SCIENTIFIC RESEARCH AND COLLECTING PERMIT

Grants permission in accordance with the attached general and special conditions

United States Department of the Interior
National Park Service
Everglades

Study#: EVER-00319
Permit#: EVER-2023-SCI-0043
Start Date: Sep 19, 2023
Expiration Date: Sep 19, 2025
Coop Agreement#:
Optional Park Code: EVER-1109

Name of principal investigator:

Name: Dr Michael Heithaus **Phone:**(305) 919-5234 **Email:**heithaus@fiu.edu

Name of institution represented:
Florida International University

Additional investigators or key field assistants:

Name: Kirk Gastrich	**Phone:** 443.690.2766	**Email:** Kirk.Gastrich@fiu.edu
Name: Jeremy Kiszka	**Phone:** (305) 919-5234	**Email:** jeremy.kiszka@fiu.edu
Name: William Sample	**Phone:** 904.477.1358	**Email:** wsamp003@fiu.edu
Name: Jennifer Rehage	**Phone:** 954.873.2641	**Email:** rehagej@fiu.edu
Name: Mack White	**Phone:** 304.482.9142	**Email:** mwhite@fiu.edu
Name: Sophia Hemsi	**Phone:** 305.919.4263	**Email:** shems002@fiu.edu
Name: Rolando Santos Corujo	**Phone:** 787.462.8565	**Email:** rsantosc@fiu.edu
Name: James Sturges	**Phone:** 703.509.9960	**Email:** jstur015@fiu.edu

Study Title:
Consumer-mediated nutrient flow in the Florida coastal Everglades: developing a predictive framework

Purpose of study:
The coastal Everglades is one of the largest estuaries in the world, and provides critical habitat for many species of invertebrates, fishes, and birds. The nutrients that support the high productivity on which these species rely largely must move upstream from marine habitats (the Gulf of Mexico) rather than flow down from freshwater inputs. Therefore, an important question is how nutrients are transported into the high productivity ecotone both from the Gulf of Mexico and the Everglades marsh. This question is particularly relevant at this time as Everglades restoration efforts will change the timing and quantity of freshwater delivery to the system and it is important to be able to predict the possible effects of such changes on nutrient redistribution. One possible vector for nutrient flow is through highly mobile predators. For example, juvenile bull sharks inhabit nursery areas in low salinity waters, but our ongoing work suggests that at least some individuals make excursions into marine waters where foraging could occur. Similarly, snook and tarpon are large bodied predators that are usually found in higher salinities but may move into lower salinity waters. Other consumers, like Florida gar and bass, may aid downstream transport through their seasonal movements from the marsh into tidal creeks while American alligators could move over a tremendous range of habitats from coastal waters to freshwater marshes. We will continue, and expand, our studies of the role of large consumers (snook, juvenile bull sharks, bass, Florida gar, American alligators, catfishes, and tarpon) in trophic dynamics and nutrient flow within the Shark River Slough and Taylor Slough of Everglades National Park. We will use stable isotope, fatty acid analysis, pollution (i.e. CH3Hg), diet studies, and acoustic telemetry to determine whether these species are feeding from marine- or freshwater-derived resources and how their movements, and resulting nutrient transport, are shaped by freshwater flow and salinity regimes. This project will provide many unique data that will enhance our understanding of the role of large consumers in nutrient flow within the estuary and links between habitat use and foraging ecology. Also, we will be able to assess the factors that structure the spatial dynamics of top predator communities in the Everglades. Most importantly, our studies will allow us to develop predictive models of animal movement that will provide managers with probable outcomes of water management decisions on consumer-mediated nutrient flow and the spatial and temporal dynamics of top predator effects within the coastal Everglades.

Subject/Discipline:
Coastal / Marine Systems
Fish / Ichthyology
Mammals

Locations authorized:
Acoustic Montioring Stations, also known as transponders, can only be moved no more than 10 meters.
Once determined, new coordinates must be provided to the Research Permit Coordinator.

Existing locations:

