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National Coastal Condition Assessment 2025

Site Evaluation Guidelines

Version 1.2 June 5, 2025



NOTICE

The National Coastal Condition Assessment (NCCA) 2025 Site Evaluation Guidelines (SEG) and related documents are based on the previous Environmental Monitoring and Assessment Program's (EMAP) National Coastal Assessment (NCA) conducted in 1999 - 2006 as well as the National Coastal Condition Assessments conducted in 2010, 2015, and mostly recently 2020.

The goal of the National Coastal Condition Assessment (NCCA) is to provide a comprehensive assessment of the condition of the Nation's coastal waters. Specifically, the NCCA assesses all estuarine waters of the United States from the head-of-salt to confluence with ocean, and the nearshore waters of the Great Lakes. Details of the project and specific methods for field sampling, sample handling, and sample processing can be found in one of the following documents:

- National Coastal Condition Assessment: Quality Assurance Project Plan V 1.2 (EPA 841-B-24-001)
- National Coastal Condition Assessment: Field Operations Manual V 1.2 (EPA 841-B-24-002)
- National Coastal Condition Assessment: Laboratory Operations Manual V 1.2 (EPA 841-B-24-003)
- National Coastal Condition Assessment: Site Evaluation Guidelines V 1.2 (EPA 841-B-24-004)

This Site Evaluation Guidelines (SEG) document contains an overview of the process involved in locating a sampling site, evaluating the site, and selecting appropriate alternate sites when necessary. All Project Cooperators must follow these guidelines in evaluating base sites and selecting replacement sites for the NCCA.

The suggested citation for this document is:

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VERSION HISTORY

Version	Date	Changes Made
1.0	March 2025	Not Applicable
1.1	March 26, 2025	<ul style="list-style-type: none">Align with changes in FOM and QAPP (Change to V 1.1, current date)Correct headers to read “Site Evaluation Guidelines” instead of “Quality Assurance Project Plan”
1.2	June 5, 2025	<ul style="list-style-type: none">Align with changes in FOM, LOM and QAPP (Change to V 1.2, current date)

TABLE OF CONTENTS

NOTICE	2
VERSION HISTORY.....	3
TABLE OF CONTENTS.....	4
LIST OF TABLES	5
LIST OF FIGURES.....	5
ABBREVIATIONS	7
ROLES AND CONTACT INFORMATION	8
1 INTRODUCTION	10
2 DEFINING THE TARGET POPULATION.....	11
3 NCCA 2025 DESIGN, PANELS AND STRATA.....	14
3.1 ESTUARINE DESIGN, STRATA AND PANELS.....	14
3.1.1 <i>Estuarine Design</i>	14
3.1.2 <i>Stratification</i>	15
3.1.3 <i>Panels and Number of Visits</i>	15
3.2 GREAT LAKES NEARSHORE DESIGN, STRATA AND PANELS.....	16
3.2.1 <i>Design</i>	16
3.2.2 <i>Stratification</i>	16
3.2.3 <i>Panels and Number of Visits</i>	17
4 INTERPRETING THE SITE EVALUATION SPREADSHEETS AND DESKTOP EVALUATION	18
4.1 SITE EVALUATION SPREADSHEETS	18
4.1.1 <i>Estuarine Site Evaluation Spreadsheets</i>	18
4.1.2 <i>Great Lakes Site Evaluation Spreadsheets</i>	18
4.2 EPA-SUPPLIED LOCATION AND DESIGN INFORMATION	18
4.2.1 <i>Stratum (or Great Lakes State) Tabs</i>	19
4.2.2 <i>Meanings of Different Row Colors</i>	20
4.3 DOCUMENTATION AND DESKTOP EVALUATION	21
4.3.1 <i>Desktop Evaluation Documentation Sections</i>	21
4.3.2 <i>Conducting the Desktop Evaluation</i>	22
4.4 SAMPLEABLE VS NON-SAMPLEABLE SITES.....	27
5 SITE REPLACEMENT	28
5.1 EXAMPLE IN REPLACING DROPPED SITES.....	30
5.1.1 <i>Replacing a Base 25_20 or Base 25_25 Site</i>	30
5.1.2 <i>Replacing a dropped Revisit Site: "Base25_20RVT2" or "Base25_25RVT2"</i>	32
6 OBTAINING LANDOWNER PERMISSION (WHEN APPLICABLE).....	34
7 FINAL SITE VERIFICATION AT THE LOCATION	36
8 SUBMISSION OF SITE EVALUATION/VERIFICATION FORMS	39
8.1 SITE EVALUATION SPREADSHEET	40
8.2 SITE VERIFICATION FORMS (APP FORM FOR EACH SITE VISITED WITH THE INTENT TO SAMPLE)	40
9 REFERENCES	41
APPENDIX A: ESTUARINE SPECIAL STUDY DESIGN DESCRIPTIONS	42
AMERICAN SAMOA REEF FLAT SURVEY	42
COMMONWEALTH OF NORTHERN MARIANA ISLANDS REEF FLAT SURVEY.....	43
GUAM REEF FLAT SURVEY.....	44
ALASKA STUDY.....	45

UNITED STATES VIRGIN ISLANDS BEACH STUDY	46
CHOCTAWHATCHEE BAY, FL STUDY.....	47
ST. ANDREWS AND ST. JOSEPH BAYS STUDY, FL (SASJB).....	48
LONG ISLAND SOUND STUDY BAY ENHANCEMENT	49
DEEPWATER HORIZON NATURAL RESOURCE DAMAGE ASSESSMENT MONITORING ACTIVITY IMPLEMENTATION PLAN PILOT STUDY	50
APPENDIX B: GREAT LAKE SPECIAL STUDY DESIGN DESCRIPTIONS.....	51
WISCONSIN STUDY.....	51
LAKE ERIE INTENSIFICATION	52

LIST OF TABLES

Table 3.1 Example of stratification for NCCA 2025 for Maine based on combinations of estuary group, land-dominated or ocean dominated designation, and whether waters are inside or outside a 100 m buffer from coastline.....	15
Table 3.2 Estuarine Panels and Visits	15
Table 3.3 Great Lakes states probabilistic sites per stratum.....	17
Table 3.4 Great Lake Panels and Visits	17

LIST OF FIGURES

Figure 2.1 Examples of estuarine systems (lighter blue area) and nearshore or offshore marine waters (dark blue area, not in frame). All waters within the enclosed light blue intracoastal waterway area are defined as estuarine and therefore considered in frame regardless of depth or salinity.....	12
Figure 2.2 Hypothetical Great Lakes Nearshore target population. Area within the 5 km buffer and 30 m or less in depth (light blue) is in frame and target. Any areas outside of the 5 km buffer are not in the frame regardless of depth. Areas deeper than 30 m (dark blue) are not target, regardless of whether they are in the frame. Coastal embayments or other features with connections to open water, regardless of width, (olive green) are in the target population.	13
Figure 4.1 Example EPA- Supplied Design Info included in Site Evaluation Spreadsheets for Estuaries (A) and Great Lakes (B).....	20
Figure 4.2 Site Evaluation Spreadsheet: Fields to be completed by evaluator or field crew: Evaluator’s contact information (top); Desktop and On-Site Evaluation information (bottom).....	22
Figure 4.3 Flowchart of site evaluation process	25
Figure 4.4 Site Evaluation Spreadsheet: Questions and Dropdown Answers	26
Figure 5.1 Hierarchy of replacing a dropped estuarine site	29

Figure 5.2 Hierarchy of replacing a dropped Great Lakes site.....30

Figure 5.3 Site replacement of a Great Lakes Base25_XX site with first available, unused Over25_25 site.31

Figure 5.4 Site replacement of an Estuarine Base25_XX site with first available, unused Over25_25 site (highlighted in red). Highlighted green Over25_25 sites would be the first used if Oversamples in the stratum are exhausted following procedure. Note: some columns have been omitted for ease of view.32

Figure 5.5 Site replacement procedure for a Base25_XXRVT2 site. The replacement site will be visited twice and that site will be replaced by an Over25_25 site within the same stratum. Note: some columns have been omitted for ease of view.33

Figure 6.1 Landowner Letter and Permission Form.....35

Figure 7.1 Equipment for In-Field Verification36

Figure 7.2 Site Verification Form39

ABBREVIATIONS

Abbreviation	Definition
GPS	Global Positioning System
GRTS	Generalized Random Tessellation Stratified survey design was used to select the X-sites for the 2025 NCCA.
km	kilometers
m	meters
mi	miles
NARS	National Aquatic Resource Surveys
NCCA	National Coastal Condition Assessment
ORD	Office of Research and Development
OST	Office of Science and Technology
OWOW	Office of Wetlands, Oceans and Watersheds
psu (ppt)	practical salinity units (or parts per thousand)
QA	Quality Assurance
SEG	Site Evaluation Guidelines
SES	Site Evaluation Spreadsheet
X-site	Location, identified by GPS coordinates, for a site selected for field sampling.

ROLES AND CONTACT INFORMATION

Field crews should contact the NCCA Project Leader or the appropriate Regional Coordinator with any questions about site selection.

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1 INTRODUCTION

The objective of the National Coastal Condition Assessment 2025(NCCA) is to monitor and assess all estuarine and Great Lakes nearshore waters of the contiguous 48 States. In 2025, reef flats of American Samoa, Guam and the Commonwealth of the Central and Northern Mariana Island in the Pacific, waters adjacent to the beaches of the United States Virgin Islands in the Caribbean, waters surrounding the southwestern coast of the Kenai Peninsula in Alaska, and some non-target areas of Long Island Sound will also use NCCA protocols for monitoring their coastal waters.

Major steps in site evaluation:

1. Review the Target Population Definition (**Section 2**) and Survey Design (**Section 3**).
2. Interpret the Site Evaluation Spreadsheet (SES) (**Section 4**).
3. Conduct Desktop Reconnaissance to:
 - Locate and verify that the selected site, or X-site, is part of the Target Population;
 - Determine whether it meets the definition of sampleable.
4. Seek permission to sample, if necessary (**Section 6**).
5. Conduct Final Site Verification at the Location (**Section 7**).
6. (If necessary) Drop and replace sites according to guidelines in this document (**Section 5**).
7. Submission of Site Evaluation/Verification Forms (**Section 8**).

EPA developed a site evaluation spreadsheet for each state and special study to use in evaluating the sites and planning its sampling activities (**Section 4**). The spreadsheet includes location information for each site and asks the evaluator to record whether the site meets the target definition (**Section 2**); determine its sampleability, (**Section 4.4**); and whether landowner permission is necessary (**Section 6**).

The site evaluation spreadsheet must be completed and submitted to the contract field logistics coordinator or uploaded to the NCCA SharePoint prior to field season. During the field season, revisions must be submitted to the field logistics contractor when sites are dropped and replaced during the onsite verification process.

Field crews must assemble an official site packet containing important locational and access information for each site they are scheduled to visit (**Section 8**). The packet must contain the appropriate maps, contact information, copies of permission letters (if applicable), and access instructions.

2 DEFINING THE TARGET POPULATION

This section describes the target populations for the estuarine and the Great Lakes nearshore regions for the 2025 NCCA. Estuarine special studies and intensifications such as the Pacific Territories and the Long Island Sound intensification will be addressed in **Appendix A**. Great Lakes intensifications and enhancements, including the Lake Erie enhancement study will be addressed in **Appendix B**.

Each statistically selected sampling location is referred to as the “X-site” and defines where sampling activities are targeted. Before collecting water, sediment, and other samples at any site, it is imperative that the field crew correctly assesses whether the site is part of the target population.

The target population for the NCCA components are defined as follows:

- **Estuarine:** The target population for the estuarine resources consists of all estuarine waters of the conterminous United States from the head-of-salt to confluence with the ocean, including inland waterways, tidal rivers and creeks, lagoons, fjords, bays, and major embayments. Head-of-salt is generally defined as 0.5 practical salinity units (psu). For the purposes of NCCA, the head-of-salt represents the landward or upstream boundary. The seaward boundary extends out to where an imaginary straight-line intersecting two land features would fully enclose a body of coastal water (see **Figure 2.1** for examples). All waters within the enclosed intracoastal waterway area with salinities greater than or equal to 0.5 psu are defined as estuarine, regardless of depth.
- **Great Lakes Nearshore:** The target population is waters within a fringing, shallow nearshore band that is heavily used by humans and most vulnerable to human activities within adjacent coastal watersheds. More specifically, the target population is limited to waters along the shoreline buffer within 5 kilometers (km) from shore or up to 30 meters (m) in depth, whichever is reached first. For the National Great Lakes Assessment 2025 (NGLA25), the landward side extends 500m into small tributaries, marginal pond, and small embayments as well as other minor indentations of the shoreline (e.g. Presque Isle Bay in Pennsylvania). This is deviation from the NGLA 2020 sample frame which had excluded semi-enclosed bays and embayments with less than a 200m wide connection to open water. The connecting channels of the Great Lakes (i.e., between the Lakes and the St. Lawrence River outlet) are not included in the target population. **Figure 2.2** demonstrates where target sites may be located within a hypothetical Great Lakes nearshore region. See Appendix B for a discussion of the Lake Erie enhancement study and the Wisconsin intensification Study.

