Figure 1. Map of the project area which incorporates most of the St. Clair-Detroit River System (waterway connecting southern Lake Huron, St. Clair River, Lake St. Clair, Detroit River, and western Lake Erie; huron-erie.org).

Table 1. Description of key terms and example of viability table (TNC 2007).

Conservation Target			
Limited suite of species, ecological communities and ecological systems that are chosen to represent and encompass the biodiversity found in the project area.			
Key Ecological Attribute	**Indicator**	**Indicator Status**	**Indicator Rating**
Aspects of a target's biology or ecology that, if missing or altered, would lead to the loss of that target over time.	Measurable entity related to a specific information need.	The current 'health' of the indicator expressed as the most recent measurement.	An assessment of the indicator status based on established thresholds.

Table 2. Indicator ratings used for the SCDRS viability assessment (TNC 2007).

Indicator Rating	Description
Very Good	The indicator is functioning at an ecologically desirable status and requires little human intervention.
Good	The indicator is functioning within its acceptable range of variation; it may require some human intervention.
Fair	The indicator lies outside its acceptable range of variation and requires human intervention. If unchecked, the target will be vulnerable to serious degradation.
Poor	Allowing the indicator to remain in this condition for an extended period will make restoration or preventing extirpation practically impossible.

Table 3. Viability analysis results for the Main Channels. Assessment units: USCR = upper St. Clair River, MSCR = middle St. Clair River, LSCR = lower St. Clair River, UDR = upper Detroit River, LDR = lower Detroit River. NA = not applicable, blank cell = not assessed, cells with assessment values but no color indicate no satus ranges assigned for that indicator and segment. See Appendix A for detailed descriptions of indicators, specific indicator assessment approaches, and indicator rating thresholds.

Key Ecological Attribute	Indicator	SCDRS Assessment Units				
		01 USCR	02 MSCR	03 LSCR	06 UDR	07 LDR
Channel condition	Artificial Shoreline Hardening Index	100%	96%	30%	99%	75%
	Percent river flow through Chenal Ecarte	NA	NA		NA	NA
Community architecture	Fish species richness – spawning		11	14	16	11
	Fish species richness – larval		15	28	4	23
	Wetland area (acres)	11	84	33520	166	3934
Fish tissue	Contaminant load-mercury					
	Contaminant load-PCBs					
Population structure	5yr average of annual peak density of lake whitefish larvae	7.88	9.17	9.35	13.14	55.71
Water quality	Mean *Hexagenia* densities in fine sediments (#/m^2)					
	Mean Mar-Oct water levels (m)	176.0	175.5	175.2	174.8	174.4
	Mean (median) total dissolved solids (mg/L)	134 (140)	144 (145)		164 (150)	151 (150)
	Mean (median) total phosphorus (µg/L)	3.67 (2.0)	1.67 (4.0)		6.33 (10.0)	7.33 (9.0)
	E. coli concentration (% MI beaches open duringbeach closings, 2013, 2012 and 2013)		100%		100%	
Population size & dynamics	Mean native mussels richness per site			7		
	Mean *Dreissena* density (#/m^2)			~17,000		
	Native mussel abundance (#/m2)			0.046		
	Number mature lake sturgeon	35484		11720		4068

Table 4. Viability analysis results for Lake St. Clair. Assessment units: WLSC = western Lake St. Clair, ELSC = eastern Lake St. Clair. See Appendix A for detailed descriptions of indicators, specific indicator assessment approaches, and indicator rating thresholds.

Key Ecological Attribute	Indicator	SCDRS Assessment Units	
		04 WLSC	05 ELSC
Community architecture	3yr mean total native intolerant fish species in annual bottom trawl surveys	7 (trawling)	
	Mean *Dreissena* density (#/m^2)		
	Smallmouth bass population relative abundance (#/lift)	4.01	0.23
	Walleye population (#/lift)	1.02	0.60
	Yellow Perch population (#/lift)	1.19	0.17
	Muskellunge population (#/lift)	0.00	0.17
Soil/Sediment stability and movement	Bed load traps and groins (#/100km shoreline)	10.3	18.1
	Erosion and deposition rates (from tributaries)		
Coastal and watershed contribution	Artificial shoreline hardening index	97%	87%
	Percent natural land cover in watershed	28%	9%
	Percent natural land cover within 2km of lake	29%	10%
Landscape pattern and structure	Emergent and submergent vegetation distribution in protected embayments and soft sediment areas	>50%	>50%
Water Quality	Dissolved phosphorus load		
	Nitrogen		
	Total Phosphorus concentrations (μg/L)	11.75	
	Cladophora standing crop (gDW/m^2) during late summer (Aug-Sept)		
	Contaminants mercury (walleye)		
	Contaminants PCBs		
	Extent of harmful algal blooms		
	E. coli concentration (% MI beaches open during 2012 and 2013)	94%	
Population size and dynamics	Average native mussels richness per site		
Food Web Linkages	Mean *Hexagenia* density in fine sediments (#/m^2; 3yr avg)		
	Mean densities of rotifers, copepods, and cladocerans in early summer (ind/L)	nd / 0.79 / 0.50	

Table 5. Viability analysis results for Native Migratory Fishes. SO = stream order. See Table 1 and 2 for assessment unit codes and Appendix A for detailed descriptions of indicators, specific indicator assessment approaches, and indicator rating thresholds.