Shark River South, 497739.6853, 2807306.156 | PDL4, 487919.1939, 2804627.317
Tarpon Bay West, 499318.9262, 2810820.882 | PDL5, 487868.6909, 2805650.732
Shark River North, 491293.9189, 2812700.032 | PDL6, 487790.1999, 2806617.268
Rookery Branch West, 504292.8283, 2811008.57 | PDL7, 486256.5402, 2807104.442
Rookery Branch Central, 509022.2069, 2813209.315 | PDL8, 485684.0271, 2810561.505
Rookery Branch East, 512187.3529, 2815334.864 | PDL9, 484871.5002, 2812175.747
Rookery Branch North, 507291.9149, 2813681.963 | SRS 3, 514749.1069, 2816801.614
Rookery Branch Upper, 505200.7221, 2814626.545 | 2013 MOD 1-1, 492368.4713, 2795960.088
RBS, 508166.9256, 2812356.414 | 2013 MOD 1-2, 494269.691, 2792115.62
TBE, 503312.5261, 2810078.428 | 2013 MOD 1-3, 506920.6493, 2788240.555
TBM1, 500021.7889, 2811425.292 | 2013 MOD 1-4, 503524.4129, 2793578.748
TBM2, 501205.3602, 2811575.454 | 2013 MOD 1-5, 503815.1402, 2798165.378
TBM3, 501066.5617, 2811142.346 | 2013 MOD 1-6, 499224.8839, 2798016.479
TBM4, 501357.4087, 2810720.042 | 2013 MOD 1-7, 488507.4789, 2801965.68
Base04, 498994.1391, 2808502.242 | 2013 MOD 1-8, 493188.3671, 2804645.58
Base03, 499077.9313, 2808071.602 | 2013 MOD 1-9, 491648.4238, 2803786.045
SRM, 497271.2292, 2808041.088 | 2013 MOD 2-1, 488732.22, 2812505.82
Base01, 495781.107, 2806260.804 | 2013 MOD 2-2, 489417.3, 2812563.48
Base02, 497065.8833, 2806872.269 | 2013 MOD 2-3, 493279, 2811683.07
PDL1, 486869.9194, 2802825.487 | 2013 MOD 2-4, 493511.53, 2811719.57
PDL2, 487966.4016, 2802722.034 | 2013 MOD 2-5, 494265.7, 2805988.28
PDL3, 488107.5694, 2803362.935 | 2013 MOD 2-6, 494779.13, 2806185.36

Existing YSI Stations:
YSI 1, 497037.3838, 2806887.655
YSI 2, 499200.4989, 2811161.706
YSI 3, 509320.786, 28136113.273

Transportation method to research site(s):

The permittee may access all sampling locations via motorboat.

Long-term storage of boats at park facilities is prohibited without prior authorization.

All investigators/technicians conducting monitoring activities by boat should be in clearly marked agency/university/institution boats.

The permittee must have appropriate navigational charts, be aware of the shallow areas, and exercise caution when navigating these waters.

In order not to disturb the submerged landscape (submerged landscape is designated wilderness), outboard gas powered motors aboard boats shall not be used in waters less than two feet deep. In these waters, only push pole, paddle, oar, or wind may be used to propel boats.

All boating mishaps, groundings, or accidents must be immediately reported to the appropriate District Ranger office.

Accessing the keys in Florida Bay is prohibited except for those that have designated camp sites.

Collection of the following specimens or materials, quantities, and any limitations on collecting:

See attached Park Specific Conditions.

The permittee may track the movements bull sharks and alligators that have already been equipped with acoustic transmitters using the previously deployed stationary acoustic monitoring stations identified in the location(s) section.

Acoustic monitoring stations are placed 1 km apart located just outside of the mangrove prop roots in order to avoid tangling and will not interfere with boating activities. Each receiver is anchored to the substrate using a concrete block and a small (5lb) danforth anchor. The monitor is in turn attached to the block and marked with a small sub-surface float. Acoustic monitoring stations must be removed at the conclusion of the study or when they are no longer in use. All sub-surface floats must be marked with the permittee's name, institution, and study number. Any additional monitoring equipment that is to be placed in the field must first be approved by the Wilderness Committee prior to implementation.

The permittee can conduct quantitative fishing to track the distribution of shark and catfish species. The permittee may use a 400 meter

long line fitted with 50 baited hooks. The permittee will retrieve the long line after one hour. Long lines must be tended at all times.

Additionally, the permittee can temporarily deploy 10 drum lines for up to 2 hours at a time in order to capture large sharks. Drum lines consist of a cement block anchor that is attached to 20 - 40m of line that runs to the surface by means of an attached, highly visible float. Secured to the bottom anchor by a swivel is 30m of heavy monofilament line which terminates with a baited shark hook. Drum lines must be tended at all times. Drum lines will be placed in four zones, and will be spaced 200-300 meters apart. The zones are identified as follows:

1. Coastal waters outside the Shark River to SRS 6
2. SRS 5 region
3. Tarpon Bay
4. Otter Creek/Rookery Branch

Each drum line must be marked with the permittee's study number and contact information in case any lines are lost. All drum lines must be removed from the park after each sampling trip. The permittee will measure, sex, tag, collect fin and muscle tissue (5 mm x 5 mm), and collect 5 ml of blood from collected sharks. Sharks will be released after collection activities.

The permittee may study shark and alligator diet by swabbing the cloaca of an animal and running a genetic test on the fecal swab. The test may be also used to reveal genetic fragments from consumed prey. The permittee will insert the tip of a sterile cotton swab into the cloaca roughly 2 cm. Then perform a quick swab to collect residue from feces and send the sample to a lab for analysis. To minimize stress on the animal, this sampling will not be collected on animals that are monitored using an attached acoustic transmitter.

The permittee can capture catfish (hardhead and gafttopsail) using hook and line gear. The permittee may retain no more than 25 catfish (caught as bycatch) per season (i.e. wet & dry, 25 total).

The permittee may capture alligators using standard hand-held snare methods during spotlighting. Chase time of individual alligators being captured should be limited to circa 25 minutes to avoid undue stress. The permittee can attach acoustic transmitters to each target species captured in Shark River.

