

NATURAL RESOURCE TECHNICAL REPORT GUIDANCE

This Natural Resource Technical Report (NRTR) Guidance is to be used for all NRTRs submitted to Environmental Coordination and Permitting (ECAP), Division staff, or for Locally Administered Projects (LAP). All NRTRs should use the most recent NRTR Template document, as appropriate. It is highly recommended that you utilize this guidance document if this is your first time working with a NRTR.

For questions on how to collect and submit the NRTR information please see [Preparing Natural Resource Technical Reports](#).

Formatted Text in NRTR Guidance and Template Documents

This guidance and the accompanying template use several forms of text formatting to assist the writer in proper completion of the NRTR:

- Written text sections that are provided in the *NRTR Template* document are standard/example language. This language can be modified to change any specifics as they pertain to your project.
- The **yellow highlighted areas** in the *NRTR Template* are data entry fields.
- **Red text** (used primarily in *NRTR Guidance* document tables below) is used to provide an example on how to format data/language within the NRTR and is intended to be replaced with project specific data/information.

Format

Use text formatting (i.e. font, size, bold, italics, etc.) specifically as presented in this template. Follow the header and footer format as shown. Orphaned paragraphs/tables (those broken by a page break), should be avoided to the extent practicable.

Draft

Until the NRTR has been reviewed by the appropriate NCDOT Environmental Staff, and is considered Final, the word DRAFT shall be included on the Cover Page and the “DRAFT” watermark shall be used within the body of the document.

For questions on the NRTR Guidance or Template contact ECAP@ncdot.gov.

1.0 INTRODUCTION

In this section, provide a brief description of the project and study area including the project length for new location and widening projects. If the road has a State Road (SR) number, include it as well. Project descriptions should be sourced from the associated [SharePoint Connect site](#).

If this is an NRTR update that replaces a previous report due to age or study area change, include the statement “This NRTR Update replaces the previous [insert date month and year] NRTR in its entirety.”

2.0 TERRESTRIAL COMMUNITIES

In this section, include a table that lists the terrestrial communities, three (3) dominant plant species in each community (as well as the scientific names of plant species), and the acreage of each community (to the nearest tenth of an acre). Communities should utilize [North Carolina Natural Heritage Program \(NCNHP\) classifications](#) when possible. If the entire community is a wetland, use the [North Carolina Wetland Assessment Method \(NCWAM\) classification](#). If multiple corridors are proposed, the table will contain coverage area columns for each of the separate corridors for comparison.

Coverage of terrestrial communities in the Study Area

Community	Dominant Species	Coverage (ac.)
Maintained / Disturbed	Fescue (<i>Festuca sp.</i>) Chinese privet (<i>Ligustrum sinense</i>) Eastern white pine (<i>Pinus strobus</i>)	3.9
Dry-Mesic Basic Oak-Hickory Forest (Piedmont Subtype)	White oak (<i>Quercus alba</i>) Pignut hickory (<i>Carya glabra</i>) Eastern white pine (<i>Pinus strobus</i>)	2.9
Piedmont Alluvial Forest	Yellow poplar (<i>Liriodendron tulipifera</i>) American elm (<i>Ulmus americana</i>) Flowering dogwood (<i>Cornus florida</i>)	9.0

3.0 ENDANGERED SPECIES AND HABITATS

3.1 Endangered Species Act Protected Species

For consultants, do not provide biological conclusions for aquatic or bat species (with the exception of northern long-eared bat in Divisions 1-8 – see next paragraph). These biological conclusions will be provided by BSG or ECAP. For Division Projects and LAP projects, discuss this with your NCDOT project manager. The responsibility for red-cockaded woodpecker (RCW) surveys will be determined on a case-by-case basis during the NRTR scoping process.

For the northern long-eared bat (NLEB) in Divisions 1-8, use the latest standard language developed by BSG and summarized from the Programmatic Biological Opinion. This can be found in the [NLEB Programmatic Language](#) and should be included prior to Section 3.2. For projects in

Divisions 9-14, include the latest standard [Western Bat PBO Language](#) when species are listed within the study area by IPaC, or contact your NCDOT ECAP coordinator or Division contact.

This section of the NRTR will contain a table that is inclusive of the current listing of federally Threatened, Endangered, and Proposed species as listed on the USFWS [IPaC \(Information for Planning and Consultation\)](#) system queried using the project study area. The species listed within the study area by the [NOAA Fisheries Southeast Region ESA Section 7 Mapper](#) will also be included in the table as appropriate (remove NOAA from NRTR template as needed).

