



St. Clair River Area of Concern

An Assessment of the Status of the Beneficial Use Impairment: Tainting of Fish and Wildlife Flavour

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St. Clair River Canadian RAP Implementation Committee

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Acknowledgements

This report on fish tainting for the St. Clair River Area of Concern (AOC) includes summaries of results from three surveys: i) 2007 Salmon Derby participants, ii) residents of Aamjiwnaang First Nations in 2008 and iii) residents of the Walpole Island First Nation (WIFN) in 2010.

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Executive Summary

In the St. Clair River Area of Concern Stage 1 Report no recent reports of tainted fish or wildlife flavour were identified as being on record. However, some incidents of tainting had been verbally provided by residents of Walpole Island and this led to the designation of the Beneficial Use Impairment (BUI), tainting of fish and wildlife flavour, as “require further assessment”. The 1995 St. Clair River Area of Concern Stage 2 report further identified this BUI as “requiring further assessment”.

Two distinct efforts were undertaken to assess this BUI prior to the surveys being reported in this report. These efforts included a 1995 controlled subjective olfactory sensory evaluation of tainting in walleye (Myllyoja and Johnson, 1995) and a survey conducted between 1996 and 1997 to look at tainting in both fish and wildlife within the St. Clair River (Dawson 1999). The results from the 1995 subjective olfactory sensory evaluation revealed no noticeable difference in tainting when comparing fish caught from within and upstream of the AOC. Also, in the 1996/97 survey, 96 percent of shoreline anglers did not report fish tainting and no wildlife consumers identified tainting. This BUI has retained the “requires further assessment” designation. Since these studies were more than 10 years old, the St. Clair River AOC Progress Report (2005) recommended further study to determine a designation. In 2006 the Canadian RAP Implementation Committee (CRIC) agreed to revisit this BUI through another survey.

This report presents the results of: i) the 2007 St. Clair River Angler Survey on fish quality conducted during the Annual Sarnia Salmon Derby, ii) a further online survey hosted by the Friends of the St. Clair River for two months following the derby, iii) a follow up survey for the Aamjiwnaang First Nation (AFN) undertaken in the spring of 2008 and iv) a fish quality survey completed in the spring of 2010 for Walpole Island First Nation (WIFN) community members. These surveys used qualitative and semi-quantitative data collected from questionnaires designed to gather information on fish quality (taste and odour) and related issues. Additional questions dealing with the appearance of fish flesh, health risks related to eating fish and an open question on other comments were also asked of the WIFN community members.

A total of 299 responses were received through all of the phases of the survey. Through the angler (2007 Salmon Derby), on-line and AFN efforts, a total of 198 survey forms were completed. Through the WIFN efforts an additional 101 survey responses were received. The survey results showed that 49 per cent of the respondents were from Canada, forty percent (40%) were from Walpole Island First Nation, six percent (six per cent) were American and the remaining five percent (five per cent) were from Aamjiwnaang First Nation. The majority of participants (40 percent), fish the St. Clair River more than 10 times per year. Eighty-two percent (82 per cent) of interviewees reported that they consume their catch from the St. Clair.

Anglers that consume St. Clair River fish were asked to comment on quality of fish taste and smell based on a range of excellent, good, fair and poor. Eighty-one percent (81 per cent) of the survey respondents identified the taste of fish from the St. Clair River as either excellent or good and only 14 people (five per cent) reported poor tasting fish. As for fish smell, 69 per cent of the



respondents identified St. Clair River fish as either excellent or good, 25% rated them as fair and only six per cent identified the smell as poor.

Of the 30 interviewees in the anglers survey of 2007 that chose not to consume fish from the St. Clair River, most reported that they catch and consume fish from lower Lake Huron, far fewer reported fish consumption from Lake St. Clair and the Detroit River. The responses from the WIFN community showed a greater variety of fishing areas where fish are consumed.

