

Preparing Natural Resource Technical Reports*

Environmental Analysis Unit
Environmental Coordination and
Permitting



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Version 3.0 (interim)

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It is retained only as an archived record.**

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* This is an interim version that has been updated to correspond with the 2017 NRTR Guidance and Template. If there are any discrepancies, refer to the NRTR Guidance and Template or contact ECAP@ncdot.gov

Purpose

This procedure is written for anyone preparing an NRTR for the North Carolina Department of Transportation (NCDOT). The purpose of the procedure is to outline the preparation of a Natural Resource Technical Report (NRTR). It is intended to help NCDOT maintain a consistent methodology and expected level of detail in preparing and documenting natural resources investigations.

Background

The natural resources investigations, which are summarized in an NRTR, provide critical information necessary for decisions to be made about the location and permitting of NCDOT projects. The NRTR is an essential component of National Environmental Policy Act (NEPA) and State Environmental Policy Act (SEPA) processes associated with NCDOT work. NRTRs are formatted to facilitate the transfer of excerpts from the report for inclusion in environmental documents such as a State Minimum Criteria Checklist (MCC) Categorical Exclusion (CE), Environmental Assessment (EA), or Environmental Impact Statement (EIS).

Responsibility and Scheduling

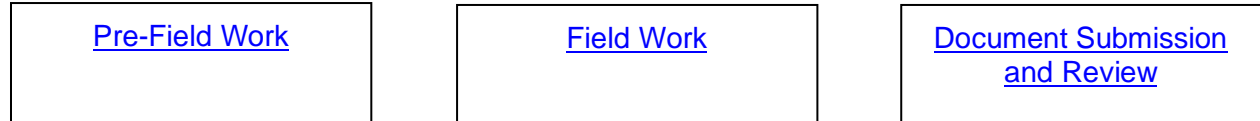
The Environmental Analysis Unit (EAU) Environmental Coordination and Permitting Group (ECAP) is responsible for managing the completion of the NRTR and associated field work for projects in the Central Raleigh Office Project Delivery Teams, including those prepared by consultants.

The Division of Highway Division Offices are responsible for managing the completion of the NRTRs and associated field work and for Division Managed Projects, including those prepared by consultants. They may request assistance from ECAP as needed.

The NRTR due dates and its associated deliverables are determined by the NCDOT Project Manager. Depending on the specific project the NCDOT Project Manager could be the ECAP

Project Manager, Project Delivery Project Manager (PDPM), Division Project Manager or another point of contact.

Procedures



Procedure 1: Pre-Field Work

Step 1. Review the U.S. Fish and Wildlife Service's (USFWS) list of [Federally Threatened and Endangered Species in North Carolina](#) for the specific county as well as the National Marine Fisheries Service (NMFS) [website](#) (if applicable) and then the North Carolina Natural Heritage Program (NCNHP) Data Explorer or equivalent database for known species occurrences and Critical Habitat Designations.

NOTE: Bald Eagle is to be assessed for all counties.

Step 2. Schedule field surveys based on the resource agency-approved optimal survey windows for [plants](#) and [animals](#).

- Identify who should perform the survey work based on the guidance provided in the [NRTR Guidance and Template](#) (ECAP or the Biological Surveys Group (BSG)).
- For Division projects, determine if ECAP assistance is needed or if the field surveys will be consulted out by the Division Office. Divisions may ask for ECAP assistance or scope out surveys from their office.

Step 3. Prior to visiting the project study area, conduct, at a minimum, a review of the following:

- Project Study Area
- U.S. Geological Survey (USGS) quadrangle maps (GIS or other website sources)
- Natural Resources Conservation Service (NRCS) county soils maps ([Web Soil Survey](#) or [Online hard copies](#))
- Most recent NCDOT aerial photography (NC OneMap)
- Current [USFWS published list of federally protected species for each county](#) and, when applicable, Recovery Plans for the listed species (and [NMFS website](#) if applicable)
- NCNHP database of protected species and rare habitats
- N.C. Department of Environmental Quality (NCDEQ Division of Water Resources (DWR) water resource information.
- GIS environmental data provided by the N.C. Center for Geographic Information and Analysis

Step 4. Upload the study area into the GPS unit or equivalent equipment (optional but strongly advised).

- Step 5.** Review the [General Field Safety](#) procedure for additional information on pre-field work activities
- Step 6.** Coordinate with your NCDOT Project Manager regarding sending out Landowner Contact Letters prior to fieldwork.

Procedure 2: Field Work

This procedure is broken down into three specific tasks. 1) Community Identification, 2) Wetland and Stream Delineation, and 3) Threatened and Endangered Species Surveys.

