Considerations for Scoping/Designing Ecological Risk Assessments Involving Urban or Developed Waterways

Version 0, August 2022

This discussion document was developed by the USEPA Ecological Risk Assessment Forum and provides information that can be helpful to consider when performing ecological risk assessments involving urban or developed waterways. The implementation of the approaches suggested by this document are at the discretion of the ecological risk assessors and the risk management team involved in the assessment. This document does not substitute for CERCLA, RCRA, or EPA regulations or guidance, nor is it a regulation. Thus, it cannot impose legally binding requirements on EPA, the States, or the regulated community and may not apply to a particular situation based on the circumstances.

Introduction

Conducting ecological risk assessments (ERAs) that involve a waterway/waterbody/watercourse of some type (streams, rivers, lakes, ponds, marshes, etc.) often involves a default assumption that "full ecological function" is expected in that waterway/waterbody/watercourse (hereafter mostly referred to as waterbody(ies)).[1] This is usually appropriate, unless the waterbody is part of an industrial facility or is a municipal use water feature (see the discussion document "Ecological Risk Assessment at Urban and Industrial Sites Discussion Paper" for further discussion of this concept). When evaluating a waterbody that has been created or has been significantly altered from its natural state however, such as a creek that has been channelized/urbanized to where the character of the creek appears to have been compromised and its potential to support "full ecological function" comes into question, or where a watercourse has been created primarily to convey stormwater, there can be some uncertainty regarding what level of ecological functioning should be expected from the waterbody. Deciding upon the expected level of ecological functioning is usually very important when creating or interpreting a Conceptual Site Model (CSM) as part of scoping and designing an ecological risk assessment (ERA) involving such a waterbody. This is because the assessment endpoints (ecological attributes to protect) for the ERA should be reflective of the type of ecological function expected from the waterbody, to help the ERA process be more efficient and decision-support focused. It follows then that if the expectations around ecological

[1] In this document "ecological function" refers to the biological processes occurring in an ecosystem. For "full ecological function" in a waterbody, one would expect all of the biological processes to be occurring that would occur in a healthy, natural ecosystem of the type in question, representing trophic levels from microbiological up to aquatic insects, fish, water-associated birds, mammals, reptiles, etc.. In certain developed waterbodies, "expected ecological function" may only include sufficient functioning of select trophic levels, or there may not be an expectation of any ecological function other than not being injurious to avian or mammalian wildlife that may use the waterbody in some fashion.

functioning are unclear, creating an accurate CSM and properly scoping the ERA can be challenging.

In many situations, decisions concerning what sorts of ecological functions are reasonable to expect from a waterbody can be facilitated through consideration of the regulatory or jurisdictional status of the waterbody, most notedly under the Clean Water Act. Under the Clean Water Act (CWA), waterways/waterbodies in the US are usually either classified as "Waters of the US/State", or not one of these. If they are Waters of the US/State, they should have "designated uses" ascribed to them under the CWA. These designated uses essentially represent 'performance expectations' that can be used to help determine and define the expected ecological function(s) of the waterbody. Having an understanding of the expected ecological functions of the waterbody can then make the scoping of the ERA much more straightforward. The main concept that is proposed in this document is that for waterbodies that are Waters of the US/State, the designated uses can and usually should provide important information that can be used in scoping the ERA for the waterbody, which can be especially useful if the waterbody's expected ecological functions are not clear due to some sort of apparently compromised condition.

