

# Loxahatchee River District

Water Reclamation | Environmental Education | River Restoration

2500 Jupiter Park Drive, Jupiter, Florida 33458

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D. Albrey Arrington, Ph.D., Executive Director



April 23, 2020

Bureau of Land Management  
c/o Peter De Witt  
600 State Road 707, Unit B  
Jupiter, Florida 33469

*Submitted electronically to:*  
[pdewitt@blm.gov](mailto:pdewitt@blm.gov)

Dear Mr. De Witt,

Thank you for the invitation to submit a proposal of temporary use of the units at the Jupiter Inlet Lighthouse Outstanding Natural Area. We have already enjoyed an informal collaboration with the Bureau of Land Management to provide some environmental education programming. We are excited by this opportunity because we are confident that we can complement and increase the education efforts of the BLM and its partners. Environmental education is a core component of the Loxahatchee River District's mission and services and aligns with the BLM's core values.

Please find attached our proposal for renovations of Units H and I. Please do not hesitate to reach out with any questions or additional information about any aspect of our proposal.

Sincerely,

A handwritten signature in blue ink, appearing to read "D. Albrey Arrington".

D. Albrey Arrington Ph.D.  
Executive Director

Gordon M. Boggie  
Board Member

Dr. Matt H. Rostock  
Board Member

Stephen B. Rockoff  
Chairman

Harvey M. Silverman  
Board Member

James D. Snyder  
Board Member

# **Jupiter Inlet Lighthouse Outstanding Natural Area Partnership and Temporary Use of Facilities Proposal**

**Organization Name:** Loxahatchee River Environmental Control District *dba* River Center

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## **Basic Contact Information**

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**Mailing Address:** 2500 Jupiter Park Drive, Jupiter, FL 33458

**Physical Address** (if different): 805 N US Highway 1, Jupiter, FL 33477

**Primary Contact Person:** D. Albrey Arrington, Ph.D.

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**Alternative Contact Person:** Jocelyn O'Neill

**Telephone:** 561-401-4201

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## **Proposed Use**

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**Units of Interest** (Please check all that apply):

- ☐ Unit F
- ☐ Unit G
- ☒ Unit H
- ☒ Unit I

### **Proposed Use:**

The proposed partnership would formalize a functional but informal collaboration between the River Center and the BLM. The requested units would provide a base of operations for River Center staff to provide managed, on-site recreational, scientific, and educational experiences to the public, students, and organized groups. These experiences would be used to fuel active environmental education efforts with a clear and specific goal of improving environmental stewardship among participants, i.e., increasing the environmental ethic of those we serve. Programs will be based out of Units H and I and will make use of and encompass the trails and water access points within the Jupiter Inlet Lighthouse Outstanding Natural Area (JILONA). We are confident we can provide managed environmental education effort that will improve understanding of natural resources dependent upon this site and increase participants willingness and desire to preserve and protect these valuable resources. We understand that BLM is considering several potential partners for these units. If only one unit is available to us, we would modify our plans accordingly.

**Detailed Proposal:****Unit I Use**

**Structure:** We propose to remove the current structure and replace, within the same footprint, a covered outdoor education and gathering space (pavilion). The roofing would match in size and color to other units to maintain the current “view shed.”

Within this space, there will seating and tables (with ADA accommodations) for gathering prior to an education program as well as a sheltering place in the event of foul weather. The structure would have a concrete floor, metal roof, restrooms and a lockable storage area. The structure would be connected to appropriate utilities (e.g., power, water, sewer). Alternatively, the structure could be changed to a chickee hut to add historical and cultural value if that is more desirable to BLM. A chickee hut already exists on the lighthouse property and can be seen from the top of the light.

**Parking:** To avoid impacting any recreational use of the BLM property, we propose to install a bus/group parking area using a permeable surface in close proximity to Unit I. By having this parking area, we will eliminate the need for our groups to use the small parking area currently used by recreational visitors on the south side of Ocean Boulevard. Particular details of new parking will be in accordance with ONA values and coordinated with and approved by BLM.

**Landscaping:** We propose to install native landscaping throughout the area, potentially including some mature trees for shade. To the extent practical, we plan on planting native, hardwood hammock species around Unit I in order to improve the natural and scenic values of the property and to improve shade on the property. We have successfully installed an active pollinator garden using all native plants at the River Center and would attempt to do the same between Unit H and Unit I properties. This will enhance the aesthetic of the area as well as provide educational opportunities and environmental benefits to the property.

**Unit H Use**

We propose to renovate this structure for the purpose of providing exhibit space, guest check-in space, restrooms, and equipment storage. Considerations will be made for ADA accessibility and the building will be protected from hurricanes by hurricane windows or installed shutters. The structure would be connected to appropriate utilities (e.g., power, water, sewer).

