

These are example criteria used in other (referenced) studies. The TAG should evaluate each criteria based on its applicability to Lake County wetlands.

Fish Habitat (& Shellfish)

Functional Significance	Criteria	Comments/ Suggestions
High	<ul style="list-style-type: none"> • Lentic wetlands (PG, TT, MDEQ) • Stream and River wetlands that are only Throughflow (not Throughflow Artificial or Throughflow Intermittent) (PG, TT, MDEQ) • Wetlands associated with a pond (MDEQ) connected to the hydrography network (PG, TT) • Ponds associated with a wetland (MDEQ) when Pond is connected to hydrography network (PG, TT) • Palustrine Aquatic Bed Outflow wetlands (PG, TT, MDEQ) • Natural Ponds that are Isolated (MDEQ) • Natural Lakes (PG, TT, MDEQ) • All Lakes that are Throughflow, Throughflow Intermittent, or Throughflow Artificial, Outflow, Outflow Intermittent, or Outflow Artificial (PG, TT, MDEQ) • Headwater wetlands except artificial types (MDEQ) connected to the hydrography network (PG, TT) • Aquatic beds; semi-permanently flooded wetlands along lakes, rivers, streams, and ponds; shallow water zone of lakes; mixed open water/vegetated wetlands (RT14) • Lacustrine Littoral: semi-permanently flooded or permanently flooded (excluding wetlands along intermittent streams); Aquatic Bed; Unconsolidated Bottom/Vegetated Wetland (Tiner 2011) • Palustrine: semi-permanently flooded (excluding wetlands along intermittent streams; must be contiguous with a permanent waterbody such as PUBH, L1UBH, or R2/R3UBH or be a semi-permanently flooded slough); Aquatic Bed; Unconsolidated Bottom/Vegetated Wetland; Vegetated Wetland with a permanently flooded water regime (Tiner 2011) • Ponds (PUBH... on NWI; not PUBF) associated with semi-permanently flooded or permanently flooded Vegetated Wetland (Tiner 2011, RT14) • Riverine Lower Perennial Aquatic Bed (Tiner 2011) 	
Moderate	<ul style="list-style-type: none"> • Palustrine: Aquatic Bed wetlands that are Outflow Artificial, Outflow Intermittent, or Isolated and not already coded water regime H (Permanently Flooded); Aquatic Bed Throughflow wetlands (MDEQ) • Ponds: Diked Impounded Ponds not already coded water regime H (Permanently Flooded) (MDEQ); Ponds not connected to the hydrography network associated with a wetland (PG, TT); Natural Ponds that are Isolated (PG, TT); Throughflow Ponds (PG, TT, MDEQ) • Lotic Stream Throughflow Intermittent wetlands (MDEQ) • Terrene Outflow Intermittent or Outflow Artificial wetlands (MDEQ) • Excavated Isolated Lakes (MDEQ) • Wetlands associated with a Pond not connected to the hydrography network (PG, TT) 	

LAKE COUNTY WETLAND RESTORATION AND PRESERVATION PLAN (WRAPP)
 Biodiversity Working Group Draft Functional Assessment Criteria (February 26, 2016)

	<ul style="list-style-type: none"> • Headwater wetlands not connected to the hydrography network, except Artificial types (PG, TT) • Seasonally flooded marshes along rivers, lakes, and streams; certain types of ponds (typically > 1acre) (RT14) • Lentic wetlands that are PEM1C (and contiguous with a waterbody) (Tiner 2011) • Lotic River or Stream wetlands that are PEM1C (including mixtures with Scrub-Shrub or Forested wetlands; and contiguous with a waterbody) (Tiner 2011) • Other Ponds and associated Fringe wetlands (i.e., 1+ acre; specify pond types: natural ponds, beaver ponds, and excavated or impounded ponds that are used for aquaculture and wildlife management) (Tiner 2011) • Lotic River Floodplain Basin Wetlands (Tiner 2011) 	
Low	<ul style="list-style-type: none"> • All remaining (PG, TT) 	Not sure ALL remaining wetlands should be included, as many wetlands likely never contain fish or shellfish

