

2017

University of North Florida Environmental Center Annual Report 2017

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Environmental Center



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ANNUAL REPORT



YEAR IN SUMMARY



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21
PARKS
VISITED




 65 VOLUNTEERS




26
STUDENTS
EMPLOYED



CREDITS

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Designed by:
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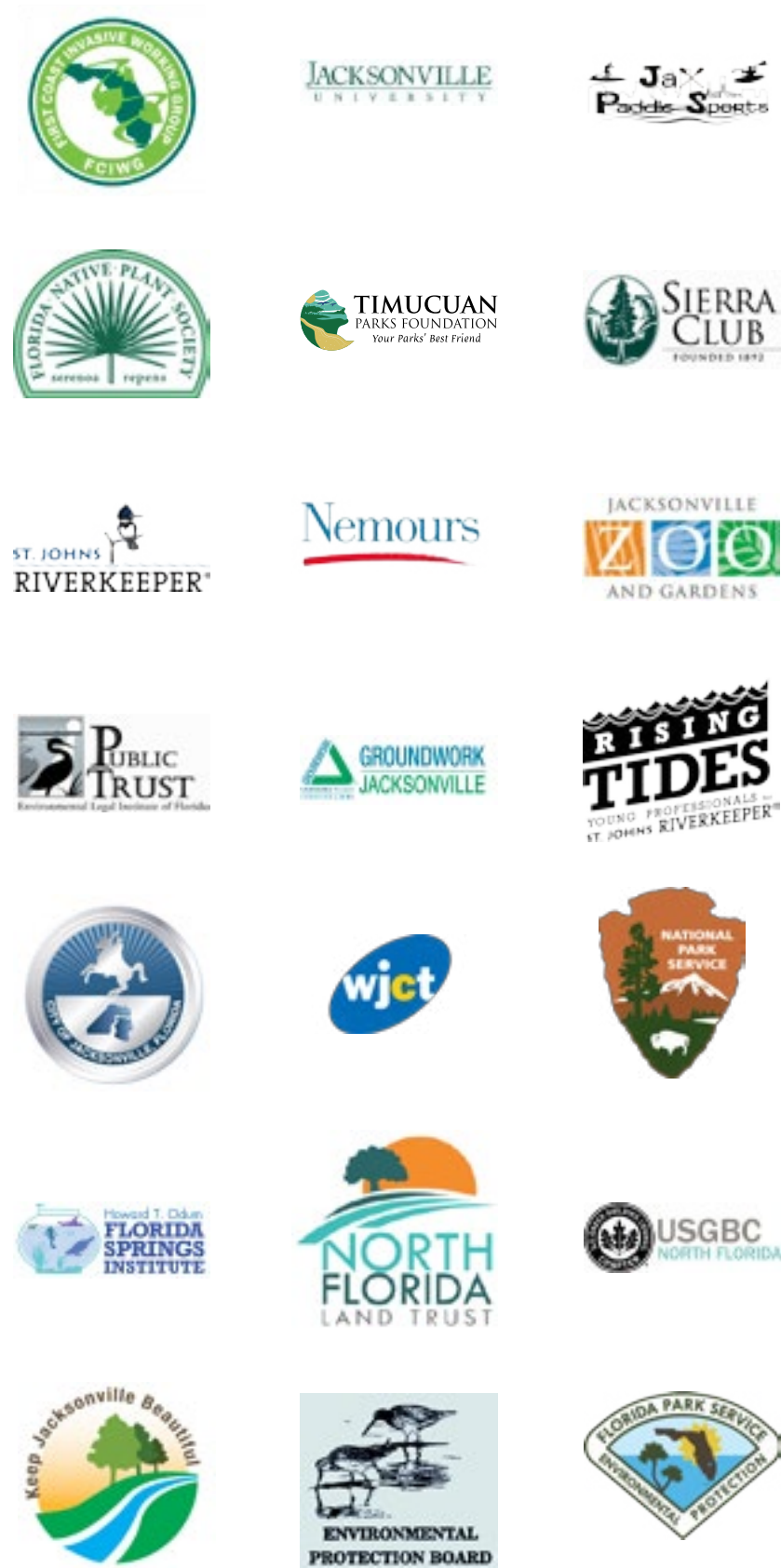
Charles "Chuck" Ged
 Dona Kerlin
 J. David Lambert, Ph.D.
 Maria D. Mark
 Radha Pyati, Ph.D.
 Kelly Rhoden
 James W. Taylor

HOW TO SUPPORT US

All of our programs are funded with grants and private donations.

If you would like to learn more about supporting our programs, please visit our website at www.unf.edu/center

OUR PARTNERS



LETTER FROM THE DIRECTOR



This annual report celebrates the accomplishments of an amazing team of passionate individuals who have come together to work toward a shared mission. The Center's efforts fall into one of three strategically focused categories: parks and preserves; rivers, coasts and springs; and sustainability. These categories reflect the community-identified needs for environmental education and research in the Northeast Florida region.

In order to address these needs, the Center coordinates and supports the efforts of a diverse and growing team of students, staff and faculty, representing disciplines from all of the UNF colleges. Importantly, our community collaborators round out our team and keep us grounded by reminding us of the realities and challenges we face in achieving our mission in the "real world."

Creating the next generation of environmental leaders is the Center's top priority. We are very proud of the project leaders' accomplishments in the Environmental Leadership Program (ELP). This year, our impressive student project leaders won several awards, applied for and received grants to support their projects and received recognition in the press. The ELP has been successful in making a measurable impact on the region thanks to the hard work of the Center's staff, faculty and, of course, our community partners.

"CREATING THE NEXT GENERATION OF ENVIRONMENTAL LEADERS IS THE CENTER'S TOP PRIORITY."

More than 20 faculty members have directly contributed their time and expertise to the mission of the Center this year. The Center's ongoing commitment to supporting faculty research and education has resulted in exciting new programs, and our goal is to increase the number of faculty who are engaged with the Center next year.

Finally, we are always grateful for the generous support from our donors. Since the Center's business model dictates that the vast majority of our programs, including "Seed Grants," must be supported by donations from the community, our donors are truly essential members of our team!

