



# **National Coastal Condition Assessment**

## **Site Evaluation Guidelines**

May 2010

## NOTICE

The goal of the National Coastal Condition Assessment (NCCA) is to provide a comprehensive assessment of the condition of the Nation's coastal waters (all coastal waters of the United States from the head-of-salt to confluence with ocean including inland waterways and major embayments such as Florida Bay and Cape Cod Bay). The complete documentation of overall NCCA project management, design, methods, and standards is contained in four companion documents, including:

- National Coastal Condition Assessment: Quality Assurance Project Plan: EPA-841-R-09-004
- National Coastal Condition Assessment: Site Evaluation Guidelines
- National Coastal Condition Assessment: Field Operations Manual: EPA-841-R-09-003
- National Coastal Condition Assessment: Laboratory Methods Manual: EPA-841-R-09-002

This document (Site Evaluation Guidelines [SEG]) contains an overview of the process involved in locating a sampling site, evaluating the site, and selecting appropriate alternate sites when necessary, and is based on the guidelines developed and followed in the Western Environmental Monitoring and Assessment Program (Peck et al. 2003). Methods described in this document are to be used specifically in work relating to the NCCA. Mention of trade names or commercial products in this document does not constitute endorsement or recommendation for use. More detail of the project overview and of specific methods for field sampling, sample handling, and sample processing can be found in the appropriate companion document.

The suggested citation for this document is:

USEPA. 2010. National Coastal Condition Assessment: Site Evaluation Guidelines  
U.S. Environmental Protection Agency, Washington, DC.

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# NATIONAL COASTAL CONDITION ASSESSMENT (NCCA) SITE EVALUATION GUIDELINES

The objective of the NCCA is to monitor and assess all coastal waters of the contiguous 48 states and Hawaii including both the marine and Great Lakes shorelines. This document is provided to clarify all of the steps involved in the process of locating and evaluating a sampling site for the National Coastal Condition Assessment (NCCA) to determine if the site is a member of the target population and whether it is sampleable. This guidance provides specific information for determining whether a site is sampleable and recording information if a site is dropped for any of these reasons. If you have questions while evaluating a site, please contact your Regional Coordinator and Gregory Colianni/Treda Grayson, Coastal Team Leaders (see Appendix 4 for contact information).

## 1) SITE SELECTION BACKGROUND

### ***A. Target Population:***

The intended target population for the NCCA is the area of the coupled water-sediment system extending from the shoreline (~mean water, 0 m) into the open water of the oceans/Great Lakes, but limited to a fringing, shallow nearshore band that is heavily used by humans and most vulnerable to human activities within adjacent coastal watersheds. More specifics for both the estuarine waters and Great Lakes is provided below.

Estuarine: The target population for the estuarine resources consists of all coastal 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 such as Florida Bay and Cape Cod Bay. For the purposes of this study the head of salt is generally defined as  $< 0.5\text{psu}$  and represents the landward/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 Figures 1a and 1b for examples). All waters within the enclosed area are defined as estuarine, regardless of depth or salinity.

***Target Population*** - *The target population identifies the resource about which information is wanted. The description of the target population must include sufficient descriptions and criteria to correctly classify as target or non-target all potential units of the population.*



**Figure 1a: Example of an estuarine system comprised of an embayment plus a complex of bays and tidal rivers and creeks.**



**Figure 1b: Example of an inter-coastal estuarine system.**

Great Lakes: For the Great Lakes, the target population is limited to the shoreline area within 5 km from shore and waters 30 meters or less in depth. This uniquely “coastal” land-water interface zone includes: river mouths, open and semi-enclosed bays, embayments, and the more open waters adjacent to shorelines. It does not include the connecting channels of the Great Lakes (between lakes and the St. Lawrence River outlet).

All waters meeting these definitions are considered target.

Great Lakes Embayments: Embayments of the Great Lakes are those areas nested within the shallow nearshore (main GL NCCA target population) which are semi-enclosed by shoreline features, making them less hydrologically-open to open lake wind and waves. Embayments include harbors with man-made shoreline structures [e.g., breakwalls] which make them semi-enclosed. Embayments come in a variety of geomorphologic forms and thus vary in the degree of physical restrictions to water movement between the embayment and more open nearshore waters. In general though, embayments represent more protected waters that are proximal to, and vulnerable, to watershed activities. They may or may not have tributaries from land, but have a continuously-open water connection/channel to the adjacent Great lake. The target population was limited to distinct semi-enclosed open water areas no smaller than 1 km<sup>2</sup> and no larger than 100 km<sup>2</sup>.

