

Fish Stories:



a profile of

FISHING

And FISH CONSUMPTION in the ST. CLAIR RIVER AREA.

Fish Stories:
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And FISH CONSUMPTION along the ST. CLAIR RIVER.

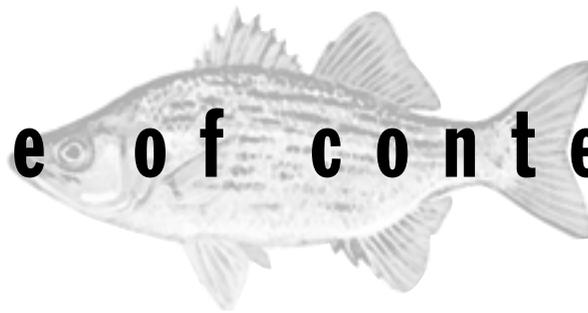


JENNIFER DAWSON

Fish and Wildlife Nutrition Project

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table of contents



LIST OF TABLESi
ACKNOWLEDGMENTSii
EXECUTIVE SUMMARYiv
1.0 INTRODUCTION AND BACKGROUND .....	.1
1.1 THE RESEARCH PROJECT .....	.1
1.2 THE RESEARCH CONTEXT AND RATIONALE .....	.1
1.3 THE ST. CLAIR RIVER AOC .....	.2
1.4 THE ST. CLAIR RIVER DATA .....	.3
2.0 DESCRIPTION OF SURVEY PARTICIPANTS .....	.6
2.1 COMPARISONS TO OTHER SURVEY AREAS .....	.6
2.2 WHERE FISHERS LIVED .....	.8
2.3 COMPARING SURVEY TO CENSUS DATA .....	.8
3.0 ST. CLAIR RIVER INTERVIEW LOCATIONS .....	.9
4.0 COMMENTS ABOUT THE ST. CLAIR RIVER FISHERY .....	.12
5.0 ENJOYMENT OF FISHING .....	.15
5.1 FISHING AS DE-STRESSOR .....	.15
5.2 SOCIAL INTERACTION .....	.17
5.3 COMMUNITY CONNECTEDNESS .....	.18
5.4 FISHING AND KIDS .....	.19
5.5 FISHING FOR FOOD .....	.21
6.0 THOSE WHO DIDN'T EAT ST. CLAIR RIVER FISH .....	.21
6.1 DEMOGRAPHIC DIFFERENCES BETWEEN "EATERS" AND "NON-EATERS" .....	.22
6.2 WHY NOT EAT FISH FROM THE RIVER? .....	.23
<i>Pollution-related reasons</i> .....	.24
<i>"Circumstantial eaters"</i> .....	.24
<i>Those who didn't like fish</i> .....	.25
<i>Fishing for fun, not food</i> .....	.26
7.0 THOSE WHO ATE FISH FROM THE ST. CLAIR RIVER .....	.26
7.1 DEMOGRAPHIC DETAILS BY LEVEL OF ST. CLAIR RIVER FISH CONSUMPTION .....	.27
7.2 WHY EAT FISH? .....	.28
<i>Superior quality</i> .....	.28



<i>Productivity and culture</i>	30
<i>Economic Benefit</i>	31
<i>Health Benefits</i>	24
7.3 SPECIES AND PREPARATION	34
<i>Specifics on species eaten from the St. Clair River</i>	34
<i>Why these species?</i>	36
<i>Parts of fish eaten and portion sizes</i>	37
7.3 CONCERNS ABOUT EATING ST. CLAIR RIVER FISH	37
<i>Those without concerns</i>	38
<i>Fish consumers and concerns</i>	42
<i>Concerns about pollution in the river</i>	43
<i>Tainted fish</i>	44
<i>Managing the risk from fish consumption</i>	45
<i>The stigma associated with eating St. Clair River fish</i>	47
8.0 SHARING FISH	48
8.1 SHOULD YOU LOOK A GIFT FISH IN THE MOUTH?	51
9.0 EATING FISH FROM OTHER ONTARIO LOCATIONS	51
9.1 WHY EAT FISH FROM ELSEWHERE?	52
10.0 USE OF THE GUIDE TO EATING ONTARIO SPORTING FISH	53
10.1 FAVOURED SOURCES OF INFORMATION	57
11.0 AQUATIC WILDLIFE CONSUMPTION	60
12.0 OTHER PRESSING CONCERNS: EXOTIC SPECIES, SHORELINE ETHICS AND FISHERY MANAGEMENT	62
12.1 EXOTIC SPECIES INTRODUCTION	63
12.2 SHORELINE ETHICS, CONSERVATION ISSUES AND RELATIONSHIP	64
12.3 FISHERY MANAGEMENT	67
12.4 COMMERCIAL FISHING	68
13.0 CONCLUSIONS	69
REFERENCES	71
APPENDIX A: SPORT FISH AND WILDLIFE CONSUMPTION STUDY IN AREAS OF CONCERN TAPED INTERVIEW GUIDES	72
APPENDIX B: SPORT FISH AND WILDLIFE CONSUMPTION STUDY IN AREAS OF CONCERN QUESTIONNAIRE	73
APPENDIX C: INTERVIEW QUESTIONS FOR AQUATIC WILDLIFE CONSUMERS	74
APPENDIX D: MAP OF ST. CLAIR RIVER AOC AND SURVEY LOCATIONS	75
APPENDIX E: RELATED WORKS AND PUBLISHED PAPERS	76