In cases where the watercourse/waterbody is not a Water of the US/State, its 'performance expectations'/expected ecological functioning may not have yet been defined or otherwise addressed. In such cases, identifying any expected or desired ecological functions of the waterbody would still be important to do as part of an ERA.[2] In some instances, a watercourse/waterbody that is not a Water of the US/State might still be expected to provide one or more valued ecological functions which would be important to recognize and account for in an ERA. In other cases there might not be any ecological function expected from such a waterway (e.g. most concrete stormwater-only conveyances) and therefore the waterway would have no expected ecological functioning, such that the only assessment endpoints for the ERA might involve the potential for risks to wildlife from incidental exposure to the waterway. Therefore, even for waterbodies that are not Waters of the US/State, it is important

[2] The identification of the "Waters of the US/State" status and expected ecological functioning of the waterbody could happen any time in the ERA process, but likely would be most useful after the screening steps (Steps 1 and 2 of the 8-Step ERA process) have been completed. In most cases, the ERA screening process would have been performed as the initial assessment effort to determine if contamination is present in the waterbody at concentrations where further ERA investigation is even warranted (or if potential secondary contaminant source issues exist). Considering the expected ecological functioning of the waterbody as a part of the Step 1 scoping might be useful to help determine how a non-traditional contaminant screening could be performed, if such a screening is warranted. Usually however an initial Steps 1 and 2 screening in typical fashion is done to identify the need for further investigation, whereupon the assessment would incorporate site-specific considerations such as a waterbody's desired ecological functioning as part of the more detailed Step 3 scoping and CSM development.

that the expected (or incidental and desired) ecological functioning of the waterbody is discussed and agreed upon as part of a robust and efficient ERA process.

These topics will be discussed in more detail below, with some Clean Water Act concepts described in brief. Detailed descriptions of the Clean Water Act are beyond the scope of this document, and the reader is encouraged to consult other materials for more detailed Clean Water Act information.

Designated Uses

The Designated Uses (some States term these as "Beneficial Uses") of a waterbody are those uses that States, territories, and authorized Tribes determine the waterbody should be 'clean enough' to fully support, regardless of its current condition. These can be considered "desired uses" in situations where all of the designated uses are not currently realized, as the designated uses apply to the waterway/waterbody "whether or not they are being attained." (40 CFR §131.3(f)). For example, a waterbody may be designated by state regulations for "aquatic life support" even though it does not presently contain a healthy aquatic ecosystem. Typically, the designated uses assigned to a water body reflect the public's answer to the questions, "What do we want to use this water body for, or how should this waterbody function?" Some ecological-related designated uses might include "supporting native aquatic life", or perhaps more specifically supporting typical warmwater species or coldwater species. Attachment 1 at the end of this document provides a few examples of ecological-related designated uses specified by several states.

Designated uses usually apply to "Water of the United States" (WOTUS), and thus within each State, "Waters of the State" (WOTS)[3]. As defined in the CWA, "Waters of the United States" include only surface waters such as streams, rivers, lakes, estuaries, coastal waters, and wetlands (a few States include groundwater as a Water of the State). Not all surface waters are

[3] WOTUS and WOTS are used somewhat synonymously in this document. It is acknowledged that while many States exert State jurisdiction for "Waters of the State" in a manner consistent with "Waters of the US" regulations, some States have statutory or regulatory definitions for WOTS that are not wholly consistent with the WOTUS definitions. For the purposes of this document, the more protective designated uses, whether they result from the State (WOTS) or Federal (WOTUS) classification, should usually be considered to inform the development of expected ecological functioning for a waterbody.

legally “Waters of the United States.” Generally, however, Waters of the US include the following:

- All waters that are traditionally navigable
- All interstate waters
- Intrastate waters used in interstate and/or foreign commerce
- Tributaries and impoundments of the above
- Territorial seas at the cyclical high tide mark
- Wetlands adjacent to all the above

Many if not most surface waters that are WOTUS and thus WOTS will be obviously so, such as rivers, named streams, lakes and ponds that are part of a WOTUS, etc. They then will have designated uses assigned to them and should therefore have water quality (and potentially sediment quality) standards assigned to them that support the designated uses. For most WOTUS/WOTS then, the expected ecological functions – being reflective of the designated uses – should be straightforward for the most part, as the designated uses will likely include at least partial if not full ecological function. For waterbodies that have all the appearance of being a WOTS, often the assumption made during ecological risk assessment scoping is that full ecological function would be expected from the waterbody, and this is often or even usually an appropriate assumption.

