OMB No. 0648-0084; Expires 12/31/2026

National Marine Fisheries Service

Endangered Species Scientific Research and Enhancement Permit Application

TABLE OF CONTENTS

Introduction

This application is for requesting an **Endangered Species Act (ESA) scientific research or enhancement permit** to take[1], import, or export National Marine Fisheries Service (NMFS) protected species, including:

- Smalltooth sawfish
- Sea turtles (in-water)
- Sturgeon (Atlantic and shortnose)

Please see our webpage on programmatic permitting to determine if your methods qualify and when to submit your application on the appropriate cycle.

Need help or have questions?

Visit our ESA scientific research permit web page, see Additional Information on page 29, or contact us at nmfs.pr1.apps@noaa.gov.

When filling out your application:

- Your application must be a stand-alone document, readable to a layperson.
- If you do not follow these instructions, your application will be returned.
- We will not consider your application if you have overdue reports.
- You will need to enter this information in our online permit system, APPS https://apps.nmfs.noaa.gov/.

Entering your application in APPS

- **Save your application every 20 minutes or you will lose information!**
- An * indicates a required field.
- Consider using these instructions as a template to draft your application in Word. Then cut and paste into APPS.
- Special characters may be either lost or migrated incorrectly.
- Refer to Chapter 2 for how to navigate APPS.
- Your application will remain in draft mode until you submit.
- Attachments cannot be larger than 20MB – contact us if you need to attach larger files.

[1] A take under the ESA means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to do any of the preceding.

Application Instructions

Project Information

File Number: This number is generated by APPS and cannot be changed. To facilitate processing, reference this File No. in correspondence with our office.

***Project Title** (up to 255 characters): Provide a concise title that includes activities, species (or taxa if multiple species), location, and purpose. For example:

- *Vessel surveys, sampling, and tagging sea turtles in the Gulf of Mexico to characterize population structure, forging ecology, and movement patterns.*

***Project Status**: The project status (New or Renewal) is automatically selected based on your answers in the APPS pre-application guide (PAG). Do not change this.

Previous Federal or State Permit #: If applicable, enter your most recent and closely related NMFS permit number. Otherwise leave blank.

***Permits Requested:** One or more permits will be listed based on your answers in the APPS PAG. If the options are incorrect, please contact us at nmfs.pr1.apps@noaa.gov.

***Where Will the Activities Occur?** One or more general locations will be listed based on your answers in the APPS pre-application guide.

***Research Timeframe:** Enter the desired start and end dates of the entire project in the following format: MM/DD/YYYY. Refer to Additional Information on page 29 for details about when to apply and consult our programmatic permitting web page. The start date must be after the date you submit the application and should consider how long it may take to process your request, at least 6 months. Permits may be requested for up to 10 years.

***Sampling Season/Project Duration** (up to 1,000 characters): Describe in which months or seasons you will work. If year-round, indicated when activities are most likely to occur. How frequently will you conduct your activities?

***Abstract** (up to 2,000 characters): provide a short summary that must include:

- Purpose of the research or enhancement.
- Species that may be taken, imported, or exported (common names).
- Take activities (e.g., capture, sampling, tagging), import, or export

- Where your activities will occur and where animals or samples will be imported or to where they will be exported.

Project Description

*Project Purpose: Hypothesis/Objectives and Justification (up to 64,000 characters)

We recommend you provide the information in this order:

1. Discuss the **need for the research** and your **research objectives or hypotheses**.
2. Explain how your proposed research would further a *bona fide* and necessary or desirable purpose, taking into account the anticipated benefits for the target species.
3. Briefly summarize **published findings** related to your research.
    - If you previously held or worked under a permit, use literature citations from that work to discuss how you previously met your objectives; and
    - Use other published literature on the subject.
4. Describe how this study is different from, builds upon, or duplicates past research.
5. If proposing **novel procedures**, include a discussion on results from pilot studies or studies on other species, if available.
6. Discuss why your project **must involve ESA-listed species** (e.g., explain why similar results could not be obtained by using an alternative non-endangered or captive surrogate).
7. Discuss how your project will contribute to the objectives identified in the species' recovery or conservation plan or otherwise respond to recommendations of a scientific body charged with management of the species.
8. If your goals are to **directly enhance the survival or propagation** of an ESA-listed species, explain how your project will achieve these goals.
9. **Take Number Rationale**: Explain how you determined your sample size or take numbers and why they are needed to meet the objectives. Discuss serious injury and mortality in the Mortalities section below.

- For example, did you base your numbers on previously reported encounter rates or abundance estimates for your study area and the number of surveys to be conducted?
- If appropriate for your study, include a power analysis or other sample size estimation to show whether the sample size is sufficient to provide statistically significant or otherwise robust results.
- Your take numbers should be realistic based on your future research plans as well as your previous experience. We will examine reported take numbers from your annual reports and compare those to the take numbers you are requesting in your new application.
- Discuss whether the **same individual animals may be taken more than once** a year.
    - If individual animals **can be identified in real time**, indicate the number of times known individuals may be intentionally taken in a year (e.g., recapture for instrument retrieval, multiple biopsy samples per year, repeat surveys in the same area for identifiable individuals). Explain why multiple takes of the same individual are needed to meet your objectives.

*Project Description (up to 64,000 characters)

Please see our webpage on programmatic permitting to determine if your methods may fall under an existing programmatic ESA Section 7 biological opinion with expedited processing. If you wish to have your work covered by a programmatic opinion, please ensure your described methods fit within its scope. Please contact us if you have questions.

Overview

Provide a **brief overview of a typical day** in the field or laboratory facility and the suite of activities you intend to perform on each animal during an encounter or capture event. Discuss the order in which you'll perform the different methods. Include where your work will happen, especially if different projects occur in different locations.

Methods

Describe your methods following the guidance below. Your narrative description must match your APPS take table (see Take Table section below).