J. David Lambert
 J. David Lambert, Ph.D.

EXECUTIVE BOARD

Christopher Baynard, Ph.D.
Associate Professor
Department of Economics and Geography
Coggin College of Business

Charles Closmann, Ph.D.
Chair and Associate Professor
Department of History
College of Arts and Sciences

Erin Largo-Wight, Ph.D.
Associate Professor
Department of Public Health
Brooks College of Health

Brian Zoellner, Ph.D.
Assistant Professor
Department of Foundations and Secondary Education
College of Education and Human Services

PROFESSIONAL STAFF



J. David Lambert, Ph.D.
Director



Maria D. Mark
Coordinator



James W. Taylor
Coordinator

MEET OUR TEAM

FACULTY RESEARCH FELLOWS

Parvez Ahmed, Ph.D. – 2015 Seed Grant Recipient
Department of Accounting and Finance
Coggin College of Business

Joe Butler, Ph.D. – Diamondback Terrapin Research
Department of Biology
College of Arts and Sciences

Chiradip Chatterjee, Ph.D. – 2015 Seed Grant Recipient
Department of Economics and Geography
Coggin College of Business

Raphael W. Crowley, Ph.D. – Maritime Management Plan
School of Engineering
College of Computing, Engineering and Construction

Quincy Gibson, Ph.D. – 2016 Seed Grant Recipient
Department of Biology
College of Arts and Sciences

Chris Johnson, Ph.D. – 2015 Seed Grant Recipient
Department of Economics and Geography
Coggin College of Business

Amy Lane, Ph.D. – 2015 Seed Grant Recipient
Department of Chemistry
College of Arts and Sciences

Radha Pyati, Ph.D. – St. Johns River Report
Department of Chemistry
College of Arts and Sciences

Kelly Smith, Ph.D. – 2016 Seed Grant Recipient
Department of Biology
College of Arts and Sciences

Stephen Stagon, Ph.D. – 2015 Seed Grant Recipient
School of Engineering
College of Computing, Engineering and Construction

Russell Triplett, Ph.D. – 2015 Seed Grant Recipient
Department of Accounting and Finance
Coggin College of Business

STUDENT STAFF



Natalie Sassine
Communications
Senior, BFA in Printmaking



Tiffany Torres
Graphic Designer
Senior, BFA in Graphic Design

STUDENT RESEARCH ASSISTANTS



Abbra Pyle
Sawmill Slough Preserve History
Senior, History



Shawna Melby
Sawmill Slough Preserve Anthropoid
Senior, Biology



Thaddeus 'Asa' Heckman
Diamondback Terrapin Research
Graduate Student, Biology



ENVIRONMENTAL CENTER STUDENT COALITION

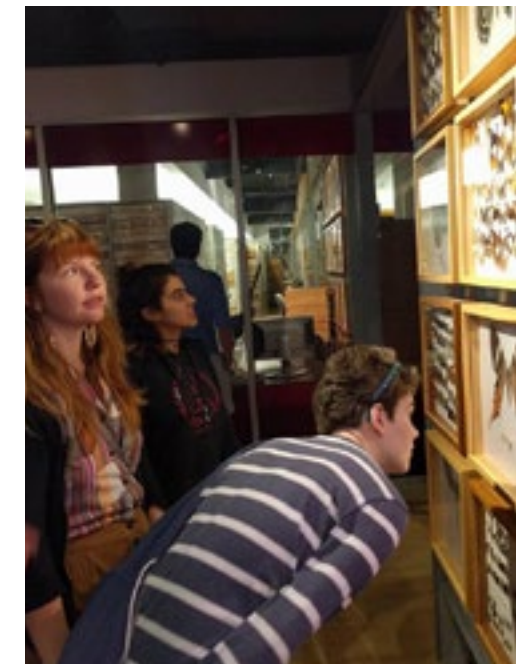
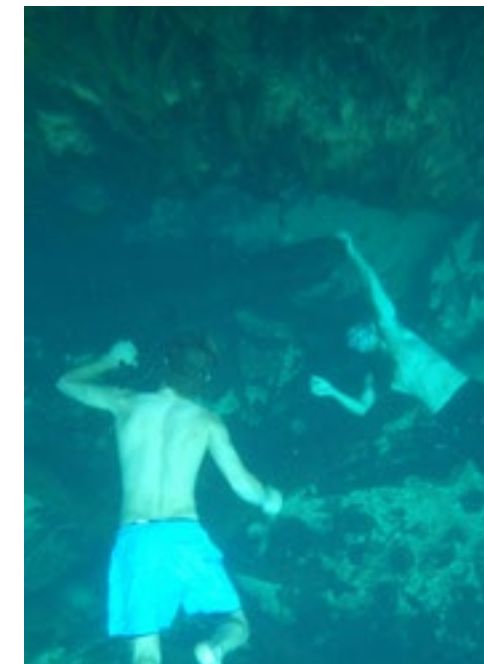
ADVENTURE, NATURE AND CONSERVATION

The Environmental Center Student Coalition attracts students who are interested in adventure, nature and conservation. The student-led organization regularly coordinates trips, exploring not only local parks in Jacksonville, but also state and national parks throughout the southeast. In addition, the club provides students with opportunities to volunteer and network with local nonprofit organizations and government agencies.



Some of this year's activities included:

- Visiting the Florida Museum of Natural History
- Meeting with National Park Service staff for a guided tour of the Martin Luther King Jr. National Historic Site (Georgia)
- Exploring the Great Smoky Mountain National Park and hiking a portion of the Appalachian Trail (Tennessee)
- Full moon paddling at Dutton Island Preserve (Florida)
- Camping and swimming at a number of Florida springs
- Participating in Give Springs a Break with the Florida Springs Institute
- Providing a nature "relaxation station" for students to destress from exams





COMMUNITY PROGRAMS

Jacksonville Environmental Symposium

Partner: City of Jacksonville Environmental Protection Board

Natural Wonders of Northeast Florida

Partner: UNF Continuing Education

Give Springs a Break

Partner: Howard T. Odum Florida Springs Institute

Green Carpet Film Series

Partner: U.S. Green Building Council Florida

- "The True Cost"
- "Water Blues, Green Solutions"
- "Just Eat It"
- "Racing to Zero"
- "The Future of Energy"
- "Cowspiracy"
- "A Plastic Ocean"
- "Divest!"
- "Sonic Sea"
- "Ahead of the Tide"
- "Facing the Surge"
- "Racing to Extinction"



To help stimulate the creation of interdisciplinary research projects related to the environment, the Environmental Center offers grants to faculty, or teams of faculty, from all six UNF colleges. The grants are intended to support environmentally-related research that subsequently results in the preparation and submission of a proposal to an external funding agency. The grants are competitively awarded to the most meritorious proposals, but there is an emphasis on projects that create effective collaborations between faculty members and students from diverse disciplines.