There will be some waterbodies for which the jurisdictional status (and expected ecological function) is unclear however, due to the waterbody(ies) being degraded in water quality, habitat quality, lack of constancy of flows, no connection to WOTUS/WOTS, etc. For impounded or “lentic” waterbodies, these may be those that have no appreciable surface water connection to a WOTUS/WOTS, or those that are created and used for municipal, agricultural or industrial purposes. For flowing water (“lotic”) systems, they may be watercourses that are dry part of the time or have poor enough habitat that an ability to support aquatic life may be questionable. In these cases, where the expectations around ecological functioning may not be clear, it is advised to consider consulting with the state/territory/Tribe or the Regional EPA Water personnel to determine if the waterbody has been assessed regarding its status as a WOTS or not. If it has and is a WOTS, the designated uses assigned to this waterbody (provided designated uses have been assigned) will be valuable for informing and supporting the decisions about the expected ecological functioning of this waterbody. If the waterbody has not been assessed, it is advised to consider asking the state/territory/Tribe to assess the waterbody to determine if they (and the US EPA) consider it a WOTS/WOTUS or not, and if so what its designated uses are to be. If it is ultimately considered to not be a WOTS/WOTUS, then it will be valuable to discuss with the pertinent stakeholders what the expectations around ecological

functioning or protectiveness should be, to inform the scoping of the ecological risk assessment.

For most States, the decision processes for identifying waterbodies/watercourses as to whether they are WOTS or not, and if they are identified as WOTS then what type of WOTS they are, have been established and may be promulgated by State law. As an example, a brief summary of the watercourse identification process used by the Tennessee Department of Environment and Conservation (TDEC) is provided in Highlight 1.

---------- Highlight 1 ----------

EXAMPLE: The Tennessee Department of Environment and Conservation (TDEC) groups flowing (lotic) watercourses into one of two categories: "streams" or "wet weather conveyances". Both "streams" and "wet weather conveyances" (WWCs) are considered by TDEC to be Waters of the State (WOTS), but they have different expectations as far as ecological functioning. It is beyond the scope of this document to present the categorization process and supporting information in detail, but as an adapted summary (adapted from "TN Hydrologic Determination Training" website reference materials, http://tnhdt.org/page.asp?Title=PDFs):

Wet weather conveyance - Man-made or natural watercourses, including natural watercourses that have been modified by channelization. The primary indicators of wet weather conveyances are:

a) hydrologic feature exists solely due to a process discharge or that flows only in direct response to precipitation runoff in their immediate locality;
b) defined bed and bank absent, watercourse dominated by upland vegetation/grass, and whose channels are at all times above the ground water table;
c) watercourse dry anytime during February through April 15th under normal precipitation/ ground water conditions;
d) watercourse not suitable for drinking water supplies;
e) hydrological and biological analyses indicate that, under normal weather conditions, due to naturally occurring ephemeral or low flow there is not sufficient water to support fish, or multiple populations of obligate lotic aquatic organisms whose life cycle includes an aquatic phase of at least two months.

* As stated in Rule 0400-40-03-.02(6): "Waters identified as wet weather conveyances according to the definition found in Rule 0400-40-03-.04, shall be protective of humans and wildlife that may come in contact with them and shall not adversely affect the quality of downstream waters."

Stream – Any watercourse that is not a WWC. Primary indicators of streams are:

a) presence of multiple populations of obligate lotic organisms with two months or longer aquatic phase;
b) presence of fish (other than or in addition to *Gambusia*);
c) presence of naturally occurring ground water table connection;
d) flowing water in channel seven days or more since the last precipitation in the local watershed;
e) evidence watercourse has been used as a supply of drinking water.