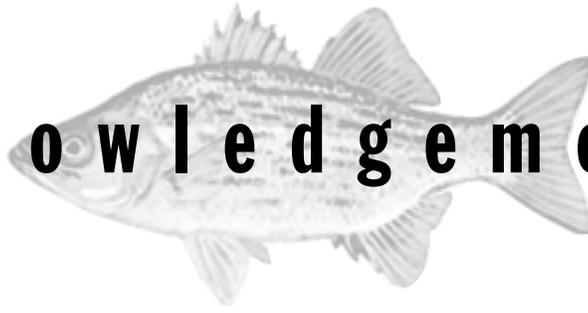


LIST OF TABLES

I.	Participation rate of fishers in the St. Clair River survey area	9
2.	Number of people interviewed at St. Clair River locations	16
3.	Participants who did not eat their catch by survey area	27
4.	Why St. Clair River participants don't eat their catch	28
5.	Number of meals of St. Clair River fish eaten over the previous year as reported by St. Clair River participants	32
6.	What St. Clair River 'eaters' like about their catch	33
7.	Fish species reported consumed by St. Clair River participants and participants in all survey areas	40
8.	Specific concerns St. Clair River fish consumers had with their catch	47
9.	Number of St. Clair River participants who reported eating fish from other Ontario locations by the number of St. Clair River fish meals they ate	57
10.	Use of the <i>Guide to Eating Ontario Sport Fish</i> by highest level of education completed by St. Clair River participants	59
II.	Sources of information used to make decisions about fish consumption by St. Clair River participants	62



a c k n o w l e d g e m e n t s



This profile of fishermen on the St. Clair River is part of a larger project that involved the active support of many people. Thanks to Brian Gibson, whose initial observations of fishermen on the Niagara River and subsequent pilot research with Kelly R. Cavan and Mai Bui laid the basis for this project. In addition to funding the research, staff at Health Canada provided invaluable leadership and support. Dieter Riedel and Jill Kearney helped to design and promote the project in its early stages. As the Technical Authority for the project Sandra Owens consistently championed the project, provided practical advice, maintained communications with members of the RAP community in Sarnia and the other survey locations, and participated throughout as an active member of the project team. More recently, Dora Boersma provided the support and direction we needed to see this project through to completion. Other members of the research team, Donald Cole, Judy Sheeshka, David Kraft and Fran Scott (who joined the project in the later stages), participated in every aspect of research design and implementation, as well as providing editorial comments on early versions of this and other project reports. In the early stages of this multi-year project Michelle Hooper assisted with the development of the survey instrument, Leo Keating managed data analysis and Heather Young-Leslie oversaw development of the interview guide and training of research assistants. In the later stages of the project Humaira Khan managed data analysis. Rachel

Derry provided accurate and prompt transcription of tape-recorded long interviews throughout.

This project could not have been carried out without our intrepid team of research assistants, who diligently trudged the shoreline, patiently interviewing shoreline fishers from morning to night in every kind weather. Their insights and observations as well as extensive knowledge of the river and the local fishery, were captured in thousands of pages of field notes, which made a major contribution to the success of the project. Research assistants who surveyed on the St. Clair river were Rob Myllyoja, Therese Hutchinson, Marta Lejkowski and Lisa Tulen.

The Ontario Ministry of Environment provided more than 3000 copies of the *Guide to Eating Ontario Sport Fish* which our research assistants distributed to survey participants on the shoreline. Chuck Cox of the Sport Fish Contaminant Monitoring program provided helpful comments when we were drafting the one-page explanation of how to use the Guide. The Ministry of Natural Resources offered advice on the development of the list of fish species that was used in the survey questionnaire. Lynda Corkum from the University of Windsor provided photographs of the Goby which we added to our species list and the photo album which RA's used for shoreline identification

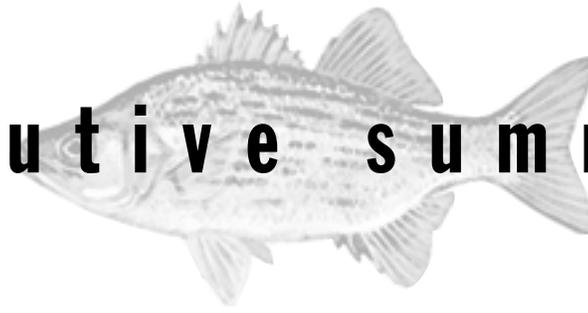
In Sarnia we received help, feedback and profession-

al advice from Gary Johnson, of the Ontario Ministry of the Environment. As coordinator of the Remedial Action Plan Gary actively supported our research project from the beginning. He provided meeting space for members of our project and office space for research assistants, as well as organizing the initial presentation of results at a public meeting in Sarnia. Scott Munro, General Manger of the Lambton Industrial Society, provided space to interview candidates for the position of Research Assistant. Thanks also to Warren Pickering

and Ward Fortin of the Bluewater Anglers, who met with members of our project and provided detailed information about local recreational fishing issues. Mr. Pickering conducted a tour of the fish hatchery managed by the Bluewater Anglers, and invited members of our project to present a summary of results at a meeting of the Bluewater Anglers. Finally, thanks to all those shoreline fishers who patiently answered our questions, allowed us to tape extended conversations and record their opinions, observations and insights into the local fishery.



executive summary



THIS REPORT PRESENTS THE ST. CLAIR RIVER RESULTS OF A SURVEY ON SHORELINE FISHING AND FISH CONSUMPTION WHICH WAS CONDUCTED IN SELECTED LOCATIONS OF FIVE ONTARIO AREAS OF CONCERN. THE SURVEY COMBINED QUALITATIVE DATA, IN THE FORM OF TAPE RECORDED INTERVIEWS AND FIELD NOTES, WITH QUANTITATIVE DATA, COLLECTED BY QUESTIONNAIRES, TO GATHER INFORMATION ON: THE AMOUNTS AND SPECIES OF FISH CONSUMED; PERCEPTIONS OF HEALTH RISK AND BENEFIT; USE OF ONTARIO'S FISH CONSUMPTION ADVISORY; AND THOUGHTS ON ENVIRONMENTAL AND RESOURCE MANAGEMENT ISSUES. RESEARCH QUESTIONS WERE DESIGNED TO PROVIDE INFORMATION AND OFFER RECOMMENDATIONS TO POLICY MAKERS, RESOURCE MANAGERS AND OTHERS INVOLVED IN ENVIRONMENTAL INITIATIVES IN THE AREAS WE SURVEYED.

At the close of three seasons of surveying, we had interviewed 924 individuals fishing along the St. Clair River from the Bluewater Bridge to Mitchell's Bay. Most of the St. Clair River interviews were conducted in three highly popular fishing locations which were—in descending order of greatest number of interviews—Lambton Generating Station, the grain elevators/government docks, and the Bluewater Bridge. While interviewees spoke highly of the St. Clair River fishery—including access to the water and species of fish available—it was widely felt that the river was challenging to fishermen, especially given the decline in stocks of some desirable fish species.