Spartina alterniflora Floating Nurseries: Growing Plants to Reduce Pond Nutrient Loading and Enhance Coastal Shoreline Restoration

Kelly Smith, Ph.D.
Department of Biology

Kenneth Rainer
Guana Tolomato Matanzas National
Estuarine Research Reserve

Nicole Llinas
Undergraduate Research Assistant

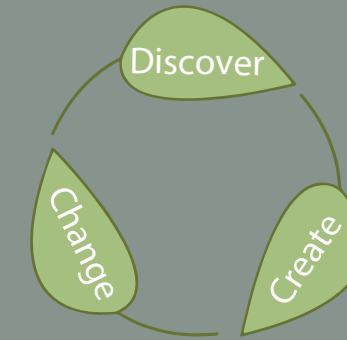
Retention ponds are ubiquitous in the southeast and play a key role in allowing stormwater to reenter the groundwater supply; however, these ponds are sources of nutrients that can lead to nuisance algae blooms in recipient waterways. We propose using floating mats planted with *Spartina alterniflora* (smooth cordgrass) to achieve two goals: 1) Reduce nutrient levels in retention ponds through uptake by plant roots and, 2) harvest mature and healthy plants for control of sediment erosion and as habitat for coastal organisms. This collaborative effort between the education group at GTMNERR, led by Kenneth Rainer, and the Department of Biology will merge scientific inquiry with environmental education. Outcomes of the project include: assessment of nutrient uptake in retention ponds; analysis of plant health response to floating mats and subsequent deployment in coastal shorelines; and integration of middle school student participation in plant harvesting and deployment as an environmental science activity.

Correlating Bottlenose Dolphin (*Tursiops truncatus*) Strandings to Cyanobacterial and Cyanotoxin Exposure in the St. Johns River

Quincy Gibson, Ph.D.
Department of Biology

Amber Brown
Graduate Research Assistant

Recent necropsy reports have documented a large number of unexplained deaths among bottlenose dolphins in the St. Johns River in Jacksonville. Moreover, a number of these deaths occurred in low salinity areas of the river that are strong deviations from the residential population's known home ranges. These findings indicate that dolphins are traveling farther upstream into the freshwater, suggesting possible exposure to native toxin producing cyanobacterial blooms. In 2015, two dolphin stranding reports noted the presence of dermal "algal mats." Preliminary microscopic identification of these algal mats revealed the presence of both water mold and cyanobacteria. This combination could potentially provide an explanation for these previously unexplained fatalities. This research will focus on unusual strandings and the effects of freshwater cyanobacterial blooms on the health of dolphins in the St. Johns River.



ENVIRONMENTAL LEADERSHIP PROGRAM

It all started with one question: “Where is our next generation of environmental leaders?”

This question was the catalyst for the Environmental Center to create a program that would train this next generation. Officially launched in 2016, the Environmental Leadership Program (ELP) provided the solution.

The ELP is a unique, project-based program that gives our student project leaders opportunities to network with community partners, UNF faculty and other mentors to create and implement long-term, impactful projects focused on the environmental challenges within our community.

Powered by undergraduate students, the ELP is a robust program focused on giving our project leaders “real-world” experience by implementing the knowledge and skills learned, both as students and as leaders. Leadership development workshops are an integral part of the program whereby students develop skills from time-management to public speaking to emotional intelligence development. These “transferable” skills prepare them to enter the workforce upon graduation.

The principles of the ELP are grounded in strong convictions about the need for developing environmental leaders within our community. Guided by these principles, we are creating a diverse community of emerging leaders who are creating projects that will have a long-lasting, positive impact on our environment and our community. Meet our next generation of environmental leaders and see how their projects are making a difference in our community!

Project Leader Anna Kolodziejski presenting at the ELP Spring Symposium.
Photo by Laura Evans

PROJECT LEADERS



ELIZABETH "NIKKI" ADAMS

Major: *Biology*
Hometown: *Jacksonville, Fla.*
Project Title: *Participating in the ELP provided me with the tools necessary to network and professionally market and develop as a budding environmental leader. My experience as an engaged project leader also gave me the necessary edge to compete and obtain nationwide internships and grants.*
Outdoor Nation: On Campus Ambassador
(see page 32)



KALEY CRAWFORD

Major: *History & Anthropology*
Hometown: *Bluffton, S.C.*
Project Title: *The ELP has allowed me to build my professional resume, make valuable relationships through networking and make great memories that add to my college experience at UNF! I am extremely grateful that I have been able to participate with one of the best programs on campus. I love how it has helped me to make a difference, and how it has made a difference in me.*
Beyond the Trail: A Walk Through History
(see page 27)



HALEY CAMP

Major: *Public Health*
Hometown: *Pensacola, Fla.*
Project Title: *By being a project leader for the Environmental Leadership Program I have gained valuable skills in critical thinking, written and oral communication and time management. The experiences and skills I have acquired as a project leader, have sparked an interest in me to continue working in this field so I can inspire and educate others about the environment.*
The Ripple Effect: Where Kids are Guided by the River
(see page 24)



COURTNEY HOGAN

Major: *Interdisciplinary Studies: Sustainable Development*
Hometown: *Coral Springs, Fla.*
Project Title: *As an ELP project leader, I have gained the necessary resources and abilities to transform my ideas to create positive social and environmental change in the community and on campus. I have learned how to organize for justice in the professional arena, which has provided me with the experience needed to expand my influence into the community upon my graduation. I am also thankful for the opportunity to form alliances with community members and professionals.*
Food Fighters: Student-Powered Hunger Relief
(see page 37)



KYLE KENNEY

Major: *The ELP has been an amazing opportunity for me. I have grown in my leadership skills and have improved greatly in my planning abilities. I look forward to continuing this growth next year.*
Coastal Biology
Hometown: Jacksonville, Fla.
Project Title: Sawmill Slough Preserve Ambassadors (see page 32)