Acoustic transmitters are to be attached to the tail scutes of the captured alligators via the combination of two methods: (1) surgical grade stainless steel wire (connected by drilling 4 small holes in the scutes) and (2) epoxy. Attachment of PTT/GPS/VHF tags on alligators will be done in conjunction with Frank Mazzotti (study # EVER-00093). Alligators may not be removed from the capture vicinity, and will be released at the site of capture once the acoustic transponders have been attached.

Name of repository for specimens or sample materials if applicable:

Repository type: Temporarily captured or handled (may include marking) and then released undamaged in place
Objects collected:
All elasmobranchs, teleosts, and marine reptiles collected will be temporarily handled and released after processing.

Repository type: Will be destroyed through analysis or discarded after analysis
Objects collected:
Collection of fin, muscle tissue (5 mm2), slime, cloacal swab and 5 ml of blood from 25 bull sharks each fishing quarter. Collection of stomach contents from 25 sharks in each season (wet and dry).

Collection of skin and scute (~1cm2), blood (~5ml), fat deposits (5mm2), cloacal swab, and muscle tissue (5mm2) samples from 25 alligators per season. Collection of stomach contents from 25 alligators in each season (wet & dry).

Collection of one leg from each blue crab captured (25 per season, 25 total).

Most, if not all, collections are presumed to be destroyed during analysis.

All specimens must be consumed/destroyed within 1 year after the expiration of this permit.

Should any specimens remain past this deadline or after laboratory analysis is complete, the permittee must contact SFCMC (see park specific conditions) for further instructions.

Repository type: Will be destroyed through analysis or discarded after analysis
Objects collected:
Collection of fin tissue (5 mm2) from 10 snook and 10 bass annually.

NPS General Conditions for Scientific Research and Collecting Permit (available at the RPRS HELP page) apply to this permit. The following specific conditions or restrictions, and any attached conditions, also apply to this permit:

Read all attachments provided with originally issued permit and adhere to any instructions, change in conditions, policy, or any approved modifications. Attachments may include guidance regarding detailed communication protocols with the park, remote site access method policies, and other information that may be considered additional Park Specific Conditions or required mitigations.

Email backcountry float plans for all field activities to EVER_CIS_CAD@nps.gov. Be sure all fields are filled out correctly. DO NOT send in plans more than 24h in advance. If your field/float plan is rejected by the system, email Everglades_Dispatch@NPS.Gov to request a new form. Forms must be downloaded and saved as a separate document for each trip.

If staying overnight in the Park, inform Dispatch on the last day before departing from the Park. The permittee must contact Dispatch by radio or phone to provide notification of prolonged field activities to avoid unnecessary deployment of search and rescue operations. Contact Dispatch for the most current radio operation protocols for the Park.

Authorized Personnel
The principal investigator identified on the permit is responsible for the actions of additional investigators or key field assistants. Persons identified in this permit are referred to as permittees and are authorized to work on the tasks described this permit. No part of this permit authorizes permittee use of Park facilities, transportation, or equipment, except where available for use by Park visitors.

The permittee must provide documentation of a current NPS Institutional Animal Care and Use Committee (IACUC) with proposed handling, collection, or monitoring of wildlife. See NPS website for application [https://www.nps.gov/orgs/1103/iacuc.htm]. Any inhumane taking will subject the permittee to the penalties of the Animal Welfare Act.

The permittee should avoid conducting their field activities in view of Park visitors. When this is unavoidable, the permittee should explain their study and field methods are permitted and that Dispatch is notified of their location and activities.

Preparation Before Entering and Leaving Park
This permit grants the permittee access to the park free of charge. The permittee is responsible for the arrangement of and all fees associated with transportation and camping, if required.

Regardless of whether the permit authorizes the collection of specimens, the permittee must request from the SFCMC Curator (Bonnie_Ciolino@nps.gov) a museum accession number for each project. The SFCMC will use the accession number to identify reports, specimens, and any other deliverables submitted by the principal investigator or other permittees associated with the permit.

If the permit authorizes collection of specimens for permanent retention in the park museum collection, the permittee must contact the South Florida Collections Management Center (SFCMC) to confirm specimen collection and approved preservation methods have begun. Prior arrangements for transfer of specimens, specimen loan, and communication protocols, such as confirmation of the proper catalog format, should be made directly with the SFCMC by contacting the Curator. See the NPS General Conditions for more information.

For permittees using equipment or installations (e.g., monitoring station, well, instrumentation, site marker, etc.), it is recommended that they contact the EVER Wilderness Coordinator before submitting their IAR to see if there is additional information needed to track their installations.

The principal investigator is required to ensure all boat operators under their permit have successfully taken the Boater Education Course before they operate a boat in Everglades National Park marine waters. In addition, their certificates must be provided to the Research Permit Coordinator. Information can be found on the website Park website [https://www.nps.gov/ever/planyourvisit/boater-education-program.htm].