Fishing itself was a highly valued and 'healthy' activity, offering the opportunity to de-stress, to interact with others, to maintain a connection with community and sustain a local tradition, and to spend time with family. Fishing was appreciated for giving children and adolescents a productive, wholesome pastime.

Thirty-six percent of St. Clair River interviewees had not eaten fish from the river in the 12 months

prior to being interviewed. When asked why not eat the fish, only 9% replied that the water was 'polluted/dirty' and 9% mentioned that the 'fish were dirty/contaminated'. It appeared that those who ate the fish and those who didn't eat the fish were not two discreet groups; there were a considerable number of participants who, given the right circumstances, might well have decided to eat their catch. A striking example of this was the 56% of St. Clair River 'non-eaters' who explained that they hadn't eaten any fish from the river in the previous 12 months because they 'hadn't caught any'.

Of the 64% of St. Clair River interviewees who had eaten fish from the river in the previous 12 months, 47% had eaten between I and II meals in the past year, 24% had eaten 12-25 meals, 24% reported between 26 and 95 meals and 4% had eaten 96 or more meals in the past 12 months. Almost half (45%) of fish consumers, when asked what they liked about the fish, responded that the fish 'tasted good' or 'was fresh'. Only 5% appreciated their catch because it was 'cheap/free', a finding consistent with opinion shared in tape recorded interviews and field notes that eating the

fish was not about poverty and necessity but was about superior taste, quality control, productivity, and cultural continuity.

The top 5 species of St. Clair River fish consumed—in terms of greatest number of participants reporting them—were (1) walleye, (2) yellow perch, (3) rainbow trout, (4) coho salmon, and (5) small-mouth bass. These species were preferred above the more challenging sheephead, catfish and carp both because tradition dictated avoidance of 'alternative species' and because usual preparation methods could not render these species palatable. Thirty percent ate parts of the fish other than the fillet. Qualitative data suggest that portion sizes were typically greater than the 8 ounces recommended in the *Guide to Eating Ontario Sport Fish*.

When St. Clair River fish consumers were asked if they had 'concerns' about the fish they caught, 51% answered 'no'. These fish consumers offered a range of reasons for their lack of concern: that there had been great improvements in the river environment due to corporate controls and ministry regulation; that they hadn't suffered any ill effect, that the risks from fish consumption were less than or equal to other risks they took; that fish migrated through the river; and that they didn't "eat enough to worry". In some cases, it seemed that fisherman shrugged off the topic of pollution and health effects as a way of avoiding a controversial and depressing conversation.

Of the 49% of fish-eaters with concerns, most were pollution related. Fish consumers had noticed improvements in the river but were highly conscious of ongoing problems and were not yet content. They wanted greater corporate and individual accountability, and increased government involvement, to ensure the positive trend

continued. Interviewees were concerned with fish tainting and a number spoke of fish caught at Lambton Generating Station and Talfourd Creek which had a petrochemical taste or smell. Those who ate St. Clair River fish attempted to manage and minimize the risk through various methods, including choice of location, releasing larger fish and particular species, removing parts of the fish when cleaning, releasing any strange-looking or unappetizing catches and reducing overall consumption.

Sharing fish was an important component of social interaction on and off the shoreline, both with familiar faces and strangers. Forty-one percent of St. Clair River interviewees, when asked what they did with their catch, replied 'give some away'.

It appeared that the more St. Clair River fish a participant ate, the more likely s/he was to report eating fish from other Ontario locations. Even so, an average of 69% of the total Ontario fish meals for St. Clair River fish consumers came from the river. Popular locations were Lake Erie/Lake St. Clair, Lake Huron, inland southern Ontario and inland northern Ontario. Interviewees chose to eat fish from these spots for a number of reasons, including the adventure of fishing in a new place and the perception that the water and fish were cleaner.

Thirty-six percent of St. Clair River fish consumers stated that they used the *Guide to Eating Ontario Sport Fish* (hereafter referred to as the Guide). Comments from participants pointed to the complexity of the publication and to the cursory and creative manner in which it was used. Some interviewees did not feel the Guide applied to them, while others questioned the rigour of government studies. A number of species caught and eaten



from the river were missing from the 1997-8 version, and almost 1 in 4 meals eaten by St. Clair River anglers were of species not included in the Guide. Information sources which were popular with St. Clair anglers included fishing organizations, the media, and each other.

Of the 924 St. Clair River participants, 11% had eaten aquatic wildlife over the previous 12 months. Eighty-seven percent of these individuals had also eaten St. Clair River fish during the same time period. Two thirds of aquatic wildlife consumers had eaten between one and five meals of duck, goose or other aquatic wildlife species. The species most frequently reported consumed were mallard and Canada goose; most frequently reported locations from which wildlife meals were taken were the St. Clair River Area of Concern, inland southern Ontario, Lake Erie and Lake Huron.

Those we interviewed were a very concerned and

vocal constituency and frequently spoke about issues of fishery management, illegal activity and breach of fishing etiquette. Very often such comments were linked to the sustainability of the fishery and it was quite clear that many we spoke with viewed their role as one of stewardship for future generations. We heard many complaints about cutbacks in the Ministry of Natural Resources, use of license money, the impact of commercial fisheries and the effect of exotic species introductions.

Key recommendations offered in the conclusion of the report are 1) to integrate resource management and fish consumption issues in Ontario's fish advisory and to use the channels fishermen already employ to distribute this information; and 2) to include fishermen, especially those who eat fish from the river, as advocates and resources when planning and implementing environmental initiatives on the river.



"Finding a suitable term by which to refer to our survey participants has been a challenge. We initially chose the label "fisher", since it was gender neutral and avoided the elitism and emphasis on rod-and-reel technique which are implied by the term "angler". On several occasions, however, we have been confronted by individuals who have objected to the term "fisher" and have preferred instead to be called by the more traditional and gender-specific "fisherman". An interesting article in the Globe and Mail (March 21, 1998) highlights this issue; a woman drew a standing ovation at a public meeting regarding a government fisheries report when she stated, "I won't be referred to as 'fisher' by no damn bureaucrats or politicians from Ottawa. I'm a fisherman and proud of it!". Given the absence of a definitive and uncontested way to refer to our participants, then, we have chosen to alternate use of the terms "fisher", "fisherman", and "angler" in this report.