Waterfowl & Waterbird* Habitat

Functional Significance	Criteria	Comments/ Suggestions
High	<ul style="list-style-type: none"> • Palustrine Aquatic Bed, Emergent, and Scrub-Shrub wetlands that are seasonally flooded, seasonally flooded/saturated, Semi-permanently flooded, intermittently exposed, and permanently flooded. No Coniferous (PG, MDEQ) and are Frequently Flooded as defined by SSURGO dataset (TT). • Semi-permanently flooded vegetated wetlands and aquatic beds, Lacustrine flats and shallow water; seasonally flooded marshes; waterfowl impoundments (RT14) • Lacustrine: Semi-permanently Flooded, Littoral Aquatic Bed (and mixes where AB dominates), Littoral Vegetated wetlands with an H water regime, Unconsolidated Shores (F, E, or C water regimes) (Tiner 2011) • Riverine: emergent wetlands, unconsolidated shores • Palustrine: semi-permanently Flooded and adjacent to a waterbody or along a slough; Aquatic Bed; Vegetated wetlands with an H water regime; Seasonally Flooded wetlands impounded (all vegetation types and associated PUB waters – natural ponds, waterfowl/wildlife impoundments, and beaver ponds) (Tiner 2011) • Lotic: River or Stream wetlands that are PEM1C (including mixtures with Scrub-Shrub or Forested wetlands); Basin or Fringe or Floodplain-basin wetlands (excluding those along intermittent streams) that are Forested or Scrub-shrub or mixtures of these types with C, F, R, or H water regime; wetlands that are mixed Forested/ Emergent or Unconsolidated Bottom/Forested with a F, R, or H water regime; Seasonally flooded wetlands that are forested or mixtures of trees and shrubs (excluding those along intermittent streams) (Tiner 2011) • Ponds associated with Semi-permanently Flooded Vegetated wetlands; Ponds associated with all of the above wetland types (Tiner 2011) 	<p>Emphasis is on the wetter wetlands and the ones that are frequently flooded for long periods (Tiner 2011)</p>
Moderate	<ul style="list-style-type: none"> • Palustrine Forested wetlands that are seasonally flooded, seasonally flooded/saturated, semi-permanently flooded, intermittently exposed, and permanently flooded. No Coniferous (PG, TT, MDEQ) • Aquatic beds; seasonally flooded marshes (>1 acre) along intermittent streams and in depressions (RT14) • Ponds 1+ acre(excluding industrial, commercial, stormwater detention, wastewater treatment, and similar ponds) (Tiner 2011, RT14) • Semi-permanently flooded vegetated wetlands not associated with a waterbody; seasonally flooded emergent wetlands (including mixtures with shrubs) contiguous with water bodies (Tiner 2011) • Palustrine: Emergent wetlands (including mixtures with Scrub-shrub) that are Seasonally Flooded and associated with permanently flooded waterbodies; Other vegetated (AB, EM, SS, FO) wetlands that are Semi-permanently Flooded (Tiner 2011) • Other Lacustrine Littoral Unconsolidated Bottom wetlands (Tiner 2011) 	
Low	<ul style="list-style-type: none"> • All remaining (PG, TT) 	

* Waterfowl (e.g., ducks, geese, and loons) and waterbirds (e.g., wading birds, shorebirds, rails, marsh wrens, and red-winged blackbirds)

Shorebird Habitat

Functional Significance	Criteria	Comments/suggestions
High	<ul style="list-style-type: none"> • Wetlands that are not intermittently exposed or permanently flooded and are: <ul style="list-style-type: none"> ○ Palustrine Aquatic Bed (MDEQ) ○ Palustrine Aquatic Bed Emergent and Scrub-Shrub (PG) ○ Palustrine Aquatic Bed Emergent and Scrub-Shrub and Frequently Flooded, as defined by SSURGO dataset (TT) • Non-persistent wetlands (PEM2) (PG, TT, MDEQ) • Lacustrine Unconsolidated shore that is partially flooded (PG, TT, MDEQ) 	Tiner 2011 includes shorebirds with 'waterfowl & waterbird habitat' function
Moderate	<ul style="list-style-type: none"> • Palustrine Emergent, Scrub-Shrub, and Forested wetlands that are not intermittently exposed or permanently flooded (PG, TT, MDEQ) 	
Low	<ul style="list-style-type: none"> • All remaining (PG, TT) 	