Program visitors would arrive at JILONA via Ocean Boulevard and would park on the proposed parking area near Unit I and then make their way to Unit H to check-in for their managed program. Inside this welcome center (Unit H), guests would be greeted by a staff member and checked in. While waiting for others to arrive, guests would be able wait indoors in an exhibit area. These exhibits would give information about the educational, recreational, scientific, and natural resources at JILONA. Guests could also watch a video about the conservation and restoration work at JILONA, BLM as well as the Loxahatchee River. Messaging would directly align with BLM’s core values.

We propose to add restrooms on the interior and exterior of the building. Interior restrooms would only be available when our welcome center was open. We anticipate making exterior restrooms available to other on-site partners if/when appropriate. To add exterior restrooms, we propose to

extend the roofline north and south on the back of the unit to match the existing porch roof. We do not believe that this will cause a noticeable change to the “view shed.” Also, we believe supplemental native vegetation (see below) will improve the “view shed” by hiding portions of the roof. Equipment and program storage would be on the back side of the building in the existing porch area. This area would be enclosed for security using materials similar to the current structure. We propose to enclose the carport, using the same style of decorative concrete block to store kayaks onsite. A roll door would be installed on the front of the carport for security. Alternatively, a gate could be installed based on BLM’s preference.

Environmental education programming would encompass a wide variety of topics, be versatile and current with issues facing JILONA and the Loxahatchee River. Activities would be structured and managed to responsibly use the resources while being mindful of recreational use and visitor safety. Activities could potentially include:

- School Field Trips – we understand considerable numbers of school children visit the lighthouse each year. We desire to provide supplemental programming that visiting teachers could elect for their classes. These supplemental education programs would be complimentary to (not overlapping with) existing programs and would focus on providing interactive experiences that fuel environmental education and improve environmental stewardship among participants.
- Summer Camp – the River Center would use this location as a base for our very successful summer camp. Exploration of the natural area would be part of the curriculum. Our camp is an “adventure” camp that travels to other locations within the Loxahatchee River watershed most days of the week.
- Guided hikes – hikes could be tailored to specific organized groups or topics. They would be given at different times of the day (sunrise, sunset, nighttime) with an effort not to exacerbate preexisting periods of high site usage.
- Fishing – we have developed a number of very successful fishing programs, and we believe select locations may be suitable for expanding these programs
- Kayaking – we know there is demand for active recreation on and near the ONA, and we believe managed kayak tours are a suitable, low-impact opportunity for participants to explore and experience the ONA’s natural resources.
- Snorkeling – this activity provides a nearly unmatched opportunity for participants to connect with the underwater world, and we believe, with proper planning and oversight, the ONA could be a phenomenal location to conduct managed snorkeling tours as well as citizen science fish surveys.
- Discovery for early learners – our Story Time and discovery programs at the River Center have been very successful with younger ages. By connecting with young children, we develop a life-long love of nature and exploration.
- Outdoor laboratory for students – The Loxahatchee River District (our parent organization) is known and recognized as the leading organization for scientific study of the Loxahatchee River. We will partner with scientific staff from the Loxahatchee River District’s (LRD) Wildpine Lab to expose students to ‘real’

science and scientists. These interactions are critical as our program participants increase in age and comprehension.

All proposed environmental education programs would be in partnership with BLM and designed to achieve BLM's onsite education goals. We are willing and able to implement targeted programs or curricula that the BLM believes to be important. We also will be excited to provide input and content for appropriate interpretive signage on the property.

**Landscaping:** We propose to install native landscaping within the Unit H property, potentially including some mature trees for shade. To the extent practical, we plan on planting native, hardwood hammock species around Unit H in order to improve the natural and scenic values of the property and to improve shade on the property. We have successfully installed an active pollinator garden using all native plants at the River Center and would attempt to do the same between Unit H and Unit I properties. This will enhance the aesthetic of the area as well as provide educational opportunities and environmental benefits to the property.

### **Occupancy Schedule and Routine Hours of Operation**

We understand overcrowding of the property is not desirable; therefore, we will make every reasonable effort not to exacerbate preexisting periods of high site usage. During the Palm Beach County School Year, the building will be scheduled on an "as-needed" basis to accommodate school groups, family programs or other programs. Programs would be available to schedule Monday – Saturday from 8 a.m. – 4 p.m. Some early morning or evening programs may occasionally be scheduled. Programs scheduled before 8 a.m. or after 4 p.m. will begin or end at a reasonable time as we wish to be considerate of neighbors. During summer months (June through mid-August), the River Center's summer camp would be based out of Unit H, Monday – Friday, 8 a.m. – 5 p.m. Camp groups (similar to school groups) and family programs would be scheduled during the week. Occasional Saturday programs would be available throughout the year.