When describing your methods, keep in mind:

- Table 1 (see pages 8-14) lists specific details you must provide for commonly used methods.
- If you have **multiple projects**, it is helpful to name them by project number or title and include project names in the Details column of the Take Table.
- It is also helpful to reference take table lines in the narrative that correspond to the take actions and procedures.
- **Sea turtle aerial and vessel surveys:** Only request take for observations or monitoring surveys with no intent to contact or capture animals if:
    - The encounter will last more than 5 minutes, **and**
    - For in-water work, you will approach animals within 50 yards.

  Contact us if you need help determining if your survey requires a permit.
- **Mitigation measures** that are inherent to your methods may be included in this section or in the Effects and Mitigation section below.
- **Figures and photographs** that illustrate your methods. You can attach them on the Project Supplemental Information page.
- **Cite references** for the methods where applicable, but do not substitute a literature citation for a complete description of the methods. You can attach a Literature Cited on the Project Supplemental Information page. References must be made available upon request.

You must provide the following information in the narrative description of the methods (i.e., the take actions, observe/collect methods, and procedures in the APPS take table):

- **Clear descriptions of all methods** (i.e., each take action, observe/collect method, and procedure in your APPS Take table). See Table 1 below for guidance on what details to include.
- A brief statement of **how each procedure or suite of procedures relate to meeting your objectives**.
- Identify the **size and life stages** of animals for which you are requesting take.

  - **For sea turtles**, indicate the minimum size in straight carapace length of the animals you expect to capture and for each procedure you are requesting.
  - **For sturgeon and sawfish,** use the size classes in the sidebar. Within each life stage, define your target size range.

- A list of the **suite of procedures** that will be performed on a subset of animals. Explain how you will decide which animals will receive which procedures. Is this based on sex, life stage, body size, body condition, health or appearance, needed sample size, etc.?
- If you will intentionally target compromised animals, explain the criteria you would use and describe the conditions of the animals.
- If animals will be **captured under another legal source** (e.g., bycaught in commercial federal fishery) prior to research or enhancement, cite the specific legal authority by name, title, or permit number for the capture of these animals. Clarify which activities you are requesting to perform after the capture and how they will occur in relation to the other legal action. Example citations: "ESA Section 7 biological opinion for the Gulf of Mexico and South Atlantic spiny lobster fishery (NMFS 2009)" or "ESA Section 10 Permit No. XXXXX".

  Note: You must demonstrate that the annual Expected Take numbers requested for your activities do not exceed the number authorized for the original capture authority, such as the cited biological opinion's incidental take statement.
- **Opportunistic research**: If there are species in the same taxa that are not your main research focus, but that you would study if opportunistically captured, include a discussion

Fish Life Stages

Atlantic sturgeon

- ELS (early life stages; eggs to larvae (<60mm Total Length [TL])
- Juveniles (< 1000 mm Fork Length [FL])
- Sub-adults (1000-1300 mm FL)
- Adults (> 1300 mm FL)

Shortnose sturgeon

- ELS (early life stages; eggs to larvae (<60mm TL)
- Juveniles (< 450 mm FL)
- Sub-adults (450-600 mm FL)
- Adults (> 600 mm FL)

Smalltooth sawfish

- Neonate/Juvenile (< 2,200 mm total length)
- Sub-adult/Adult (≥ 2,200 mm total length)

of them in this section. Describe how the research would fit within your objectives and which methods you would use to study these species. Include rows for these species in your take table.

- Discuss whether animals of the same species (i.e., conspecifics) may be taken (e.g., harassed, captured) during your work. Note that you should discuss other non-target sea turtles and ESA-listed fish in the Non-target ESA-listed Sea Turtle and Fish Species section. You should address non-target taxa (e.g., marine mammals) in the Effects and Mitigation section.

- **Data analysis**: Provide a brief description of how data and/or samples will be analyzed.

Table 1. Guidance on Describing Commonly Used Methods

When describing your methods, include the following information, as applicable:

Take action/ procedures	Method Description Guidance
Active acoustics (all)	Sound source (e.g., echosounder, underwater speaker, acoustic deterrent device) Beam width Water depth, or depth range if applicable Frequency (bandwidth) Maximum source level (specify metric SEL_{cum} or SPL RMS) Maximum received level Distance of source to target and non-target animals (including marine mammals) Signal duration and duty cycle Number of exposures/trials in a day and whether you will target the same animal(s) more than once Duration of each sound exposure and maximum total duration of sound emission per 24-hr period How many sound source types might be used within a 24-h period Ambient sound level, when known Post playback monitoring (monitoring distance and duration)
Active acoustics (for behavioral response studies)	Please include all of the details above in the Active Acoustics section. If working with a variety of sound sources, be sure to include these details for a "typical" playback scenario as well as a worst-case scenario (e.g. source level, received level, duty cycle, frequency, maximum exposure duration, etc.). Make sure to consider all functional hearing groups, including target and non-target exposures. We strongly recommend consulting the NMFS 2018 User Spreadsheet and accompanying instructions for impacts to marine mammals. Be sure to specify if your source is impulsive (direct from source) or non-impulsive (playback via speaker).