While many anglers do not avoid eating specific types of fish, many identified a variety of commonly avoided species. Few participants provided a clear reason for this.

Interviewees that consume fish from the St. Clair River were asked if they habitually avoid fishing in certain areas of the St. Clair River. Of the 209 interviewees that responded, 65 per cent did not consciously avoid areas of the St. Clair River. Of the 27 per cent of anglers in the 2007 survey who avoid fishing in areas of the river, the most commonly avoided area was the lower river, with the most common reason being an overabundance of aquatic plants. The survey results for members of the WIFN community differed in that a larger percentage (13 per cent) of respondents avoided the upper river area (near Sarnia), while 5 per cent avoided all areas.

Two hundred and eleven interviewees responded when asked to comment on perceived changes needed to improve the quality of the St. Clair River fish. Even when they ranked the quality of fish taste and smell as excellent, many were compelled to recommend required actions. Most expressed ongoing concerns over chemical spills, discharges to the river by industry and a call for zero pollution, while some indicated that no changes to the river would increase their confidence in fish quality. A general call for cleaner water was proposed by a subset of respondents.

Based on the weight of evidence provided through the results of this survey, and the two previous studies undertaken to evaluate the tainting of fish and wildlife flavour on the St. Clair River, the recommendation to the Canadian RAP Implementation Committee is to designate the Tainting of Fish and Wildlife Flavour beneficial use impairment as “not impaired”.



Introduction

Tainting of fish and wildlife flavour is beneficial use impairment (BUI) that has been identified as “requiring further assessment” within the St. Clair River Area of Concern (AOC). Two studies undertaken in the later part of the 1990’s endeavoured to clarify whether the status of this BUI is “impaired” or “not impaired”. In 1995, a controlled olfactory sensory evaluation of tainting in walleye showed no distinguishable difference between upstream fish and fish caught within AOC waters. A change in status to “not impaired” was recommended in the 1997 RAP Update report, with confirmation based on a St. Clair River shoreline survey. A subsequent survey was completed in 1997 with results (Dawson 1999) showing that 96 per cent of respondents did not report fish tainting and no mention was made of tainting of wildlife flavour from those that consumed wildlife (Dawson 1999). Further, the few reports of tainting that were identified in this survey did not comment on whether the tainting was a recent or past observation. A secondary portion of this survey included questions on wildlife consumption and whether any tainting was observed. Of 106 respondents in this category there was not one report of tainting of wildlife flavour. While these studies may not have been completely representative of all users of St. Clair River, including First Nations, conditions within the St. Clair River are thought to have improved since these reports were published.

The St. Clair River Canadian RAP Implementation Committee (CRIC), which was established in the fall of 2005, discussed the need for a new assessment to determine the current status of this BUI. It was decided by the CRIC and supported by the Binational Public Advisory Committee (BPAC) that a survey be conducted to seek input from individuals most able to provide an accurate perspective on the tainting of fish and wildlife flavour. These individuals would represent consumptive users and sport fish anglers from the general public and First Nations.

This report, developed by a working group of the CRIC, presents the results of i) the 2007 St. Clair River Angler Survey on fish quality conducted during the Annual Sarnia Salmon Derby, ii) a further online survey hosted by the Friends of the St. Clair River for two months following the derby, iii) a follow up survey for the Aamjiwnaang First Nation (AFN) undertaken in the spring of 2008 and iv) a fish quality survey completed in the spring of 2010 for Walpole Island First Nation (WIFN) community members.

Methods

This study was designed to determine if St. Clair River fish currently have noticeable tainting associated with anthropogenic chemicals discharged to the river (rather than natural factors) and whether tainting that may be identified are markedly different from fish taken from outside the AOC. A 2007 St. Clair River Angler questionnaire was developed by Environment Canada with input from partner agencies, the BPAC and the Friends of the St. Clair River (FOSCR). Questionnaires were printed, and a shoreline survey conducted. Anglers participating in the Bluewater Anglers 2007 Salmon Derby were requested to answer a set of questions relating to fish quality. The Derby typically attracts approximately 1000 anglers from the United States and Canada and was viewed as an opportunity to survey consumptive users and sport fish anglers



to better understand their perceptions of fish quality. Both Walpole Island and Aamjiwnaang First Nations were contacted to ensure participation of both First Nations.

