Ecology
Protected Species Survey, Avoidance and Minimization

OVERVIEW

This guidebook describes GDOT procedures for complying with protected species requirements from project survey through project-level efforts to avoid and minimize impacts to protected species. The major federal law governing these requirements is the Endangered Species Act (ESA) (16 USC 1531-1544), and the major state laws governing these requirements are the Georgia Wildflower Preservation Act (OCGA 12–6-170) and the Georgia Endangered Wildlife Act (OCGA 27–3–130).

REGULATIONS, GUIDANCE, AND POLICY

Federal

The purpose of the ESA is to conserve the ecosystems on which endangered and threatened species depend and provide a program for the conservation of such species. It is the policy of Congress that all federal agencies shall seek to conserve endangered and threatened species and shall utilize their authorities in furtherance of the purposes of the ESA. This includes federal agencies funding state transportation projects, such as the Federal Highway Administration (FHWA). The ESA is administered by the US Fish and Wildlife Service (USFWS) and National Oceanic and Atmospheric Administration (NOAA) Fisheries. Each agency is required to use the best scientific and commercial data available in fulfilling the requirements of the ESA.

Section 7(a)(1) of the ESA directs all federal agencies to utilize their authorities and develop programs to conserve endangered and threatened species. Section 7(a)(2) requires federal agencies to consult with USFWS and/or NOAA Fisheries to ensure that any federal action authorized, funded, or carried out is not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of

critical habitat. Section 7(a)(4) directs federal agencies to confer with the USFWS and/or NOAA Fisheries on any action that is likely to jeopardize a proposed species or adversely modify proposed critical habitat.

Federally listed species occurring in Georgia under USFWS jurisdiction include all terrestrial species, freshwater aquatic species, West Indian manatee (*Trichechus manatus*), and sea turtles when they are on land. The federally listed species occurring in Georgia under NOAA Fisheries jurisdiction include all other marine mammals, anadromous fish, and other living marine resources, including sea turtles in the water column.

For GDOT projects, effects are assessed on species with the following federal protection status: endangered, threatened, candidate, and proposed. Federal species listing status and status definitions can be found in the USFWS Information for Planning and Consultation (IPaC) web portal. Although not typically assessed on GDOT projects, for any species petitioned under the ESA where there is substantial information that listing may be warranted, the species may be treated similarly as a federally listed species at the discretion of the lead Federal Agency and/or USFWS and NOAA Fisheries.

State

Pursuant to state law (OCGA 391–4–10.01), the Georgia Department of Natural Resources (GADNR), Wildlife Resources Division (WRD) is authorized by the Wildflower Preservation Act and the Endangered Wildlife Act to protect species indigenous to Georgia and deemed rare, unusual, or in danger of extinction. Activities on public land intended to harass, capture, kill, directly cause death, or destruction of habitat for state designated protected species are prohibited and can be prosecuted as a misdemeanor. For GDOT projects, effects are assessed on the species with the following Georgia protection status: endangered, threatened, rare, and unusual. State species listing status and status definitions can be found in the WRD Biodiversity Portal.

FIELD SURVEY

The Environmental Survey Boundary (ESB) entered in IPaC during early coordination serves as the field survey area used to identify federally listed/proposed/candidate species and their suitable habitat, and designated/proposed critical habitat that may be affected by a project, regardless of project type or design. Field habitat assessments and species-specific surveys for species that may be affected by the project should be limited to the ESB. The only exception being surveys for aquatic and some semi-aquatic species which extend beyond the ESB as noted in the GDOT *Aquatic Survey Protocols for Transportation Projects within the State of Georgia* (Aquatic Survey Protocols) and *State of Georgia Protected Species Habitat & Presence/Absence Survey Methodologies Manual* (Protected Species Survey Methodology Manual), respectively.

Aquatic Survey Protocols,
GDOT Office of Environmental Services

Protected Species Survey Methodology Manual,
GDOT Office of Environmental Services

Protected species habitat assessments and field surveys must be conducted per the Protected Species Survey Methodology Manual. Surveys for protected aquatic species, including fish, non-burrowing crayfish, or mollusk species must be conducted in accordance with the Aquatic Survey Protocols. Additional species surveys may be required post-let, depending upon pre-let survey findings, and would be coordinated with USFWS and WRD and outlined in the approved Protected Species Survey Report (PSSR), Ecology Resource Survey and Assessment of Effects Report (ERS AOE) or Addendum (ADDM), and Special Provision (SP) 107.23H. Required post-let surveys shall also be included in the Environmental Commitments Table (ECT, Green Sheet) and Environmental Resources Impact Table (ERIT).

Suitable Habitat Assessment (Phase 1)

Habitats/land use areas within the ESB must be assessed to determine habitat suitability for protected species included on WRD, USFWS, and/or NOAA Fisheries early coordination lists. Suitable habitat identified within the ESB during the general ecology field survey (Phase 1), must be noted and GPS located for subsequent GIS mapping. The GIS habitat shapefiles serve as reference for subsequent species-specific surveys (Phase 2), if required, and development of a Protected Species Habitat Map (See the *Ecology General Project Report Template and Guidance*[1]). Ecological features distinguishing suitable habitat for protected species not recorded in the general habitat delineation, such as rock-outcroppings, river bluffs, substrate characteristics, or other microhabitats, should also be documented in the Ecology Resource Survey Report (ERSR) and delineated on the Protected Species Habitat Map.