Target vs Non-Target Areas in Estuarine Sampling Frame.

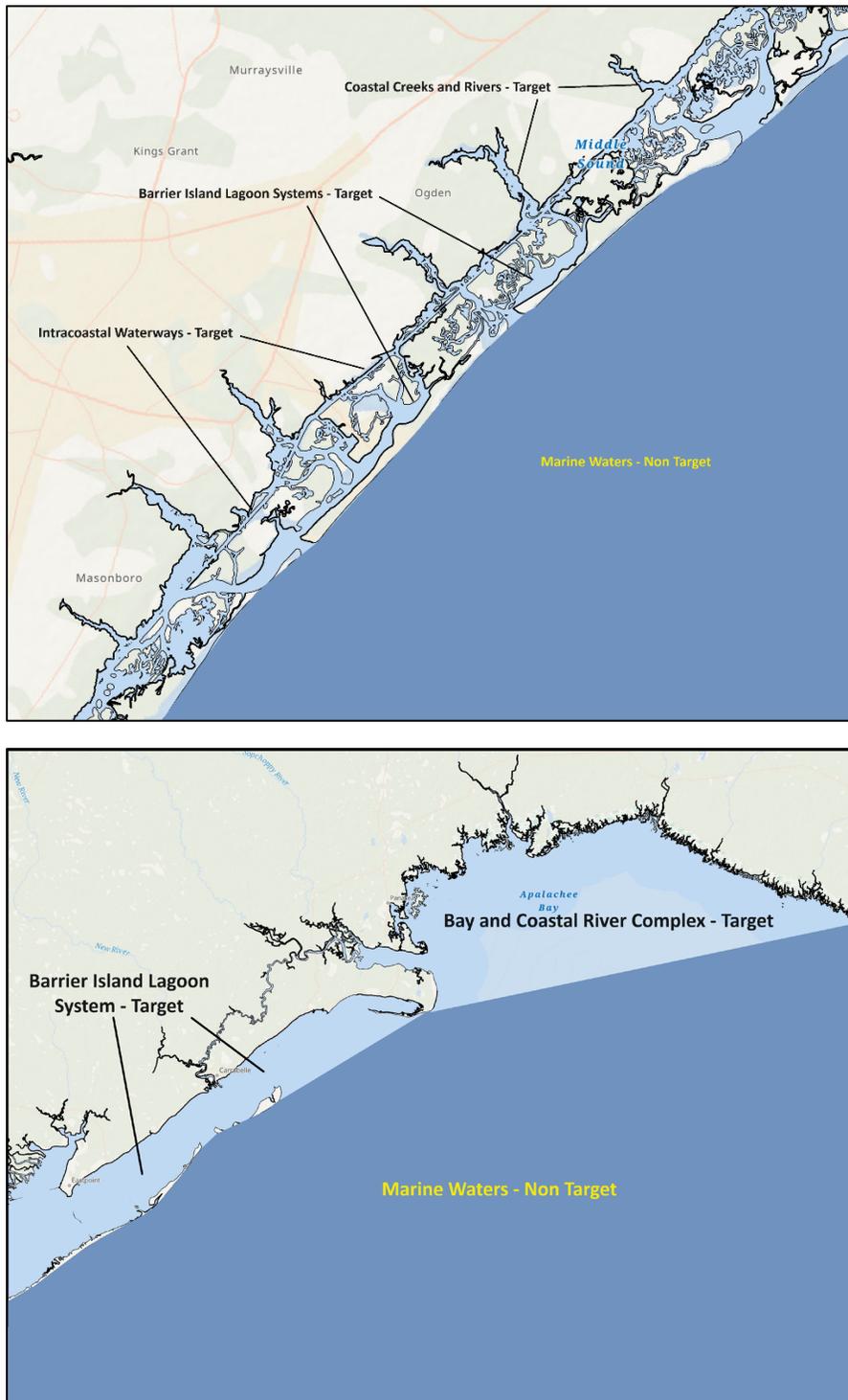


Figure 2.1 Examples of estuarine systems (lighter blue area) and nearshore or offshore marine waters (dark blue area, not in frame). All waters within the enclosed light blue intracoastal waterway area are defined as estuarine and therefore considered in frame regardless of depth or salinity.

Target vs Non-Target Areas in Great Lakes Sampling Frame.

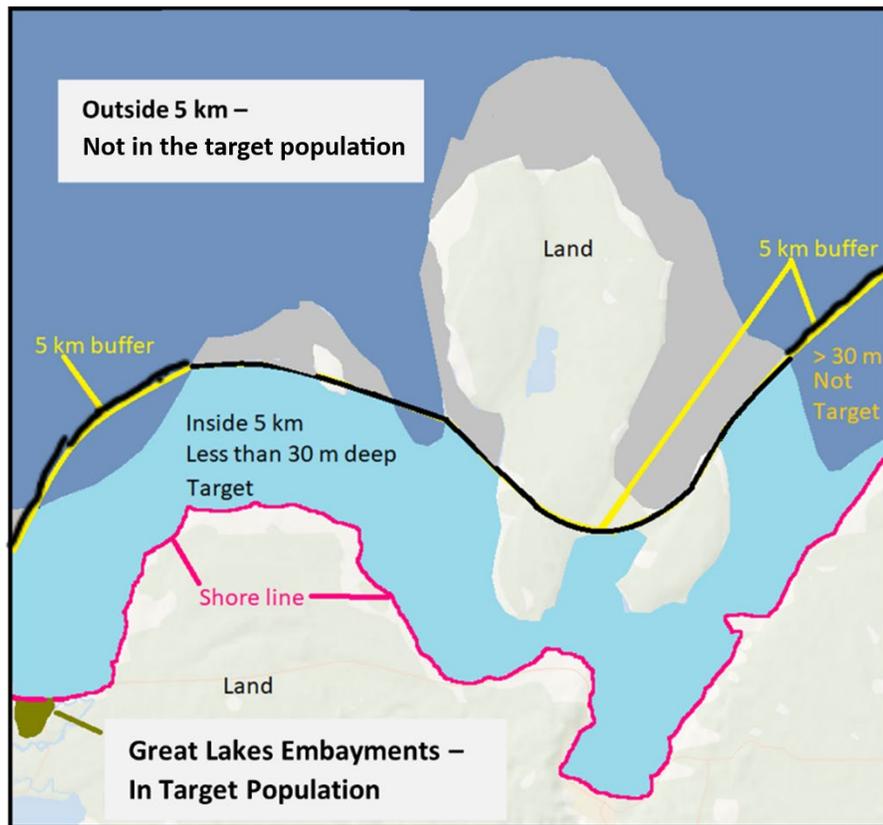


Figure 2.2 Hypothetical Great Lakes Nearshore target population. Area within the 5 km buffer and 30 m or less in depth (light blue) is in frame and target. Any areas outside of the 5 km buffer are not in the frame regardless of depth. Areas deeper than 30 m (dark blue) are not target, regardless of whether they are in the frame. Coastal embayments or other features with connections to open water, regardless of width, (olive green) are in the target population.

The Lake Erie Special Study, and Wisconsin intensification frames are detailed in Appendix B.

3 NCCA 2025 DESIGN, PANELS AND STRATA

EPA classified sites by strata and panels before statistically selecting the sites using a Generalized Random Tessellation Stratified (GRTS) survey design for an area resource. **Section 3.1** describes the stratification and panels used to classify estuarine sites before selection. **Section 3.2** presents the same information for the Great Lakes nearshore sites.

Site IDs have been assigned to each site in the following format: PREFIX_STATE-ID where:

- PREFIX indicates the study design:
 - NCA25 - Marine probabilistic sites
 - NGL25 - Great Lakes nearshore probabilistic sites
- STATE/TERRITORY is the two-letter abbreviation for the state or territory in which the site occurs
- ID is a five-digit number specific to the site. Note that these numbers repeat across states and are not unique to any one site. When referring to a site, the entire site ID including the prefix and state identifier is essential. Intensification study sites will have a 5-digit site ID starting with number other than “1” (e.g. Long Island Sound Study: NCA25_CT-3XXXX)

Probabilistic sites are divided by state and by panel whereas intensifications may have special designs described in **Appendices A and B**. Panel identifiers contain the following information:

- BASE or OVERSAMPLE DESIGNATION and SURVEY YEAR
 - Base25 - NCCA 2025 Base site
 - Over25 - NCCA 2025 Oversample (replacement) site
- PANEL YEAR
 - 20 - NCCA 2025 sites that were also sampled in NCCA 2020 (e.g. Base25_20)
 - 25 - New sites not previously sampled (e.g. Base25_25)
- REVISIT STATUS
 - The number 2 following RVT indicates the site is a Revisit site and is to be sampled twice in the same season (e.g. Base25_20RVT2)

With some exceptions, oversample replacement sites must be selected from the same stratum as the original site (See **Section 5**).

3.1 ESTUARINE DESIGN, STRATA AND PANELS

3.1.1 ESTUARINE DESIGN

A total of 708 NCCA 2025 estuarine sites will be sampled in 2025; of those, 42 sites will be sampled twice (revisit sites) for a total of 750 sampling events. The sites were drawn using a stratified probability survey design that is constructed from two independent designs.

- The first design consists of sites sampled in 2020 (resample sites) (Base25_20). A total of roughly 345 sites (311 to be sampled once in 2025 and 34 sites to be sampled twice in 2025) are planned to be sampled from this design.

- The second design selects new sites (Base25_25) and consists of 363 sites (355 to be sampled once in 2025 and 8 to be sampled twice). A GRTS survey design for an area resource was used for the second design.

3.1.2 STRATIFICATION

For the *estuarine design*, all coastal states are stratified by state using the postal code abbreviation. Within each state, sites are further stratified by estuary group (with the exception of Florida, Massachusetts and Texas), then by whether waters are land-dominated or ocean-dominated, and finally whether waters are inside or outside a 100 m buffer from the shoreline (See **Table 3.1** for an example of this stratification; e.g. Maine). Some states have additional stratification levels:

- Massachusetts and Texas designs are stratified by state-designated regions.
- Florida is first stratified into Southeast and Gulf Coast regions, and then further stratified by oceanic province within those regions, and then the land domination and 100 m buffer strata described above.

Table 3.1 Example of stratification for NCCA 2025 for Maine based on combinations of estuary group, land-dominated or ocean dominated designation, and whether waters are inside or outside a 100 m buffer from coastline.

PSTL_CODE	EST_GROUP	LAND_OCEAN	BUFFER_100M
ME	AP_Casco_Bay	Land_Dominated	LE100m
ME	AP_Casco_Bay	Ocean_Dominated	GT100m
ME	AP_Other	Land_Dominated	GT100m
ME	AP_Other	Land_Dominated	LE100m
ME	AP_Other	Ocean_Dominated	GT100m
ME	AP_Penobscot_Bay	Land_Dominated	LE100m
ME	AP_Penobscot_Bay	Ocean_Dominated	GT100m

3.1.3 PANELS AND NUMBER OF VISITS

For estuarine stratum, EPA selected base and oversample sites within different panel-years. Base sites are evaluated first, and replaced, as necessary, from the oversample sites. The panel-year names provide information about the number and type of visits (See **Table 3.2**).

Table 3.2 Estuarine Panels and Visits

Panel-year Name	Number of Visits in 2025
Base25_20	1
Base25_20RVT2	2
Base25_25	1
Base25_25RVT2	2
Over25_25	TBD

- Base25_20: NCCA 2025 base sites that were sampled in NCCA 2020 that will be sampled once.
- Base25_20RVT2: Sites from NCCA 2020 that will be sampled twice in NCCA 2025.
- Base25_25: New NCCA 2025 base sites (that were not sampled in NCCA 2020).
- Base25_25RVT2: NCCA 2025 revisit sites (that were not sampled in NCCA 2020). These exist when there was not an eligible NCCA 2020 site as the revisit.
- Over25_25: New sites for NCCA 2025 that are oversample sites that will only be used if any Base25_XXRVT2 or Base25_XX site cannot be sampled in 2025.

In addition to serving as replacement sites for any dropped base sites (See **Section 5** for replacement site selection information), oversample sites can also be used to supplement the NCCA site draw for potential state-wide or other geographic assessments or enhancements. Please contact the NCCA Lead for help with designing any enhancements using oversample panel-year sites.

3.2 GREAT LAKES NEARSHORE DESIGN, STRATA AND PANELS

3.2.1 DESIGN

The Great Lakes nearshore survey design consists of two independent designs.

- The first design contains resamples sites sampled during NCCA 2020 Great Lakes assessment. Roughly half of the NGLA 2025 unique sites will be from NGLA 2020, and all revisit sites were sites previously evaluated in NGLA 2020.
- The second design selects new sites using an updated survey design used for NCCA 2025. Both designs use a Generalized Random Tessellation Stratified (GRTS) survey design for an area resource.

3.2.2 STRATIFICATION

EPA stratified the *Great Lakes Nearshore* component by state within each of the Great Lakes. **Table 3.3** lists the strata for each state in the Great Lakes assessment.