Within the table, “Habitat Present” will be designated as Yes, No, or Undetermined. Undetermined will be used if a site visit / habitat assessment has not yet occurred.

The “Biological Conclusion” column will contain the conclusion rendered for each species based on habitat assessment and field surveys. Biological Conclusions will be one of the following:

- “No Effect”
 - No suitable habitat is present for the target species.
 - Suitable habitat for the target species is present within the study area and a survey of suitable habitat, conducted during the appropriate survey window, results in the target species not being found (plants only).
- “May Affect - Not Likely to Adversely Affect”
 - The target species or its Critical Habitat occurs within the project study area and the effects of the project are expected to be insignificant.
 - Potential habitat for the target species exists in the project study area, but no individuals are found to be present during surveys (animals only).
 - Effects of the action are likely to be beneficial.
- “May Affect - Likely to Adversely Affect”
 - The target species or its Critical Habitat occurs within the project study area and the proposed project may cause adverse effects to individuals of the target species or Critical Habitat.
 - The target species is assumed to be present and the proposed project may cause adverse effects to individuals of the species.
- “Not Required”
 - The target species does not require a biological conclusion (e.g., those species that are proposed for listing or are listed as SAT).
- “Unresolved”
 - If surveys are needed and have not yet been completed as of the NRTR due date.

Table footnotes for abbreviations have been provided within the NRTR Template. Only those abbreviations that were used within the table should be included as table footers.

ESA federally protected species listed within the Study Area

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
<i>Myotis grisescens</i>	Gray Bat	E	Yes	Unresolved
<i>Glyptemys muhlenbergii</i>	Bog Turtle	SAT	No	Not Required
<i>Helianthus schweinitzii</i>	Schweinitz's Sunflower	E	Yes	No Effect

E - Endangered; SAT - Similarity of Appearance (Threatened)

For each species listed, identify the optimal survey window (which can be found on the [NCDOT Connect Site](#)). Include scientific names in parentheses of any species listed in the biological conclusion.

The biological conclusion for each species will contain:

- 1) a clear description of the suitability of observed habitats in the study area, including why they do or do not meet the requirements of the species. Since a habitat description will not be included in this document, you may need to include a limited portion of the habitat requirements in the biological conclusion to defend your biological conclusion. Habitat requirements for each species can be found on the [NCDOT Connect Site](#), the [USFWS website](#), and/or the [NMFS website](#).
- 2) a description of the survey methodology used if habitat is present (date(s) of survey, personnel, hours spent on survey, visit to known occurrences, etc.).
- 3) a statement of the results of the field survey if one was conducted.
- 4) a statement identifying only when the species has any known records from the NHP database within 1.0 mile from the study area (include the publication date of the database used or, if using the NHP workroom, include the date it was checked).
- 5) If the species is being handled by BSG and the surveys are not yet complete, the biological conclusion paragraph should state, "This information will be provided by the NCDOT Biological Surveys Group (BSG)" followed by the statement identifying any nearby NHP records (see item 4 above). If the surveys have been completed by BSG, the biological conclusion paragraph should state, "See [insert date] survey memo for information about this species" followed by the nearby NHP record statement.

If the study area occurs within an area designated as Critical Habitat for any species as described on the current USFWS IPaC listing, then a description of the critical habitat will be included, and a Biological Conclusion will be rendered as it relates to potential impacts to the Critical Habitat.

3.2 Bald and Golden Eagle Protection Act

Please refer to the [Bald Eagle Survey Protocols](#) on the NCDOT Connect site. Habitat assessments and survey results will then be described in a similar fashion as Section 3.1. However, no biological conclusion will be rendered. Include a statement of a review of the NHP database for known occurrences within 1.13 miles of the project study area.

3.3 Essential Fish Habitat

This section is only required for projects in Divisions 1-3. This section will identify the occurrence of any National Marine Fisheries Service (NMFS) designated Essential Fish Habitat (EFH) in the study area.

- Information and GIS Data/Mapping can be found at: <https://www.habitat.noaa.gov/apps/efhmapper/>
- If EFH is in your study area, then a table will be included with the following columns: species and life stage.
- Species will be provided as common name only.
- Life stages which occur will be categorized as Egg, Larva, Juvenile, or Adult (other stages should be used as listed by NMFS).
- Data are provided by NMFS for each designated EFH.
- If no designated Essential Fish Habitat occurs in the study area, include a definitive statement to that effect.