1.0 INTRODUCTION AND BACKGROUND

1.1 The research project

The Fish and Wildlife Nutrition Project—a multi-disciplinary research team whose members include an epidemiologist, nutritionist, sociologist, community medicine physician, environmental scientist and anthropologist—was contracted by Health Canada to conduct a survey of shoreline fishermen in Toronto, Hamilton, and along the Canadian sides of the Niagara, St. Clair and Detroit Rivers from 1995 to 1997.

The study was designed to provide detailed information about fishing in each of these water bodies, including who eats the fish, how much and which species are eaten, how the fish is cleaned and prepared, and use of Ontario's fish consumption advisory and other information sources. We also asked participants for their perspective on the risks and benefits of fish and aquatic wildlife consumption and their opinions about the state of the local fishery and environment. This information was collected to fill data gaps and help guide policy and action in the areas we surveyed.

Data was collected using three methods: structured questionnaires, semi-structured tape recorded conversations and field notes taken by research assistants (RAs). Copies of the Sport Fish and Wildlife Consumption Study in Areas of Concern tape-recorded interview guide and questionnaire can be found in Appendices A and B.

1.2 Research context and rationale

In 1985, the International Joint Commission's Great Lakes Water Quality Board identified 42 "Areas of Concern" around the Great Lakes. These locations, commonly referred to as "AOCs", were

accorded this acronym based on the point source pollution and destruction of fish and wildlife habitat which had caused significant degradation of local ecosystems.

The Great Lakes Water Quality Agreement requires that clean-up plans—officially referred to as Remedial Action Plans—be developed and implemented in each of the Areas of Concern through the involvement of federal, state, provincial and local agencies; technical experts; interested groups; and local citizens. The five locations we surveyed—Metro Toronto, Hamilton Harbour, and the Niagara, St. Clair and Detroit Rivers—are all classified as AOCs and, to varying degrees, have Remedial Action Plans (RAPs) in place. These are all places where local sources of environmental contamination have resulted in restrictions being placed on the consumption of locally caught fish.

Consumption of Great Lakes fish was first recognized as a health concern in the mid-1970s when research identified the presence of persistent toxic chemicals in fish found throughout the Great Lakes basin. Since then, research has explored the extent to which particular communities or groups may be at higher risk of exposure to persistent toxic chemicals as a result of the sources and quantities of fish and wildlife they eat.

The impetus behind our research was the need to identify potentially 'at risk' groups eating Great Lakes fish. Hence we targeted Areas of Concern, sought to interview individuals who ate locally caught fish and wildlife, and focused our attention on the rarely-studied shoreline fisherman. The research, however, was designed from the outset to explore both the risks and the benefits of catching and eating local fish and wildlife. Candid, insightful and challenging conversations with fishers from



many different backgrounds demonstrated that issues of risk and benefit were complex, carefully considered and contested. The data we collected helped to recast our research question from 'who is at risk?' to 'how is risk defined?' and from 'who follows fish consumption advice?' to 'how do different groups and individuals balance the risks and benefits of fish consumption?'

The use of qualitative methods was part of a conscious strategy to broaden our understanding of issues of risk and benefit and to more accurately reflect the complexity of risk/benefit analysis. Readers of this report may well have spoken to fishermen in the course of their professional work and may, in fact, recognize some of the opinions and ideas which are quoted in this report. The documentation and analysis of such conversations and observations 'from the field' is a research method with a long history and varied application within the social sciences. Qualitative methods range from a one-off focus group which is quickly transcribed and analyzed to years of intensive 'participant-observation' and key informant interviews with a particular group or community. Our method—conducting semi-structured tape-recorded interviews and writing field notes over several months—falls somewhere in the middle. Members of our research team did not live with fishermen, nor did they necessarily spend any time fishing in the areas we surveyed. Within the constraints of the survey format, however, we did attempt to gather in-depth and experiential information which could be analyzed in a detailed and interpretive way.

1.3 The St. Clair River AOC

This report focusses on results from those participants interviewed while fishing in selected areas of the St. Clair River AOC. The river itself

is an approximately 30 kilometre channel which links Lake Huron to the north with Lake St. Clair to the south and forms part of the international boundary between Canada and the United States. The Map in Appendix D shows both the AOC and study area boundaries. The two differ somewhat because 1) we chose to focus on the main water-body and major tributaries rather than the entire watershed and 2) our survey strategy was dictated by the movements and preferences of the fishers.

Particular issues of concern which have been identified in the St. Clair River RAP Stage I Addendum Report (1993) are: municipal and industrial point sources of contaminants; urban and rural non-point sources of contaminants including combined sewer overflows and agricultural run-off; contaminated sediments; and loss of wetland resources and other fish and wildlife habitat.

Progress on river clean-up is measured by improvements in I4 areas, three of which have direct relevance to this study: restrictions on fish and wildlife consumption, tainting of fish and wildlife flavour, and fish tumors or other deformities.

At the end of 1999, the St. Clair River RAP had a full-time coordinator working out of the Ministry of the Environment office in Sarnia. The RAP team—consisting of binational public advisory committee members and government agency members—had been very active during the information gathering phase necessary to complete Stages I and II of the RAP but no longer met, since these somewhat administrative tasks were largely complete. Instead, action-oriented initiatives were being undertaken by the Habitat/Non-point Source and Sediment

	NUMBER OF REFUSALS	NUMBER OF FISHERS INTERVIEWED BEFORE	NUMBER OF PARTICIPANTS	NUMBER OF FISHERS APPROACHED
1996	100	142	512	754
1997	26	103	412	541
TOTAL	126	245	924	1295

TABLE 1. PARTICIPATION RATE OF FISHERS IN THE ST. CLAIR RIVER SURVEY AREA*

* Survey protocol dictated that fishers were to be surveyed only once. Those who refused to participate and those interviewed previously have been excluded from the 'participant' total.

sub-committees. As a result of renewed commitment to the RAP process from senior levels of government in both the United States and Canada, a working group—including members from the United States Environmental Protection Association, Michigan's Department of Environmental Quality, Ontario's Ministry of the Environment and Environment Canada—was preparing a series of papers to report on issues important to the St. Mary's, Detroit and St. Clair River RAPs.