Table 3.3 Great Lakes states probabilistic sites per stratum.

State Name	Great Lakes Nearshore Strata and Number of Sites					Total Number of Great Lake Sites per State
	Lake_Erie_NearShore_USA	Lake_Huron_NearShore_USA	Lake_Michigan_NearShore_USA	Lake_Ontario_NearShore_USA	Lake_Superior_NearShore_USA	
Illinois			1			1
Indiana			2			2
Michigan	6	45	28		31	110
Minnesota					8	8
New York	11			45		56
Ohio	26					26
Pennsylvania	2					2
Wisconsin			14		6	20

3.2.3 PANELS AND NUMBER OF VISITS

For Great Lakes stratum, EPA selected base and oversample sites within different panel-years. Base sites are evaluated first, and replaced, as necessary, from the oversample sites. For the base sites, the panel-year names provide information about the number and type of visits. For Great Lakes, all oversample sites are from the 2025 panel-year (See Table 3.4).

Table 3.4 Great Lake Panels and Visits

Panel-year Name	Number of Visits in 2025
Base25_20RVT2	2
Base25_20	1
Base25_25	1
Over25_25	TBD

- Base25_20RVT2: Sites from NCCA 2020 that will be sampled twice in 2025.
- Base25_20: Sites from NCCA 2020 that will be sampled once in 2025.
- Base25_25: New sites that will be sampled once in 2025.
- Over25_25: New sites that are used to replace, Base25_20RVT2, Base25_20, or Base25_25 sites that cannot be sampled.

4 INTERPRETING THE SITE EVALUATION SPREADSHEETS AND DESKTOP EVALUATION

This section describes the Site Evaluation Spreadsheet that each state received from EPA. The spreadsheet provides the base sites and oversample sites drawn for the strata within each state. It is important that states and field crews understand each portion of the spreadsheet and how to use it when evaluating NCCA 2025 sample locations.

The Site Evaluation Spreadsheets are available on the NARS SharePoint site and can be emailed to crews by EPA if needed (contact the Contractor Field Logistics Coordinator). The NCCA 2025 Site Evaluation page of the NARS SharePoint site can be accessed at: https://usepa.sharepoint.com/sites/OW_Community/nars/NCCA/Forms/AllItems.aspx?id=%2Fsites%2FOW%5FCommunity%2Fnars%2FNCCA%2FNCCA%202025%2FShared%2FSite%20Evaluation&viewid=6753ba82%2D51c5%2D4def%2Dba40%2D60733e38c314

4.1 SITE EVALUATION SPREADSHEETS

Although they are similar, there are slight differences between the estuarine and Great Lakes Site Evaluation Spreadsheets. This section explains the parts of the site evaluation spreadsheets and their similarities and differences.

4.1.1 ESTUARINE SITE EVALUATION SPREADSHEETS

Estuarine site evaluation spreadsheets are broken down into state-specific excel files. In general, the pages look very similar from one state to another. They all contain a “Metadata Electronic Recon” tab, which provides descriptions for EPA-supplied location and design information, and another tab containing all sites within that state, separated by strata.

Estuarine state exceptions to this are:

- Massachusetts and Texas designs are stratified first by state-designated regions
- Florida is first stratified into Southeast and Gulf Coast NCCA regions

4.1.2 GREAT LAKES SITE EVALUATION SPREADSHEETS

Similar to the estuarine site evaluation spreadsheets, the Great Lakes site evaluation spreadsheets are broken down into state-specific excel files. Each State spreadsheet contain one individual tab that contains the site information for each Great Lake sampled (different lakes are separated by a brown row as a reminder to not select oversample sites from outside of the current Great Lake).

4.2 EPA-SUPPLIED LOCATION AND DESIGN INFORMATION

Note that there is slightly different locational information for estuarine and Great Lakes sites. However, both contain Panel and Stratum columns, which are used in selecting oversample sites.

4.2.1 STRATUM (OR GREAT LAKES STATE) TABS

The “Stratum” (or Great Lakes State) tabs each have two main parts:

- EPA-Supplied LOCATION and DESIGN INFORMATION has column headings that are highlighted in yellow (**Figure 4.1**). This part of the spreadsheet provides information about the site. This part of the spreadsheet is locked and cannot be edited.
 - Each spreadsheet has rows of base sites (blue rows) and oversample sites (white rows). The number of base sites and oversample sites differ for each state.
 - The count of “Total Target Sites”, on the upper left of the site evaluation spreadsheet represents the total number of base sites per state. Please note, base sites labeled with the suffix “RVT2” will need to be sampled twice. The second visit of a revisit site is not included in the “Total Target Sites” number.
 - The left-hand side of the spreadsheet provides the following information about each site:
 - **2025 Site ID**: Identification code for the site which NCCA2025 will use to track sites and samples.
 - **Site ID from NCCA 2020 (if applicable)**: Identification code for the site if it was sampled in 2020. For example, the 2020 site ID can be used to review site assessment records from the previous survey.
 - **State**: Two-letter state postal code.
 - **Estuary (Estuary SES only)**: Major estuary group.
 - **Land/Ocean Dominated (Estuary SES only)**: Indicates whether an estuarine site is located in land-dominated or ocean-dominated waters.
 - **100m buffer (Estuary SES only)**: Indicates whether the site is inside or outside the 100 m buffer from coastline.
 - **Site Name (Estuary SES only) or Great Lake Name (Great Lakes SES only)**. If the site name is incorrect, please correct it in the comments field in the right-hand part of the spreadsheet (described in **Section 4.3** below).
 - **Longitude**. Decimal degrees (NAD 1983).
 - **Latitude**. Decimal degrees (NAD 1983).
 - **NCCA Region (Estuary SES only)**. National Coastal Assessment regional designation used for earlier coastal surveys.
 - **Province (Estuary SES only)**.
 - **Base/Oversample panel**. See **Section 3.1.3** and **Section 3.2.3** for descriptions of panels used in estuarine and Great Lakes nearshore draws, respectively.
 - **Stratum**. See **Section 3.1.2** and **Section 3.2.2** descriptions of estuarine and Great Lakes nearshore strata, respectively.

A. Example of EPA-Supplied Information for Estuarine Sites												
EPA-Supplied LOCATION and DESIGN INFORMATION												
LOCATION INFORMATION										DESIGN INFORMATION <i>(Consider both columns in selecting replacements)</i>		
2025 Site ID	Site ID from NCCA 2020 (if applicable)	State	Estuary	Land/Ocean Dominated	100m Buffer	Site Name	Latitude	Longitude	NCCA region	Province	Base/Oversample Panel	Stratum
If a Revisit (Base25_XXRVT2) site is dropped, please reassign the Revisit status to the next available Base25_XX site AND replace the dropped site with the next available oversample (Over25_25) site.												
NCA25_NI-10008	NA	NJ	VP_Delaware_Estuary	Land_Dominated	GT100m	Delaware Bay	39.23416655	-75.26818797	Northeast_Coast	Virginian Province Base25_25	Blue rows are Base sites.	100m
NCA25_NI-10016	NA	NJ	VP_Delaware_Estuary	Land_Dominated	GT100m	Maurice River	39.22613132	-75.01378989	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10017	NA	NJ	VP_Delaware_Estuary	Land_Dominated	GT100m	Delaware Bay	39.31672296	-75.38485589	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10009	NA	NJ	VP_Delaware_Estuary	Land_Dominated	LE100m	Culliers Run	39.61362351	-75.41518662	Northeast_Coast	Virginian Province Base25_25		100m
NCA25_NI-10018	NA	NJ	VP_Delaware_Estuary	Land_Dominated	LE100m	Cohansey River	39.38245262	-75.30311289	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10019	NA	NJ	VP_Delaware_Estuary	Land_Dominated	LE100m	Delaware Bay	39.20597374	-75.16685917	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10010	NA	NJ	VP_Delaware_Estuary	Ocean_Dominated	GT100m	Delaware Bay	38.97152524	-75.01339901	Northeast_Coast	Virginian Province Over25_25	Thick border between white and blue row separates different land/ocean or 100m buffer designations within estuary.	100m
NCA25_NI-10011	NA	NJ	VP_Delaware_Estuary	Ocean_Dominated	GT100m	Delaware Bay	39.15602465	-74.90801701	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10020	NA	NJ	VP_Delaware_Estuary	Ocean_Dominated	GT100m	Delaware Bay	39.03581549	-74.99442966	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10021	NA	NJ	VP_Delaware_Estuary	Ocean_Dominated	GT100m	Delaware Bay	39.09704846	-75.15490884	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10001	BCUA_W4	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Hackensack River	40.8226	-74.034277	Northeast_Coast	Virginian Province Base25_20	Brown fill separates estuary groups.	100m
NCA25_NI-10002	NHGD_28	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Raritan Bay	40.490977	-74.26856	Northeast_Coast	Virginian Province Base25_20		100m
NCA25_NI-10003	K4	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Arthur Kill	40.571812	-74.210873	Northeast_Coast	Virginian Province Base25_20		100m
NCA25_NI-10004	NCCA10-1592	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Hudson River	40.70423	-74.03124	Northeast_Coast	Virginian Province Base25_20		100m
NCA25_NI-10005	NHGD_18	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Newark Bay	40.65666	-74.14683	Northeast_Coast	Virginian Province Base25_20		100m
NCA25_NI-10022	NA	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Raritan Bay	40.46731426	-74.24564852	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10023	NA	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Raritan Bay	40.46262585	-74.21895563	Northeast_Coast	Virginian Province Over25_25	White rows are Oversample sites.	100m
NCA25_NI-10024	NA	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Hudson River	40.66498061	-74.06368358	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10025	NA	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Raritan Bay	40.46027952	-74.20546051	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10026	NA	NJ	VP_NY_NJ_Harbor	Land_Dominated	GT100m	Sandy Hook Bay	40.42491507	-74.00463917	Northeast_Coast	Virginian Province Over25_25		100m
NCA25_NI-10006	NHGD_11	NJ	VP_NY_NJ_Harbor	Land_Dominated	LE100m	Passaic River	40.73966	-74.15566	Northeast_Coast	Virginian Province Base25_20		100m
NCA25_NI-10007	NHGD_15	NJ	VP_NY_NJ_Harbor	Land_Dominated	LE100m	Hackensack River	40.7395	-74.084	Northeast_Coast	Virginian Province Base25_20		100m

B. Example of EPA-Supplied Information for Great Lake Sites							
EPA-Supplied LOCATION and DESIGN INFORMATION							
LOCATION INFORMATION					DESIGN INFORMATION <i>(Consider both columns in selecting replacements)</i>		
2025 Site ID	Site ID from NCCA 2020 (if applicable)	State	Great Lake	Latitude	Longitude	Base/Oversample Panel	Stratum
If a Revisit (Base25_20RVT2) site is dropped, please reassign the Revisit status to the next available Base25_20 site AND replace the dropped site with the							
NGL25_MI-10001	NGL20_MI-10002		Michigan Lake Erie	41.9783891	-83.22606826	Base25_20RVT2	MI_Lake Erie
NGL25_MI-10002	NGL20_MI-10003		Michigan Lake Erie	41.77540808	-83.42459803	Base25_20	MI_Lake Erie
NGL25_MI-10003	NGL20_MI-10001		Michigan Lake Erie	41.85548789	-83.37181082	Base25_20	MI_Lake Erie
NGL25_MI-10004	NA		Michigan Lake Erie	41.9075344	-83.21807654	Base25_25	MI_Lake Erie
NGL25_MI-10005	NA		Michigan Lake Erie	41.93172537	-83.27415101	Base25_25	MI_Lake Erie
NGL25_MI-10006	NA		Michigan Lake Erie	41.85912637	-83.33013924	Base25_25	MI_Lake Erie
NGL25_MI-10007	NA		Michigan Lake Erie	41.99215659	-83.15253293	Over25_25	MI_Lake Erie
NGL25_MI-10008	NA		Michigan Lake Erie	41.87124727	-83.28346372	Over25_25	MI_Lake Erie
NGL25_MI-10009	NA		Michigan Lake Erie	41.73801703	-83.44178842	Over25_25	MI_Lake Erie
NGL25_MI-10010	NA		Michigan Lake Erie	42.04054533	-83.17118489	Over25_25	MI_Lake Erie
NGL25_MI-10011	NA		Michigan Lake Erie	41.84698502	-83.37679593	Over25_25	MI_Lake Erie
NGL25_MI-10012	NA		Michigan Lake Erie	41.82274188	-83.41406779	Over25_25	MI_Lake Erie
If a Revisit (Base25_20RVT2) site is dropped, please reassign the Revisit status to the next available Base25_20 site AND replace the dropped site with the							
NGL25_MI-10013	NGL20_MI-10020		Michigan Lake Huron	43.66117226	-83.81374505	Base25_20RVT2	MI_Lake Huron
NGL25_MI-10014	NGL20_MI-10025		Michigan Lake Huron	45.96306896	-84.7143035	Base25_20RVT2	MI_Lake Huron
NGL25_MI-10015	NGL20_MI-10031		Michigan Lake Huron	44.01349983	-82.76739263	Base25_20RVT2	MI_Lake Huron

Figure 4.1 Example EPA- Supplied Design Info included in Site Evaluation Spreadsheets for Estuaries (A) and Great Lakes (B).