Unauthorized parking of permittee vehicles is subject to towing at the owner's expense. To exit the vehicle safely and avoid obstructing traffic permittees must park completely off the road.

Identifying Vehicles, Vessels, Equipment, and Installations
All motorized vehicles, motorized boats, canoes, and kayaks must be marked with easily identifiable lettering of the name or logo of the permittee's affiliated agency, educational institution, or company. Unaffiliated researchers can use a sign on the dashboard with the words "RESEARCH VEHICLE".

All installations placed in the field must be clearly marked with the principal investigator's name, affiliation, and study number. The permittee must provide GPS coordinates to the Research Permit Coordinator and Wilderness Coordinator for each installation with 48

hours of placement. All installations must be removed after each sampling trip unless authorized a longer time frame described in their permit, which should not exceed within 30 days of the permit expiration, including unplanned hiatuses. A point of contact for any installation other than the principal investigator on the permit must be reported to the Wilderness Coordinator. The principal investigator will retain overall responsibility for installation construction, maintenance, and removal under the terms of their permit. Additional installations or modifications must be requested through the Research Permit Coordinator.

Wildlife Protection
Permittee must be aware of current wildlife reporting protocols. Review document "WILDLIFE REPORTING for EVER staff, interns, VIPs, contractors vSep2021" provided with research permit approval email or contact Research Permit Coordinator for most current version.

To reduce the potential for unintentional introduction of non-native organisms, all vessels and equipment must be free from visible dirt and debris (for example, mud and plant material) before being brought into the Park.

STONY CORAL TISSUSE LOSS DISEASE: Though Florida Bay does not support coral reefs, many researchers working in Florida Bay may use equipment or vessels in waters of the Florida Keys. Hence, they might unknowingly contribute to the potential spread of Stony Coral Tissue Loss Disease (SCTLD). For this reason, researchers are recommended to decontaminant field equipment before and after entering Park waters. For information about SCTLD please visit the Florida Department of Environmental Protection SCTLD Response webpage: [https://floridadep.gov/rcp/coral/content/stony-coral-tissue-loss-disease-response]

Rules of Research Conduct
Unless explicitly authorized in the permit specific conditions, no federal threatened or endangered (T&E) species may be collected under this permit. Accidental deaths, injury, or collection of T&E or any species not included in this permit must be reported in writing to the Research Coordinator within 48 hours after the event for investigation. Failure to do so may result in criminal prosecution, permit suspension or modification.

While near, on, or in water, disturbing submerged natural features (such as seagrass), historic artifacts or features, or violating any other regulations may result in criminal prosecution, permit suspension or modification. The permittee must comply with all posted signs, on land and in water, unless explicit authorization has been given to the contrary.

In the event of a natural disaster (i.e. hurricane, fire, flood, etc.) or vandalism, the permittee will receive guidance from the Research Permit Coordinator regarding instructions to protect, retrieve, repair, or replace installations.

Cultural and Historical Resource Guidelines
Even within an approved sampling area for natural resources, do not move, alter, or damage any cultural resources or other human made artifacts (including but not limited to, any primitive tool, building structure, ship components, pieces, or fragments). Locations and notes of cultural resources to be turned in at the end of the project to the cultural resource team and will not be included in any reports/publications.

According to the 2008 National Park Service Programmatic Agreement Section VI, if previously unidentified cultural resources are discovered during project implementation all work in that area must stop until approval from the Chief of Cultural Resources. Leave object(s) where and as found, take a photo of the object(s), and mark the location with a GPS coordinate or describe using easily identifiable stationary objects such as distance from nearby buoys (example "cannon or anchor south of lvl 2 site point 275"). Contact the Superintendent's office (ever_superintendent@nps.gov) as soon as internet connection is available or contact Dispatch with the information of the found object(s) observed and the best way to contact the permittee who found the object(s) and the principal investigator of the permit. Do not share the information about the found object(s) outside the above contacts or the Principle Investigator.

If items protected by the Native American Graves Protection and Repatriation Act (NAGPRA), such as Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony (cultural items), are discovered during project implementation all activity all work in that area must stop in the area of discovery. Leave object(s) where and as found, take a photo of the object(s), and mark the location with a GPS coordinate, and all permittees must leave the field site area immediately. Contact the Superintendent's office (ever_superintendent@nps.gov) as soon as internet connection is available or contact Dispatch. In addition, as soon as internet connection is available, contact the Southeast Regional Office Division of Cultural Resources (SERO_Cultural_Resources_Division@nps.gov). Provide each contact the information of the found object(s) observed and the best way to contact the permittee who found the object(s) and the principal investigator of the permit. Do not share the information about the found object(s) outside the above contacts or the Principal Investigator.

Additional conditions are provided in the NPS General Conditions attachment.

Annual Reporting Requirements
Permittees who intend to issue press releases or offer interviews with the media or other public forums on their work within the Park(s)

shall notify by email the Park(s) public information officer and permit coordinator of the topic/ intent at least 2 weeks in advance; this notification requirement expires 2 years after permit expiration. The Park also requests notification of the initial publication of research results in journal articles and other scientific outlets.