Take action/ procedures	Method Description Guidance
Administer drugs or other substances (e.g., stable isotopes, bone marking, anesthesia)	Name of each drug/chemical and its purpose, including for reversal/recovery For captive fish: Euthanasia drugs and protocols Dosage of each drug/chemical Delivery method and route (e.g., intramuscular, intravenous, subcutaneous, topical, immersion) Location of administration on body Duration of each drug Post drug administration monitoring Optional: you may include a drug table with the information requested above
Aerial and vessel surveys (manned) For encounters 5 minutes or longer (see p. 7 for details)	Number of surveys per year Type and size of survey aircraft and/or vessel Number of aircraft and/or vessels to be operated at the same time Type of survey (e.g., line transect, photogrammetry) Minimum altitude/approach distance Air/vessel speed Protocols for breaking track to ID and/or capture species Duration spent with group or individual per day
Aerial surveys using unmanned aircraft systems (UAS)	Number of surveys per year Type and size of UAS and/or vessel Number of aircraft and/or vessels to be operated at the same time during an encounter Type of survey (e.g., line transect, photogrammetry) Minimum altitude Air speed Protocols for breaking track to ID species Duration spent with group or individual per day Type of UAS – fixed wing or vertical takeoff and landing (VTOL) Payload components – what is the UAS carrying and for what purpose (e.g., camera, sensor)? Ground control station description (what it is, where it will be located-on shore or on vessel, number of stations, and how close the station will be to animals) Do you have the appropriate FAA permits/authorizations (including pilot licenses)?
Auditory brainstem response or evoked potential	Type of sounds emitted (e.g., pips, clicks, tones) Maximum source level Whether animal will be transported to a facility (complete the Transport Section in Take Table) Distance and position of speaker relative to animal to target animal Signal duration, duty cycle, and frequency of sound emitted Total duration of sound emission (including total exposure duration within a 24-h period) Handling/restraint methods (including anesthesia/sedation, see above) Type of measurement equipment (suction cup or needle electrodes and location on animal) Handling duration

Take action/ procedures	Method Description Guidance
Captive experiments	In addition to describing the procedures of the experiment on the animals, describe their care and maintenance, including a complete description of the facilities where they will be maintained. This includes but is not limited to: • Dimensions of the pools or other holding facilities • Number, sex, and age of animals by species to be held in each tank/enclosure • Water supply, amount, quality, power supply, and backup redundancy • Diet, amount and type • Sanitation & quarantine practices Indicate the final disposition of animals after completion of experiments (e.g., for sturgeon: continued maintenance, euthanasia or transfer to another permitted facility, if appropriate). For fish species: Provide justification if a captive breeding program will be established in accordance with the species conservation plan or recovery plan. If requested by NMFS, indicate if you are willing to participate in a captive breeding program. If not, describe how you will prevent breeding.
Capture and restraint	Type of capture (e.g., hand, gill net [drift or anchored], trawl, seine) and gear description (e.g., net dimensions and mesh size) Deployment methods (e.g., boat type, net set, tow or soak times) Configuration, duration, and monitoring of net sets (how often net set is checked) Number and roles of personnel Numbers of animals captured at a time Number of animals processed at a time Dimensions and type of holding container/manner of restraint Anesthesia/sedation (see Administer Drugs above) Manner of release Duration of restraint/holding from capture to release If **recapturing** animals, indicate under what circumstances they will be immediately released without processing or fully or partially processed (i.e., what will be done to them on recapture). For sea turtles: Identify an on-call veterinarian and nearby permitted rehabilitation facility available for emergencies

Take action/ procedures	Method Description Guidance
Export/ import/ receive samples	Type of activities: • Export samples collected under the requested permit or received from other legal sources • Re-import exported samples • Import samples from foreign countries • Receive samples from other U.S. legal sources Sample type (e.g., skin/blubber, blood, muscle, DNA) U.S. or foreign sources of samples: • Authorized persons or collections, including your own research; • Animals in captivity (samples from routine husbandry procedures or under separate authorization); • Animals in foreign countries stranded alive or dead or that died during rehabilitation; • Animals killed during legal subsistence harvests; or • Animals killed incidental to legal commercial fishing operations How the sample or animal was originally taken The legal authority for the original take for imported/received samples Sample preservation, storage/shipping/analysis What country are samples being exported to? Where are samples being imported or received from: high seas, name and affiliation, or country Designated port of entry/import or export See also Disposition of Tissue Samples below

Take action/ procedures	Method Description Guidance
External instruments (e.g., instruments attached with epoxy, suction-cup, wire, etc.; a table is helpful for multiple tag types)	Type of instrument Type of data collection (e.g., archival requiring retrieval) Instrument dimensions: • Mass in air or water • For turtles: tag frontal area and shape per Jones et al. (2013)[2] • For fish: Percentage of body mass Minimum size of animal to receive each instrument type Maximum footprint/maximum number of tags per animal Criteria for determining tag types and number of tags on an animal (e.g., body condition, life stage) Whether tags will be coated with antifouling paint Attachment method (e.g., remote suction cup by pole; restraint and adhesives; monofilament line) Disinfection/sterile preparation for carapace drilling site and gear For remote deployment or detachment: • number of attempts per animal per day, • minimum approach distance and angle, • include total number of attempts needed for all work if requesting multiple procedures (e.g., tag and skin sample) on same animal during same encounter Pain management if required (see Administration of Drugs) Location on body Duration of procedure, including curing time Duration of instrument retention Release mechanism or recapture to remove Post-tag monitoring

[2] Todd Jones, T., Van Houtan, K. S., Bostrom, B. L., Ostafichuk, P., Mikkelsen, J., Tezcan, E., Carey, M., Imlach, B., Seminoff, J. A. and Rands, S. (2013), Calculating the ecological impacts of animal-borne instruments on aquatic organisms. Methods Ecol Evol, 4: 1178-1186. doi:10.1111/2041-210X.12109

