

### 3. CASE STUDY: THE OKEFENOKEE ECOSYSTEM FUELS MANAGEMENT PROGRAM

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(Far left photo courtesy U.S. Fish and Wildlife Service)

*On the workshop’s second day, the 120 participants board four buses and embark on an all-day “case study” excursion that includes: a presentation on the Okefenokee National Wildlife Refuge’s fire history and prescribed fire program, a “hands-on” tour of the Okefenokee swamp ecosystem, and introductions to the related fire management roles of the Georgia Forestry Commission, Florida Division of Forestry, and U.S. Forest Service.*

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#### **MAKE THIS A LEARNING MOMENT**

“When we observe the evolution of the fire management program of the Okefenokee National Wildlife Refuge system, we are going to be observing collaboration in a complex environment. We need to pay attention to the mistakes they *don’t* make—and how they have designed themselves to avoid making these mistakes. Are there parallels between the Okefenokee program and what you do back on your own home units?

You need to ask yourselves: How are they set up to *avoid* making mistakes? Have they identified clues that indicate that they’re moving toward mistakes? How are they prepared to *recover* from mistakes? Do they know where their expertise is located to prevent

problems—to be able to contain these problems in the early stages?

Are they learning anything and drawing lessons from past experiences? Are they doing After Action Reviews? Listen for what their primary expectations are. See if they are set up to realize when those expectations might not work. Ask yourself, ‘If I were to take charge of this program, what would I personally do more of—or do less of, or, maybe more of the same.’ Keep tabs on what surprises you. Look for good examples of High Reliability Organizing principles. Make this a learning moment. When we get back, we’ll pool our experiences. We’ll reflect on what we saw.”

**DR. KARL WEICK’S CASE STUDY SUGGESTIONS PRIOR TO FIELD VISIT**



### Setting the Stage for the Workshop's Case Study

Fire is a natural component of the 438,000-acre Okefenokee Swamp that stretches from northeast Florida down into southeastern Georgia. This unique ecosystem is composed of federal, state, and private lands. The U.S. Fish and Wildlife Service's 396,000-acre Okefenokee National Wildlife Refuge was established in 1936 to help preserve and maintain the swamp's health and natural features. The majority of the refuge's land is part of the National Wilderness Preservation System.

Disruption of the swamp's naturally-occurring fire regime has resulted in major changes in the Okefenokee Swamp's upland and wetland habitats. A key refuge goal is to reestablish historic fire regimes with prescribed fire aimed at restoring and maintaining longleaf pine community habitats throughout the refuge's uplands. At the same time, adjoining private properties must be protected from unplanned and uncontrolled destructive wildland fire that originates inside the refuge and burns out onto these neighboring lands.



*Photo on right by Mike Hilbruner.*

***“Ron Phernetton brought the Okefenokee Wildlife Refuge’s fire management program a long way. His work and diligence have brought us to where we are today.”***

Fred Wetzel, the Okefenokee National Wildlife Refuge’s current Fire Management Officer, introducing Ron Phernetton to the Managing the Unexpected Workshop audience at its first stop on the day-long field visit. Recently retired, Phernetton served as the Okefenokee National Wildlife Refuge’s Fire Management Officer beginning in 1974.

## **FIRE MANAGEMENT LESSONS LEARNED LONG AGO ARE RE-HEEDED - ECOSYSTEM, AND EVERYONE, BENEFITS**

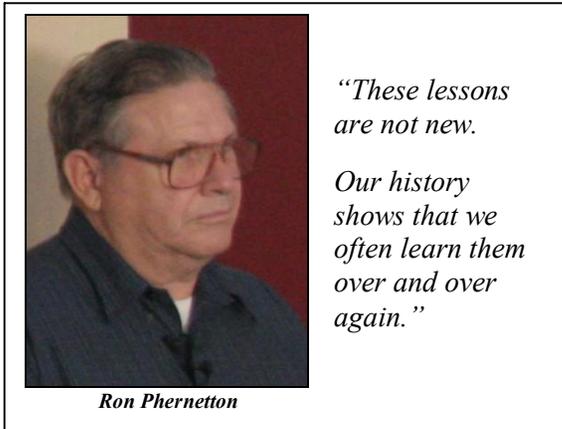
Ron Phernetton guarantees that fighting fire is totally atypical within the Okefenokee Swamp.