*Sampling Frame - The specific information, usually a list or map, that identifies every unit within the population of interest is the sampling frame. Such information is needed so that every individual member of the target population can be identified unambiguously.*

## **B. Sampling Frame:**

The NCCA marine sample frame was derived from prior National Coastal Assessment sample frame developed by ORD Gulf Breeze Ecology Division. The prior GED sample frame was enhanced as part of the National Coastal Monitoring Network design by including information from NOAA's Coastal Assessment Framework, boundaries of National Estuary Programs

and identification of major coastal systems. For NCA 2010 information on salinity zones was obtained from NOAA. For Delaware Bay, Chesapeake Bay, Puget Sound and state of South Carolina, the prior NCA sample frames were replaced by GIS layers provided by those organizations, ensuring that no prior areas in NCA were excluded and any differences clearly identified in the new NCA 2010 sample frame. For the Californian Province excluding San Francisco Bay, the GED sample frame was changed to match 2004 sample frame used for NCA 2004 study.

The NCCA Great Lakes sample frame was determined from existing standard GIS medium vector shoreline coverage from NOAA. That coverage was modified slightly to include an extension 500 m upstream in river mouths and include a few embayment areas which were noticeably missing from the existing shoreline coverage.

For the embayment sites, an automated GIS-methodology was used to define unique contiguous areas within the target size range which were within the main GL NCCA nearshore frame (i.e., from shoreline to 30 m water depth and no greater than 5 km from shore). Additionally, they met quantitative geometric criteria to define them as a semi-enclosed water body.

## **C. Site Selection:**

Using a Generalized Random Tessellation Stratified (GRTS) survey design for an area resource, the survey design is a stratified design with unequal probability of selection based on area within each stratum. More information on this process can be found in the NCCA 2010 Design Document.

Note: a statistical survey draw was also completed for Alaska, Puerto Rico and the Canadian portion of the Great Lakes shoreline, but the NCCA sampling in 2010 is limited to the marine and Great Lake shorelines of the 48 contiguous states and Hawaii. The territories of American Samoa, Guam and the Northern Marianas are also conducting related sampling during 2010.

## **D. Sample Sites and the "X-site":**

Each point selected using the process described under sampling frame above is referred to as the "X-site." The "X-site" is the point that determines the location at which samples are taken. The latitude/longitude of the "X-site" is listed on the site spreadsheet that was distributed by the EPA Regional Coordinators. Oversample sites are provided in the spreadsheet as well. These sites are to be used as replacement sites, in order, for any dropped base sites. They can also be used to intensify the national survey to achieve a state-wide or other geographic-wide assessments.

## 2) SITE EVALUATION PROCESS

There are 5 steps involved in this process (Figure 1):

- Locate the index site (“x-site”) on a topographic map and verify that the x-site appears to meet the target population definition
- Obtain permission to access the site
- Verify that the site is sampleable
- Sample the site *OR* replace with an alternate site
- Complete and submit the site evaluation guidelines