Take action/ procedures	Method Description Guidance
Internal instruments (e.g., stomach temperature pills, telemetry tags)	Type of instrument Instrument dimensions Mass in air Percentage of body mass for all tags combined Criteria for determining tag types and number of tags per animal (e.g., body condition, life stage) Minimum size of animal to receive an internal instrument Use of local anesthetic or anesthesia/sedation (see Administer drugs) Cleaning/sterile preparation Insertion method (describe e.g., surgical implant, injection, stomach tube) and any applied coating on the tag Location within body Duration of procedure Duration of instrument retention How instruments are voided Type of data collection (e.g., archival requiring retrieval) Post-tag monitoring For sea turtles: include a veterinary-approved protocol for stomach pills
Intrusive sampling (e.g., blood, digital fecal extraction, laparoscopy, lavage, muscle, scute, skin, swabs); remote or under restraint	Type of tissues Equipment (e.g., needle, punch, scalpel) Size or volume of sample (diameter and depth or total volume) Equipment sterilization or disinfection Location on body If restrained: cleansing/disinfection of site; left open or wound closure If remote: • collection method (e.g., pole sampling), • minimum approach distance • number of attempts per animal per day (i.e., success rate) Minimum size of animal to receive each procedure Pain management or sedation (drugs and dosages as above) Whether animal will be transported to a facility for temporary holding (see Transport information in Take Table below) Number of samples per animal per capture event and per year Sampling intervals (e.g., for serial blood samples)Sample preservation and storage For sea turtles: include a veterinary-approved protocol for laparoscopy, tumor removal surgery

Take action/ procedures	Method Description Guidance
Marking (e.g., bone mark (OTC, fluorescent), flipper tag, Floy/dart tags, paint, PIT tag, shell etching)	Type of mark Dimensions of tag or mark Total number and combination of tags or marks on each animal Location on body Method of application Cleaning and disinfection procedures Duration of mark Whether mark would be reapplied, if lost Size of animals to receive tags including minimum size For turtles: -Veterinary-approved protocol for PIT tagging turtles <16 cm SCL -Type of paint (non-toxic only)
Non-intrusive sampling (e.g., photography; diagnostic imaging; collecting voided feces, urine, fish eggs or milt; skin swabs)	Minimum approach distance for remote data collection (PIT tag scanning, underwater photography) Sampling method (e.g., X-ray; topical swab) Frequency of encounter?/sampling per day Duration of encounter/sampling per day Data or sample collection Whether animal will be transported to a facility for temporary holding (see Transport information in Take Table section)
Remotely Operated Vehicles (ROVs)	Same details as for vessel surveys and also: Description and size of ROV Whether it is tethered or wireless, tether material and length Deployment method, in relation to capture and release of animal, if applicable Describe any light sources Whether there will be a live video feed monitored Encounter duration

Non-target ESA-listed Sea Turtle and Fish Species

Discuss whether and how non-target ESA-listed sea turtles or fish species may be unintentionally captured or otherwise affected. These are species that co-occur with your target species and that could be harassed or taken during your work, but that you will not opportunistically incorporate into your study.

Include these non-target species on separate rows in the Take Table if you expect take (e.g., unintentional harassment or capture). For ESA species designated by Distinct Population Segment, specify the DPSs.

Other non-target taxa (e.g., marine mammals, ESA-listed corals) should be addressed in the Effects and Mitigation section below.

Project Supplemental Information

Attach a Supplemental Information File

You can attach up to 10 files in APPS to provide additional information.

- Preferred file formats: Microsoft Word, Excel, or PDF.
- The maximum file size allowed is 20 MB.
- Audio and video files (such as mp3, m4b, wav) cannot be uploaded. Contact us if you need assistance.
- On the Location screen you will be asked to attach a map.

Status of the Affected Species (up to 2,000 characters)

If choosing "range-wide" in the Stock/Listing Unit column in a row of the take table, indicate the specific DPSs you are targeting, their status under the ESA, and location. Otherwise, put N/A and choose the specific stock or DPS in the take table.

*Mortalities (up to 5,000 characters)

If authorization for mortality[3] (euthanasia/intentional[4] or accidental/unintentional) is proposed:

- **What take actions, observe/collect methods, or procedures** could result in mortality?
    - Explain how these activities or procedures may result in mortality (e.g., drowning).
    - Explain **why it's not feasible to use other methods** that won't result in mortality.
- Briefly summarize mortalities that have occurred **during the previous five years** of your permitted activities using the same or similar techniques.
    - What were the circumstances that led to death or euthanasia?
    - What was the cause of death?
    - What steps will you take to reduce the potential for additional mortalities?

[3] Caused by the presence or actions of researchers including but not limited to deaths or serious injuries sustained during capture and handling, including predation or while attempting to avoid researchers or escape capture, or resulting from infections related to invasive procedures such as sampling or tagging.

[4] This includes euthanasia for humane reasons (e.g., if working with compromised/comatose animals).

- What is the **maximum number of animals** of each species/DPS that could be seriously injured, unintentionally die, or be euthanized annually and over the life of the permit? For example, two serious injury/mortalities per year, not to exceed four over the life of the permit.
- **Justify the number** of mortalities requested. Explain how the requested number of mortalities is **reasonably likely to occur**.
- **Euthanasia of captive fish:**
    - Under what circumstances is euthanasia conducted (e.g., directed research, final disposition)?
    - How is it decided, conducted (including use of drugs), and who conducts it?
- **Euthanasia may not be requested for sea turtles.** Euthanasia falls under the authority of the Sea Turtle Stranding and Salvage Network.
- What are the protocols for **necropsy and carcass disposal**? If necropsy cannot occur, explain why.

***Effects and Mitigation** (up to 64,000 characters)

Discuss how Take Table actions (Take Actions, Observe/Collect Method (e.g., capture), and Procedures) **will affect individual target and non-target animals**. You should discuss the effects of mortalities in the Mortalities section above.

Cite the **best available science** (i.e., peer-reviewed literature or other published data sources) and your experience (e.g., personal communication, annual permit reports). References must be made available upon request.

Group together take actions with similar responses and describe, as applicable:

- Typical behavioral and physiological responses
- Worst-case responses
- % of animals that typically exhibit each response type
- Average/estimated recovery time
- Wound healing time (e.g., from invasive sampling or tagging)
- Condition of animals on recapture/resight
- Recovery from sedation and/or handling
- Post-release behavior (immediate and long-term)

  - Time it takes to resume normal behavior after harassment
  - Tag retention and tag breakage
  - Anticipated drag costs for sea turtle transmitters and attachments
  - Effects on sensitive life stages (e.g., spawning adults)
  - Effects to nesting female sea turtles if working during the nesting period
  - Habitat use for animals in resident populations (based on telemetry data, re-sightings, recaptures)

- **Bycaught non-target species:** will they be released alive? Or is a certain percentage expected to be unintentionally harmed or killed?