The following two sections describe each part of the spreadsheet.

4.2.2 MEANINGS OF DIFFERENT ROW COLORS

- The blue rows identify the base sites for each stratum.

- Immediately below the blue rows are **unshaded (white) rows** identifying replacements, or oversample sites, for each stratum.
- For Estuarine site evaluations; **A thick border between a white and blue row** separates Land/Ocean and Buffer designations within an estuary group. (Shown in **Figure 4.1A**)
- Estuarine states in which samples are drawn from different estuary groups (and, in special cases, state-designated regions e.g., Massachusetts), or Great Lakes states with sites in more than one lake (e.g., Michigan) have **brown rows** that separate the lakes, estuaries, or regions. *It is important that replacement sites be drawn from oversample sites in the same estuary (if possible), state-designated region, or Great Lake as the dropped sites. Don't cross brown rows to select oversample sites.* (Shown in **Figure 4.1A**)

4.3 DOCUMENTATION AND DESKTOP EVALUATION

4.3.1 DESKTOP EVALUATION DOCUMENTATION SECTIONS

The right-hand side of the site evaluation spreadsheet (see **Figure 4.2**) provides space for evaluators or field crews to complete the desktop and in-field assessments described in **Section 4.3.2**. The following information is collected in the right-hand side of the spreadsheet:

- **Contact Information.** Provide the name, phone number, and email address of the person most knowledgeable about the desktop review and in-field reconnaissance.
- **Desktop and On-Site Evaluations:** Use the dropdown menus to respond to each of the following questions. **For EPA's survey weight calculations, it is important that all questions have answers for all evaluated sites.**

As crews work through the site evaluation process described in **Section 4**, any site which receives the following answers:

- **Yes** responses for all three questions (including N/A for required landowner permission): Must be sampled.
 - **No** for any question, the site would not be sampled (see example categories in **Figure 4.4**).
 - **Maybe** for any question: Must have an on-site evaluation or subsequent planned sampling visit.
- **Comments (required if dropping a site, otherwise optional):** Use the space to provide any information that might be useful for EPA's review such as:
 - Reasons for dropping a site;
 - comments about target determination;
 - other additional information related to the three questions;
 - corrections to a site name.

Contact Information					
Name	Phone Number	Email			
DESKTOP and ON-SITE EVALUATIONS (Complete for Design Sites and Any Necessary Replacements)					
Does the site meet the requirements of a target site?	Is the site accessible and safe to sample?	Has landowner granted permission to access the site?	Was this site an Oversample site? <small>(Please note, oversample sites can be used in multiple panels- make sure your oversample site has not been used already for another site.)</small>	If yes, please denote which BASE 2025 Site ID it was replacing.	Comments: Must provide explanation for why a site is dropped; Alternate or Corrected Site Name; Other Comments

Figure 4.2 Site Evaluation Spreadsheet: Fields to be completed by evaluator or field crew: Evaluator’s contact information (top); Desktop and On-Site Evaluation information (bottom).

4.3.2 CONDUCTING THE DESKTOP EVALUATION

The objective of the desktop evaluation is to eliminate sites that are clearly not part of the target population or cannot be sampled. By using data that are easily obtainable and verifiable, the desktop evaluation locates the site and determines if the selected site is, or likely will be, in the target population and sampleable during the 2025 field sampling season. If information obtained during the desktop evaluation is not conclusive, then a field visit is required.

In order to achieve the most robust results possible with the probabilistic sampling design, every effort must be made to sample the base sites that were generated. Some sites may be accessed easily while others may require more lengthy or time-consuming trips. It is very important to not reject a site based on inconvenience, inaccessibility or in an attempt to sample a specific location of interest.

4.3.2.1 Steps in Desktop Evaluation

Before starting the desktop evaluation, the field crew should obtain as much information as possible for each site.

Figure 4.3 summarizes the steps to locate and evaluate selected field sites for their eligibility and accessibility. The desktop process consists of the following steps:

1. **Study the Site Evaluation Spreadsheet** described in Section 4.1.
2. **Gather information about the site.** A number of sources of information are available, including aerial images, topographic maps, state, county, or tribal coastal data, the National Hydrography Dataset (NHD), personal and local knowledge, literature and scientific reports, land ownership records, and the internet.
3. **Locate the X-site.** Use the most recent aerial imagery that can be obtained. Using this imagery and any supplemental sources of information, determine if the X-site is within 37 m (If a site is not sampleable within 37 m of the X-site coordinates, crews may move up to 100 m away from the X-site to find a sampleable area.) of a coastal estuary or the Great Lakes nearshore.

4. **Determine if X-site is within the target population.** If the site appears to be outside of an estuarine area (for marine sites); or for Great Lakes sites, greater than 5 km from shore, greater than 30 m in depth, or extends further than 500m into small tributaries, marginal ponds and small embayments, drop the site and replace it with an alternative site. Notify the Contractor Field Logistics Coordinator (Contact Information is provided on **page 8**.) and submit an updated version of the site evaluation spreadsheet. Select a replacement site following the protocol described in **Section 5**.
5. **Determine if a site is safe to access and sample.**
 - Review maps, other collected information, or enlist the assistance of someone with personal knowledge of the location of the X-site to determine if it is physically accessible by field crews and safe to sample.
 - Using definitions in **Section 4.3** determine if the site meets various sampleable/non-sampleable characteristics that are to be used in completing the site evaluation spreadsheet.
6. **Examine nearby area.** Review maps and other sources of information to determine if a sampleable site exists within a radius of 37 m (or up to 100 m; See **Section 4.3.2.1**) around the X-site. If a sampleable site does not exist within this radius, then follow the procedures for selecting an alternate site in the **Section 5**.
7. **Document findings in the Site Evaluation Spreadsheet.** If the maps and other sources of information indicate **conclusively** that the site is **not** accessible, (if the site is in a shipping channel, for example):
 - Note the reason(s) why it is not accessible and
 - Note whether the X-site is part of the target population (from Step 4 above).

Information provided in this spreadsheet is critical to the statistical analyses of data from the survey. Complete the spreadsheet (see **Figure 4.4**) to provide EPA with as much information as possible for its data analysis. Three aspects are especially important and must be completed for all evaluated sites. (See **Section 4.3** for drop-down choices). Provide the findings of whether the site:

- Meets the target population definition. Even if the site isn't safe to be sampled, provide your best assessment for whether the site is in the target population.
- Is accessible and safe to sample. If it is anticipated that the site will require additional resources and/or considerable time to sample, contact the NCCA Project Leader to discuss whether the site should be dropped (see contact information on **page 8**). Consider only physical accessibility here, and not permission for access or sampling (i.e. answer this question with the assumption that permission would be granted).
- Has landowner approved access to the site (if necessary) (see **Section 6**).

Depending on the circumstances, EPA may remove unsafe or inaccessible sites from the sample frame for future NCCA surveys.

8. **Prepare the official site packet.** The field crew should keep information and data sources used in the desktop evaluation as part of the official site packet for each site. For each site deemed sampleable or inconclusive (sites that had a response of “maybe” for satisfying target population requirements or site accessibility), the site packet also should include forms, any necessary research permits (if applicable), and site access instructions. The packet also should include the appropriate maps, aerial images, contact information, and copies of landowner permission for access.

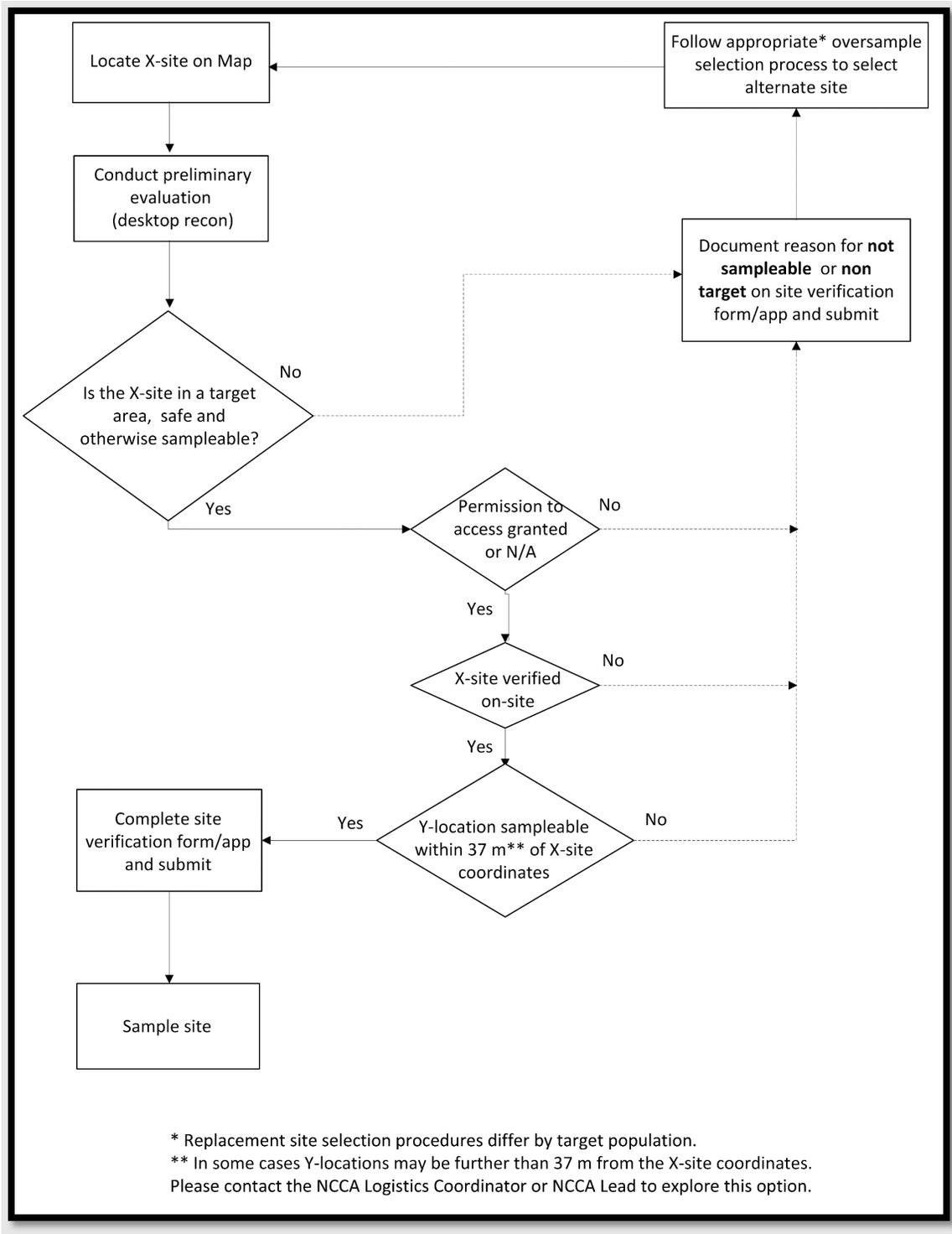


Figure 4.3 Flowchart of site evaluation process

Question 1: Does the site meet the requirements of a target site?

1. Yes, Target
2. This selection is no longer in use.
3. Maybe, requires on-site evaluation
4. Maybe, tide too low (estuarine sites; return at appropriate time in tidal cycle)
5. Maybe, mudflat at certain times (return at appropriate time in tidal cycle)
6. Unable to access site, but clearly is target (e.g., in shipping channel)
7. Unable to access site, but probably target (e.g., site map indicates target)
8. Unable to access site, and unable to determine if target
9. No, Dry
10. No, Mudflat (permanent)
11. No, Wetland
12. No, Estuarine site is outside the imaginary line connecting two land features at the seaward boundary
13. No, Marine site has salinity <0.5 psu (freshwater is out of scope except within Great Lakes)
14. No, Map Error (X-site is clearly not target, for example: parking lot)
15. No, Great Lakes Site is deeper than 30 m.
16. No, Great Lakes Site is greater than 5 km from shore.
17. No, Great Lakes Site is in a connecting channel/river (e.g. Saint Mary's River between Lake Superior and Lake Huron is not included)
18. No, site is > 500m upstream in a tributary to a Great Lake (e.g. Maumee River in Ohio)
19. No, site does not meet the definition of a reef flat (defined as the shallow area between the shoreline intertidal zone and the reef crest of a fringing reef) (Reef flat spreadsheets only)
20. No, Other (explain in comments)

Question 2: Is the site accessible and safe to sample?

Note that responses to the second question reference whether the site would be sampleable if landowner permission is granted.

1. Yes, Sampleable
2. Maybe, temporarily inaccessible (try again later)
3. Maybe, Unable to access site; available sources are insufficient to determine if target
4. No, Equipment related unsampleable (e.g., less than 1 m in depth).
5. No, permanently inaccessible (unable/unsafe to reach site)
6. No, EPA concurred that site could be dropped because access would require extreme efforts

Question 3: Has landowner granted permission to access the site?