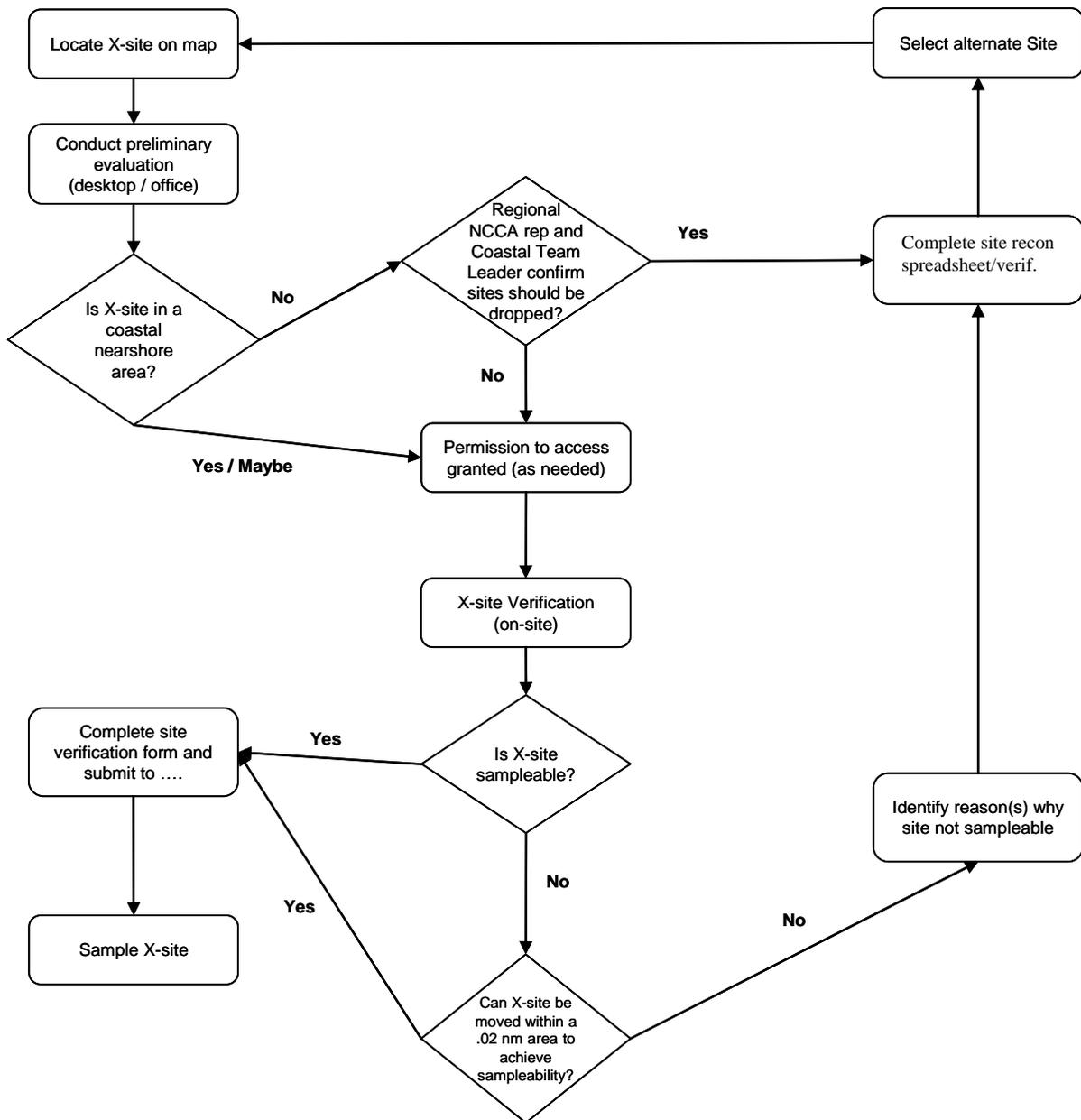


Figure 1 Process of Site Evaluation

In the process of completing each of the steps in site evaluation, the Field Crew will also assemble a site packet that contains important location and access information for each site they are scheduled to visit. The site packet should contain appropriate maps, aerial images, contact information, copies of landowner permission forms, any necessary research permits (if applicable), and site access instructions. If the field crew is not composed of any employee from the state/tribal agency, they should contact the regional coordinator to determine if agency staff are able to provide technical assistance in verifying locations. Before a site visit, each Field Crew should confirm access to the sampling site by contacting the landowner(s) listed in the site packet to ensure the team has permission to sample and to verify that information in the site packet is accurate.

### 3) DESKTOP EVALUATION

The primary purpose of desktop evaluation is to determine if the selected site is, or likely will be, in the target population during the 2010 sample period using data that is easily obtainable and verifiable without the expense of a more intensive field visit. **The focus of the desktop evaluation should be on ruling out sites that are clearly not part of the target population for reasons described in more detail below. If information obtained during the desktop evaluation is not conclusive then a field visit will be necessary.**

It is possible that some sites selected for sampling based on available GIS information will not be part of the NCCA target population. A number of sources of information will be useful for the desktop evaluation. These include 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. The use of these sources is at the discretion of the individual Field Crew but all information gathered about a site will enhance the site evaluation.

The procedures for conducting the desktop evaluation are detailed in the steps below. Information found during the evaluation should be recorded on the Site Evaluation Spreadsheet (See Attachment 1 for more information). It is important that the information requested in the spreadsheet is completed for each site regardless of whether it is selected for sampling or not. The information provided in this spreadsheet will contribute to the statistical analyses of data from the survey. Please see Attachment 1 for more information on documenting the site evaluation information.

**Step 1.** Locate the X-site on the most recent aerial imagery that can be obtained. Using this imagery and any supplemental sources of information, determine if the X-site is in or near (within 0.02nm or 37m) an estuary or the Great Lakes nearshore as described above under Target Population (see Section 6 for relocation information within the 0.02nm or 37m area) If the image or other sources of information provide **conclusive** evidence that the X-site **is not** in a location that meets these definitions, but rather is

clearly outside of an estuary, in a Great Lakes connecting channel, on land etc., note the reason for this conclusion in the Site Evaluation Spreadsheet and follow the procedures for selecting an alternate site in Section 7. If the site is identified as being outside of an estuarine area (for marine sites) or greater than 5km from shore (for Great Lakes sites), please verify this measurement with your regional coordinator and Greg Colianni/Treda Grayson before dropping the site and replacing it with an alternative site.

- Step 2.** 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.

*In order to achieve the most robust results possible with the probabilistic sampling design, every effort must be made to sample the primary coastal sites that were generated. It is very important not to reject a site based on inconveniences in access. Some sites may be accessed easily while others may require more lengthy or time-consuming trips. Similarly, it may not be possible to collect data at all sites for all indicators, but samples should still be collected for other indicators rather than dropping the site (for example, kelp beds may hinder a crews ability to collect sediment. Be sure to note that in those instances when sediment cannot be collected at the X site, crews should move (and attempt additional sediment grabs) within a .02nm or 37m and then a .05nm or 100 m area from the X- site to increase the likelihood of obtaining sediment as described in the field operations manual Section 4) Some sites may be in areas that are impossible to safely access. A site may be permanently inaccessible if it is unlikely to be sampled by anyone due to physical barriers that prevent access (e.g., heavily used shipping lanes). Sites might also be rejected for sampling if they are temporarily inaccessible due to barriers that may not be present at some future date (e.g. unsafe weather conditions), but which render them inaccessible during the entire study index period.*

If these maps and other sources of information indicate **conclusively** that the site is **not** accessible, for example the site is in a shipping channel, note the reason(s) for this conclusion on the Site Evaluation Spreadsheet and follow the procedures for selecting an alternate site in Section 6.