In fact, he says this unique area’s habitat can’t be compared to anywhere else in the country—not even Michigan’s cultivated bogs and ostensibly similar habitats found in the Lake States and Northeast. He explains that the swamp’s fire-prone dry periods occur in 10 to 30-year cycles. “Between these cycles, entire management staffs can change, priorities can change, management plans are replaced, and the files that tell our history are archived.”

“That’s why we’re here today,” Phernetton tells the Managing the Unexpected Workshop audience. “To document the lessons that we have learned in the past in a form that will survive. Then, during those long periods when fire suppression isn’t an emergency—when everything becomes a little more ‘mundane’—we can still cope with that year that will come when fire, once again, becomes a main priority.”

“These lessons are not new,” Phernetton stresses. “Our history shows that we often learn them over and over again.”

The former Okefenokee Refuge Fire Management Officer outlined a series of historic fires that he describes as “stepping stones in the development of our (current) fire management techniques.” He said that from 1855 to 1927, before the refuge was established, when the swamp water levels were high, the fire suppression technique was to run the fire into the water. When swamp water levels were low, they tried to keep the fire out of the swamp. “Because they knew that once it got in there, they were in for a long period of trouble.”



*“These lessons are not new.*

*Our history shows that we often learn them over and over again.”*

In the spring of 1932—during a dry cycle—a large wildfire occurred in the swamp. It would burn over an area. Then, after the swamp dried-out even more, the fire would run back over this same area and burn “the muck” again. Phernetton said that—back then—they realized that, because of the swamp’s unique physical composure, no equipment could put these fires out. In 1945, when the refuge’s first manager retired, he wrote a book that documented: When wildfires burn over prescribed fire areas, the damage was minimized; The swamp’s native wildlife can adapt and recover from wildfire; Fires in the piney woods are beneficial, not damaging to the swamp’s historic, ecological systems.

Ironically, these lessons learned were not heeded. 1945 started an era when the swamp management’s program was to suppress wildfire and curtail prescribed fire. Several large, damaging fires (that killed much of the swamp’s longleaf pine communities) encouraged refuge managers to make the following recommendations: 1) Flood the swamp; 2) Build a perimeter road around the swamp for better suppression access; 3) Construct a fire break (sill) between the swamp and its upland perimeter. In the 1960s, a perimeter road was built. An intended fire break sill was also constructed, but it never worked and proved detrimental to the overall swamp ecosystem and habitat.

Phernetton recounted several swamp wildfires during the 1980s that had assaults of water-bucket helicopters, retardant bombers, numerous line-building hand crews, and out-of-their-element Incident Management Teams assigned to them—to absolutely no avail. “Those fires didn’t go out for

months—until the rains came. Fires got suppressed, but I don't think we ever had too much to do with it," Phernetton confides. After the 1988 Yellowstone Fires, the land management mandate from Washington D.C. was to aggressively suppress every swamp fire.

Phernetton recalled a swamp fire in 1990 (the Shorts Fire) in which "we just about killed ourselves building line around it." He figures that they might have saved "maybe one square foot of land by killing ourselves on this fire."

Another lightning fire that year in the swamp burned 23,000 acres over two months. Suppression efforts cost \$9 million. "After that," Phernetton tells the Managing the Unexpected Workshop audience, "we knew we couldn't put fires out in the swamp. We knew we had to hit those fires when they came *out* of the swamp."

Just like they knew—and did—back in 1932.

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### **A LEARNING ORGANIZATION AT WORK: RON PHERNETTON'S LIST OF OKEFENOKEE SWAMP KEY FIRE MANAGEMENT LESSONS LEARNED**

- ❖ We cannot safely manage swamp fires without adequate fire suppression equipment, personal fire protection equipment, training and funding.
- ❖ Other than a very small spot fire, it is impossible to suppress fires in the swamp.
- ❖ It is dangerous and foolhardy to put (fire suppression) personnel in the swamp. Travel is hazardous and difficult. People can easily get trapped by fire.
- ❖ It is dangerous to put equipment in the swamp. It will just get stuck.
- ❖ If you could put equipment and personnel—and *anything* you wanted to—into the swamp to suppress fire, it wouldn't do any good anyhow.
- ❖ Besides fertilizing the vegetation, aerial retardant drops just make a real good show.
- ❖ If it were possible to create a fireline in the swamp, the chance of it holding anything is zero. There is just too much available aerial fuels to burn.
- ❖ As they did in 1932, the most effective management technique is to retreat to the uplands and fight fire there—when it leaves the swamp.
- ❖ Managed wildfire used in conjunction with prescribed fire is beneficial in the uplands and in the swamp for both fuel suppression and habitat quality.
- ❖ A surface fire in the swamp stops spreading only when it reaches open water areas.
- ❖ A swamp fire isn't out until the water level comes up from underneath.

