

## *Looking Forward, Looking Back*

We started by looking back at the previous session; related to our jeopardy wrap up, we had a discussion about the competitive nature of society, and how even though we focus on cooperation there may still be an underlying level of competition. Then we looked forward to what we were going to learn during our sixth session. After a brief introduction to the current session's agenda we discussed the coming sessions in Apalachicola and Gainesville.



## Environmental Services Provided by Agriculture in a Changing Climate

### Welcome to LAKE PLACID

Archbold Biological Station provided a fabulous location for February's session. The station is situated on the Lake Wales Ridge an area abundant with Florida scrub habitat. Our accommodations for this session were unique. The Frances Archbold Hufty Learning Center and Adrian Archbold Lodge, situated in the midst of one of the most endangered habitats in the world, are housed in a certified Leadership in Energy Efficiency and Design (LEED) Platinum facility. LEED certification is designated through the United States Green Building Council.

The overarching theme for the year is climate change and in this session we discussed climate change as it affects agriculture. Specifically we looked at the role of environmental services in agriculture and the ability to provide these services in a changing climate.

In addition to class sessions at the Station, we also visited the McArthur Agro-Ecology Center (MAERC). At this working ranch we learned about the ecological and economic importance of Florida's Beef Industry and about compensating landowners for environmental services through programs such as U.S. Department of Agriculture Wetlands Reserve Program (WRP) and Florida Ranch Lands Environmental Services Project (FRESP).

Our first guest after lunch on Thursday was Shelly Johnson with the University of Florida Conserved Forest Ecosystems: Outreach and Research (CFEOR) program. We were also joined during the session by past NRLI alumni Curt Williams and Leslie Corcelli

#### this issue

Welcome to Lake Placid [P.1](#)

Difficult Dynamics [P.2](#)

FRESP [P.3](#)

Archbold & Climate Change [P.4](#)

Touring MAERC [P.5](#)

Blue World Green World [P.6](#)

## First Day Wrap-Up

We wrapped up the day with a great dinner prepared by Mary Gross, who facilitates guest services at the Station. We spent some time in the early evening meeting with our practicum advisors to discuss progress to date.

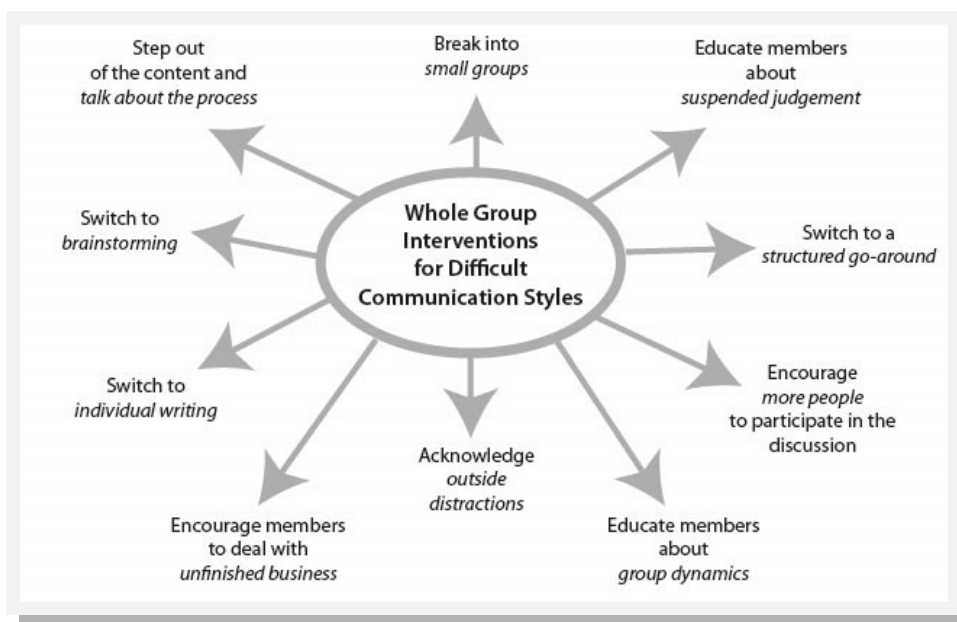


## Dealing with Difficult Dynamics

Jon Dain began the afternoon session by explaining that people have varying communication styles. We communicate uniquely with the different people in our life, from social settings to work settings, whether we are a talker or a quiet person. We explored various communication styles: styles that bother us on some level about other people, and behaviors that detract from or drag on the meeting process. We also introspectively explored bothersome traits that we have. We shared those traits in small groups and discussed some techniques that we could use to become more aware of those undesirable traits. We studied techniques a facilitator can use to handle situations, including discussing “group dynamics” with the group when they first get together.