See Figure 3 for information on the definition of various sampleable/non-sampleable categories that are to be used in completing the information requested in the site evaluation spreadsheet for the site.

- Step 3.** Desktop evaluation is complete. If the site is identified as non-sampleable, submit the completed Site Evaluation Spreadsheet and be sure to follow the process for selecting an alternative site in Section 6. If the site is identified as sampleable, follow the procedures for obtaining permission to access the site in Section 4.

Information and data sources used in the desktop evaluation should be kept and incorporated into the official site packet for each site. If you have a question about whether information should be deemed conclusive evidence that a point is either not target or inaccessible, please contact your

regional coordinator and Greg Colianni/Treda Grayson.

#### **4) OBTAINING PERMISSION TO ACCESS CANDIDATE SITE**

Each field crew is responsible for obtaining permission for their sampling team to access their sampling sites if the site or the launch point falls on private lands. Obtaining permission prior to the sampling day is often important to minimize loss of time on the part of the field team. When applicable, contact with the landowner or agency can be done either through an “in-person” recon visit or through mailing out landowner permission request letters, similar to the attached cover letter (**Figure 2**) with a permission slip (**Attachment 1**) for the landowner to return. In either case, a signed permission slip is important to use as documentation on the day of sampling. Some teams 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.

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 team to contact landowners before the sampling day. The provision of county maps for the field crews will help clarify access to the targeted sampling site.

Field Crews will also need to be aware of and follow any special conditions and requirements for accessing and sampling on state, tribal, or federal lands. Field Crews should work with appropriate state, tribal and federal agencies to determine any permits or special condition that apply to the access points and the coastal waters. EPA will work to provide assistance to crews in coordinating efforts with federal land management agencies as needed, Field Crews should work with the appropriate state agencies to determine any permits or special conditions that apply to state lands.

(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. A computer was used to randomly select these sites. A total of approximately 700 coastal sites and 200 Great Lakes sites were selected for sampling in 2010. Water quality chemistry, aquatic life, and habitat will be evaluated at each site. The findings of the study are not 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 topographic 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)

Figure 2 Example of a permission cover letter

## 5) SITE VERIFICATION

While traveling from a base location to a site, record a detailed description of the route taken on page 1 of the Verification Form (**Attachment 3**). This information will allow others to find the site again if it is selected for a repeat visit in the future. Upon reaching the target site, confirm its location and that the team is at the correct location. Record the information on page 1 of the Verification Form. Complete a Verification Form for each site visited (regardless of whether it is sampled), following the procedures described below.

### Equipment and supplies list for site verification.

For locating and verifying site	<ul style="list-style-type: none"><li>▪ Sampling permit and landowner access (if required)</li><li>▪ Field Operations Manual and/or laminated quick reference guide</li><li>▪ Site dossier, including access information, site spreadsheet with map coordinates, street and/or topographic maps with "X-site" marked</li><li>▪ NCCA Fact Sheets</li><li>▪ GPS unit (preferably one capable of recording waypoints) with manual, reference card, extra battery pack</li></ul>
For recording	<ul style="list-style-type: none"><li>▪ Clipboard</li></ul>

measurements	<ul style="list-style-type: none"> <li>▪ #2 pencils</li> <li>▪ Site Verification Form</li> </ul>
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## SITE VERIFICATION PROCEDURES

1. Find the site location in the field corresponding to the target site coordinates and the target site marked on the map. Record the routes taken and other directions on the Verification Form so that others can visit the same location in the future.
2. Use all available means to ensure that you are at the correct location as marked on the map including: GPS, 1:24,000 USGS map, topographic landmarks, county road maps, local contacts, etc.
3. The field team must verify that the site is correctly located. Sampling site verification is based on map coordinates and locational data from the GPS. Latitude and longitude are required for all sampled sites. Identify the “X-site” using GPS and navigate to the location within 0.004167 decimal degrees of latitude and longitude of the given X site. This distance is approximately equal to the precision of the GPS receiver ( $\pm 100$  m) without differential correction of the position fix. This is the desired level of precision. Record the actual coordinates of the vessel after anchorage, not the initial intended coordinates, on the field data sheet. Make sure the GPS unit is set to reference the NAD 83 geospatial data set. Include the type of satellite fix (2D or 3D) for QA purposes. Record this information on the site verification form and in the Site Evaluation Spreadsheet.
4. Determine whether the site is sampleable using the guidelines provided below in Figure 3, and mark the appropriate box on the Verification Form (Attachment 3) and reflect this information in the Site Evaluation Spreadsheet (Attachment 1).
5. Do not sample non-target or "Non-sampleable" or "No Access" sites. Place an "X" in the "NO" box for "Did you sample this site?" and check the appropriate box in the "Non-Sampleable" or "No Access" section of the Verification Form; provide detailed explanation in comments section.