Annual Reports and associated documents (data, maps, etc) shall be uploaded no later than the last day in March, regardless of the permit start date, to the NPS Natural Resources Information Division (NPS-NRID) an Investigator's Annual Report (IAR) at https://irma.nps.gov/rprs. RPRS IAR unless prior arrangements are made with the Research Permit Coordinator for an alternative method.

The IAR should include a summary of the current study activity over the past year including an introduction, methods, results, discussion, and a conclusion. The IAR should include the final locations of sampling sites and installations (GPS coordinates) and provide the sample descriptions or species names and quantities of each collected. Upload and attach to the IAR all other deliverables and documentation generated as part of the permit activities (e.g., maps, photos, copies of field notes, electronic copy of data, etc.) as required by the permit. A copy of a comprehensive report with details (such as provided for a grant, contract, agreement) and copies of peer-reviewed journal articles related to study and authored by one or more permittees are encouraged be uploaded and attached to the IAR. A copy of the final report and accompanying data, maps, etc., must be uploaded to the RPRS using the appropriate service feature.

Summary of permitted field methods and activities:

We will use longlines and drumlines to monitor and sample sharks and pole-snares to monitor and sample alligators. Acoustic transmitters and stationary receivers will be used to track the movements of bull sharks, snook, bass and alligators. We will also use satellite transmitters and animal borne cameras (with data-logging technologies; acceleration, depth, temp, sal.) to track movements and behaviors of alligators and sharks. We will use stomach content analysis and fecal swabs to study the feeding patterns of alligators and bull sharks. We will also collect tissue samples from all individuals for pollution, methylation, and stable isotope analysis, and fatty acid analysis.

Recommended by park staff(name and title):

TONYA HOWINGTON Digitally signed by TONYA HOWINGTON Date: 2023.08.30 14:37:02 -04'00'

Reviewed by Collections Manager:

Yes X No ____

Approved by park official:

TYLAN DEAN Digitally signed by TYLAN DEAN Date: 2023.09.18 18:00:01 -04'00'

Date Approved:

Title:

Biological Sciences Branch Chief

I Agree To All Conditions And Restrictions Of this Permit As Specified

(Not valid unless signed and dated by the principal investigator)

Michael Heithaus — 09/19/2023

(Principal investigator's signature) (Date)

THIS PERMIT AND ATTACHED CONDITIONS AND RESTRICTIONS MUST BE CARRIED AT ALL TIMES WHILE CONDUCTING RESEARCH ACTIVITIES IN THE DESIGNATED PARK(S)

GENERAL CONDITIONS
For
SCIENTIFIC RESEARCH AND COLLECTING PERMIT

United States Department of the Interior
National Park Service

1. **Authority** - The permittee is granted privileges covered under this permit subject to the supervision of the superintendent or a designee, and shall comply with all applicable laws and regulations of the National Park System area and other federal and state laws. A National Park Service (NPS) representative may accompany the permittee in the field to ensure compliance with regulations.

2. **Responsibility** - The permittee is responsible for ensuring that all persons working on the project adhere to permit conditions and applicable NPS regulations.

3. **False information** - The permittee is prohibited from giving false information that is used to issue this permit. To do so will be considered a breach of conditions and be grounds for revocation of this permit and other applicable penalties.

4. **Assignment** - This permit may not be transferred or assigned. Additional investigators and field assistants are to be coordinated by the person(s) named in the permit and should carry a copy of the permit while they are working in the park. The principal investigator shall notify the park's Research and Collecting Permit Office when there are desired changes in the approved study protocols or methods, changes in the affiliation or status of the principal investigator, or modification of the name of any project member.

5. **Revocation** - This permit may be terminated for breach of any condition. The permittee may consult with the appropriate NPS Regional Science Advisor to clarify issues resulting in a revoked permit and the potential for reinstatement by the park superintendent or a designee.

6. **Collection of specimens (including materials)** - No specimens (including materials) may be collected unless authorized on the Scientific Research and Collecting permit.

The general conditions for specimen collections are:

- Collection of archeological materials without a valid Federal Archeology Permit is prohibited.

- Collection of federally listed threatened or endangered species without a valid U.S. Fish and Wildlife Service endangered species permit is prohibited.

- Collection methods shall not attract undue attention or cause unapproved damage, depletion, or disturbance to the environment and other park resources, such as historic sites.

- New specimens must be reported to the NPS annually or more frequently if required by the park issuing the permit.Minimum information for annual reporting includes specimen classification, number of specimens collected, location collected, specimen status(e.g., herbarium sheet, preserved in alcohol / formalin, tanned and mounted, dried and boxed, etc.), and current location.

- Collected specimens that are not consumed in analysis or discarded after scientific analysis remain federal property.The NPS reserves the right to designate the repositories of all specimens removed from the park and to approve or restrict reassignment of specimens from one repository to another. Because specimens are Federal property, they shall not be destroyed or discarded without prior NPS authorization.
- Each specimen (or groups of specimens labeled as a group) that is retained permanently must bear NPS labels and must be accessioned and cataloged in the NPS National Catalog.Unless exempted by additional park - specific stipulations, the permittee will complete the labels and catalog records and will provide accession information.It is the permittee's responsibility to contact the park for cataloging instructions and specimen labels as well as instructions on repository designation for the specimens.