- N/A. Public access available.
- Yes. Landowner granted permission
- No. Landowner denied permission

Question 4: Is this an oversample site?

- Yes. (Be sure to note which site it is replacing in the next column.)
- No.

** If an unusual weather event causes measured salinity to be below 0.5 psu at a site where historical salinity values are greater than or equal to 0.5 psu, and the site is otherwise within the estuarine target population, sample the site or make plans to revisit the site and sample under representative conditions. Document the severe weather event in the comments for that site. If in doubt, contact the NCCA Field Logistics Coordinator.*

Figure 4.4 Site Evaluation Spreadsheet: Questions and Dropdown Answers

4.4 SAMPLEABLE VS NON-SAMPLEABLE SITES

After you confirm the location of the X-site, evaluate area surrounding the X-site and classify the site as target (sampleable), target (temporary non-sampleable), no access or non-target (not sampleable). These definitions below describe the choices from the dropdown menu listed in **Figure 4.4**.

- **Non-Sampleable Temporary Category**
 - The site could not be sampled on that particular day but is still a target site. Examples might include a recent precipitation event that has caused unrepresentative conditions. The site should be revisited.
- **No Access to Site Categories**
 - *Access Permission Denied*--You are denied access to the site by the landowners.
 - *Permanently Inaccessible*--Site is unlikely to be sampled by anyone due to physical barriers that prevent access to the site (e.g., major shipping lane).
 - *Temporarily Inaccessible*--Site cannot be reached at the present time due to barriers that may not be present at some future date (e.g. high water, extreme weather event) but are expected to exist throughout the index period.
 - *Equipment-related inaccessibility: site <1m deep* - The site could not be sampled because it is less than 1 m deep and the draft of the boat exceeds the water depth, preventing access. No suitable depth could be found within 37 m (or up to 100 m; See **Section 4.3.2.1**) from the X-site. This site is still part of the target population and if the crew can sample a site that is less than 1 m deep, they should do so.
 - *Equipment-related inaccessibility: site >1 m deep* - The site was deeper than 1 m but the boat draft exceeds the water depth, preventing access. No suitable depth could be found within 37 m (or up to 100 m; See **Section 4.3.2.1**) from the X-site. Before dropping this target site, every attempt should be made to bring a boat of suitable draft for the location.
- **Non-Target (Non-Sampleable) Categories**
 - *Dry site*--There is no coastal water anywhere within a 37 m radius (or up to 100 m if necessary) centered on the X-site. Please denote in the comments if the site was dry at time of sampling visit or if site was determined to be dry from another source and/or field visit prior to actual sampling visit.
 - *Mudflat* - There is no standing water, but site is clearly a permanent mudflat. If site is likely to be covered with water at other times during the index period, the site should be sampled on another day.
 - *Wetland*- There is standing water present, but site is in a wetland.
 - *Not estuarine*-- site is outside of the imaginary straight-line intersecting two land features that would fully enclose a body of water.
 - *Estuarine, salinity <0.5 psu* freshwater is out of scope except with the Great Lakes.
 - *Map Error* - No evidence that the X-site represents coastal waters (x-site is inland, significantly up-stream in a stream/river, etc.)
 - *Great Lakes, not nearshore (i.e., beyond 5 km from shore)*
 - *Great Lakes, too deep (i.e., water depth at site is greater than 30 m.)*

- *Other* - The site is non-target for reasons other than those above. Please describe in detail and verify with your NCCA Project Lead before replacing a site based on this category (see contact information on **page 8**).

5 SITE REPLACEMENT

EPA requires that crews replace sites following a specific protocol to maintain the statistical integrity of the NCCA survey design. Oversamples sites may only be selected as described. Direct questions about site replacement to the NCCA Contractor Field Logistics Coordinator and/or the NCCA Lead.

Select replacement sites by following EPA’s protocol. Site Evaluation Spreadsheets organize base (primary panel-year) and oversample (replacement panel-year) sites by state and stratum. The sites are listed on the spreadsheet in the order in which they were randomly selected. Each site was assigned a Site ID reflecting that numerical order. All primary (base) sites must be evaluated for sampling and should be sampled unless they are determined to be non-target, non-sampleable, or non-accessible. If a primary site is rejected because it is non-sampleable or not accessible, then it will be replaced by the next alternate (oversample) site within the same panel-year and stratum¹.

IMPORTANT: Sites are organized to be evaluated in **SiteID** order and when necessary, may only be replaced by oversample sites within **same Stratum** or Great Lake from the site evaluation spreadsheet. Two important rules must be followed if making replacements:

- If a site is evaluated and it is determined that it cannot be sampled, then it is to be replaced by the next oversample site in order on the list within the same Stratum. For estuarine sites, it may be necessary to select an oversample site outside of the stratum (different combination of estuary group, land/ocean domination, and 100m buffer designation). **Figure 5.1** demonstrates the Oversample selection process specific to estuarine sites.
- If the panel of the dropped site is Base25_XXRVT2, then its replacement, which will be a base site, takes on the RVT2 assignment. That is, the site must be visited twice in 2025. This replacement base site must then be replaced using the oversample site list as there is no net loss of total target sites. Follow the flowchart in **Figure 5.1** and **Figure 5.2** to see how to replace estuarine and Great Lakes sites and refer to **Section 5.1** for detailed examples.

Site Replacement - Key Points to Remember:

- If a site is evaluated and it is determined that it cannot be sampled, then it is to be replaced by the next available oversample site in order on the list within the stratum or Great Lake.
- If you drop a revisit (Base25_XXRVT2) site, it should be replaced according to the hierarchy described in the flowchart in **Figure 5.1** and **Figure 5.2**.

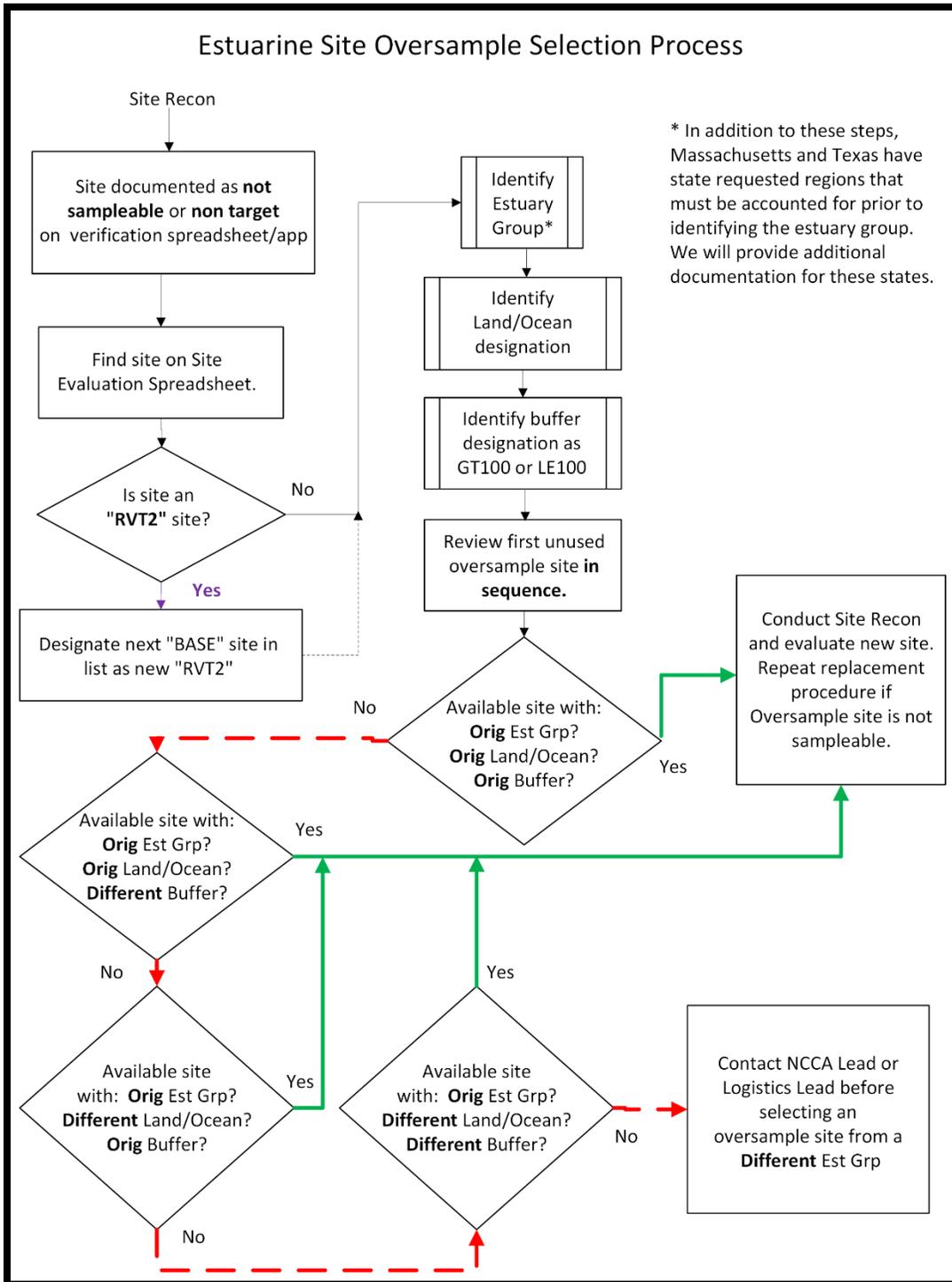


Figure 5.1 Hierarchy of replacing a dropped estuarine site.

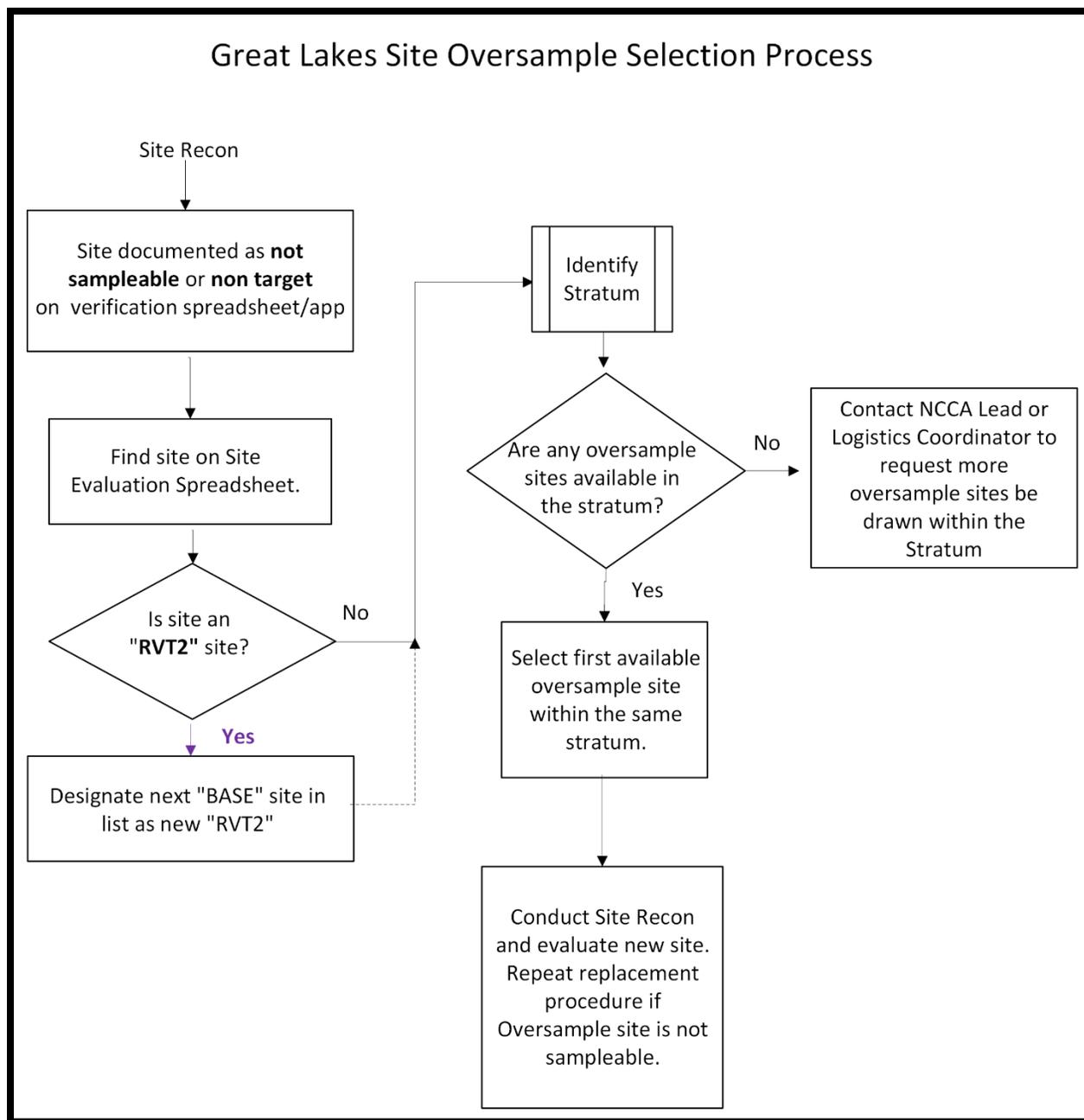


Figure 5.2 Hierarchy of replacing a dropped Great Lakes site.

