientific discipline focused on the study of how animals relate to their inorganic and organic environments. The Ecological Society of America was formed in 1915, and the first ecology departments at universities were established in the 1950s. By that same decade, the examination of all elements in a bounded environment, or ecosystem, and the effects that individual actions had on other aspects of the system, had become an essential part of ecology, influenced by the work of E. P. Odum.⁵

As the environmental movement gained in momentum, it used the ecosystem concept to show the consequences of human actions on the environment, and ecologists, in turn, became caught up in the environmental movement; scientists began to write books and articles for a more general audience, as well as giving public lectures, in order to obtain public support for funding and “to educate the public about the history of science as well as the significance of current research.”⁶ Rachel Carson, a marine biologist, for example, published *Silent Spring* in 1962, a book that, in the eyes of many, ushered in the environmental movement. Other scientists followed, including biologist Barry Commoner, who published *The Closing Circle*, and Paul Ehrlich, an entomologist whose book *The Population Bomb* warned about the dangers of overpopulation. Spurred on by these publications, environmentalism became more prominent in American society in the 1960s; the number of articles on environmental topics in national magazines increased by more than 300 percent from the late 1950s to the late 1960s. Membership in the Sierra Club grew from 15,000 in 1960 to 113,000 in 1970, while the National Audubon Society expanded from 32,000 constituents in 1960 to 148,000 in 1970.⁷

By the end of the 1960s, environmentalism had become a hot political topic, and senators such as Wisconsin’s Gaylord Nelson, Maine’s Edmund Muskie, and Washington’s Henry Jackson made environmental protection one of their primary focuses in Congress. Due to their influence, Congress passed a law in December 1969 declaring the federal government’s responsibility towards the environment – the National Environmental Policy Act (NEPA). It stipulated that the government would cooperate with state and local entities to ensure the coexistence of man and nature “in productive harmony.” The law established a Council on Environmental Quality in the Executive Office of the President “to appraise programs and

activities of the Federal Government,” and it also required federal agencies to prepare environmental impact statements (EISs) whenever they conducted activities “significantly affecting the quality of the human environment.”⁸ In accordance with the policy established by NEPA, Congress and the White House created the Environmental Protection Agency (EPA) soon after NEPA’s passage to regulate actions affecting the nation’s environment.⁹

With the aid of NEPA, environmental groups began to attack the Corps with more frequency and with more concerted approaches. Because the law required federal agencies to produce EISs for their projects, it opened federal construction proposals to more public scrutiny than ever before. The law therefore forced the Corps and other federal agencies to consider environmentalist concerns in their endeavors, heightening the already-burgeoning power of the movement.¹⁰ Nowhere is this more apparent than in the issues surrounding the Cross-Florida Barge Canal, the Everglades Jetport, and Big Cypress Swamp in the late 1960s and early 1970s.

As environmental organizations increased the visibility of construction projects in Florida, several Floridians increased their prominence in the national eye. Joseph B. Browder, for example, a former television producer who quit his job to focus on environmental issues, served as the southeastern regional representative of the National Audubon Society and was instrumental in forming the Everglades Coalition to defeat the jetport. During the debate over the jetport, he testified before numerous congressional committees about the airport’s potential effects on Everglades National Park. Browder also convinced Marjory Stoneman Douglas, the author of *The Everglades: River of Grass*, to found Friends of the Everglades in 1969 to fight the jetport proposal. Arthur R. Marshall, a marine biologist who worked at the Vero Beach office of the U.S. Fish and Wildlife Service until 1970 (when he took a position at the University of Miami), spent countless hours educating people on the South Florida water system, believing that the Everglades needed its natural flow restored in order to prevent the region from dying. Marshall also criticized Florida’s grow-at-all-costs approach to land use and water planning, believing that some restrictions were necessary to preserve the state’s water supply.¹¹



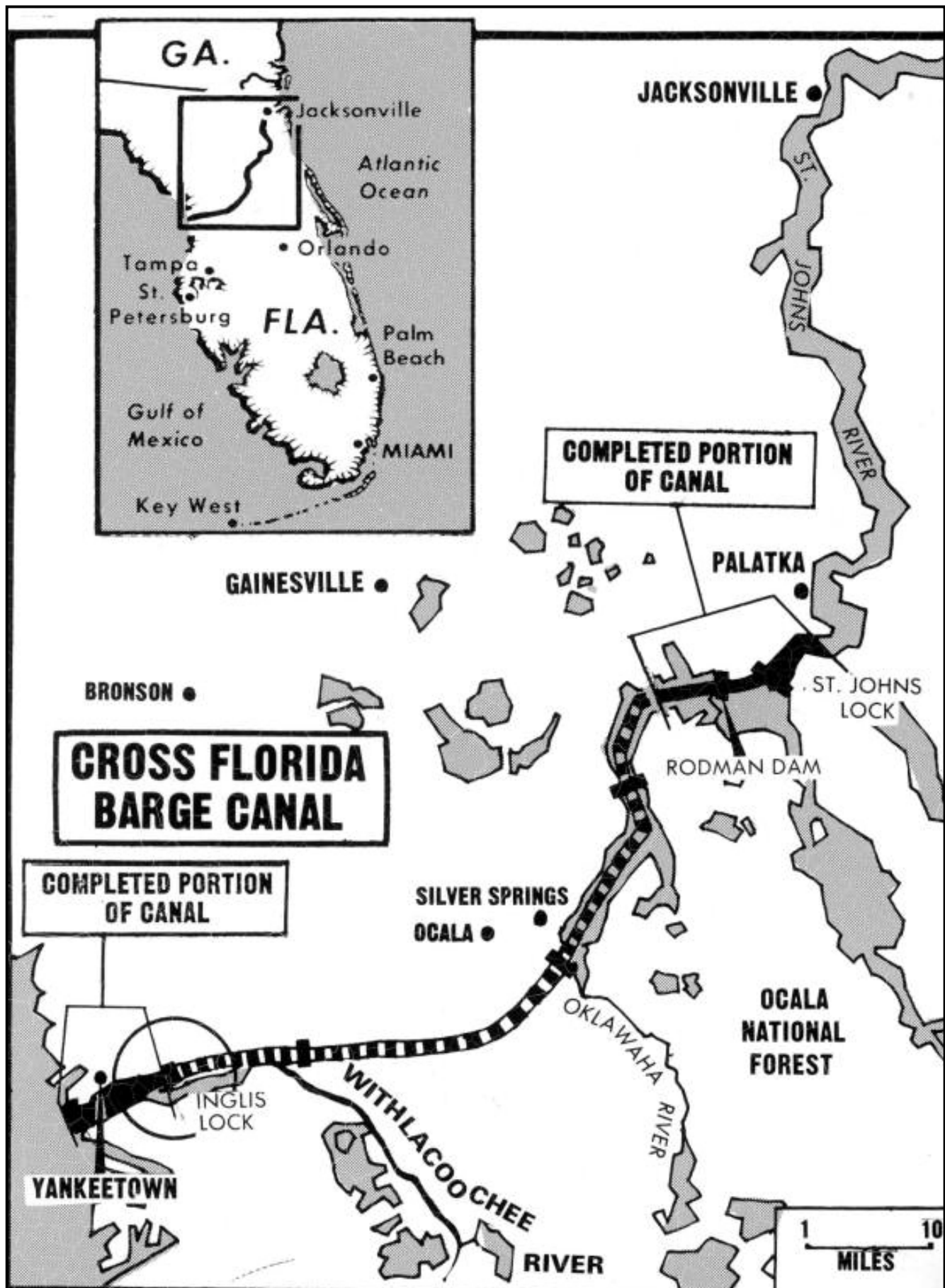
Governor Claude Kirk (left) presenting an award to Nathaniel Reed (right). (Source: The Florida Memory Project, State Library and Archives of Florida.)

In both federal and state offices, Browder, Douglas, and Marshall had some receptive audiences; the importance of ecological issues in Florida transcended political parties. Although President Richard Nixon, a Republican, did not agree with much of the environmental movement, he understood politics well enough to support some key issues, such as NEPA and the Clean Air Act of 1970, in order to deflect the political influence of rivals such as Edmund Muskie and Henry Jackson. Nixon also appointed some crucial environmental officers, including Deputy Assistant to the President for

Domestic Affairs John Whitaker, who held a deep concern for the environment; Russell Train, the undersecretary of the interior who became chairman of the Council on Environmental Quality in 1970; and Nathaniel Reed, special environmental assistant to Florida Governor Claude Kirk, who became assistant secretary of the interior for fish, wildlife, and parks. Because of Reed's familiarity with Florida issues, he was instrumental in achieving national concern for problems affecting the Everglades and South Florida. On the state level, Governor Claude R. Kirk, Jr. (Republican, 1967-1971) understood the political benefits of supporting environmental causes, while his successor, Reubin Askew (Democrat, 1971-1979) was more committed personally to environmental action, as was Jay Landers, his environmental adviser. Because of the efforts of these officials, environmentalists were able to achieve some worthy goals in Florida in the late 1960s and early 1970s, especially revolving around Big Cypress Swamp and a proposed jetport in the area.¹²

In order to defeat the jetport, environmentalists used tactics pioneered in the fight against a Florida construction project, albeit in northern Florida, planned by the Corps of Engineers: the Cross-Florida Barge Canal. The canal had deep historical roots. The idea for a waterway connecting one side of Florida to the other had existed since the initial Spanish occupation of Florida in the 1500s, and Floridians had made several proposals of a trans-Florida canal in the 1800s and early 1900s.¹³ With General Charles P. Summerall, a retired four-star general who had served as Chief of Staff from 1926 to 1930 heading the efforts, support for the canal gained momentum in the 1930s, in part because it promised jobs for a depression-ridden state, and in part because the Corps determined that a feasible route existed. The Corps concluded that the best path for the canal, which would be a sea-level ship canal, would begin on Florida's western gulf coast at Yankeetown (approximately 70 miles north of Tampa), where the Withlacoochee River flowed. The canal would follow the Withlacoochee east to Dunnellon, and then northeast (but south of Ocala) to the Oklawaha River. Following the Oklawaha, it would connect to the St. Johns River at Palatka, eventually emptying into the Atlantic Ocean at Jacksonville. President Franklin D. Roosevelt authorized using emergency funds for the construction of this route in order to provide jobs in Florida, leading the Corps to begin construction on the waterway. After spending \$5 million and clearing nearly 5,000 acres of land in the late 1930s, however, the project was abandoned, largely because of opposition from railroads and other entities, which claimed that poor water quality and aquifer contamination would result. Therefore, the Corps developed a new plan in 1943, proposing that the canal be a lock, rather than a sea-level structure, that would serve barges instead of ships. The 12-foot deep waterway would contain five locks and two dams, including the Rodman Dam and Eureka Dam across the Oklawaha River. However, due to the United States' participation in the Second World War, the canal received little federal support.¹⁴

The major push for construction of the barge canal came in the 1960s after John F. Kennedy won the presidency, partly on a platform guaranteeing the waterway's construction. His support, coupled with state backing engineered by Governor Farris Bryan, pushed Congress to appropriate funds for the canal's construction in 1962. On 27 February 1964, President Lyndon B. Johnson presided over a groundbreaking ceremony in Palatka that commenced canal construction once again.¹⁵



Location of the proposed Cross-Florida Barge Canal. (Source: The Florida Memory Project, State Library and Archives of Florida.)

However, opposition to the canal gradually coalesced, largely because of its potential environmental harm. In 1962, after seeing a presentation by the Alachua Audubon Society, Marjorie Carr, a resident of Gainesville and wife of University of Florida zoologist Archie Carr, became convinced that the canal would destroy much of the lower stretches of the Oklawaha River. This river meandered for 60 miles through northern Florida, east of Ocala, the largest city near the river, as an outlet for the Oklawaha chain of lakes, including Lake Apopka. Beginning at Lake Griffin, the river ran through a subtropical hardwood forest on its way to the St. Johns River, providing habitat for limpkin, otter, and alligator, as well as numerous game fish such as bass. Although farmers had diked the upper portion of the river in the 1800s, and although the timber industry extracted numerous trees from the forest in the 1880s, the Oklawaha still had, in the words of journalist Luther Carter, a “wild and junglelike character.”¹⁶ Realizing the beauty and importance of the Oklawaha ecosystem, Marjorie Carr, together with biochemist David S. Anthony of the University of Florida, began a society-sponsored study of the barge canal’s potential environmental effects.¹⁷ After deciding that the canal and the construction of Rodman Dam and Reservoir would largely destroy 40 out of the 50 miles of the Oklawaha that still flowed freely, Carr, the Alachua Audubon Society, and the Florida Audubon Society asked Congress to investigate alternate routes for the waterway, bypassing the river. Stating that the Corps claimed that environmental damage would be minimal, Congress refused.¹⁸

Yet Carr influenced others, and they began to agitate for the preservation of the Oklawaha. In 1966, over 350 people attended a state-sponsored public hearing on the canal, which, according to William N. Partington of the Florida Audubon Society, was “the largest of its kind to be held on a Florida conservation issue.”¹⁹ Critics, including a group called Citizens for the Conservation of Florida’s Natural and Economic Resources, told state leaders that the canal and Rodman Reservoir would kill the Oklawaha’s natural beauty. According to Partington, Florida Secretary of State Thomas Adams and other officials, using arguments that jetport proponents would also make, dismissed these concerns as “birdwatchers let[ting] off steam” and counseled environmentalists to move out of the way “so that orderly progress could be made.”²⁰ Despite the unproductive nature of the meeting, Partington believed it to be a turning point in the history of Florida’s environmental movement because it was the first time that individuals and disparate groups united behind a common ecological cause.



Governor Claude Kirk (left) presenting an award to Marjorie Carr (center), the driving force behind environmental opposition to the Cross-Florida Barge Canal. Carr’s husband Archie (right) looks on. (Source: The Florida Memory Project, State Library and Archives of Florida.)

In March 1966, state officials formally endorsed the project, and for the next few years, the Corps worked on channel construction and building other works, including Rodman Reservoir.

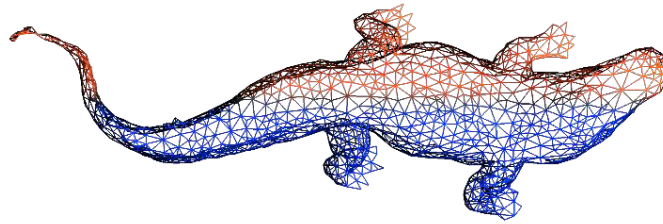
But when the Corps filled the reservoir in 1968 and 1969, water hyacinth began to flourish, validating a 1967 report by the Federal Water Pollution Control Administration indicating that algal blooms were likely in the reservoir. The Corps continued its work on the Eureka Lock and Dam on the Oklawaha, but the condition of Rodman Reservoir led Carr and others, who originally wanted the Corps to change only the course of the canal, to call for a complete halt to construction.²¹

In order to effectuate a work stoppage, Florida environmentalists formed the Florida Defenders of the Environment in July 1969 to coordinate legal work with the Environmental Defense Fund, Inc., an organization established in 1967 to litigate against ecological despoilers, specifically against the use of the pesticide DDT (one of its founders, Victor J. Yannacone, Jr., lived by the motto “Sue the Bastards”).²² Using environmental litigation to stop potentially destructive projects was a relatively new tactic, having been pioneered in 1965 by the Sierra Club and other environmental groups to stop the construction of a hydroelectric project above the Hudson River. Yet it had proved enormously effective, paving the way for the establishment of Florida Defenders, with Partington as chairman and Carr as assistant general chairman. Having commissioned a study of the canal’s ecological effects, Florida Defenders, assisted by the Environmental Defense Fund, filed a suit against the Corps on 15 September 1969, charging it with violating the constitutional rights of American citizens by destroying the natural resources of the Oklawaha River Valley. The litigation asked that the U.S. District Court in Washington, D.C., enjoin the Corps from further work on the canal until a study on social costs and benefits could be performed.²³

Meanwhile, the Florida Game and Fresh Water Fish Commission and the FWS both determined that the canal would result in drastic changes in the Oklawaha ecosystem and that the Rodman Reservoir would degrade quickly into a stagnant nutrient trap. Both agencies recommended a detailed ecological study of the canal’s impacts.²⁴ At the same time, Florida Defenders of the Environment completed its ecosystem study in March 1970. It foresaw only ecological disaster for the Oklawaha Valley – “the only large wild area remaining that supports the full spectrum of plant and animal life native to north-central Florida” – if the canal was completed. The organization, therefore, recommended the halt of further appropriations for the waterway, the draining of Rodman Reservoir, and the return of the Oklawaha to its “natural free-flowing condition.”²⁵

In 1970, an article in *Reader’s Digest*, which had 18 million subscribers, attacked the project and the Corps further, influencing hundreds of people to write letters to the secretary of the interior about the project. In this essay, entitled “Rape of the Oklawaha,” James Nathan Miller, an environmentalist, characterized the Corps as “the most damaging single force at work on the U.S. countryside” and the canal as merely one more pork-barrel boondoggle. He accused Corps leaders of deliberately massaging the canal’s benefit-cost ratio in order to justify it economically. Miller asked for not only a stoppage of construction, but also recommended that the federal government either eliminate benefit-cost analyses altogether (because no economic price could be placed on environmental values) or provide ways to “inject *human judgment* into a formula that now accepts only dollar signs.”²⁶

The Corps also began facing battles on the economic front, as Congress cut congressional appropriations for the canal. This led to a slowdown in construction, and the delay allowed canal



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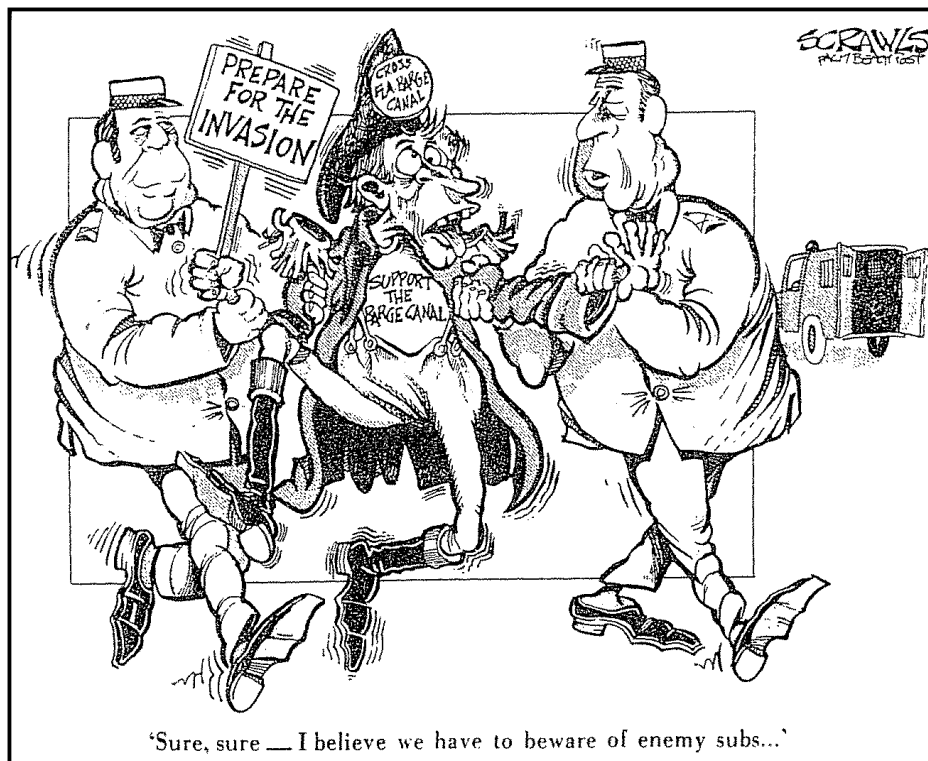


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enemies to increase their efforts. Blazing a path that jetport opponents would follow, environmentalists decided to petition the federal government for help. In January 1970, 162 prominent scientists, including environmental leaders throughout the United States, sent a letter to President Richard M. Nixon, asking him to dismiss the project to prevent “further degenerative manipulation of one of the most valuable natural ecosystems of Florida” and to preserve “the quality of the subsurface water supply of Central Florida.”²⁷ In June, Secretary of the Interior Walter Hickel asked the Secretary of the Army to implement a moratorium on construction until new ecological and economic studies could be completed. After some resistance, Corps leaders agreed to a six- to twelve-month moratorium.²⁸

Meanwhile, the President’s Council on Environmental Quality (CEQ) investigated the canal situation. After perusing several ecological studies, the CEQ concluded that the canal would destroy the unique characteristics of the Oklawaha River Valley, causing water weed infestation in the area, polluting surface and subsurface water, and changing the river from “a cool, highly enriched, densely shaded, flowing” waterway to “a warm water, highly enriched, unshaded, shallow watercourse, with little or no flow.”²⁹ Because of this potential damage, Russell Train, chairman of the CEQ, recommended to John C. Whitaker, Deputy Assistant to the President, that project construction halt.



An editorial cartoon from *The Palm Beach Post* depicts the "crazy" reasoning that barge canal proponents used to justify the canal.

April 1970 to provide advice to Corps leaders on ecological concerns) recommended a thorough review of the project in December 1970.³¹

Before the Corps could make a comprehensive examination, U.S. District Court Judge Barrington Parker issued a preliminary injunction barring the Corps from further work on the canal. Only four days later, on 19 January 1971, Nixon released a written directive that the

Whitaker forwarded Train’s recommendation, as well as a separate decision paper Whitaker had composed, to John Ehrlichman, President Richard Nixon’s aide over domestic affairs. After reviewing these documents, Ehrlichman decided that the CEQ had valid reasons for wanting the project halted, so he told the Chief of Engineers to end construction. “It’s doing terrific damage,” Ehrlichman recalled saying to the general, and “the cost-benefit basis doesn’t prove out to me.”³⁰ The Corps did not necessarily disagree, and its Environmental Advisory Board (first established in

Corps cease work on the canal to preserve the Oklawaha environment. Not only would the canal significantly harm “a uniquely beautiful, semi-tropical stream,” Nixon stated, but it was also economically unjustified. “The step I have taken today,” the President explained, “will prevent a past mistake from causing permanent damage.”³²

But Nixon’s order had repercussions, as both state officials and canal proponents believed that he had exceeded his authority.³³ Accordingly, the Authority filed a suit in the Jacksonville Federal District Court against the United States, stating that the President did not have the power to halt construction.³⁴ The litigation continued for the next three years, and on 31 January 1974, U.S. Circuit Court Judge Harvey M. Johnsen ruled that Nixon did not have the proper authority to halt the canal, stating that such power rested only with Congress. Canal proponents celebrated this victory, but it seemed hollow, primarily because Johnsen also issued a permanent injunction on further construction until the Corps completed a comprehensive environmental impact statement (EIS) with a revised benefit-cost ratio. Johnsen’s ruling eroded state support of the project, as Florida Governor Reubin Askew stated that he and his cabinet would not ask for any additional canal appropriations until the Corps had completed the EIS, and the Florida Department of Natural Resources rescinded its previous support of the canal until it had examined the EIS and the economic report.³⁵

The state’s position on the canal was clarified in a two-day public hearing held in December 1976. Three hundred fifty people attended, some of them wearing green signs proclaiming “Stop the Canal” or “Save the Oklawaha,” while others had red and blue buttons declaring “I Support the Canal.” After hearing testimony from both sides, the cabinet voted six to one to withdraw state support for the canal, and on 17 January 1977, it passed a resolution recommending against further construction and asking Congress to deauthorize the project.³⁶

With no further state backing, and realizing that the issue had become so politicized that the Corps could not win, the Jacksonville District’s EIS, published in 1977, recommended against further construction. Jacksonville District Engineer Colonel Donald Wisdom still believed that the canal was both economically and ecologically viable, but only if both sides were willing to compromise. Unfortunately, according to Wisdom, canal opponents “no longer could look at anything but total stoppage of the canal”; there was no chance of conciliation.³⁷ Chief of Engineers Lieutenant General J. W. Morris concurred in the Jacksonville District’s decision to abandon the canal, declaring that environmental concerns precluded the Corps from continuing the project. The only things left to accomplish were the Oklawaha River’s restoration and the project’s deauthorization, things that took several years to accomplish. Ultimately, however, the state designated canal route lands that it owned as the Cross Florida Greenway State Recreation and Conservation Area, renamed the Marjorie Harris Carr Cross Florida Greenway in 1998.³⁸

The Everglades Jetport

The battle over the Cross-Florida Barge Canal was not an isolated incident; instead, there were several examples in the 1960s and 1970s of environmental interests halting or rejecting Corps projects. A proposed dam and reservoir on the Meramec River in eastern Missouri, first planned in the 1930s, met its ultimate demise in August 1978 when voters voted against the project’s continuation for both economic and environmental reasons. Likewise, in southwestern

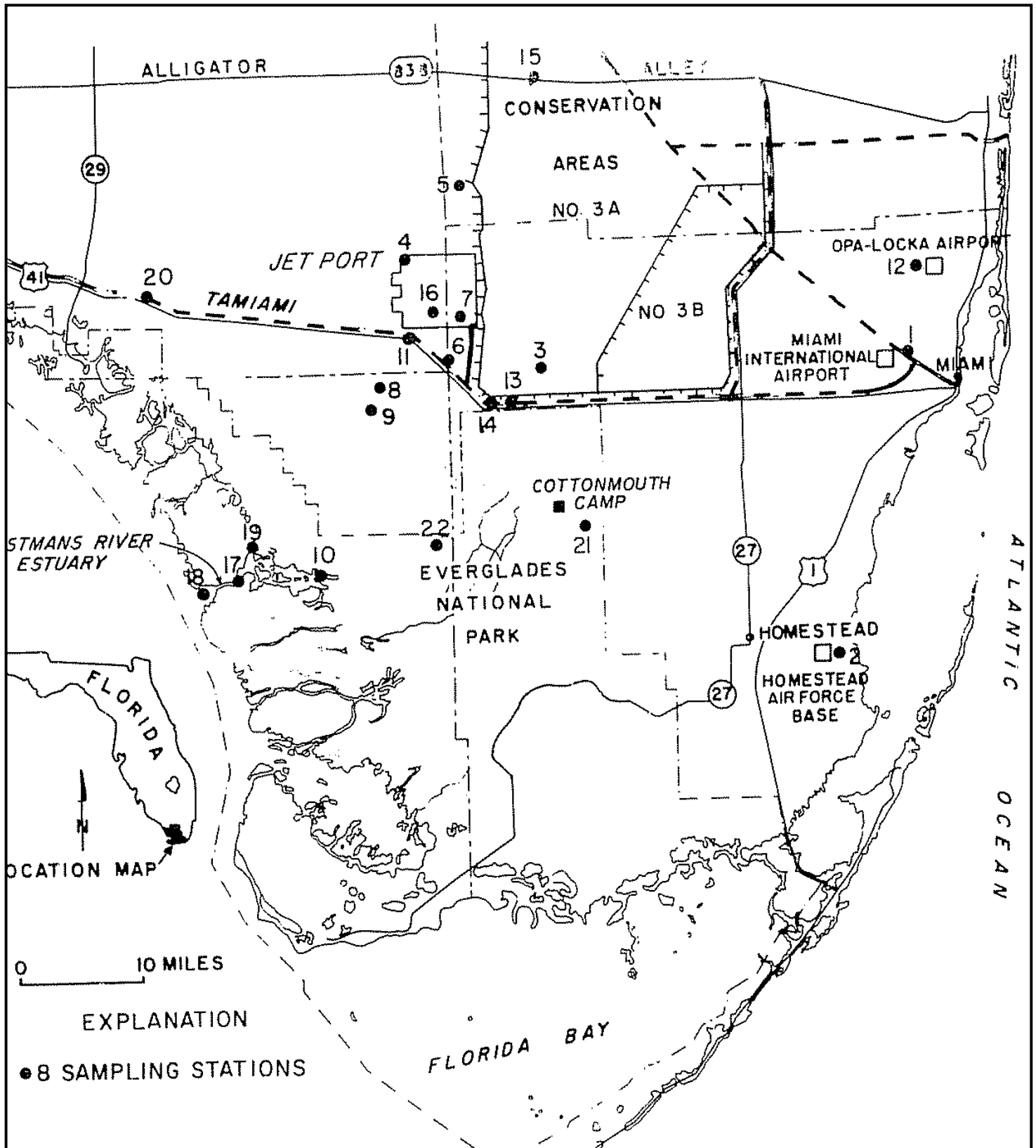
Wisconsin, environmentalists banded with congressional leaders such as U.S. Senator Gaylord Nelson to prevent the Corps from building a dam and reservoir for flood protection on the La Farge River.³⁹

Another example came in Florida itself, where environmentalists used many of the same tactics that they employed in the Cross-Florida Barge Canal fight to defeat a proposed jetport in Big Cypress Swamp in the late 1960s and early 1970s. The jetport proposal stemmed from the increasing growth and rapidly expanding population of South Florida in the 1960s. Dade County, for example, saw its population climb from approximately 500,000 people in 1950 to nearly 1.5 million in 1970. The larger number of residents created a real estate boom that showed no signs of stopping; Florida was projected in the 1960s to become the third largest state in the United States by 2000 (a prediction slightly off-the-mark, as the state had the fourth largest population in 2005). But the state itself did not have adequate planning measures for controlling the effects of this expansion on vital natural resources, including water. As Paul Brooks explained in an article in *Audubon* in 1969, “pressures on the land and water are at a maximum; zoning for their protection at a minimum.”⁴⁰ As Florida continued to grow, the stress on its natural resources increased as well.