- Collected specimens may be used for scientific or educational purposes only, and shall be dedicated to public benefit and be accessible to the public in accordance with NPS policies and procedures.

- Any specimens collected under this permit, any components of any specimens (including but not limited to natural organisms, enzymes or other bioactive molecules, genetic materials, or seeds), and research results derived from collected specimens are to be used for

scientific or educational purposes only, and may not be used for commercial or other revenue - generating purposes unless the permittee has entered into a Cooperative Research And Development Agreement(CRADA) or other approved benefit - sharing agreement with the NPS.The sale of collected research specimens or other unauthorized transfers to third parties is prohibited.Furthermore, if the permittee sells or otherwise transfers collected specimens, any components thereof, or any products or research results developed from such specimens or their components without a CRADA or other approved benefit-sharing agreement with NPS, permittee will pay the NPS a royalty rate of twenty percent(20 %) of gross revenue from such sales or other revenues. In addition to such royalty, the NPS may seek other damages to which the NPS may be entitled including but not limited to injunctive relief against the permittee.

7. **Reports** - - The permittee is required to submit an Investigator's Annual Report and copies of final reports, publications, and other materials resulting from the study. Instructions for how and when to submit an annual report will be provided by NPS staff.Park research coordinators will analyze study proposals to determine whether copies of field notes, databases, maps, photos, and / or other materials may also be requested.The permittee is responsible for the content of reports and data provided to the National Park Service

8. **Confidentiality** - - The permittee agrees to keep the specific location of sensitive park resources confidential. Sensitive resources include threatened species, endangered species, and rare species, archeological sites, caves, fossil sites, minerals, commercially valuable resources, and sacred ceremonial sites.

9. **Methods of travel** - Travel within the park is restricted to only those methods that are available to the general public unless otherwise specified in additional stipulations associated with this permit.

10. **Other permits** - The permittee must obtain all other required permit(s) to conduct the specified project.

11. **Insurance** - If liability insurance is required by the NPS for this project, then documentation must be provided that it has been obtained and is current in all respects before this permit is considered valid.

12. **Mechanized equipment** - No use of mechanized equipment in designated, proposed, or potential wilderness areas is allowed unless authorized by the superintendent or a designee in additional specific conditions associated with this permit.

13. **NPS participation** - The permittee should not anticipate assistance from the NPS unless specific arrangements are made and documented in either an additional stipulation attached to this permit or in other separate written agreements.

14. **Permanent markers and field equipment** - The permittee is required to remove all markers or equipment from the field after the completion of the study or prior to the expiration date of this permit. The superintendent or a designee may modify this requirement through additional park specific conditions that may be attached to this permit. Additional conditions regarding the positioning and identification of markers and field equipment may be issued by staff at individual parks.

15. **Access to park and restricted areas** - Approval for any activity is contingent on the park being open and staffed for required operations. No entry into restricted areas is allowed unless authorized in additional park specific stipulations attached to this permit.

16. **Notification** - The permittee is required to contact the park's Research and Collecting Permit Office (or other offices if indicated in the stipulations associated with this permit) prior to initiating any fieldwork authorized by this permit.Ideally this contact should occur at least one week prior to the initial visit to the park.

17. **Expiration date** - Permits expire on the date listed. Nothing in this permit shall be construed as granting any exclusive research privileges or automatic right to continue, extend, or renew this or any other line of research under new permit(s).

18. **Other stipulations** - This permit includes by reference all stipulations listed in the application materials or in additional attachments to this permit provided by the superintendent or a designee. Breach of any of the terms of this permit will be grounds for revocation of this permit and denial of future permits.

PARK SPECIFIC CONDITIONS

Water Vessel Use in EVER and DRTO

All water vessels:

Communicate with the Agreements or Contracting Representative on your project, if it is NPS funded. They should be able to provide you with details or contact for the required field protocols for your project.

All motorized vehicles (including those trailering water vessels), motorized boats, canoes, and kayaks must be marked with easily identifiable lettering of being used for research purposes. Examples are the name and/or logo of the permittee's affiliated agency, educational institution, or company. Unaffiliated researchers can use a sign with the words "RESEARCH VEHICLE".

Airboat:

Follow the instructions provided in your permit, if there are specific conditions.

Motorboat Operator Certification for Airboats (MOCCA) is required for NPS staff in the field. It is recommended that non-NPS airboat operators also have this certification.

Use the boating ramp closest to your field site. Privately owned, or non-NPS, airboats may only be launched/recovered at the designated public boat ramps at US 41 (next to Coopertown) and East Everglades (Near Chekika Day Use Area); or, at privately owned boat ramps adjacent to or within the boundaries of Everglades National Park, as long as they are not operated outside the designated airboat use area .

Motorboat:

Follow the instructions provided in your permit, if there are specific conditions.