To facilitate the gathering of public input on fish taste and smell, the 2007 questionnaire asked participants a total of six questions, some having multiple parts (Appendix 1). The 2007 questionnaire was informed by a previous Health Canada funded study that examined fishing and fish consumption along the St. Clair River (Dawson, 1999). The questions on the 2007 questionnaire touched on topics related to residency of anglers, the frequency of fish trips to the St. Clair River, the types of fish eaten, the quality of both fish taste and smell, avoidance of fish types and areas, and changes to the St. Clair River that would increase angler confidence in fish quality.

Six Lambton College students were contracted by the FOSCR to conduct the shoreline surveys at the City of Sarnia weigh-in station between April 27th and May 6th 2007. Additional surveys were completed through the FOSCR website and members of the Bluewater Anglers. Numerous media releases and interviews were conducted to garner public interest and participation, including: *Sarnia Observer*, *Sarnia This Week*, *Wallaceburg News* the *Port Huron Times Herald* and *CHOK Radio* in Sarnia.

During the initial review of the data collected from the 2007 survey, some concern was expressed by the Aamjiwnaang First Nation representatives on the relatively low level of participation by AFN. In the summer of 2008, further effort was employed using the same questionnaire in the AFN community and resulted in an additional 14 questionnaires being completed.

In 2010 Environment Canada supported the development of a similar angler survey by WIFN Heritage Centre staff for their community. In developing the questionnaire, staff sought input from the WIFN Habitat and Species Working Group. The survey was similar but not identical to the angler survey of 2007. A Walpole Island First Nation community member was contracted to conduct the survey in the Walpole Island First Nation community during March 2010. Members of the community were either interviewed by the member who was contracted to conduct the survey or they completed the survey at the Heritage Centre. This resulted in 101 responses. The results from both surveys are integrated in this report where possible. Questions or responses that differed between the two surveys are reported separately.

RESULTS

Survey Participants

A total of 299 individuals were interviewed. Survey participants were asked where they lived in order to provide a demographic overview. Forty-nine percent (N=148) of participants were from Canada, and 6 per cent (N=14) resided in the United States. The response rate from the two First Nations in the St. Clair River area were Walpole Island with 40 per cent (N=121) of the survey respondents and Aamjiwnaang First Nations with five per cent (N=16).



Table 1. Demographic summary of interviewees participating in the St. Clair River survey.

Residency	Total	per cent
Canada	148	49
US	14	6
Walpole Island First Nation	121	40
Aamjiwnaang First Nation	16	5

Note: Some survey respondents from AFN and WIFN were captured during the initial 2007 survey, making their numbers higher than those identified as parts of the additional surveys.

Angling Effort

When asked how many fishing trips are made to the St. Clair River on an annual basis, approximately 11 per cent reported that they make less than one trip per year; this includes 12 respondents from WIFN who reported never fishing in the area. Seventeen percent (N=47) reported making between one and three fishing trips, 16 per cent (N=46) make four to six fishing trips and 13 per cent (N=38) make between seven and ten fishing trips. The majority, 40 per cent (N=112) reported that they fish the St. Clair River more than 10 times per year (Table 2).

Table 2. Summary of annual fishing trips to the St. Clair River.