## NO LONGER THE INTROVERTED FEDERAL MANAGER - WE HAVE BECOME EXTROVERTS

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Fire lives here. Just like we do.

It's not *if* a fire is going to move out of the refuge onto private property—it's *when*. We know it will happen. We know there is no way we can stop this. That's why the GOAL (Greater Okefenokee Association of Landowners) organization was built. Because the first thing we need to do is to be prepared when that fire does come out.

That's what our process has been.

Are we listening to what is being told to us?—to what we are seeing when we are out there? Are we learning anything? And, are we applying this knowledge into new technologies? Sometimes the 'new way' mimics the 'old way.' We never really did decide that fire for us was unexpected—we *knew* fire was coming out of the swamp. The exact time it was going to happen was unpredictable. But what it's going to do—we did know that.

We used history as our coach to remind us. We used cooperation as a game plan to get it done. Then we used constant review of what we do—and of what our results were—as a mentor to tell us whether or not we've been successful or not.

You've got to review what you do. You've got to consistently be aware of where it's making sense. Then you need to look at what your goal was to begin with. Are you moving toward that mark, or are you moving away from it? This is, simplistically, the way we've looked at how we want to manage this ecosystem as a group of landowners.

Because we realize we can't do it alone. We can't manage by ourselves any more. We have other partners. This is important, I can't stress this enough: the only way that we have been able to succeed at anything is that we have become *extroverts*. Yes, we've stopped being the introverted federal manager. We've become extroverted. We've stopped drawing our boundaries at the boundary line.

We've moved our boundary out to the land that we affect. If fire moves 20 miles out, then that's where we need to be. And you need to pull all the people together to ensure that everyone has input.

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*Fred Wetzel, Fire Management Officer with the Okefenokee National Wildlife Refuge, explains his agency's mission to the workshop participants.*

**Fred Wetzel**  
**Fire Management Officer**  
**Okefenokee National Wildlife Refuge**



#### **OKEFENOKEE NATIONAL WILDLIFE REFUGE GOAL:**

*“Develop cooperative ventures with adjacent landowners to aid in the management of swamp perimeter fires. Most cooperative ventures will be accomplished through the 80-member Greater Okefenokee Association of Landowners (GOAL) organization—representing the 20 major landowners who surround the Okefenokee Swamp.”*

#### **TEN YEAR ORGANIZING EFFORT UNITES OKEFENOKEE SWAMP LANDOWNERS IN FIRE PROTECTION STEWARDSHIP ROLE**

The 1990 Shorts Fire was the “wake-up” call.

It burned 21,000 acres of swamp and upland in and adjacent to the Okefenokee National Wildlife Refuge. The fire seriously impacted this federal agency’s landscape, as well as state, private, and timber company lands.

For more effective and efficient fire suppression, it became apparent that better coordination between these different land holders was critical. By 1994, a series of informal landowner group supper meetings had been held to further promote this idea. It was decided that, besides this need for better communication, pre-suppression, and fire suppression coordination—other forest and wildlife issues associated with the Okefenokee Swamp also needed to be addressed.

This spawned the development of an organization of interested landowners—public, private, and commercial—to address southeast Georgia and northeast Florida land management issues. The Greater Okefenokee Association of Landowners—GOAL—was born.

*Top photo courtesy Okefenokee National Wildlife Refuge.*



*The Okefenokee National Wildlife Refuge's swamp habitats include open "wet" prairies, cypress forests, scrub-shrub vegetation, upland islands, and open lakes.*

### **BALANCING WILDLAND FIRE'S ROLE—ITS ABILITY TO DAMAGE AND ITS NEED TO SUSTAIN**

Every year, wildfire damages commercial timberland surrounding the Okefenokee National Wildlife Refuge. Ironically, at the same time, wildfire can benefit the neighboring Okefenokee Swamp ecosystem. "Balancing these opposing needs in an efficient and cost-effective manner was one of the driving forces in developing the GOAL organization," explains GOAL Website information (<http://www.srs.fs.usda.gov/r8/goal/index.html>).