Any protected species observed during the general ecology field survey not known by WRD, USFWS, or NOAA Fisheries to occur in the project area must be GPS located and reported to the appropriate resource agency. Rare taxa element occurrence data should be submitted electronically to WRD using the Element Occurrence (EO) Reporting Form (Protected Species Survey Methodology Manual Appendix A, link provided above) or Survey 123. GDOT should be entered in the Company/Affiliation field.

[1] All Ecology templates are located on the Ecology Section SharePoint. See instructions for accessing SharePoint on Office of Environmental Services Guidebooks website.

Element Occurrence Reporting Form, Survey 123

Species-Specific Survey (Phase 2)

The Protected Species Survey Methodology Manual and Aquatic Survey Protocols should be consulted for approved species survey methodologies. Species survey activities may require federal and/or state scientific collection permits. The Ecologist should coordinate with the appropriate agency(s) for collection permit requirements prior to the survey. Scientific collecting permits must be obtained in advance of any field survey for which they are required. Unless otherwise noted on a permit, all surveys conducted under a federal recovery permit (ESA § 10(a)(1)(A) permit) require pre-approval and a response letter from the USFWS field office 15 days prior to the survey.

If the target species is newly listed and not included in the Protected Species Survey Methodology Manual or Aquatic Survey Protocols or if any deviations from the survey methodologies/protocols is requested, the Ecologist should consult the appropriate species experts at WRD, USFWS and/or NOAA Fisheries at least 30 days prior to the scheduled species survey. In such cases, the Ecologist is responsible for developing a proposed survey methodology, which must be approved by WRD for state listed species and WRD, USFWS, and/or NOAA Fisheries for federally listed species, prior to use. If an approved survey methodology is not followed or if pre-survey coordination is not completed for species without an approved methodology, GDOT reserves the right to require additional surveys without providing additional scope and work hours.

In the event the project schedule does not allow the opportunity to complete a species-specific survey during the recommended survey season, the Ecologist must contact appropriate species experts at WRD, USFWS, and/or NOAA Fisheries to determine if surveying outside the recommended season is appropriate. Documentation of the proposed surveyor's prior experience with the target species must be provided to verify that the surveyor is qualified to identify the species outside the survey season.

Consultant Ecologists may coordinate directly with agencies only upon approval by the GDOT Ecologist, who must be copied on all correspondence.

ASSUMED PRESENCE

If suitable habitat for a state listed species is identified within the ESB and the species is reasonably certain to occur, based on WRD or USFWS occurrence records, then assuming species presence may eliminate the need to complete a species-specific survey. Suitable habitat includes habitat that contains ecological features that serve a life history need(s) (i.e., feeding, breeding, and/or sheltering) of a listed species. It should be noted that suitable habitat may not be optimal habitat for a given species, due to disturbance or degradation of ecological features.

Terrestrial species for which presence may be assumed include those with only a Habitat Survey Methodology (Phase 1 survey) in the Protected Species Survey Methodology Manual. Refer to the GDOT Aquatic Survey Determination Decision Tree in the Aquatic Survey Protocols for assuming presence for state listed aquatic species. For all other species, the GDOT Ecologist or Ecology Team Leader should be consulted prior to assuming presence. Technical assistance per the *Joint Coordination Procedures (JCP) Standard Operating Procedure (SOP) for Early Coordination and Technical Assistance with Agencies for Ecological Assessments and Project Planning* may also be required.

Joint Coordination Procedures,
GDOT Office of Environmental Services

Assumed presence of a federally listed species may require formal Section 7 ESA consultation; therefore, prior coordination with the GDOT Ecologist and the resource agency is required.

Assuming presence typically requires that GDOT implement a SP 107.23H to avoid/minimize adverse effects to listed species. GDOT may prefer not to assume presence if SP conditions could delay the project schedule, increase project cost, or require post-construction measures that would require regular maintenance. The Ecologist should request technical assistance from WRD, USFWS, and/or NOAA Fisheries regarding recommended avoidance/minimization measures to include in SP 107.23H to determine if assuming presence is feasible.

AVOIDANCE AND MINIMIZATION MEASURES

Refer to the Ecology Assessment of Effects Guidebook for GDOT Avoidance and Minimization Measures Meeting (A3M) procedures. The following information pertains to avoidance and minimization measures (AMMs) specific to protected species or designated critical habitat occurring on GDOT projects. AMMs shall be identified based on the scope of the project action potentially affecting protected species, the stressors posed to species by the action, and the potential effect to species. AMMs are added as elements of the proposed project.

Pre-Construction

The following AMMs are developed prior to project construction.

Design

Protected species locations identified during species specific surveys must be designated as an Environmentally Sensitive Area on project plans. The Ecologist is responsible for documenting all protected species locations and providing delineations to Design for inclusion in the project plans. See the Ecology Resource Survey Guidebook for more information on Environmentally Sensitive Area labeling on plan sheets.