We discussed the importance of designing activities to engage participants and encourage all ideas. We also learned how the room layout can help to ensure good group dynamics, and we were reminded of the importance of the ever-powerful process agenda!

This exercise brought us back to the fundamentals of NRLI: dealing with difficult dynamics is dealing with difficult issues and *not difficult people*. Facilitators must be constantly cognizant of this fact.



# Florida Ranchlands Environmental Services Project



Betsy Boughton speaks with the Class XII Fellows about the FRESP program.

Our context speaker Dr. Betsy Boughton, research director at the MAERC ranch provided us with details about the ranch and the Florida Ranchlands Environmental Services Project (FRESP)

Dr. Boughton discussed the variety of parameters that are monitored to better evaluate the role of environmental services in agriculture. She explained how channelization of the Kissimmee River increased the flow of water into Lake Okeechobee, which decreased or eliminated the hydroperiod of upriver wetlands. Such changes altered the natural ecological functioning of this system and drastically increased the speed that nutrients (organic or inorganic) found their way into the big lake. A Total Maximum Daily Load (TMDL) of 140 metric tons (m/t) of nutrients is the goal for Lake Okeechobee however, the current rate is 352 m/t. Proposed changes such as increased sheet flow from the Kissimmee Valley will change the current dynamics and improve the ecological functions that naturally occur within this system.

Dr. Boughton also explained how ranching is tough economically and ranchers have to diversify activities to survive economically. To receive payment for environmental services (PES) a baseline for the available en-

vironmental resource services must be established for a ranch. The baseline must be measured and documented using a model that includes Best Management Practices (BMPs) and water storage capacity per acre. This is generally measured in acre-feet, the volume of water it takes to cover one acre with a foot of water or about 326,000 gallons.

Biodiversity on ranchlands is very high. The expansive landscapes provide habitat for many threatened and endangered species including the Crested Cara Cara, Meadow Larks, and Burrowing Owls. Florida Black Bear and Florida Panther also rely heavily on ranchland as these lands often form a large part of their range.

Strategies were developed through the FRESP program to slow down the flow of water from the Kissimmee Valley by creating water storage features on ranch lands along the way. Ranchers work with the program managers to choose the level of services they will provide for water and phosphorus retention. They are required to provide water services in ditches and utilize water control structures. Strategies included rehydrating drained wetlands, pumping into impoundments, and treatment marshes. Programs complement existing restoration programs.

FRESP was designed to provide incentives that encourage innovation. Payments are made to ranchers when required documents are produced demonstrating the benefits they have provided for the ecosystem, such as water conservation or release. The “buyers” in this agreement, in the MAERC instance, is the South Florida Water Management District (SFWMD) which implements a comprehensive monitoring program on these projects to ensure their effectiveness. The price paid per acre was established based on a principled negotiation between the landowners and SFWMD.

The 2011 pilot FRESP program was a competitive offering to all ranchers in the Northern Everglades Basin; eight ranches were chosen for the pilot



program. The ranchland had to be Florida Department of Agriculture and Consumer Services (FDACS) and BMP approved. The storage target



# Archbold and Climate Change



Hilary Swain, Executive Director of Archbold Biological Station speaks at the Thursday session about the land management and ecological services of Archbold and Buck Island Ranch. Photo by Candy Kaswinkel

On Friday, Dr. Hilary Swain, Executive Director of Archbold Biological Station and McArthur Agro-Ecology Research Center (MAERC) at Buck Island Ranch talked about the Everglades headwaters region and the history of land management in the area. She also established the importance of this area in providing habitat for endemic, listed, and non-listed species. She also told us that the Station has a staff of fifty and carries out long term research.

Dr. Swain talked about the Millennium Ecosystem Assessments and the sub-basins draining to the northern Everglades, which give rise to the need for environmental services. Ranch lands, she said, could provide environmental services and ameliorate impacts downstream. However, ranchers need to be compensated for their efforts and land use because ranches have low economic margins and maintaining these margins is crucial to staying in business.

Dr. Swain explained the importance of rangelands for raising beef cows. Buck Island Ranch, which has 10,000 acres with 3,000 head of cattle, is one of the many cow-calf operations in Florida. We

learned that it is hard to make the economics of grass-fed beef work, so calves are transported west for finishing and slaughter.

On average a ranch is a carbon sink, and fertilizer, and fuel. The Buck Island specific carbon flux data through the eddy flux towers. Other data gathering, routinely done at Buck Island through Biological Station.

We learned that the unique ridge eco-high number of endangered species and in Florida. More than half the remaining high densities of common everyday spe-lands are also valuable for connecting experienced massive habitat loss and by the story of a black bear that trav-

**"It of course goes without saying that economic feasibility limits the tether of what can or cannot be done for the land. It always has and it always will."**

**Aldo Leopold.**

carbon sources include methane from cattle, rancher is able to measure and capture site use of complex scientific equipment called experimental land use, and observations are the MAERC in conjunction with the Archbold

systems of Polk and Highlands counties have a the highest concentration of endemic species scrub in the area is protected. There are also cies, which benefit from ranchlands. Private conserved lands because the ridge area has fragmentation. Connectivity was highlighted elled 500 miles in two months.