The GOAL organization provides landowners the opportunity to share concerns and solve problems that impact the daily decisions of land management. To date, GOAL projects have included: wildfire preparedness, fire suppression coordination (from communication/radio frequencies/shared cell phone numbers, to resource lists of equipment and personnel), and creating helicopter dip sites. Non-fire endeavors have included a black bear study and creation of a special conservation fund.

### **ASSURING THAT THE OKEFENOKEE SWAMP AREA RESOURCES WILL BE HERE FOR FUTURE GENERATIONS**

The 80-member Greater Okefenokee Association of Landowners (GOAL) represents more than two million acres of public, private and commercial lands in south Georgia and north Florida. The grassroots group's stewardship ethic aims to manage, protect, and promote forest resources in and around the Okefenokee Swamp. Moreover, the group's vision is to produce a consolidated and influential entity to actively assure that these resources will be available for future generations.

GOAL recognizes that:

1. Forest resources are the major industry in the area.
2. The Okefenokee Swamp is a national treasure that is economically and biologically beneficial to both the local communities as well as the states of Georgia and Florida.
3. It is essential to have a coordinating committee for fire protection of public and private resources.
4. A formal organization of landowners will provide an avenue for communications and develop strength in dealing with area issues.

## HOW DO WE MANAGE FIRE IN THIS SWAMP ECOSYSTEM?

“We had to get indoctrinated to the swamp ecosystem,” explains Joe Ferguson, the Forest Service’s Southern Region Assistant Director of Fire and Aviation. A portion of the Okefenokee Swamp-adjacent Osceola National Forest includes the 15,000 acre-plus Pin Oak Swamp. “We learned we had to manage fire differently there,” Ferguson assures. “It was a slow learning curve, but we had the benefit of having the Okefenokee [National Refuge] experiences.”

Ferguson spoke to the workshop participant’s during the field study day. He emphasized how the original Greater Okefenokee Association of Landowners (GOAL) guidelines have also helped his agency in its fire management pursuit. “We realized we needed to get rid of our egos. Get the chip off our shoulders. Even if we are the biggest landowner, we don’t have to be the biggest player.

“We learned we needed to engage with our state partners,” Ferguson said. “They are the bridge with the local landowners here. A private landowner has always been in the GOAL leadership role.”

*“We learned to use common sense and to focus on what’s right for the land.”*

**Joe Ferguson,  
Assistant Director,  
Fire and Aviation  
Management,  
Southern Region,  
USDA Forest  
Service**



## PROACTIVE COMMON SENSE INSIGHTS ENSURE SUCCESSFUL COLLABORATION

The cooperative partnership Greater Okefenokee Association of Landowners (GOAL) was not formed overnight. It took ten years. In fact, before these supportive relationships were developed, people avoided working together and even engaged in confrontations during wildfires. Joe Ferguson, Assistant Director of Fire and Aviation in the Forest Service’s Southern Region, has devised a list of tips for how his agency can best continue to dovetail with the local GOAL organization:

- Start a dialogue or a project in an area of mutual interest.
- Invest a lot of personal time; visit with landowners *on their schedule* and make it a point to eat lunch together.
- Listen openly to landowner issues.

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*Stay legal but beat the bureaucracy to death.*

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- Be humble; do not have a chip on your shoulder.
- Go out of the way to help each other on all issues.
- Stay legal but beat bureaucracy to death.
- Really engage the state agencies in the processes.
- Play a support role as a federal agency, have a private landowner be the steering committee chair.
- Always focus on what is right for the land.



Right photo by Mike Hilbruner

*Managing the Unexpected in Prescribed Fire and Wildland Fire Use Operations Workshop participants observe—first hand—the Okefenokee National Wildlife Refuge lands.*

## **NEIGHBORING \$20 BILLION COMMERCIAL FOREST INDUSTRY HELPS PROPEL SWAMP FIRE SUPPRESSION MANAGEMENT**



*Alan Dozier*

The field study included a visit to the Georgia Forestry Commission which shares Okefenokee Swamp area stewardship responsibility with the U.S. Fish and Wildlife Service. Workshop participants listened to speakers and viewed an unusual collection of special swamp fire suppression equipment.