These problems were clearly seen when Dade County proposed the building of a jetport in Big Cypress Swamp on the northwest boundary of Everglades National Park. The swamp itself was a mix of marsh and lowland forest, containing sloughs, tree islands, bay and cypress trees, orchids, ferns, and bromeliads on limestone and sand formations. The area was almost completely flat, and it was estimated that 50 percent of the surface water running into Everglades National Park (or 9 percent of the park’s total water) came from the swamp’s extremely slow-moving sheet flow. The area also housed 17 endangered species, including the Florida panther, the American alligator, and the roseate spoonbill.⁴¹

Despite its ecological importance, many believed that the swamp was the ideal place for a new jetport in South Florida. An airport was necessary, proponents claimed, because the increasing number of tourists going to Miami and South Florida’s east coast brought an ever-growing number of flights and travelers to Miami International Airport. The fact that Miami was a good departure point for transoceanic travel and that domestic carriers conducted many training flights in the area only compounded the problem. In the mid-1960s, transportation experts estimated that Miami International Airport, which saw 10 million passengers and 500 million pounds of air cargo a year, would reach its air traffic saturation point by 1973. Therefore, the Federal Aviation Administration (FAA) and the Department of Housing and Urban Development began searching for sites where a new training facility could be located, thereby relieving some of the airport’s pressure.⁴²

Working jointly with the Dade County Port Authority, which the Florida state legislature had created in 1945, and desiring that the site be somewhere remote from human habitation, the FAA determined in April 1966 that the best site was north of the Tamiami Trail in Water Conservation Area No. 3, close by the boundary of Everglades National Park. But no one consulted with either the NPS or the FCD about this location until February 1967. At that time, the FCD announced its opposition to the site because it believed an airport was incompatible with the objectives of the water conservation areas, and the Dade County Port Authority and the FAA decided to search for a new location.⁴³



Map showing the location of the proposed Everglades Jetport. [Source: U.S. Geological Survey, "Preliminary Determinations of Hydrobiological Conditions in the Vicinity of the Proposed Jetport and Other Airports in South Florida" (1969).]

Initially, the agencies investigated areas south of Tamiami Trail and next to Everglades National Park, but park officials complained that aircraft noise would disrupt wildlife in those locations. The Port Authority therefore turned its attention to southwestern Florida, and in November 1967, leaders of Dade and Collier counties announced that they had agreed to the construction of a jetport on a 39-square mile tract within Big Cypress Swamp, six miles north of the park's Forty-Mile Bend Ranger Station, with an eastern boundary common with Conservation Area No. 3's western border. Two runways would be completed within five years to begin pilot training, but the Port Authority envisioned that the jetport would eventually have another two to four runways and that it would begin conducting domestic and international commercial flights when Miami International Airport reached its saturation point. Preliminary construction plans commenced almost immediately.⁴⁴

The proposal failed to produce any opposition in its first few months. The Florida Game and Fresh Water Fish Commission reviewed the plans and offered no objection; Director O. E. Frye, Jr., told the Dade County Port Authority that he was concerned with possible jet fuel contamination of Conservation Area No. 3, but he dropped the matter after a Port Authority representative assured him that no problems would occur. Instead, Frye complimented the planners, envisioning "the creation of extensive waterways resulting from the construction of elevated runways which could afford virtually unlimited fishing possibilities."⁴⁵ According to journalist Luther Carter, the FCD, the State Board of Conservation, and the trustees of the Internal Improvement Fund also reviewed the plans and made no objections.⁴⁶ NPS officials did voice some concern about the location, fearing a jetport would contaminate water flowing into the park, but these protests were only made to Florida Game officials.⁴⁷

With only limited opposition, the Dade County Port Authority held a groundbreaking ceremony on 18 September 1968. Governor Kirk and U.S. Secretary of Transportation Alan Boyd did not attend the festivities, but Kirk sent a statement praising the jetport while Boyd participated by telephone. This spirit of cooperation ended in October during a meeting between the FCD and the State Road Department when Robert Padrick, chairman of the FCD and a member of the Sierra Club, discovered that the alignment of proposed Interstate 75 had been changed to cross through the middle of Conservation Area No. 3 in order to facilitate travel from Miami to the jetport. Because such a placement would have bisected the conservation area, potentially destroying its ecological values, Padrick, in the words of John Maloy, an engineer with the FCD, "sounded the clarion call," writing to more than 100 Florida environmentalists, including Nathaniel Reed in the governor's office, to mobilize opposition to the plan.⁴⁸

Padrick also called a meeting in December 1968 with representatives from the U.S. Army Corps of Engineers, the Florida Game and Fresh Water Fish Commission, the NPS, Everglades National Park, the FWS, the USGS, the Sierra Club, and the National Audubon Society to discuss how to proceed. Park leaders again raised concerns that the jetport would pollute water coming into the park, while others worried about the impacts of industrial and housing developments that would certainly follow the airport's construction. Joseph Browder of the National Audubon Society and Gary Soucie of the Sierra Club indicated that the group should focus on relocating the facility, but others seemed unwilling to pursue that option. Instead, the gathering decided to submit questions and concerns to the Dade County Port Authority for its consideration.⁴⁹

In the meantime, the jetport proposal began receiving national attention. The *New York Times* covered the issue extensively, in part because the New York Port Authority and the Metropolitan Transportation Authority believed that the completion of the jetport would divert international travelers to Miami. Some even speculated that the jetport would be bigger than the New York, Los Angeles, and Washington airports combined.⁵⁰ Anthony Wayne Smith, president of the National Parks Association, published an editorial against the facility in *National Parks Magazine*. Calling the jetport the latest of numerous environmental follies in Florida, Smith wondered why the United States in general and Florida in particular had such difficulty with “economic, social, and governmental planning.” Could people not see that the jetport “greatly imperiled” a national park on which the public had “invested vast efforts and millions of dollars?” Could not effective land or water planning be implemented to prevent such travesties? Not only would the park suffer, Smith claimed, but the Miccosukee Indians, who were related to the Seminole and who had a state reservation in the area, would as well since the facility covered their traditional hunting grounds. He called for concerned citizens to write to President-elect Richard Nixon and ask for his help.⁵¹

As the criticism mounted, the Dade County Port Authority decided to hold a public hearing on 28 February 1969 to answer growing concerns. At this meeting, Port Authority officials addressed the questions submitted to it by federal and state leaders, including what other locations had been considered, how the jetport would be operated, what steps the Port Authority would take to guard against water pollution, and what overall regional development planning had been made. Yet the Port Authority did not resolve any of these issues, answering most of them with a perfunctory “this question is presently under study.”⁵² Despite this unaccommodating attitude, federal agency representatives persisted in their opposition. John C. Raftery, superintendent of Everglades National Park, discussed the “enormously complex problems” that the jetport would cause, “including disruption of the Park’s remaining natural water supply, introduction of pollutants and destruction of Park’s wilderness values.”⁵³ According to one observer, Arthur Marshall, representing the Interior Department, stated that the main problem was the environmental damage the jetport could wreak on South Florida, especially Big Cypress Swamp, Conservation Area No. 3, Everglades National Park, South Florida estuaries, and the land of the Miccosukee Indians. Air, noise, and water pollution were all potential effects, Marshall continued, as was the possibility of a reduction in water reaching the park. Because of this, Marshall proposed that an interagency working committee be appointed consisting of representatives from state and federal agencies, as well as the Miccosukee, to provide solutions to these issues.⁵⁴

Marshall’s suggestion fell on deaf ears, leading Browder to declare that unless the Port Authority could provide assurances that the jetport would not harm the Everglades ecosystem, he would wage a national campaign to stop its construction.⁵⁵ State officials, however, seemed largely pacified after the hearing. Reed informed Governor Kirk that the building of the jetport in Big Cypress Swamp was inevitable, meaning that the state should work to ensure that it became a “great” facility with “minimal disturbance of natural values and historic water sloughes [*sic*].” By using “careful planning, zoning, and enforcement,” Reed continued, these goals could be reached; he also argued that development of the area by the Port Authority – “a well financed agency” – was preferable to actions by individual landowners.⁵⁶

waving homeowners shouting objections to a jetport in their corner of the county, the commission crushed those expectations by a four-to-three vote against site 14.

In part it was a vote against further development in burgeoning South Florida. Miami Mayor John Orr, chairman of the Metro Commission and one of those who voted against site 14, questioned whether the county actually would need a new airport even in the 1980s when airport planners estimate that traffic growth will require it. "There are any number of us who are resisting that rate of growth now," he said in a telephone interview. "The activity of the present Metro Commission in zoning and land-use planning is going to slow things down."

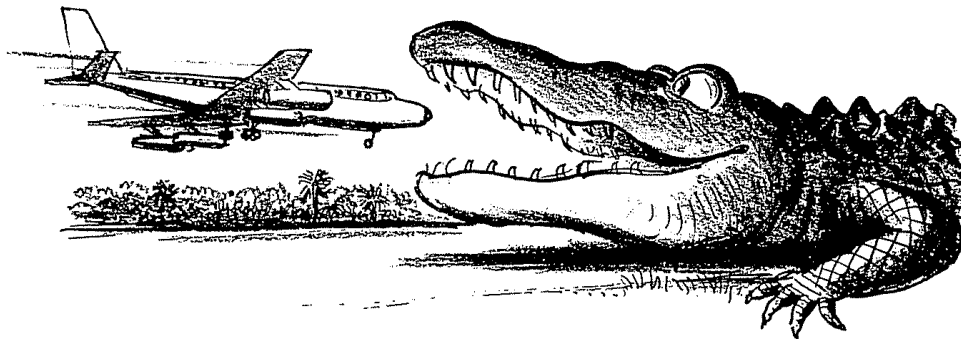
As for the need for flight training

according to the Interior Department's 1969 Leopold Report would mean the destruction of the entire South Florida ecosystem.

With no alternate site designated, they feared that pressure to continue and to expand flight operations in the Big Cypress could never be laid to rest. Only last fall, officials within the U. S. Department of Transportation were arguing for expanded operations in the Everglades even after a new airport was built.

Whether the commissioners' vote put a stop to the new site selection process and therefore caused a breach of the jetport pact was not clear in the days immediately following their action. Under the terms of the 1970 agreement, the federal government can close down the Everglades operation after giving 90 days'

the water and air and the animal and plant life of the surrounding swamp is not clear nor is it likely to be for many years. The South Florida Environmental Project, a multiagency monitoring program within the Department of Interior, is gathering and analyzing data on pollution at the airstrip. Noise pollution monitoring has been too recently instituted for data to have been analyzed. Regularly conducted sampling of water begun in May 1970 and air quality monitoring begun in March 1972 have so far revealed no detectable environmental disturbances. But as pointed out in a recent preliminary environmental impact statement prepared by the Port Authority, "This is not to be construed as meaning that the utilization of the facility is having no effect on the environment, but that



facilities, the mayor pointed out that "Our own Port Authority people testified that with these newer types of airplanes, the 747s and DC-10s and so on, a higher percentage of training is being conducted in simulators than in aircraft." According to an Eastern Airlines spokesman, a pilot learning to fly an L-1011 spends five hours in a visual simulator for every one in the aircraft.

For the Everglades coalition of more than twenty conservation organizations—chaired by Dr. Elvis J. Stahr, president of the National Audubon Society, and Anthony Wayne Smith, president of the National Parks and Conservation Association—it was a vote that jeopardized years of painstaking efforts to protect Everglades National Park by prohibiting development in the Big Cypress watershed to its north, development that

notice if, in its judgment, Dade County is in "default in diligently attempting to locate a site for a regional airport." In a letter to President Nixon, the Everglades coalition urged the closing down of the airport "as rapidly as training can be shifted, unless the commissioners reconsider." Local conservationists saw a chance to open the site selection process to areas outside Dade County where drier, higher land would provide a site less damaging to the environment than any in Dade County. And the airlines, with millions of dollars invested in the Miami area, were reportedly pressing for a vote of approval of site 14.

In the meantime, training flights continue at the Dade-Collier Transition and Training Airport. The impact that the continuous landings and takeoffs of the big jets are having on

the effects, if any, are at this point in time sufficiently subtle that they were not detected by the techniques utilized in the monitoring effort."

"These results were predictable," comments Joe Browder, a spokesman for the Everglades coalition who has long been involved in the jetport controversy. "The training operations were permitted under strict controls designed to prevent any damage. But it would be wrong to conclude from this data that no long-run damage will occur." One disturbing fact is that measurements of ozone at the Everglades airport have at times exceeded national ambient air quality standards. Ozone, a critical element in the Los Angeles smog, is formed by reactions involving hydrocarbons and nitrogen oxides in the presence of sunlight. According to John T. Brown, in charge of Interior's monitoring pro-

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An editorial cartoon from *Audubon Magazine* shows the conflicts between airplanes and wildlife that the jetport would produce.

Facing the intransigence of the Port Authority and the passivity of the state, environmental organizations took another approach. In April 1969, Smith and Browder formed the Everglades Coalition as a way for different national associations to work together for the stoppage of the jetport proposal. Smith and Elvis Stahr, former Secretary of the Army who served as president of the National Audubon Society, co-chaired the organization, while Browder served as its

coordinator. This group contained representatives from most of the major environmental organizations in the United States, including the National Parks Association, National Audubon Society, Wilderness Society, Sierra Club, Nature Conservancy, National Wildlife Federation, and the Friends of the Earth – in the words of Smith, “practically the entire conservation movement.”⁵⁷ Other organizations, such as the United Automobile Workers of America and the United Steelworkers of America also joined. The major objectives of the Everglades Coalition were to stop jetport construction, to preserve Big Cypress Swamp, and to protect Everglades National Park.

Meanwhile, Marjory Stoneman Douglas formed another organization whose initial purpose was jetport opposition. One night in a Miami grocery store, Douglas encountered Susan Wilson, one of Browder’s assistants, and told her how impressed she was with Browder’s work on the jetport problem. Instead of accepting the compliment, Wilson asked Douglas what she was doing to help the Everglades. “Oh me?” Douglas answered. “I wrote the book.” Wilson, quick to seize the opportunity, rejoined “That’s not enough,” informing Douglas that they needed more help. A bit taken aback, Douglas mumbled that she was willing to do whatever she could. The next day, Browder called her and asked her to write a “ringing denunciation of the jetport” in the press.⁵⁸ When Douglas demurred, explaining that such statements were better coming from organizations, Browder told her to form one, explaining that she could unite some of the local individuals and organizations interested in preserving the Everglades in the same way that he had brought national interests together. Accepting Browder’s challenge, Douglas created the Friends of the Everglades and opened it to all interested parties, requiring only a membership fee of \$1. It grew steadily over the next few years as Douglas and other members traveled throughout South Florida, informing citizens about the jetport and the destruction it could cause.⁵⁹



Marjory Stoneman Douglas, founder of Friends of the Everglades. (Source: The Florida Memory Project, State Library and Archives of Florida.)

The Everglades Coalition and the Friends of the Everglades heightened public awareness about the jetport, and they also implemented a new strategy to stop the development. In the Department of Transportation Act of 15 October 1966, Congress had inserted a proviso that the secretary of transportation could not approve any undertaking using land from “a public park, recreation area, wildlife and waterfowl refuge, or historic site” unless he or she had first determined that no other feasible alternative existed and that the program had implemented sufficient mitigations to “minimize harm” to such areas.⁶⁰ Because the jetport required the rerouting of Interstate 75 through Conservation Area No. 3, representatives of the Everglades Coalition, Sierra Club, National Audubon Society, and other organizations argued that the airport’s construction fell under the authority of the Transportation Act. Secretary of Transportation John Volpe had not made any studies of feasible alternatives or

of environmental effects, they claimed, meaning that he had not complied with the law. In April 1969, Everglades Coalition members sent a letter to Volpe, urging him to conform to the act by stopping construction and relocating the airport. “We would hope that the burden of resolving this conflict would not have to fall upon the shoulders of the President of the United States,” they concluded.⁶¹

But environmentalists were well aware that the involvement of high-level federal officials, and perhaps even President Nixon, might be necessary to prevent the jetport’s construction.⁶² Fortunately for them, they had an ally in Secretary of the Interior Walter Hickel. In March 1969, Hickel had toured South Florida to attract attention to alligator poaching in Everglades National Park. While there, he flew over the proposed jetport site, observing the completed runway and contemplating the “long-term damage” that the facility could cause.⁶³ Hickel and other Interior officials were especially worried about water pollution, stemming both from the jetport itself and from the construction of industrial and residential areas around the facility. Such development, Hickel believed, would dump fertilizer, insecticides, and sewage into water flowing into the park. After his return, Hickel contacted Volpe to express his concerns.⁶⁴

Due to Hickel’s pressure, as well as the constant criticism of environmental organizations, Volpe agreed in June 1969 to the creation of a joint committee of Interior and Transportation representatives to conduct studies on the jetport. The Interior Department took the lead on the examination of environmental effects, designating Dr. Luna Leopold, a USGS research hydrologist who was one of the most prominent geomorphologists of the twentieth century, as well as former head of the USGS’s water resources division and the son of famed wildlife conservationist Aldo Leopold, as the coordinator of the study, with Arthur Marshall serving as the Florida liaison and Manuel Morris of the NPS as the federal contact. Governor Kirk, together with Reed, applauded the idea. Apparently, public discontent with the proposed jetport had convinced Kirk and Reed to cooperate with the environmental study.⁶⁵

As the study commenced, the U.S. Senate Committee on Interior and Insular Affairs, under the leadership of Senator Henry M. Jackson of Washington, held hearings on Everglades National Park water issues, including the jetport. All interested parties were represented, such as the Interior Department, the FCD, the Corps of Engineers, the EC, the National Audubon Society, the Sierra Club, and the Dade County Port Authority. Critics of the jetport explained that they wanted the Port Authority to find another location for the facility; they were not asking for its complete elimination. The Port Authority, however, represented by William W. Gibbs and C. H. Peterson, doubted that another feasible site existed. Besides, they testified, the Port Authority had only plans to construct a training facility; it would not build a full-fledged jetport “until it can be clearly proven that such development will not have an adverse effect” on the park.⁶⁶ Senator Gaylord Nelson found that difficult to believe, especially because the Port Authority’s 1968 annual report had delineated plans to convert the training operation into a commercial jetport by 1980 at the latest. In addition, Gibbs and Peterson angered Nelson by telling him that the Port Authority had no responsibility for any kind of development that occurred outside the 39-square-mile area, even though Port Authority Director Allen Stewart and Deputy Director Richard Judy kept boasting about the huge growth that would follow the jetport’s construction. Who would take responsibility for ensuring that development did not

harm the park, Nelson wondered. Peterson answered that it was a county duty, but that did not appease Nelson who decried the lack of land and water planning in Florida.⁶⁷

The flippant attitude of the Dade County Port Authority regarding Big Cypress development upset environmentalists, as did several inflammatory quotations attributed to jetport supporters in the press. Michael O'Neil, Florida's secretary of transportation, for example, told reporters that he did not care if the jetport harmed alligators because the animals "make nice shoes and pocketbooks." Meanwhile, Judy proclaimed that "Big Cypress Swamp is just typical South Florida real estate" that would eventually be "one of the great population centers of America," while Stewart announced that "a new city is going to rise up in the middle of Florida . . . whether you like it or not."⁶⁸

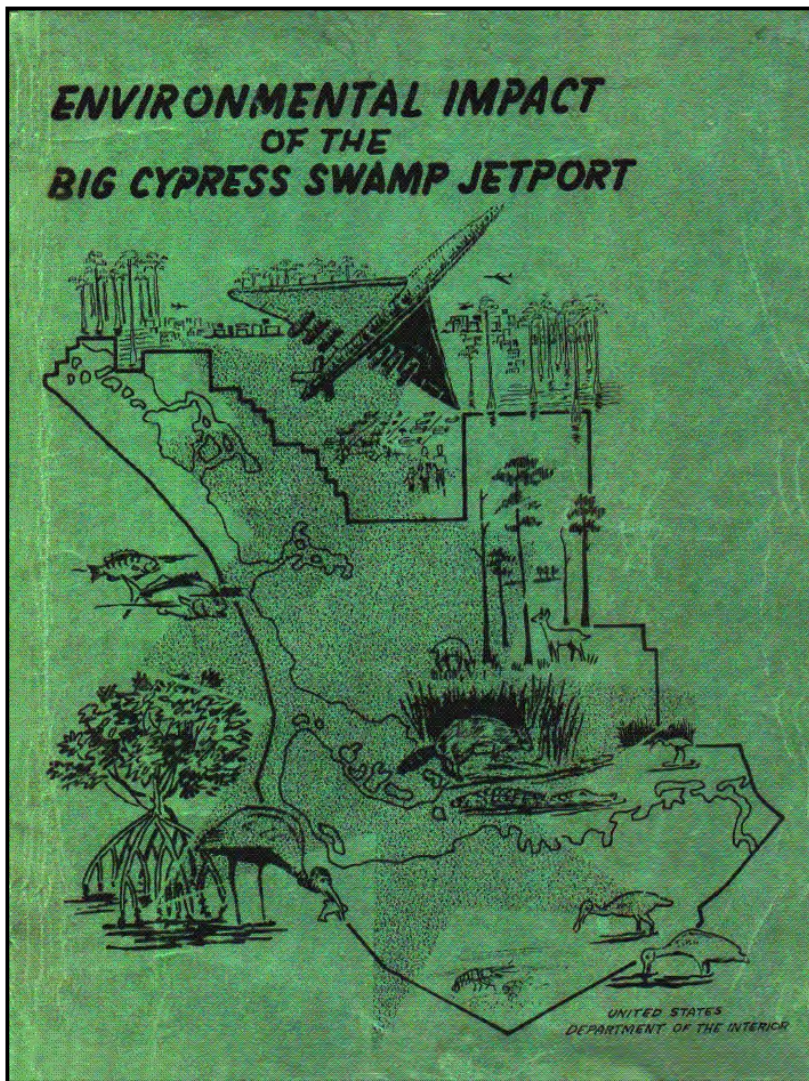
As jetport proponents made such bold pronouncements, and as the September opening of the first runway neared, a spate of critical articles appeared in national publications. In July, *National Parks Magazine* published a piece, complete with photographs of bulldozers and downed trees, calling attention to the "serious new threat" that the jetport posed to Everglades National Park.⁶⁹ That same month, an article in *Audubon* by environmentalist Paul Brooks condemned the jetport, quoting Park Superintendent John C. Raftery as stating that the park faced "slow death" if the facility became a reality. "As now located," Brooks declared, "the Everglades jetport is an abortive offspring of the unholy wedlock of the booster and the engineer."⁷⁰ Only by ensuring its removal could environmentalists protect the park from ultimate destruction.