### Number of Participants

Below is a table that will help show our capacities per program, how often we anticipate offering the program using current resources (and expected demand), and the anticipated number of people per year that will could participate in a River Center program at the JILONA.

Program	Capacity	Times Per Year	Total Estimated People Per Year
Blooming in the Garden	30	4	120
Boat Tour	16	2	32
Camp Group	50	10	500
Clean Up	50	4	200
Fishing Clinic	20	4	80
Girl Scout Program	60	2	120
Nature Walk/Naturalist	25	8	200
Homeschool Workshop	30	4	120
Kayak Program	14	3	42
School Group	50	20	1,000
Science Day	50	1	50
Science with Sam	15	12	180
Seine and Dip	30	5	150
Summer Camp	16	40	640
			3,434

In addition to these River Center sponsored programs, River Center could be available to provide BLM sponsored programs or curricula. We would also be open to providing “add-on” education programs for groups visiting the lighthouse if that would be of benefit to other partners. This would increase our “education” numbers. Plus, if the demand and resources are there, this initial estimation could go up.

### Site Security

We understand site security is a priority. We would like to understand if BLM prefers a particular approach to site security. First, we could leave fences and gates as they are, and have River Center staff meet program participants at the gate and provide entrance to the site of Units H and I. Alternatively, at the LRD’s expense, we could move the fence and gate such that Units H and I are outside of the gated/fenced area. This second alternative would decrease security at Units H and I but conceivably would increase security for the remainder of the BLM property. Of course, we are interested in understanding BLM’s preference, and would be willing to develop specific plans accordingly.

**Past Accomplishments Relative to Proposed Use:****Naturalist Series in Partnership**

The River Center offers seasonal “naturalist” programs at a variety of locations throughout the Loxahatchee River watershed in partnership with other agencies.

Nature Walks: During the cooler months (November – March), we provide guided nature walks at different natural areas. Our hope is that we can help people become more aware of these resources for recreation and feel more comfortable exploring on their own. Each program is led by a River Center naturalist. Here are some of the areas where we have taken our guests for walks:

- JILONA (BLM) - both north and south side trails
- Blowing Rocks Preserve (The Nature Conservancy – TNC)
- Pine Glades Natural Area (Palm Beach County, Environmental Resource Management – PBC ERM)
- Cypress Creek North and Cypress Creek South Natural Areas (PBC ERM)
- Hungryland (South Florida Water Management District – SFWMD)
- Delaware Scrub (PBC ERM)
- North Jupiter Flatwoods Natural Area (PBC ERM)
- Jupiter Ridge Natural Area (PBC ERM)



Kayak Tours: During the warmer months (March – October), we offer kayak trips and kayak paddle instruction at a variety of locations in partnership with other agencies. These include:

- Wild & Scenic Loxahatchee River at Lainhart Dam – (SFWMD)
- Pine Glades Natural Area (PBC ERM)
- Fullerton Island (PBC ERM)
- Sawfish Bay (Town of Jupiter – TOJ)
- Bird Island (TOJ)

In addition to these programs, we have partnered up with the naturalists at PBC ERM to provide kayaks for some of their programs including:

- Winding Waters
- Pine Glades Hike and Paddle
- Snook Islands
- Cypress Creek South





**Boat Tours:** Boat tours are provided almost year-round through a partnership with Aqua Adventure Tours. This 18-passenger boat takes visitors on two different experiences launching from Burt Reynolds Park. In the cooler months, the tour ventures up the Wild and Scenic River all the way to Kitching Creek and lasts about 3 hours. This tour is geared toward adults. A River Center naturalist onboard talks about the natural history of the area and important issues facing the Loxahatchee River. In the warmer months, the trip is shortened to 2 hours and geared toward families. Passengers are invited to disembark at Jupiter’s “sandbar” for a “wet-feet” experience to discover the variety of marine organisms that live there. A River Center naturalist is there to teach people about what they find. *(We get excited thinking about how successful this program could be from a restored Coast Guard dock.)*



**Estuary Exploration:** This seine and dip program is offered during warmer months or school breaks. This program began back in the 1980s when the Loxahatchee River District operated our precursor programs to the River Center out of the building presently occupied by the Jupiter Inlet Lighthouse and Museum. Families are invited to come discover all the interesting things that live in the Indian River Lagoon. The program is provided in partnership with The Nature Conservancy at Blowing Rocks. River Center naturalists are there to guide people to find plants and wildlife and then teach about their importance. Our goal is for people to more deeply connect with and value nature as they actively explore the estuary and its remarkable diversity. We are confident these highly successful programs will translate well to the JILONA site.