5.1 EXAMPLE IN REPLACING DROPPED SITES

5.1.1 REPLACING A BASE 25_20 OR BASE 25_25 SITE

Great Lakes sites: Both Base25_20 and Base25_25 sites should be replaced with the first available Over25_25 site from the same stratum. For Great Lakes sites, this means selecting the next available Oversample from the same state + Great Lake. As a reminder, brown fill

will separate sites by Great Lake for states that border multiple Great Lakes. Do not cross the brown fill within the site evaluation spreadsheets when selecting an oversample site (e.g. replacing a Lake Erie site with a Lake Huron oversample).

For example, as shown in Figure 5.3, if Base25_20 site, NGL25_MI-10003, cannot be sampled, the first available unused Over25_25 site within the MI_Lake Erie stratum, NGL25_MI-10007, should be sampled once. Always go in order of Site_ID when selecting the Oversample.

LOCATION INFORMATION						DESIGN INFORMATION <i>(Consider both columns in selecting replacements)</i>	
2025 Site ID	Site ID from NCCA 2020 (if applicable)	State	Great Lake	Latitude	Longitude	Base/ Oversample Panel	Stratum
If a Revisit (Base25_20RVT2) site is dropped, please reassign the Revisit status to the next available Base25_20 site AND replace the							
NGL25_MI-10001	NGL20_MI-10002	Michigan	Lake Erie	41.9783891	-83.22606826	Base25_20RVT2	MI_Lake Erie
NGL25_MI-10002	NGL20_MI-10003	Michigan	Lake Erie	41.77540808	-83.42459803	Base25_20	MI_Lake Erie
NGL25_MI-10003	NGL20_MI-10001	Michigan	Lake Erie	41.85548789	-83.37181082	Base25_20	MI_Lake Erie
NGL25_MI-10004	NA	Michigan	Lake Erie	41.9075344	-83.21807654	Base25_25	MI_Lake Erie
NGL25_MI-10005	NA	Michigan	Lake Erie	41.93172537	-83.27415101	Base25_25	MI_Lake Erie
NGL25_MI-10006	NA	Michigan	Lake Erie	41.85912637	-83.33013924	Base25_25	MI_Lake Erie
NGL25_MI-10007	NA	Michigan	Lake Erie	41.99215659	-83.15253293	Over25_25	MI_Lake Erie
NGL25_MI-10008	NA	Michigan	Lake Erie	41.87124727	-83.28346372	Over25_25	MI_Lake Erie
NGL25_MI-10009	NA	Michigan	Lake Erie	41.73801703	-83.44178842	Over25_25	MI_Lake Erie
NGL25_MI-10010	NA	Michigan	Lake Erie	42.04054533	-83.17118489	Over25_25	MI_Lake Erie
NGL25_MI-10011	NA	Michigan	Lake Erie	41.84698502	-83.37679593	Over25_25	MI_Lake Erie
NGL25_MI-10012	NA	Michigan	Lake Erie	41.82274188	-83.41406778	Over25_25	MI_Lake Erie
Do not cross brown fill to select Oversample from different Great Lake							
If a Revisit (Base25_20RVT2) site is dropped, please reassign the Revisit status to the next available Base25_20 site AND replace the							
NGL25_MI-10013	NGL20_MI-10020	Michigan	Lake Huron	43.66117226	-83.81374505	Base25_20RVT2	MI_Lake Huron
NGL25_MI-10014	NGL20_MI-10025	Michigan	Lake Huron	45.96306896	-84.7143035	Base25_20RVT2	MI_Lake Huron
NGL25_MI-10015	NGL20_MI-10031	Michigan	Lake Huron	44.01349983	-82.76739263	Base25_20RVT2	MI_Lake Huron
NGL25_MI-10016	NGL20_MI-10037	Michigan	Lake Huron	44.05814083	-82.89045983	Base25_20RVT2	MI_Lake Huron
NGL25_MI-10017	NGL20_MI-10021	Michigan	Lake Huron	43.24615352	-82.46420498	Base25_20RVT2	MI_Lake Huron

Figure 5.3 Site replacement of a Great Lakes Base25_XX site with first available, unused Over25_25 site.

Estuarine sites: When replacing Base25_XX sites, use the next available Over25_25 site from the same stratum (having the same estuary group, land/ocean designation, and 100 m buffer designation). Should the Oversamples sites in a stratum be exhausted however, crews should utilize following procedure shown below (and illustrated in Figure 5.1).

1. Keep *original* estuary group, keep *original* land/ocean designation, keep *original* 100 m buffer designation
2. Keep *original* estuary group, keep *original* land/ocean designation, **change 100 m buffer designation**
3. Keep *original* estuary group, **change land/ocean designation**, keep *original* 100 m buffer
4. Keep *original* estuary group, **change land/ocean designation, change 100 m buffer**

(Contact the NCCA Lead or Logistics Coordinator before moving to the choices below.)

5. **Change estuary group**, keep *original* land/ocean designation, keep *original* 100 m buffer designation.
6. Repeat step 2 for new estuary group.

7. Repeat step 3 for new estuary group.
8. Repeat step 4 for new estuary group.
9. Repeat steps 5, 6, 7, and 8 as necessary.

For example, as shown in **Figure 5.4**, if Base25_25 site, NCA25_DE-10008, is dropped, the first available unused Over25_25 site within the same stratum should be used (DE-VP_Chesapeake Bay-Land_Dominated-GT100m). If both Over25_25 sites (NCA25_DE-10016 or NCA25_DE10017) are also dropped or already used, then the next available Over25_25 site that should be chosen is NCA25_DE_10018. This Oversample changes the 100 m buffer designation but keeps the *original* estuary group and keeps the *original* land/ocean designation.

EPA-Supplied LOCATION and DESIGN INFORMATION						
LOCATION INFORMATION					DESIGN INFORMATION <i>(Consider both columns in selecting replacements)</i>	
2025 Site ID	Estuary	Land/Ocean Dominated	100m Buffer	Site Name	Base/ Oversample Panel	1) Replace Base site with Oversample from same stratum
NCA25_DE-10008	VP_Chesapeake_Bay	Land_Dominated	GT100m	Nanticoke River	Base25_25	DE-VP_Chesapeake_Bay-Land_Dominated-GT100m
NCA25_DE-10016	VP_Chesapeake_Bay	Land_Dominated	GT100m	Nanticoke River	Over25_25	DE-VP_Chesapeake_Bay-Land_Dominated-GT100m
NCA25_DE-10017	VP_Chesapeake_Bay	Land_Dominated	GT100m	Nanticoke River	Over25_25	DE-VP_Chesapeake_Bay-Land_Dominated-GT100m
NCA25_DE-10009	VP_Chesapeake_Bay	Land_Dominated	LE100m	Broad Creek	Base25_25	DE-VP_Chesapeake_Bay-Land_Dominated-LE100m
NCA25_DE-10018	VP_Chesapeake_Bay	Land_Dominated	LE100m	Nanticoke River	Over25_25	DE-VP_Chesapeake_Bay-Land_Dominated-LE100m
NCA25_DE-10019	VP_Chesapeake_Bay	Land_Dominated	LE100m	Nanticoke River	Over25_25	DE-VP_Chesapeake_Bay-Land_Dominated-LE100m

2) Next set of Oversamples to use if all GT100m Over25_25 sites are exhausted.

Figure 5.4 Site replacement of an Estuarine Base25_XX site with first available, unused Over25_25 site (highlighted in red). Highlighted green Over25_25 sites would be the first used if Oversamples in the stratum are exhausted following procedure. Note: some columns have been omitted for ease of view.

5.1.2 REPLACING A DROPPED REVISIT SITE: “BASE25_20RVT2” OR “BASE25_25RVT2”

Should a Revisit site (Base25_20RVT2 or Base25_25RVT2) site need to be replaced, the first available Base25_XX site within the same stratum will be used. This site will receive the “RVT2” designation and be sampled twice in the 2025 field season. The used Base25_XX site will then be replaced with the first available Over25_25 site within the same stratum so as to not change the total number of base sites. **Figure 5.5** showcases the site replacement procedure for NCA25_MS-10001 which selects NCA25_MS-10002 as the replacement site and is sampled twice. This site is then replaced with the NCA_25-10020 Over25_25 site. *Note, site evaluation spreadsheets may look different as some columns have been hidden for ease of view.*

LOCATION INFORMATION				DESIGN INFORMATION <i>(Consider both columns in selecting replacements)</i>	
2025 Site ID	State	NCCA region	Province	Base/ Oversample Panel	Stratum
If a Revisit (Base25_20RVT2 or Base25_25RVT2) site is dropped, please reassign the Revisit status to:					1) Replace RVT2 site with next Base site
NCA25_MS-10001	MS	Gulf_Coast	Louisianian Province	Base25_20RVT2	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10002	MS	Gulf_Coast	Louisianian Province	Base25_20	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10003	MS	Gulf_Coast	Louisianian Province	Base25_20	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10004	MS	Gulf_Coast	Louisianian Province	Base25_20	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10005	MS	Gulf_Coast	Louisianian Province	Base25_20	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10006	MS	Gulf_Coast	Louisianian Province	Base25_20	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10010	MS	Gulf_Coast	Louisianian Province	Base25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10011	MS	Gulf_Coast	Louisianian Province	Base25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10012	MS	Gulf_Coast	Louisianian Province	Base25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10013	MS	Gulf_Coast	Louisianian Province	Base25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10020	MS	Gulf_Coast	Louisianian Province	Over25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10021	MS	Gulf_Coast	Louisianian Province	Over25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10022	MS	Gulf_Coast	Louisianian Province	Over25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10023	MS	Gulf_Coast	Louisianian Province	Over25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10024	MS	Gulf_Coast	Louisianian Province	Over25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10025	MS	Gulf_Coast	Louisianian Province	Over25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m
NCA25_MS-10026	MS	Gulf_Coast	Louisianian Province	Over25_25	MS-LP_West_Mississippi_Sound-Land_Dominated-GT100m

2) Replace Base site with first unused Over25_25 Site.

Figure 5.5 Site replacement procedure for a Base25_XRVT2 site. The replacement site will be visited twice and that site will be replaced by an Over25_25 site within the same stratum. Note: some columns have been omitted for ease of view.

6 OBTAINING LANDOWNER PERMISSION (WHEN APPLICABLE)

It is important to obtain landowner permission prior to sampling, when necessary. NCCA sites are generally accessible by boat from the open waterway. To access the waterway, the field crew should first determine if a public dock will provide suitable access for the boat. If a private dock is more convenient, then the field crew must obtain landowner permission before using the dock. In addition, field crews must comply with any special conditions and requirements for accessing and sampling on state, tribal or federal lands/waters.

Each field crew is responsible for obtaining permission to access their sampling sites. Landowner information can be obtained from the county tax assessor office. Tax assessor maps will display landowner boundaries, addresses and, oftentimes, phone numbers. This information enables the field crew to contact landowners before the sampling day, and identifies which landowner owns which portions of the shoreline. The provision of county maps for the field crews will help clarify access to the targeted sampling site.

EPA recommends that each field crew obtain permission prior to the sampling day to minimize loss of time during field sampling. The field crew can contact the landowner either through an in-person reconnaissance visit or through mailing permission request letters to the landowner, such as a letter signed by the Regional Monitoring Coordinator with a permission slip for the landowner to return. Crews should also consider requesting landowner permission for oversample sites in case of dropped base sites. **Figure 6.1** provides a sample letter and permission form that your program or organization can modify as appropriate. In either case, a signed permission slip, such as the one shown in **Figure 6.1** can be used as documentation on the day of sampling.

Field crews should work with appropriate state, tribal and federal agencies to determine any permits or special conditions that apply to the access points and the coastal waters. As needed, EPA will assist field crews in coordinating efforts with tribes and other federal agencies. Field crews should work with the appropriate state agencies to determine any permits or special conditions that apply to state lands.

Some crews will choose to deal with access issues on the day of the sampling event. This method is usually adequate if a desk-top reconnaissance shows that the area around the site includes enough public land to gain access to the waterway. If the site is in an area that is largely privately-owned land, waiting until the day of sampling could pose unnecessary delays and access issues that should have been resolved prior to the scheduled sampling day.

(Date)
Dear Landowner:

The US Environmental Protection Agency, in cooperation with State agencies, is conducting an environmental assessment of coastal waters (estuaries and Great Lakes) across the United States. Approximately 725 coastal sites and 225 Great Lakes sites were statistically selected for sampling in 2025. Water quality chemistry, aquatic life, and habitat will be evaluated at each site. The findings of the survey will not be used for enforcement or regulatory purposes.

We are contacting you prior to the site visit to obtain permission (form enclosed) to access the sampling site. We have enclosed a copy of a map(s) with the site(s) identified by an "X" at the specific point to be sampled. We realize that working on your property is a privilege and we will respect your rights and wishes at all times.