----------END Highlight 1 ----------

Using a process likely resembling that used by TDEC, a watercourse/waterbody will be categorized by the state/territory/Tribe and if it is a WOTS, designated uses (or at least an expected level of ecological protectiveness) will usually be assigned to it. Notice that in the TDEC example, the WWC (which does not have designated uses assigned to it but instead may have ecological protectiveness goals associated with it) would not be expected to support a full complement of aquatic life but should not pose risk to wildlife or humans that come into contact with it. Streams however (which are assigned designated uses) would have aquatic life support as part of their designated uses/expected ecological function. Now, even considering the apparent definitiveness of these last two statements and the decision 'rules' given in Highlight 1, there can be some exceptions to these expectations pertaining to ecological protectiveness/functioning for a given WOTS type. This is true for Tennessee as well as other states and would probably most often apply to waters exhibiting apparently compromised habitats. For this reason, even if protectiveness information has been obtained online for such watercourses/waterbodies, it can be worthwhile to verify the ecological function/protectiveness expectation the state/territory/Tribe has for that watercourse/waterbody via consultation with the appropriate entities.

Expected Ecological Function and Assessment Endpoints

In cases where the state/territory/Tribe has categorized the waterbody using its procedures, and if it is a WOTUS/WOTS and the designated uses have been ascribed to the waterbody (and

all of this has been agreed to by the US EPA), one can then generally use this information to inform the "expected ecological functions" for the waterbody, as the expected ecological functions should usually reflect the designated uses (and other protectiveness expectations if ascribed).

If the waterbody is classified as a WOTUS/WOTS and the designated uses include such uses as "aquatic and wildlife", "aquatic life", "wildlife", etc. (see Attachment 1 for examples of ecological-related designated uses), then the expected ecological functions would be related to the presence and support of a healthy aquatic and aquatic-associated ecosystem similar to what would be expected from an unimpacted watercourse/waterbody of that type in that area. The assessment endpoints in an ERA would likely then be along the lines of survival, growth and reproduction of fish, a healthy and balanced benthic assemblage, support of populations of wildlife that use the waterbody, etc. Even if the waterbody does not currently support the aquatic or aquatic-associated ecological communities that the designated use(s) indicate(s) is/are a goal, the expected ecological function(s) and ERA assessment endpoints should reflect the designated uses and their goals.

If the waterbody is classified as a WOTUS/WOTS but is compromised in some way, such as by low dissolved oxygen or extreme temperatures or similar issues, the designated uses may reflect this inability to function up to a level that would be expected for a healthy waterbody. If the designated uses (or other protectiveness expectations) are reflective of this compromised condition, then the expected ecological functioning as part the ERA should reflect these reduced expectations as well. For example, in Florida, a waterbody's designated uses (Attachment 1) can either include "Class III" which has the ecological designated use (and expected ecological function) of "propagation and maintenance of a healthy, well-balanced population of fish and wildlife", or instead can include "Class III-Limited", which has the ecological designated use (and expected ecological function) of a " 'Limited Population of fish and wildlife' [which] means the aquatic biological community does not fully resemble that of a natural system in the types, tolerance and diversity of species present." In the "Class III" case, the assessment endpoints in an ERA involving this waterbody would likely reflect more standard assessment endpoints involving survival, growth and reproduction of fish, a healthy and balanced benthic assemblage, full support of populations of wildlife that use the waterbody, etc. In the "Class III – Limited" case however, the assessment endpoints for an ERA could be more along the lines of the presence of an aquatic assemblage that is tolerant of or reflects the compromised condition of the waterbody, a lesser ability to support populations of wildlife associated with the waterbody, etc., to reflect the governing entity's diminished expectations around ecological functioning of this waterbody. This would require site-specific considerations to customize the assessment endpoints as appropriate to reflect the specific designated uses and protectiveness goals ascribed to the waterbody.