KATIE NICHOLSON

Major: Working in the environmental leadership program has benefited me in many ways, but I think the largest way it has impacted me is by broadening my horizons. The ELP has introduced me to local organizations, professionals and events. This has helped me to become more involved in the environmental community.
International Affairs
Hometown: Melbourne, Fla.
Project Title: Diving Into Springs



ANNA KOLODZIEJSKI

Major: *The ELP has been invaluable in connecting me with mentors and community leaders in the environmental field. As a project leader, I also get to work with other passionate and driven students who care about making a positive impact on the world around them. Being part of this team truly inspires me and motivates me to shoot for the stars both in my intended career — sustainable structural engineering — and as a personal advocate of environmental conservation.*
Civil Engineering
Hometown: Cardiff, Wales
Project Title: Jax Green Shores (see page 23)



DANIEL NOREZ

Major: The Environmental Center and ELP have given me the best opportunities for real-world application of my major. My resume is very professional with the experiences gained from working there. As the ELP grows, the future generations will do amazing things, and I will be proud to have been a part of the program.
Public Health
Hometown: Chihuahua, Mexico
Project Title: Tree Rx: Prescribing Urban Trees for Community Health (see page 38)



SEAN LAHAV

Major: *The ELP has provided me with extraordinary opportunities that have cemented my passions for the environment and great outdoors. By allowing me to conceptualize and produce my own documentary series — and work one-on-one with community partners — I have been able to grow, mature and excel as a rising environmental leader. While my time with the UNF Environmental Center has come to an end, the lessons I have learned from this program will continue to shape my professional outlook and career.*
Political Science
Hometown: Boyton Beach, Fla.
Project Title: Exploring Northeast Florida's Special Places (see page 28)



KEVIN O'HALLORAN

Major: Participating in the ELP has been an overall rewarding experience. Having the opportunity to work with the USGBC Florida linked me to an organization I hope to stay involved with throughout my career. The opportunity to network with community leaders has been very rewarding as I enter into the Jacksonville job market.
International Relations
Hometown: Lakeland, Fla.
Project Title: Jax Sustainability Report (see page 37)



MADISON MASTERS

Major: The Environmental Center has given me numerous positive experiences as a project leader. I have gained real-world experience in professional environments and networked with leaders in the community. I have also developed confidence in public speaking. The experience gained will be a great asset as I enter the workforce.
Anthropology
Hometown: Lakeland, Fla.
Project Title: Tree Rx: Prescribing Urban Trees for Community Health (see page 38)



KELLY RHODEN

Major: The Environmental Center has given me a tremendous amount of experience, particularly in public speaking, project management and team work. From my involvement, I have learned so much about working in a professional environment and have built relationships with many of my coworkers and community members.
Public Health
Hometown: Charleston, S.C.
Project Title: Tree Rx: Prescribing Urban Trees for Community Health (see page 38)



RIVERS, COASTS AND SPRINGS

Northeast Florida, as much of Florida, is defined by water. The St. Johns River, the longest river in Florida, runs through Jacksonville where it empties into the Atlantic Ocean and creates an expansive saltwater estuary where the two meet. Northeast Florida is also home to miles of beautiful beaches, many of which are preserved from commercial development.

The Environmental Center has a long history of projects focused on rivers, coasts and springs, with a specific focus on the St. Johns River. Since 2007, a multi-university team of scientists have published the State of the River Report. In addition, the Environmental Center has offered a transformational learning opportunity for undergraduate students since 2006 called the “St. Johns River Experience.”

Working with community partners such as the St. Johns Riverkeeper, Howard T. Odum Florida Springs Institute and the City of Jacksonville Environmental Protection Board, the Environmental Center is dedicated to supporting research conducted by faculty and students, as well as developing community-based educational programs.

Students and staff paddle the historic Suwannee River during the Center's fall retreat.
Photo by James Taylor

ST. JOHNS RIVER EXPERIENCE



Photo: Sean Lahav

ACADEMIC LEADERS

James W. Taylor
Environmental Center

Rick Troendle, Ph.D.
Department of Chemistry

Every spring, the Environmental Center and a select group of students embark on a journey exploring the St. Johns River and its expansive watershed. The St. Johns River Experience is an interdisciplinary course, examining the ecology and history through a combination of classroom learning and experiential learning. The course is designed

to challenge students both academically and physically through lectures, assigned readings, student presentations and lab work. The highlight of the course is a full-immersion trip over spring break where students spend their days visiting state parks, swimming in the springs, paddling down tributaries and boating on the St. Johns River.

The 2017 St. Johns River Experience included:

- Multiple guest speakers
- Collection and analysis of water samples
- Restoration project on Lake Jesup
- Exploration of the St. Johns River and multiple tributaries
- Public forum organized by students
- Tour of the JEA waste water treatment facility

This program was made possible through the UNF Office of Undergraduate Studies and the Cummer Family Foundation. Additional support was provided by the St. Johns Riverkeeper.



2017 STUDENTS

Catherine Black, junior
Coastal Biology

Lacy Bocharski, junior
Anthropology

Kalee Gaskin, sophomore
Public Health

Isabella Genta, junior
Coastal Biology

Kyle Kenney, sophomore
Coastal Biology

Sean Lahav, senior
Political Science

Molly O'Brien, junior
Ecology and Evolutionary Biology

Catherine Vernon, junior
Psychology

Ashlen Ward, senior
Coastal Biology



Photo: Sean Lahav





FUNDED RESEARCH

STUDIES ON DIAMONDBACK TERRAPINS IN COASTAL GEORGIA

RESEARCH TEAM

Joe Butler, Ph.D.
Department of Biology

J. David Lambert, Ph.D.
Department of Economics and Geography

Thaddeus "Asa" Heckman
Graduate Research Assistant

Gretchen Bielmyer, Ph.D.
JU Department of Chemistry

For the past three years a team of faculty and students have been surveying coastal Georgia in search of diamondback terrapin populations and nesting sites. During this third year the team also commenced a concentrated study of terrapin nesting on St. Catherine's Island along with a radio-telemetry project to elucidate habitat needs of terrapins.