1.4 The St. Clair River data

Surveying on the St. Clair River took place from June 7 to November 7, 1996 and from April 1 to June 23, 1997. RAs—one of whom was fluent in Polish, one who was fluent in the ways of the local fishery and a third who brought knowledge of local environmental issues—almost daily drove the length of the St. Clair River from the Bluewater Bridge to Mitchell's Bay in a tireless quest for new volunteers for the project. Although they had a list of priority locations to survey and were cautioned to avoid unsafe situations, RAs were encouraged to seek out participants who might be fishing at unusual times or in out of the way locations—an aspect of this unique job which one RA enthusiastically referred to as a "stake-out". Our survey method was different than the more systematic and mathematical creel census used by the Ministry of Natural Resources to collect data about fish caught. The

goals were to follow the fishermen, to encourage maximum participation and to capture the eccentricities of the study area.

During the survey seasons the RAs—who acted as the eyes and ears of the project on the shoreline—became familiar faces along the St. Clair River, sharing information and stories with many of the regulars in the local fishing scene. In return, the regulars gave our RAs notebooks—full of insightful information about life on the river and a chance to feel part of the local fishing culture.

Table I shows that a total of 1295 St. Clair River fishers were approached during the 3 seasons of surveying. Of this 1295, 126 refused to participate in the study. The most popular reason for declining to participate—offered by 39% of the 126 people who refused—was that it was the individual's first time fishing here/they were a tourist. Fourteen percent (n=18) did not participate because they were not interested, while another 14% (n=17) were busy or didn't want to be disturbed. Eleven percent (n=11) declined to participate because they were 'a beginner'. Sixteen percent of St. Clair River refusals were categorized as 'other'. Difficulty finding a common language in which to conduct the interview, while a common reason for refusing to participate in the Metro Toronto, Hamilton, Niagara and Detroit River study areas, presented much less of a problem along the St. Clair River,

where only 6% of refusals were categorized as 'due to language'.

Nineteen percent of the 1295 individuals we contacted had been interviewed previously and were therefore not surveyed again. Thus the statistics presented in this report have been generated from the responses of the 924 St. Clair River fishers who agreed to participate in the study and had not been interviewed before.

The questionnaire used in Metro Toronto, Hamilton Harbour, and along the Niagara River during 1995 underwent some changes before the 1996 survey season began. Significant modifications to the 1996 questionnaire included: 1) asking demographic questions of all interviewees, not just fish consumers 2) asking for estimates of number of days per year and number of years each interviewee had fished 3) adding 'fish taste/smell bad' as a response to the questions 'why don't you eat what you catch?' and, for fish consumers only, 'what are your concerns [about the fish you catch]?' 4) asking fish consumers about their sources of information for eating fish and 5) asking 'do you use the *Guide to Eating Ontario Sport Fish?*' rather than 'are you aware of the *Guide to Eating Ontario Sport Fish?*' As a result of these alterations to the questionnaire, the data collected in 1995 and 1996-7 are not always exactly equivalent. While this does not affect any comparisons within the St. Clair River dataset, since the 1996 version of the questionnaire was used for all St. Clair River interviews, there are times when comparison to results from other survey areas may be slightly affected. Readers are alerted to such instances by footnotes to any affected tables.

The St. Clair River dataset also includes transcripts of tape recorded conversations with 37 survey

participants who were interested in giving us a more comprehensive, lengthy and informal response to research questions. These conversations—all conducted in English—ranged from 15 minutes to 79 minutes, with an average length of 43 minutes. Twenty-six were conducted with men, 5 with women and 6 with a man and woman together. Thirty-four interviewees had eaten St. Clair River fish in the previous 12 months and 3 had not.

The dataset also includes 582 pages of handwritten field notes, penned by the research assistants during shoreline shifts and when inspired by thoughts and recollections at home. These notes capture the conversations, observations and analytical commentary of the RAs and have allowed us invaluable insight into the findings from both the questionnaire and taped interview data.

The St. Clair dataset is somewhat unique in that we received funding to conduct a more intensive investigation of aquatic wildlife consumption in this particular study area. From the opening of duck season on September 25th 1996 until December 12th of that same year we shifted our focus from fish to fowl, furbearers and turtles in order to 1) profile who was hunting and trapping along the St. Clair River, what species were being consumed, in what ways and how often; 2) document the perceptions of hunters regarding the risks and benefits of wildlife consumption and any other issues that were important to hunters in the St. Clair River area; 3) detail the local infrastructure—both formal and informal—that supports hunting in the area and 4) make recommendations for future studies of wildlife consumption in the St. Clair River area. This report contains a section on aquatic wildlife consumption which summarizes the major findings of a separate report, "*Done Like*

Dinner: A Study of Aquatic Wildlife Consumption in the St. Clair River Area", which was submitted to the Great Lakes Health Effects Program of Health Canada.

Each of the sections of this report integrate the quantitative data collected via the questionnaire with the qualitative data collected through field notes and tape recorded interviews. This report relies heavily on qualitative data both because of the background and training of the author and because qualitative methods lend themselves very

well to a study designed to capture the viewpoint of the participants themselves.

The primary purpose of this report is a practical one: to present results from our survey and to offer interpretation and recommendations to those interested in issues specific to the St. Clair River area. For more general and comparative information we refer the reader to the related works and published papers listed in Appendix E.



2.0 DESCRIPTION OF SURVEY PARTICIPANTS

The following section offers a demographic overview of the fishers we surveyed, including comparisons of St. Clair River participants to those interviewed in other survey areas and to the population of Lambton and Kent counties.

2.1 Comparisons to other survey areas

We found that the fishers encountered along the shorelines in all five of the areas we surveyed were usually friendly, helpful and willing to participate in our study; participation rates ranged from 90% in Hamilton Harbour and 84% along the Detroit River to 81% along the Niagara River and 78% in Metro Toronto. The participation rate along the St. Clair River was the second highest, at 88%.