Task 1. Community Identification

- Step 1.** Classify all communities using one of the following:
- NCNHP Classification of the Natural Communities of North Carolina ([1990 or 2012](#)) for undisturbed upland communities.
 - Best professional judgment for disturbed upland communities based on dominant vegetation or land use (e.g. Pine Plantation, Agricultural field, Residential Development)
 - [NC Wetland Assessment Manual \(NCWAM\)](#) classification for wetland habitats.
- Step 2.** Record the dominant plant species observed in each community
- Step 3.** Record information on site topography, hydrology, and disturbance history, or other features that may be relevant to the ecology of the area (e.g., rock outcrops, beaver dams, ditches or canals). Identify invasive species found in field notes.

Task 2. Wetland and Stream Delineation

Wetland Delineation

- Step 1.** Identify and delineate jurisdictional wetlands within the study area. Flag wetland limits following the guidelines presented in the [1987 U.S. Army Corps of Engineers Wetland Delineation Manual](#) and any relevant [USACE Regional Supplements](#). Delineate wetlands under the jurisdiction of NC Division of Coastal Management (NC DCM).
- Step 2.** Classify wetlands in accordance with the [NC WAM](#) then either as tidal, riparian, or non-riparian. Prepare the following forms below:
- One USACE Wetland Data Form for each wetland along with one form for a corresponding upland area in accordance with 1987 USACE Wetland Delineation Manual and any relevant USACE Regional Supplements.
 - NCWAM Wetland Rating Sheet in accordance with the most recent NCWAM User Manual for each wetland (or wetland type, if appropriate). Field maps will need to identify and portray delineated wetlands

Stream Delineation

- Step 1.** Identify surface waters in the study area. Classify and describe aquatic habitats (streams, rivers, lakes, ponds, and estuaries) within the study area. Conduct cursory in-stream surveys, where possible based on depth and flow, to identify the presence of aquatic organisms (fish, crayfish, benthic macroinvertebrates, etc.)

and to record stream physical characteristics (width, depth, substrate, bank height). Artificial ponds do not require survey, but should be described based on the quality of aquatic habitat that they provide.

- Step 2.** Determine whether streams are jurisdictional and note whether they are intermittent or perennial using the guidance from the latest version of the DEQ-DWR [Methodology for Identification of Intermittent and Perennial Streams and Their Origins](#). Use the most recent [NCDWR Stream Identification Form](#) to make jurisdictional calls when there is ambiguity (i.e. any stream not clearly perennial).
- Prepare a NC Stream Assessment Method (NCSAM) Field Assessment Form for each stream that is degraded or where a lower mitigation ration may be appropriate in accordance with the most recent [NCSAM User Manual](#).

For ephemeral streams:

- Describe the ephemeral streams in field notes, preparing NC Stream Identification Forms as necessary.
- Note the location on a field map.
- Note any environmental conditions (such as drought) that may affect the call on an ephemeral stream.

Post Delineation Procedures

- Step 1.** All wetlands, and when applicable, jurisdictional waters will be located with a submeter capable GPS Unit. For additional information on using the GPS unit or preparing the Microstation wetland file, refer to [Consultant GPS-CADD](#).
- Step 2.** For river basins that have associated NC DWR Buffer Rules, determine all features for which the Buffer Rules apply. Note streams on the soil maps that do not exist or are ephemeral.
- Step 3.** Identify Areas of Environmental Concern (AEC) under the jurisdiction of the NC Division of Coastal Management (NC DCM).
- Step 4.** Prepare and submit a Preliminary or Final [Jurisdictional Determination \(JD\) Package](#) as directed by NCDOT ECAP, Project Delivery or Division Project Manager to the appropriate USACE, NCDWR and/or NCDCM representative.
- ECAP Procedure: Consultants will submit a draft preliminary or final JD Package (based on the scope) to ECAP for review. Consultant or ECAP (as specified in scope) will submit the JD Package to the USACE, NC DWR and/or NC DCM representative.
 - Division Procedure: Consultants will prepare a Preliminary or Final JD based on their scope and submit to Division for review. Refer to your scope or Project Manager on how to submit to the agencies
- Step 5.** If scoped by ECAP, Project Delivery or Division, schedule a verification site visit with the appropriate USACE, NCDWR and/or NCDCM representative(s) to verify all wetland, stream, and buffer determinations.
- Consultants scoped by Project Delivery or ECAP will coordinate all verification site visits with the ECAP Project Manager and the appropriate agencies.
 - For Division managed projects check with your Division Project Manager on agency coordination or your scope
 - Revise any JD forms and mapping based on agency review comments.

- Step 6.** The resulting determination issued by the regulatory agencies will be included in the final NRTR if received prior to final NRTR due date.