Please return the completed Access Permission Form in the enclosed envelope by (date). If you have any questions concerning this request, please contact me (phone number). We are looking forward to hearing from you.

Sincerely,

(Name)

I grant permission to the biological field crew from (state agency, Cooperator, or contractor) to access the coastal target site located on my property as part of the EPA's National Coastal Condition Assessment.

_____ Do grant permission
_____ Do grant permission but with the following restrictions:
_____ Do not grant permission

Landowner Name (Please print): _____
Landowner Signature: _____
Date: _____
Phone Number: _____
Address: _____

*If the operator is different than the landowner, please list the name and phone number below so that we may contact the operator before the site visit.

Figure 6.1 Landowner Letter and Permission Form

7 FINAL SITE VERIFICATION AT THE LOCATION

The final step is to visit the site, usually as part of reconnaissance or the actual field sampling visit. Complete the Site Verification information on the NCCA App for each site visited with the intent to sample (regardless of whether it is sampled), following the procedures described below.

Equipment:

- Sampling permit and landowner access (if required)
- Field Operations Manual and/or laminated quick reference guide
- Site dossier, including access information, site spreadsheet with map coordinates, street and/or topographic maps with “X-site” marked
- NCCA Fact Sheets
- GPS unit (preferably one capable of recording waypoints) with manual, reference card, extra battery pack

Figure 7.1 Equipment for In-Field Verification

- **Record directions.** While traveling from a base location to a site, the field crew provides a detailed description of the route taken on the Site Verification Form (Figure 7.2) in the NCCA App. The directions will allow others to find the site again if it is selected for a repeat visit in the future.
- **Confirm location.** Upon reaching the target site, confirm that the field crew is located at the same latitude and longitude identified in spreadsheet for the X-site. Sampling site verification is based on map coordinates and locational data from the GPS.
 - **Navigate to the X-site.** Navigate the sampling vessel as close as possible to the target X-site using GPS (it is preferred that the sampling location is no more than 0.02 nautical miles (nm) or 37 m from the target X-site however the sampling location may be up to 100 m from the X-site if sampling is not possible within 37 m (See Section 4.3.2.1)). Compare the target X-site coordinates with the GPS coordinates displayed at the sampling site.
 - **Record, in the Site Verification Form, the actual coordinates** of the vessel after anchorage, not the initial intended coordinates, on the Verification Form in the App. Make sure the GPS unit is set to reference the NAD83 geospatial data set and for decimal degrees (not degrees, minutes, seconds). This new location is where sampling will begin and is called the Y-location.
 - **Record the type of satellite fix** (≤ 3 or ≥ 4) for QA purposes in the Site Verification Form in the App.

- **Assess sampleability** as described in **Section 2** and **Section 4.4**. In addition, verify that the water is deep enough so that samples can be collected from the boat, otherwise, the site is non-sampleable. Questions about wading to sample shallow water should be directed to the Contractor Field Logistics Coordinator.
- **Assess relocations** if the X-site itself is not sampleable. Every attempt should be made to relocate to a sampleable area within a 37 m (or up to 100 m; See **Section 4.3.2.1**) radius of the intended location. In searching for a suitable relocation site, the Field Crew Leader should choose a specific compass heading (e.g., north, south, east, west) and slowly motor the vessel in that direction for approximately 15-20 m. Assess the potential relocated site as described in **Section 4**. Should the relocated site fail to meet the operational definition of sampleable, then this process may be continued using the same heading out to the 37 m (or up to 100 m; See **Section 4.3.2.1**) mark or using a new heading until an acceptable sampling location is found. If a sufficient amount of effort is expended and no suitable site is found, then the determination may be made that the site is non-sampleable.
- Mark the appropriate bubble on the Site Verification Form (**Figure 7.2**). Do not sample non-target or "Non-sampleable" or "No Access" sites. Fill in the "NO" bubble for "Did you sample this site?" and fill in the appropriate bubble in the "Non-Sampleable-Permanent" or "Non-Sampleable-Temporary" section of the Verification Form in the App; provide detailed explanation in comments section. In the site evaluation spreadsheet of base and oversample sites (**Figure 4.4**), provide comments in the last column.

Site name	<input type="text"/>	Date collected	<input type="text"/>	<input type="button" value="Today"/>		
Crew	<input type="text"/>	<input type="button" value="Select Date"/>				
Did you sample this site? <input type="radio"/> YES <input type="radio"/> NO <input type="button" value="Comment"/>						
Station Depth (m):	<input type="text" value="XX.X"/>					
Arrival Time:	<input type="text" value="XX:XX"/>	<input type="button" value="Now"/>	Depart Time:	<input type="text" value="XX:XX"/>	<input type="button" value="Now"/>	
VERIFICATION INFORMATION						
Site verified by (mark all that apply):				Other ver. type:		
<input type="checkbox"/> GPS	<input type="checkbox"/> Local contact	<input type="checkbox"/> Signs	<input type="checkbox"/> Roads	<input type="checkbox"/> Topo. map	<input type="checkbox"/> Not verified	<input type="text" value="Describe other"/>
LOCATION INFORMATION						
Design Latitude:	<input type="text" value="30.3892666840275"/>	Design Longitude:	<input type="text" value="-88.0007375670584"/>			
Measured coordinates of Y-location (Decimal Degrees - NAD 83):						
Measured Latitude	<input type="text" value="XX.XXXX"/>	Measured Longitude	<input type="text" value="XXX.XXXX"/>	Number of satellites		
			<input type="radio"/> 4 or more	<input type="radio"/> 3 or less		
Y-Location distance from X-site:	<input type="radio"/> Within 37 meters		<input type="radio"/> 37-100 meters			
ADDITIONAL SITE CHARACTERISTICS						
Select habitat type:	<input type="text"/>	<input type="button" value="v"/>				
Select bottom type:	<input type="text"/>	<input type="button" value="v"/>				
Debris present?	<input type="radio"/> Yes <input type="radio"/> No					

COMMENTS/DESCRIPTIONS

General comments

Directions to site

Crew scanned or submitted a site sketch

PERSONNEL

Crew Leader

Fish Taxonomist

Crew Member <input style="width: 150px;" type="text"/>	Crew Member <input style="width: 150px;" type="text"/>
Crew Member <input style="width: 150px;" type="text"/>	Crew Member <input style="width: 150px;" type="text"/>
Crew Member <input style="width: 150px;" type="text"/>	Crew Member <input style="width: 150px;" type="text"/>

📶 Online

Figure 7.2 Site Verification Form

8 SUBMISSION OF SITE EVALUATION/VERIFICATION FORMS

The final step is to provide EPA with the necessary documentation. For all base sites and all oversample sites evaluated and/or selected as replacements (sampled and non-sampleable), the field crew must provide the two documents identified below. The information is critical for the statistical evaluations for the final report.

8.1 SITE EVALUATION SPREADSHEET

For information collected prior to the start of the 2025 sampling index period, please upload your Site Evaluation Spreadsheet to the [EPA SharePoint site](#) under NCCA 2025/Site Evaluation/Crew Submitted Site Evaluation Spreadsheets.

If you need access to the SharePoint site, please send an email to Brian Hasty (hasty.brian@epa.gov), Kendra Forde (forde.kendra@epa.gov) and cc: Hugh Sullivan (sullivan.hugh@epa.gov). If you are having trouble with the SharePoint site, you may email interim and final spreadsheets to the Contractor Field Logistics Coordinator and your Regional Coordinator (see **page 8** for contact information). After the start of the **field season**, **please email any updates to the spreadsheet every two weeks**. Reminders will be sent out from the Contractor Field Logistics Coordinator as needed. This process will help to ensure that all appropriate base and replacement sites are sampled.

At the conclusion of sampling, final completed site evaluation spreadsheets must be submitted to EPA via the SharePoint as described above (or by email if necessary) **no later than October 31, 2025**. Crews should strive to submit the final completed site evaluation within 2 weeks of sampling the last site. The Contractor Field Logistics Coordinator will contact each crew to verify information and ensure that all required information is completed.

8.2 SITE VERIFICATION FORMS (APP FORM FOR EACH SITE VISITED WITH THE INTENT TO SAMPLE)

Site verification forms will be completed with the use of the EPA provided iPads when the site has been sampled (or not sampled). Submitting the site verification form will create a database record for that sampling event. If a site is not sampled, fill in the appropriate fields for why the site wasn't sampled. If a site is sampled, fill out all information on the verification form.

9 REFERENCES

Dumelle, Michael and Olsen, Tony. 2024. "National Coastal Condition Assessment 2025 Coastal Estuarine Survey Design." Internal Working Document created March 2024 (Updated September 2024).

Dumelle, Michael and Olsen, Tony. 2024. "National Great Lakes Assessment (NGLA) 2025 Design Document" Internal Working Document created on August 22, 2024.

Olsen, Tony. 2024. "Alaska NCCA 2025 Survey Design" Internal Working Document created on November 25, 2024.

Olsen, Tony. 2024. "American Samoa Reef Flat 2025 Survey Design" Internal Working Document created on May 28, 2024.

Olsen, Tony. 2024. "CNMI Reef Flat 2025 Survey Design" Internal Working Document created on May 29, 2024.

Olsen, Tony. 2024. "Guam Reef Flat 2020 Survey Design" Internal Working Document created on May 28, 2024.

APPENDIX A: ESTUARINE SPECIAL STUDY DESIGN DESCRIPTIONS

AMERICAN SAMOA REEF FLAT SURVEY

Target Population: The target population is all reef flats in coastal waters of American Samoa. Restricted to Tutuila Island

Sample Frame: American Samoa reef flat sample frame was obtained from NOAA coastal habitat GIS layer.

Survey Design: The survey design incorporates sites sampled from the prior study in 2010 and new sites selected in 2025. Both designs use the same stratification and multi-density categories. For 2025, 50% (25 sites) of the sites are from 2010 to be resampled in 2025 and 50% (25 sites) are new sites.

Stratification: Stratification by Tutuila Island.

Multi-density Categories: Multi-density categories based on polygon sizes of reef flats

Panels: The design for American Samoa has the following panels:

1. Legacy: Sites from 2010 reef flat study that will be re-sampled once in 2025
2. Base: New sites that will be sampled once in 2025
3. Over: New sites that are over sample sites that will only be used if any legacy or base sites cannot be sampled in 2025

Sample Size: The expected sample size is 50 sites for Tutuilla with over sample sites available to replace 2010 or 2025 sites. Note that 25 sites are from 2010 and 25 sites are new sites.

Site Use: When a “base” site cannot be sampled for any reason, the site must be replaced using the following rules:

1. Legacy: When a site in this category cannot be sampled it should be replaced by the next available site in the Over list within the same stratum.
2. Base: When a site in this category cannot be sampled it should be replaced by the next available site in the Over list within the same stratum.

COMMONWEALTH OF NORTHERN MARIANA ISLANDS REEF FLAT SURVEY

Target Population: The target population is all reef flats in coastal waters of Commonwealth of Northern Marianas (CNMI).

Sample Frame: CNMI reef flat sample frame was obtained from NOAA coastal habitat GIS layer.

Survey Design: The survey design incorporates sites sampled from the prior study in 2010 and new sites selected in 2025. Both designs use the same stratification and multi-density categories. For 2025 50% (25 sites) of the sites are from 2010 to be resampled in 2025 and 50% (25 sites) are new sites.

Stratification: Stratification by Saipan, Tinian and Rota islands.

Multi-density Categories: Multi-density categories based on polygon sizes of reef flats.

Panels: The combined designs for CNMI have the following panels:

- Legacy: Sites from 2010 reef flat study that will be re-sampled once in 2025
- Base: New sites that will be sampled once in 2025
- Over: New sites that are over sample sites that will only be used if any legacy or base sites cannot be sampled in 2025

Sample Size: The expected sample size is 50 sites total. The over sample is 100% of base sample for use if sites must be replaced.

Site Use: When a “base” site cannot be sampled for any reason; the site must be replaced using the following rules:

1. Legacy: When a site in this category cannot be sampled it should be replaced by the next available site in the Over list within the same stratum.
2. Base: When a site in this category cannot be sampled it should be replaced by the next available site in the Over list within the same stratum.

GUAM REEF FLAT SURVEY

Target Population: The target population is defined as all reef flats in coastal waters of Guam.

Sample Frame: The sample frame is an integrated GIS layer that includes reef flats, estuaries, near shore and offshore regions of Guam. Only the portion associated with reef flats was used for the survey design. See documentation for NCCA 2010 Guam reef flat design for process of constructing the GIS layer.

Survey Design: The survey design incorporates sites sampled from the prior study in 2010 and new sites selected in 2025. Both designs use the same stratification. For 2025, 50% (25 sites) of the sites are from 2010 to be resampled in 2025 and 50% (25 sites) are new sites.

Stratification: Stratification by Achang, Pati, Piti, Tumon reserve regions and Other regions.

Multi-density Categories: None. Equal probability within strata.