The researchers employed several detection methods to survey terrapins and their nesting areas. To date, they have recorded nearly 1,000 records of diamondback terrapin activity. Additionally, the team has collected nearly 150 water samples that will be evaluated for heavy metals and other pollutants. Information gained through this study can be used by habitat managers to assure that terrapins continue to have the space and habitat they require for future success.

MARITIME MANAGEMENT PLAN

The Environmental Center received a two-year grant to develop the "Duval Maritime Management Plan" for the City of Jacksonville. The grant is a collaborative effort with the Northeast Florida Regional Council and Jacksonville University's Marine Science Research Institute.

The objectives of this applied-research project are to assess the current status of maritime facilities (such as boat ramps), determine current and future needs (with community input), and develop a long-term plan that assures future public access to our river and coastal resources.

RESEARCH TEAM

J. David Lambert, Ph.D.
Department of Economics and Geography

Raphael W. Crowley, Ph.D.
School of Engineering

Mackenzie Sanchez
Graduate Research Assistant

Quinton White, Ph.D.
JU Marine Science Research Institute

Margo Moehring
Northeast Florida Regional Council



Photo: Sean Lahav

STATE OF THE RIVER REPORT

FOR THE LOWER ST. JOHNS RIVER BASIN

The ninth State of the St. Johns River Report was published in summer 2016 by a team of scientists from UNF, Jacksonville University, Valdosta State University and Florida Southern College. This project, supported by the Environmental Protection Board of the City of Jacksonville, has provided an annual baseline of the basin's health since 2008.

The 2016 report revealed the following findings: Trends from the latest report that show improvement in the river's health include the lower nitrogen levels, satisfactory amounts of dissolved oxygen and a drop in overall air emissions of toxic chemicals in the region. Other indicators remain largely unchanged, such as unsatisfactory levels of phosphorus; high amounts of chlorophyll a, an indicator of harmful algae blooms;

fecal coliform levels above water quality criteria in many tributaries; an uncertain future for submerged aquatic vegetation; stable fish stocks; and wetlands being lost to development pressures. In addition to salinity, areas that have worsened include surface water discharges of toxic chemicals and an increase this year in non-native species to 75 total, with the spread of lionfish and Cuban tree frogs of particular concern.

Members of the report team discussed these findings with several media outlets, including WJCT's First Coast Connect and WJXT.

For more information, please visit www.sjrreport.com

Radha Pyati, Ph.D. — UNF Principal Investigator
Gerry Pinto, Ph.D. — JU Principal Investigator





JAX GREEN SHORES

Project Leader Anna Kolodziejki wants to start a “JAX Green Shores” movement by growing support for living shorelines as an alternative to hardscapes, such as sea walls or bulkheads for homeowners who live along waterways. She also wants to implement living shorelines in residential development retention ponds as a way to create a natural environment to support wildlife. Kolodziejki spent most of this year researching living shorelines and volunteering with the Seminole

Education, Restoration & Volunteer (SERV) program assisting with living shorelines restoration projects. In the upcoming year, she will focus on creating educational materials and coordinating restoration projects to start the “green shores” movement here in Jacksonville. Having recently moved to the Mandarin area, she plans to concentrate her project development for that area, which provides a variety of areas that can serve as pilot projects to start her “JAX Green Shores” movement.

PROJECT LEADER:
Anna Kolodziejki



COMMUNITY PARTNER:
Friends of GTM (Guana Tolomato Matanzas) Research Reserve

THE RIPPLE EFFECT

WHERE KIDS ARE GUIDED BY THE RIVER



PROJECT LEADER:
Haley Camp



COMMUNITY PARTNER:
Nemours Children's Specialty Care

Project Leader Haley Camp focused on creating a connection to the St. Johns River through inspiring crafts, interactive displays and educational facts related to the river for the patients and families of Nemours Children's Specialty Care. As a public health major, Camp wanted to integrate the healing power of “nature therapy” in order to reduce the stress and anxiety experienced by the children and their families, while also teaching them how to be environmental stewards and the importance of the river and flora and fauna it supports. Her project included environmental arts and crafts inspired by the St. Johns River; a St. Johns River Height Measuring Wall where the children could compare their

heights to the plants and animals — “Are you as tall as a heron?” — and, providing “kidnoculars” so the children could see the outdoors, up close and personal, and identify what they saw using a variety of activity sheets. We thank the staff and administration of Nemours Children's Specialty Care for their generous support, which made this project a huge success for the patients and families they serve.





PARKS AND PRESERVES

Jacksonville is home to the largest urban park system in the United States, with more than 80,000 acres of parks and preserves! From upland pines to cypress swamps to coastal marshes, Jacksonville has it all when it comes to diverse ecosystems.

The University of North Florida has its own 382-acre nature preserve. The Sawmill Slough Preserve, which was protected by President John A. Delaney in 2006, provides recreational, educational and research opportunities for not only students, faculty and staff, but the community as well. The Environmental Center has many programs focused on the Sawmill Slough Preserve.

The Environmental Center is dedicated to developing community-based programs that connect UNF students to the parks and preserves in Northeast Florida. Furthermore, the Center is engaged in multiple research projects and provides funding for faculty to conduct research. Community partners include the Timucuan Parks Foundation, North Florida Land Trust, National Park Service, Florida State Parks and the City of Jacksonville Preservation Parks.



BEYOND THE TRAIL A WALK THROUGH HISTORY



PROJECT LEADER:
Kaley Crawford



COMMUNITY PARTNERS:
Timucuan Parks Foundation;
National Park Service; Florida
State Parks; City of Jackson-
ville Preservation Parks

“Beyond the Trail: A Walk Through History” was the second series of this project. Project Leader Kaley Crawford wanted to highlight the extensive history within our parks and preserves in Duval County.

Student participants and community members were treated to walks and talks with historical experts, which ranged from learning about the indigenous Timucua Indians to the life and voyages of the Kingsley family. Participants also learned about Jacksonville’s little-known role in the civil war by visiting Camp Milton where they planted a “southern” garden, which was harvested for the Camp Milton civil war re-enactment held in the spring.

Throughout the series of events, students and community partners networked and learned from each other about their experiences and passions.