Amphibian Habitat

Functional Significance	Criteria	Comments/suggestions
High	<ul style="list-style-type: none"> • Palustrine emergent, scrub-shrub, and forested wetlands along with those mixed types <5 acres in size, isolated, and only seasonally flooded, seasonally flooded/saturated, or semi-permanently flooded (MDEQ); and not frequently flooded as defined by SSURGO (PG) or <2 acres in size in Illinois (TT). • Outflowing wetlands (PG, TT, MDEQ) • Palustrine aquatic beds that are isolated and not intermittently exposed or permanently flooded; and not frequently flooded as defined by SSURGO. (PG, TT, MDEQ) • Wetlands adjacent to rivers (PG, TT, MDEQ) • Lakeside wetlands (PG, TT, MDEQ) • Ponds and any wetlands that are associated with those ponds (TT) • Natural ponds and wetlands associated with those ponds (PG, MDEQ) • Natural ponds of any size (RT14) • Small isolated permanently flooded or semi-permanently flooded wetlands (including ponds) in an upland forest matrix (e.g., woodland vernal pools) AND other wetlands contiguous to or within 100m of these wetlands (Tiner 2011) 	
Moderate	<ul style="list-style-type: none"> • Palustrine emergent, scrub-shrub, and forested wetlands with those mixed types that are <5 acres in size and Throughflow and only seasonally flooded, seasonally flooded/ saturated, or semi-permanently flooded (MDEQ) and not frequently flooded as defined by SSURGO (PG), or <2 acres in size in Illinois (TT). • Palustrine emergent, scrub-shrub, and forested wetlands along with those mixed types that <5 acres in size and outflowing artificially or intermittently and only seasonally flooded, seasonally flooded/ saturated, or semi-permanently flooded (MDEQ); and not frequently flooded as defined by SSURGO (PG), or <2 acres in size in Illinois (TT). • Palustrine emergent, scrub-shrub, and forested wetlands along with 	

	<p>those mixed types that are isolated and only seasonally flooded, seasonally flooded/ saturated, or semi-permanently flooded (MDEQ); and not frequently flooded as defined by SSURGO (PG, TT).</p> <ul style="list-style-type: none"> • Palustrine aquatic bed isolated wetlands that are permanently flooded (PG, TT, MDEQ) • Scrub-shrub and forested wetlands <5 acres in size (must be PFO1) (PG, MDEQ), or <2 acres in size in Illinois (TT). • Rivers (PG, TT, MDEQ) • Ponds and the wetlands associated with them not already coded water regime H (Permanently Flooded) (PG, MDEQ) 	
Low	<ul style="list-style-type: none"> • All remaining (PG, TT) 	

Unique Wetland Resources/Conservation of Rare and Imperiled Wetlands and Species (MDEQ)/Conservation of Rare Wetlands and Species (TT)/Provision of Unique, Uncommon, or Highly Diverse Wetland Plant Communities (Tiner 2011, RT14, Tiner 2010)

Functional Significance	Criteria	Comments/suggestions
High*	<ul style="list-style-type: none"> • MI Natural Features Inventory's Biological Rarity Index and Probably value layer to identify wetlands and species of rarity (MDEQ). • Wetland has at least one occurrence of a Federal or State-listed threatened or endangered species (TT) • Wetland is identified as locally rare by local assessment work (TT) • Wetland type viewed as potentially significant for the provision of habitat for unique or diverse wetland plant communities in coastal Georgia (Tiner 2011) • Lotic: river fringe wetlands; stream fringe wetlands (excluding those dominated by dead woody plants); stream basin wetlands (RT14) • Regionally significant wetlands (Tiner 2010) 	<p>Add wetlands classified as "Great Lakes Coastal", ADID, & HQARs (if feasible) to this list</p> <p>RT14: This function is intended to identify wetlands that may be different from the majority of the watershed's wetlands and focuses on vegetation, landscape position, and special modifiers applied in the classification process. It excludes any ditched, excavated, or impounded wetlands.</p>
Moderate	<ul style="list-style-type: none"> • Locally significant wetlands (Tiner 2010) 	
Low	<ul style="list-style-type: none"> • All remaining (TT) 	

*Referred to as 'significant' by Tiner rather than 'high.'

Great Lakes Coastal Wetlands

Functional Significance	Criteria	Comments/suggestions
High	<ul style="list-style-type: none"> • 	No existing method for this function. SMC staff recommendation to classify wetland polygons as "Great Lakes Coastal" and include this wetland type in other functions [e.g., in Unique wtl resources]
Moderate	<ul style="list-style-type: none"> • 	
Low	<ul style="list-style-type: none"> • 	

Open Wetlands and Waters Habitat

Functional Significance	Criteria	Comments/suggestions
High	<ul style="list-style-type: none"> Inland Lakes, Ponds, and Impoundments (TNC) Emergent wetlands >10ha (TNC) 	TNC model based on target habitat types for American Bittern, Blue-Winged Teal, and Black Tern as “umbrella species” indicative of this habitat type
Moderate	<ul style="list-style-type: none"> Shrub bog (TNC) 	TNC model also includes upland habitats & proximity analysis
Low	<ul style="list-style-type: none"> 	