General news magazines also provided publicity. *Time* called the battle over the jetport a "testing ground for U.S. environmental policies," stating that environmentalists feared the impacts of "jet noise, exhaust fallout, fuel and oil spills" on Everglades National Park, as well as "the prospect of helter-skelter development around the airport."⁷¹ *Look* issued a photo essay depicting "the assault on the Everglades,"⁷² while *Life* published an article by Florida mystery writer John D. MacDonald, arguing that the jetport would eliminate the westward flow of water from Big Cypress Swamp, the last "reasonably natural" water supply to the park.⁷³ These articles all mentioned that the joint Department of Transportation/Department of Interior study of ecological effects was in process, but, as *Look* pessimistically related, "there is no assurance that the county will be willing to abandon years of ambitious planning" even if the examination proved that such an action was necessary to save the park.⁷⁴

As the news media continued its discussion of the jetport, representatives of the Department of Transportation and the Department of the Interior completed their environmental examination, issuing it in September 1969.⁷⁵ The first sentence of the document, usually referred to as the Leopold Report after Luna Leopold, pulled no punches. It proclaimed that the

development of the proposed jetport and its attendant facilities will lead to land drainage and development for agriculture, industry, housing, transportation, and services in the Big Cypress Swamp which will inexorably destroy the south Florida ecosystem and thus the Everglades National Park.⁷⁶

The major problems, the report continued, would result from the air, noise, and water pollution produced by the jetport and any commercial development, affecting plant and wildlife, the Miccosukee Indians, and tourists visiting the park. The report then outlined three alternatives



Cover of the Leopold Report.

watershed important to the park, needed additional forms of protection. And, third, the state of Florida needed to implement land use planning laws to safeguard its natural resources. Two subsequent reports from other sources bolstered these conclusions. The first, sponsored by the National Academy of Science, declared that the jetport would considerably damage Big Cypress and recommended instead that regional planning and Big Cypress preservation be implemented.⁷⁸ The second, conducted by a task force called Overview, which was chaired by former Secretary of the Interior Stewart Udall and commissioned by the Dade County Port Authority, outlined ways in which the jetport and the park could coexist, but ultimately called for the acquisition of Big Cypress Swamp by state or federal officials.⁷⁹

With the growing amount of hard evidence that the jetport and commercial development in Big Cypress would have deleterious effects, state officials finally acted. Convinced that “poorly planned development” of the Big Cypress Swamp had harmed both Everglades National Park and South Florida’s “ecological balance,” Reed began agitating for regional planning and “enforceable land use programs that protect the environment while allowing the private owner use of his land.” He asked a commission composed of representatives from Dade, Collier, and Monroe counties to develop “a regional land use program to protect the Big Cypress Water

that Florida officials could take: first, they could allow construction of the training facility, the subsequent jetport, and the commercial development to occur, thereby resulting in complete ecological devastation; second, they could allow the existing runway to be used as a training facility with no other expansion, which would give the state enough time to develop proper planning and land use regulations; or third, they could convince the Port Authority to remove the runway and abandon the site, which would “inhibit greatly the forces tending toward development in Big Cypress Swamp.”⁷⁷ The report made no recommendation as to the appropriate course to take, content only to describe the environmental effects of each measure.

But to any careful reader, three conclusions were clear. First, jetport development should be abandoned and the runway should be removed in order to preserve Everglades National Park. Second, Big Cypress Swamp, as a

Shed,” and he recommended the establishment of a state task force to aid Transportation and Interior in the selection of a new site.⁸⁰ At the same time, Kirk informed Hickel and Undersecretary of the Interior Russell Train that the state no longer supported the jetport, and he requested abandonment of the Big Cypress site. The Everglades Coalition, meanwhile, filed a petition in October requesting that Volpe disapprove the jetport under the authority of the Department of Transportation Act of 1966, while Hickel told John Ehrlichman, Nixon’s aide over domestic affairs, that the FAA had the power to delay and hinder the project, thereby making it too expensive for the Port Authority’s liking.⁸¹

Hickel and Train also gave a copy of the Leopold Report to Ehrlichman and to John C. Whitaker, Deputy Assistant to President Nixon, asking that the White House back the jetport’s relocation. Ehrlichman then prepared a summary of the issues and gave it to Nixon. After reading the brief, Nixon informed Ehrlichman that the South Florida airport must not be developed in Big Cypress, and that as soon as another location became viable, the training runway should be eliminated. He directed Ehrlichman to have Interior and Transportation officials begin negotiations with the Dade County Port Authority and the state of Florida to implement these actions.⁸²

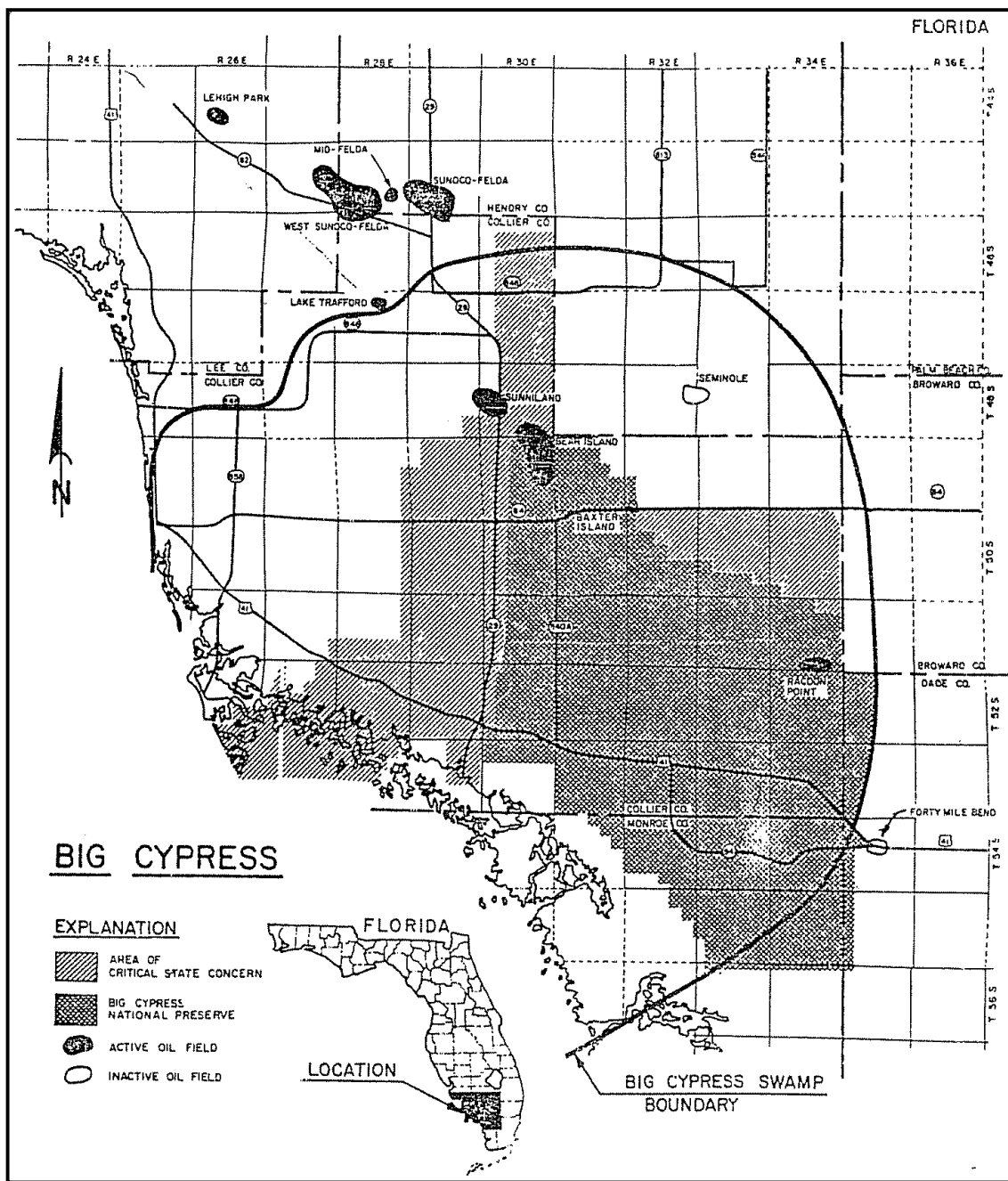
Nixon’s efforts to prevent jetport construction came at a time when the President was first beginning to embrace a strategy of addressing environmental concerns proactively, resulting in part from favorable publicity that Nixon received for his support and signing of NEPA. Nixon’s State of the Union address in January 1970, for example, would discuss the importance of the environment, and the President was also preparing an environmental message for Congress. Although Nixon would sour on environmental issues late in his presidency, his early administration sought to mine ecological concerns for political gold. Halting jetport construction early in 1970 fit into this scheme; the concerns of Hickel, Whitaker, and Ehrlichman also played into the decision.⁸³

Regardless, for the next several weeks discussions occurred between the Interior Department, the Department of Transportation, the Florida governor’s office, and the Dade County Port Authority about what to do with the runway and the ultimate development of the jetport. Finally, on 16 January 1970, all sides signed “The Everglades Jetport Pact.”⁸⁴ This agreement recognized that South Florida needed another airport to relieve congestion at Miami International Airport, and it also acknowledged the Port Authority’s efforts at finding a reasonable site. However, because studies had concluded that the jetport “would not be compatible with the preservation and protection” of Everglades National Park and that unregulated operation of the training facility would “produce serious environmental and ecological effects,” all sides agreed to certain stipulations. The Port Authority assented to operate the training facility as a single runway, and it agreed to “immediately” institute measures to find another jetport site, submitting quarterly reports of its progress to the United States. If the federal government deemed that the Port Authority was not diligently pursuing another site, it could terminate the pact. Otherwise, when an appropriate location was found, the United States would purchase it for the Port Authority. The state of Florida would “diligently assist” the Port Authority in its search and would convey any state lands free of charge to it. Once the Port Authority had constructed a suitable airport, it would then abandon the runway in the Big Cypress Swamp. It also consented to a list of measures to prevent fuel or oil contamination of land or water by the existing facility,

And, indeed, Nelson and Muskie did. Tired of the constant bickering between the state, the Corps, and the NPS, and resigned to the fact that no agreement was forthcoming, the two pushed a bill through Congress providing money for the conveyance canals and pumping stations proposed in the Corps' 1968 report. But the bill also contained a stipulation added by the Committee on Public Works, of which Muskie was a member, that as soon as practicable, and no later than when the Corps had completed the necessary works, Everglades National Park would receive either 315,000 acre-feet annually, prorated monthly according to an NPS schedule, or 16.5 percent of the total water deliveries from the project, whichever was less.⁸⁵ The committee's report explained that the proviso was added "to secure as promptly and regularly as possible delivery of water to the Everglades National Park" and to extinguish all questions of how much water the C&SF Project had to deliver to the park. Because the federal government had supplied so much money for the C&SF Project, and because the park was "a national asset to be preserved for our own and future generations," the committee believed it had the authority to make this stipulation.⁸⁶

Although the NPS now seemed to have the guarantee of water that it desired, problems resulted almost immediately. Since language in the act required the stipulation to become effective as soon as practicable, the Corps and the FCD began implementing it in 1971, a year when little rain fell. Therefore, even though the park would have received more water under the FCD's interim plan, the FCD provided water throughout 1971 following Congress's requirement. This meant that the park received 20 to 25 percent less water than what it would have procured, while agricultural and urban interests continued to receive normal amounts, a situation that struck FCD Executive Director G. E. Dail, Jr., as unreasonable. "Since there is agreement that this formula is an extremely poor one," Dail told Jacksonville District Engineer Colonel A. S. Fullerton, "we do not believe that it should continue to be applied under current conditions," especially since projections showed that normal rainfall would allow "all essential demands" to be met "without the need to impose a curtailment of water use." Fullerton promised to investigate whether Congress intended the formula to apply immediately, but in the meantime, Everglades National Park faced a depleted water supply.⁸⁷

Nevertheless, at least some strides had been made in providing necessary water to the park from the C&SF Project. Throughout the 1960s, the Corps, the FCD, and the NPS all had different viewpoints as to the water priority of Everglades National Park, and these disparities became glaringly apparent as drought ravaged the Everglades. When little water from the C&SF Project was forthcoming, NPS officials demanded that the Corps guarantee to the park a certain amount of water untouchable by future demands. In the words of NPS Director George Hartzog, it was time for the Corps to stop paying mere "lip service to the preservation of the Everglades."⁸⁸ Corps leaders, however, claimed that they could not provide such a promise, insisting that only the state of Florida could make that assurance. Because of the phenomenal growth of South Florida, and because supplying water to the park could have adverse effects on fish and wildlife in the water conservation areas (as evidenced by the problems with deer herds in 1966), state officials refused to provide a guarantee. Despite the opposition of the state and the reluctance of the Corps to provide a specific written guarantee, the Corps, in the 1968 restudy report, did, for one of the first times since the authorization of the C&SF Project, admit that the project needed to supply sufficient water to Everglades National Park. This reiteration of the



Map of the Big Cypress area. [Source: Big Cypress Area Management Task Force, "Report to Governor and Members of the Cabinet" (1983).]

approximately 38,000 acres adjoining the Tamiami Trail and operate it as the Tamiami Trail National Parkway. The rest of the Big Cypress would be subject to compensable land use restrictions, meaning that no drainage or construction would be allowed, but landowners could file claims with the U.S. Court of Claims for compensation, which would have a limit of \$10 million for all awards.⁸⁹

Many environmentalists, including Browder and Marshall, disagreed with this recommendation, claiming that the only way to save Big Cypress and to protect the Everglades' water supply was through purchasing the entire area. They convinced Florida Governor Reubin Askew of this necessity, and in July 1971, he told Secretary of the Interior Rogers Morton (who

had replaced Hickel in 1970) that “acquisition is the only sure method to protect the heart of this natural ecosystem,” a stand supported by the entire cabinet sitting as the trustees of the Internal Improvement Fund.⁹⁰ With Askew’s backing, Florida’s two senators, Democrat Lawton Chiles and Republican Edward Gurney, introduced a bill (drafted by Browder) into Congress in August, stipulating that the federal government purchase 547,000 acres in Big Cypress Swamp and designate it as the Everglades-Big Cypress National Recreation Area. As this bill made its way through Congress, Reed, who had become assistant secretary of the interior for fish, wildlife, and parks, began pushing for the Nixon administration to support the acquisition, as did other prominent environmentalists such as Elvis Stahr of the National Audubon Society, Anthony Wayne Smith of the National Parks Association, Browder, and Leopold. The Environmental Coalition for North America, an organization working for national environmental causes, pledged its backing as well. These individuals and groups had a ready ally in the White House in John Whitaker, Deputy Assistant to President Nixon. Because of Whitaker’s and Reed’s influence, and realizing the importance of obtaining Florida votes in the 1972 presidential election, Nixon issued a statement in November declaring that it was “essential for the federal government to acquire this unique and vital Watershed.”⁹¹

Only a day after Nixon’s proclamation of support, Senator Henry Jackson, chairman of the Senate Committee on Interior and Insular Affairs who had his own presidential aspirations, held a hearing on Chiles’ legislation in Miami. State officials and environmentalists made a united stand on the purchase, but landowners in Collier County complained about the measure, stating that 35,000 landowners would be ruined by the acquisition. Some even likened the proposal to oppression by the Soviet Union. Former Florida Governor Fuller Warren, representing the landowners, stated that the government would severely cripple Collier County by removing so much land from the tax rolls, for “next to the air we breathe, the most essential ingredient of life is revenue.”⁹² Yet state officials and the Nixon administration continued to support acquisition; Nixon even sent his daughter, Julie Nixon Eisenhower, to tour the area with Secretary Morton in January 1972, while the administration introduced its own Big Cypress purchasing bill into Congress (S. 3139).⁹³

In April 1972, the Senate Subcommittee on Parks and Recreation of the Committee on Interior and Insular Affairs held a hearing on the two bills, which were essentially similar except for three major points: S. 3139 created a national freshwater reserve rather than a recreation area, eliminated acquisition by legislative taking, and provided for joint state-federal management of the Big Cypress area. This time, however, Senator Alan Bible from Nevada presided, and he was not as favorably inclined toward the acquisition as Jackson. Bible found S. 3139 more palatable than Chiles’ bill, but he still found problems with the legislation, including the cost of acquisition and the provision in S. 3139 that landowners be compensated over 10 years rather than immediately. He made his views known throughout the hearing, giving a sympathetic ear to Collier County landowners.⁹⁴

In the late spring of 1972, Bible’s opposition solidified when Robert O. Vernon, Florida’s state geologist, claimed that Big Cypress Swamp runoff was not essential for the park’s water supply because surface runoff accounted for only 11 percent of the park’s total water.⁹⁵ Hearing this, Bible announced that he would not allow the Subcommittee on Parks and Recreation to release S. 3139 to the Senate “until the people of Florida resolve their differences on the Big



Ponded water in the Big Cypress Swamp. (Source: U.S. Geological Survey.)

Cypress question.”⁹⁶ Environmentalists and other scientists vehemently disagreed that water from Big Cypress was unessential, but the damage had been done.

Meanwhile, the Seminole and Miccosukee Indians objected to the Big Cypress plan, fearing its effects on their land. In 1957, the Seminole Tribe of Florida had organized itself under the authority of the Indian Reorganization Act of 1934. In 1962, Indians living along the Tamiami Trail, who considered themselves as distinct from the Seminole (even though non-Indians generally referred to them as Seminole), had organized into a separate entity known as the Miccosukee Tribe of Indians. In order to ensure that the Miccosukee had a land base, the state had divided the Big Cypress Reservation in 1965, giving the lower 76,000 acres to the Miccosukee and allowing the Seminole to retain the upper 28,000 acres adjoining the federal tract.⁹⁷ Both tribes worried that this land would be included in the Big Cypress boundaries. Howard Tommie, chairman of the Seminole Tribal Council, and Fred Smith, president of the Seminole Tribe, thus counseled legislators to forestall such an action, claiming that the Seminole already managed 62 percent of their land for natural resources. “We don’t want to be told what to do on our land,” Tommie explained, while Smith insisted that the Seminole were “more ecology-minded than some of the professional ecologists.”⁹⁸ The major concern of both the Seminole and the Miccosukee was that the federal government would not allow them to maintain their traditional ways of life, including hunting and fishing, on any land included in the preserve. These fears evaporated, however, after Congress included specific language in the Big Cypress

legislation allowing Indians the “usual and customary use and occupancy” of their lands, including hunting, fishing, trapping, and the conducting of tribal ceremonies.⁹⁹

With the Seminole and Miccosukee on board, Governor Askew and the state legislature took some significant action in the spring of 1973, spurred on by Florida Wildlife Federation President John “Johnny” Jones. Jones, one of the most effective lobbyists in Florida history, was strongly in favor of Big Cypress preservation and obtained a meeting with Bible where he asked him why he opposed the bill. According to Jones, Bible told him that the federal government had already spent enough money to acquire Everglades National Park; he asked Jones, “When is Florida going to put the money into this damn thing?” Jones asked him how much he wanted Florida to contribute, and Bible said \$40 million. Jones then informed Askew of Bible’s request, and Askew had State Senator Daniel Robert “Bob” Graham, the future governor of Florida, propose a bill in the Florida legislature that the state contribute \$40 million for land acquisition.¹⁰⁰ That same law, known as the Big Cypress Conservation Act of 1973, also designated



Miccosukee and Seminole representatives before the Florida legislature. (Source: The Florida Memory Project, State Library and Archives of Florida.)

approximately 574,000 acres of Big Cypress Swamp, as well as an additional 285,000 acre buffer zone (including Okaloacoochee Slough, the Fakahatchee Strand, and the northern Ten Thousand Islands) as an “area of critical state concern.”¹⁰¹ This designation was created in the Florida Environmental Land and Water Management Act of 1972 to allow the state to prevent development in and provide other protection to environmentally important regions.

Despite the passage of this legislation, Bible continued to oppose the bill, “double-crossing” Florida, in the words of Jones.¹⁰² But in the fall of 1973, the House of Representatives passed H. R. 10088, a bill introduced by Representative James Haley of Florida and sponsored by the rest of Florida’s congressional delegation. Similar to Chiles’ bill, it had one major difference: instead

of establishing a national recreation area, it would create the Big Cypress Water Preserve, a new unit of the national park system. The House Committee on Interior and Insular Affairs envisioned preserves as areas with “exceptional values or qualities illustrating the natural heritage of the Nation,” including “ecological communities, . . . natural phenomena, or climax communities.” Under this bill, the NPS would manage the preserve to maintain “the natural and scientific values of the area.”¹⁰³

After passing the House, the legislation went to the Senate where it sat for several months due to Bible’s opposition. Finally, Thomas Kimball of the National Wildlife Federation approached Senator Henry Jackson and, according to Jones, “told him [Jackson] what a dirty deal Bible had pulled.”¹⁰⁴ Jackson then pushed the bill, forcing Bible’s subcommittee to consider it. The Subcommittee on Parks and Recreation made several changes and recommended its passage to the Senate. The alterations included replacing the legislative taking aspect of acquisition to “normal acquisition procedures” (meaning that landowners would receive compensation over a six-year period) and allowing “all improved residential and commercial property, including mineral estate” to remain in the Big Cypress area as long as it was not “detrimental to the Preserve.”¹⁰⁵ The House agreed to these changes, and the bill went to President Gerald Ford for his signature. It became law on 11 October 1974, allowing \$116 million for the purchase of 574,000 acres in the Big Cypress Swamp (the state of Florida would still contribute its \$40 million).¹⁰⁶ Although some details still had to be finalized with the acquisition, environmentalists, the state of Florida, and the federal government had effectively ensured the preservation of part of the Big Cypress Swamp, an area important not only for its water supply to Everglades National Park but for its own ecology as well.

The battles over the jetport and the barge canal, coupled with the passage of NEPA in 1970 and the growing use of environmental law, ushered in a new way of doing business for the Corps. Both of these controversies indicated that environmentalists now had the power to halt projects that they considered to be ecologically damaging. In the aftermath of these fights, the Corps acknowledged that it had to consider environmental concerns more closely, something which it had vocalized since the late 1960s. The Corps would frequently encounter bumps and setbacks as it began to change its mission-oriented focus to one that accepted the necessity of considering environmental concerns, but by the mid-1970s, the Corps was clearly on its way to making such changes permanent. As historian George E. Buker has indicated, the Cross-Florida Barge Canal was “the last major engineering project” in Florida that “ignored the protests of the environmentalists.”¹⁰⁷ Part of the reason for this was that Corps leaders, such as Colonel Wisdom, were willing to consider carefully environmental concerns. Wisdom himself denied Section 404 permits on Marco Island to the Deltona Corporation in 1975, for example, inaugurating “the most important single event during the post-NEPA period” that “improve[ed] the Corps’ environmental image.”¹⁰⁸

But another reason was merely the increasing influence of environmentalists. Victories in halting both jetport and canal construction and in obtaining protection for Big Cypress Swamp gave the environmental movement increasing confidence and more unity and cohesion, and highlighted its growing strength within Florida and the nation as a whole. Environmentalists were now major players in water management issues in Florida, and they had developed the organizational ability and the tactics to attack projects that could potentially degrade ecological

values. The work of organizations such as the Everglades Coalition and the Friends of the Everglades, as well as individuals such as Joseph Browder, Arthur Marshall, and Marjorie Carr, pushed the administrations of Claude Kirk, Reubin Askew, and Richard Nixon to look more closely at environmental issues in Florida no matter what their political party. At the same time, the jetport and barge canal battles forced federal, state, and local officials to realize two things: first, that the state of Florida, in the face of continued growth, had inadequate measures to protect natural resources within its borders, and second, that the state's water resources – especially in terms of quality – needed to be addressed. For the rest of the 1970s, all water management players would have the opportunity to apply the lessons learned from the jetport and the barge canal as they tackled a problem that threatened the entire South Florida ecosystem – the degradation of the Kissimmee River and Lake Okeechobee.



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¹ At a 1969 hearing before Congress, Chief of Engineers Lieutenant General William F. Cassidy explained that Big Cypress Swamp was outside of the boundaries of the C&SF Project, meaning that the Corps had no jurisdiction over the jetport. If the structure was actually built, the Dade County Port Authority would have to receive Corps approval before discharging water into any of the water conservation areas, but until that time, the Corps had no authority. Therefore, Corps participation in the jetport controversy was relegated to occasional attendance at meetings and hearings. Senate Committee on Interior and Insular Affairs, *Everglades National Park: Hearings Before the Committee on Interior and Insular Affairs, United States Senate, Ninety-First Congress, First Session, on the Water Supply, the Environmental, and Jet Airport Problems of Everglades National Park*, 91st Cong., 1st sess., 1969, 27 [hereafter referred to as Jetport Hearing]. As evidence of this, note that Cassidy's testimony runs for over 20 pages, but only about six short paragraphs have any information about the jetport; the rest deals with water supply to Everglades National Park.

² Kirkpatrick Sale, *The Green Revolution: The American Environmental Movement, 1962-1992* (New York: Hill and Wang, 1993), 6.