Task 3. Threatened and Endangered Species Surveys

- Step 1.** As noted in Procedure 1, Step 1, determine the optimal survey time (referred to as a survey window) for each federally protected species listed for the county or counties the study area is located in using resource agency-approved optimal survey windows for [plant](#) and [animal](#) species. If the initial field work (Task 1 & Task 2) is performed outside the appropriate survey window and suitable habitat is found, then revisit the study area during the next available survey window. If field surveys are performed after the completion of the NRTR but before the planning document is completed, document the survey results in a survey memo. Post the survey memo on the NCDOT Preconstruction site and email your NCDOT Project Manager that the memo is available.
- Step 2.** Refer to the optimal survey windows for [animal](#) species that are deferred to the BSG for surveying. If survey assistance from the BSG is required, the ECAP project manager will submit a request to BSG using ETRACS. For consultants, this process is determined by your NCDOT Project Manager.
- Step 3.** Refer to the same survey information in Step 2 for species that ECAP will consult directly with the appropriate resource agency in lieu of a survey. For consultants, this process is determined by your NCDOT Project Manager.
- Step 4.** For all protected species surveys, follow the available field survey procedures relative to the species under consideration. For a list of available procedures, refer to the [Environmental Guidance and Procedures site](#).
- Step 5.** Based on the field survey, produce a biological conclusion. Refer to [Rendering a Biological Conclusion](#) procedure.

Procedure 3: NRTR Document Review and Submission

- Step 1.** Complete the NRTR document using the latest [NRTR Guidance and Template](#) at the time the Scope of Work is finalized.
- Step 2.** Draft NRTRs will be submitted and reviewed in the following manner:
- For NRTRs produced by ECAP staff: ECAP Project Manager will submit Draft NRTR and Microstation WEX file to a peer and then the ECAP Regional Manager with appropriate review sheet.
 - For NRTRs outsourced through the ECAP On-Call contract: The consultant will submit electronic PDF copy of the Draft NRTR including their QA/QC sheet and the Microstation WEX file to the Regional Manager. The Regional Manager will forward the Draft NRTR to the ECAP Project Manager. The ECAP Project Manager and the Regional Manager will review the NRTR. If time allows, an additional peer review can be added. Comments will be provided to the consultant in the PDF.
 - For NRTRs outsourced as part of a larger Project Delivery contract: The consultant will submit an electronic PDF copy of the Draft NRTR including their QA/QC sheet and Microstation WEX file to the appropriate PDPM. The PDPM will then submit the Draft NRTR via ETRACS to ECAP for review. The ECAP Project manager and the Regional Manager will review the NRTR. If time

allows, an additional peer review can be added. Comments will be provided to the consultant in the PDF.

- For Division managed projects: The Draft NRTR should be submitted to the NCDOT Project Manager of the unit you are working with.

Step 3. Final NRTRs will be submitted in the following manner:

- Submittals will be made to the appropriate person as discussed in Step 2.
- For ECAP and Project Delivery projects: Consultants should submit responses to review comments in Adobe PDF along with their QA/QC sheet. ECAP reserves the right to not accept the NRTR as final if comments have not been adequately addressed.
- The ECAP staff will save the NRTR (in pdf format) to the NCDOT Preconstruction site and send an email notifying the appropriate staff that it has been completed.

All Final submittals from consultants will contain the following:

1. An electronic copy of the NRTR (in PDF format) including all figures and appendices. Electronic file names will be by TIP number (e.g., B-1234 NRTR.pdf)
 2. An electronic copy of the NRTR in Microsoft Word format (text only)
 3. A copy of the Microstation WEX/WETfile
 4. A copy of the GPS corrected file (.cor) or corresponding file
 5. A copy of all shapefiles used to create the figures
 6. All field maps and notes made during the investigations in PDF form
 7. PLS letter if applicable (see [Consultant GPS-CADD](#))
- Consultants can place the files on a CD, email or put on the NCDOT Preconstruction site per your NCDOT Project Manger's determination.

Policy, Regulatory, and Legal Requirements

- [Clean Water Act](#)
- [Coastal Area Management Act](#)
- [National Environmental Policy Act 1969 \(NEPA\)](#)
- [State Environmental Policy Act \(SEPA\)](#)
- [Right of Entry for Surveys - G.S. 136-120](#)
- [Endangered Species Act 1973](#)

Resources and Tools

Website:

<https://connect.ncdot.gov/resources/Environmental/Pages/Environmental-Compliance-Guides.aspx>

Reference books, guidebooks:

- [NC Wetland Assessment Manual](#) (NCWAM)
- [NC Stream Assessment Manual](#) (NCSAM)
- [US Army Corp of Engineers Wetland Delineation Manual](#)
- [Atlantic and Gulf Coastal Plain Regional Supplement](#)
- [Eastern Mountains and Piedmont Regional Supplement](#)
- [NCDOT's Best Management Practices for the Protection of Surface Waters](#)
- [NCNHP Classification of the Natural Communities of North Carolina \(1990 and 2012\)](#)

Contacts

For suggestions regarding this procedure or about performing this procedure contact:

ECAP@ncdot.gov