### Homeschool

The River Center’s Homeschool Workshops and Field Trips have become one of our flagship programs over the past two years. Every Tuesday we offer a Homeschool Field Trip opportunity. Participants can select from a menu of programs that we offer to school groups. Programs are selected by topic or age level (grade). Over the past 2 years, we have successfully hosted homeschool workshops at JILONA in partnership with BLM. “A Day in the Life of the Indian River Lagoon” is a regional, citizen-science day that occurs in October and is geared for school age children. We gathered a variety of data from two different sites: 1) on the sandy beach on the Loxahatchee River proper and 2) along the shoreline at the end of the Indian River Lagoon near Cato’s bridge. This program allows school-aged children to become true scientists measuring and recording ‘real’ data as they monitor important characteristics of the site. JILONA plus the River Center has proven to be a very successful partnership for this program.





### Girl Scout Programs

Another one of the River Center’s flagship programs is our Girl Scout Workshops. The River Center received a “Community Award” from Girl Scouts of Southeast Florida in 2019 for our partner programs. Each year we host 5-6 Girl Scout badge-earning (skill-based learning) workshops for a variety of age groups; kindergarten through 12<sup>th</sup> grade. Badges offered by the River Center are always structured around nature or STEM (science, technology, engineering, math) in alignment with our mission statement. Topics or badges that we have offered are:



- Daisy (Kindergarten / 1<sup>st</sup> grade) – Clover Petal (Use Resources Wisely), Rosie Petal (Make the World a Better Place), Zinni Petal (Considerate and Caring), Outdoor Art Maker
- Brownie (2<sup>nd</sup> / 3<sup>rd</sup> grade) – Wonders of Water (Journey), Hiker, Household Elf, Senses, Bugs, Home Scientist, Inventor, Outdoor Art Creator
- Junior (4<sup>th</sup> / 5<sup>th</sup> grade) – Gardener, Detective, Flowers, Animal Habitats, Outdoor Art Explorer
- Cadette (6<sup>th</sup> – 8<sup>th</sup> grade) – Trailblazer, Special Agent, Trees, Woodworker, Night Owl, Outdoor Art Apprentice
- Senior (9<sup>th</sup> / 10<sup>th</sup> grade) – Truth Seeker (tackling issues), Sky
- Ambassador (11<sup>th</sup> / 12<sup>th</sup> grade) – Water
- Gold Award Projects (highest award earned in Girl Scouts) – Exotics and Invasives Removal for the Migratory Bird Garden at the River Center.
- Fish Like a Girl – This is a non-badge earning workshop for Girl Scouts sponsored by Florida Fish and Wildlife Conservation Commission (FWC) and Fish Florida. Girl Scouts does not currently have a “fishing” badge, but we knew that girls would enjoy learning to fish. This program always has a waitlist. We offer this program for Daisies – Juniors.

Many of these workshops would be enhanced by a more natural location like JILONA.

### Pollinator Garden

The Migratory Bird Garden was created behind the River Center in 2007 through a Girl Scout Gold Award project and a Jupiter High School Environmental and Field Studies Academy (JERFSA) Envirothon project. The Envirothon team for that year placed first in the state competition and third in the national competition and that was achieved, in part, by the project that they completed here at the River Center. They provided an excellent starting point for us to develop a “pollinator garden.”



Over the past 18 months, we have focused on creating habitats using native plants and our visitors now enjoy observing increased pollinators and native wildlife. We know this approach would yield fruit at JILONA. Here is how we have phased the work thus far:

- **Phase I** – only native plants were added to this area. They were colorful and hardy for full-sun and sandy soil. Dune sunflower, blanket flower, and beach verbenas, to name a few.
- **Phase II** – in partnership with Pratt Whitney, Florida Native Plant Society and Mounts Botanical Garden volunteers, we added this area to focus on rare, threatened and endangered plants and butterflies. Nearly all the plants in this area were a critical host plant for rare or threatened butterflies (caterpillars).
- **Phase III** – this section of the garden was installed by an Eagle Scout. It is located very near Phase II and was designed to provide nectar plants for all adult butterflies, but especially to support our rare butterflies.
- **Secret Garden** – we want to provide a natural play space for children. This area is still under construction and will be completed by a different Eagle Scout.

Now that habitats are growing, our educators are developing curriculum so that these habitats will be an effective, outdoor classroom. We are confident this approach would take root and be effective at JILONA, and it would be a great way to enhance the natural values of the property.

### Family Programs

The River Center offers a variety of family programs throughout the year. Our most popular is story time on Thursday mornings. We also host campfire events, early learner programs in our garden, craft days, public fish feedings and documentary nights. There are two fishing tournaments each year for families: Jr. Angler (5-week tournament) and the AustinBlu Land & Sea Fishing Tournament (1-day tournament).