Motorboat Operator Certification for Airboats (MOCCA) is required for NPS staff in the field. It is recommended that non-NPS airboat operators also have this certification.

Use the boating ramp closest to your field site.

All designated speed zones, and pole and troll zones must be adhered to.

Use the boating ramp closest to your field site. Power driven vessels (other than airboats) may only be launched or recovered at the designated boat ramps at Flamingo and West Lake for EVER. Contact the DRTO Site Manager, if you need information about dock rules within the Park boundaries.

For DRTO only (recommended for EVER):
STONY CORAL TISSUSE LOSS DISEASE: To mitigate the potential spread of Sony Coral Tissue Loss Disease (SCTLD) into the Park and potentially other parks or waters of the Florida Keys, researchers will be required to decontaminant field equipment before and after entering Park waters. For information about SCTLD please visit the Florida Department of Environmental Protection SCTLD Response webpage: [https://floridadep.gov/rcp/coral/content/stony-coral-tissue-loss-disease-response].

For EVER only:

Notify the Research Permit Coordinator that all boat drivers under the permit have taken the Everglades Boater Education Program before the boat drivers are actively driving a boat in the Park's marine waters. For more information goto: Boater Education Program - Everglades National Park (U.S. National Park Service) (nps.gov)

Permittees conducting motorboat operations in the park must ensure that boats have appropriate safety gear on board at all times (lifejackets, fire extinguishers, paddles, sounding devices, first aid kit, etc.) Boats must meet State, Federal, and U.S. Coast Guard standards. The permittee should also carry provisions (water, food, etc.) in case of an emergency that results in an extended stay in the field. Prior to mooring buoys being installed and for research purposes only, boats can only be anchored on sandy-bottomed substrates while working within the boundaries of ENP.

PARK SPECIFIC CONDITIONS

COMMUNICATION WITH EVER AND DRTO (including Dispatch, radio use, and permit modifications)

SOFL NPS Dispatch:

Email backcountry float plans for all field activities to EVER_CIS_CAD@nps.gov. Be sure all fields are filled out correctly. DO NOT send in plans more than 24h in advanced. If your field/float plan is rejected by the system, email Everglades_Dispatch@NPS.Gov to request a new form. Forms must be downloaded and saved as a separate document for each trip.

If staying overnight in the Park, inform Dispatch on the last day before departing from the Park. The permittee must contact Dispatch by radio or phone to provide notification of prolonged field activities to avoid unnecessary deployment of search and rescue operations. Contact Dispatch for the most current radio operation protocols for the Park.

Radio use in remote areas:

Park radio traffic should be kept to a minimum. If the permittee must use a park radio for communications with other members of his/her field party, the permittee must make sure that all radios are on the local park channel (channel 1).

When conducting field activities, within remote areas of EVER, the permittee must carry a radio, Personal Locator Beacon, satellite phone or cell-phone for emergency purposes. All emergencies should be immediately reported to the Dispatch. Permittees with access to park radios can contact the Dispatch on channel 2 for emergencies only. The Communications Center call sign is 784. Permittees should use "624 and their last name" for identifying themselves to the Communications Center (e.g. 784, 624 Smith).

Dispatch is available to review best practices for the use of communication radios in remote areas. If you need this information, contact Dispatch between 7am-12noon.

Communicate with the Agreements or Contracting Representative on your project, if it is NPS funded. They should be able to provide you with details associated with required field protocols for your project. It is very helpful if you announce what repeater you are calling 784 on. At any given time Dispatch is monitoring several repeaters, and unless dispatch responds on the repeater the you are calling us on, it is unlikely that you will hear dispatch respond.

- Permittees should use 'plain language' to describe their emergency and reference their location as it is described on their permit or provide GPS coordinates of their location, if possible.
- It is useful for permittees to announce which Park Repeater say “784 -624Smith ‘repeater name.’”
- See map of repeaters in EVER on next page.

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Permit Modifications:
If a modification of the original or approved modified permit is desired, send an email with the same detail of information that is requested for an application to the Research Permit Coordinator. Information should include, as applicable:

- Permit Number
- Principal Investigator
- Names and contact information (phone and email) of additional co-investigators or name of those to be removed
- Purpose of modification and how it will compliment, improve, or change the anticipated results of the currently approved permitted study
- Summary of the proposed modified field methods and activities
- New collection type (describe or name species, physical sample, visual data)
- Number of samples (per site, per trip, per permit total)
- Frequency of new sampling
- Proposed change in permit expiration, sampling dates, or due date for IAR or final report
- Proposed modification of study location and access method
- GPS coordinates of new sites or sites to be removed (also provide map, if possible)
- Site marking installations (PVC [diameter and length], flagging, detail of other) and when will be removed
- Proposed access method(s)
- Additional information that may help understand the purpose, activity, and timeline of the modification.

Annual requirements:

- The required Investigator Annual Report IAR is due by March each year regardless of permit expiration date. Upload to IAR to http://irma.RPRS.gov and upload to it an updated set of coordinates for your study (sampling sites and installation locations), a comprehensive report, maps, data, photographs, and any other relevant information to help us learn the status and recent results of your study.