EXPLORING NORTHEAST FLORIDA'S SPECIAL PLACES



PROJECT LEADER:
Sean Lahav



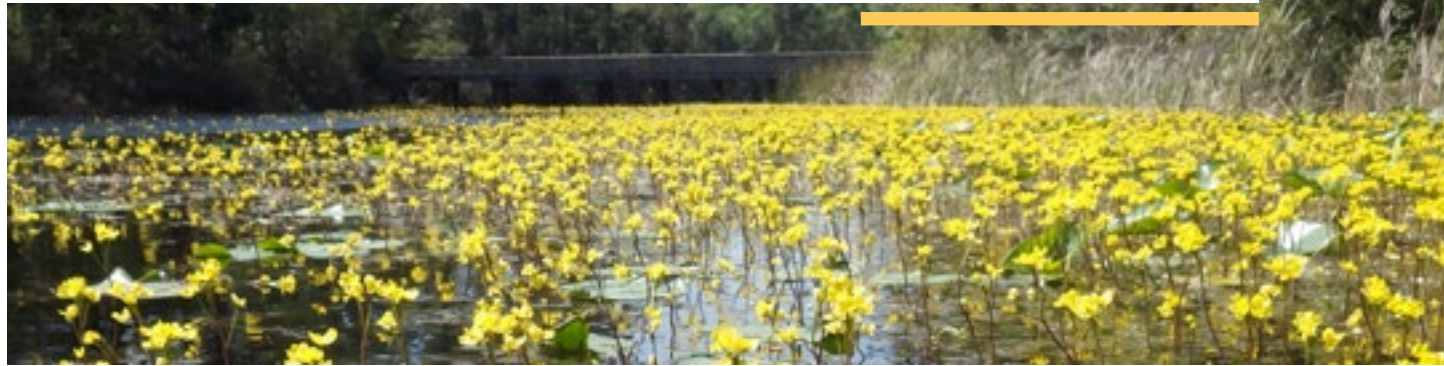
COMMUNITY PARTNERS:
Public Trust Legal Institute of
Florida; National Park Service;
Florida State Parks; City of
Jacksonville Parks and Recre-
ation

Project Leader Sean Lahav completed his 20 video series in the fall of 2016 and launched a video debut that was attended by almost 200 guests. He has been featured on local television shows, radio talk shows and in Jacksonville Magazine. His videos are currently being released by WJCT weekly and presented on their website. Each video features a park, showing the recreational amenities, ecology, history and cultures it has to offer.

Community partner Public Trust Environmental Legal Institute of Florida brought to the Environmental Center the idea for a project that would inspire people to explore their park system and develop a “sense of place” to ensure the preservation of these special places now and for future generations. Lahav’s tireless work and unrelenting passion for these special places resulted in the huge success of this project.



SAWMILL SLOUGH PRESERVE



The Sawmill Slough Preserve is a 382-acre protected natural area located on the UNF campus. The area was officially designated as a preserve in 2006 by President John A. Delaney. Winding through the Preserve are the Robert W. Loftin Nature Trails, which are named after the distinguished UNF professor.

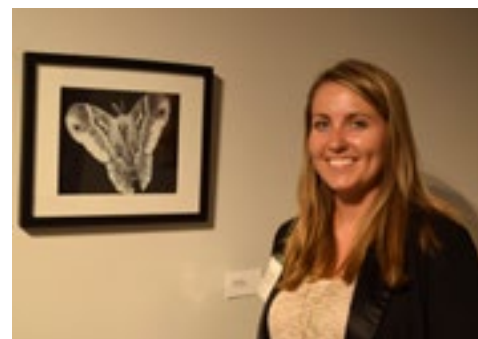
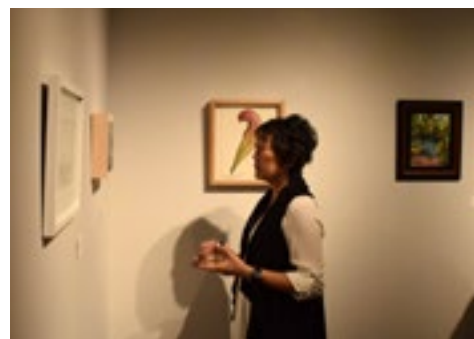
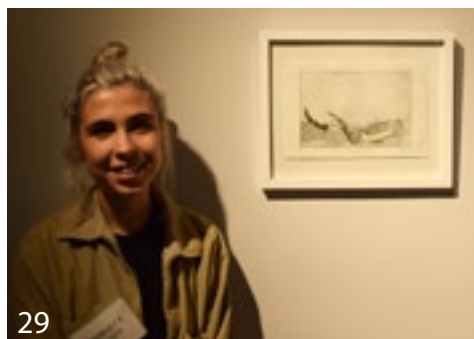
The Sawmill Slough Preserve is a campus asset that serves as a living laboratory and provides students and faculty with amazing opportunities to connect with nature, conduct research and inspire student artists. The Environmental Center has a long history of leveraging the Preserve for academic and research purposes.

PRE[SERVE] ART EXHIBITION

The Environmental Center, in partnership with the Department of Art and Design and the Gallery of Art, hosted the first student art exhibition focused on the Sawmill Slough Preserve.

FACULTY COMMITTEE

Alex Diaz, M.F.A. — Photography
 Jim Draper, M.F.A. — Gallery of Art
 Sheila Goloborotko, M.F.A. — Printmaking
 Kally Malcom, M.F.A. — Photography
 J. David Lambert, Ph.D. — Environmental Center



PRESERVE DIGITAL ARCHIVE

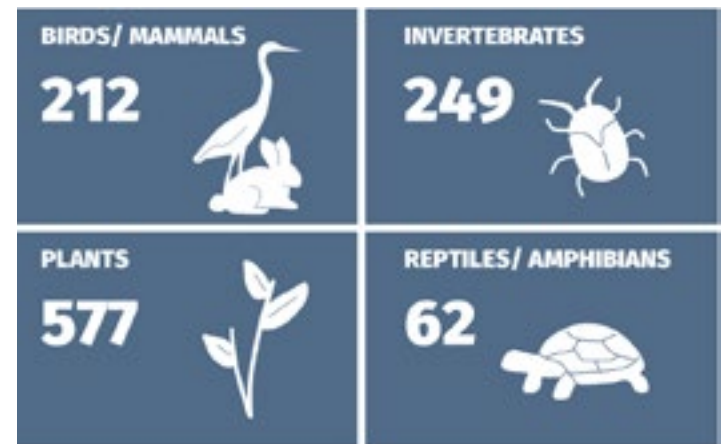
The Environmental Center launched the Digital Archive in 2015 to serve as a scientific, cultural and historical archive for the Sawmill Slough Preserve. The online scientific and educational resource documents years of research and management efforts by various departments, including the Environmental Center, Department of Biology, Department of History and Physical Facilities.