- For **novel procedures**, discuss the most likely anticipated responses based on literature from studies on other species, if available, and any results from testing, if applicable.

- Discuss the anticipated **effects on the species or DPS**, especially if mortalities or reproductive effects are possible. On what is your determination based?

You may **include mitigation and monitoring protocols here or in the Methods** section above. Do not restate those here if they are included above; simply reference the section where the following information appears.

- For **invasive procedures**, including biological sampling and instrumentation, describe your steps to prevent infection. For example, describe if and how you will:
  - Prepare the sampling site by cleaning and disinfecting the tissue (for captured animals).
  - Use single-use, sterile instruments (e.g., needles).
  - Sterilize[5] other devices prior to use and in the field if contaminated including but not limited to use of cold sterilization
  - Administer prophylactic antibiotics to animals (include the drug, dosage, and route of administration).

- Describe your short- and long-term **post-procedure monitoring** protocols.

5 **Sterilization** destroys or eliminates all forms of microbial life and is carried out by physical or chemical methods (CDC 2008). **Disinfection** eliminates many or all pathogenic microorganisms, except bacterial spores, on inanimate objects usually by liquid chemicals (CDC 2008).

- Explain if and why monitoring or mitigation is not feasible for specific procedures, species, situations, etc., as needed.

- For sea turtles: if veterinarian approval is required, attach the full protocol, any veterinary comments/recommendations, and the signed approval. This may include an approved Institutional Animal Care and Use Committee (IACUC)[6] proposal.

- Describe any **mitigation you will take to avoid or minimize impacts to non-target** protected species (e.g., marine mammals, sturgeon, sea turtles, corals, U.S. Fish and Wildlife Service species). Discuss whether and how they may be unintentionally harassed, captured, or otherwise affected. Identify if you require take of these species. For ESA species designated by DPS, specify the DPSs. Identify if you require takes of these species.

Research Coordination

- Describe how you will coordinate with other permit holders in your action area.
    - List their names and affiliations.
    - Explain how you will work together. For example, will you share vessels or coordinate the timing of surveys to avoid repeated takes of the same animals?
- Will you collaborate with other permitted researchers to share data? Will you contribute your data to relevant catalogs and databases (e.g., telemetry)? If so, list their names and affiliations and explain your collaboration plans.

Attach a References File

Attach a **bibliography** of references cited in this application. Referenced materials must be made available upon request, as needed for evaluation of the application and preparation of ESA or NEPA analyses. If a link to your referenced material is available, add the link to your References File.

*Resources Needed to Accomplish Objectives (up to 4,000 characters and attach files if necessary)

- Explain how your expertise, facilities, and resources[7] are adequate to accomplish your proposed objectives and activities.

[6] For sea turtle research: **NMFS researchers are required** to submit the NMFS IACUC-approved protocols and assurance letter.

[7] **Expertise** includes a summary of the cumulative experience of you and your personnel. **Facilities** include such things as your existing infrastructure or laboratories. **Resources** include financial (e.g., current funding and/or history of securing funding); material (e.g., sampling equipment, UAS, boats); and other resources

- List relevant proposals, contracts, grant awards, or letters of agreement that would demonstrate your resources. If funding is not yet secured, provide a history of funding over the past 5 years. Copies must be made available upon request.
- Indicate the status of other international, federal, state, or local authorizations and permits you have applied for, secured, or will apply for.

***Disposition of Tissue Samples** (up to 4,000 characters)

Outline what will be done with the biological samples during your research or enhancement and after your project is complete, as follows:

1. If you are performing your analyses in-house, state whether the samples will be consumed, destroyed, or curated.
2. If you are sending samples to another entity:
   - List the name, affiliation, and location of any person or institution that will receive, analyze, or curate samples.[8]
   - Include the sample type and purpose of transfer (type of analysis and/or curation). State whether samples will be consumed in analysis, destroyed, curated, or returned.
3. If samples will remain after the completion of your research, indicate if you will retain legal custody of the curated samples or if you will permanently transfer custody of the samples.

***Public Availability of Product/Publications** (up to 800 characters)
Describe the end products of your proposed project and how they will be made available to the public.

Project Locations

First, follow the guidance below to describe where you plan to work. Then, for each location, use the Take Table to list the species you expect to encounter and the procedures you will conduct in each location.

- Add **New Location**: provide information about one or more study areas

(e.g., collaborative partnerships that can be drawn on to support your work).

[8] Persons or institutions authorized to receive samples for analysis or curation related to the objectives of your permit are known as **Authorized Recipients**.

  - General area (ocean basin)
  - State(s), as applicable.

- Enter **Location Details**, as applicable:
  - Waterbody: enter names of rivers, estuaries, bays, etc. This is required for sturgeon research.
  - Latitude and longitude of your study area
  - River miles (Begin Mile and End Mile)
  - Limits of your study area (e.g., to the U.S. EEZ, to the edge of the continental shelf, to 50m depth)
  - Names of land masses where research will occur (e.g., islands).

- **Attach File**: Include a map(s) to scale that clearly shows the location of your proposed activity. If requested, provide a shapefile or Google Earth kmz/kml with lat/long data and the associated basic metadata with your application.

Take Table

The take table represents the **estimated** number of animals you propose to take, import, or export **annually** during your research.

Columns you will fill out in the take table in APPS:

1. **Select**: Leave this box blank unless you need to copy, move, or delete the row.
2. **Species**: Use the drop down list.
3. **Listing Unit/Stock**: Select the applicable ESA listing unit or DPS. Only choose Range-wide if your location has multiple populations of the same species and you cannot distinguish between them while in the field.
4. **Production/Origin**: Select from the drop-down list. Categories include Wild, Captive, Rehabilitation Facility, or All.