#### Fishing Clinics (sponsored by FWC)

Several times each year, the River Center holds a fishing clinic geared for children 5-12. This workshop covers fish identification, measurements, regulations, and safety. The children get to practice their knot-tying, de-hooking and casting skills before heading down to the water to fish for about an hour. We hope this gives kids the skills and confidence they need as well as teaching adults how to take their kids fishing safely. We think fishing clinics might be another program that we could potentially offer at JILONA.



#### Science with Sam

This is a new and very popular program at the River Center. Each Wednesday afternoon after school, the River Center offers a science program for elementary aged children. The topic for each week is different as well as the activities. We do want to add an outdoor program at least once per month, possibly at alternate locations to introduce students to the habitats of the Loxahatchee River watershed. JILONA may be a good location for some of these programs.



#### Cleanups

A few times per year, in partnership with Keep Palm Beach County Beautiful, the River Center hosts cleanups at Coral Cove Park. We have also done kayak-based cleanups with volunteers

from organized groups such as Pratt Whitney. We would be able to host a variety of cleanups for the trails and waterfront areas at the JILONA.

### Summer Camp

The River Center runs a small camp (16 campers) each week of the summer (typically 8 out of 10 weeks of summer break). Each week is geared toward a different age group (1-3 grades, 4-5 grades, middle school, and high school) allowing us to provide a tailored experience based the camper's knowledge and abilities. Each day this camp travels to a different natural area or park in the Loxahatchee River watershed to engage in a variety of activities that promote exploration. Sites include: JILONA (north trail and snorkel/dip netting on the Loxahatchee River in the snorkel area and by the US 1 bridge), Fullerton Island, Pine Glades, DuBois Park, Coral Cove Park, Jonathan Dickinson State Park, MacArthur Beach State Park, Hobe Sound Nature Center, Jupiter Beach Park, Busch Wildlife Sanctuary, Jupiter Lighthouse, Blowing Rocks Nature Conservancy, and Cypress Creek South Natural Area. Activities include: snorkeling, seining, dip netting, fishing, hiking, kayaking, paddle boarding and boating for the older groups.



### School and Camp Groups



Each year, over 5,500 students and campers attend a field trip experience at the River Center. During their field trip (limit 50 per group), they receive a tour of our exhibits, a touch tank experience and hands-on STEM activity of their choosing. All the field trips offered during the school cover Florida State standards and are vetted by the Palm Beach County School District to be eligible for free bussing. The River Center does not charge a fee for any school group visiting during the school year. With free bussing available, the River Center's programs are easily available to all schools in north county.

### Volunteer Program

We have a robust volunteer program. One week of our summer camp is dedicated to a "Teen Community Service" Camp. Each day these teens travel to different natural locations and provide volunteer service. They do trail maintenance, cleanups and other activities. In addition, we have plenty of volunteers and volunteer groups that enjoy special projects and cleanups.



## Eligibility

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### Organization eligibility (Please check all that apply):

- ☐ Local Partner identified in the ONA’s designating Act;
- ☒ Other Federal, State or local government entity
- ☐ Organization established by State legislator
- ☐ Non-profit organization

### Organizations Mission Statement:

Loxahatchee River District Mission Statement:

*We are dedicated to protecting public health and preserving the Loxahatchee River watershed and its natural habitats through innovative wastewater solutions, research and **environmental stewardship**.*

River Center Mission Statement:

*To foster a sense of **environmental stewardship** of the Loxahatchee River’s diverse watershed with quality educational programs, exhibits and meaningful events.*

Loxahatchee River District Vision:

*Inspiring and achieving a healthy environment*

### Support and Enhancement of ONA Values:

#### Natural / Biological / Scenic Values

##### Landscaping

The River Center plans to include all native landscaping, including mature trees in our renovations. Our goal is to restore habitat and create both an exploration and learning space for people of all ages to better understand the importance of native landscaping and how it supports our native and migrating wildlife. Similar to the way that we structured our pollinator gardens here at the River Center, we would select plants that provide shelter, food, or are host plants for pollinators. Selected plants would be suitable for the dry, sandy and sunny conditions that are prevalent for scrub or tropical hammock habitats. We would strive to incorporate appropriate, rare or threatened plants, which will promote natural recruitment and showcase the beauty and importance of those plants. Education programs will be developed in conjunction with our native landscaping.

##### Cleanups

Unfortunately, trash and litter degrade the aesthetic and functional qualities of our native habitats and negatively impact native wildlife. We have a long, successful history of hosting a variety of cleanups (i.e., litter removal), and we look forward to improving natural, biological, and scenic values of the JILONA site through managed cleanup events. If appropriate, such cleanups would engage existing cleanup partners at Keep Palm Beach County Beautiful and other volunteer groups (e.g., Jupiter High Environmental Research Field Studies Academy) or engaged organizations (i.e.