“Georgia leads the nation in commercial forest land,” Alan Dozier, Chief of Forest Protection for the Georgia Forestry Commission, told the workshop participants. He called trees his state’s “number one crop.” He said they represent an estimated annual \$20 billion dollar commercial forest industry.

“So once you get a fire that comes out of the swamp,” Dozier vowed, “you’re getting into a \$20 billion dollar industry. That’s why fire is an important issue to us.”

Dozier, who, along with his staff, actually attended the week-long workshop, summed up the swamp suppression history for his fellow workshop participants. Going back 40 years, he said, efforts included building dams and a perimeter road encircling the entire Okefenokee Swamp. *[continued next page]*

## **GOAL FACILITATES FIRE PROTECTION PROGRESS:**

### **'LOTS OF SUCCESS' - FROM 250-MILE SWAMP EDGE FIRE BREAK, TO COMPREHENSIVE MAPPING AND PORTABLE ROAD SIGNS**

*[continued from page 17]*

“But we finally found out that nothing tames the swamp like having good cooperation with your landowners. That’s what really does it,” Dozier said. Like all of the key fire management players in this neck of the woods, Dozier is a fervent supporter of GOAL—the Greater Okefenokee Association of Landowners.

He said that creating the fire break around the Okefenokee Swamp’s perimeter—a GOAL project—initiated the continuing cooperation.

“Next thing we knew, we had this 250-mile swamp break totally completed,” Dozier marvels. “And then we created a comprehensive, modern map of the entire area. Then we did the helicopter dip sites.

And next we did the color-coded road signs. If a road sign is red, it means the road connects to the (swamp) perimeter road.”

Georgia’s Chief of Forest Protection explained how some of the area’s landowners were initially opposed to these signs. They were worried that the advent of such public markers might usher people onto their properties, he said.

“So we went to portable signs,” Dozier explained. “Now, we only put them up when we have a fire; then we take them back down.

“Yes, we’ve got a lot of success out of the GOAL operation.”



*Jim Karels*

### **COMMUNICATION-SAVVY ORGANIZING THWARTS DEVASTATING SURPRISES**

*“I like to brag about GOAL and how it prevents surprises.*

*So many times on fires, surprise is what brings everybody to their knees. You don’t know what’s going on until somebody else has made a decision and not talked to you about it. So many times, this is what really impacts you.*

*We use GOAL to prevent these surprises.”*

**Jim Karels, Assistant Director, Florida Division of Forestry,  
addressing the ‘Managing the Unexpected’ Workshop participants**

**BEWARE OF 'HUG FEST' SYNDROME: DON'T FORGET 'PREOCCUPATION WITH FAILURE' HRO PRINCIPLE**

“We haven’t really talked about the first High Reliability Organizing principle, and that’s the ‘Preoccupation with Failure.’ And even in this room we fell into the trap of just focusing on everything they (GOAL) are doing right. And I don’t mean to be critical because they *are* doing so much that’s right. But we need to do this. I’ve only learned this by going through this workshop before, and by being involved in a very large (prescribed fire) escape. And so I have learned, myself, to be more preoccupied with failure. And until you go through a big failure—that you didn’t see coming and that you should have anticipated—it’s hard to look at things that way. I get accused of being a pessimist. But I’ve been through it. . . I now know the importance of After Action Reviews.”

**Workshop Participant  
During integration discussion following the case study field visit**

**TRYING TO MANAGE FOR THE UNEXPECTED—SOME GOOD AND NOT-SO-GOOD EXAMPLES**



*Fred Wetzel*

“We do a lot of briefings before and after our prescribed burns. During our prescribed burn reviews, we review the results of the burn. We review the procedures that got us there. We review the goal that we needed to make and determine if we need to adjust our course.”

“We’ve done something else to help track where we’re going and where we’ve been. We’ve put a critique on the back of all our burn sheets. If we want to capture something that goes wrong, we can put a note here on the back. Then we can turn to these and discuss them during our reviews. We can make sure this input becomes part of the written record.”

“The Blackjack Bay Complex Burn was a prescribed fire that left [escaped] from Black Jack Island. We did the burn on March 7. We were completely in prescription. But there was one key that we had not fully tracked well—one of the things that in the South you almost never have to deal with: our 1,000-hour fuel moistures. We should have watched them more than we did. They had gotten down into the single digits.

But we hadn’t tracked that.”

**Fred Wetzel, Fire Management Officer, Okefenokee National Wildlife Refuge**