³ Samuel P. Hays, *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955-1985* (Cambridge: Cambridge University Press, 1987), 2-5, 34-35; Samuel P. Hays, *A History of Environmental Politics Since 1945* (Pittsburgh, Penn.: University of Pittsburgh Press, 2000), 15-19, 22-23; Adam Rome, "'Give Earth a Chance': The Environmental Movement and the Sixties," *Journal of American History* 90 (September 2003): 527-530; Lynton Keith Caldwell, *The National Environmental Policy Act: An Agenda for the Future* (Bloomington: Indiana University Press, 1998), 26-28.

⁴ Rome, "'Give Earth a Chance,'" 525-554; J. Brooks Flippen, *Nixon and the Environment* (Albuquerque: University of New Mexico Press, 2000), 3-5.

⁵ Robert P. McIntosh, *The Background of Ecology: Concept and Theory* (Cambridge: Cambridge University Press, 1985), 2, 194-196; Frank Benjamin Golley, *A History of the Ecosystem Concept in Ecology: More Than the Sum of the Parts* (New Haven, Conn.: Yale University Press, 1993), 1-3; Dorothy Nelkin, "Scientists and Professional Responsibility: The Experience of American Ecologists," *Social Studies of Science* 7 (1977): 79-80.

⁶ Quotation in Michael A. Bryson, *Visions of the Land: Science, Literature, and the American Environment from the Era of Exploration to the Age of Ecology* (Charlottesville: University Press of Virginia, 2002), 134-135; see also Nelkin, "Scientists and Professional Responsibility," 80.

⁷ Rome, "'Give Earth a Chance,'" 527; Flippen, *Nixon and the Environment*, 5; Michael E. Kraft, "U.S. Environmental Policy and Politics: From the 1960s to the 1990s," *Journal of Policy History* 12, no. 1 (2000): 23; Sale, *The Green Revolution*, 1-3, 20-22.

⁸ The National Environmental Policy Act of 1969 (83 Stat. 852).

⁹ Caldwell, *The National Environmental Policy Act*, 28-30, 37.

¹⁰ See Jeffrey K. Stine, "Environmental Politics and Water Resources Development: The Case of the Army Corps of Engineers during the 1970s," Ph.D. dissertation, University of California at Santa Barbara, 1984, 25, 35.

¹¹ Arthur R. Marshall, "Repairing the Florida Everglades Basin," 11 June 1971, File Everglades National Park 1958-86 General/Resolutions/Agreements, Box 02161, SFWMDAR; Blake, *Land Into Water*, 196-197.

¹² Flippen, *Nixon and the Environment*, 8-11; Blake, *Land Into Water*, 197-198; Carter, *The Florida Experience*, 50-53; Hays, *Beauty, Health, and Permanence*, 57-58.

¹³ Blake, *Land Into Water*, 150-151. For a history of the canal up to the 1920s, see Charles E. Bennett, "Early History of the Cross-Florida Barge Canal," *The Florida Historical Quarterly* 45, no. 2 (1966): 132-144. This is not an entirely objective piece, as Bennett, a U.S. representative from Florida, was a major proponent of the canal.

¹⁴ See C. P. Summerall, Chairman, The Ship Canal Authority of the State of Florida, to Governor, 16 January 1943, File Canal 1940-1949, Box 2, Robert N. "Bert" Dosh Papers, Manuscript Series 25, Special and Area Studies

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Collections, George A. Smathers Library (East), University of Florida, Gainesville, Florida [hereafter referred to as Dosh Papers]; Walter F. Coachman, Jr., to The Members of the Executive Committee of Canal Counties, 24 January 1942, *ibid.*; U.S. Engineer Office, *Definite Project Report on Cross-Florida Barge Canal* (Jacksonville, Fla.: U.S. Engineer Office, 1943).

¹⁵ William N. Partington, “History of the Cross-Florida Canal,” in Florida Defenders of the Environment, *Environmental Impact of the Cross-Florida Barge Canal* (Gainesville, Fla.: Florida Defenders of the Environment, 1970), 55; Blake, *Land Into Water*, 152-162, 164-165, 201-203; Carter, *The Florida Experience*, 271-273, 276-278; J. Richard Sewell, “Cross-Florida Barge Canal, 1927-1968,” *The Florida Historical Quarterly* 46 (April 1968): 371, 374-375, 379-381; Flippen, *Nixon and the Environment*, 58. Kennedy and Johnson’s support was not necessarily out of a belief in the benefits of the canal; at least some came from political expedience. In July 1963, Major Holbrook Scott, an Ocala resident, claimed that the “Barge Canal issue can make or break the Federal Administration in Florida in 1964.” The situation was probably not that dramatic, but it is clear that both Kennedy and Johnson realized the political value of supporting the canal, at least in these early stages. See Scott to Hon. Clarence Cannon, M. C. from Missouri, 29 July 1963, Folder Canal 1960-1965, Box 2, Dosh Papers.

¹⁶ Carter, *The Florida Experience*, 267.

¹⁷ “Canal Fight Started At Audubon Meeting,” *The Tampa Tribune-Times*, 24 January 1971.

¹⁸ Quotation in “Canal Fight Started at Audubon Meeting”; see also Stephen Trumbull, “The River Spoilers,” *Audubon* 68 (March-April 1966): 109-110.

¹⁹ Partington, “History of the Cross-Florida Canal,” 55.

²⁰ Quotation in William M. Partington, “Oklawaha – The Fight Is On Again!” *Living Wilderness* 33 (Autumn 1969): 19; see also Carter, *The Florida Experience*, 281-282; “Canal Fight Started At Audubon Meeting”; Partington, “History of the Cross-Florida Canal,” 55; “Cross Florida Barge Canal Chronological Development,” 12 February 1971, 4, File Cross Fla Barge Canal—General, Box 2, Davis Papers. For an example of the recreational benefits of Rodman Reservoir, see Department of the Army, U.S. Army Engineer District, Jacksonville, Florida, News Release, “Cross-Florida Barge Canal Project,” n.d., File Barge Canal 1969-70, Box 2, S949, FSA.

²¹ Partington, “History of the Cross-Florida Canal,” 55-56; “Canal Fight Started At Audubon Meeting”; Carter, *The Florida Experience*, 283.

²² For more information on the formation of the Environmental Defense Fund and its role in the fight against DDT, see Thomas R. Dunlap, *DDT: Scientists, Citizens, and Public Policy* (Princeton: Princeton University Press, 1981).

²³ Partington, “Oklawaha – The Fight Is On Again!,” 19-22; “Canal Fight Started At Audubon Meeting”; Partington, “History of the Cross-Florida Canal,” 56; Carter, *The Florida Experience*, 284-287; Stine, “Environmental Politics and Water Resources Development,” 51-52, 59.

²⁴ See Florida Game and Fresh Water Fish Commission, “A Brief Assessment of the Ecological Impact of the Cross Florida Barge Canal,” November 1969, File Fla. Game and Fresh Water Fish Comm., Box 1, John Henry Davis Papers, Manuscript Series 23, Special and Area Studies Collections, George A. Smathers Library (East), University of Florida, Gainesville, Florida [hereafter referred to as Davis Papers]; United States Department of the Interior, Fish and Wildlife Service, Bureau of Sport Fisheries and Wildlife, “Review and Appraisal of the Cross Florida Barge Canal,” 30 March 1970, File Florida Defenders of the Environment, *ibid.*

²⁵ Florida Defenders of the Environment, *Environmental Impact of the Cross-Florida Barge Canal*, 1-5.

²⁶ Quotations in James Nathan Miller, “Rape on the Oklawaha,” *Reader’s Digest* 96 (January 1970): 54-60 (emphasis in the original); see also Carter, *The Florida Experience*, 291-292.

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²⁷ “Text of a Letter Addressed to President Nixon, Dated January 27, 1970, Mailed February 6, 1970 and Signed by 162 Environmental Scientists,” File Clippings 1969-1974, Box 3, Davis Papers; Carter, *The Florida Experience*, 290.

²⁸ Flippen, *Nixon and the Environment*, 105; Robert E. Jordan III, Special Assistant to the Secretary of the Army (Civil Functions), to Honorable John C. Whitaker, Deputy Assistant to the President, 11 November 1970, File Barge Canal 2-71/8-71 (Governor Askew), Box 2, S949, FSA; “Canal Foe Coalition Seeks Drive Support,” *The Tampa Tribune*, 9 September 1970; “Army to Reject Halting Barge Canal?” *Miami Herald*, 19 June 1970; “Environmental Veto Threatens Florida Canal,” *Christian Science Monitor*, 29 June 1970; “Cross Florida Barge Canal Chronological Development.”

²⁹ Quotation in Executive Office of the President, Council on Environmental Quality, “Summary of Environmental Considerations Involved in the Recommendation for Termination of Construction of the Cross Florida Barge Canal,” File U.S. Council on Environmental Quality, Box 3, Davis Papers; see also Russell E. Train, Chairman, Memorandum for Mr. Whitaker, 1 December 1970, in Carter, *The Florida Experience*, 311-312.

³⁰ John D. Ehrlichman, “Presidential Assistant with a Bias for Parks,” an oral history conducted in 1991 by William Duddleson, in *Saving Point Reyes National Seashore, 1969-1970: An Oral History of Citizen Action in Conservation*, Regional Oral History Office, The Bancroft Library, University of California, Berkeley, 1993, 368-369 [hereafter referred to as Ehrlichman interview]; see also Carter, *The Florida Experience*, 296-298.

³¹ Stine, “Environmental Politics and Water Resources Development,” 59-60.

³² Quotation in Office of White House Press Secretary, Statement by the President, 19 January 1971, in Carter, *The Florida Experience*, 312; see also “President Blocks Canal in Florida,” *New York Times*, 20 January 1971; Blake, *Land Into Water*, 209; Flippen, *Nixon and the Environment*, 130; Stine, “Environmental Politics and Water Resources Development,” 60-61. Whitaker told journalist Luther Carter that Parker’s court injunction did not influence Nixon to halt construction; the White House had received Whitaker’s decision paper several days before the ruling was announced. Carter, *The Florida Experience*, 298-299.

³³ See Ehrlichman interview, 369; Martin Reuss, *Shaping Environmental Awareness: The United States Army Corps of Engineers Environmental Advisory Board, 1970-1980* (Alexandria, Va.: Historical Division, Office of Administrative Services, Office of the Chief of Engineers, 1983), 19.

³⁴ “Wanted Dead or Alive? Cross Florida Canal,” *Pensacola (Fla) News-Journal*, 18 April 1971; Robert L. Shevin, Attorney General, to The Honorable Reubin O’D. Askew, 15 February 1971, File Barge Canal 2-71/8-71 (Governor Askew), Box 2, S949, FSA; L. C. Ringhaver, Chairman, to Richard M. Nixon, 12 February 1971 (with attachment), *ibid.*; Blake, *Land Into Water*, 212.

³⁵ “Nixon Can’t Halt Canal, U.S. Judge Johnsen Rules”; “Resolution,” File Cross-Florida Barge Canal, Box 9, S1160, Florida State Board of Conservation Water Resources Subject Files, 1961-1968, FSA; Blake, *Land Into Water*, 213. The Corps had prepared an EIS in 1970, but environmentalists believed that this seven-page paper was insufficient and the court agreed.

³⁶ “Corps Strives To Blunt Barge Canal Opposition,” *The Florida Times-Union*, 17 December 1976; “Cabinet Vote Doesn’t Bury the Barge Canal,” *The Florida Times-Union*, 19 December 1976; “Resolution,” 17 January 1977, in U.S. Army Corps of Engineers, Jacksonville District, *Cross Florida Barge Canal Restudy Report: Final Summary* (Jacksonville, Fla.: Department of the Army, Jacksonville District, Corps of Engineers, 1977), A-1 – A-4; Blake, *Land Into Water*, 214.

³⁷ Colonel Donald A. Wisdom interview by George E. Buker, 22 and 23 December 1978, Jacksonville, Florida, 22, transcript in Library, Jacksonville District, U.S. Army Corps of Engineers, Jacksonville, Florida [hereafter referred to as Wisdom interview]; “Cross Florida Barge Canal Restudy Report, Appendix D, Major Issues,” in Jacksonville District, *Cross Florida Barge Canal Restudy Report: Final Summary*, D-12.

³⁸ Jacksonville District, *Cross Florida Barge Canal Restudy Report*; Wisdom interview, 22; Florida Department of Environmental Protection, “Marjorie Harris Carr Cross Florida Greenway – History,”

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<<http://www.dep.state.fl.us/gwt/cfg/history.htm>> (18 January 2005); Florida Defenders of the Environment, “Restoring the Ocklawaha River Ecosystem” <<http://www.fladefenders.org/publications/restoring3.html>> (18 January 2005). Ocklawaha is a variant spelling of the name of the river.

³⁹ For more information about the La Farge Project, see Theodore Catton and Matthew C. Godfrey, “Steward of Headwaters: U.S. Army Corps of Engineers, St. Paul District, 1975-2000,” 75-82, manuscript prepared for the St. Paul District, U.S. Army Corps of Engineers, St. Paul, Minnesota. For more information about the Meramec Dam, see T. Michael Ruddy, “Damming the Meramec: The Elusive Public Interest, 1927-1949,” *Gateway Heritage* 10 (Winter 1989-1990): 36-45.

⁴⁰ Paul Brooks, “Superjetport or Everglades Park?” *Audubon* 71 (July 1969): 5; see also Planning Research Section, Department of Planning and Zoning, Miami-Dade County, “Demographic Profile, Miami-Dade County, Florida, 1960-2000,” September 2003, 1 <http://www.co.miami-dade.fl.us/planzone/Library/Census/demographic_profile.pdf> (21 January 2005).

⁴¹ Everglades-Jetport Advisory Board, “The Big Cypress Watershed: A Report to The Secretary of the Interior, April 19, 1971,” in Senate Committee on Interior and Insular Affairs Subcommittee on Parks and Recreation, *Everglades-Big Cypress National Recreation Area: Hearing Before the Subcommittee on Parks and Recreation of the Committee on Interior and Insular Affairs, United States Senate*, 92d Cong., 1st sess., 1971, 137-139.

⁴² Robert S. Gilmour and John A. McCauley, “Environmental Preservation and Politics: The Significance of ‘Everglades Jetport,’” *Political Science Quarterly* 90 (Winter 1975-1976): 721-722; Carter, *The Florida Experience*, 188.

⁴³ Gilmour and McCauley, “Environmental Preservation and Politics,” 723; “Miami Jetport and Interstate 75: Everglades National Park,” File Jetport Correspondence 1971, Box 8, S949, Governor’s Office Jay Landers Subject Files, FSA.

⁴⁴ Gilmour and McCauley, “Environmental Preservation and Politics,” 723; Carter, *The Florida Experience*, 189-191; “Miami Jetport and Interstate 75.” For a full discussion of Port Authority consultations with the NPS during this process, see J. D. Brama, Assistant Secretary for Urban Systems and the Environment, to Hon. Henry M. Jackson, Chairman, Interior and Insular Affairs Committee, 27 June 1969, in Jetport Hearing, 38-39.

⁴⁵ O. E. Frye, Jr., Director, to Mr. Alan C. Stewart, Dade County Port Authority, 22 February 1968, File Big Cypress: Jetport (Environmental Studies), Box 1, S1719, Game & Fresh Water Fish Commission Everglades Conservation Files, 1958-1982, FSA.

⁴⁶ Carter, *The Florida Experience*, 193.

⁴⁷ “Report on Ecology Conference Relative to the Proposed Collier-Dade Training Airport, June 20, 1968,” File Big Cypress: Jetport (Environmental Studies), Box 1, S1719, FSA.

⁴⁸ John “Jack” Maloy interview by Matthew Godfrey, 14 July 2004, West Palm Beach, Florida [hereafter referred to as Maloy interview]; Jetport Hearing, 68, 87-88; Gilmour and McCauley, “Environmental Preservation and Politics,” 725; Carter, *The Florida Experience*, 194-195; Blake, *Land Into Water*, 218.

⁴⁹ “Minutes of a Meeting of the Governing Board of the Central and Southern Florida Flood Control District and the Interested Parties Who Were Present to Discuss the Dade County Port Authority’s Proposed Jet Port Site Held at the Riviera Country Club in Coral Gables, Florida, Friday, December 13, 1968,” File Big Cypress: Jetport (Environmental Studies), Box 1, S1719, FSA; Carter, *The Florida Experience*, 195-196.

⁵⁰ Flippen, *Nixon and the Environment*, 31-32.

⁵¹ “Folly in Florida,” *National Parks Magazine* 43 (January 1969): 2.

⁵² For the written answers to the questions, see “Answers to Questions Submitted by Central and South Florida Flood Control District, February 3, 1969,” in Jetport Hearing, 74-79.

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⁵³ “Statement of John C. Raftery, Superintendent, Everglades National Park at Jetport Meeting, Miami Springs, Florida, February 28, 1969,” File Park Problems Big Cypress Jetport, EVER 22965, CR-ENPA.

⁵⁴ As quoted in C. Edward Carlson, Acting Regional Coordinator, to Mr. Allen Stewart, Director, Dade County Port Authority, 7 March 1969, File Big Cypress: Jetport (Environmental Studies), Box 1, S1719, FSA; see also Carter, *The Florida Experience*, 196.

⁵⁵ Jim Smith to Senator Adams, 7 March 1969, File Jetport Correspondence, Box 8, S949, FSA.

⁵⁶ Nat Reed to Governor Kirk, 5 March 1969, File Jetport—Everglades, Box 9, S949, FSA. Michael Grunwald, citing an interview with Reed, claims that Reed, attending the meeting with Arthur Marshall, “jumped to his feet and berated Dade County mayor Chuck Hall for wasting everyone’s time” with the dismissive answers. However, such an action is not in accord with the letter that Reed wrote to Kirk a week after the meeting, and no other accounts of the meeting mention an outburst by Reed. See Grunwald, *The Swamp*, 255-256.

⁵⁷ As quoted in Senate Committee on Public Works Subcommittee on Flood Control – Rivers and Harbors, *Central and Southern Florida Flood Control Project: Hearing Before the Subcommittee on Flood Control—Rivers and Harbors of the Committee on Public Works, United States Senate*, 91st Cong., 2d sess., 1970, 228-230; see also Joseph Browder interview by Theodore Catton, 17 November 2004, Washington, D.C. [hereafter referred to as Browder interview]; “Coalition Forms to Fight Florida Jetport,” *National Parks Magazine* 43 (May 1969): 28; Carter, *The Florida Experience*, 196-197; Blake, *Land Into Water*, 218.

⁵⁸ All quotations in Marjory Stoneman Douglas with John Rothchild, *Voice of the River* (Sarasota, Fla.: Pineapple Press, 1987), 224-226; see also Martha Munzer, “The Everglades and a Few Friends,” *South Florida History Magazine* 23 (Winter 1995): 12-13.

⁵⁹ Douglas, *Voice of the River*, 224-226; Munzer, “The Everglades and a Few Friends,” 12-13; Grunwald, *The Swamp*, 257-258.

⁶⁰ Act of 15 October 1966 (80 Stat. 931).

⁶¹ National Parks Association et al., to Hon. John A. Volpe, Secretary of Transportation, 17 April 1969, in Jetport Hearing, 126-128. For examples of the arguments dealing with the applicability of the Department of Transportation Act, see Jetport Hearing, 121-122.

⁶² See Joe B. Browder, Southeastern Representative, to Mr. Charles H. Callison, Executive Vice President, National Audubon Society, 2 May 1969, File Jetport Correspondence 1971, Box 8, S949, FSA.

⁶³ Walter J. Hickel, *Who Owns America?* (Englewood Cliffs, N.J.: Prentice-Hall, 1971), 101-102.

⁶⁴ Hickel, *Who Owns America?*, 101-102; Walter J. Hickel, Secretary of the Interior, to Mr. Secretary, 30 April 1969, File Jetport Correspondence 1971, Box 8, S949, FSA; “Clash Seen Over Jetport Plan,” *The Washington Post*, 15 May 1969; Carter, *The Florida Experience*, 197-198; “Conservationists Urge Halt on Jetport Work,” unidentified newspaper clipping, File Jetport Correspondence 1971, Box 8, S949, FSA; Blake, *Land Into Water*, 218; Flippen, *Nixon and the Environment*, 39.

⁶⁵ Russell S. Train, The Under Secretary, to All Assistant Secretaries and Heads of Bureaus and Offices, 9 June 1969, File I.#2.A. Leopold Report, Box 2, Accession No. 412-91-0041, RG 412, Records of the Environmental Protection Agency, NARA-SE; Carter, *The Florida Experience*, 198-200.

⁶⁶ As quoted in Jetport Hearing, 101-102.

⁶⁷ Jetport Hearing, 104-106.

⁶⁸ O’Neil and Judy quotations in John G. Mitchell, “The Bitter Struggle for a National Park,” *American Heritage* 22, no. 3 (1970): 100; Stewart quotation in Brooks, “Superjetport or Everglades Park?” 5.

⁶⁹ “‘Progress’ Menaces the Everglades,” *National Parks Magazine* 43 (July 1969): 8-10.

Chapter Five Endnotes (continued)

⁷⁰ Brooks, “Superjetport or Everglades Park?” 5-11.

⁷¹ “Conservation: Jets v. Everglades,” *Time* (22 August 1969): 42-43.

⁷² Anthony Wolff, “The Assault on the Everglades,” *Look* (9 September 1969): 44-52.

⁷³ John D. MacDonald, “Threatened America – Last Chance to Save the Everglades,” *Life* (5 September 1969): 58-66.

⁷⁴ Wolff, “The Assault on the Everglades,” 44. For more information on the national coverage, see “Jetport Fight Stirs National Interest,” *The Miami News*, 28 August 1969.

⁷⁵ Although the Department of Transportation was also supposed to have a voice in the report, it submitted its revisions too late to have them effectively implemented in the final version. Transportation officials had a different view of the problems than Leopold and his team, believing that any threat to the park would exist with or without the jetport, and that commercial development would not be a great problem. The differences between the two viewpoints were so great, and the deadline for publication so near, that Leopold merely submitted the report to Under Secretary Russell Train with Transportation’s name eliminated from the cover. However, when Hickel transmitted the report to Governor Kirk, he stated that the conclusions were made “in consultation with Secretary of Transportation John A. Volpe.” Carter, *The Florida Experience*, 204-205; Walter J. Hickel, Secretary of the Interior, to Governor Kirk, 7 October 1969, File Jetport Correspondence 1971, Box 8, S949, FSA.

⁷⁶ United States Department of the Interior and Luna B. Leopold, *Environmental Impact of the Big Cypress Swamp Jetport* (Washington, D.C.: United States Department of the Interior, 1969), 1-2 [hereafter referred to as Leopold Report].

⁷⁷ Leopold Report, 136-144; see also “Miccosukee See Airport as Final Destruction,” *The Florida Times-Union*, 12 September 1969.

⁷⁸ Blake, *Land Into Water*, 220; Gilmore and McCauley, “Environmental Preservation and Politics,” 729.

⁷⁹ For a reprinting of Overview’s report, see “Overview: There’s a Jetport in the Future If South Florida Plans Ahead,” *The Miami Herald*, 11 December 1969.

⁸⁰ “Dictated by Nathaniel Reed – Thursday – September 11, 1969,” File Big Cypress: Jetport (Environmental Studies), Box 1, S1719, FSA

⁸¹ “Policy on Everglades Jetport,” File Big Cypress: Jetport (Environmental Studies), Box 1, S1719, FSA; Carter, *The Florida Experience*, 205; Gilmore and McCauley, “Environmental Preservation and Politics,” 730; Flippin, *Nixon and the Environment*, 41.

⁸² Gilmore and McCauley, “Environmental Preservation and Politics,” 731-732; Carter, *The Florida Experience*, 207-208.

⁸³ Flippin, *Nixon and the Environment*, 9, 55-56, 221.

⁸⁴ Gilmore and McCauley, “Environmental Preservation and Politics,” 731-732; Carter, *The Florida Experience*, 207-208. Collier County was supposed to be a party to the agreement as well, but its officials never signed it.

⁸⁵ “The Everglades Jetport Pact: Articles of Agreement by and between The United States, State of Florida, Dade County Port Authority, Collier County,” File Jetport Correspondence 1971, Box 8, S949, FSA.

⁸⁶ Peter L. Cook, Acting Director, Office of Federal Activities, U.S. Environmental Protection Agency, Memorandum for Barbara Blum, 21 October 1977, File Jetport Background Info 1976-1979 DEIS, Box 1, Accession No. 412-91-0041, RG 412, NARA-SE; Colonel Emmett C. Lee, Jr., District Engineer, to Division Engineer, South Atlantic, 7 November 1972, File 1110-2-1150a (C&SF) Jetport 1972, Box 9, Accession No. 077-01-0023, FRC; Browder interview; Blake, *Land Into Water*, 221-222.

Introduction and Referral of Bills

Introduction & Referral of Bills



Chapter Five Endnotes (continued)

⁸⁷ Flippen, *Nixon and the Environment*, 56.

⁸⁸ Carter, *The Florida Experience*, 232-242; Grunwald, *The Swamp*, 234-235, 244; “Drainage Halt Urged In Big Cypress Swamp,” *The Miami Herald*, 30 August 1970.

⁸⁹ Everglades-Jetport Advisory Board, “The Big Cypress Watershed: A Report to The Secretary of the Interior, April 19, 1971,” in Senate Committee on Interior and Insular Affairs Subcommittee on Parks and Recreation, *Everglades-Big Cypress National Recreation Area: Hearing Before the Subcommittee on Parks and Recreation of the Committee on Interior and Insular Affairs, United States Senate*, 92d Cong., 1st sess., 1971, 131-181; Carter, *The Florida Experience*, 242-244; Department of the Interior, “Interior Secretary Morton Releases Land Use Plan for Big Cypress Swamp,” n.d., File Big Cypress, Box 3, S949, FSA; Secretary of the Interior to Director, National Park Service, et al., 19 November 1969, File USDI Everglades Jetport Advisory Board—File #1 Advisory Board Meeting Notes & Progress Report, Box 1, *ibid*.