Key Ecological Attribute	Indicator	SCDRS Assessment Units						
		01 USCR	02 MSCR	03 LSCR	04 WLSC	05 ELSC	06 UDR	07 LDR
Access to spawning areas	% of accessible headwater stream habitat (SO 1)	NA	42%	92%	46%	56%	33%	96%
	% of accessible creek habitat (SO 2-3)	NA	42%	92%	32%	56%	23%	96%
	% of accessible small river habitat (SO 4-5)	NA	60%	89%	46%	41%	35%	100%
	% of accessible large river habitat (SO >6)	NA	NA	NA	100%	64%	NA	NA
	% of accessible tributary wetland habitat	NA						
	Area of Main Channels habitat suitable for lithophilic spawners							
Population size and dynamics	Lake sturgeon status across tributaries	35484		11720				4068
	Shorthead redhorse status across tributaries (CPUE spring gillnet)		0.03	0.0075			0.01	0.03
	Walleye status across tributaries (CPUE spring gillnet)		0.14	0.0375			0.215	0.78
	White sucker status across tributaries (CPUE spring gillnet)		0.15	0.08			0.043	0.03

Table 6. Viability analysis results for Islands. See Table 1 and 2 for assessment unit codes and Appendix A for detailed descriptions of indicators, specific indicator assessment approaches, and indicator rating thresholds.

Key Ecological Attribute	Indicator	SCDRS Assessment Units						
		01 USCR	02 MSCR	03 LSCR	04 WLSC	05 ELSC	06 UDR	07 LDR
Connectivity among communities/ ecosystems	Road density (m road/km^2) on islands	NA	256	615	0	0	5548	4185
Landscape pattern & structure	House density on island (# buildings/km^2)	NA	133	10	0	0	2	155
Size of characteristic communities /ecosystems	% natural land cover on entire island	NA	80%	59%	100%	14%	32%	40%
Soil/sediment stability and movement	Artificial shoreline hardening index	NA	100%	23%	0%	72%	100%	52%
	Bed load traps and groins (#/100km shoreline)	NA	0	0	0	0	0	7.9
Conservation status	% of high-ranked islands protected	NA	0%	17%	100%	0%	0%	2%

Table 7. Viability analysis results for Coastal Wetlands. See Table 1 and 2 for assessment unit codes and Appendix A for detailed descriptions of indicators, specific indicator assessment approaches, and indicator rating thresholds.

Key Ecological Attribute	Indicator	SCDRS Assessment Units						
		01 USCR	02 MSCR	03 LSCR	04 WLSC	05 ELSC	06 UDR	07 LDR
Abundance and diversity of amphibians	Amphibian community-based coastal wetland Index of Biotic Integrity (IBI)	53		39		23	2	25
Abundance and diversity of wetland-dependent bird species	Marsh bird IBI			37	49	44	9	26
Fish habitat quality	Wetland fish index of wetland quality							
Macroinvertebrate quality	Invertebrate IBI		36	42		48.3		
Plant community integrity	% coverage of *Phragmites* (US only)			38%	45%		8%	43%
Species composition/dominance	Wetland macrophyte index		3	3			3	3
Spawning habitat quality and accessibility	Spawning/recruitment success of coastal wetland spawners							
Trophic structure	Wetland zooplankton index							
Connectivity among communities & ecosystems	% natural land cover in watershed	3%	29%	13%	28%	9%	17%	13%
	% natural land cover within 500m of mapped wetlands	2%	60%	31%	32%	7%	36%	22%
Water level regime	Mean growing season (Mar-Oct) water level	176.0	175.5	175.2	174.9	174.9	174.8	174.4
Water quality	Mean annual total phosphorus							
	Water quality index for wetland quality							
Size of characteristic communities /ecosystems	Wetland area (acres)	11	84	33520	1108	4482	166	3934

Table 8. Viability analysis results for Coastal Terrestrial Systems. See Table 1 and 2 for assessment unit codes and Appendix A for detailed descriptions of indicators, specific indicator assessment approaches, and indicator rating thresholds.

Key Ecological Attribute	Indicator	SCDRS Assessment Units						
		01 USCR	02 MSCR	03 LSCR	04 WLSC	05 ELSC	06 UDR	07 LDR
Connectivity among communities & ecosystems	Road density (m road/km^2) within 2km of shoreline	13226	3652	1132	7543	2854	11280	5987
Landscape pattern & structure	House density within 500m of coast (# buildings/km^2) (U.S. only)	656	367	91	442		591	222
Size/extent of characteristic communities/ecosystems	% natural land cover within 2km of shoreline	5%	24%	51%	23%	8%	4%	51%
Soil/sediment stability and movement	Artificial shoreline hardening index	100%	96%	30%	97%	87%	99%	75%
	Bed load traps and groins (#/100km shoreline)	0	3.8	0.3	10.3	18.1	3.6	16.2
Coastal land use	% area 2-10km from lake in natural land cover	26%	30%	8%	22%	2%	2%	11%

Table 9. Viability analysis results for Aerial Migrants. See Table 1 and 2 for assessment unit codes and Appendix A for detailed descriptions of indicators, specific indicator assessment approaches, and indicator rating thresholds.

Key Ecological Attribute	Indicator	SCDRS Assessment Units						
		01 USCR	02 MSCR	03 LSCR	04 WLSC	05 ELSC	06 UDR	07 LDR
Anthropogenic disturbance	Mean distance between suitable shorebird habitat and disturbance factor (m)	39	227	914	91	233	58	198
	Mean distance between suitable waterfowl habitat and disturbance factor (m)	126	237	1752	1081	1129	121	473
Habitat availability	% of 2km shoreline area suitable for shorebirds	0%	29%	64%	6%	87%	1%	21%
	% of 2km shoreline area suitable for landbirds	10%	34%	54%	28%	7%	9%	28%
	% of 2km shoreline area suitable for waterfowl	17%	45%	88%	56%	95%	22%	54%
Management status	% of high priority habitat across all bird groups in conservation management (U.S. only)	0%	2%	25%	34%	0%	0%	11%