Panels: The combined designs for Guam have the following panels:

1. Legacy: Sites from 2010 reef flat study that will be re-sampled once in 2025
2. Base: New sites that will be sampled once in 2025
3. Over: New sites that are over sample sites that will only be used if any legacy or base sites cannot be sampled in 2025

Sample Size: The total expected sample size is 50 sites within all reef flats. Each reserve region will have 4 total sites and other region stratum will have 34 sites. In each case 50% of sites are from 2010 and 50% are new sites.

Site Use: When a “base” site cannot be sampled for any reason; the site must be replaced using the following rules:

1. Legacy: When a site in this category cannot be sampled it should be replaced by the next available site in the Over list within the same stratum.
2. Base: When a site in this category cannot be sampled it should be replaced by the next available site in the Over list within the same stratum.

ALASKA STUDY

Target Population: The target population are the estuaries included in Kachemak Bay and the estuaries along the southeastern continental shelf.

Sample Frame: The sampling frame for the Alaska study region is based on the NCA sampling frame which was completed prior to NCCA. The area in the two strata is given in square kilometers.

REGIONS	AK	Total
Kachemak_Bay	995	995
Shelf_Region	1,785	1,785
Total	2,780	2,780

Survey Design: The sites are selected using a spatially balanced survey design stratified by two regions: Kachemak Bay and southeastern continental shelf estuaries.

Sample Size: The total expected sample size is 40 sites including 13 legacy sites. Each stratum (Kachemak_Bay and Shelf_Region) has 20 sites. An additional 5 sites in each stratum are provided as over sample sites.

Site Use: When a “base” site cannot be sampled for any reason; the site must be replaced using the following rules:

1. Legacy: When a site in this category cannot be sampled it should be replaced by the next available site in the Over list within the same stratum.
2. Base: When a site in this category cannot be sampled it should be replaced by the next available site in the Over list within the same stratum.

UNITED STATES VIRGIN ISLANDS BEACH STUDY

Target Population: The target population are the 139 beaches of the U.S. Virgin Islands (USVI) on the islands of Saint Martin, Saint Croix, and Saint Thomas as provided by USVI Department of Environmental Quality.

Sample Frame: The sample frame is the 139 beaches of Saint Martin, Saint Croix, and Saint Thomas with each beach being represented by a single point and operating as discrete units.

Survey Design: All 139 beaches will be included in the survey design. The survey will operate as a census, where all site-weights are equal to one. Beaches for the study were put in reverse hierarchical order and stratified by the three islands.

Sample Size: The total expected sample size is 139 sites, including 44 sites that are part of the USVI Beach Water Monitoring Program which have been listed as “legacy” sites.

Site Use: All sites are to be sampled. No oversamples were included in this survey and any site dropped will not be replaced. The table below shows the distribution of sites for each island.

stratum	Base	Legacy	Total
St. Croix	29	21	50
St. John	33	8	41
St. Thomas	33	15	48
Total	95	44	139

1. Legacy: Beaches previously sampled as part of the USVI Beach Water Monitoring Program.
2. Base: Beaches to be sampled, but not previously sampled as part of the beach monitoring program.

CHOCTAWHATCHEE BAY, FL STUDY

Target Population: The target population of interest is the NCCA target population restricted to the CHTWB region.

Sample Frame: The sampling frame is the NCCA sampling frame restricted to the CHTWB region. The current sampling frame contains a variable, WTBDY_NM, that designate whether waters are in the CHTWB region.

Survey Design: The CHTWB 2025 survey design is an unstratified, spatially-balanced probability design that will collect 10 additional sites in the CHTWB region (in addition to those selected as part of NCCA that happen to land in the CHTWB region). Three sites from NCCA 2025 were in the CHTWB region, so 13 total sties were selected in the enhancement.

Panels: There are four different panels in the design output file:

- Base25_20 (n=1): NCCA 2025 base sites that were sampled in NCCA 2020 in the CHTWB region
- Base25_25 (n=2): NCCA 2025 new base sites in the CHTWB region
- Base25_25_CHTWB (n=10): New base sites in the CHTWB region
- Over25_25_CHTWB (n=13): New oversamples sites in the CHTWB region

Site Use: When a Choctawhatchee “base” site (indicated by NCA25_FL-3XXXX) cannot be sampled for any reason, the site must be replaced using the first available Choctawhatchee OverSample site in siteID order (must also use NCA25_FL-3XXXX). This is critically important to the scientific integrity of the design.

If all oversamples in are exhausted, reach out to the NCCA Logistics Coordinator and NCCA Lead to request that more oversample sites be drawn.

ST. ANDREWS AND ST. JOSEPH BAYS STUDY, FL (SASJB)

Target Population: The target population of interest is the NCCA target population restricted to the SASJB region.

Sample Frame: The sampling frame is the NCCA sampling frame restricted to the SASJB region. The current sampling frame contains a variable, WTBDY_NM, that designate whether waters are in the SASJB region. Most of the SASJB waters are in St. Andrew Bay.

Survey Design: The SASJB 2025 survey design is an unstratified, spatially-balanced probability design that will collect 10 additional sites in the SASJB region (in addition to those selected as part of NCCA that happen to land in the SASJB region). Four sites from NCCA 2025 were in the SASJB region, so 14 total sties were selected in the enhancement.

Panels: There are four different panels in the design output file:

- Base25_20 (n=3): NCCA 2025 base sites that were sampled in NCCA 2020 in the SASJB region
- Base25_25 (n=1): NCCA 2025 new base sites in the SASJB region
- Base25_25_SASJB (n=10): New base sites in the SASJB region
- Over25_25_SASJB (n=14): New oversamples sites in the SASJB region

Site Use: When a SASJB “base” (indicated by NCA25_FL-4XXXX) site cannot be sampled for any reason, the site must be replaced using the first available SASJB OverSample site in siteID order (must also use NCA25_FL-4XXXX). This is critically important to the scientific integrity of the design.

If all oversamples in are exhausted, reach out to the NCCA Logistics Coordinator and NCCA Lead to request that more oversample sites be drawn.

LONG ISLAND SOUND STUDY BAY ENHANCEMENT

Target Population: The marine coastal waters are defined as those from the head-of-salt (i.e., the landward extent of saltwater incursions) to the confluence with the open ocean. This unique coastal land-water interface zone includes inland waterways, river mouths, open and semi-enclosed estuaries, bays, embayments, and the more open shallow waters within the Long Island Sound Study (LISS) National Estuary Program region.

Sample Frame: A sampling frame previously provided by the LISS staff was used to construct the current sampling frame ((see NCCA 2020 design document for more). The current sampling frame contains a variable, NCCA_BAYS, that designate whether LISS waters were in the NCCA 2025 frame (NCCA_Bays) or not (Bays_Only). Most of the LISS waters are also in the NCCA 2025 frame.

Survey Design: The LISS 2025 survey design is a stratified, spatially-balanced probability design that will collect 60 sites in the LIS region. There will be 30 sites in the Connecticut Region of the LIS and 30 sites in the New York Region of the LIS. Two sites from NCCA 2025 were in the Connecticut region of the LIS and zero sites from NCCA 2025 were in the New York Region of the LIS.

Panels: The combined design for LISS has the following panels:

- Base25_25_LISS ($n = 60$): New base sites in the LIS region
- Over25_25_LISS ($n = 58$): New oversample sites in the LIS region

Site Replacement: Long Island Sound Study Sites (indicated by NCA25_CT-3XXXX or NCA25_NY-3XXXX) should be replaced within each strata (i.e., state). Note that replacement sites should always be selected in SITE_ID order (must use NCA25_CT-3XXXX or NCA25_NY-3XXXX) within strata (i.e., “next available oversample” for the LISS means the oversample having the subsequent SITE_ID in the same state). This is critically important to the scientific integrity of the design.

If all oversamples in are exhausted, reach out to the NCCA Logistics Coordinator and NCCA Lead to request that more oversample sites be drawn.

DEEPWATER HORIZON NATURAL RESOURCE DAMAGE ASSESSMENT MONITORING ACTIVITY IMPLEMENTATION PLAN PILOT STUDY

Target Population: This “MAIP” pilot study will take place in marine coastal waters of Alabama, including the entirety of Mobile Bay and the portion of Mississippi Sound extending from Mobile Bay west to the Alabama-Mississippi border. The marine coastal waters are defined as those from the head-of-salt (i.e., the landward extent of saltwater incursions) to the confluence with the open ocean. This unique coastal land-water interface zone includes river mouths, open and semi-enclosed estuaries, bays, embayments, and the more open shallow waters within the Mobile Bay National Estuary Program region. This target population does not include the Alabama intracoastal waterway connecting Oyster Bay to Wolf Bay, tributaries feeding Perdido Bay or the waters of Perdido Bay.

Sampling Frame: The sampling frame is the NCCA sampling frame restricted to Mobile Bay and Mississippi Sound from Mobile Bay west to the Alabama-Mississippi border.

Survey Design: The MAIP 2025 survey design is an unstratified, spatially-balanced probability design that will collect 45 additional sites in the waters of Mobile Bay and Mississippi sound within the state of Alabama.

Site_Use: The Site_Use variable designates whether a site is a “Legacy” site being re-used from a previous probabilistic site draw, a “Base” site drawn newly for this study, or an “Over”[sample] site that was newly drawn to be used in the event that any site in this study needs to be replaced.

Panel_Use: The Panel_Use variable further divides the Legacy sites as “Seine” (indicating that the probabilistic site was originally drawn as a State of Alabama probabilistic fisheries sampling site) or an “NCCA” site (indicating that the site was originally drawn as an NCCA site in previous year surveys). There are 17 Seine sites, of which 3 are revisit sites. There are 15 NCCA Sites, of which 2 are revisit sites. The Panel_Use variable for Base and Over[sample] sites is “NRDA” (indicating that the sites were newly drawn for this pilot study). There are 13 Base NRDA sites and 7 Over NRDA Sites.

Site Replacement. When replacing any non-revisit site, use the next available Over[sample] site. Should a Revisit site (Seine_RVT2 or NCCA_RVT2) site need to be replaced, the first available Seine or NCCA site will be used. This site will receive the “RVT2” designation and be sampled twice in the 2025 field season. The used Seine or NCCA site will then be replaced with the first available Over[sample] site so as to not change the total number of base sites.

Should a site need to be dropped and all Over[sample] sites be exhausted, reach out to the NCCA Lead to request additional oversample sites be drawn.

APPENDIX B: GREAT LAKE SPECIAL STUDY DESIGN DESCRIPTIONS

WISCONSIN STUDY

Target Population: The target population is the NGLA target population restricted to Wisconsin shorelines, which includes shorelines in Lake Michigan and Lake Superior.

Sampling Frame: The sampling frame is the NGLA sampling frame restricted to Wisconsin shorelines.

Survey Design: The sample size is 30 sites per Great Lake (Michigan and Superior). The NGLA 2025 sample is intensified in Wisconsin to accommodate this sample size. The stratification variable is the Great Lake (Michigan or Superior).

Panels: There are five different panels in the design output file:

- Base25_20: NGLA 2025 base sites that were sampled in NGLA 2020
- Base25_20RVT2: NGLA 2025 revisit sites that were sampled in NGLA 2020
- Base25_25: NGLA 2025 base sites (that were not sampled in NGLA 2020)
- Base25_25_WI: Wisconsin Great Lake base enhancement sites
- Over25_25_WI: Wisconsin Great Lake oversample enhancement sites

Site Use: When a “base” site (indicated by NGL25_WI-3XXXX) cannot be sampled for any reason, the site must be replaced using the first available OverSample site within the Great Lake (Superior or Michigan) in siteID order (must use NCA25_WI-3XXXX). This is critically important to the scientific integrity of the design.

LAKE ERIE INTENSIFICATION

Target Population: The Lake Erie Basin study includes the nearshore waters of Lake Erie within the United States divided into the Eastern, Central and Western Basins. Nearshore zone is defined as region from shoreline to 30m depth constrained to a maximum of 5 km from shoreline.

Sample Frame: The sampling frame is the NGLA sampling frame restricted to Lake Erie.

Survey Design: The sample size is 30 sites per Lake Erie region (Eastern, Central, and Western). The NGLA 2025 sample is intensified in the Lake Erie region to accommodate this sample size.

Panels: There are five different panels in the design output file:

- Base25_20: NGLA 2025 base sites that were sampled in NGLA 2020
- Base25_20RVT2: NGLA 2025 revisit sites that were sampled in NGLA 2020
- Base25_25: NGLA 2025 base sites (that were not sampled in NGLA 2020)
- Base25_25_Erie: Lake Erie base enhancement sites
- Over25_25_Erie: Lake Erie oversample enhancement sites

Site Use: When a Lake Erie Enhancement “base” site (indicated by NGL25_NY-2XXXX, NGL25_PA-2XXXX, NGLS25_OH-2XXXX, or NGL25_MI-2XXXX) cannot be sampled for any reason, the site must be replaced using the first available Lake Erie Enhancement OverSample site within the same basin and state in siteID order (must use NGL25_NY-2XXXX, NGL25_PA-2XXXX, NGLS25_OH-2XXXX, or NGL25_MI-2XXXX). This is critically important to the scientific integrity of the design.