Sea Turtle Vessel Surveys

For surveys that **do not involve capture, but will remain within 50 yards for more than 5 minutes**:

- Count every animal you approach within 50 yards, regardless of whether a behavioral reaction has occurred.
- Count 1 take per animal observed per day when you know it is the same animal.
- If unable to identify the animal, count each turtle seen as a new take.

5. **Life Stage**: Select from the drop-down list. You may enter take information for more than one life stage (e.g., adult versus juvenile) on separate rows or select a combination of life stages on the same row.

6. **Sex**: Select from the drop-down list. If your activity targets only one sex, indicate which. Otherwise select Male and Female.

7. **Expected Take**: This represents a reasonable estimate of the maximum number of individuals you will take, import, or export, annually.

8. **Take Action**: The "take action" is a generalized overview of how animals will be taken by your activities over the course of the year. If more than one action is proposed for your project, you must enter the takes on separate rows. For example, create separate take rows for animals that will be captured and sampled versus animals that will be harassed only.

9. **Observe/Collect Method**: Select the method of observation (e.g., survey, vessel) or collection/capture. Select only one observe/collect method per row. If multiple methods are proposed, you must provide take information in separate rows for each observe method.

10. **Procedures**: You will open a separate pop-up window with a species-specific list of activities. Check the boxes to select all activities to be performed concurrently on the same animals.

    a. Choose "Other" if a proposed activity is not listed. In the Details box (see below), briefly describe what the "Other" means. For example, Other = carapace swabs.

    b. You must select "Transport" if you will temporarily hold and perform experiments on **wild** animals (e.g., acoustics, imaging, feeding studies) in a facility.

    c. If some animals will only get a **subset of procedures**, list this subset on a separate row.

Sea Turtle Aerial Surveys

For surveys that will stay with animals for **more than 5 minutes and flown at an altitude lower than 700 ft.:**

- Count 1 take per sea turtle observed per day, regardless of the number of passes over the same animal.

11. **Transport**: If you chose Transport as a Procedure, a Transport button will appear in the Transport column.

- Click the button to enter information about how you plan to transport animals.
- First, you will be given the option to choose an existing transport method (if you have already entered one for this application) or to Add a New Transport Information Record to the List.
- When you click the link to add a new record, you will be asked to provide the following information:

a. **Mode(s) of transportation:** Describe the vehicle or other platform used to transport animals.

b. **The name of the transportation company, if applicable, and the qualifications of the common carrier to transport live animals:** If a contractor or other entity will do the transportation, enter information in the box. Otherwise, click on N/A.

c. **Maximum length of time from capture to arrival at destination:** How long will the animals be in transport?

d. **Description of the container (e.g., cage, tank) used to hold the animal during transit:** Include the material and design of the container and its dimensions.

e. **Any special care procedures (e.g., moisture, medicines) to be administered during transport:** How will the animals be cared for during transport?

f. **A statement as to whether the animals will be accompanied by a veterinarian or some similarly qualified person:** If so, give the name, affiliation, contact information for each person.

g. **Destination:** Use the alphabetical drop down list to select the destination. You can start typing to jump to the appropriate section. If your destination is not on the list, click on the "New Destination" button to add it. If the animals will be taken to a laboratory or aquarium, provide details of the location. If the animals will be released in another waterbody, provide details of the location.

h. **How will the animals be contained at the destination facility?** Describe the containment system for the animals, quarantine procedures, and effluent treatment.

i. **The final disposition of the animals:** Describe, for example, whether the animal will be released into the wild or retained in permanent captivity.

12. **Begin Date**: Populated with the Begin Date you entered on the Project Information page. You may change the date to coincide with a specific project time shorter than the overall duration of the permit. You cannot enter a date that is earlier than your original Begin Date.

13. **End Date**: Populated with the End Date you entered on the Project Information page. You may change the date to coincide with a specific project time shorter than the overall duration of the permit. You cannot enter a date that is later than the End Date you previously entered.

14. **Details**: Enter up to 255 characters to provide details on each take table row. This is especially useful to clarify age class, takes, intentional repeated takes, specific activities, or projects.

*Anticipated Effects on the Environment

1. Will you be working in or near areas with **unique environmental characteristics or important scientific, cultural, or historical resources**? Yes or no.

   Examples include:

   - Animals used for subsistence
   - Archaeological resources
   - Critical Habitat of ESA-listed species
   - Essential Fish Habitat including wetlands, coral reefs, sea grasses, and rivers
   - Federally recognized Tribal and Native Alaskan lands, cultural or natural resources, or religious or cultural sites
   - Marine Protected Areas
   - Minority or low-income communities
   - National or State Parks
   - National Marine Sanctuaries and National Monuments
   - National Historic Landmarks
   - Sites listed in or eligible for listing in the National Register of Historic Places
   - Wild and Scenic Rivers

- Wilderness Areas
- Wildlife Refuges

a. If yes, please list those areas. As applicable, mention if you will need to or have already obtained permission (licenses, permits, authorizations) to work in these areas. (up to 1,200 characters)

b. How would your activities affect such resources? What measures will you take to ensure your work does not cause loss or destruction of such resources? (up to 1,200 characters)

c. For marine mammal activities in Alaska or Washington, how will you ensure your project does not adversely affect the availability (e.g., distribution, abundance) or suitability (e.g., food safety) of marine mammals for subsistence uses? (up to 800 characters) **Enter Not Applicable.**

2. Discuss if your activities have the **potential to impact the physical or biological environment**, in particular coastal and marine environments. Impacts can be positive or negative. (up to 2,000 characters)

   Examples of potential impacts include:
   - Altering substrate while anchoring vessels and buoys
   - Using bottom trawls or other types of nets
   - Erecting structures
   - Ingress and egress of researchers
   - Injuring or killing benthic organisms (e.g., seagrass, corals)
   - Altering the physical or chemical characteristics of water (e.g., oil spills)
   - Affecting a species' abundance or distribution