NMFS designated Essential Fish Habitat in the Study Area

Species	Life Stage
Coastal Migratory Pelagics	All
Blacktip Shark (Atlantic Stock)	Juvenile/Adult
Spinner Shark	Neonate

4.0 AQUATIC RESOURCES

See the *Aquatic Resources Delineation Report QA Checklist* for instructions on what additional information is needed within that document.

4.1 Streams within the Study Area

This section will consist of a table which identifies all the perennial and intermittent streams in the study area.

- The Name/Label for unnamed tributaries will follow the format SA, SB, SC..., for all unnamed features.
- Named streams will utilize the stream name as the Name/Label (not SA, SB, SC...). [See Consultant GPS-CADD](#)
- Any lakes or ponds with an NCDWR Index Number (e.g. Catawba River (Lake Norman)) will be included in the streams table.
- Any ditches that meet one of the following criteria will be identified, with names following the typical stream format (SA, SB, etc.):
 - A ditch that appears to be relocating an intermittent or perennial stream.
 - A ditch that has been constructed within an intermittent or perennial stream.

- A ditch that has been constructed within a wetland and exhibits at least intermittent flow.
- Flow Regime will be designated as either Perennial or Intermittent.
- River Basin Buffer will be presented as either Subject or Not Subject, as per the relevant NCDWR Riparian Buffer Protection Rule and [NRCS/USGS mapping](#). This column will only be included in the table if the project area is located within watershed protected under these rules.
 - Required documentation for riparian buffer status can found in the *Aquatic Resources Delineation Report QA Checklist*.
- NCSAM Ratings will be provided for select stream segments that have been identified as being visibly degraded enough to warrant a potential reduction in mitigation. If streams are clearly of higher quality through field observations, no NCSAM Rating is required.
- If a project is within more than one 8-digit HUC, then the table should be split via identifying headers.
- If Table 6 is four (4) or more pages long, then it may be included as an appendix.
- If there are more than four (4) figure sheets, it may be appropriate to add a column titled “Sheet Number”.
- If no perennial or intermittent streams occur in the study area, a definitive statement to that effect will be included.

Stream Identification and Classifications

Stream Name or Label	NCDWR		Flow Regime	River Basin Buffer	NCSAM Rating
	Index Number	Classification			
HUC 8: 03020201 (Neuse)					
Black Creek	27-45-(1)	B;NSW	Perennial	Subject	Medium
SA	27-45-(1)	B;NSW	Intermittent	Not Subject	Low
HUC 8: 03030004 (Cape Fear)					
SB	18-16-(0.3)	C	Intermittent	-	-
	18-16-(0.3)	C	Perennial		

4.1.1 Stream Designations and Surface Water Quality

This section will include information regarding the following, and any additional information that is deemed necessary for project planning purposes.

- The USGS 8-digit HUC(s) that the project study area occurs in.
- Identify any streams within the study area or within 1.0 mile (as the crow flies) downstream of the study area that are, High Quality Waters (HQW), Water Supply (WS) I&II, or Outstanding Resource Waters (ORW). Add statement that none are present, if applicable.
- Add a paragraph identifying other aquatic resources including:
 - If the project is in Divisions 11, 13 or 14, indicate if the project area is located in a trout watershed (see USACE [website](#) for trout watershed locations).

- If the project is in Divisions 1, 2 or 3, indicate any primary nursery areas. (Data can be viewed on the [DMF Interactive Map for Current Rules](#))
- If the project is in Divisions 1, 2, 3, 4, 6 or Wake County, indicate any anadromous fish spawning areas. (Data can be viewed on the [DMF Interactive Map for Current Rules](#))
- If no such designations occur for the specific regional designations above, include a definitive statement to that effect.
- State any correspondence from the NCWRC or NCDMF, if applicable.
- Identify any streams within the study area or within 1.0 mile (as the crow flies) downstream of the study area that are on the 303(d) list (and include the cause of impairment).
- The temperature designation of the streams – cold, cool, warm – will be identified in the text. This information can be found on the NCDOT ECAP Connect site [here](#).

4.2 Wetlands within the Study Area

This section will consist of a table which identifies all delineated wetlands in the study area.