## 6) SITE RELOCATION

Relocation situations occur when the X-site itself is deemed to be not sampleable, but a nearby location is sampleable. For relocation situations, every attempt should be made to relocate a site within a 0.02 nm (37m) radius of the intended location that provides for a sampleable, target site (see definitions in Figure 3). A guideline the relocation effort follows:

- 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 20 m. Assess the relocated site using the Site Verification guidelines above. Should the relocated site fail to meet the operational definition sampleable, then this process may be continued using the same heading out to the 37 m mark or using a new heading until an acceptable sampling location is found. If after a sufficient amount of effort is expended and no suitable site is found, then the determination may be made that the site is unsampleable.

The specific reason the X-site is unsampleable must be documented in the site-verification spreadsheet.

- Do not reject a site because sediments cannot be collected (refer to the Field Operations Manual for more information on the process for relocating to collect sediment). Additionally, successful deployment of fish collection gear should not necessarily be used as a determining factor for rendering a site “unsampleable”.

## Sampleable/Nonsampleable Categories

After you confirm the location of the X-site, evaluate area surrounding the X-site and classify the site into one of four major sampling status categories: Sampleable, Non-Sampleable (temporary), No Access to site, or Non-Target (not sampled).

### Sampleable Categories (Review the target population definition for more specific information)

- *Estuarine Waters*--There is water and the site is within an estuarine environment (eg., tidal habitats and adjacent tidal wetlands and waters that are at least occasionally diluted by freshwater runoff from the land) (or these conditions exist within 0.02 nm or 37m from the x-site – refer to Section 7: site relocation)
- *Great Lakes Coastal Waters* – There is water and the site is within 5km of shore but not deeper than 30 meters (or these conditions exist within .02nm or 37m of the x-site- refer to Section 7: site relocation).

Note: *a site can still be identified as sampleable even if all indicators cannot be collected. For example, kelp beds may hinder a crews ability to collect sediment however other indicators can still be collected. In this instance, the site would be sampleable. Refer to the Field Operations Manual Section 4 for more information on moving to collect sediment samples.*

### Non-Sampleable Temporary Category (site can be revisited)

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- *Non-Sampleable Temporary - Other*-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 meter deep and the draft of the boat did not allow access. No suitable depth could be found within 0.02nm or 37m 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 meter deep, they should do so.
- *Equipment-related inaccessibility: site >1 m deep* – The site was deeper than 1 meter but could not be sampled due to the draft on the boat being used. No suitable depth could be found within 0.02 nm or 37m 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 (permanent condition; site is non-target)

- *Dry site*--There is no coastal water anywhere within a 0.02nm or 37m radius centered on the X-site. If determined at the time of the sampling visit, record as "Dry-Visited"; if site was determined to be dry from another source and/or field verified before the actual sampling visit, record as "Dry-Not visited."
- *Great Lakes -- Wetland*-- There is standing water present, but site is in a wetland.
- *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 classified as non-sampleable (temporary) and rescheduled for another day.)
- *Marine – Not Estuarine* -- site is outside of the imaginary straight-line intersecting two land features that would fully enclose a body of coastal water.
- *Map Error* – No evidence that the X-site represents coastal waters (x-site is inland, significantly up-stream in a stream/river, etc.)
- *Other* – The site is non-target for reasons other than those above. Please describe in detail and verify with your regional coordinator and Greg Colianni before replacing a site based on this category.

## 7) SELECTING ALTERNATE SITES

The sampling site lists for the NCCA are organized by state spreadsheets within each EPA Region. Each spreadsheet contains a list of all primary (panel=base) and alternate (panel=oversample) sites in the State. The sites are listed on the spreadsheet in the order in which they were randomly selected. All primary (base) sites must be evaluated for potential sampling and should be sampled unless they are determined to be non-sampleable or not 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 State.

**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 site in order on the list within the major estuary group or Great Lake.
- If you drop a revisit site, the replacement site from the oversample list becomes the new revisit site.

Sites are organized to be replaced in SiteID order within each major estuary group or Great Lake from the state list in the site evaluation spreadsheet. All base/revisit sites are highlighted in yellow; oversample sites follow the base sites for each stratum. If a site is evaluated and it is determined that it cannot be sampled, then it is to be replaced by the next site in order on the list within the major estuary group or Great Lake. This information can be found in the stratum column. When a primary site is rejected, the sampling/reconnaissance team—or other cooperator project lead -- must contact the EPA Regional Coordinator and Gregory Colianni/Treda Grayson to report it. The Field Crew must inform the EPA contacts which site was rejected, the reason why and the site selected from the oversample list to replace it. The EPA contacts will confirm that the correct process was used to select the site and confirm which Field Crew is responsible for sampling the site (if multiple organizations are sampling within the state boundaries).