⁹⁰ Reubin Askew, Governor, to Honorable Rogers Morton, 20 July 1971, File Big Cypress, Box 3, S949, FSA; Resolution, 23 November 1971, *ibid*.

⁹¹ Quotation in The White House, Statement By the President, Big Cypress National Fresh Water Reserve, November 1971, File Legislation Big Cypress—Area of Critical Concern—Background Material 1973-1974, Box 20, D. Robert “Bob” Graham Papers, Manuscript Series 148, Special and Area Studies Collections, George A. Smathers Library (East), University of Florida, Gainesville, Florida; see also Carter, *The Florida Experience*, 245; Grunwald, *The Swamp*, 258. Grunwald argues that Nixon made his announcement because he caught wind that Senator Henry Jackson would be holding a hearing on Big Cypress in Miami and he wanted to “knock Jackson out of the box in Florida!”

⁹² Senate Subcommittee on Parks and Recreation, *Everglades-Big Cypress National Recreation Area*, 53-54, 84-86.

⁹³ “Julie and Rogers View Cypress Swamp Tract,” *The Evening Star*, 5 January 1972; Nathaniel Reed, Assistant Secretary of the Interior, to Hon. Henry M. Jackson, Chairman, Committee on Interior and Insular Affairs, 19 April 1972, in Senate Committee on Interior and Insular Affairs Subcommittee on Parks and Recreation, *Everglades-Big Cypress National Recreation Area: Hearings Before the Subcommittee on Parks and Recreation of the Committee on Interior and Insular Affairs, United States Senate, Part 2*, 92d Cong., 2d sess., 1972, 15-17.

⁹⁴ Senate Subcommittee on Parks and Recreation, *Everglades-Big Cypress National Recreation Area Part 2*, 29, 42.

⁹⁵ Robert O. Vernon, Director, Division of Interior Resources, to The Honorable Reubin O’D. Askew, Governor, 15 June 1972, File Big Cypress, Box 3, S949, FSA.

⁹⁶ Quotation in “Second Look at Big Cypress Bill,” *Fort Myers News-Press*, 6 June 1972.

⁹⁷ Harry A. Kersey, Jr., “The East Big Cypress Case, 1948-1987: Environmental Politics, Law, and Florida Seminole Tribal Sovereignty,” *The Florida Historical Quarterly* 69 (April 1991): 458-459. In 1984, this state reservation became a federal Indian reservation held in trust by the United States. See Hobbs, Straus, Dean & Wilder to Miccosukee Tribe of Indians of Florida, 20 March 1989, File Indian Affairs Miccosukee Research 94, Box 22792, SFWMDAR.

⁹⁸ “Seminoles Ask Exemption of Lands in Swamp Deal,” unidentified newspaper clipping in Folder Legislation Big Cypress, 1972-1973, Box 20, Graham Papers.

⁹⁹ Quotations in Senate, *Establishing the Big Cypress National Preserve, Florida*, 93d Cong., 2d sess., 1974, S. Rept. 93-1128, Serial 13057-7, 7; see also Act of 11 October 1974 (88 Stat. 1258).

¹⁰⁰ Jones interview, 20.

¹⁰¹ Quotation in “Big Cypress Conservation Act,” copy in File Legislation Big Cypress Conservation Act 1973, Box 21, Graham Papers; see also “Big Cypress Eminent Domain Bill Filed,” *Orlando Sentinel-Star*, 13 April 1973;

Chapter Five Endnotes (continued)

“Senator Proposes State Preserve Big Cypress Area,” *Sarasota Herald-Tribune*, 6 March 1973; “Memorandum for Record,” 13 March 1973, File Legislation Big Cypress 1972-1973, Box 20, Graham Papers; Senator D. Robert Graham Press Release, n.d., *ibid.*; “Big Cypress Act Defended,” *Tallahassee Democrat*, 10 November 1973; Carter, *The Florida Experience*, 246-247.

¹⁰² Jones interview, 20.

¹⁰³ Quotation in House, *Establishing the Big Cypress National Preserve in the State of Florida, and for Other Purposes*, 93d Cong., 1st sess., 1973, H. Rept. 93-502, Serial 13020-5, 6-7; see also “State and Federal Efforts to Preserve the Big Cypress Swamp,” *Tropical Audubon Bulletin*, n.d., copy in File Legislation Big Cypress—Area of Critical Concern 1973-1974, Box 20, Graham Papers.

¹⁰⁴ Jones interview, 20.

¹⁰⁵ Senate, *Establishing the Big Cypress National Preserve, Florida*, 93d Cong., 2d sess., 1974, S. Rept. 93-1128, Serial 13057-7, 7.

¹⁰⁶ Act of 11 October 1974 (88 Stat. 1258); Blake, *Land Into Water*, 234.

¹⁰⁷ Quotation in George E. Buker, *The Third E: A History of the Jacksonville District, U.S. Army Corps of Engineers, 1975-1998* (Jacksonville, Fla.: U.S. Army Corps of Engineers, 1998); see also Stine, “Environmental Politics and Water Resources Development,” 39-40, 51.

¹⁰⁸ Quotations in Jeffrey K. Stine, “Regulating Wetlands in the 1970s: U.S. Army Corps of Engineers and the Environmental Organizations,” *Journal of Forest History* 27 (April 1983): 71; see also Stine, “Environmental Politics and Water Resources Development,” 147-157.

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THE WITCHERY OF ARCHERY

By Maurice Thompson, 1879.

Chapter I Prefatory remarks

*“Cheerily blow the bugle horn In the cool green woods of morn;
Loose the hounds and let them go, Wax the cord and bend the bow.”*

I HAVE not purposed writing a history of archery. My object has been to present, in the simplest way, some of my own adventures by field and flood, from which the reader might easily gather a comprehensive knowledge of the theory and practice of a sport which is as harmless and fascinating as it is old and honorable. It may not be amiss, however, to here sketch an outline of the rise of archery in England, the great mother of archers.

It is a well-worn saying that experience is the perfect school. In this school, at the hands of William the Norman, on the field of Hastings, the English took their first great lesson in archery, which resulted in establishing in their hearts a profound admiration, almost amounting to veneration, for the long-bows and resistless arrows of their conquerors. With a wise foresight the victorious invader gave into the hands of his subjugated enemies these simple but powerful weapons, and, by a shrewd stroke of policy, made the very carrying of a bow and shafts the badge of a freeman. He well knew that upon missile weapons of superior range and penetration he must depend for all future success in war, and that nothing could cement a people like a sort of democracy in the military idea. Therefore he adroitly managed to make the long-bow and arrows the weapons alike of rich and poor, noble and peasant, the miserable serf being the only person denied their use. From this time forward the long-bow rapidly grew in public favor, until by years of loving practice the English yeomen made it the terror of the world in battle; and it became the one instrument of forest and field sports common to patrician and plebeian, king and esquire.

From the desk of Rick Pryce:

It may well be said that the powerful government of Great Britain rests upon a foundation of iron arrow-heads—that its greatest glory has been achieved by the hard shooting of its archers—that its history's most brilliant pages have been graven on imperishable tablets with the bodkin-pointed shafts of the yeomen who drew bows at Crecy and Agincourt, and all those fights where its supremacy over Europe was enforced by the “whistling grey-goose wing.”

Nothing but the most costly and elaborate Spanish coats of mail could withstand a cloth yard arrow from a ninety pound English long-bow. The French rulers tried in vain for many years to educate their subjects in archery so as to return their Norman-Saxon enemies missile for missile. The clumsy cross-bow, however, was their only efficient projectile weapon, and its inferiority to the six-foot yew was made patent on many a bloody field.

In a word, the history of England, from the Norman conquest down to the day when fire-arms supplanted the long-bow and arrows as military and hunting weapons, is the history of archery, and may be read elsewhere.

But the “six-foot yew” would not wholly flee before the rifle and fowling-piece. It was not so easily cast out from the hands of a people whose fathers had made it famous forevermore.

The old toxophilite societies kept up their organizations, and from time to time new ones were formed, until archery, about the last of the eighteenth and the beginning of the nineteenth century, took shape as *par excellence* the sport of the nobility and gentry of England, Scotland, and Wales.

In 1840 Mr. George Agar Hansard published at London a large volume, entitled “The Book of Archery,” in which was brought together everything of interest connected with its subject which years of careful labor had enabled him to discover. This gave a new impulse to the “royal sport,” which obtains to this day.

In the United States there existed no archery organizations prior to the publication, in some of our literary magazines, of a number of my own papers descriptive of long-bow shooting on the lawn and “by field and flood.” At present there are hundreds of clubs from Maine to Texas. The

spread of the "Toxophilite mania," as some one has named it, has been so sudden and wide that our dealers have been unable to supply the demand for archery tackle, and in most of our towns and villages the manufacture of rather clumsy, but by no means worthless, long-bows and arrows has been quite a paying business. In the following pages I have attempted to afford the newly initiated archer such entertainment as the stories of a veteran, however poorly told, are pretty sure to possess for the tyro. If, on the other hand, this book happen to fall into the hands of an old and experienced archer, let him not cast it aside unread, for many things in it will be new, even to him. Of archery as a lawn game everything is told in the Appendix. I have there drawn together the fullest information possible on all that pertains to practical bow-shooting and the use and manufacture of all the implements of the archer craft. All is taken from my own experience; not a rule is laid down which I have not practically tested. During the fifteen years that, as an archer, I have roamed the woods, I have tried every kind of bow I could procure, from a plain mulberry stick made with my own hands to a bow of snakewood wrought in the far East by Indian cunning, and every sort of arrow, from a rudely feathered reed to the finest Highfield ever made. I have shot in all kinds of weather, by day and by night, and do not feel that egotism ought to be counted against me, when I offer to describe some of my adventures, even if the offending pronoun does dance pretty freely along my pages. Furthermore, I have keenly enjoyed writing these chapters, as a lazy way of living over again some charming days of excitement and novel sport, and as a tentative venture into a field of book-making as inviting as it is narrow and difficult of access.

The manual of archery given in the Appendix contains everything my experience has suggested, as well as the practical part of Mr. Hansard's work. I have spared no pains in reducing to the simplest and directest rules and maxims all that is necessary to a perfect practice of bow-shooting for either hunting or target purposes.

It was thought advisable, in the good old days of prefaces, to forestall or disarm criticism by some special plea or another; but, although I have indulged in something akin to the ancient preface, I shall not deny the critic what comfort he may find in making literary faces at my book. Let him say whatever his sense of duty compels. I know and you know, reader, that these tales of a careless archer have made him, for the time, an honest fellow, as,

The Witchery of Archery

reading them, he listened to the twang of the bow-cord and the keen hiss of the arrow by the reedy lakes, or in the dark, lone woods of the South and West! If he give me due credit for this brief effect, he may leave the rest to the archers and all the sport-loving folk for whom this book is written.

Of one thing I am sure: no amount of criticism, just or unjust, can turn from me my staunch, sympathetic, and enthusiastic friends, the Boys and Girls of America. I know too well how the rosy-cheeked misses will enjoy the lawn practice with their associates, and the boys, how they will dream of all sorts of adventures in the wild, green woods of summer!

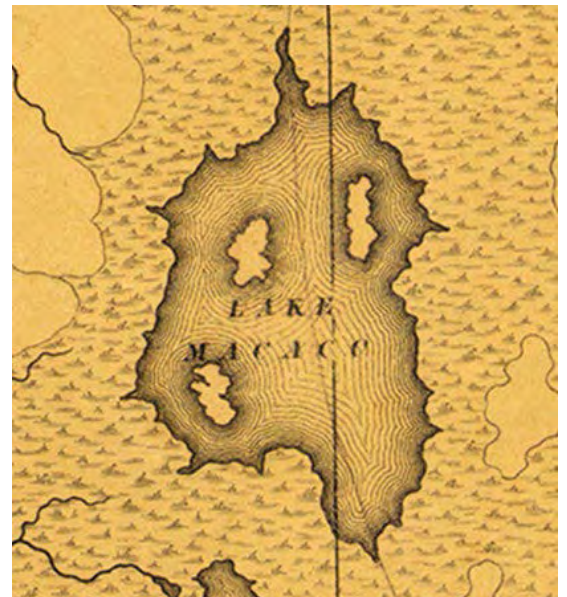
The chapters following are arranged with a view to contrast, as they have nothing in them by which they can be linked together so as to form even the semblance of a continuous narrative. They are the pleasantest and cheeriest fragments of my wildwood days with bow and quiver, put together, without any attempt at high art, for those who love outdoor sports and the merry life of a hunter and naturalist. Whilst it has often been necessary in order to avoid too much skipping about, to dove-tail into certain parts of my sketches, incidents and adventures not properly belonging to the time and locality, I aver that nowhere have I departed from truth in the descriptions of places and things. That I have, in a few instances, drawn upon my fancy for some local coloring when the outlines of landscapes could not be recollected, I cannot admit or deny, and if I have occasionally “dropped into poetry,” I assure the reader that it does not “come higher.”

After all, this book is for the archer, and everything in it pertaining to the sport may be relied upon as having come of the very best practice of the “noble exercise of archery.”

Chapter VIII

The Mysterious Lake

Part I of 2



LAKE OKECHOBEE, formerly called Mayaco, or Macao, ever since the discovery of Florida by Europeans, and if we may trust the traditions of the aborigines, long before, has slept in a sort of poetical fog of mystery. No doubt the far-famed story of the Fountain of Youth hidden away in the wild tangles of the Land of Flowers, being once disproved, let fall something of its delightful romance upon the lake, which, though hemmed in with almost impassable swamps, marshes, and everglades, and jealously guarded by all the cunning of its wild owners, really did and does exist—a wonder to the scientist and an exhaustless field for the operations of the naturalist and sportsman.

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This vast body of water lies on the Floridian peninsula, far towards its southern point, having a shape not unlike that of a great spider, from whose elliptical outline of body radiate short, crooked legs. All around it stretch the cypress, swamps and wet prairies, through which innumerable dark, sluggish streams crawl like indolent serpents. Its shores are in most places low, only a few inches above the water, and a great portion is unapproachable on account of the mass of lily-pads, stiff reeds, flags, and water-lettuce that forms a wide, impenetrable fringe thereto. Often this dense growth is spread across the mouths or friths of the streams, preventing their discovery, except with great labor and loss of time. The tribes of Indians formerly inhabiting Florida based all their poetry on fabulous hunting-grounds located on the islands and along the borders of Okechobee. They had a good foundation in fact for much of their dreamful story. In their light canoes, at certain seasons of the year, when the whole Okechobee region is mostly inundated, they could speed from island to island, from tussock to tussock, from hummock to hummock, finding everything their simple nature craved, namely, fish, birds, and wild animals upon which to practise with their bows and arrows and rude tackle, securing plenty to eat, and skins and feathers to clothe and decorate themselves withal. Vegetation was variegated and luxuriant beyond compare; gorgeous flowers and gay foliage made the woods and brakes dazzlingly bright and beautiful. Here in the midst of gayly painted birds, vast reptiles, and glossy serpents, under a sky of perpetual and healthful summer, the swarthy hunter lived a life sweeter than Arcadian to him. The shores of the great lake, dimly defined and shaded with mystery, affected his imagination and aroused in him all the dreamful superstitions of his nature. And then, too, somewhere here were situate his pearl fisheries, whence his people drew their vast supplies of this ornament, loads of which passed into the possession of De Soto and his followers. No wonder the lake was jealously guarded by the Indian, and still less the wonder that his descriptions of it were touched with the coloring of romance, and bathed in an atmosphere of fascinating mystery.

White men, of course, were not slow to add such touches to the story as would render it most palatable to our own lovers of the new and wonderful, and very soon the region of the Okechobee was described as full of old ruins crumbling under the attacks of time, overrun with wild vines, and surrounded with moats and terraces, the works of some forgotten race. The

islands in the lake, according to this enlarged account, were wild gardens of tropical fruit and parterres of fabulously beautiful flowers, among which all sorts of gaudy birds and butterflies floated and feasted the year round. Springs of health-giving water welled up through the snow-white sands, and perpetual breezes blew cool from the rippling lake. Here one could live to ripe old age, free from the yoke of labor, and subject to none of the aches and pains, the changes of temperature and the poisonous malarial fevers of other countries. But who could find the lake? The Indians utterly refused to be persuaded or bribed to lead the way, or to furnish the least clue to the wild labyrinth that bounded it. No white man dared to brave by himself the dangers that beset the undertaking.

So it rested for many years.

The early Spanish authorities in Florida may have sent expeditions into the southern part of the peninsula, but no well-based account has left us any exploration of Okechobee itself up to the date of the Seminole war, when our government troops cut their way to its shores. It is probable, however, that De Soto penetrated to the lake without knowing it, and, standing by its reedy, boggy margin, gazed off through the cypress forests under the low hanging vines and air-plants that decked the trees, and wondered how far away the mysterious region still lay. But it is certain that to the geographers of the early part of the present century Okechobee was little better than a probable body of fresh water lying somewhere above, or rather below, the head-waters of the great St. John's River. During the stay of the United States troops in the Seminole country, the lake was crossed and recrossed by officers and men, but it so happened that no one connected with the army cared to publish any very satisfactory account of such surveys as the military operations demanded, nor of the discoveries consequent thereto. It is safe to say that no military expedition, covering a field so new and interesting, has been projected within the century with less results to science and general information than attended the Florida war. The fauna and flora of the everglades were almost wholly neglected in those particulars interesting to naturalists, and descriptive geography was scarcely thought of. No notes, no sketches, no collections worth naming were preserved. "A fort was established here," "a camping-spot was there," "a trail was marked out, or a military road opened from this point to that," are phrases that contain the great part of all one can glean from the published accounts of the operations. When the Seminoles



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were conquered and most of them banished, and our army had retired from the peninsula, the everglades fell again into darkness and mystery, and after a few years Okechobee began again to be doubted by some and clothed in romantic drapery by others.

In the winter of 1867 and 1868 I visited the upper St. John's region, and whilst there happened to get possession of some information and make some personal acquaintances which resulted in a visit to and a thorough exploration of Okechobee and some of its creeks and rivers.

I was told that two or three parties of native "cracker" hunters had reached the lake at different times by way of the Kissinee River, which runs into it, or rather unites with it, after many a sluggish turn in and out among the prairies and wild jungles of that semi-tropical wilderness.

Of course many stories more or less improbable, where not positively impossible, were told to me, and all the old traditions and fables of the Okechobee revived. One hunter had visited an old ruined dwelling built of carved stones which stood on a high bluff at the southern end of the lake; another had brought home strange fruits of most delicious flavor; another had caught huge fish and had seen enormous water-monsters; whilst still another had encountered tigers and leopards and panthers too numerous to note. What giant water-plants, what fragrant flowers, what perennial fruits were those of the mysterious Okechobee! Exciting descriptions gratuitously reached me from many sources.

By a simple means, which it would be improper for me to here disclose, I came into possession of knowledge which led to my forming the acquaintance of three men—genuine hunters, by the way—who, during the late Southern war, along with several others, to avoid being forced into the military service of the Confederacy, had "taken to the woods" and had lived the life of the Seminole for nearly four years. These men had transported materials and built on the Kissinee a sailboat of considerable size, in which, through the years of the war, they had explored every nook, corner, and inlet of the Okechobee, living by means of fishing, hunting, and frequent raids on the stores and herds of the "settlements." In fact, these men had been freebooters to a certain degree, and outlaws to all intents and purposes, of the Confederate States of America.

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But when I dropped in on these fellows they were good citizens of Florida and making a precarious living by lawful pursuits. I learned that their boat, "The Deserter," as they had named it, still lay hidden down on the marshy banks of the Kissinee, just below the old government military road-crossing.

I called the three together in secret conference, and put before them a proposition involving the purchase of their labor and the use of the "Deserter" for so long a time as I might need the same in exploring the Kissinee and the Okechobee. My offer was slender enough as wages usually go, but the men were needy, and it was better than they were getting, so it was quickly accepted. This arranged, I immediately dispatched a letter to my brother Will, who was at Calhoun, Georgia, to come to me forthwith, fully armed and equipped for a bout by flood and field, which simply meant that he was to bring two or three English long-bows, a dozen cases of hunting arrows, plenty of fishing accoutrements, arsenic, etc., for preserving skins, a sketch-book and pencils, and a few other absolute necessities. As for me, I had come prepared.

By the time Will could join me I had procured everything needful and had dispatched two of the men with a wagon-load to the boat, keeping the third man for a guide. Procuring saddle-horses and a "cracker" and his two boys to bring them and the wagon back, we made our way to the river, nearly two hundred miles distant, in four days, after floundering through slush ponds and coffee-colored streams till we felt, as Will expressed it, "like tallow-dips on a hot shelf;" and found the men and boat awaiting us, all right and ready for the voyage.

A large shed covered with brush had been ex-temporized, and in the gathering twilight a pine-knot and fagot fire flamed cheerily, by the light of which we changed our clothing. A turkey had been killed, too, and hung, done brown, slow-roasted by the fire. We ate such a meal as half-famished hunters rarely get, enjoyed a pipe, and sought repose.

It was broad daylight when I awoke. The "cracker" and his sons had already been paid off by Will, and gone homeward with the wagon and horses and oxen. From the slight elevation on which the shed stood I had a good view of the sombre little river on which the "Deserter" lay at anchor. I went down and examined the boat. It was a monster, being about twenty-six feet

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The Witchery of Archery

long and six feet across, but it was shallow, and drew only a few inches of water. In many respects it was clumsily built and awkwardly arranged. It was rigged in a fashion not to be described. Notwithstanding its rudeness of finish, we soon discovered that its builders had well calculated the requirements the boat was intended to meet. In fact, the “Deserter” was staunch and steady, with broad bottom and long centre-board, drawing only a few inches of water, and perfectly tight. It looked like a miniature pirate craft.

A little string of bead-like lakes marks the source of the Kissinee, whence, through a vast hunting ground unequalled in any other land, it flows away southward in search of the Okechobee, its borders growing lower and marshier, until, from the point at which we struck it to its mouth, its edges arc uncertainly defined by lettuce and lily-pads tangled together in dense masses for most of the way.

The width of the river is variable, rarely less than one hundred and twenty feet, and often spreading out to an uncertain limit among water-plants and aquatic shrubs, and forming dark, still lagoons where snakes and alligators abound.

Here and there, however, beautiful bluffs over-hang the brownish current, often heavily wooded and gay with flowers, where birds as brilliant as sunlight flash back and forth, making the air quiver with their songs.

All the mystery of the traditions of the Okechobee took hold of me again as we weighed anchor, and with the men at the oars, quietly swept down the rather rapid tide of the Kissinee. A peculiar balm was on the air and a fragrance of spicy foliage, with now and then a resinous hint mingled with the odor of something like sweet-gum. We drew on at quite a good rate, and I lay in the stern of the boat taking pencil notes; but my thoughts flew ahead to the vast, mysterious lake toward which we were winding our way.

Will, however, seemed inclined to take any sport that might offer. Standing at the very prow with bow in hand, he soon let go a sharply singing arrow at a white ibis that took wing before us. In an instant old ruins and enchanted islands slipped from my mind and I was upright stringing my bow.

All day long we wound in and out with the flow of the stream, our men

occasionally making the welkin ring with their songs.

At night we went ashore and spread our tent-wing on a pretty sloping bit of ground, and the next morning I refused to go on till I had spent three hours shooting at gallinules, coots, and water-turkeys in a neighboring pond or lagoon. At ten a.m. we resumed our journey, finding the current tortuous in the extreme, and at one point getting a fine view of one of those grass prairies so common to the peninsula. I killed a deer with my rifle, just before nightfall, the only one we saw while on the river, and we were glad to add its venison to our supply of provisions.

The moon being near its full and affording a strong light, we did not accept the offer of several fine landing-places passed near nightfall, and the consequence was that it was near midnight before we found dry ground and wood. We camped on a live-oak point, and heard all night what our men said were wolves making a doleful noise far to the east of us.

With the first gray streak of dawn we were astir, and after a hasty breakfast we again took up the clew and wound away seeking the inner room of the labyrinth. The river began to narrow—the bluffs disappeared, and soon we were speeding between rank aquatic plants, under the arms of maples and ash. Then came clumps of palms and curious rubber parasites. Courlans and snake-birds were everywhere. The journey began to be strangely monotonous, and somehow the air began to feel as though we were in the vicinity of some great body of water. Herons flew high overhead, and occasionally a small flock of wood-duck whisked past us. On one of these latter Will used my shotgun to good effect, but the birds, on being dressed, gave forth a decidedly fishy odor, and we threw them away.