- All wetlands within the study area are to be delineated according to the [1987 Corps Wetland Delineation Manual and appropriate Regional Supplements](#).
- Each wetland will be identified on water resource mapping with a unique Map ID in the form WA, WB, WC..., where each wetland is coded sequentially from one terminus of the project to the other, if possible.
- All wetlands will be classified and rated using [NCWAM](#). If one wetland consists of multiple NCWAM wetland types, then each wetland type will be described in a separate table row.
- The NCWAM Category column will identify each wetland site as either Riparian, Non-riparian, or Tidal.
- For projects located in Divisions 1-3, all CAMA wetlands should be noted with a table footnote directing the reader to Section 5.5.
- If a project is within more than one 8-digit HUC, then the table should be split via identifying headers (reference streams table as example).
- If the table is four (4) or more pages long, then you may include it as an appendix.
- If there are more than four (4) figure sheets, it may be appropriate to add a column titled “Sheet Number”.
- If no wetlands occur in the study area, include a definitive statement to that effect.

Wetland Identification and Classifications

Wetland Label	NCWAM			Forested
	Wetland Type	Category	Rating	
WA	Bottomland Hardwood Forest	Non-Riparian	Medium	Yes
WB	Saltwater Marsh ¹	Riparian	High	No
	Bottomland Hardwood Forest	Riparian	Medium	Yes

¹See Section 5.5 for additional CAMA wetland information.

4.3 Other Surface Waters within the Study Area

This section will consist of a table which identifies all other surface waters in the study area.

- Any surface water ponds/impoundments, either connected to a stream or wetland feature, or isolated, will be identified. Pond names will follow the format PA, PB, PC... unless it is a named pond or lake (without an NCDWR Index Number identifier).
- Any ditches that do not meet the criteria to be included in Section 4.1, but still appear to have at least intermittent flow, will be identified with names following the format DA, DB, etc. Examples of ditches that might be included in this section include, but are not limited to:
 - Channels/ditches constructed within/around agricultural operations and other properties that appear to have at least intermittent flow.
 - Drainage channels/ditches constructed outside of wetlands that appear to have at least intermittent flow.
- The aquatic resource that is adjacent to (or immediately downstream of) the listed surface water shall be noted.
- River Basin Buffer will be presented as either Subject or Not Subject, as per the relevant NCDWR Riparian Buffer Protection Rule and [NRCS/USGS mapping](#). This column will only be included in the table if the project area is located within a watershed protected under these rules.

Other Surface Water Identification and Classifications

Surface Water Name or Label	Resource Type	Adjacent Aquatic Resource	River Basin Buffer
PA	Pond / Impoundment	SA	Subject
DA	Ditch	-	Not Subject
PB	Open Water	Black Creek	Subject
PC	Stormwater BMP	-	Not Subject

5.0 REGULATORY CONSIDERATIONS

5.1 Clean Water Act

This section will consist of a brief explanation of the status of the described aquatic resources with regards to the Clean Water Act. As the NRTR is typically completed in the early planning stages of a project, it is commonplace for jurisdictional determinations to not have been requested or issued at the time of this document. Regulatory verification of jurisdictional status should be requested prior to project permitting as deemed necessary by NCDOT environmental staff and agency partners.

If there is other pertinent information regarding jurisdictional determinations for the project it should be included in this section.

5.2 Endangered Species Act

This section will include a brief statement stating that discussion of threatened and endangered species in the NRTR should be considered preliminary and based on current project information. A definitive determination regarding the need for Section 7 consultation cannot be made until project design, impacts, and federal permitting needs are further developed. Updates to this information will be provided as project planning progresses and agency coordination becomes appropriate.

If the appropriate coordination has already occurred for the project, then a statement to that effect will be included.

5.3 N.C River Riparian Buffer Rules

In this section, identify any N.C. River Basin Riparian Buffer Rules that apply to streams in the study area. Refer to the Aquatic Resources Section to identify which specific streams are Subject or Not Subject to riparian buffer rules. If the project is not within a watershed that is protected by riparian buffer rules, replace the template text with a definitive statement to that effect.

5.4 Rivers and Harbors Act Section 10

In this section, identify any streams or open surface waters which have been designated as [Navigable Waters under Section 10 of the Rivers and Harbors Act](#). If no streams or surface waters within the study area have been designated as Navigable Waters, replace the template text with a definitive statement to that effect.

5.5 Coastal Area Management Act

This section is only required for projects in Divisions 1-3.

This section will identify any Coastal Area Management Act (CAMA) wetlands or other [Areas of Environmental Concern \(AEC\)](#) in the study area along with their AEC designation. CAMA wetlands will reference the Wetland Label code and the Aquatic Resources figure. If the project county is not under jurisdiction of CAMA, or if no AECs occur in the study area, then a definitive statement to that effect will be included.