Annual Fishing frequency	Number of Interviewees	per cent
<1 x/yr	31	11
1-3 x/yr	47	17
4-6 x/yr	46	16
7-10 x/yr	38	13
>10 x/yr	112	40
No response or other	8	3

Specifics on Species Eaten from the St. Clair River

Eighty-two percent (N=246) of participants reported that they consume the fish they catch from the St. Clair River. Survey results show that 86 per cent of interviewees preferred to consume the more “traditional” sport fish, including walleye/pickerel, perch, salmon, trout and bass, with walleye being the preferred species by over 50 per cent of the participants (Table 3).



Table 3. Most common fish consumed by St. Clair River anglers.

Fish Type	N	per cent
Walleye/Pickerel	171	34
Perch	129	25
Salmon/trout	59	12
Bass	77	15
Pike	14	3
Crappie	8	1.5
Catfish	5	1
Bluegill	8	1.5
Panfish	4	1
All types	33	6

Quality of St. Clair River Fish

Anglers that consume St. Clair River fish were asked to comment on quality of fish taste and smell (Table 4). Eighty-one percent (N=208) of survey respondents identified the taste of fish from the St. Clair River as either excellent or good, 14 per cent identified the taste as fair and only 14 of the respondents or 5 per cent reported poor tasting fish (41 participants either did not provide a comment on fish taste or indicated they did not know). As for fish smell, over 69 per cent (N=172) of the respondents identified St. Clair River fish as either excellent or good, a further 25 per cent (N=62) rated the smell as fair and only 6 per cent identified the smell as poor (49 participants either did not provide a comment on fish smell or indicated they did not know).

Survey participants were then asked to comment on the types of tastes and odours in fish that they found distasteful in fish caught over the past three years. Of the 16 who reported poor quality of smell and provided comments, three stated that St. Clair River fish had a “fishy” smell, and three indicated that the fish have more of an odour in the summer and less in winter. Of the participants that responded that the taste of fish is poor in the St. Clair River and providing comment, one indicated that chemicals had changed the taste of fish and others just did not like the taste. One respondent indicated the pickerel tasted different in one year (2006). Many of the comments from members of the WIFN regarding concerns with fish consumption were related to the appearance of fish (lesions, sores or deformities on fish).

Table 4. Summary of survey participant responses on quality of fish taste and smell.

	Excellent	Good	Fair	Poor
Taste	77 (30 per cent)	132 (51 per cent)	36 (14 per cent)	14 (5 per cent)
Smell	53 (21 per cent)	119 (48 per cent)	62(25 per cent)	16 (6 per cent)



The survey also identified if anglers who do not consume St. Clair River fish, choose to eat fish from areas adjacent to the AOC. The 2007 survey revealed that anglers, that chose not to consume fish from the St. Clair River, reported that they catch and consume fish from lower Lake Huron. Far fewer reported fish consumption from Lake St. Clair and the Detroit River. Eleven individuals reported that they avoid fish from all areas surrounding the AOC. This trend was reversed in the WIFN responses. A greater number of respondents ate fish from the lower parts of the AOC, in proximity to the First nation territories, such as Lake St. Clair, Goose Lake, Johnson Channel, Chematogan Channel, Mitchell’s Bay and the Snye River.

Do Anglers Avoid Eating Specific Types of Fish?

Approximately 60 per cent of the anglers reported that they avoid eating certain types of fish. However, only a few provided a clear reason why. Respondents listed things such as “taste preference”. Some expressed concern that bottom fish are more likely to contain high contaminant concentrations because of their association with bottom sediments (N=110) and larger fish were not eaten because of exposure to contaminants for a longer period. Thirteen respondents from WIFN were concerned that eating fish with tumours may cause disease (cancer) while 19 per cent did not eat carp and 16 per cent did not eat catfish. Ten respondents did not consume certain species of fish taken in the summer. Some also thought that pike, bass and pan fish are too bony (N=4) and do not contain enough meat. One indicated avoidance of fish caught during certain times of the day and one avoided eating “shallow lake fish” caught in the river during the summer, due to the occurrence of parasites.

Table 5. St. Clair River Survey participant reports of avoidance of certain fish.