If the waterbody has been assessed and is not classified as a WOTUS/WOTS, and does not have designated uses ascribed to it, then the expected ecological function would be something to discuss with state/territory/Tribal personnel, other applicable Trustees, and those involved in the ERA. It may be that there is no expected ecological function for such a waterbody. Even if the waterbody is not expected to support aquatic life or wildlife that may interact with it, it should be expected that the waterbody would not pose a risk to wildlife receptors that might come into contact with it (e.g., should not be an "attractive nuisance"), nor should it have negative impacts on downstream waterbodies (e.g., not itself be a source of contamination). In cases where there is no expectation of aquatic life function or aquatic life protectiveness for a waterbody, the ecological risk assessment endpoints may simply be that the waterbody does not pose a risk to wildlife that may use or otherwise come into contact with the waterbody.

There may be special circumstances where a waterbody is not classified as a WOTUS because it is isolated from surface watercourses, or is dry much of the year, or for other reasons, but the waterbody provides (or it is determined that it should be providing) one or more particular ecological functions that are considered valuable. Ephemeral waterbodies for example may only contain water for a portion of the year, such that they do not support a fully aquatic community. But such waterbodies can be important ecologically, such as by providing valuable habitat for amphibian reproduction. Some states may not consider these WOTS, while other states, such as Arizona, have a WOTS classification for such waterbodies ("Aquatic and Wildlife – Ephemeral") despite them in some cases not being a WOTUS. In any case, if a waterbody is not classified as a WOTUS or even as a WOTS, but it does provide (or it is determined that it should be providing) one or more valued ecological functions, then the assessment endpoints developed for the ERA of the waterbody would need to include and be protective of those valued ecological functions.

NOTE: As described above, an ERA conducted for a waterbody should be designed to evaluate the risks to the assessment endpoints considered relevant for the expected ecological functioning of the waterbody (and the ecological exposures to the waterbody) at that time, or if the intent is to be predictive, for the expected ecological functioning that is planned for the waterbody in the future. As should be considered applicable for all ecological risk assessments however, if the use and/or the expected ecological functioning of (or the ecological exposure to) the waterbody changes in the future to where the previous ERA and its assessment endpoints or exposure assumptions are not considered adequately protective of the new conditions and/or the new expected ecological functioning, the waterbody should be reassessed for ecological risk to ascertain the adequacy of protection for the new ecological functioning expected for - or the new realities of exposure to - the waterbody.

Summary/Conclusions

Designing and scoping ecological risk assessments for many or most waterbodies (marshes, rivers, natural streams, lakes, etc.) will usually be fairly straightforward, as the expected ecological functions will clearly involve the support of aquatic life and wildlife. Designing/scoping an ecological risk assessment involving a waterbody with compromised water quality or habitat quality and/or within developed/urban/industrial settings can be less straightforward however, as the expectations around the ecological functioning of the waterbody may not be clear. An approach that can provide useful information regarding the expectation of ecological function for a waterbody is to consider the status of the waterbody within the CWA framework. For waterbodies that have been identified as WOTUS/WOTS, the designated uses (or other ecological protectiveness goals) assigned to the waterbody should help risk assessors identify the expected ecological functions for the waterbody and thus guide the selection of assessment endpoints for the ERA. For situations where the waterbody is not considered a WOTUS/WOTS, deciding on the expected ecological functions and assessment endpoints will likely be a necessary subject of discussion with the governing entities on a case by case basis.

Part of the benefit of this approach, especially if designated uses have been assigned to a waterbody, is that it can remove much of the "subjectivity" involved if those conducting an ERA might otherwise have to make judgement calls about expected ecological function for an apparently compromised (e.g. poor quality habitat) waterbody. There can be significant differences of opinion about what is a "reasonable expectation" concerning expected ecological function of apparently compromised waterbodies given the different perspectives of those usually involved in ERAs and the remedial decisions they inform. If the CWA classification and designated use (or related) information is available for the waterbody, this can provide relatively objective information that can be used to inform, justify and support the expected ecological function decisions and subsequent assessment endpoint development in ERA scoping, and can provide everyone involved with a common point of reference. On the other hand, if there are no designated uses or other ecological performance expectations for a waterbody, this can also be valuable information as it indicates that the expectations around the ecological functioning of the waterbody need to be discussed and agreed to by the project team and other pertinent stakeholders so that the ERA can be designed around an established set of expectations regarding what ecological functions are valued and are to be assessed for risk and protected if needed.