Pratt Whitney). Quantifying the debris collected during these clean ups will add a new scientific and educational component.

### Special Projects

We manage a network of volunteers and volunteer groups that are interested in special projects, and we look forward to using this dedicated volunteer workforce to complete various needed tasks on the JILONA property (i.e. constructing and repairing benches, creating stations that encourage visitors to intentionally use all their senses to experience the natural and scenic values of the property). We look forward to contributing as part of BLM's Public Lands Day. Of course, all such work would be presented to BLM staff for review and approval before being implemented.

### **Education Values**

Many of our programs that were outlined in our past accomplishments section are well-suited for implementation on the JILONA location. Here are some specifics about each program that we would be able to provide:

#### BLM Curricula and Signage

To ease the load on BLM staff, if there is specific curricula that BLM would like to see implemented, the River Center is fully capable of completing that goal for BLM. We would also enjoy the opportunity to work with BLM on interpretive signage and provide input on topics, audiences, and function.

Nature Walks: During the cooler months (November – March), we would provide guided nature walks at both the north and south JILONA trails. These walks would focus on the different habitats located in the JILONA. The hiking trail elevations show the natural progression from scrub habitat through tropical hammock to the mangrove habitat. Nature walks could focus on just one of these habitats and the important wildlife that call it home or they could be an overview of each of the major habitats and the ecotones between them. We would like to offer special nature hikes for autistic students and/or their families, because we know first-hand that being in nature can soothe and inspire children with special needs.

Kayak Tours: During the warmer months (March – October), we could offer kayak trips that feature the tidal mangrove swamp on the north end of the JILONA location (near the overlook area) as well as the clear waters under the bridge and the JILONA shoreline. These waters are incredibly beautiful and are teeming with wildlife. We know such programs are a highly effective way for people to connect with nature, and that such connections improve environmental stewardship.

#### Homeschool Workshops and Field Trips

We anticipate continuing to host the “Day in the Life of the Indian River Lagoon” workshop that we have hosted in partnership with BLM for the past two years. “A Day in the Life of the Indian River Lagoon” is a regional, citizen-science day that occurs in October and is geared for school age children. We gather a variety of data from two different sites: 1) on the sandy beach on the Loxahatchee River proper and 2) along the shoreline at the end of the Indian River Lagoon near the bridge. Data includes biological, environmental, water quality, tides and currents and other tests. In addition to that program we would be able to offer additional program topics for homeschool students. Topics may include: lichens, gopher tortoise, hammocks, birds, insects, tracks and scat, tides and currents, erosion impacts, scrub habitat, reef fish, endangered plants and

water quality. Our homeschool program is always pioneering and piloting new programs that we sometimes adapt to mainstream education programs for field trips. This is a great way to discover what types of programs work best at a given location or for a given age group.

#### Girl Scout Programs

As detailed above in our past accomplishments, we believe that many of our Girl Scout workshops would be enhanced by a more natural location like JILONA. Specifically: Hiker, Trailblazer, Trees, Water, Sky, Flowers, Bugs and all the Outdoor Art badges. To earn each skill badge, the girls must complete five different criteria, one of which usually includes a “connect” component with something that they can do to help in their communities.

#### Fishing Clinics

Fishing clinics would be a great way to introduce children (and their adults) to the joys of fishing in beautiful locations such as the JILONA. During our workshops, children get to practice knot-tying, de-hooking and casting skills before heading down to the water to fish for about an hour. All workshops include discussions on regulations, fish identification, measurements, safety and responsible use of our natural resources. We hope this gives kids the skills and confidence they need as well as teaching adults how to take their kids fishing safely. We know fishing is a significant part of the rich culture of the JILONA property and Jupiter/Tequesta at large. We believe our fishing programs, if managed appropriately, would provide a unique opportunity to directly connect participants to nature (fish) and the historical culture identified in this area (e.g., native Americans harvesting and consuming oysters and fish, early lighthouse keepers harvesting and consuming fish, etc). These programs may offer invaluable opportunities to collaborate between on-site partners, and we look forward to exploring such synergistic partnerships.

#### Science with Sam

This is a new and very popular program at the River Center. Each Wednesday afternoon after school, the River Center offers a one-hour science program for elementary aged children. The topic for each week is different as well as the activities. We want to add an outdoor program possibly once per month at the JILONA. Topics have already included: clouds, reptiles, fungi, bird migration, fish morphology, orienteering, bugs and insects, the wonders of water, weather watching and shark senses. Tracks and scat, erosion, seasonal changes, pollution, flowers, and earth science are some of the upcoming topics.