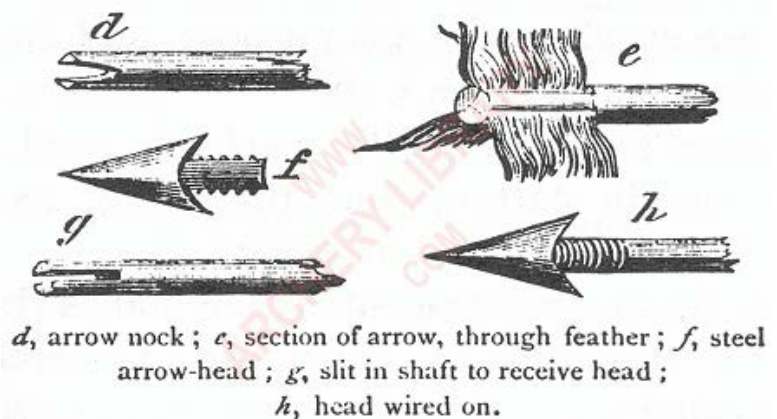
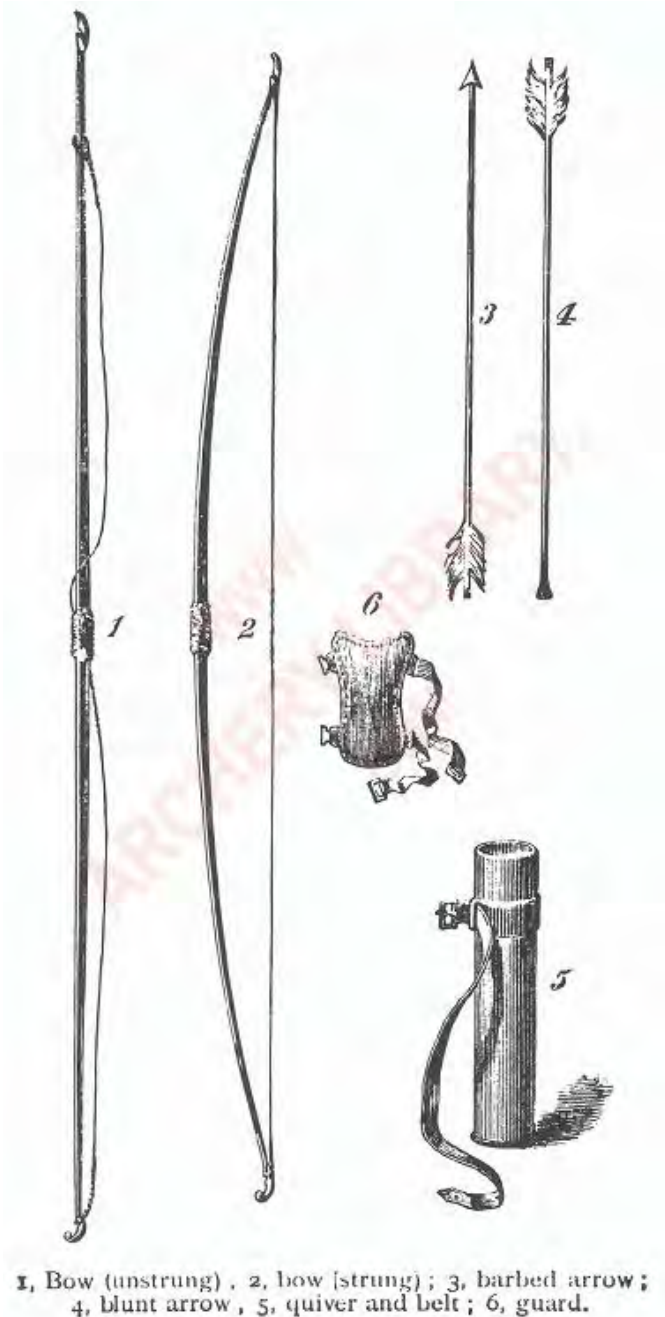
I have been on the Suwanee, the Caloosahatchee, the Ocklawaha, the St. John's, and many of the smaller streams of Florida, but I have never seen anything to compare with the lower Kissinee for snake-birds, limpkins, bitterns, cormorants, and herons. The bushes and trees are full of clumsy nests, and the clamor and clang of voices is incessant. The birds wheel overhead, they flap their wings in the tree-tops, they wriggle and pipe and scream in the water among the cypress knees and lilypads—they meet the eye everywhere, they almost deafen you. Snakes, too, are abundant. The spotted brown moccasin is the commonest kind, though I saw some slender green

The Witchery of Archery

tree-serpents and an occasional adder, or viper, as they are called South.

At its mouth, the Kissinee is wide—a half-mile or more, I guessed it to be and is literally choked with weeds, grass, lily-pads, water-vines, lettuce, and what looks like pale brown moss, though it may be the dead roots of aquatic plants. Pushing through this for a mile or more, the body of Okechobee is reached—still, dark, and lonely.

We raised our mast when we had cleared the obstructions. To do this our men had to take off their clothes and stand waist-deep in the water. Our oddly fashioned sail was soon shaken out. and we had the satisfaction of seeing it fill beautifully.



Chapter VIII

The Mysterious Lake

Part 2 of 2

“The first sail ever spread on the Okechobee!” I cried, leaning over the larboard rail to get my first clear vision of the vast stretch of bluish water lying south of us.

“The lust sail, but not the fust time by a long shot!” replied the man at the tiller, and this reminded me of the “Deserter’s” past record. Many a time before had this little pirate sailed this inland sea!

And now we cleared the grass points and tussocks of the bay of the Kissinee, and sailed out upon the body of the lake.

A feeling of disappointment took complete possession of me as we glided smoothly along over the gently swelling surface, scarcely making a ripple. This was Okechobee, the pearl fishery of the aborigines, the famous, the guarded lake of mystery! Where were the ruins—the carved stones—the turrets and moats? Where were the happy islands? This was a cheat and a delusion. But no, yonder is an island, and—how quickly the blood leaps to my temples!—yonder is a ruin. I was on the point of shouting for joy, when suddenly I became aware that it was great cypress knees I saw, instead of low rained battlements of stone!

“Yonder’s our signal rag,” said one of the men to another, as he pointed to where something red hung from a tall cypress stump. “It’s been thar two years or more.” We all looked.

It proved to be a tag of red cloth nailed there for the purpose of indicating the entrance to the Kissinee bay. The freebooters had put it there in the days when they refused to fight for the lost cause! Nor was this the last signal we found. The wing of an ibis similarly nailed marked the mouth of a stream coming in from the west, and numerous old loppings and blazes were pointed out to us.

We camped two days on an island, several of whose ash trees bore marks of the ax made by our guides three years before. While here we experienced a terrible gale, which fairly lifted the lake bodily up. We were deluged, and it was only by almost superhuman efforts that we saved our boat and cargo. It did not blow long, but the effect was awful beyond description. At one time the water fell in great lashes through the tops of the trees blown over almost level. The lake swashed back and forth like water in a basin when the vessel is violently shaken, and the noise was terrific. But the dash and clash and turmoil ceased almost as suddenly as it had begun, and the voice of cardinal grossbeak announced the end.

The remote solitude and scenery of the lake seemed to make my men communicative. They told us many a fascinating story of their outlaw life—thrilling adventures with bears and panthers—stolen visits to the towns above, and little predatory raids—thee hundred and one dodges and strategies—the joys and hardships of their refugee life in the everglades and on the bosom of Okechobee. They were lank, sallow, long-legged, tough-looking fellows, and bore marks of having “roughed it” indeed.

The shores of Okechobee are for the most part marked by a line of trees flanked by marsh or floating islands of water-weeds. In sonic places the ugly cypress knees run far out, and pallid dead trees rise from the water like the bleached bones of giants.

Reed tussocks or islands abound in the lake, some of them mere tufts, and vast stretches of tall grass in some places seem to be bounded by the horizon. For a great distance the west shore is a Flat marsh, dreary in the extreme, while on the other side the lake is margined with forests running close down by and often into the water, which is choked with aquatic plants.

When the wind served our turn we had a most delightful time bowling slowly along over the bluish waves. Our boat was staunch and steady, but not fast, a good thing for our comfort, as in many places the lake was so shallow that we could not let down the centre-board, and we often struck on submerged logs, knees, and stumps. Vast floating islands of fallen cypress trees appeared here and there, rafts that swung to and fro and up and down with the impulse of wind and wave.

We had royal weather, the one gale excepted, during the whole of our voyage, and insects really bothered us very little, considering our exposed condition and the myriads of mosquitoes and biting gnats that breed in the swamps and marshes.

Once well out upon the open body of the lake, we found the water bright, even sparkling, but when taken up in a cup it appeared clouded with vegetable fibres and other filth. We tried fishing in many places, but found that no game fish seemed to inhabit the open water. The little creek mouths and estuaries, where the lettuce and lily-pads are not too thick, are, however, surprisingly full of large black bass and beautiful bream the voracity of which I have nowhere else seen equalled. One evening, just below the mouth of a large stream, probably Fish-eating Creek, I drew out bream of a pound in weight as fast as I could cast.

We followed the western coast-line from the Kissinee to the first large bay, then, as the wind set east, sailed across the lake in a direction a little north of east, getting a good view of the shore-line north of us, and easily found the frith of a large creek, near which we camped for two days; then we dropped down three or four miles to where, by a crescent sweep, the timber—mostly maple, ash, and boxwood—runs far out into the lake, forming a good harbor, and we found a delightful camping spot on a sort of shell mound at the mouth of a natural avenue, through which the wind flowed gently all night long, keeping away the swarms of mosquitoes. We discovered good water, too, and enjoyed it as much as if it had been the choicest brand of ancient wine. Huge alligators were disporting in the aquatic weeds and grass of a lagoon hard by, but we did not care to molest them. Two or three hundred yards out across a stretch of yellow lily-pads, hundreds of herons' nests loaded the scraggy cypress trees, and, as night drew on, the great white birds flitted round and round and in and out like ghosts in the dusky twilight. It was Will who suggested that as soon as the herons had settled in their "rookery" we might steal up to them with the boat, and use our bows and arrows in the moonlight with great effect. The plan seemed good, and we tried to execute it, but an intervening wing of impassable marsh frustrated us. The next morning, however, with gun and bow, we secured the plumes of over twenty herons.

This profitable sport held us till near ten o'clock a.m., after which,

resorting to the oars, for want of a breath of air, we rounded the crescent and consumed four hours in reaching a long, low sandbar, lying northeast by southwest, perfectly white and bare. We supposed this bar to be the work of the recent gale, as it looked clean and new, and our men declared they had never before seen it. It was a good place on which to rest, so we disembarked. I swept the whole field with my glass. Far south to the greenish blue horizon line, I could see nothing but a waste of water, over which came a slow, uneasy swell, accompanied by a swashing sound peculiarly dreamful and mysterious. Westward, and a little south, at a distance of perhaps fifteen miles, clumps of trees in fanciful shapes marked the line of a large island, far away beyond which, scarcely discernible with my glass, appeared a palmetto ridge with its fans and spikes gleaming in the sunlight. North of us what seemed to be a vast floating raft of grass and weeds crossed the line of vision.

After an hour for dinner and sketching, we took advantage of a stiff breeze blowing to the south-west and bowled along over about twenty-five miles of pretty high waves, to a large bay, on the north side of which we camped near some veritable ruins. But I am compelled to add that they were the ruins of a rude shanty reared by my men and their companions in the days of their outlawry. The poles and palmetto thatch of which this hut was made, they had transported in the boat from far up the lake. The frail thing was blown awry, and was fast sinking in the sand. My men examined it with a good deal of interest, apparently; conversing meanwhile among themselves in tones too low for me to distinguish the words.

We remained here for three days, waiting for a favorable wind, then set sail, and swept by a long curve, close to the grass marshes of the southern end of the lake, beyond which the everglades stretch away to the chain of little lakes whence a number of streams creep down to the coast. We slept in the boat one or two nights while examining this stretch of shore, and here was the only place where the mosquitoes were unmanageable.

Leaving the dreary region of marsh-grass and castard apple, we rowed hard in a northeasterly direction, making for the dark line of cypress trees that fringe the eastern shore of Okechobee. We encountered several rafts of floating grass and weeds and passed numerous low marsh islets lying southeast of our course. The body of the lake now lay west of us.

We found good foothold on a little beach betwixt the water and a gloomy cypress swamp. We camped here, and were serenaded all night by raccoons squeaking and chattering in the trees hard by. This animal seemed abundant all along the east shore of the lake, and no doubt makes great havoc with the eggs of the wood-ducks that nest in the hollows of the big cypress trees. I killed a large old marsh-hare with my bow by moonlight the night we camped here, the only one seen during our voyage.

Our next stopping place was twenty miles by the shoreline farther north, where we stayed two nights and a day. Here we were visited by two cadaverous-looking Indian men and a boy. They were from a hunting party of Okechobees, who, they said, were camped ten miles east on the prairie. They reported deer very scarce, and turkey more so. Their guns were rude flint-lock rifles. They examined our long-bows and arrows with much apparent interest, the boy seeming especially delighted.

With a favoring wind we next sailed in a north-westerly direction to a large island some twenty miles distant, where we shot many herons of both the white and blue kind. This island had a wildly tropical luxuriance of vegetation, and would be a pleasant place for a fortnight's sojourn in January, if one were seeking solitude and—mosquitoes! I ought not to complain of these merry insects, however, for they never annoy me as they do other persons, no matter how numerous and bloodthirsty their swarms may be. With a little oil of penny-royal properly prepared and rubbed on my face and hands, I defy them.

From this island, sailing some twenty degrees north of east, we skirted the shore where immense cypress trees shade a low sand beach, and landed on the inner angle of a pointed bay, which seems to be about twenty miles in a southeasterly direction from the frith of the Kissinee. Here we remained three days, and, guided by one of my men, Will and I penetrated inland to the Okechobee prairie and beyond it to a vast stretch of pine lands, where we killed several turkeys and a deer. Parts of the prairie just mentioned are covered to the depth of six inches with water, which is completely hidden by the sawgrass that grows in it.

Our next sail was a tiresome tacking process, by which we zigzagged up the indented coastline on the northeastern side of the lake, passing what

seemed to be the mouths of two considerable creeks, across which the floating lettuce and lily pads had flung an impassable barrier.

We camped about eighteen miles from the Kiskadee and were again visited by Indians. It was not far from this spot that, several years later, while re-exploring Okechobee alone in a small skiff, I met a party of several gentlemen, who in a large boat were doing "the lake on scientific" principles. They seemed to be a jolly, energetic set, bent on finding out all they could. They had come down the Kiskadee, and had been on the lake for some weeks. They thought me unarmed, overlooking my two long-bows and bundle of arrows, which lay in the bottom of my rude skiff. In answer to some friendly questions I told them I was a Hoosier looking at the country. Being Yankees, they "guessed" I might get drowned if I trusted myself to Okechobee in that little skiff. Little did they dream that in that same frail box I had already paddled and poled my way over many miles of the lake with a view to the discovery of the old pearl-fisheries of the Indians! They gave me a box of matches and went their way. I have since learned that this party had been sent out by the proprietors of an Eastern journal to explore the lake and make a collection from the flora and fauna of the region.

When we again sailed, our course was west of north. After two miles of slow motion with a quartering wind, we had to resort to the oars. We entered the mouths of several small creeks, apparently mere connecting links between some large lagoons and the lake, and after a long day's work entered a large frith or bay and slept in our boat. Next morning, we made a careful examination, and found three creeks, we thought, emptying into this bay. There are several decaying huts on some points here to which the Indians from the lower lake regions come occasionally, to occupy them for a while during their hunting excursions. From the appearance of the old fruit gardens surrounding these dilapidated shanties, I should judge that a small colony of "crackers" might be planted here and do well, as things go on the peninsula. While hunting there, Will killed, with his bow, a gayly-plumed paroquet. We saw several of these birds, and from certain signs we were led to believe they breed there. The one Will killed was swinging to a twig by its short curved bill and he knocked it off with a round-headed arrow.

The fishing was fine at the innermost point of the bay, where the creeks above mentioned come in. With a spinning-spoon mounted with scarlet

feathers and white tail-hair of a deer, I took black bass and large perch till I was tired. Some of the bass scaled over six pounds each. When I hooked one he would spin round among the lily pads, making a lively fight to foul my line, and I lost several fine ones before I learned how to land them. A bass broiled on coals is not a bad dish for a hungry voyager, especially when all the rest of his meat has spoiled, a "side" of bacon excepted. We ate the fish with great satisfaction.

Our next move was back into the mouth of the Kissinee, thence up the river and home, by way of the St. John's. The result of this voyage was by no means satisfactory to me. I was quite youthful and very visionary, and taking hope from some shells and a little further hint of pearls, concluded that the old Spanish stories might not be all untrue. So, some years later, I returned, and all alone, in a mere shell of a skiff, very narrow and shallow, and armed with nothing but a small Smith & Wesson pistol and an English long-bow and arrows, explored the lake in every direction. During this lonely voyage I made some Indian acquaintances. One fellow made a lasting impression on me. His name was Kakeegee, as nearly as I can spell it, and his friendship for me was something unexpected and touching. He volunteered many kindnesses, hung about me for several days together, and finally ran away with one of my bows and a sheaf of arrows! Of course I cherish his memory!

Okechobee is a strange lake in many respects. Besides the Kissinee, many smaller streams flow into it, while its only outlet is south, through the mysterious everglades. The chief trouble encountered in settling its limits and the exit and even the entrance places of its waters, is the existence of immense floating or easily detachable masses of aquatic weeds and grass that with every great storm are drifted from one part of the lake to another. Today the mouth of a stream may be open, and tomorrow it is choked with one of these great floats. A storm on Okechobee is simply a rearrangement of the lake, whose whole southern confine oscillates with every wind.

There are several islands, probably permanent, in the lake, other than those already described, but they are low marshes without timber. From north to south the water measures forty-seven miles. From east to west its greatest extent is nearly thirty.

The principal trees found on the lake are, in the order of their number, cypress, ash, maple, palmetto, oak, magnolia, and boxwood. Elderberry and willow bushes are abundant, and that strange, huge parasite, the rubber tree, is often found enclosing large trees in its folds, from root to top. Gorgeous air-plants and luxuriant vines run among the branches of the forests, from tree to tree, blending their odd, gay foliage and fiery spikes with the fronds of the palm and the sprays of the cypress. In many places the scenery is fancifully picturesque, the water and aerial effects being especially fine. The air is generally fresh and cool, but quite fluctuating in strength and direction. The sunshine is sometimes almost burning hot, but, for many days together, I suffered no inconvenience from this source. A sort of fog usually hung over the lake from three o'clock to ten o'clock a.m., after which a haze, not unlike that of a Western Indian summer, took its place, clothing the distant marshes and tree clumps in a peculiarly dreamful dimness.

In the lagoons and creeks bordering the lake, alligators are large and numerous. The principal birds of the lake are the limpkin, the snake-bird, the herons, cormorants, ibis, gallinules, coots, spoonbills, kingfishers, fish-crow, teal, and wood-duck. Fish-hawks and barred owls were numerous, and we found many of their nests. I killed two fine specimens of the ivory-billed woodpecker and saw many more. The red-winged blackbird was seen in swarms in all the swamps and marshes, and great flocks of them flew over the lake from side to side in the early part of our stay. Swallows in abundance skimmed the water near the shores, and various songbirds enlivened the dusky depths of the woods.

Okechobee can never have the winter cottages of rich Northerners along its shores, and its islands will never be popular as picnic grounds. The deadly moccasin is everywhere. Myriads of insects infest the whole region, biting and stinging by night and day, and the water is bad. I made many pencil sketches of the most striking features of the scenery, but neither pen nor pencil can give more than a rough idea of the solitude, the tropical mysteriousness, the wild, monotonous gloom of the vast waste. If Okechobee has no venerable ruins, it at least has venerable trees. Some of its cypresses are of immense size and great age. Our voyage, a part of which I have not given in detail, consumed five weeks and two days. It was altogether a unique and charming experience.

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E

is hereby given that

Sam Rice

I aver that I am a Married M.
Also able to bear arms
and that I became a resident of Florida in
in the year *Eighteen Hundred*
I aver that the settlement herein into

th of *April*
twenty five

DESCRIPTION OF THE INTENDED SETTLEMENT.

On the North Side of the Manatee River Twenty Chains
from the bank of the River to a line call marked R
the Commencing point - thence from said line six
Chains due North to a small line call thence west
twenty six & a half Chains to prairie thence South
Sixty Chains & from thence twenty six & a half Chains
East to the beginning. *Sam Rice* this 1st day

1843

Sam Rice

We Certify that the above is a
true Copy of the original now on file in this office
John W. Upde
John W. Upde

FACES ON THE FRONTIER

FLORIDA SURVEYORS AND DEVELOPERS IN THE 19TH CENTURY

by Dr. Joe Knetsch

CHAPTER 5

COLONEL SAM REID: THE FOUNDING OF THE MANATEE COLONY AND SURVEYING THE MANATEE COUNTRY, 1841-1847

The life of Colonel Samuel Reid is virtually unknown in the Manatee country. Although he was the leader of the colony that led to the eventual settlement of the area, his past has been ignored in favor of those whose families still inhabit the area and who, along with Reid, bravely pioneered the Manatee frontier. This neglect is also the result of the poor image Reid has had as a surveyor of the area. Although vindicated by the Bradens and Robert Gamble at the time, the rumors of poor performance or fraud have persisted. His contributions to the growth of the area, therefore, have been clouded by the mist of the past. It is now time to take a deeper and clearer look into the life of this Manatee pioneer.

Reid entered Florida from Gwinnett County, Georgia, in 1825 and settled in the frontier area near Tallahassee.¹ In 1833, he purchased forty acres southeast of Tallahassee in Township 1 South, Range 2 East.² It does not appear that he was too interested in farming as a lifetime work, and in 1837, he purchased Lot 170, original plat of Tallahassee, on the corner of Jefferson and Monroe Streets, two blocks north of the capitol.³ On June 7, 1838, Reid entered into a partnership with James B. Gamble and began to sell “a general assortment of goods.” The new firm operated under the name

Faces on the Frontier

of Gamble & Reid.⁴ The 1839 tax rolls showed that the firm had one slave working in the store and an inventory of \$18,000, quite large for the era. It also showed that the town lots on which the store sat were valued at \$3000, for which \$32.50 was paid in Territorial taxes and \$66.00 in County taxes.⁵ The firm lasted only a year and a half and was dissolved by mutual consent on January 1, 1840. The firm continued to do business under the name of James B. Gamble, until he was joined by J. Gratton. Gamble, when the name was changed to James B. Gamble & Co.⁶ The same issue of the *Tallahassee Floridian* that announced the formation of the latter firm advertised that Sam Reid was going into the “Storage and Commission” business at Port Leon, the new terminus of the Tallahassee Rail Road.⁷ In fact, Sam Reid was the first purchaser of lots in the new city.⁸ By mid-1840 he was doing an active business at Port Leon and owned “extensive Warehouses and Wharf” in that town. These facilities he leased to a J. Vail in early 1841.⁹

¹Armed Occupation Permit No. 316. Newnansville Land Office. Land Records and Title Section, Division of State Lands, Department of Environmental Protection, Tallahassee, Florida. A copy of this permit also exist in the National Archives, Suitland Research Center, Suitland, Maryland, in Record Group 49.

²Deed Book C, 374. Leon County Property Records, Microfilm No. 10. Leon County Clerk of the Circuit Court. Microfilm in the Florida Department of State, Division of Archives and Records Management, Tallahassee, Florida. (The property was purchased from John Methina.) Hereafter, Deed Book Letter and page number.

³Deed Book E, 706.

⁴Tallahassee *Floridian*, February 9, 1839. The advertisement was dated June 7, 1838, announcing the new firm.

⁵“Tax Rolls Leon County 1829-1855,” (Incomplete file). Microfilmed by the Geneological Society Salt Lake City, Utah. 1956. Copy at the State Library of Florida Florida Room (Dodd Room). Florida Department of State, Tallahassee, Florida. Page number is unreadable.

⁶Tallahassee *Floridian*, January 11, 1840 and January 15, 1840.

⁷*Ibid*

⁸Deed Book E, 836. This shows Reid purchased Town Lots 6 and 7, Block 1, complete with water privileges. He purchased these lots for \$5 each. Also see, Elizabeth Smith's

special edition of the *Magnolia Monthly* entitled “A Tale of Three Tombstones.” (Crawfordville: Magnolia Monthly Press, 1968), 27.

⁹*The Florida Sentinel*, May 28, 1841. The advertisement stating this information is dated April 8, 1841, and was run in successive editions of the paper.

In January 1835, he must have been well enough settled to take as his bride, Carolina J. Alston, on January 7 of that year.¹⁰ The Alston family was one of the more influential families in Middle Florida at this period and the marriage brought Reid into a wider circle of powerful people. His brothers-in-law included Dr. John Bacon and David S. Walker, later governor of Florida and one of Reid's closest confidants.¹¹ The Alston's were the family involved in the famous duel and murder involving General Leigh Read. Indeed, Sam Reid attended a special meeting in honor of the late Augustus Alston, killed by Leigh Read, in late December 1839. Also attending the memorial meeting were James B. Gamble, Robert Gamble, D. S. Walker, R. B. Ker and Arthur M. Randolph, son-in-law of former governor William Pope Duval.¹²

¹⁰Tallahassee *Floridian*, January 10, 1835. Found referenced in “Leon County Marriages,” Florida Room, State Library of Florida, Tallahassee, Florida. This is a loose index taken from contemporary newspapers, and bound for reference work. No date of publication.

¹¹Walker married Philoclea Alston on May 24, 1842, while Bacon married the third sister Clementina on May 24, 1837. “Leon County Marriages.” Florida Room State Library of Florida, Tallahassee, Florida. Later letters from Reid to the Surveyor General of Florida often asked that gentleman to forward his personal letters to his wife through Walker.

¹²Tallahassee *Floridian*, December 21, 1839.

The 1840 census showed that Reid had three children under the ages of five, two daughters and one son, living with him and, in addition to his wife, one other adult between the ages of thirty and forty. The same document also recorded that he owned fifteen slaves, eleven males and four females. The household, therefore, totaled twenty-one persons according to these figures.¹³ To support such a large number of individuals means that Reid was somewhat successful in his business operations.

¹³1840 Census for Leon County, Florida, within the division allotted to George E. Dennis. 65. A microfilm copy of this record is located in the Florida Department of

Faces on the Frontier

State, Division of Archives and Records Management.

Reid's other interests are very noteworthy. In 1834, for example, as a stockholder in the Tallahassee Rail Road, he signed a petition on behalf of the line asking for federal lands. The president of the railroad was Governor Richard Keith Call.¹⁴ He was one of the signers of a number of resolutions sent to Washington in 1838, along with William P. Duval, A. M. Randolph and R. B. Ker.¹⁵ Most importantly for the future of the Manatee area, on February 24, 1840, he signed a petition supporting the concept of law establishing military colonization of the Florida frontier, which had been proposed by Governor Call. Also signing this lengthy petition were six of the Gamble family, William H. Wyatt, John Addison of Gadsden County, and two members of the Grisset[h] family, also from Gadsden County.¹⁶

¹⁴Clarence E. Carter, Editor, *The Territorial Papers of the United States: The Territory of Florida*, Volume XXV, 1834-1839 (Washington: Government Printing Office, 1960), 77. Hereafter, *Territorial Papers*, volume and page.