CAMA Areas of Environmental Concern

Aquatic Resource Name / Label	Resource Type	Associated AEC(s)
SA	Stream	Public Trust Water
WB	Wetland (Saltwater Marsh)	Coastal Wetland
Albemarle Sound	Open Water	Estuarine Water

5.6 Coastal Barrier Resources Act

This section is only required for projects in Divisions 1-3.

If the project study area is located within a [Coastal Barrier Resources System](#) unit, then a Section 5.6 should be included to address the Coastal Barrier Resources Act and identify any units which are present.

Standard/Example Text: The following Coastal Barrier Resources System (CBRS) units exist within the study area; [insert CBRS unit name(s)].

6.0 REFERENCES

Only include the relevant references used for this project. Use a consistent format for each reference. An example format for references follows:

Agency name. Year. Title of document referenced. Date updated or accessed.
<http://includethelinktogettothedocumentyoureferencedhere>

Lastname, X.X., X.X. Lastname, and X.X. Lastname. Year. Title of book or reference. City:
Publishing company (if applicable). ### pp.

APPENDICES

After the main body of the NRTR, include the following items in this order (Appendix headings or cover sheets are not required):

1. Figures
2. Responsibilities of Contributors
3. [Insert taxa, e.g. Mussel, Fish, etc.] Survey Report(s) (if applicable)
4. Jurisdictional Determination Letter(s) (if applicable)

FIGURES

Figures should be rendered on either 8.5x11 or 11x17 page sizes as appropriate. If the project area is very large and there many sheets within the Terrestrial Communities and Aquatic Resources maps, please include and index map, match lines, or a reference frame.

Figure 1 – Project Vicinity

- Use the map provided by the NCDOT project manager.
- If a vicinity map is not provided, one can be created. Components shall include the following:
 - Project information (STIP, County, description).
 - North arrow and scale.
 - Coordinates (Latitude, Longitude [decimal degrees]) of the project.
 - Inset(s) identifying the county and/or location within the county.
 - The study area shall be depicted in red.
 - A background showing roads, municipalities, and landmarks as appropriate.
 - Suggested Data Source: ESRI [World Street Map](#)

Figure 2 – Terrestrial Communities

- The Terrestrial Communities map shall include the following:
 - Project information (STIP, County, description).
 - North arrow and scale.
 - The study area shown in red, on recent aerial imagery background. Major streets should be labeled.
 - Suggested Data Source: ESRI [World Imagery](#), [Hybrid Reference Layer](#)
 - Each community shall be shown in a different color, all with a slight transparency. Water bodies that are large/wide enough may be included as either “Open Water” or excluded from terrestrial community mapping.
 - If endangered plant boundaries (EPBs) are mapped within the project study area during NRTR field work, they shall be depicted in the Terrestrial Communities Map, as appropriate.
 - Select water resources may also be shown to help depict accurate locations of these populations.

Figure 3 – Aquatic Resources

- The Aquatic Resources map shall include the following:
 - Project information (STIP, County, description).
 - North arrow and scale.
 - The study area shown in red, on recent aerial imagery background. Major streets should be labeled.
 - Suggested Data Sources: ESRI [World Imagery](#), [Hybrid Reference Layer](#)
 - Streams shall be depicted in a shade of blue. Distinguish perennial streams from intermittent streams by different shades of blue. If resource visibility is an issue with the varying shades of blue, consult the NCDOT project manager.
 - Wetlands shall be depicted and filled in green or utilize the wetland or swamp hatchings, if appropriate.
 - All surface waters identified in the *Other Surface Waters within the Study Area* table should also be depicted on the aquatic resources map.
 - Ponds/impoundments shall be depicted in a different shade of blue from streams.

RESPONSIBILITIES OF CONTRIBUTORS

Use the formatted table below to list all personnel/staff that worked on the NRTR. If additional responsibility categories are needed to describe the tasks that were completed, they may be added as additional columns.

Standardized Format:

Contributor		Stream Determinations	Wetland Delineations	Terrestrial Community ID	ESA Assessments	Document Preparation	GIS / Figure Creation	QA/QC Review
Name	Role							
Harper Mendon	Project Manager	✓	✓	✓				✓
Evan Dalhart	Env. Scientist	✓	✓	✓	✓	✓	✓	
Calvin Rourke, PWS	Sr. Env. Scientist	✓	✓		✓	✓		✓
Sierra Mallory	GIS Technician					✓	✓	