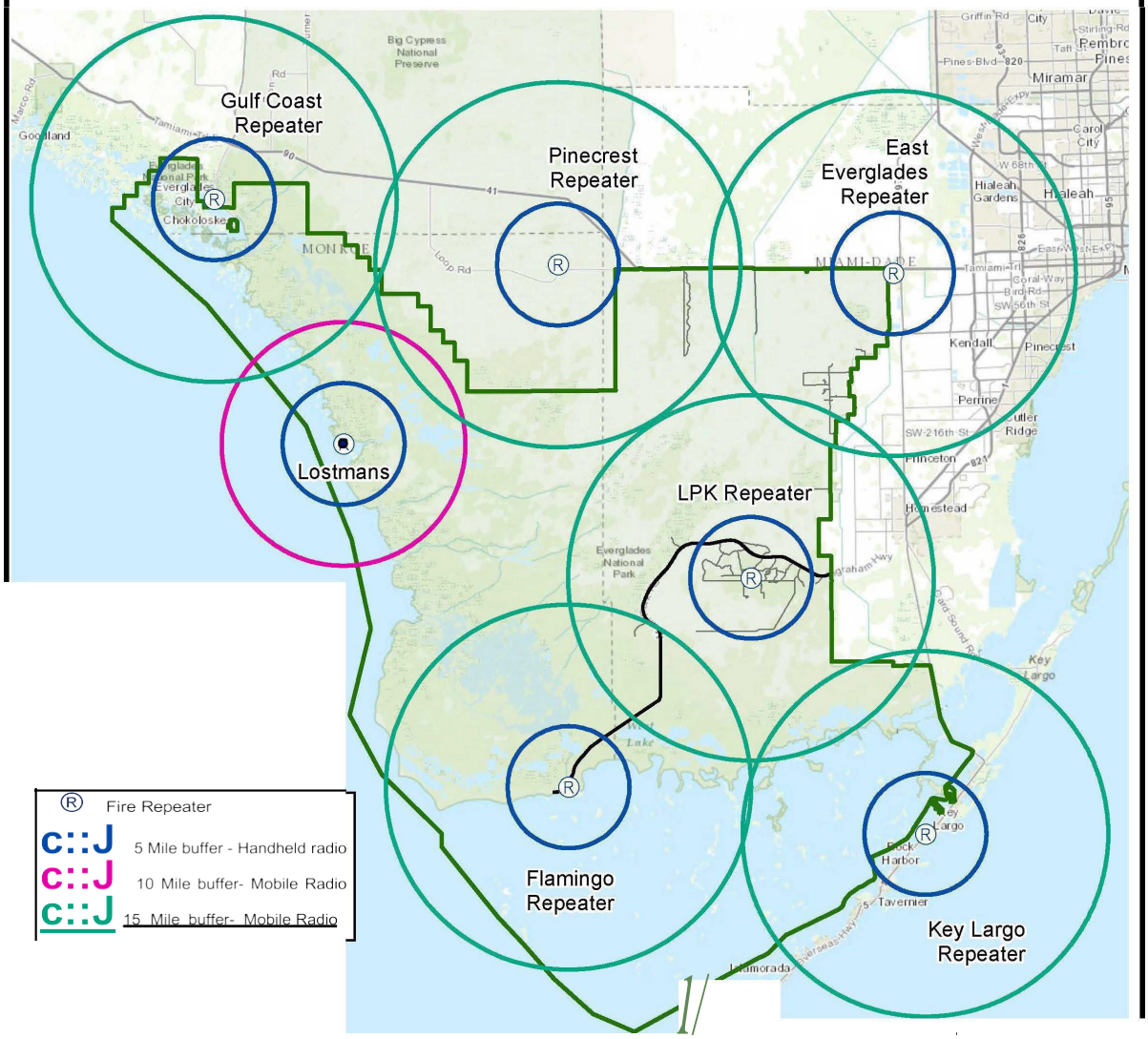
- Only if your field activities are conducted in designated wilderness fill out the attached MRA Report worksheet if your sampling sites are in designated wilderness and send it the Park's Wilderness Coordinator, (PJ_Walker@nps.gov) when you submit your IAR (annual report) before March of each year.

- Submit your permit renewal request three (3) months before the expiration date.

Everglades National Park
Florida

National Park Service
U.S. Department of the Interior

Everglades National Park Repeaters



Name	Channel	RxFrequeny	Rx_Tone	Tx Frequeny	Tx_Tone
LPK Repeater	2	172.525	$555	171.625	$555
Gulf Coast Repeater	6	172.5250	$555	171.625	$61F
East Everglades Repeater	7	172.525	$555	171.625	$656
Flamingo Repeater	3	172.525	$555	171.625	$4F9
Pinecrest Repeater	5	172.525	$555	171.625	$4F9
Key Largo Repeater	4	172.525	$555	171.625	$4A4
Lostmans		172.525	$555	171.625	$6CA