¹⁵*Territorial Papers*, XXV, 464-66.

¹⁶*Territorial Papers*, XXVI, 81-88.

However, this picture of success and political activity must be tempered by the fact that, by 1843, his operations in Port Leon had not been prospering for reasons unknown. In that year, Sam Reid was forced to convey title to William Bailey, of Jefferson County, to his property in Port Leon, in addition to five slaves—May and her four children. The transfer of this property was through a default of payments on two notes totaling seven thousand dollars and backed by George K. Walker, brother of David S. Walker. If Walker met certain conditions, however, the transfer was to become null and void. As holder of Reid's notes to Bailey, Walker stood to gain the Port Leon property if he would make the payments.¹⁷ This venture probably went sour when Port Leon was destroyed by a hurricane later in 1843.

¹⁷Record Book of Hillsborough County, Territory of Florida, Vol. III: 1838-1846. Copy prepared by Historical Records Survey, Works Progress Administration, Jacksonville, Florida. 1938. 376-78.

About April 8, 1841, Reid leased his business interests in the Port Leon

warehouses and wharf to J. Vail and headed south to Tampa Bay, having accepted the position as Deputy Collector of Customs for the Port of St. Marks. On July 1, 1841, he wrote to R. W. Alston, his brother-in-law, about the need to send a revenue cutter to the coast of Florida to prevent the Spanish fishing camps from selling arms and supplies to the Indians. Reid's letter was passed on to former governor William P. Duval who sent it on to the Secretary of Treasury. Duval, an old acquaintance of Reid's, noted, "Mr. Reid is an intelligent man, of high character, and a most vigilant [*sic*] officer." The fact that Reid's views coincided with those of the ex-governor was an important factor in the transmission of this letter.¹⁸ The letter demonstrated Reid's close contacts with the politically powerful families and their recognition of his worth.

¹⁸*Territorial Papers*, XXVI, 363-64.

Reid's duties as Deputy Collector of Customs required him to become acquainted with the area, which stretched from Charlotte Harbor northward. As such, he most likely scouted out the area of the Manatee River, at the time a virtually unsettled wilderness. His post and ownership of warehouses at Port Leon brought him into contact with the staff of General William Worth, then commanding the United States army in Florida. Through Worth's liaison, Lieutenant M. Patrick, Reid was recruited to lead a colonization effort on the Manatee River. The effort began on April 16, 1842, when the little band of colonists, headed by "Colonel" Samuel Reid landed at Manatee. According to General Worth, the colony "is composed entirely of persons from Middle Florida. The land is of Superior quality & from the character of the Gentlemen concerned, there is certainty of success." The General also noted that the colonists had been issued arms. (200 "Ball Buckshot & Cartridges," 10 muskets and 20 musket flints, along with tents.)¹⁹ The new settlement totaled fifteen white males, ten black males, two black females over fourteen and four black children, for a grand total of thirty-one individuals.²⁰ Reid's scouting of the area, possibly in company with Josiah Gates and others, proved to be important in establishing the colony on the river and showed his keen sense of judgment.

¹⁹Report of June 13, 1842. Worth to General R. Jones, Adjutant General. Letters Received by the Office of the Adjutant General, 1822-1860 (Main Series). Record Group 94. Roll 262.

Faces on the Frontier

W 217-405. National Archives Microcopy 567. 1842. The colonists of this colony are listed as follows: 1. Col. S. Reid; 2. J. Gates; 3. Mr. Ledwith; 4. Mr. Price; 5. F. Follansher; 6. Mr. Retterline; 7. Mr. McDonald; 8. Mr. Craig; 9. Wm. H. Wyatt; 10. John Bowers; 11. Dan. Buchanan; 12. John Addison; 13. John Griseth.

²⁰*Ibid*

The army units posted at Tampa Bay's Fort Brooke were to act as guardians for the young colony. On May 18, 1842, Assistant Adjutant General T. Cooper wrote to Major T. Staniford, then commanding at Fort Brooke, "The Colonel Commanding desires you will consider the party under Col. Reid at Manatee river, in all respects on the footing with others the most favored, & to afford them every facility & encouragement. He desires you will furnish them Arms &c. as a loan, to be accounted for by Lt. Patrick, to whom report will be made in the case. The tents loaned the party are to be retained by them until they can conveniently house themselves, so as not to interfere with the planting of crops."²¹ This stewardship was to prove mutually useful to the settlers and the army in the coming months and years.

²¹Letter of May 18, 1842. Cooper to Staniford. Letters Received by the Office of the Adjutant General, 1822-1860 (Main Series). Record Group 94. Roll 262. W 217-405. National Archives Microcopy 567. 1842.

Reid's leadership role involved him with the military as the eyes and ears of the colony and adjacent frontier. He was frequently required to quell false rumors and assure the colony, and others, that the Indians posed no threat to their existence. In September 1842, a truce with the Indians was concluded and General Worth wanted the frontier settlements notified that Indians would be moving through their locales. Reid was informed by a letter that Indians would be moved through the Manatee area, on their way to embarkation at Tampa. Lieutenant P. A. Barbour wrote, on behalf of Worth, to the Commander at Fort Brooke, Captain William Seawell, "Colonel Reid has been written to today and advised of the intentions of his southern neighbours to visit Tampa. His settlement need not be visited from your post."²² As the leader of the colony, Reid was informed of most of the moves of the military and their possible impact on his settlement.

²²Letter of September 14, 1842. Barbour to Seawell. Letters Received by the Office of

the Adjutant General, 1822-1860. (Main Series) Record Group 94. Roll 260. U-W 46. National Archive, Microcopy 567. 1842.

Like many, but not all of the settlers, Reid received an Armed Occupation Permit (No. 316, Newnansville Land Office) to occupy the land he had already begun to clear and plant. The date of the founding of the colony—April 16, 1842—precedes by many months the passage of this landmark piece of legislation. Because of this, it is likely that some of the settlers who accompanied Reid left prior to the receiving or requesting such a permit. Some may have died, too, however, there has yet to be uncovered any record of this. It may also be that the success of the colony did encourage many of the Armed Occupation Act settlers to try their luck on the Manatee River. These speculations, however, lack documentary proof at the present time. The only sure thing we can note is that many of the settlers who came to Manatee with Reid, did receive their permits and patents under this act.

Reid continued in the leadership of the colony when an incident, typical of the frontier, occurred. In mid-1844 rumors were flying that another Indian war was looming and that Indians had been spotted near the settlements. Allegedly one of the survey party of Henry Washington's had reported seeing many Indian signs in the vicinity of the Manatee River, where that crew was working. On August 5, 1844, General Worth wrote the following to Captain Montgomery, commanding at Tampa, "Sir: I desire you to cause the enclosed communication to be forwarded with the least avoidable delay to Colonel Reid, by the Star, if at Tampa, and not urgently employed, instruct the messenger to await for Colonel Reid's answers if he can be found at his residence ... Seal the letter to Colonel Reid before forwarding." The same letter noted that the affidavits requested by General Worth to the falseness of the Indian scare, must be done quietly and without arousing any undue suspicion on the part of the settlers.²³ The rumor started by a "drunken scoundrel" of Henry Washington's survey party, was quickly squelched and ended. Worth suspected that the entire story was a pre-planned episode meant to arouse the settlers and the government to attack the Indians and drive them, finally, from Florida.²⁴ The point of interest in this correspondence is the continued importance of Sam Reid as the recognized leader of the colony, even though the Bradens, Gamble, Gates and others were already on the scene.

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²³Letter of August 5, 1844. Worth to Montgomery. William Worth Belknap Papers, Box 1, Princeton University, Princeton, New Jersey.

²⁴Letter of July 7, 1845. Worth to Lt. Colonel Belknap. William Worth Belknap Papers, Princeton, University, Princeton, New Jersey.

Shortly after the founding of the colony, it was recognized by the government that the Manatee area would soon have to be surveyed to assure proper title to the lands of the colonists. Sam Reid requested the appointment as U. S. Deputy Surveyor and called on friends to support his application. Richard Keith Call responded to this request and wrote to the Surveyor General, “my friend Col. Saml Reid, who is anxious to obtain a contract to survey a portion of the public lands in Florida. He is in every respect worthy and well qualified.”²⁵ With the help of such friends, Sam Reid became the U. S. Deputy Surveyor when he signed his first contract on November 21, 1843. For his new duty, he received \$3.75 per mile of survey line, \$.25 lower than the average for the day.²⁶

²⁵Letters of Application. Volume 2, 1825-1847. Land Records and Title Section, Florida Department of Environmental Protection. Tallahassee, Florida. Hereafter DEP.

²⁶Contract File of Samuel Reid. Drawer: U. S. Deputy Surveyors O-Z, File: U. S. Deputy Surveyor Samuel Reid. Land Records and Title Section. DEP.

Reid immediately requested an Army escort into the area of his survey because of the presumed Indian threat. The Army, however, refused to allow this as the escort that accompanied Henry Washington's crew proved to be counterproductive, scarring Indians on the way to surrender back into the Big Cypress and out of the reach of the troops.²⁷ Reid's first survey was also delayed because of “incessant rains and high waters.”²⁸ Reid described the conditions at that time, “I repaired early in January to the field and have been constantly and labourously engaged ever since at it, but from the quantity of Rain which fell about that time, I find it impossible to commence at the Southern boundary of my district as the whole Country was overflowed. Before I ceased my party was frequently on the point of Starvation for water.”²⁹ The situation on the frontier was wet and threatening for the new surveyor, but, undaunted by these temporary setbacks, he pushed on to complete his contract. What is important to note here is the fact that Reid did



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Faces on the Frontier

not head to the southern end of the contract area, but finished the number of required miles in the northern end of the district. Before the year was out, he was to be accused of running false lines in the area he clearly did not survey.

²⁷*Letters and Reports to Surveyor General*, Volume 1, 1825-46, 265-69. Land Records and Title Section. DEP. Hereafter, *Letters and Reports*, volume number and page number.

²⁸*Territorial Papers*, XXVI, 654.

²⁹*Letters and Reports*, Volume 1, 277.

Surveyors had numerous obstacles to completing contracts and making ends meet during the surveying season. Two of these have been noted above, however, added to them were the problems of recruiting a capable crew that could be counted upon to endure the hardships and competently fulfill the needs of the surveyor. The surveyor also had to purchase instruments, supplies, wagons, mules/horses, field books, and other supplies before embarking on the venture. This meant that most of the deputy surveyors had to have some up front money before taking on any contract. Additionally, each surveyor had to be bonded and have someone willing to underwrite the enterprise. This required having contacts willing and able to put up the bond money, or its equivalent, before the survey could start. The four to six month surveying season, done in “dry” season only, and the constant possibility of sickness, death, insects, injury, or other mishaps added to these difficulties. All of these things made surveying a very speculative business and some surveyors did lose their investments by not completing the contracts on time, if at all.

On August 22, 1843, Reid wrote that he had arrived home and reported that not much had been done and that he had been becalmed four days on a small sloop. He then noted that he was beginning the chaining of sections in Township 34 South, Range 17 East, but the rainy season prevented much from being accomplished. He did tell Surveyor General Valentine Conway that he would send his notes via Colonel Braden as soon as that gentleman returned to Tallahassee. Indicative of his interest in the development of the colony, Reid also included samples of the first tobacco crop raised by the colonists.³⁰ By November 15th, he had completed the survey and had sent in the notes for approval.³¹

³⁰*Letters and Reports*, Volume I, 280.

³¹Letter of November 15, 1843. Reid to Conway. Land Office Notices, Refusals, Acceptance, and Sundry Letters (file) Armed Occupation Permits M-Z (drawer). Land Records and Title Section DEP.

At this time, Reid notified the Surveyor General that there was a potential conflict in the Armed Occupation claims of Mr. Ledsworth and Mr. Price, both of whom were absent from the area at the time of the survey. Josiah Gates, the brother-in-law of Price, sent a note to Reid identifying his relative's claim and that of Mr. Ledsworth. Reid asked for the discretion to adjust the claims so that they did not fall in the same quarter section of land, but specifically asked for specific instructions on how to make the alteration so as not to take any of the improvements from either party. For the information of the Surveyor General, Reid also notified him of new settlers coming into the area, after the period for the Armed occupation law, most of whom, he noted, settled in the pine lands.

³²*Ibid*

In late October of 1843, the Surveyor General had written Reid informing him of the charges of false surveys being levied against him. However, because he was in the woods surveying, he did not receive the information until January 8, 1844, a delay of over two months. Reid immediately informed Conway:

I regret exceedingly that I had not recd your letter earlier, as I could long since have satisfied you that the charges against me are entirely false. You will see by my returns that no Surveys now are reported to have been made at or near Charlotte Harbour. I saw Colo. Washington at Tampa last winter, just as I commenced work, who informed me that his line terminated in Town. No. 40 and the no. of miles, but I have forgotten the distance, but I am under the impression that the line running West between Township 38 & 39 is not less than ten miles of any portion of Charlotte Harbour...But Sir the whole statement of those Alabama gentlemen is false, I assert it and believe that the field notes of Col Washington will Sustain me, that after going South 2 1/2 miles in Town. 37 Range 22 that there is not five acres of land, that is not in ordinary wet season covered with

DID YOU KNOW?



Divers Find 2,000-Year-Old 'Computer' That Calculated Position of the Sun, Moon, & Planets Like Clockwork

A lump of corroded metal was pulled from the ocean floor in 1901, along with an extraordinary cache of monumental Greek art artifacts. Found near the Greek island of Antikythera, the crusty object was soon revealed to be nothing short of extraordinary.

Upon investigation, researchers determined it to be a piece of advanced ancient technology—they classified the object as an “analog computer” some 2,000 years old.

How Was It Discovered?

Diving for sponges was their goal, but the fishermen who explored the seafloor near Antikythera, an island between Crete and Laconia, over a century ago found more than they bargained for: they located the remains of an ancient Greek shipwreck. Amid its cargo, there were museum-caliber bronze and marble statues, vases, and other precious artifacts. The strange mechanism was spotted among them.

Museum researchers were smitten with all the art; less attention was paid to the rusty remnant. Yet, shortly thereafter, archeologist Valerios Stais examined it more closely in 1902 and identified a gear. The curious object was determined to be a hand-powered astronomical clock—the

first known analog computer—that could calculate cosmic events far beyond what was possible to figure out manually.

The device was dubbed the Antikythera Mechanism after the Greek island where it was found. It started as a single, solid lump but soon it separated into three chunks, and it subsequently broke into more pieces as it was handled further over the decades. More pieces were also found elsewhere.

Examinations determined that it had 37 separate meshing bronze gears, each with fine triangular teeth. These were hidden behind metal dials and housed within a bronze and wood frame, roughly the size of a shoebox. Seven fragments are mechanically significant, while 16 smaller parts were determined to bear inscriptions in ancient Greek. It was mainly due to advances in X-ray imaging during the last 50 years that these revelations came about. In 1974, gamma-ray examinations helped catalog 82 individual pieces.

What Did the Device Do?

Although the Antikythera Mechanism was plucked from the cargo of a ship, it is unlikely to have been used for navigation, as its delicate gears would not have fared well in the harsh conditions at sea. It could add, subtract, multiply, and divide—but it could also do much more, computing cosmic events.

Cranking the device with a handle drove an intricate sequence of gears. The clockwork mechanism is thought to have calculated the positions of the sun, moon, constellations, and planets of the solar system. By inputting

Pieces of the so-called Antikythera Mechanism, circa 150-200 B.C. (Left: Louisa Gouliamaki/AFP via Getty Images; Right: Tilemahos Efthimiadis/CC BY 2.0 DEED)





Remnants of what is believed to be the world's earliest computer. (Left: Marsyas/CC BY-SA 3.0 DEED; Right: Louisa Gouliamaki/AFP via Getty Images)

a given date, these data could be predicted with mathematical precision. It could also tell the lunar phases and when the next eclipse would be. It was so advanced it even accounted for leap years, and kept track of the 4-year Olympiad—or the ancient Greek equivalent.

Rivalling the European astronomical clocks of later centuries, the Antikythera Mechanism would not meet its match in technological advancement until the clockwork creations of Richard of Wallingford came about in the 14th century. Some of the ancient device's components are said to rival certain 18th century clocks in intricacy.

What Are Its Origins?

Research suggests that the astronomical device might have been made in Syracuse on the island of Sicily—mainly because calendrical markers on its dials point to the colonies of Corinth, of which Syracuse was one. In 2008, the Antikythera Mechanism Research Project proposed a link between the device and the philosopher Archimedes, who is from Syracuse.

Alternatively, scientists have proposed that it came from Rhodes and was built by the Stoic philosopher Posidonius—the reason is that many vases in the ship's cargo originate from that particular Greek island.

As for its age, the ship itself sank around 70-60 B.C. yet the device probably hails from earlier. Recent studies suggest it could have been built around 150 B.C. or perhaps as early as 200 B.C.



Left: Inscriptions are visible on the Antikythera Mechanism, on display at the Archaeological Museum in Athens. (LOUISA GOULIAMAKI/AFP via Getty Images); Right: An artist's reproduction of the Antikythera Mechanism. (Aristotle University of Thessaloniki) (Gts-tg/CC BY-SA 4.0 DEED); Inset: A side side view of an artist's reproduction of the Antikythera Mechanism, Thessaloniki Technology Museum (Gts-tg/CC BY-SA 4.0 DEED)

Why Does It Matter?

Although the Antikythera Mechanism might be the first computer ever found, it likely wasn't unique. There were almost certainly other similar designs. The notion that there were like mechanisms raises a host of conundrums for researchers and historians today.

After 2,000 years beneath the sea, the ancient computer found near Antikythera carries far-reaching implications for today's paradigm; if it really is that old and functioned as some scientists say it did, that could overturn much of what we think we know about the advancement of human civilization.

You can see the mechanism on display at the National Archaeological Museum in Athens. There are also several artistic reconstructions of how it might have looked, in the University of Thessaloniki and Thessaloniki Technology Museum, in Central Macedonia.

Faces on the Frontier

water and that except some Cypress Swamp on Peas Creek, there is not one acre of hammock land in or about Charlotte Harbour...He [Washington] told me of this when I saw him, and he advised me to throw up mounds, and to prepare myself with a spade to do so. I did as he directed. ...I have Sent up requesting Colo Braden and indeed the whole neighbourhood to come around and examine the work.”³³

³³*Letters and Reports*, Volume I, 281-82.

Of course, Joseph Braden did come to the aid of his friend and neighbor, writing to Conway on January 17, 1844, “I have seen a letter from you to Col Reid that he is charged by some Gentlemen from Alabama with making 'sham' surveys. I have been a resident on the River for a period commencing within a few days of his surveys until the present time, & am satisfied that the persons who made these charges, have never been on the River, & not have recd the information here, that they were 'sham' surveys. Such is not the opinion of those living on the River, & who have had many opportunities of ascertaining whether the surveys were worth making or not. I have no hesitation in saying that the charges are malicious & groundless.”³⁴

³⁴*Letters and Reports*, Volume 1, 285. See also page 293 of same volume.

The alleged group of Alabama gentlemen was a hoax hatched by a disappointed surveyor, who had been seeking employment with the Surveyor General and with Reid, but was rejected because of his lack of proper character and behavior. The letter accusing Reid is a good example of creative thinking. As Reid had written, the description offered by the “Alabama Gentlemen” was pure fiction. The land claimed to have been seen and marked by these people is described as “varied and picturesque scenery of rich hammocks, prairie, and pine lands interspersed with ponds and bayous [*sic*], which enhanced it in our estimation as a first rate grazing range for cattle.”³⁵ Anyone, to this day, familiar with the area of Charlotte Harbor can see the falseness of this description. Yet, Reid was called upon to defend his surveys and his reputation against the slanderous attack.

³⁵*Letters of Commissioner*, Volume 3, 1840-43 600-702. Land Records and Tille Section. DEP

In the October 26, 1843, letter to Reid, the Surveyor General advised

him on how to handle the charges and prove the validity of his work. He recommended that he take some of the local, reputable people out to his work, let them examine the marks and lines and then furnish sworn affidavits to what they had seen. Conway concluded, “This course may have the tendency to disabuse the minds of all interested and supersede for the present the necessity of commissioning another Deputy to go in and examine your work.”³⁶ Reid followed this good advice and got the cooperation of Judge Josiah Gates and Hector W. Braden who swore that “We made a particular examination of these several lines, amounting to more than nine miles, including ten corner posts, and more than fifty bearing trees; these we found well marked and easy to delineate. We find no difficulty in following any of these lines or ascertaining with facility the Townships Ranges and Sections on the entire route.”³⁷ These were strong witnesses for the surveyor and their influence proved important in finally ending the speculation regarding the correctness of his work.

³⁶*Letters of Surveyor General*, Volume 4, 1842-44, 102-03. Land Records and Title Section. DEP

³⁷*Letters and Reports*, Volume 1, 297.

The man behind the accusations was Robert B. Ker, a man known to Reid and many of the early settlers of the Manatee River region. Ker had been active in many of the social and political events in Tallahassee and served as Deputy Surveyor on many occasions, including the final survey of the boundary of the Forbes Purchase. However, the job of Deputy Surveyor was a political appointment, in most instances, and Ker was not in with the group around Valentine Conway. Conway, after some initial hesitation, saw the evidence Reid had referred to and the affidavits of Braden, Gates and others and was convinced that Reid's work was legitimate. It was soon suspected that the entire episode was being staged by Ker in revenge for being refused employment, especially since none of the seven signees on the petition from the “Alabama Gentlemen” were known to anyone, including those on the Manatee River supposedly interviewed by these men.³⁸

³⁸*Letters of Surveyor General*, Volume 4, 73-75.

In what appears to be a final desperate act by Ker, he wrote to David

Faces on the Frontier

Levy Yulee, Florida Delegate to Congress, stating the same case alleged by the “Alabama Gentlemen.” Ker even stated that he had confidence in one Charles D. Chesterfield of this group and believed Chesterfield had a basic knowledge of surveying and was able to correctly judge the work done by Reid. He concluded his tirade by, again, stating the impossibility of running 800 miles of lines in four months, which many surveyors claimed to have done in Florida.³⁹

³⁹*Letters of Commissioner*, Volume 4, 17-19.

When Conway was sent a copy of Ker's letter to Yulee, he was quick to respond:

The Author of this communication applied to me for a contract in the fall of 1842. On instituting an enquiry into his character & standing I soon learned enough to prevent me from complying with his wishes. Indeed, on one of those occasions he presented himself before me in a high state of intoxication and subsequently I have frequently observed him in a similar situation. Chagrined and disappointed in his application he has sought revenge by attempting to cast odium upon the work executed by my Deputies in the field ... Now Sir, after the most diligent enquiry I cannot ascertain the actual whereabouts or identity of an individual member of the company of disappointed & disaffected Explorers of Hammock Land & Marks & believe me when I assure you that it is and has long been my firm conviction that R. B. Ker, himself is the getter up & concoctor of this whole scheme of defamation & falsehood with design to injure Col. Reid and bring into disrepute the surveys generally.⁴⁰

⁴⁰*Letters of Surveyor General*, Volume 4, 113-16.

Reid too, found out the author of this cruel hoax and challenged Ker to come to Manatee and show where these “sham” surveys were. Reid went so far as to offer to pay Jay Ker's travel expenses.⁴¹ Ker did not take up this challenge.

⁴¹*Letters and Reports*, Volume 1, 303-04.

Commissioner of the General Land Office, Thomas H. Blake, effectively ended the controversy after obtaining other evidence on the character of Robert

B. Ker. He had the correspondence of Reid and Ker before him when he made the decision and also had affidavits from Braden, Gates and others. Blake complimented Conway on the manner in which he had handled this small crisis and maintained the public confidence in the surveys. He informed Conway that he was totally satisfied with the correctness of Reid's surveys and had acted upon his accounts. Payment for which was already on the way to Reid.⁴²

⁴²*Territorial Papers*, XXVI, 891-92.

By mid-1844, Reid was again in the field trying to survey some of the coast near Teira Cia Bay. This was difficult surveying because the land was so broken, judgment had to be used in determining what islands had enough land to pay for the cost of surveying and the nature of the tides complicated these judgments. He also noted that a previous surveyor in the area of Township 27 South, Range 18 East had not followed instructions correctly and had thrown excess lands onto the southeast or southwest. As the range lines had been run from north to south and he had started from the southeast corner and run north in sectioning, the two lines did not match, which he correctly noted, made his surveys look bad.⁴³ Reid well aware that his surveys were under tight scrutiny and made every effort to run his lines correctly. Yet, diligent as he was, the taint of the Ker investigation, the lack of remaining monumentation within a decade and the fact that his contacts were politically powerful have clouded the judgment of some as to the correct nature of the majority of his work. The majority of today's surveyors believe that Reid's work was relatively accurate, however, some still have doubts about his ability after all these years.⁴⁴

⁴⁴Discussions in my seminars on the History of Surveys and Surveying, conducted for the Florida Surveying and Mapping Society, have given me valuable insight into today's opinion concerning Reid's work. Two seminars in Tampa and one in Sarasota have given me the opportunity to talk to the majority of surveyors who have attempted to follow his field notes. My colleagues in the Bureau of Survey and Mapping also have found Reid's work, by and large, fairly accurate. There are, however, one or two strong dissenters from this opinion.

Reid's family moved to the Manatee area, probably in 1844, from the Tallahassee area, and remained until shortly after he died, in April 1847. Evidence of this occupation of the land is found in the records of Leon County, where it is recorded that Carolina S. Reid “of Hillsborough Co.”