**Marine Site Replacement:** Figure 4 outlines the process for replacing a site within a State for marine sites. If site NCA10-1190 in Florida (highlighted in bright yellow) is reported as non-sampleable, the first alternate site within the same estuary – in this case CarP\_Other, NCA10-2192 (highlighted in green) , will be added as a replacement. If site NCA10-1294 is rejected, the next alternate site in the **LP\_Apalachee\_Bay** stratum will be added; NCA10-2299. Because 1294 is a revisit visit, 2299 becomes the new revisit site. As primary sites are rejected, the Field Crew lead or Cooperator lead will continue to replace them with alternate sites by selecting the next one on the list from the appropriate estuarine groups in the stratum column. Remember, if you drop a revisit site, the replacement site becomes the new revisit.

Site id	State	Stratum	Panel	Latitude	Longitude
NCA10-1190	FL	CarP_Other	Base	30.50875904070	-81.43482305180
NCA10-1193	FL	CarP_Other	Base	30.32010485030	-81.62646391390
NCA10-1197	FL	CarP_Other	Base	30.00395025860	-81.64196164130

NCA10-1201	FL	CarP_Other	Base	30.54911958570	-81.49425522830
NCA10-1206	FL	CarP_Other	Base	29.77883577610	-81.27240768680
NCA10-1209	FL	CarP_Other	Base	30.19058510980	-81.64256141940
NCA10-1212	FL	CarP_Other	Base	30.38706370490	-81.63754591090
NCA10-1213	FL	CarP_Other	Base	30.41046013440	-81.67483574010
NCA10-2192	FL	CarP_Other	Over	30.50070057910	-81.44328312100
NCA10-2197	FL	CarP_Other	Over	29.32611790910	-81.07370163280
NCA10-2201	FL	CarP_Other	Over	30.23242601490	-81.65789244860
NCA10-2205	FL	CarP_Other	Over	30.29612246540	-81.66590020730
NCA10-2209	FL	CarP_Other	Over	30.39919532570	-81.57799290760
NCA10-2213	FL	CarP_Other	Over	29.93745800070	-81.30873576460
NCA10-2215	FL	CarP_Other	Over	30.10120188650	-81.74746838380
NCA10-1294	FL	LP_Apalachee_Bay	Revisit	29.96715186410	-83.94437721590
NCA10-1295	FL	LP_Apalachee_Bay	Base	29.97571458570	-84.11755290290
NCA10-1296	FL	LP_Apalachee_Bay	Base	30.09362054860	-84.21621351690
NCA10-1297	FL	LP_Apalachee_Bay	Base	30.00948838740	-84.30958358240
NCA10-1298	FL	LP_Apalachee_Bay	Base	30.02372859890	-84.58118831150
NCA10-1299	FL	LP_Apalachee_Bay	Base	29.97247500350	-84.45746542830
NCA10-2299	FL	LP_Apalachee_Bay	Over	29.96855134980	-83.89600927020
NCA10-2300	FL	LP_Apalachee_Bay	Over	30.09234560700	-84.03794950810
NCA10-2301	FL	LP_Apalachee_Bay	Over	29.94714177750	-84.34331138370
NCA10-2302	FL	LP_Apalachee_Bay	Over	30.02832610400	-84.12929737680
NCA10-2303	FL	LP_Apalachee_Bay	Over	29.99094984170	-84.24953675160
NCA10-2304	FL	LP_Apalachee_Bay	Over	30.00991758090	-84.28158638600

**Figure 4 Excerpt from Florida's site evaluation spreadsheet**

**Great Lake Site Replacement:** Figure 5 outlines the process for replacing a site within a State for Great Lake sites. If site NCA10-1140 in Michigan (highlighted in bright yellow) is reported as non-sampleable, the first alternate site within the same Great Lake – in this case Lake Erie, NCA10-2141 (highlighted in green) , will be added as a replacement. Because 1140 is a revisit site, 2141 becomes the new revisit site. If site NCA10-1096 is rejected in Lake Huron, the next alternate site in the Lake Huron stratum will be added - NCA10-2091 . As primary sites are rejected, the Field Crew lead or Cooperator lead will continue to replace them with alternate sites by selecting the next one on the list from the appropriate Great Lake in the stratum column. Remember, if you drop a revisit site, the replacement site becomes the new revisit.

Please note, if a base NCCA site that is also identified as a NPS site is dropped, the next site within that Park from the state draw should be used as the replacement. Please contact your Regional Coordinator or Gregory Colianni/Treda Grayson with questions.