During the A3M, the project team must evaluate design measures to avoid or minimize impacts to protected species, critical habitat, and/or suitable habitat. Common design avoidance/minimization measures include, but are not limited to, reducing construction limits through design of 2:1 slopes with guardrail or retaining walls and use of orange barrier fencing to prevent contractor encroachment within Environmentally Sensitive Areas. Refer to the A3M Guidebook to help facilitate conversation during the A3M.

For aquatic species, adverse effects may be avoided through design of clear span stream crossings (e.g., bottomless culverts or bridges) and restricting in-stream use of construction equipment and temporary structures. Impacts to aquatic species can be minimized through design of water quality best management practices (BMPs) to treat stormwater prior to discharge to receiving waters in which protected species, critical habitat, or suitable habitat are present. Refer to the Ecology Assessment of Effects Guidebook for the Ecology Post-Construction Stormwater Report used to document the feasibility analysis of post-construction water quality BMPs for protected species. Use of temporary in-stream structures (i.e., jetties, bulkheads, or cofferdams) during construction may also need to be avoided to further protect known or assumed species locations. Project specific measures, beyond those identified during A3M, should be identified during agency consultation (See Section VI.B).

Relocation Plan

If protected species have been identified by species-specific surveys and adverse effects cannot be avoided, then temporary or permanent species relocation may be required. Examples of species that may require relocation include, but are not limited to, gopher tortoise (*Gopherus polyphemus*), semi-aquatic turtles, mollusks, and plant species.

Relocation of federally listed species shall only be conducted after Formal Section 7 Consultation is complete with USFWS. As part of formal consultation, a relocation plan will need to be developed and approved by the lead federal agency and USFWS and/or NOAA Fisheries.

Depending on the species, the Ecologist must consult the appropriate state and/or federal agencies for development of a species relocation plan to include relocation methods, identification of a suitable relocation site, monitoring requirements, and responsible parties. Refer to Section III of the *GDOT Aquatic Survey Protocols* for more information regarding aquatic species relocations. Refer to the Appendices of the *Protected Species Survey Methodology Manual* for terrestrial and semi-aquatic species relocation protocols.

A species relocation plan is typically included with a Biological Assessment (BA) for a project that may adversely affect a federally listed species. For projects that may adversely affect state listed species, a relocation plan should be included with the ERS AOE or ADDM for the project. A species-specific survey is required prior to development of a relocation plan to verify species extent in the ESB or expanded survey area required per the GDOT Aquatic Survey Protocols or Protected Species Survey Methodology Manual. Additional surveys may be required as part of the relocation plan prior to construction.

There are exceptions to the species-specific survey requirement as instructed in the Protected Species Survey Methodology Manual, which should be consulted for the target species prior to relocation plan development.

Depending upon the project schedule, additional surveys may be necessary prior to or as part of a relocation. Known occurrence within the ESB shall not preclude the need to complete a species-specific survey by a qualified surveyor. Relocation requirements, including monitoring during relocation and post-construction, must be included in SP 107.23H and Environmental Commitments Table.

Construction

Protected species AMMs, not included in project design, to be implemented during project construction are detailed in SP 107.23H, which is included in contract documents. Measures included in SP 107.23H must be followed for contract compliance. The SP 107.23H example measures provided below do not represent a comprehensive list of AMMs. Please refer to any GDOT-approved SP 107.23H templates for species-specific construction AMMs. Project conditions that may affect construction quantities for bidding should be placed in a special provision specific to the Standard Specification for the associated contract item, as appropriate. For example, SP 713.6 prohibits monofilament slope matting for erosion and sedimentation control for projects that may affect protected species (e.g., ensnarement of snakes).

A common construction AMM includes seasonal work restrictions in suitable habitat during sensitive spawning or nesting/roosting periods for protected species. Special Provision 107.23H is not typically used for protected plant species, as protected plants identified within project limits are typically relocated. However, there may be instances where, due to agency input, restrictions may be added to provide adequate protection for known plant or other terrestrial species in SP 107.23H. For example, if there is a known occurrence of protected plants adjacent to the project right-of-way, then a provision regarding enhanced erosion control BMPs (i.e., those exceeding National Pollutant Discharge Elimination System permit requirements) during construction may be added. The appropriate species experts at WRD, USFWS, and/or NOAA Fisheries should be consulted regarding measures to include in SP 107.23H for protected species.

Post-Construction

Post-construction AMMs may be implemented before or after project construction is complete, but are characterized by the long-term benefits they provide. These AMMs should be specified in the Post-Construction Stormwater Report (See Ecology Assessment of Effects Guidebook), SP 107.23H, ECT, project plans, and/or the ERIT. Examples include, but are not limited to, installation of Environmentally Sensitive Area signage and restriction of right-of-way maintenance activities (e.g., mowing) that may adversely affect a species. Monitoring of relocated populations is also required post-construction, with frequency, duration, and reporting requirements specified in the species relocation plan developed and approved during pre-construction.

Guidebook Revision History

Revision Description	Relevant Sections	Revision Date
Initial Publication	All	4/30/2021