The archive platform was developed by Dr. Stuart Chalk from the Department of Chemistry. Numerous students, faculty and staff have contributed to the archive. The majority of efforts to date have focused on developing the Campus Natural Assets Inventory; however, more recently, there has been an effort to develop an environmental history of the campus and preserve.

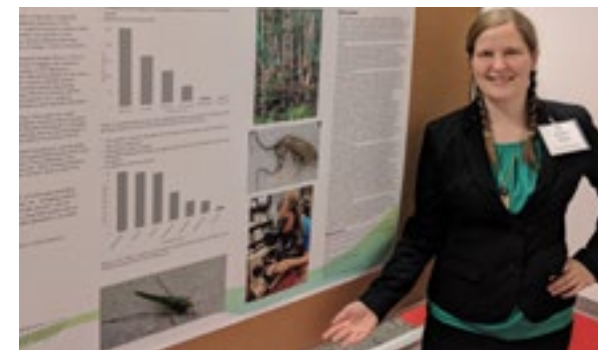
Please visit the Preserve Digital Archive at <http://preserve.unf.edu>

CAMPUS NATURAL ASSETS INVENTORY

Since 2006, the Environmental Center and Preserve Curator Chuck Hubbuch have worked toward developing an inventory of native flora and fauna found within the Sawmill Slough Preserve. A number of faculty and students have been involved with this project.



Shawna Melby, biology — Survey of Arthropods in the Sawmill Slough Preserve



There has been an ongoing effort to document the diversity of flora and fauna found in the Sawmill Slough Preserve. The research conducted by Shawna Melby focused on the phylum Arthropoda, a diverse group, including mostly insects, that exhibit a wide range of host and habitat specializations, including wetland and long-leaf pine ecosystems. Arthropods were sampled using a variety of techniques including Lindgren funnel traps, pit fall traps, sticky traps and more.

Abbra Pyle, history — Archiving Historical Documents



During spring 2017, undergraduate research assistant Abbra Pyle began work sorting materials donated to the Environmental Center in order to compile an environmental history of the Sawmill Slough Preserve and the Robert W. Loftin Nature Trails. Work is nearly completed on the first topic: the history of the UNF Golf Complex at the Hayt Learning Center and the environmental concerns related to its construction. Ultimately, the goal is to profile a range of topics related to the Sawmill Slough Preserve.

SAWMILL SLOUGH PRESERVE AMBASSADORS



Project Leader Kyle Kenney's passion for the outdoors and natural environment shaped his project, "Preserve Ambassadors." The 382-acre, on-campus Sawmill Slough Preserve, was the perfect impetus for his program. He wanted to get more students aware of and involved in the Preserve. He trained a core group of students to be the Preserve's ambassadors, who could also lead events in the Preserve for students, as well as report any hazards or problems they observed while in the Preserve to the campus curator.

Training included learning about the history, the flora and fauna, and the activities the Preserve had to offer. Additionally, Kenney wanted to track information about the Preserve's visitors (i.e., first-time visit; activities; reason for visit, etc.), so he created a survey to allow the Preserve Ambassadors to capture this data. He also held camping, hiking, fishing and paddling 101 clinics, both in the Preserve and at an area park, Dutton Island Preserve in Atlantic Beach. The inaugural class of Preserve Ambassadors consisted of nine students, and more than 30 students participated in the events and clinics.



PROJECT LEADER:
Kyle Kenney



COMMUNITY PARTNERS:
UNF Eco Adventure
UNF Physical Facilities



OUTDOOR NATION ON CAMPUS AMBASSADOR

CONNECTING OSPREYS WITH THE OUTDOORS

Project Leader Nikki Adams competed for and was awarded a \$3,750 grant from Outdoor Nation, in partnership with the National Park Service. As UNF's "Campus Outdoor Ambassador," her objective was to connect millennials with the outdoors and the national parks. Adams planned several on/off-campus and national park events. For National Public Lands Day, students camped at Stephen Foster State Park, paddled the Suwannee River, and hiked to Sulfur Springs and Big Shoals. "Preserve Adventure Fest" took place in the Sawmill Slough Preserve, which included zip lining, creating nature-inspired crafts, while sipping on hot chocolate.

Over the MLK holiday, students were given a personal tour by the NPS Chief of Interpretation of Dr. Martin Luther King Jr.'s birthplace in Atlanta followed by a trip to the Smoky Mountains, with some students experiencing snow for the first time! For the service project, students spent a day constructing kayak racks for the local national park, Timucuan Ecological & Historic Preserve, and then camped at Big Talbot Island State Park and kayaked the Ft. George River.

"AWARDED A \$3,750 GRANT FROM OUTDOOR NATION"

This project had 145 students participate, in which 35 percent had never visited a national park and 72 percent were first-time visitors to many of the event sites.



PROJECT LEADER:
Nikki Adams



COMMUNITY PARTNERS:
National Park Service
Outdoor Nation
Jax Paddle Sports





SUSTAINABILITY

Nearly 20 million people currently live within Florida, with the population expected to double before 2060. In addition, threats from climate change and sea-level rise will increasingly impact our cities. Leaders will need to consider ways to balance economic growth with growing environmental and social concerns. Sustainability could be the solution needed.

The University of North Florida is a perfect living-laboratory for students to gain an understanding of sustainability in practice. With nearly 5 million square feet of building space and a total population of 18,393 students, faculty and staff, UNF has plenty of operational challenges. Student project leaders help identify and address needs on campus through research and program development. Staff and faculty work with university administration in an effort to find creative solutions to sustainability challenges.

Working with our community partners, the Environmental Center also contributes to expanding awareness and understanding of sustainability in the community. Partners include U.S. Green Building Council (USGBC) Florida, Groundwork Jacksonville, Northeast Florida Regional Council and the City of Jacksonville.

Bike rack designed and built by UNF students.