<i>Site id</i>	<i>State</i>	<i>Stratum</i>	<i>Panel</i>	<i>Latitude</i>	<i>Longitude</i>
NCAGL10-1140	Michigan	Lake Erie_USA	Revisit	41.85548789	-83.37181083
NCAGL10-1148	Michigan	Lake Erie_USA	Base	41.97838910	-83.22606826
NCAGL10-1154	Michigan	Lake Erie_USA	Base	41.77540808	-83.42459803
NCAGL10-1160	Michigan	Lake Erie_USA	Base	41.98628375	-83.16000724
NCAGL10-1166	Michigan	Lake Erie_USA	Base	41.91762589	-83.29771774
NCAGL10-1168	Michigan	Lake Erie_USA	Base	41.92854315	-83.23335254
NCAGL10-2141	Michigan	Lake Erie_USA	OverSamp	41.91737840	-83.24061004
NCAGL10-2145	Michigan	Lake Erie_USA	OverSamp	42.05998631	-83.17978134
NCAGL10-2158	Michigan	Lake Erie_USA	OverSamp	41.84529374	-83.38692718
NCAGL10-2164	Michigan	Lake Erie_USA	OverSamp	41.88430015	-83.30797653
NCAGL10-2167	Michigan	Lake Erie_USA	OverSamp	41.97967824	-83.21412730
NCAGL10-2169	Michigan	Lake Erie_USA	OverSamp	41.81439334	-83.43201490
NCAGL10-1091	Michigan	Lake Huron_USA	Revisit	43.66117227	-83.81374505
NCAGL10-1092	Michigan	Lake Huron_USA	Revisit	43.24615352	-82.46420498
NCAGL10-1093	Michigan	Lake Huron_USA	Revisit	45.75036237	-84.56395123
NCAGL10-1094	Michigan	Lake Huron_USA	Revisit	44.83934528	-83.24250009
NCAGL10-1095	Michigan	Lake Huron_USA	Revisit	43.69187813	-83.60716071
NCAGL10-1096	Michigan	Lake Huron_USA	Base	45.96306896	-84.71430350
NCAGL10-1097	Michigan	Lake Huron_USA	Base	45.37810395	-83.64797083
NCAGL10-1098	Michigan	Lake Huron_USA	Base	43.99504716	-83.74728059
NCAGL10-1099	Michigan	Lake Huron_USA	Base	44.00505114	-83.22757902
NCAGL10-1100	Michigan	Lake Huron_USA	Base	45.93965160	-84.66939243
NCAGL10-1101	Michigan	Lake Huron_USA	Base	45.00659691	-83.35905655
NCAGL10-1102	Michigan	Lake Huron_USA	Base	43.87990812	-83.43664297
NCAGL10-1103	Michigan	Lake Huron_USA	Base	44.01349982	-82.76739263
NCAGL10-2091	Michigan	Lake Huron_USA	OverSamp	43.43816447	-82.52560942
NCAGL10-2092	Michigan	Lake Huron_USA	OverSamp	43.96079643	-83.29976591
NCAGL10-2093	Michigan	Lake Huron_USA	OverSamp	45.68079773	-84.33828281
NCAGL10-2094	Michigan	Lake Huron_USA	OverSamp	45.96547619	-83.93677500
NCAGL10-2095	Michigan	Lake Huron_USA	OverSamp	43.48770127	-82.49571234
NCAGL10-2096	Michigan	Lake Huron_USA	OverSamp	44.05544403	-83.01852164

Figure 5 Excerpt from Michigan's site evaluation spreadsheet (note, some rows have been hidden in the Lake Huron base site list for space reasons.)

### Special Situations

- **Great Lake Embayment Enhancement Sites:** EPA conducted a special draw of sites to enhance the NCCA work for embayments across the Great Lakes. If any of the 152 embayment enhancement sites are dropped during desk recon, the next site in the overall embayment site list will be chosen. If an embayment site is dropped during a field visit, the site is dropped and not replaced with an alternate site. Contact Peder Yurista, EPA ([yurista.peder@epa.gov](mailto:yurista.peder@epa.gov)) with questions.
- **National Park Service Sites:** Another draw was also conducted to enhance sites for the

National Park Service. If a National Park Service special site is dropped, the next oversample site on the list within the Park should be selected to replace it. Please note, if a base NCCA site that is also identified as a NPS site is dropped, the next site within that Park from the state draw should be used as the replacement.

**Point of contact: Greg Colianni (202-566-1249) or Treda Grayson (202-566-0916)**

## **8) SUBMISSION OF SITE EVALUATION/VERIFICATION FORMS**

The following forms must be returned to EPA for all base sites and for all oversample sites selected as replacements whether they are sampled or not. There must be completed forms for all sites for each state through the last site on the oversample list that is sampled regardless of whether all of those sites are sampled.