It appears that we were more likely to encounter 'regulars' on the Detroit and St. Clair River shorelines than in other survey areas; 19% of our total contacts along each of these southwestern Ontario waterways were classified as 'interviewed before' compared to 15% in Hamilton Harbour, 9% along the Niagara River and 5% in Metro Toronto. In fact, field notes indicate that the St. Clair River 'interviewed before' total may in fact be an underestimate. Instead of religiously filling out questionnaire information on each angler encountered on every shift, RAs tended to approach—at least with the intent to survey—only those individuals who were not immediately recognized as "repeat customers".

The St. Clair River sample (924 participants) was our third largest. We interviewed 1531 fishermen in Metro Toronto locations, 999 along the Detroit River, 618 along the Niagara River and 565 in the Hamilton Harbour area.

In some ways, the overall demographic profile of the St. Clair River anglers we interviewed differed little from the results from all 5 survey areas. The main activity of St. Clair respondents, for example, was similar to the survey total. Most St. Clair River interviewees were working full or part-time (60%), while 16% were retired and 15% gave their main activity as 'going to school'. Fewer than 5% reported that their main activity was any of the following: homemaking, receiving disability, looking for work or 'other'. The sex of respondents was also similar to the survey average. Most St. Clair River anglers (92%) were male, compared to an overall survey total of 93%. There was also little difference regarding marital status (65% of St. Clair River interviewees were married versus 63% overall) and the proportion of participants who had children under 18 living at home (44% along the St. Clair River versus 46% overall).

Household income, too, did not differ markedly from our overall findings. Twenty-six percent of St. Clair River respondents had a household income of \$15,000 to \$29,999, 25% reported having an annual income of \$30,000 to \$44,999 and 16% were in the \$45,000 to \$59,000 bracket. It appeared that St. Clair River respondents were slightly more likely to report a household income in excess of \$60,000 (24% versus 21% overall).

Comparison with overall findings revealed little difference between St. Clair interviewees and those interviewed in the other locations with regard to age. Ten percent of St. Clair respondents were under 19 years old, 22% were 19-29, one quarter were 30-39 years old, 17% each fell into the 40-49 and 50-64 age brackets and 10% were 65 years or older.

In other ways, however, those interviewed along the

St. Clair River appeared quite different from those we encountered fishing in the four other survey areas. In fact, St. Clair River fishermen could be typified as our most homogeneous group, at least in terms of ethnic diversity. While 62% of Metro Toronto interviewees had been born in a country other than Canada or the U.S., only 14% of St. Clair River fishers—the lowest proportion of all 5 areas—were immigrants from off-continent. Seventy-nine percent of St. Clair River interviewees had been born in Canada; this was the highest proportion of all survey areas and well above the survey total of 62%. Seven percent of St. Clair River respondents had been born in the U.S. compared to 18% of Detroit River interviewees, 10% of Niagara River respondents and less than one percent of fishermen interviewed in Hamilton Harbour and Metro Toronto locations. Six percent of St. Clair River respondents were U.S. residents at the time of the interview.

Not surprisingly, given the large number of Canadian-born interviewees, almost all (95%) of St. Clair River fishermen spoke at least some English at home. Eighty-two percent were exclusively English speaking (compared to a survey total of 67%), while 13% spoke English and another language (compared to 18% overall) and 5% did not speak any English at home (compared to 15% overall). While our overall findings have been necessarily skewed due to the veritable United Nations we encountered on the Metro Toronto shoreline, it is important to note that no other survey area had a higher proportion of English-only speakers or a lower proportion of interviewees who spoke English+another language and no English at home. Almost half (49%) of those St. Clair River interviewees who reported speaking languages in addition to or other than English spoke French at home, a proportion higher than

the overall survey finding of 16% French speakers.

St. Clair River respondents born outside of Canada tended to have immigrated earlier than their counterparts in other survey areas. Most (28%) of those St. Clair River fishermen born outside Canada had immigrated prior to 1955 compared to 11% overall. And while between 42% and 57% of immigrant interviewees in each of the other 4 survey areas had arrived in Canada since 1985, only 20% of the immigrants interviewed along the St. Clair River had emigrated during this time period.

St. Clair River respondents appeared to have slightly less formal schooling than did their counterparts in the other 4 survey areas. The fact that most (33%) of St. Clair River interviewees had completed high school but had not pursued post-secondary studies was consistent with an overall finding of 34%. However, 26% of St. Clair participants had left school after Grade 11 compared to 21% overall and only 6% had completed university compared to 11% overall.

As was the case in all 5 of the locations we surveyed, those interviewed along the St. Clair River were long time anglers. St. Clair participants, however, seemed the most long-standing of the bunch (41% had fished 30 or more years versus a survey total of 33%; 17% had fished for less than 10 years versus a survey total of 25%). In a similar show of commitment to the sport, St. Clair River respondents reported spending more days per year with a line in the water than did their fellows in Metro Toronto, Hamilton, Niagara and along the Detroit River. Forty-six percent of St. Clair participants fished 50 days or more a year compared to 35% overall. Twenty-two percent of St. Clair participants reported fishing more than 100

days a year compared to 14% overall.

2.2 Where fishers lived

We asked survey participants if they would like to receive a summary of the results of our study and, if so, recorded their address on the questionnaire to develop a mailing list. Sixty-one percent (n=560) of St. Clair River interviewees gave us their home address, a response much higher than that received in any of the other four areas we surveyed. Of this 560, 462 (83%) lived in one of the Kent or Lambton county census division areas. Twenty-nine (5%) lived in the U.S.; twenty-two (4%) lived in Middlesex county; nine (2%) lived in Elgin county; six (1%) lived in Oxford county; three lived in Peel Region; and two each resided in Metro Toronto and Brant counties. One participant lived in each of the Ottawa-Carleton, Durham, Wellington, Hamilton-Wentworth, Haldimand-Norfolk, and Waterloo census divisions.

2.3 Comparing survey to census data

Comparison of the background information we collected from St. Clair River fishers to the 1996 census data for Lambton and Kent counties shows that there are differences between our sample and the surrounding population, some subtle and some striking.