Fish type	N
Bottom feeding fish	110
Pike	41
Bass	30
Pan fish	12
Yellow perch	6
Walleye	7
Salmon/trout	9

Note: while some of the numbers on avoidance of fish may seem to be high, the majority of the issues surrounding this avoidance referred to concerns regarding the impacts of consumption on health and not taste or smell. It should be further noted that Restrictions on Fish and Wildlife Consumption is an impaired BUI in the St. Clair River.

Avoidance of St. Clair River Areas

Respondents that consume fish from the St. Clair River were asked if they habitually avoid fishing in certain areas of the St. Clair River (Table 6). Of the 209 interviewees that responded, most (66 per cent; N= 137) did not consciously avoid areas of the St. Clair River.



Of the 34 per cent (N= 72) of interviewees who avoid fishing in areas of the St. Clair River, the most commonly avoided area was the lower river; mostly due to aquatic vegetation. However, WIFN members who most commonly avoided the upper part of the river (13 per cent) cited concern over the influences of Sarnia and associated industrial facilities, the Lambton Generating Station and the associated warm water, along with a fear of sewage contamination in the upper river. Five WIFN members stated they avoid all areas of the river. Four interviewees chose not to specify where on the river they avoided fishing but provided the following reasons: sewage, sores on fish and too dirty. WIFN members were asked if they ate fish from other areas. Fifty per cent (50 per cent) or more of the respondents reported eating fish from: Lake St. Clair (67 per cent), Goose Lake (64 per cent), Johnson Channel (55 per cent), and Chematogan Channel (50 per cent).

Table 6. Summary of concerns of fish consumers who avoid fishing in areas of the St. Clair River.

Concerns	Upper	Middle	Lower	Unspecified location
Too many aquatic plants	-	-	12	
Oily taste in fish	-	-	4	
Power Generating Station and warm water	-	2	1	
Sewage	1	-	-	1
Fear of contaminants in fish	1	2	3	1
River smells bad	-	1	-	
Fish Tumours				17
No comment	6	-	4	1
Influences from chemical valley/Sarnia/marinas	13			
Chematogan because of rock bass			2	
From inside marshes			1	

Perceptions on Changes Needed to the St. Clair River to Increase Angler Confidence

Although the majority of people (approximately 95 per cent) identified the taste and smell of St. Clair River fish as excellent, good or fair; 130 interviewees provided a response when asked to comment on the perceived needs in the St. Clair River to improve the quality of fish.

Most expressed ongoing concerns over chemical spills, discharge to the river by industry and a call for zero pollution, while some indicated that no changes to the river would increase their confidence in fish quality. WIFN members reported that the greatest changes that needed to occur were: less industry and zero pollution (30 per cent) and the prevention of spills (13 per cent). A general call for cleaner water was proposed by a subset of respondents, with individuals calling for greater control of sewage spills and a need to address sewage separation in Sarnia. There was roughly the same number of respondents that wished to see larger fish populations, a greater diversity of natural structure in the river, control for non-native species and less fishing pressure.



Table 7. Perceived changes to the St. Clair River to increase confidence in the quality of fish.

Perceived changes needed	Number of responses
Stop spills	47
Less industry or zero pollution	46
Cleaner water	21
Control sewage spills and address sewage separation	13
More fish, natural structure, less fishing	11
High fines to plants that pollute and more strict regulations	11
More monitoring and reports on testing	8
Boat traffic	5
Plant trees	2
Clean up sediments	2
Reduce Pollution from US	1
Closure of Dunn Paper Plant	1
More four-stroke engines	1
Close power plant	1
Filter water	1
Wind towers	1
No changes	33
Don't know	4

Do you believe that eating St. Clair River fish currently poses a health risk to you?