3. Invasive Species

   a. Does your project involve activities known or suspected of **introducing or spreading invasive species**, intentionally or not? Examples include transporting animals, discharging ballast water, and using boats/equipment at multiple sites. Yes or no.

   b. Describe measures you would take to prevent the possible introduction or spread of non-indigenous or invasive species, including plants, animals, microbes, or other biological agents. (up to 1,200 characters)

4. Biological Specimens

    a. Will your activities involve collecting, handling, or transporting **potentially infectious agents or pathogens, such as biological specimens** (animals, blood, tissues)? Yes or no.

    b. Will your activities involve using or transporting **hazardous substances**, such as toxic chemicals? Yes or no.

    c. If yes to either question, describe the protocols you will use to ensure that public health and human safety are not adversely affected, such as by spread of zoonotic diseases, chemical injuries, or contamination of food or water supplies. (up to 1,200 characters)

5. Do your activities involve equipment (e.g., scientific instruments) or techniques that are **untested, or have unknown or uncertain impacts** on the biological or physical environment? Yes or no.

    If yes:

    a. Briefly describe the equipment or techniques and provide any information about the use of these in your study area and/or with other taxa and what is known about their impacts. (up to 1,200 characters)

    b. Discuss the degree to which they are likely to be adopted by others for similar activities or applied more broadly. (up to 800 characters)

Project Contacts

The person entering the application in APPS will automatically be assigned the following roles: **Applicant/Permit Holder, Principal Investigator (PI),** and **Primary Contact**.

1. You may need to change or add personnel. See Chapter 2 for directions on how to change who is assigned to these roles.

2. Use the guidance below to help you decide who should have what role.

3. To prevent duplicate entries, **ALWAYS search APPS for the person before entering a new contact.** Start with the last name in the APPS search box.

4. **Include a table** with the names of the PI and Co-Investigators (CIs), and the specific procedures they will oversee or conduct (see example Table 3). **Attach the table on the Supplemental Information page**.

5. As you add personnel, **check whether each person already has a Qualifications Form (QF) in APPS.** It will appear next to their name once you add them to your Contacts page. If there is not a QF in APPS, then attach one for the PI and each CI. See Qualifications and Experience below.

Descriptions of Personnel Roles

A project must have a **Responsible Party if the Applicant/Permit Holder is an organization, institution, or agency**. The Responsible Party or Applicant/Permit Holder is an official who has the legal authority to bind the organization, institution, or agency and is ultimately responsible for the activities of any individual operating under the authority of the permit.

The **Principal Investigator** (PI) is the individual primarily responsible for the take, import, export, and any related activities conducted under the permit. There can only be one PI on a permit. The PI:

- Must have qualifications, knowledge, and experience relevant to the activities authorized by the permit.
- Must be on site during activities conducted under the permit unless a Co-Investigator is present to act in place of the PI.
- May also be the Applicant/Permit Holder and Primary Contact.

The **Primary Contact** is the person primarily responsible for correspondence during the application review process and after a permit is issued. Typically this person administers the permit, requests modifications (e.g., personnel changes), and submits reports. The Primary Contact may also serve other roles on the permit (e.g., Applicant/Permit Holder, PI, CI).

The Applicant/Permit Holder or Responsible Party, PI, and Primary Contact will have access to APPS to enter and edit the application, submit reports and modification requests, and will receive automatic emails from APPS.

Co-Investigators (CIs) are individuals who are qualified and authorized to conduct or directly supervise activities conducted under a permit without the on-site supervision of the PI.

- You must add CIs to the application if the PI will not always be present during the permitted activities.
- CIs can also be added or removed once a permit has been issued.

Research Assistants (RAs) are individuals who work under the direct and on-site supervision of the PI or a CI. RAs cannot conduct permitted activities in the absence of the PI or a CI. RAs do not need to be named in the application or permit.

A **Veterinarian (for sea turtles only)** who is licensed to practice on sea turtles must be identified for each sea turtle permit application. A veterinarian must be named: 1) for emergencies in an on-call capacity, and 2) to directly perform or supervise certain methods, including surgery and drug administration. More than one veterinarian may be listed to fulfill these roles.

Unmanned Aircraft Systems (UAS) Pilots are persons who have their FAA-certification to fly unmanned aircraft systems and experience piloting UAS. A CI or the PI with taxa specific (e.g., sea turtles) experience may be qualified to serve in this role. In other cases, you may designate someone as a UAS Pilot who is tasked with only that role and does not have taxa specific experience.

Personnel for Unmanned Aircraft Systems (UAS)

To fly UAS, you must have: 1) someone with experience working with the target species in the wild, and 2) someone who is FAA-certified to conduct or oversee UAS flights with approximately 5 hours of flight experience. These may be satisfied by one or more persons, depending on the qualifications of your team. The following scenarios describe the personnel roles for UAS that you may request based on their qualifications.

Table 2. UAS Personnel

Scenario 1: Species expert who is also an FAA-certified UAS pilot

If the person has:	They may be named as:
Experience working with the subject species/taxa in the wild **and** UAS experience with an FAA UAS certification	**PI or CI to supervise and operate UAS**. No separate UAS Pilot required to be named on the application.

Scenario 2: Species expert (PI or CI) accompanied by an FAA-certified UAS pilot

If the person has:	They may be named as:
Experience working with the subject species/taxa in the wild, but no UAS experience	**PI or CI to supervise UAS**. A separate UAS Pilot must be named for the UAS operation.
UAS experience and FAA UAS certification but no taxa specific experience	**UAS pilot to operate the UAS or directly oversee operation as the remote pilot in command**. The UAS pilot must be supervised by the PI or a CI with taxa specific experience.