Sex was certainly one of the more obvious differences; 48% of the census population was male compared to 92% of our participants. We encountered fewer people on the shoreline who spoke exclusively English at home (82% of fishers compared to 96% of the Lambton/Kent populations) and more people who spoke English and another language (13% versus 1% of the Lambton/Kent populations). Numbers of participants who did not speak English at home were, however, similar to the census numbers (5% fishers, 4% census). The proportions of fishermen in each age category were similar to census findings.

Educational attainment was yet another area of difference. Thirty-three percent of St. Clair River fishermen had completed high school but not pursued post-secondary education, compared to 14% of the census population. The fishers we interviewed tended to have less post-secondary education than the census population; 31% of fishers had at least some post-secondary education compared to 53% of the census population. However, similar proportions of fishers and census respondents had less than a Grade 12 education. St. Clair River fishers tended to have household incomes lower than that of the general population. Seventy-seven percent of fishers had incomes of less than \$60,000 compared to 63% of the census population.



3.0 ST. CLAIR RIVER INTERVIEW LOCATIONS

While our research team surveyed more than a dozen locations along the St. Clair River from the Bluewater Bridge at the mouth of Lake Huron to Mitchell's Bay on Lake St. Clair (see Appendix D), less than half of these fishing spots were what one would call popular. In fact, 52% of the fishermen we interviewed were encountered at one of 3 locations: Lambton Generating Station (21%), the grain elevators/government docks (16%), and in the vicinity of the Bluewater Bridge (15%).

A discussion of the most popular fishing locations can be somewhat misleading, in that it implies that fishermen were prone to plunk themselves in one favoured spot, either for the day or the season. In fact, the opposite seemed to be true. Fishers tended to follow the fish—particularly during the "pickerel run"—and would fish at one spot while it was "hot" and move on when the fish did. Thus particular spots, like locations in Sombra, Moore-town and Courtright, would have brief periods of popularity followed by comparatively little fishing activity. The stretch of the St. Clair Parkway which passed through the "Indian reserve" was a prime example of this phenomenon. During the annual migration of walleye up the river, fishing in this particular area became very intense and between 30 and 50 cars would line the road's edge until the early hours of the morning. At other times of the year, however, few anglers would be spotted here. As one fisherman remarked, "I know the reserve this year will be a hot spot probably the first two weeks in May. Shoulder to shoulder for 10 days of it" and added with a laugh, "It's a good place to sell french fries".

It is also important to note that individuals—particularly those who preferred one or two species to

the exclusion of all others—were often passionate devotees of less popular spots and weren't above sneaking onto private property or off-limits commercially-owned land to access excellent fishing. Diehard walleye fishermen occasionally mentioned fishing at "Mueller's" and "behind Esso", obscure spots which our research assistants found with difficulty or not at all, despite careful directions from helpful fishermen. While one could catch catfish, yellow perch and other panfish at Port Lambton, it was the Sturgeon fishermen—many of whom were from the States and had parked their Winnibegos near the waterfront—who could be regularly found fishing this part of the river through spring and summer. "Weekend anglers" and those who were fishing with small children would frequently forego the better fishing at locations like Lambton Generating Station for the safety and amenities of Sarnia Bay.

Our results regarding the most popular locations are also likely a product of the fact that we did not survey over the winter. Many participants mentioned that they preferred to eat fish from cold water or "through the ice" because the summer alternative was potentially "muddy", "mushy", "fishy-tasting", "wormy", and bacteria-ridden. Thus particular spots which were inaccessible or less productive in the summer were reputed to be immensely popular with hardy ice fishermen. Mitchell's Bay, for example, was a family oriented summer site with plenty of amenities and opportunities to swim, snorkel, camp, fish and picnic. Common catches were smallmouth and largemouth bass, yellow perch and other panfish. But while most other locations along the river decreased in popularity once the cold weather arrived, Mitchell's Bay sported a vibrant ice fishery, and participants often spoke of the busy community of ice huts which would dot the Bay once the water froze.



Lambton Generating Station was by far the most popular of the St. Clair River locations we surveyed; it was, as one interviewee described it, "pounded with fishermen". Table 2 shows that almost one quarter (21%) of anglers were surveyed here and that it was equally popular among those who had eaten St. Clair River fish and those who had released or given away all their catch over the previous 12 months. Fishing at "the Hydro", as it

was called by regulars, was excellent and fishing intensity remained strong from the start of our survey season in April right through to its end in December. Species desired by the majority—like yellow perch, rainbow and brown trout, coho and chinook salmon, and silver, smallmouth and rock bass—could be caught, as well as less sought after species like sheephead, garpike, dogfish and sucker. As one fisherman noted, "you can catch just about

 LOCATIONS	TOTAL INTERVIEWS	ATE ST. CLAIR RIVER FISH?*	
		NO	YES
VICINITY OF BLUEWATER BRIDGE	137 15%	36 11%	101 17%
NORTH SLIP/GRAIN ELEVATORS/GOVT DOCKS	147 16%	58 18%	88 15%
SARNIA BAY	78 8%	20 6%	58 10%
IMPERIAL OIL	3 <1%	1 <1%	2 <1%
SUNCOR (INCL. CHIPPEWA'S RESERVE)	76 8%	16 5%	60 10%
TALFOURD CREEK	77 8%	39 12%	38 6%
STAG ISLAND BOAT LAUNCH	11 1%	0 0%	11 2%
MOORETOWN	20 2%	11 3%	9 2%
COURTRIGHT	17 2%	4 1%	13 2%
LAMBTON GENERATING STATION	195 21%	74 22%	121 21%
CATHCART PARK (SOMBRA LOCATIONS)	29 3%	14 4%	15 3%
FAWN PARK	14 2%	8 2%	6 1%
PORT LAMBTON	30 3%	12 4%	18 3%
ESCARTE CHANNEL	34 4%	13 4%	21 4%
MITCHELL'S BAY	56 6%	25 8%	30 5%
TOTAL PARTICIPANTS	924	331	591

TABLE 2. NUMBER OF PEOPLE INTERVIEWED AT ST. CLAIR RIVER LOCATIONS

* Participant was specifically asked if s/he had eaten St. Clair River fish in the 12 months prior to the interview.

anything out of here". Walleye could be caught by those wading off shore south of the Generating Station and there were reports of catching the odd lake trout and sturgeon. Fishermen appreciated the walkway which had been built and some spoke highly of measures taken by the station, like strobe lights, to deter fish from entering its water intakes.