This question was only part of the WIFN survey; it was not included in the 2007 angler surveys. Thirty seven respondents indicated they believed that eating fish from the St. Clair River posed a health risk, while a similar number (38) did not know. Fifteen did not think that it was a health risk, while 11 did not respond. It should be noted that many parts of the Great Lakes have some level of fish consumption restrictions described and publicized by the Ontario government through the Guide to Eating Sports Fish. Concern by residents related to fish consumption in the AOC is therefore expected. The most frequent responses explained their concerns are listed in Table 8 below



Table 8: Perceived sources of health risks

Type of Risk	Number of responses
Chemical pollution and spills	19
Fish mercury pollution	4
Diseased fish	3
Eating too much contaminated fish	3
Poor water quality	2
Unknown water quality/risks	2
Freighter traffic	2
Government warnings	1
Power plant	1
Historical reports of risk	1
Heavy metals	1
Polluted sediments	1
Unclear response	4

Conclusion

The results of this study identify that tainting of fish through taste and odour is not a concern expressed by over 95 per cent of those interviewed during these surveys of St. Clair River anglers. Only a very small minority of fish consumers, when asked to comment on fish quality, reported fish smell and/or taste as poor. Only five percent of participants reported poor fish taste and six percent of participants reported poor fish smell, when asked to comment on specific tastes and odours within the last three years. Reasons provided by respondents identifying either poor taste or smell included that fish from the St. Clair River have a fishy smell, that fish texture and taste had changed but could not describe the change in taste, while a few associated poor fish taste and smells with chemicals in the St. Clair River.

Members of the WIFN are clearly concerned about the quality of their environment as it relates to the consumption of fish, their water supply and the protection of wildlife. They are interested in: an elimination of spills and discharges to the river by the complexes in the chemical valley, a cleanup of sediments and better monitoring and reporting of water quality and fish consumption guidelines. However, the majority of members who responded to the survey continue to fish and consume their catch.

This report summarizes the results of four surveys on the tainting of fish and wildlife flavour beneficial use conducted since 2007. Combining the results from these surveys along with the 1995 controlled subjective olfactory sensory evaluation of tainting in walleye in which no identifiable tainting was identified (Myllyoja and Johnson, 1995), a 1996/97 survey of over 924



individuals in which only four per cent voiced concern over fish tainting and no mention of tainting of wildlife flavour from those that consumed wildlife (Dawson 1999), we conclude that the Beneficial Use Impairment on tainting of fish and wildlife flavour in the St. Clair River is “not impaired”.

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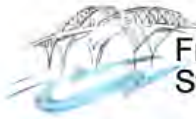
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Appendix 1

St. Clair River Anglers Survey Form

Fish Quality and River Aesthetics



**Friends of the
St. Clair River**

St. Clair River Anglers Survey: Fish Quality and River Aesthetics



Friends of the St. Clair River (FOSCR) requires public input on fish tainting and river aesthetics in order to determine the current status of these beneficial uses of the River. This survey seeks to determine if St. Clair River fish currently have noticeable taints associated with human influences on the river, rather than natural factors, and to understand public perception of the current aesthetic condition of the St. Clair River. **PLEASE** help us collect this important data.

1. In which nation do you reside?

Canada (Local to the St. Clair River Visitor)
 Aamjiwnaang First Nation
 Walpole Island First Nation
 U.S. (Local to the St. Clair River Visitor)
 Other

FISH QUALITY

2. How often do you fish the St. Clair River?

<1X/year 1-3X/year 4-6X/year 7-10X/year >10X/year

3. Do you eat fish from the St. Clair River? Yes No

a) If you answered 'yes', what types of fish do you eat?

b) How do you rate the quality of fish caught?

TASTE	Poor	Fair	Good	Excellent
SMELL	Poor	Fair	Good	Excellent

c) If you rated fish quality as 'poor', what tastes and/or odours have you noticed over the last three (3) years that you disliked?

d) If you answered 'no', do you eat fish caught from these other areas?

Lower Lake Huron	Yes	No
Lake St. Clair	Yes	No
Detroit River	Yes	No

Why?

