

# SUMMARY OF 2012 HAMILTON HARBOUR RAP STAKEHOLDER FORUM DECISIONS

Hamilton Harbour Remedial Action Plan (HH RAP) Beneficial Uses													
i	ii	iii	iv	v	vi	vii	viii	ix	x	xi	xii	xiii	xiv

The Hamilton Harbour Remedial Action Plan (RAP) Stakeholder Forum met five times between February – June 2012. All of the Beneficial Uses outlined by the International Joint Commission (IJC) were discussed. Two of the 14 topics were separated into discussions on fish or wildlife instead of combining the topics, creating a total of 16 Beneficial Uses discussed.

Status	# of Beneficial Uses
Impaired	8
Requires Further Assessment	4
Not Impaired	3
Deferred	1

Beneficial Use i	Restriction on Fish Consumption	2012 Status:	Impaired
Beneficial Use i (fish) will be considered not impaired when there is no significant difference in the fish consumption advisories for Hamilton Harbour compared to reference location(s) and the contaminants of concern are declining in Hamilton Harbour fish.			
Beneficial Use iii	Degradation of Fish Populations	2012 Status:	Impaired
Beneficial Use iii (fish) will be considered not impaired when the nearshore fish community has the following structure:			
<ul style="list-style-type: none"> <li>a. Shift from a fish community indicative of eutrophic environments (e.g. White Perch, Alewife, Bullheads, and Carp) to a self-sustaining community more representative of a mesotrophic environment with a balanced trophic composition that includes top predators (e.g. Northern Pike, Largemouth Bass and Walleye) and other native species (e.g. Suckers, Yellow Perch and Sunfishes).</li> <li>b. Attain an Index of Biotic Integrity (IBI) of 55-60 for Hamilton Harbour and maintain the target score for two sequences of monitoring carried out a minimum of every three years. The IBI incorporates components of native species richness, numbers and biomass; piscivore biomass; non-native species; and reflects water quality and the quality of fish habitat.</li> </ul>			

## SUMMARY OF 2012 HAMILTON HARBOUR RAP STAKEHOLDER FORUM DECISIONS

**Beneficial Use iii**    **Degradation of Wildlife Populations**    **2012 Status:**    **Impaired**

Beneficial Use iii (wildlife) will be considered not impaired when:

a. Colonial waterbirds:

The overall objective is to have a sustainable mixed community of colonial waterbirds. In general are aiming for an increase of the rarer species and a reduction in the number of over-abundant species. Management of colonial waterbirds and achieving specific populations of particular species requires an adaptive management approach be in place to ensure sustainable populations continue to the extent possible after delisting.

Targets (Number of Nests)

Ring-billed Gulls < 10,000;	Common Terns 300-600+;
Herring Gulls 200-300+;	Caspian Terns 400-600+;
Double-crested Cormorants < 2,500;	Black-crowned Night Herons 100-200+

b. Other wildlife including waterfowl:

No target will be suggested for other species of birds or animals, but a target for habitat (Beneficial Use xiv) has been suggested which will enhance wildlife populations generally. In addition, management of some species may be necessary as a result of habitat enhancement.

**Beneficial Use vi**    **Degradation of Benthos**    **2012 Status:**    **Impaired**

Beneficial Use vi will be considered not impaired when remedial actions to address contaminated sediment have been implemented and follow-up monitoring demonstrates improved benthic community structure and a reduction in acute and chronic toxicity attributable to contaminants in Hamilton Harbour sediments relative to historical surveys.

Progress should continue to be made towards these desired outcomes:

1. Littoral Zone (depth < upper limit of maximum extent of anoxic conditions)

- Benthic community structure (BCS) is not different from that of appropriate reference conditions and BCS is not correlated to sediment contaminant levels among sites.
- Acute and chronic sediment toxicity attributable to contaminants in sediments not different from appropriate reference conditions.

2. Profundal Zone (depth > upper limit of maximum extent of anoxic conditions)

- BCS is not correlated to sediment contaminant levels among sites.
- Acute and chronic sediment toxicity attributable to contaminants in sediments not different from appropriate reference conditions.

**Beneficial Use viii**    **Eutrophication or Undesirable Algae**    **2012 Status:**    **Impaired**

Beneficial Use viii will be considered not impaired when there are no persistent adverse water quality conditions attributable to cultural eutrophication for a period of three consecutive years. Listed are the anticipated environmental conditions for Hamilton Harbour (Table A), Cootes Paradise and Grindstone Creek area (Table B), and the annual average net loading targets required by major Harbour point sources to achieve those conditions (Table C).

**TABLE A: Environmental Conditions – Hamilton Harbour**

	Final Goals	Compliance Criteria
Phosphorus concentration	< 20 µg/L	15 of 17 epilimnetic integrated samples analyzed weekly* at the centre station from June to September are at or better than the targeted goal
Chlorophyll a concentration	< 10 µg/L	
Secchi disc transparency	> 2.5 m	
Un-ionized Ammonia concentration	< 0.02 mg/L	Biweekly epilimnetic integrated samples from ice-out to the end of May, and weekly epilimnetic integrated samples in June at the centre station do not exceed the targeted goal
Minimum Dissolved Oxygen concentration	> 6 ppm; but > 3 ppm during allowable exceedence period	During June to September inclusive, the water column at centre station should have a minimum 4 metre thick layer of water with a temperature <20°C and a DO >6 mg/L. Compliance with this goal is to occur in at least 15 of 17 profiles measured weekly, and during any exceedence episode, the water column at centre station should still have a minimum 2 metre thick layer of water with a temperature <20°C and a DO >3 mg/L.