### **- SITE EVALUATION SPREADSHEET**

For information collected prior to the start of the 2010 sampling index period, please send the spreadsheet to your regional coordinator and to Gregory Colianni via email. After the start of the **field season, please send updated spreadsheet information to your regional coordinator and to Gregory Colianni every several weeks (see appendix 4 for contact information).**

### **- SITE VERIFICATION FORMS (Part of form packet for each site visited)**

Send completed evaluation forms (with other field forms as appropriate) for the sites to the Information Management Coordinator, Marlys Cappaert, in the fed ex envelope provided in the site kit. Forms should be submitted within 2 weeks of sampling

## **9) LITERATURE CITED**

Madden, C. J., K. Goodin, R.J. Allee, G. Cicchetti, C. Moses, M. Finkbeiner, D. Bamford. *Coastal and Marine Ecological Classification Standard*. NOAA and NatureServe. 2009.

NOAA. Coastal Science Center. Coastal And Marine Ecological Classification Standard. Version III (Working Draft) Standards Working Group, Federal Geographic Data Committee April 2010

Peck, D.V., J.M. Lazorchak, and D.J. Klemm (editors). Unpublished draft.  
Environmental Monitoring and Assessment Program -Surface Waters: Western Pilot Study Field Operations Manual for Wadeable Streams. EPA/XXX/X-XX/XXXX. U.S. Environmental Protection Agency, Washington, D.C.

U.S. Environmental Protection Agency. *Research Strategy: Environmental Monitoring and Assessment*. Washington D.C. 2002.

U.S. EPA. Wadeable Streams Assessment: Site Evaluations Guidelines.



## Attachment 1

### Instructions for completing the site evaluation form (spreadsheet)

EPA will provide each state or other organization conducting sampling as part of the NCCA 2010 with a site evaluation spreadsheet that includes all of the appropriate sampling sites organized by state, then stratum (NCCA estuary or Great Lake) and site id. These sites will include base sites (composed of both “revisit” and “base” sites) and oversample sites.

A) Complete site evaluation information for all sites highlighted in yellow (these are the base sites). Several columns use pick lists for ease in providing consistent information.

- i. The spreadsheet will have columns A-G completed.
- ii. Column H: Indicate whether the site is target or non-target based on the target definition provided in Section 1 above. If you have questions, please contact your regional coordinator and Greg Colianni/Treda Grayson.
- iii. Columns I-K: Either during the desktop reconnaissance or field visit, determine whether the site is sampleable using Figure 3. If yes, select the appropriate category in column J; if no, select the appropriate category in column K. If the site is not currently sampleable, but will be later in the index period be sure to note when you plan to return in the comment field. The information in the spreadsheet should be updated when the site is determined to be sampleable.
- iv. Columns L and M: Input the actual GIS readings for latitude and longitude recorded at the X-site. If the site is not visited, leave these two columns blank.
- iv. Column N: If a site is dropped, please provide any additional information that will be useful to NCCA analysts.
- v. Columns O-Q: - Provide contact information for the person(s) conducting the site recon.
- vi. Column R: Provide any additional comments for explaining the current site recon.

B) If you drop a site, select a replacement site from the oversample sites for that same stratum (estuary or Great Lake). In the site evaluation spreadsheet, these oversample sites are listed directly below the base sites for that stratum (italicized sites following each set of yellow base sites).

- i. Be sure to let your regional coordinator and Greg Colianni/Treda Grayson know which sites have been dropped and which sites are selected as replacements. This will be especially important if more than one organization is conducting sampling with a state and estuary, or within a state/Great Lake.
- ii. If you drop a revisit site, the oversample site within that stratum used as a replacement becomes the new revisit site.

C) For any stratum where one or more base sites are dropped, **all sites within the oversample list for that stratum up to the last one sampled also require site evaluation information.**

D) Submit site evaluation information in the spreadsheet to your regional coordinator and Gregory Colianni/Treda Grayson prior to the start of the field season and periodically throughout the field season as changes are made.

## Attachment 2

### Example of Landowner Permission Slip

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.



**Attachment 4**  
**NCCA Project Contact List**

**CONTACT LIST**

**Field Logistics Coordinator**

Jennifer Linder  
Tetra Tech  
400 Red Brook Blvd., Suite 200  
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Jennifer.Linder@tetrattech.com

**Information Management Coordinator**

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Computer Sciences Corporation  
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Corvallis, OR 97333  
(541) 754-4467  
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[cappaert.marlys@epa.gov](mailto:cappaert.marlys@epa.gov)

**Alternate Field Logistics Coordinator**

Chris Turner  
Great Lakes Environmental Center  
739 Hastings St  
Traverse City, MI 49686  
715-829-3737  
715-874-5370 (fax)  
cjturner@wwt.net

**Sampling Kit Request and Coordination**

Mailee Garton  
or  
Sara McNew  
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739 Hastings St  
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231-941-2230  
231-941-2240 (fax)  
[mgarton@glec.com](mailto:mgarton@glec.com)

**Great Lakes Human Health Fish Tissue Contacts**

Leanne Stahl  
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1200 Pennsylvania Avenue, NW (4503T)  
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**USEPA HEADQUARTERS**

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## USEPA REGIONAL CONTACTS

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