Note: Other personnel who are not FAA-certified may manually operate the UAS (e.g., for training purposes) provided the FAA certified pilot designated on the permit directly oversees the UAS operation.

Qualifications and Experience

The PI and each CI must complete a Qualifications Form (QF). Previously we accepted CVs, resumes, and biosketches, but often these did not include sufficient information about the person's field experience to demonstrate they were qualified in the proposed take activities. You can download a blank QF from the Contacts page in APPS or from any of our permitting web pages.

Once you fill out a QF and attach it to your profile in APPS, you won't need to upload a new QF unless you acquire new skills, your level of experience changes, or 10 years has passed. Each contact should only have **1 QF file** in their profile; it will apply to all permits they are affiliated with. They may **replace** the QF with an updated version as they gain new experience.

Persons authorized as the PI or CIs must have qualifications corresponding to their duties. Note, if the PI or a CI will be supervising but not performing specific procedures, they must demonstrate sufficient cumulative experience to oversee the project, personnel (e.g., other CIs, research assistants, veterinarians), and procedures.

If you do not provide sufficient information, we will not authorize the person(s).

In addition, **you must submit a table (see Table 3) defining the PI and CI roles** and activities (i.e., supervising or conducting specific procedures) to be performed. Attach this table on the Supplemental Information screen

Table 3. Example Personnel Roles

Name/Affiliation	Role	Activities
John Smith, Ph.D., University A, City, State	Principal Investigator	Supervise and perform all activities under the permit
Jane Smith, Institution B, City, State	Co-Investigator	Conduct all activities *excluding* UAS and anesthesia during captures
Jane Doe, D.V.M., Institution C, City, State	Co-Investigator and Attending Veterinarian	Oversee and conduct captures, and anesthesia of sea turtles

Name/Affiliation	Role	Activities
Jane Doe, Ph.D., Institution C, City, State	Co-Investigator	Oversee and conduct captures, anesthesia, and surgical implantation of sonic tags in fishes
John Doe, Ph.D., University D, City, State	Co-investigator	Collect skin biopsy samples and create cell lines
Bob Jones, City, State	UAS pilot	UAS pilot supervised by the PI or a CI

Submit Application

See Chapter 2 for how to submit your application in APPS and check on its status.

Additional Information

What is this application not for?

Research or enhancement activities on:

- Sea turtles on land or in rehabilitation
- Marine mammals
- Pacific marine and anadromous fish (e.g., steelhead, eulachon, salmon)
- Protected species parts (only involving importing, exporting, or receiving parts)

When should you apply?

For projects within the scope of existing programmatic consultations, the following timelines apply.

Species	Application Due	Decision (Issue or Deny)
Atlantic and shortnose sturgeon	August 1	January 31
Sea turtles	April 1	September 30
Smalltooth sawfish	August 1	January 31

If your project falls outside the scope of a programmatic consultation, submit your application 1 year in advance of the proposed research.

What is the process for getting a permit?

1. Follow these instructions and contact the Permits and Conservation Division at nmfs.pr1.apps@noaa.gov or 301-427-8401 with any questions.
2. Submit your application via APPS.

   a. A permit analyst will review your application and contact you if additional information is needed.
3. Address any questions within 60 days or your application will be withdrawn.
   a. Once we consider your application complete, we will publish a notice in the Federal Register, which starts a mandatory 30-day public comment period.
   b. Concurrently, we will send your application to subject matter experts in partner institutions and federal and state agencies for review.
   c. We will determine whether or not your proposed research requires an ESA Section 7 consultation. Your research may fall under a programmatic consultation. If it does not follow under a programmatic, we will need to request consultation to assess impacts to ESA-listed species. The ESA consultation can take up to 6 months.
4. Address any questions received during the comment period.
   a. We will draft the permit and supporting documentation (including National Environmental Policy Act analyses, responses to public comments, and documentation of ESA issuance criteria).
   b. The documents will be reviewed by various NMFS offices including a legal review.
   c. For individual consultations, a Biological Opinion will be issued if ESA-listed species may be taken and adversely affected to determine if the activity will jeopardize the species or adversely modify critical habitat.
   d. The Office Director will decide whether to issue or deny your permit.

What is the process for requesting a modification to a permit?

If your permit falls under a programmatic consultation, you may need to submit your modification request as part of the application cycle. See our programmatic permitting web page for information on when to submit different types of modification requests.

Use APPS to submit your modification request. You'll need to provide a description of your proposed changes and include all the necessary details for those changes, as applicable. Use these application instructions as a guide. For example, changes to your objectives will require that you discuss all the points in the Project Purpose section. Additions to personnel require Qualifications Forms and descriptions of their roles.

Applicable Laws and Regulations

Under ESA Section 10(a)(1)(A) of the ESA, persons may be authorized to take threatened and endangered species for purposes of scientific purposes or enhancing the survival or

propagation of the species. Interested persons are required to submit an application in accordance with the ESA and the implementing regulations at 50 CFR Part 222. These instructions for applying for a research or enhancement permit are drawn from, but do not substitute for, ESA regulations. Under NEPA, Federal agencies must assess the effects of federal actions on the environment. Under Section 7 of the ESA, Federal agencies must ensure that the permitted activities will not jeopardize the continued existence of listed species or result in adverse modification of critical habitat.

All permit documentation, including the application, permit and modifications, reports, inventory information, and any other associated documents are considered public information and as such, are subject to the Freedom of Information Act.

Paperwork Reduction Act Statement

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995 unless the information collection has a currently valid OMB Control Number. The approved OMB Control Number for this information collection is 0648-0084. Without this approval, we could not conduct this information collection. Public reporting for this information collection is estimated to be approximately 50 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. All responses to this information collection are required to obtain a permit pursuant to the ESA, NEPA, and their implementing regulations. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief, Permits and Conservation Division, Office of Protected Resources, F/PR1, NOAA/National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910; email nmfs.pr1.apps@noaa.gov.