# SUMMARY OF 2012 HAMILTON HARBOUR RAP STAKEHOLDER FORUM DECISIONS

## Beneficial Use viii Eutrophication or Undesirable Algae (continued)

TABLE B: Environmental Conditions – Cootes Paradise and Grindstone Marsh Area

	Cootes Paradise	Grindstone Marsh Area
Phosphorus concentration	60-70 µg/L*	60-70 µg/L*
Chlorophyll a concentration	20 µg/L*	20 µg/L*
Secchi disc transparency	1.5 m*	1 m*
Un-ionized Ammonia concentration	< 0.02 mg/L	< 0.02 mg/L
Minimum Dissolved Oxygen concentration	> 5 ppm*	> 5 ppm*
Submergent/ emergent aquatic plant area	240 ha*	50 ha*
Suspended solids	25 ppm*	25 ppm*

\* Cootes Paradise Water Quality Technical Team is working to develop final goals.

TABLE C: Net Loading Targets – Annual Average (kg/day)

	Phosphorus	Ammonia	Suspended Solids
Woodward WWTP	74	1000	1488
Skyway WWTP	17	115	280
King WWTP (Dundas) *	TBD	TBD	TBD
CSOs	8	48	329
Streams **	TBD	-	-
Industry (combined)	-	270	-
U. S. Steel Canada (Stelco)	-	-	1500
ArcelorMittal Dofasco	-	-	1500

\* Cootes Paradise Water Quality Technical Team is working to develop final goals.

\*\* Stream loadings work ongoing by Water Quality Technical Team.

## Beneficial Use x Beach Closings and Water Contact Sports 2012 Status: Impaired

Beneficial Use x will be considered not impaired when Hamilton Harbour public beaches (Bayfront Park and Pier 4 Park) meet the provincial beach management protocol 80% or more of the swimming season for a minimum of three consecutive years.

## Beneficial Use xi Degradation of Aesthetics 2012 Status: Impaired

Beneficial Use xi will be considered restored when the waters are free of any substance due to human activity which produces a persistent objectionable deposit, unnatural colour or turbidity, or unnatural odour for a period of three consecutive years.

## Beneficial Use xiv Loss of Fish and Wildlife Habitat 2012 Status: Impaired

Beneficial Use xiv will be considered not impaired when:

1. Emergent and submergent aquatic plants measure ≥ 500 hectares (230 ha in Hamilton Harbour + Windermere Basin and 270 ha in Cootes Paradise + Grindstone Creek Marshes).
2. Improved littoral shore (0-5 m depth) measures ≥ 15 kilometres.
3. Wildlife habitat measures ≥ 300 hectares.
4. Colonial nesting waterbird island habitat measures ≥ 1.5 hectares.
5. The quality and quantity of fish and wildlife habitat in Hamilton Harbour (including Windermere Basin, Cootes Paradise, and Grindstone Creek Marshes) improves to support the fish and wildlife populations identified in Beneficial Use iii.

## SUMMARY OF 2012 HAMILTON HARBOUR RAP STAKEHOLDER FORUM DECISIONS

Beneficial Use i	Restriction on Wildlife Consumption	2012 Status:	Requires Further Assessment
Beneficial Use i (wildlife) will be considered not impaired when there are no restrictions on consumption of wildlife from the Harbour attributable to local sources.			
Beneficial Use iv	Fish Tumours or Other Deformities	2012 Status:	Requires Further Assessment
Beneficial Use iv will be considered not impaired when incidence rates of fish tumours in brown bullheads, as an indicator species, do not statistically exceed rates at relevant reference site(s).			
Beneficial Use v	Bird or Animal Deformities or Reproduction Problems	2012 Status:	Requires Further Assessment
Beneficial Use v will be considered not impaired when the types and frequency of deformities and/or reproductive impairments associated with contaminant exposure are similar to those seen at a suitable reference site(s), and do not result in a population level effect as examined through sentinel species (e.g. snapping turtles and herring gulls).			
Beneficial Use xiii	Degradation of Phytoplankton and Zooplankton	2012 Status:	Requires Further Assessment
<i>2012 Delisting Objective Update deferred until more information is available.</i>			

Beneficial Use ii	Tainting of Fish and Wildlife Flavour	2012 Status:	Not Impaired
Beneficial Use ix	Restrictions on Drinking Water Consumption	2012 Status:	Not Impaired
Beneficial Use xii	Added Costs to Agriculture and Industry	2012 Status:	Not Impaired

Beneficial Use vii	Restrictions on Dredging Activities	2012 Status:	<i>Deferred</i>
<i>2012 Delisting Objective Update and Beneficial Use Status deferred until more information is available.</i>			

For more information on the discussions at the meetings, please visit our website [www.hamiltonharbour.ca/rap](http://www.hamiltonharbour.ca/rap) or contact the HH RAP Office at [rapoffice@ec.gc.ca](mailto:rapoffice@ec.gc.ca) or (905)336-6279.