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bought the crops of Robert Alston her brother, for a tidy sum of \$15,000. The crop, the majority of which was cotton, was to be sold to pay off this debt, and any shortages would be made up from the next year's crop.⁴⁵ However, Carolina Reid left the Manatee area after Sam's demise for we find her again, on the records of Leon County purchasing land and crops near Lake Miccosukee.⁴⁶ It would appear from this evidence, none of Sam Reid's family remained in southern Florida after his death.

⁴⁵Deed Book I-J. 259. (Dated May of 1847.)

⁴⁶Deed Book I-J. 381. (Dated April 28, 1848.)

The next to last letter we have of Sam Reid, was penned on November 10, 1846. In this letter he clearly knows that he is dying. At the same time, he also passes the torch into the hands of the capable John Jackson:

This will be handed to you by Mr. John Jackson, who visits St. Augustine for the purpose of making my returns, my continued illness making it impossible for me to do it in person. Mr. Jackson has been with me through the survey, and can give you any and all information which you may require touching the survey. You will find Mr. Jackson a scientific, intelligent and honorable man, and every way worthy of any confidence you may place in him. I fear that I have run my last line, as my protracted illness gives me no room for hope for a speedy recovery, if I recover at all, and would therefore recommend Mr. Jackson to your favourable notice, as an accomplished surveyor.⁴⁷

⁴⁷*Letters and Reports*, Volume 1, 313.

Reid's ability to pick capable people to do certain jobs or join in colonization efforts proved to be uncanny. Most of the early settlers, as we have seen, were brought together by Sam Reid and remained to found the prosperous Manatee colony. These hardy men and women were the backbone of the colony and the pioneers of the area. Unfortunately, the name of the man who brought them here has remained forgotten until now. His choice of John Jackson, one of Florida's most accurate and dedicated surveyors, was a final note to his ability to see the true and necessary character of

those he associated with on the frontier of southern Florida. Without his abilities, persuasiveness and tenacity, the Manatee colony may not have been as successful as it proved to be. Thus, we should now add the name of Sam Reid, the true founder, to the list of valiant pioneers who established one of Florida's premier settlements.

Next Month ...

CHAPTER 6

A SURVEYOR'S LIFE: JOHN JACKSON IN SOUTH FLORIDA

Joe Knetsch has published over 170 articles and given over 130 papers on the history of Florida. He is the author of [*Florida's Seminole Wars: 1817-1858*](#) and he has edited two additional books. [*Faces on the Frontier: Florida Surveyors and Developers in 19th Century Florida*](#) is a history of the evolution of surveying public lands in Florida and traces the problems associated with any new frontier through the personalities of the major historical figures of the period. As the historian for the Division of State Lands, Florida Department of Environmental Protection, he is often called to give expert witness testimony involving land titles and navigable waterways issues.



Issue 35 January 2024

NSRS Modernization News

For all issues of **NSRS Modernization News**, visit:
geodesy.noaa.gov/datums/newdatums/TrackOurProgress.shtml

SPROCCET to Replace HTDP

NGS is building Software for **PR**ojecting **O**bservations, **C**onstraints and **C**ofactor matrices/**E**rrors through **T**ime (SPROCCET), as a replacement for the Horizontal Time-Dependent Positioning (HTDP) utility in the modernized NSRS. Improvements include: (a) support for orthometric data, (b) use of GDX, (c) use of IFDM2022, (d) error propagation through time, as per [the multi-epoch least-squares adjustment \(ME-LSA\) problem](#), (e) distinct modules for 14-parameter Helmert transformations and deformation models, (f) use of a modern coding language, (g) bug fixes and model corrections. SPROCCET will be capable of projecting geodetic information through time, and changing the geometric frame, and therefore will be a pre-processor for LASER, used in both the modernized version of OPUS and in REC adjustment projects.

Multi-GNSS OPUS-S Available for Beta Testing

OPUS-S, the NGS service for processing GPS data for 2+ hour occupations, can now process all GNSS constellations. NGS has developed M-PAGES, our new multiple-constellation Global Navigation Satellite System (Multi-GNSS) software for position solutions. M-PAGES has been added to OPUS-S and is available for testing at <https://beta.ngs.noaa.gov/OPUS/>. This new version

of OPUS-S allows users to process data from all GNSS systems in operation today that have two or more frequencies (GPS, GLONASS, Galileo, Beidou, QZSS). We call on the community to help us test the new service during this BETA release.

Multi-Epoch Least-Squares Adjustment Papers, Redux

Two new papers, providing details on the application of the Multi-epoch Least-squares adjustment (ME-LSA) problem have been published:

- [NOAA Technical Memorandum NOS NGS 95](#)
- [NOAA Technical Memorandum NOS NGS 96](#)

TM 95 discusses the complications of covariances that arise from using gridded deformation models, while TM 96 provides specific equations for observation types supported by NGS software, based on earlier ME-LSA papers.

Where's the GRAV-D Progress Chart?

GRAV-D's airborne campaign has come to a close. All re-flights have finished, and the final data-set is being prepared for hand-off to the GEOID2022 team. With this success, the beloved GRAV-D progress chart has been happily removed from our newsletter.

THE RESOURCES OF



KEY TO MAP

Figures show value of Annual Pre-War Output



100,568,000



2,848,794,000



250,457,000



5,891,599,000



3,330,491,000



2,546,766,000



117,183,000



7,661,609,000



2,787,358,000

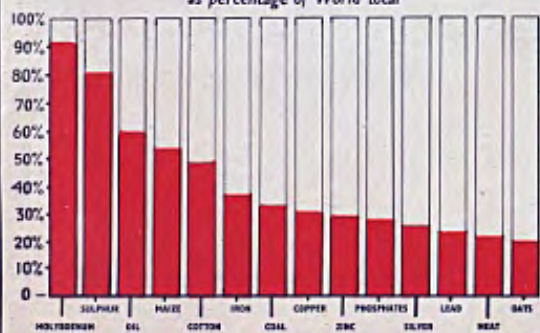


630,000,000



U.S.A. PRODUCTION OF RAW MATERIALS

as percentage of World total



The United States of America is the world. Its industrial capacity combined. Today, the U.S.A. is playing a decisive part in the world.



THE UNITED STATES



KEY TO MAP

Figures show value of Annual Pre-War Output



OIL
\$1,390,000,000



COAL
\$835,600,000



METAL ORES
\$258,749,000



PHOSPHATES & POTASH
\$22,708,000



COTTON & COTTON SEED
\$467,000,000



GRAIN
\$2,155,436,000



CATTLE & DAIRY PRODUCTS
\$5,307,861,000



SHEEP
\$143,655,000



PIGS
\$1,072,800,000



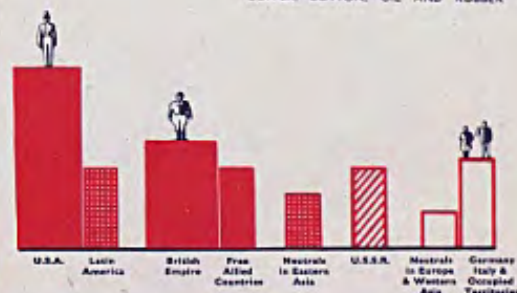
FRUIT
\$394,000,000

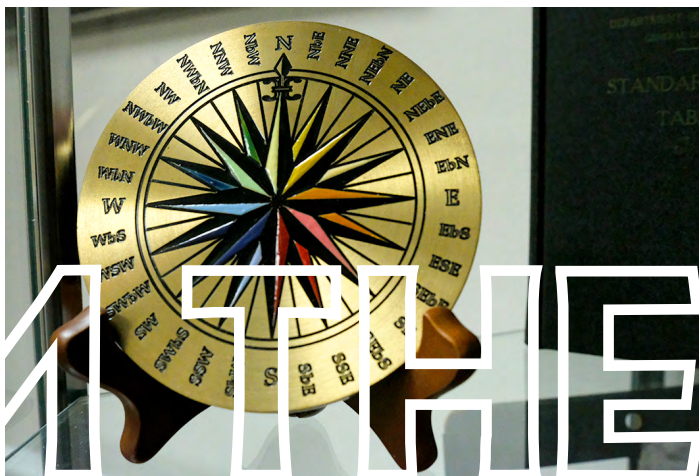
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SCENES

IN A

SURVEYOR'S LIFE;

OR A

RECORD OF HARDSHIPS AND DANGERS ENCOUNTERED.
AND AMUSING SCENES WHICH OCCURRED,

IN THE

Operations of a Party of Surveyors

IN

SOUTH FLORIDA.

By W. L. PERRY.

JACKSONVILLE:
C. DREW'S BOOK AND JOB PRINTING OFFICE 1859.

CHAPTER IV

THE COMPASS WAS SET, the chain unrolled, and the axemen commenced clearing out a track due south along which to measure the line. When a sort of opening was made through the thick undergrowth for some distance by the axeman, the Captain pulled up his jacob staff and moved forward for a new sight. My position being at the front end of the chain, I moved ahead, also carrying the ten little iron pins used by surveyors in measuring land, and when the chain was stretched full length, Ralf shouted "*stick.*" I immediately stuck down one of the pins at the end of the chain, and answered "*stuck.*"

This interesting operation was repeated every thirty-three feet; that being the length of the chain used by surveyors.

On account of the thick undergrowth of the swamp, closely interwoven with bamboo and almost every other species of thorned vine and bush, through which it was necessary to open a road sufficiently wide and clear to enable us to make a correct line and measurement, we progressed but slowly, as at noon we had made but one mile and a quarter. The water being three feet deep, we were under the necessity of standing to dine, and using roots and cypress knees which projected out of the water as tables.

In the afternoon the growth of the swamp appeared to become more dense, and the water deeper, so that it was exceedingly difficult and fatiguing to make any headway at all.

As the sun sunk lower and lower toward the western horizon, and there appeared no signs of dry land, we began to prepare our minds for

a glorious night of it in the swamp, with no place dry enough to lie upon, or to build a fire upon, to keep off the musketos, which had begun already to sing their ominous notes about our anxious ears. Good fortune, however, destined for us a better fate. The Captain discovered, some distance off in the direction we were going, what he conceived to be an opening which we thought might be high woods. We stuck down a stake to mark the spot, rolled up the chain, and pushed for this open space, in hopes of finding high ground upon which to encamp for the night. We were not disappointed, for the opening proved to be a small island, containing about an acre of dry ground, and affording an abundance of wood. We slept soundly after our laborious day's work in the swamp, under an old Indian shed, covered with pine bark, several of which were standing on different parts of the island.

At an early hour in the morning we plunged again into the swamp, anxious to see the opposite side. All hands seemed cheerful and lively until toward evening, as the prospect for a night in the swamp seemed now almost inevitable, when there was evidently a lengthening of faces all around. No one felt disposed to communicate his thoughts to his neighbor, so that there was no talking done. Nothing broke the solemn stillness around us, save the noise of the axes, an occasional order from the Captain to the axemen directing them "to the right" or "to the left," as the case might require, the splashing of the water as we dragged our tired legs through it, and the eternal *stick, stuck, stick, stuck*, of the chainmen.

There can be little doubt that very many unpleasant thoughts were associated that afternoon with surveying generally; but no dissatisfaction was openly expressed by any, if we may except a few horrid groans which occasionally escaped from Joe, as he would hitch his foot under a root and precipitate himself, head and ears, under the mud and water. About four o'clock in the afternoon the Captain climbed a tree to look out ahead, and proclaimed the glorious news of "high ground and open woods ahead, and not more than three hundred yards off." By this proclamation a wonderful change came over the spirit of our dreams. Where only a few minutes previous all was solemnity and gloom, now all was merriment and high glee. The redoubled efforts of the axemen soon brought us to high open pine woods, after having spent two days in making a line of four miles length in the swamp. As soon as we emerged from the mud and water, we marked the spot,

and set out for the camp. We found it about seven miles around the swamp, and reached there about dark, tired and hungry enough. After enjoying a hearty supper, blankets were spread, and a night of profound obliviousness soon passed away.

On the following morning we packed everything into the wagon, and moved around to the south side of the swamp, which operation, owing to the very difficult passage around, consumed the entire day. We reached the rolling pine woods at the point where we desired to locate a camp, at about dark, and came to a halt. Within a hundred yards or so of the spot where our tent was pitched, there was a large clear water lake, from which we desired to get our supply of water. When we had unharnessed the team, I mounted old Bet, (one of the ponies,) and Ralf the other, to ride them down to water. Arriving to within a few feet of the water's edge, Bet called a halt and refused to approach another inch, for what reason I could not see. I used every means short of actual force to induce her to go near enough to drink, for I knew she was dry, but to no purpose. In the darkness I could see nothing, nor could I conceive of anything that could justify such obstinacy. I borrowed Rabe's whip, and applied it to her for sometime, but to no effect. Becoming furious at last at what I conceived the most unwarrantable contrariness, I alighted in the palmetto and began to apply the lash in such a manner as to make her snort at every blow. After a long resistance, in which she jumped and kicked at no small rate, the poor old brute made a desperate effort, stepped forward, and in another instant disappeared entirely beneath the flood before us, except about six inches of her nose, which, by a strong effort at the bridle, I succeeded in keeping above the surface. On a closer examination, we found the bank of the lake was perpendicular to the depth of about six or seven feet, and there extended from the shore some distance out into the lake a mass of mud, moss, and water, too thick to allow Bet to swim, and too thin and soft to prevent her going down. We had a heavy job to get her out. By means of a spade, however, with which we dug away the bank, and a number of pry poles, we succeeded in doing so after four hours labor.

For some time after this adventure we went rapidly forward with our work without meeting with anything of particular interest. We generally located our camp in the centre of a township as near as we

could guess, and worked around it with one, two, or three days rations packed on our backs, and sleeping at night wherever dark caught us, and we could find a dry spot of ground; making the camp in the middle of the township headquarters, to which we returned when our provisions were consumed. The packmen were usually kept employed in transporting provisions from Fort Capron, and from the regular camp to us on the line, while Smith was kept busily engaged in cooking victuals for the hands and moving camp from place to place.

We invariably rested Sundays; a thing not always done by Surveyors. Once, however, we lost a day, and for several weeks worked on the Sabbath and lay up Monday, supposing the latter to be the day of rest.

In traveling through the brush and saw palmetto, we of course wore out clothes fast, especially pantaloons. When worn off to the knee, we usually patched and pieced them with raw deer skin, hair outside, which answered a very good purpose. Frequently our breeches legs wore off while we were away from the camp, without the means to mend them, and by the time the wearer went two or three days in this condition, walking continually through brush, briars, and saw palmettos, his legs generally presented the appearance of having had an attempt at amputation made by a child with a dull saw, who had worried it from the foot to the knee, without being able to get deeper than just through the skin. Such rakes across that very sensitive part, the shin-bone, the reader may imagine, were not generally attended with very agreeable feelings.●

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1959 - 1960
R.H. Jones



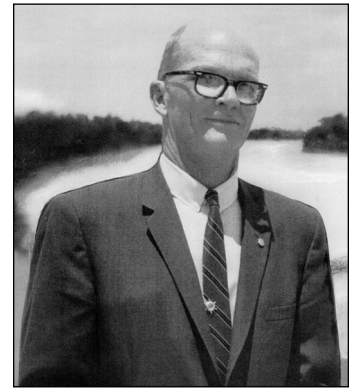
1960 - 1961
Hugh A. Binyon



1961 - 1962
Russell H.
DeGrove



1962 - 1963
Perry C. McGriff



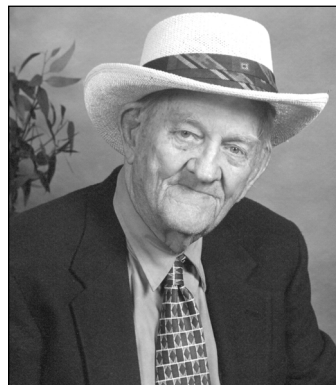
1963 - 1964
Carl E. Johnson



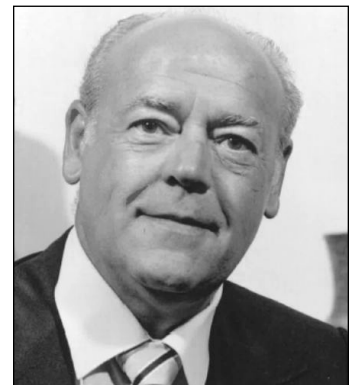
1964 - 1965
James A.
Thigpenn, III



1965 - 1966
Harold A.
Schuler, Jr.



1966 - 1967
Shields E. Clark



1967 - 1968
Maurice E. Berry

Past Presidents



1968 - 1969
William C. Hart



1969 - 1970
Frank R.
Shilling, Jr.



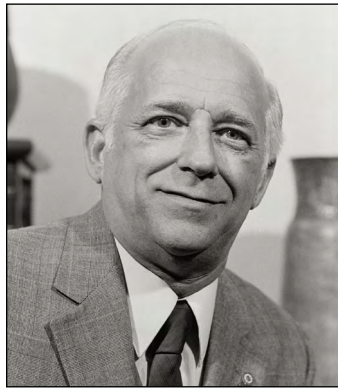
1970 - 1971
William V. Keith



1971 - 1972
James M. King



1972 - 1973
Broward P. Davis



1973 - 1974
E.R. (Ed)
Brownell



1974 - 1975
E.W. (Gene)
Stoner



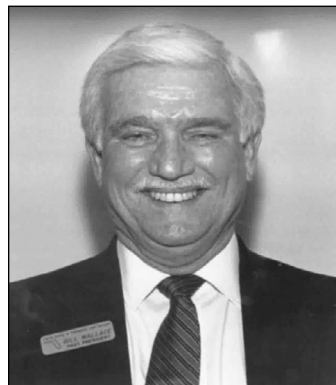
1975 - 1976
Lewis H. Kent



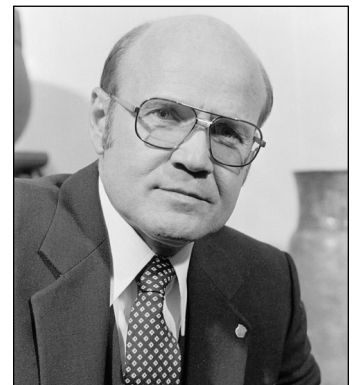
1976 - 1977
Robert S. Harris



1977 - 1978
Paul T.
O'Hargan

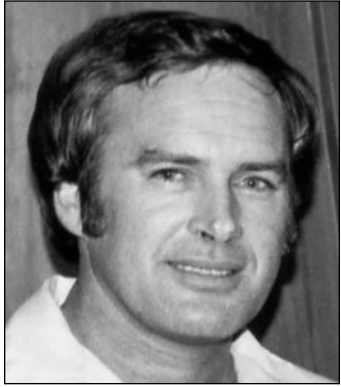


1978 - 1979
William G.
Wallace, Jr.



1979 - 1980
Robert W.
Wigglesworth

Past Presidents



1980 - 1981
Ben P.
Blackburn



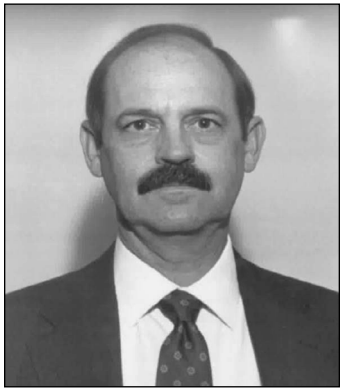
1981 - 1982
William B.
Thompson, III



1982 - 1983
John R. Gargis



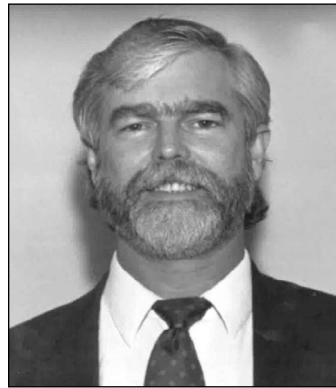
1983 - 1984
Robert A.
Bannerman



1984 - 1985
Buell H. Harper



1985 - 1986
H. Bruce
Durdén



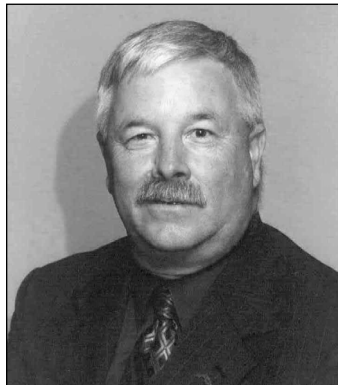
1986 - 1987
Jan L. Skipper



1987 - 1988
Stephen M.
Woods



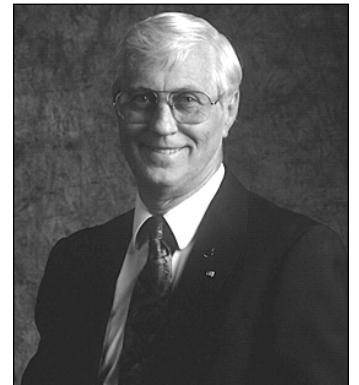
1988 - 1989
Stephen G.
Vrabel



1989 - 1990
W. Lamar Evers

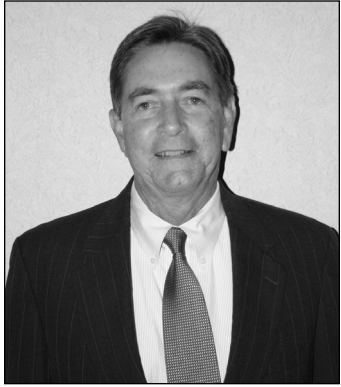


1990 - 1991
Joseph S. Boggs



1991 - 1992
Robert L.
Graham

Past Presidents



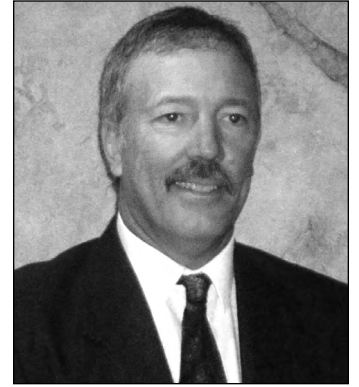
1992 - 1993
Nicholas D.
Miller



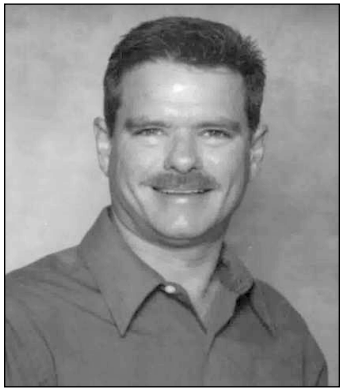
1993 - 1994
Loren E.
Mercer



1994 - 1995
Kent Green



1994 - 1995
Robert D. Cross



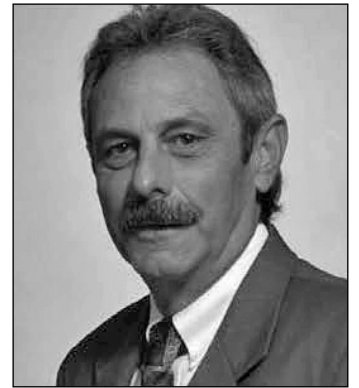
1995 - 1996
Thomas L.
Connor



1996 - 1997
Gordon R.
Niles, Jr.



1997 - 1998
Dennis E.
Blankenship



1998 - 1999
W. Lanier
Mathews, II



1999 - 2000
Jack Breed



2000 - 2001
Arthur A.
Mastronicola



2001 - 2002
Michael H.
Maxwell



2002 - 2003
John M. Clyatt

Past Presidents



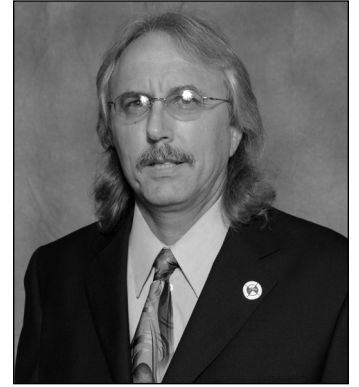
2003 - 2004
David W.
Schryver



2004 - 2005
Stephen M.
Gordon



2005 - 2006
Richard G.
Powell



2006 - 2007
Michael J.
Whitling



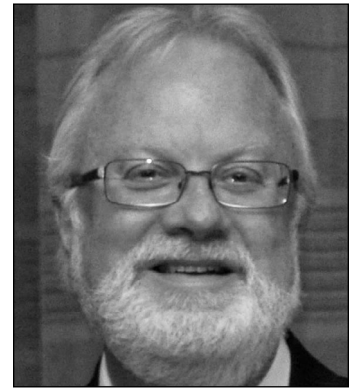
2007 - 2008
Robert W.
Jackson, Jr.



2008 - 2009
Pablo Ferrari



2009 - 2010
Steve Stinson



2010 - 2011
Dan Ferrans



2011 - 2012
Jeremiah
Slaymaker



2012 - 2013
Ken Glass



2013 - 2014
Russell Hyatt



2014 - 2015
William Rowe

Past Presidents



2015 - 2016
Dale Bradshaw



2016 - 2017
Lou Campanile, Jr.



2017 - 2018
Robert Strayer, Jr.



2018 - 2019
Dianne Collins



2019 - 2020
Don Elder



2020 - 2021
Hal Peters



2021 - 2022
Lou Campanile, Jr.

ADMINISTRATIVE Staff



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Rebecca Porter

director@fsms.org



Education Director

Samantha Hobbs

education@fsms.org



Communications Director

Justin Ortiz

communications@fsms.org



Regional Coordinator

Cathy Campanile

seminolecc84@gmail.com

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Recruitment Bonus will be Awarded based on a Point System. 6 Points for each New Full Member, Gov. Surveyor, & Sustaining Firm. 1 Point for each New Associate, Affiliate, & Student Member.

Whenever a New Member fills out their membership form they must provide referred current member's name when asked, "Were you referred by a Current Member of FSMS?"

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