Something to note when considering WOTS-designated waterbodies is that if entities involved in the waterbody's ERA scoping and assessment endpoint development process have disagreements regarding the reasonableness of the designated uses (or perhaps other ecological performance expectations) for a WOTS-designated waterbody, the process to get designated uses modified is likely beyond a project-specific issue and would likely involve a Reclassification of designated uses, including the performance of a Use Attainability Analysis. Addressing this in detail is beyond the scope of this document, but a summary of what is involved in this process is provided below (Highlight 2).

For information about the classification of and designated uses for a waterbody, one should be able to contact the Regional EPA Water personnel and/or the state/territory/Tribal water personnel to determine (a) if the waterbody has been categorized; (b) if so, what the classification is and what the associated designated uses or protectiveness goals are, if there are any, or (c) if it has not been classified, if the authorized personnel will perform the assessment and classification to provide the information useful for determining the expected ecological function(s) for the waterbody. Some of the information for named waterbodies can also be found online, on either the Regional EPA or State websites.

Useful References

Introduction to the Clean Water Act:
https://cfpub.epa.gov/watertrain/pdf/modules/IntrotoCWA.pdf :

Water Quality Standards Handbook, Chapter 2: Designation of Uses:
https://www.epa.gov/sites/production/files/2014-10/documents/handbook-chapter2.pdf

UAAs to modify designated uses: https://www.epa.gov/sites/production/files/2014-11/documents/uaa_casestudies-all.pdf

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Highlight 2: Reclassification/Removal of DUs – from https://cfpub.epa.gov/watertrain/pdf/modules/IntrotoCWA.pdf

EPA regulations prohibit removing an "existing" or actual use from the designated uses for a water body (Figure 13). A designated use that has not been attained, however, may be removed under limited circumstances.

A key part of the process through which a state, territory, or tribe would enact a "downgrading" is called a Use Attainability Analysis (UAA). In the UAA, the state would have to demonstrate that one or more of a limited set of situations exists.

First, it must be shown that the current designated use cannot be achieved through implementation of: (1) applicable technology-based limits for point sources; and (2) cost-effective and reasonable best management practices (BMPs) for nonpoint sources.

If it has been shown that designated uses can't be met with the measures above, then another set of factors should be considered. These factors are as follows:

(1) Naturally occurring pollutant concentrations prevent the attainment of the use; or

(2) Natural, ephemeral, intermittent or low flow conditions or water levels prevent the attainment of the use, unless these conditions may be compensated for by the discharge of sufficient volume of effluent discharges without violating State water conservation requirements to enable uses to be met; or

(3) Human caused conditions or sources of pollution prevent the attainment of the use and cannot be remedied or would cause more environmental damage to correct than to leave in place; or

(4) Dams, diversions or other types of hydrologic modifications preclude the attainment of the use, and it is not feasible to restore the water body to its original condition or to operate such modification in a way that would result in the attainment of the use; or

(5) Physical conditions related to the natural features of the water body, such as the lack of a proper substrate, cover, flow, depth, pools, riffles, and the like, unrelated to water quality, preclude attainment of aquatic life protection uses; or

(6) Controls more stringent than those required by sections 301(b) and 306 of the Act would result in substantial and widespread economic and social impact.