Another challenge for the area is the "legacy" phosphorus in the landscape caused by the significant phosphorus loading into the ecosystem from the 1950s to 1970s when ranchers used fertilizer application at the rate then recommended by the University of Florida (UF). Later it was found that application rate was too high and resulted in too much phosphorus in the soil. From analysis researchers were able to determine that 85 percent of the phosphorus came from fertilizer applications and that the use of phosphorus led to loading five to seven times that of native pastures.

Dr. Swain shared a quote from Aldo Leopold that she felt was applicable to what the researchers are currently doing: "It of course goes without saying that economic feasibility limits the tether of what can or cannot be done for the land. It always has and it always will."

## TOURING MCARTHUR AGRO-ECOLOGY RESEARCH CENTER

Dr. Betsy Boughton arranged and conducted our field trip with the assistance of two of her employees. Upon our arrival at Buck Island Ranch we climbed aboard two custom swamp buggies designed to traverse the unique landscape and provide an elevated view of the low lying Florida ranch land.

Our guides explained how the research on the ranch is applicable to real life situations and how it applies to sustainable ranchland management in the northern Everglades. We were told that ranchlands in Florida are the tenth largest producer of beef in the nation, contributing to 10 percent of Florida's gross state product and providing 14 percent of the state's employment. Ranchlands cover one third of the northern Everglades region and one sixth of Florida.

McArthur Agro-ecology Research Center is a working ranch that is leased to Archbold Biological Research Station through the J. D. McArthur Foundation. Revenue from cattle ranching operations is used to support staff wages and the ranch also receives payment each year for water storage.

We stopped to look at one of the water control structures that Dr. Boughton had mentioned the day before. Water quantity data is collected and stored at the structure every 15 minutes by an autonomous sampling device.

We learned that UF students measure CO<sub>2</sub> emissions and look at sources of methane; 84 percent comes from cows burping (ruminant methane). Grazing management can maximize the sequestration of carbon on a property. Grazing promotes sequestration because the grasses use the carbon for root system development. Collecting carbon data can establish sequestration baselines for ranches and get them ready for carbon markets.

We got to see one of the solar water pumps that have been installed to provide water for the cows to keep them out of the wetlands because research is being conducted in many



Betsy Boughton explains the water control structure used at MAERC to store water and collect water quality data. *Picture by Candy Kaswinkel*

of the wetland areas. We learned more about the economics of ranching in Florida and some of the breeds of cattle that are raised, such as Brahma, which can handle the Florida climate while providing the highest economic return.

The mosaic structure of burns in the landscape, we learned, ensures that grass is available seasonally, especially if a freeze occurs. Ranchers have adapted management to changing seasons; for example, traditionally January to February was the traditional burning season because it is dry, but now they also burn in March. Changing weather patterns also challenge long-term breeding seasons.

## STAKEHOLDER PANEL



Environmental Services Stakeholders speak in small groups at Archbold Biological Station. Panel Members L to R are Hilary Swain, Betsy Boughton and Curt Williams. Far right: Bette Loiselle leads group wrap-up of talks at the close of the panel discussion. *Photos by Candy Kaswinkel.*

The stakeholder panel was organized a little differently this time because one of the panel members was not able to join us for the whole session. We split into three smaller groups to discuss the environmental services provided by agriculture and the sustainability of cattle ranching in this area. Fellows rotated through three stations. For the station without a stakeholder the group sat and reflected on what we had learned from the stakeholder/s so far and discussed the issue as a group. The stakeholder panel participants were Curt Williams, assistant director of Government and Community Affairs, Florida Farm Bureau; Dr. Betsy Boughton, director of the McArthur Agro-Ecology Research Center; and Dr. Hilary Swain, executive director of Archbold Biological Research Center. After the panelists left, we shared our observations as a group





## Blue World—Green World: Scenario Based Planning

Blue World/Green World was a fun scenario-based planning exercise that, in our case, gave us a taste of acting. Some groups were asked to envision an ideal community ten years in the future (Green World); other groups were tasked with envisioning the bleakest future for a community (Blue World). Teams then presented scenarios in the form of skits that ranged from a women’s club meeting to a speech from a mayoral candidate. This exercise showed us how creativity loosens up people and allows them to think of even more ideas. This can be a great exercise to identify scenarios that work towards reaching a goal. In addition it also reveals potential challenges that may lead to under-



Fellows work in a small group to plan skit for scenario planning exercise. *Photo by Candy Kaswinkel*

standing scenarios that might best be avoided. We discussed the fact that skits may not work



NRLI Fellows act out a skit based on envisioning the future in ten years.. *Photo by Candy Kaswinkel*

with all groups. As a facilitator, you would need to be aware of the context of your group to know if this type of exercise would be successful.