#### Summer Camp

The River Center anticipates using this location as a base for our summer camp of 16 campers per week of the summer (typically 8 out of 10 weeks of summer break). Each week is geared toward a different age group (1-3 grades, 4-5 grades, middle school and high school) making it easier for us to provide a tailored experience based the camper’s abilities. Exploration of the JILONA would be part of the curriculum. It is an “adventure” camp and therefore travels to other locations within the Loxahatchee River watershed most days of the week. We anticipate that the camp would only stay onsite at the JILONA one or two days per week. On-site activities may generally include: snorkeling, seining, dip netting, fishing, hiking, kayaking, and paddle boarding.

#### School and Camp Groups

Assuming a large number of school children visit the lighthouse each year, we hope to offer supplemental, environmental programming that would complement (not overlap) existing lighthouse programming. By allowing visiting teachers an opportunity to select from supplemental

environmental programs, we hope to expand the educational reach for students that visit the site. Ideally, we hope to offer supplemental interactive experiences that fuel environmental education and improve environmental stewardship among school children visiting the site. Of course, we would work with BLM and other on-site partners to offer the most synergistic programs.

#### Educator Workshops and Professional Development

We would host Project WILD workshops including Aquatic WILD, Growing Up WILD, Flying WILD, and Schoolyard WILD. Workshops would be planned at least 1-2 times per year. BLM interns and employees as well as other partnering organizations would be welcome to participate in the training. If they are already certified, we would welcome them as co-facilitators. We could also host other educator trainings such as Project Learning Tree, Project WET and Florida Marine Science Educators Association (FMSEA) certifications. Through experience, we have found offering these educator workshops is a highly effective way to significantly increase the impact of our programs and educational content, because these educators take our programs and messaging and disseminate them to students that will not have an opportunity to visit us in person.

#### Everyday Science

We hope to expose people to everyday science in an interesting and engaging way. We propose to mount 1 or 2 underwater web cams (at the dock or at the point) as well as a salinity probe. The web cam could show the biodiversity of the underwater habitats at the JILONA and be a source of entertainment and wonder for people around the world. The salinity probe provides real scientific data and can be used to help people understand how the tides influence the salinity, water quality and water clarity at the site.

#### **Recreational**

Through our educational programs, we will encourage the responsible, recreational use of the JILONA sites and promote BLM events and volunteer opportunities. We can have literature available to hand out, links on our web page and cross promote on social media platforms.

#### **Scientific**

Each week staff from the WildPine Laboratory at the Loxahatchee River District samples the water at Cato's Bridge (Station 20) in a project testing for enterococci bacteria of recreational waterways (see <https://loxahatcheeriver.org/river/>, weekly bacteria); weekly in-situ field readings (temperature, pH, conductivity, salinity and dissolved oxygen) of surface waters are also recorded. Surface water samples are collected quarterly at the same location and water samples are analyzed at the lab for alkalinity, chlorophylls, color, enterococci, fecal coliform bacteria, total nitrogen, total phosphorus, ortho-phosphate, turbidity and total suspended solids (see <https://loxahatcheeriver.org/river/river-keeper/>). These data are freely available to BLM and the public through our websites. WildPine Lab also has an established seagrass monitoring program (<https://loxahatcheeriver.org/river/seagrass/>) and would be able to include a seagrass monitoring site at the swimming area on the south side of the JILONA. Further, the lab is interested in exploring ideas for research studies that may benefit the local BLM site and address BLM's core values. These may include: 1) erosion studies and beach profiling to monitor the erosion of the cliff face, 2) experimental studies and hydrodynamic monitoring to quantify sediment movement on/around the point, 3) monitoring the landscape for invasive plants (this could be accomplished by working with River Center staff and volunteers), 5) underwater fish surveys (lionfish tagging study) to evaluate shoreline type/structure as habitat (BLM property has distinct unique shoreline



habitats to study), 6) seagrass experiments including stress, productivity and predator exclusion cages. It may also be possible, to use some of the space at the proposed pavilion at Unit I as an area to set up some experiments with aquaria. Lab staff currently work in collaboration with Dr. Jessica Miles at Palm Beach State College on the Smithsonian Institute's Autonomous Reef Monitoring Structure (ARMS) program (<https://www.oceanarms.org/>) with 3 ARMS units deployed off the ONA shoreline. Collaboration and lab staff involvement in the program would significantly increase with River Center presence on the BLM property. If BLM would like further details, we can easily expand the design and elaborate on details.

### **Statement of Public Benefit:**

We are certain that our proposed environmental education programs will enhance and complement the natural and education goals and values of the BLM while introducing new people to the recreational and aesthetic value of the JILONA. Also, we believe the financial investment we will make in the site (e.g., connecting Units H and I to public utilities, improving parking, improving/restoring natural vegetation, conducting cleanups, etc) will result in specific, measurable public benefits as described throughout.