4. Do you avoid eating any specific types of fish in the St. Clair River?

Northern Pike	Walleye
Bass	Salmon & Trout
Yellow Perch	Panfish (Crappie, Bluegill, Rock Bass)
Bottom feeding fish	
Other (please specify):	

Why?

Survey conducted by Friends of the St. Clair River with funding support from Environment Canada

5. Are there specific areas of the St. Clair River where you avoid eating the fish you catch?

No Yes (Where: Upper Middle Lower)

Why?

6. What changes to the St. Clair River would increase your confidence in the quality of fish?

RIVER AESTHETICS

7. Would you say that the aesthetics/appearance of the St. Clair River has improved over the last 10 years?

Yes No Don't Know

What is this based on?

8. How would you rate the appearance of St. Clair River water?

Degraded Poor Fair Good Excellent

9. Have you noticed any objectionable deposits, unnatural colour or turbidity, unnatural odour or unnatural scum/floating material in the last two years?

Yes No

If YES, what was the appearance of this substance?

Where did it occur? Upper Middle Lower

How often does it occur?

< 1X/year 1-3 X/year 4-6 X/year 7-10 X/year
 >10X/year Always/Constantly

Thank you for your participation.
Please return completed survey to:

Ken Hall
 Friends of the St. Clair River
 248 Trudeau Dr.
 Sarnia, ON N7S





Appendix 2

**Walpole Island First Nation Survey of
Fish Flavour from the St. Clair River**

2010 Survey Form on Aesthetics of the St. Clair River



The Following is a reproduction of the survey used with members of the Walpole Island First Nation in 2010.

PART A: ST. CLAIR RIVER FISH

1. Do you eat fish caught from the St. Clair River?
2. How often do you eat fish from the St. Clair River?
 - a. 1 – 3 times a year
 - b. 4 – 6 times a year
 - c. 7 – 10 times a year
 - d. More than 10 times a year
3. What type (species) do you eat?
4. Do you avoid eating any specific types of fish from the St. Clair River?
 - a. If yes, what types (species) of fish don't you eat and why? Size of fish?
5. How do you rate the quality of fish caught from the St. Clair River?
 - a. Taste of Fish: Poor, Fair, Good, Excellent
 - b. Smell of Fish: Poor, Fair, Good, Excellent
 - c. Appearance of Flesh: Poor, Fair, Good, Excellent
6. Have you noticed anything unusual about the taste, odour, and appearance of fish?
If yes, can you describe what you have noticed and when?
7. Are there specific areas of the St. Clair River where you avoid eating the fish you catch? (Examples: Upper, Middle, Lower Portions of the St. Clair River)
8. Do you eat fish caught from these other areas?

PART B: OTHER QUESTIONS

1. Do you believe that eating St. Clair river fish currently poses a health risk to you?
If yes, can you explain why?
2. What changes in the St. Clair River would increase your confidence in the safety and quality of the fish from the St. Clair River?
3. Do you have other comments that you would like to share?



2010 SURVEY ON AESTHETICS (APPEARANCE) OF THE ST. CLAIR RIVER

1. How would you rate the appearance of the water of the St. Clair River?
2. Have you noticed any of the following in the St. Clair River?
 - Objectionable deposits
If yes, can you describe its appearance, where you have noticed it, and when?
 - Unnatural colour or turbidity (clarity)
If yes, can you describe its appearance, where you have noticed it, and when?
 - Unnatural odour/smell
If yes, can you describe its appearance, where you have noticed it, and when?
 - Unnatural Scum/floating material
If yes, can you describe its appearance, where you have noticed it, and when?
3. Would you say that the appearance of the St. Clair River has changed over the following years?
 - Over the past 5 years
 - Over the past 10 years
 - Over the past 20 years
 - Over the past 50 yearsIf yes can you explain the changes in appearance?
4. Do you have other comments that you would like to share?