The exercise could be varied by adding “yellow” to signify status quo. The overarching theme of this exercise is that things (including organizations) change over time and that using a planning tool like this can help you to guide that change by understanding the end goals and the steps that are involved in reaching those goals.

The exercise can be done over a number of days or weeks—usually more time than we had is required. Because we already knew each other and did not need to dedicate time to introductions, we could dive right into the exercise. Blue World/Green World can be used as a way to reframe negative issues into positive ones. Everyone gets to provide input and their value, skills, and knowledge are included in the planning exercise.

## Archbold Biological Station Tour



Dr. Swain took us on a tour of the LEED certified facility. She explained the underground cistern that captures rainwater from the roofs which are used to flush low-flow toilets. We discussed the use of natural light throughout the facility including the classrooms. Light from exterior windows is diverted into the courtyard windows of the classroom through a system of strategically placed diverters. The site chosen for the learning center and lodge was once a disturbed part of the Station (an old tennis court had been located there). The new facility is within the footprint of the previous disturbed site and using existing concrete areas for new parking spaces. Additional energy saving systems, including motion sensors on the lights and solar showers, were also incorporated into the green construction

The tour was followed by dinner and a visit from Leslie Corcelli, president of the NRLI Alumni Association



# Broken Squares



Life is full of give and take and we don't always communicate well on what we need and/or fully understand what others need. For this exercise, we broke up into groups and each person in the group had geometric puzzle parts. All the parts necessary for each person to make a square were on the table, but not within the possession of each player. We had to offer pieces of the puzzle to each other. We could not speak or gesture (or steal pieces). We simply had to observe and wait.

The exercise led us into a discussion about cooperation and the impacts and difficulties of not being able to communicate. We learned that it isn't always easy for people to give away pieces but they may have the key solving one of problems, even if they must wait for the right component to solve their own. When we are dealing with natural resource issues, stakeholders may have key information that helps us to reach an informed and representative solution for all. There are often many pieces to a puzzle and all the pieces have to be incorporated.

## Session Wrap-up

Sports and newscasts were the theme for the reading, debrief, and feedback panel sessions.

**Reading Discussion.** It was a glorious Saturday morning for a game of baseball, and the teams were in rare form. Bruce was the pitcher for a game of verbal baseball. Teams were Jays and the Panthers; the Panthers were up first. Bruce pitched the questions and correct answers resulted in base hits; the size of the base hit increased depending on the difficulty of the question.



Jon led a discussion on the emotional intelligence reading, we broke into small groups to discuss our personal experiences of "emotional high jacking." We discussed the importance of trying to tap into those emotions for positive outcomes and how to manage an inverse effect. Jon recommended always reviewing chapters 6 and 7 of the facilitator's handbook before a meeting.



**Breaking News...NRLI News that is!** The headline might very well read: NRLI Class XII breaks ground on the NRLI acting academy. Well, maybe not, but the debrief session certainly identified some aspiring actors and actresses. Libby led a fun and energetic debrief session where Fellows got to act in skits that represented our experiences from the session. Andy did a great job as Libby's co-host for a local TV show that included on-location pieces, a movie premier, and an interview with a writer.



**Debrief.** The session ended with a game of square darts! This feedback game was led by Allen and Andy. Fellows crowded into concentric squares based on how much they liked or disliked various parts of the weekend and activities. Squares were ranked 1, 2, 3 and scores were kept on flip charts so the facilitation team could review the feedback.

## NRLI Project Team

Jonathan Dain  
Bruce Delaney  
Joy Hazell  
Laila A. Racevskis  
Paul Monaghan

## Report Contributors

M J Carnevale  
Katrina Locke

## Report Layout

Candace Kaswinkel

## NRLI Class XII Fellows

Elizabeth Carnahan  
Michael Carnevale  
Jack Daugherty  
Scot Eubanks  
Whitney Gray  
Stacie Greco  
Alexander Gulde  
Mike Herrin  
Scott Johns  
Jacob Larson  
Katrina Locke  
Bette Loiselle  
Andrew LoSchiavo  
Ramona Madhosingh  
-Hector  
Allen Martin  
Maria Merrill  
Bob Progulske  
Eleanor Sommer  
Sarah Thompson  
Ondine Wells  
Jennifer Williams

## Mailing Address

P.O. Box 110240,  
Gainesville, FL 32611-0240,  
342-846-1511

*This report forms part of a series written by current NRLI Fellows. Reports represent and are a product of the experiential learning process that is a highlight of the NRLI program and have not been formally peer reviewed.*