CAMPUS SUSTAINABILITY



One of UNF's core values is "responsibility to the natural environment," and that commitment can be seen in the protection of the Sawmill Slough Preserve, numerous LEED-certified buildings and countless other sustainability features that can be found throughout campus. The Environmental Center has continuously encouraged UNF to be a leader in sustainable practice

and has supported a number of programs aimed at improving campus sustainability. Staff from the Environmental Center chair the campus Sustainability Committee, student project leaders organize volunteer and educational programs and research assistants conduct applied research to better understand UNF's environmental impact.

TEXTBOOK RECYCLING



 **1,730 LBS**
OF BOOKS RECYCLED

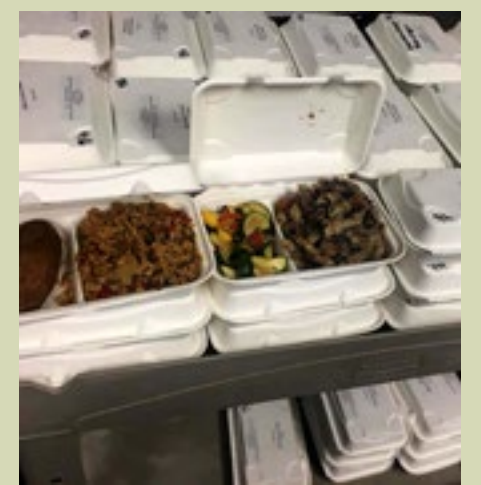


BIN WARS

In 2016, the Environmental Center partnered with Osprey Productions and Physical Facilities to organize "Bin Wars," a recycling bin design competition. During homecoming week, student organizations were recruited to create unique recycling bins that displayed their Osprey pride. The bins were then used to collect recycling at special events.



In addition to helping collect recyclables at UNF special events, the Bin War recycling bins were used at community events to help collect recyclables and raise awareness.



FOOD FIGHTERS: STUDENT-POWERED HUNGER RELIEF

PROJECT LEADER:
Courtney Hogan



FACULTY PARTNER:
Lauri Wright, Ph.D.
Department of Nutrition
and Dietetics

COMMUNITY PARTNERS:
Northeast Florida AIDS
Network, Chartwells, Food
Recovery Network, United
Way of Northeast Florida

Project Leader Courtney Hogan's passion to fight against social injustices led her to create a project focused on addressing food insecurity within Jacksonville through reducing food waste on campus. Along with fellow student Brianna Ballard and faculty member Dr. Lauri Wright, Hogan created an on-campus club, "Food Fighters."

The project officially "kicked-off" on Jan. 30, 2017, when Hogan and Ballard hosted a "hunger dinner" for UNF students. The dinner raised awareness about food insecurity, both internationally and locally, where the students shared meals from under-developed countries to developed countries. The team then partnered with Chartwells to recover unused, prepared food from the Osprey Café, which was repackaged

into individual servings and delivered to community partner, Northeast Florida

**"AWARDED A
\$10,000
GRANT FROM
THE UNITED WAY"**

AIDS Network (NFAN). NFAN supports community members who have AIDs or AIDs-related illnesses and providing nutritious meals is one of its services. Food Fighters was one of three organizations that competed for and was awarded a \$10,000 grant from the United Way "Upstream" grant initiative. This grant will be used to fund supplies; cold and dry storage space; host awareness events to include nutritionists, chefs and speakers; and develop educational materials.



JAX SUSTAINABILITY REPORT



PROJECT LEADER:
Kevin O'Halloran



FACULTY ADVISOR:
J. David Lambert, Ph.D.
Department of Economics
and Geography

COMMUNITY PARTNERS:
JEA, Jacksonville Port Authority,
Jacksonville Transportation
Authority, North Florida
Transportation Planning
Organization, Jacksonville Aviation
Authority, Northeast Florida
Regional Council, Jacksonville
Environmental Protection Board

Project Leader Kevin O'Halloran's primary focus in urban redevelopment and sustainability led him to develop the first sustainability report for Jacksonville. He realized there was no repository that contained data regarding Jacksonville's overarching sustainable practices when it came to national rankings published by organizations such as the American Council for Energy-Efficient Economy (ACEEE). As a result, Jacksonville consistently scored low (40 out of 51) when it came to sustainable practices. O'Halloran's approach was to create a sustainability report that incorporated Jacksonville's independent authorities,

since they generally had the largest carbon footprint and each implemented their own sustainable practices. Over the course of eight months, he met with all the stakeholders, formed an ad-hoc committee and gathered information that he compiled into a report. This report divided the information into several different areas: energy, water, transportation, resiliency, green space, waste, administration and community. Combining all of the existing data and practices into one report has been well-received by the Chamber of Commerce and other economic-minded organizations.



COMMUNITY SUSTAINABILITY

TREE Rx: PRESCRIBING URBAN TREES FOR COMMUNITY HEALTH

PROJECT LEADERS:
Kelly Rhoden
Madison Masters
Daniel Norez



FACULTY ADVISOR:
J. David Lambert, Ph.D.
Department of Economics
and Geography

COMMUNITY PARTNER:
Groundwork Jacksonville



Three project leaders collaborated with Groundwork Jacksonville to identify the best opportunities for planting trees in the Springfield and Eastside neighborhoods of Jacksonville. In addition, students assessed the health and societal benefits of trees, which included respiratory benefits, crime reduction, ecosystem services and property values. The last component of the project involved developing outreach materials to

educate the community about the importance of trees. The team of ELP project leaders successfully completed the project in 2017 and gave multiple presentations to community organizations such as City Beautiful Jax and Sierra Club. In recognition of their efforts, City Beautiful Jax presented the project leaders with an award at the 24th Annual Mayor's Environmental Awards Luncheon.

USGBC LiveSMART



The Environmental Center and Director Dr. J. David Lambert have been working closely with the U.S. Green Building Council (USGBC) Florida in developing the LiveSMART mobile unit. The Sustainability Materials and Resources Trailer, or LiveSMART, is a mobile trailer that goes out to the community and provides direct education on sustainable living and green building practices. The educational unit is deployed at community markets, sporting events, home and patio shows, schools and many other events. Staff and students from the Environmental Center regularly provide assistance with the trailer and community outreach.