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### **Partnership**

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#### **Partnership, Coordination, and Engagement:**

The River Center relies on partnerships to make many of our programs possible. We bring a partnership mindset to the table, and we are excited to work synergistically with on-site partners. We aim to make sure that our programs align with the messages of our partner organization, meet their standards, and enhance their ability to reach a greater audience. We are currently running programs with 18 other organizations. We pride ourselves on our ability to work well with others because, in our experience, the whole is greater than the sum of its parts. We take this approach to developing our education and outreach programs and look forward to developing further partnerships.

We are confident that our programs will directly align with BLM's educational, natural, scientific, and recreational values and messaging. We are certain that we will be able to greatly increase the reach and quantity of programs occurring at the JILONA. We understand the constraints of a small BLM staff tasked with maintaining the site; there is little time left for education. Based on our proven track record, the River Center has the staff, support and abilities to fill that gap and provide programs that BLM would like to see at the site. With input from BLM staff and other on-site partners, we will create exceptional and engaging programs that promote scientific inquiry, environmental education, the importance and beauty of healthy natural habitats, and responsible recreation. We believe we are the right partner for this task.

We hope BLM views the Loxahatchee River District and our River Center staff as high-functioning educators, and we look forward to partnering with BLM and associated partners to further the ONA values at the JILONA site. We are certain of our ability to compliment the already successful programs at the Jupiter Inlet Lighthouse. They have fantastic historical programs and the River Center would be thrilled to provide natural history programs to compliment those programs. In addition, River Center staff would be willing to work with Lighthouse staff to effectively incorporate natural history and hands-on components into current programming if that would be beneficial. Our staff has vast experience working with groups in the field and has developed effective education techniques. Each year, we have new staff come aboard including up to 4 seasonal interns and externs (science teachers from Palm Beach County Schools). We provide environmental education program and field training, safety training for the field,

and group management skills. We would be willing to work with any of our partners and offer that same training to them if this would be desirable.

In an effort to benefit other partners, the Loxahatchee River District, with support from other partners, would contribute toward the restoration of the Coast Guard dock. Not only would it benefit our programs, but it likely would benefit other partners as well.

Finally, as we have been doing for years, we know we can do more together. We are open to developing programs and events in partnership with any of the stakeholders at the JILONA to bring awareness to value of the JILONA. We look forward to collaboration and are amenable to accommodate partnership inputs and inclusions.

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### Next Steps

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#### **Renovation Planning**

If given the opportunity to submit a full proposal, we have outlined here a timeline and expectations at each phase. If BLM requires a tighter time frame, we will comply.

##### **Phase I – 1-6 months**

- **Environmental Education Programming** – with BLM approval of curricula and resource use, many of the programs that we have outlined above could be accomplished immediately without the use of the unit. We would be excited to start running programs right away. Hikes, Fishing Clinics, Science with Sam and homeschool workshops would be programs that we would launch as soon as possible.
- **Design** – With access to the site our architects and engineers could begin planning and drawings for the site. Utility connections, permitting, building codes, and ADA accessibility (where appropriate) would all be included in those plans.
- **Board Approval** – The Governing Board of the Loxahatchee River District must approve the scope and resources necessary to complete the project prior to proposal submission.
- **Submission of the Proposal**

##### **Phase II (after negotiations and approval by BLM of the full proposal) – 6-12 months**

- **Environmental Education Programming** – the programming would continue as long as BLM permits.
- **Bid Process** – the Loxahatchee River District would put contracts out to bid for the proposed work. Some contracts will require approval by the District Governing Board.
- **Landscaping** – we would begin landscape enhancement immediately, following BLM's acceptance of the full proposal, with shade trees and native plants. We would add landscaping where it would not be affected by construction work.

##### **Phase III (after Bid Process is complete) – 12-18 months**

- **Environmental Education Programming** – the programming would continue as long as BLM permits.
- **Construction / Renovations** – contractors on site and working for 4-6 months to complete the renovations and add parking areas.
- **Landscaping** – final landscaping after construction is complete.

**Statement of Adequate Funding**

The Loxahatchee River District is an independent, multi-county special district of the state of Florida. We are managed by a publicly elected, five-member Governing Board. Our Governing Board has expressed support for pursuing this opportunity. Furthermore, the Loxahatchee River District is in a very strong financial position with a significant cash reserve on hand. Our funding is not subject to the uncertainties of fund raising. We provide an essential utility service to our community, so we are not going anywhere. And, public education is deemed a core component of our mission and services. There is no doubt we have the staying power and financial resources to accomplish the proposed work.