If a UAA indicated that conditions for authorizing a removal of one or more designated uses existed, the UAA and the accompanying proposal to downgrade a designated use must go through the public review/participation process that is required for any change in a WQS and must be approved by EPA. EPA has provided some guidance on the meaning of key terms such as “substantial and widespread social and economic costs,” particularly as it relates to “point source” dischargers such as municipal sewage treatment plants and industrial facilities.

----------END Highlight 2 ----------

Attachment 1. Ecological-related Designated Use examples

These are examples of ecological function related Designated Use classifications from various states, to give readers an idea of the various eco-focused designated uses in use.

From Arizona (http://legacy.azdeq.gov/environ/water/standards/download/SWQ_Standards-1-09-unofficial.pdf):

- Aquatic and wildlife (cold water)
- Aquatic and wildlife (warm water)
- Aquatic and wildlife (ephemeral)
- Aquatic and wildlife (effluent-dependent water)

From West Virginia (https://dep.wv.gov/WWE/getinvolved/sos/Documents/WQS/WV_WaterUses.pdf):

Use Category	Use Subcategory	Description
Aquatic life	Warm water fishery	Propagation and maintenance of fish and other aquatic life in streams or stream segments that contain populations composed of all warm aquatic life.
Aquatic life	Trout waters	Propagation and maintenance of fish and other aquatic life in streams or stream segments that sustain year-round trout populations. Excluded are those streams or stream segments which receive annual stockings of trout but which do not support year-round trout populations.
Aquatic life	Wetlands	Propagation and maintenance of fish and other aquatic life in wetlands. Wetlands generally include swamps, marshes, bogs and similar areas.
Other Uses	Wildlife	All stream segments and wetlands used for [are useable by] wildlife.

From California, for the San Francisco Bay and Sacramento-San Joaquin Delta Estuary (https://www.epa.gov/sites/production/files/2014-12/documents/ca-sanfrancisco-bay.pdf):

Beneficial (Designated) Use Category	Description
Warm Freshwater Habitat **(WARM)**	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Cold Freshwater Habitat **(COLD)**	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
Migration of Aquatic Organisms **(MIGR)**	Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.
Spawning, Reproduction. and/or Early Development **(SPWN)**	Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.
Estuarine Habitat **(EST)**	Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
Wildlife Habitat **(WILD)**	Uses of water that support estuarine ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
Rare, Threatened. or Endangered Species **(RARE)**	Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under State or federal law as being rare, threatened, or endangered.

From Florida (https://www.flrules.org/gateway/ruleNo.asp?id=62-302.400):

Water Quality Classification	Designated Use
Class II	shellfish propagation or harvesting
Class III	Fish consumption; recreation; propagation and maintenance of a healthy, well-balanced population of fish and wildlife
Class III-Limited	Fish consumption; recreation or limited recreation; and/or propagation and maintenance of a limited population of fish and wildlife. "'Limited Population of fish and wildlife' means the aquatic biological community does not fully resemble that of a natural system in the types, tolerance and diversity of species present."

From New Jersey (https://www.nj.gov/dep/rules/rules/njac7_9b.pdf):

From information in "Section 7:9B-1.12 Designated uses of FW1, PL, FW2, SE1, SE2, SE3 and SC waters", a summary of what ecological designated uses apply to what surface water classification is tabulated below.

Surface Water type (X means the designated use applies)

FW1	PL	FW2	SE1	SE2	SE3	SC	Ecological-related Designated Uses (Uses that are not primarily ecological are not listed here)
X							Set aside for posterity to represent the natural aquatic environment and its associated biota
X							Maintenance, migration and propagation of the natural and established aquatic biota
	X						Maintenance, migration and propagation of the natural and established biota indigenous to this unique ecological system
		X	X	X		X	Maintenance, migration and propagation of the natural and established biota
				X	X		Migration of diadromous fish
				X	X		Maintenance of wildlife
					X		Maintenance and migration of fish populations

FW = fresh waters; PL = Pinelands waters; SE = saline estuary waters; SC = saline coastal waters