Stream Shading*

Functional Significance	Criteria	Comments/suggestions
High	<ul style="list-style-type: none"> Lotic Stream wetlands that are Palustrine Forested and Palustrine Scrub-Shrub and Headwater (TT, MDEQ) Terrene headwater wetlands that are Palustrine Forested and Scrub-Shrub (PG) Headwater wetlands that are Forested and Scrub-Shrub and within 50 feet of the hydrography network (TT) LS (not LS4 or not LS__pd) and PFO, LS (not LS4 or not LS_pd) and PSS (not PSS_Ba or not PSSf); excluding FO5 and SS5 (RT14) 	Determine if criteria should be “forested AND scrub-shrub” (needs to be both) or “forested OR scrub-shrub” (could be either)
Moderate	<ul style="list-style-type: none"> Stream wetlands that are Palustrine forested and Palustrine scrub-shrub and NOT Headwater (PG, TT, MDEQ) All other wetlands that are forested and scrub-shrub (PG) All other wetlands that are not forested and scrub-shrub and within 50 feet of the hydrography network (TT) 	See comment on Boolean logic above
Low	<ul style="list-style-type: none"> All remaining (PG, TT) 	

*Noted as a subcomponent of Fish & Shellfish habitat in Tiner 2010, RT14.

Riparian Habitat

Functional Significance	Criteria	Comments/suggestions
High	<ul style="list-style-type: none"> Shrub swamp or Floodplain Forest <300 m from non-impaired (303d-listed) channels (TNC) Stream (Cold, Cool, and Warm), or River (Warm) adjacent to natural land cover and <300 m from non-impaired (303d-listed) channels (TNC) 	TNC model based on target habitat types for Wood Turtle as “umbrella species” indicative of this habitat type; TNC model includes upland habitat types as well
Moderate	<ul style="list-style-type: none"> Forested wetland (Broadleaf deciduous) <300 m from non-impaired (303d-listed) channels (TNC) 	
Low	<ul style="list-style-type: none"> Shrub bog, Forested wetland (evergreen), Forested wetland (tamarack), Forested wetland (ridge & swale), Emergent wetland <300 m from non-impaired (303d-listed) channels (TNC) Inland Lakes, Ponds, Impoundments <1ha and <300 m from non-impaired (303d-listed) channels (TNC) 	

Beach Habitat

Functional Significance	Criteria	Comments/suggestions
High	<ul style="list-style-type: none"> Coast: beach (TNC) 	TNC model based on target habitat types for Caspian Tern and Common Tern as “umbrella species” indicative of this habitat type
Moderate	<ul style="list-style-type: none"> 	
Low	<ul style="list-style-type: none"> Emergent wetland, Inland Lake, Pond, or Impoundment within 2 miles of beach habitat (TNC) 	

Invertebrate Species Habitat*

Functional Significance	Criteria	Comments/suggestions
High	<ul style="list-style-type: none"> Aquatic beds; semi-permanently flooded wetlands along lakes, rivers, streams, and ponds; shallow water zone of lakes; mixed open water/vegetated wetlands; ponds associated with semi-permanently or permanently flooded vegetated wetlands (RT14) 	*Only one previous reference report for assessing this function – RT14, which lumped <i>Fish & Aquatic Habitat</i> .
Moderate	<ul style="list-style-type: none"> Seasonally flooded marshes along rivers, lakes, and streams; certain types of ponds (typically > 1acre) (RT14) 	
Low	<ul style="list-style-type: none"> 	

REFERENCES

ADID: NIPC, USEPA, SMC. 1992. Advanced Identification Study, Lake County, Illinois: Final Report.

MDEQ: Michigan Dept. of Environmental Quality. 2011. Landscape Level Wetland Functional Assessment: Methodology Report.

TT: Tetra Tech. 2014. Final Methodology Memo for Wetland Management Opportunities (Lower Fox, WI, & Upper Des Plaines, IL).

PG: PG Consultants. 2014. Methods and Results for a Geographic Information System Landscape Model of Wetland Functions in the Sandusky Subbasin (OH).

RT14. Tiner et al. 2014. Wetlands of Pennsylvania’s Lake Erie Watershed: Status, Characterization, Landscape-level Functional Assessment, and Potential Restoration Sites. USFWS.

Tiner2011: Tiner, Ralph W. 2011. Predicting Wetland Functions at the Landscape Level for Coastal Georgia Using NWIPlus Data. USFWS.

TNC: The Nature Conservancy. 2012. The Duck-Pensaukee Watershed Approach (WI).