The 'north slip'—which included locations like Bridgeview Marina, the Guildwood Inn and grain elevators, the government dock, and the Sidney Smith—was the second most popular area for St. Clair fishermen. Sixteen percent of interviewees were encountered here and again it seemed equally populated by those who had eaten fish from the river and 'non-eaters'. Field notes report that both families out for a day of fun and devoted salmon anglers fishing for a winner in the Sarnia Salmon Derby could be found here. The north slip could be classified as a mixed use area, frequented by picnickers, divers, people strolling, watching the river from the comfort of their cars and arriving and departing in boats from the marina behind the Guildwood Inn. Species available from these spots included yellow perch, rainbow trout, salmon, bass species and the omnipresent goby.

Fifteen percent of fishermen were interviewed in the vicinity of the Bluewater Bridge, an area which extended from the Sarnia Yacht Club to south of Purdy's fishery. In this area we interviewed a greater proportion of those who ate St. Clair River fish (17%) than 'non-eaters' (11%). Common catches were rainbow trout, walleye, yellow perch and bass species. Smelt fishing near "Purdy's beach" was popular in May. One research assistant, attracted by the "carnival feeling" of smelt fishing, wrote:

"There were several women here, some fishing, some just participating in the event by being there. A couple of grandfathers were there looking after children. There was a carnival feeling to the place—10-15 vehicles, 7 or so groups, women, kids, grandparents—really fun". The area around the bridge was busy with tourists, families, people walking or rollerblading. It was also almost always busy with fishing. Near the bridge was an area referred to variously as "Old Man's Hill" or "Old Folks Hill" by the regulars, named after a group of retired men who fished this particular spot all year round.

The spot where Talfourd Creek enters the St. Clair River, while not among the top three locations for interviews, was another popular fishing spot; eight percent of interviews were conducted at this location. Talfourd Creek was most interesting, however, because of the widespread perception that the creek was an outflow for local industry and therefore polluted. Unlike other spots along the river, where the proportion of 'eaters' was generally higher than 'non-eaters,' Table 2 indicates that individuals interviewed at Talfourd were less likely to report having eaten fish from the river in the past 12 months. Although many felt ambivalent about the quality of fish taken from Talfourd Creek, no one felt ambivalent about the quality of fishing there, since the warm water outflow was a magnet for fish of all varieties. As one fisherman remarked, "Talfourd Creek, you could throw a minnow and a bobber in, you're going to get carp, sheephead, bass, pickerel, pike, a trout and a perch, a sunfish or a rock bass. You get all the different types of fish in the lake right in the same spot, the same time of the day. Just cast it in. The kids just love it 'cause it keeps them occupied."



4.0 COMMENTS ABOUT THE ST. CLAIR RIVER FISHERY

The St. Clair River, variously described as “beautiful”, “glorious”, “terrific” and “gorgeous”, was clearly regarded as a local treasure by many of those we interviewed. One young fisherman, in describing the river, stated, “I think it’s gorgeous. I love the water here. You can do basically anything here. Ski, fish. There’s a little bit of diving”. Another admitted, “I love this river. I wouldn’t give up this lifestyle for anything”.

Fishing, not surprisingly, was one of the most appreciated attributes of the river for those we interviewed. The St. Clair was described as “very, very productive” and “teeming with life” and many interviewees asserted that they could “always” or “easily” catch fish in the river. Fishermen frequently mentioned the variety of species available in the St. Clair, including sought-after sport fish like salmon and trout which would give a good fight and “edible species” like walleye and yellow perch which were destined for the table. Excellent shoreline access, scenic views, and the ability to catch fish from the bank were other often-mentioned positive aspects of the St. Clair fishery.

Some interviewees liked to fish the river because of its convenience to home. But comments like “it’s handy”, “it’s only a couple of minutes from home”, “I can cross the road to fish” or “I live near here” were not offered as backhanded compliments or accompanied by a wistful admission that the interviewee would rather be fishing somewhere else. Rather, fishermen considered themselves lucky to live so close to the St. Clair River and often included proximity to home as only one reason among many for fishing the river. One interviewee nicely summarized this fortunate blend of convenience and quality, accessibility and renown. When asked why he fished the St. Clair,

he simply replied “because it’s local and famous”. Another fisherman reminisced with a laugh, “I remember what, 18 years ago, we drove up to Thunder Bay to do some fishing. Asked them where a good fishing spot was, they said, ‘Mitchell’s Bay’. I said, ‘That’s only 10 minutes from home. I drove 18 hours to get to Thunder Bay’”.

The reputation of the St. Clair River was conveyed by the number of anglers we interviewed who had travelled considerable distances to toss a line in at various well-known locations along the river. We interviewed fishermen from Leamington, Chatham, London, the Lake Simcoe area, Toronto, Windsor, communities along the Lake Erie shoreline, and Cornwall. Kids in town for a warm-weather hockey tournament had been advised by the local coach to “bring grills and poles” so they could fish between games and have “a cookout” behind the Harbour Inn. One interviewee, the owner of a local bait shop, characterized the popularity of St. Clair fishing with out-of-towners. “I get people coming down from St. Catherines, Niagara Falls, a lot of people from London, a lot of people from Toronto”, he explained. “They come down here to fish all winter long for our rainbows and our browns and our salmon in here. Yeah, it’s pretty well known for it”.

Six percent of St. Clair River interviewees were American residents. Americans—most of whom, our research assistants reported, were African-American—often came with motor homes for fishing holidays at Port Lambton, the Generating Station, or Mitchell’s Bay, or came for day trips via the ferry. Their reasons for fishing the Canadian side of the St. Clair are a testament both to the quality of fishing available here and the quality of the people fishing in the same spots. American interviewees mentioned the generous shoreline access, cleaner water and fish, well-cared for shoreline environment, and the lack of minimum size limits or possession limits on particular

species. They also appreciated the peaceful shoreline atmosphere, which they described as “less busy”, “not as congested”, and “less crowded” than locations on the U.S. side. In Canada, we were told, “people are real nice”; Americans felt they were “treated with respect” and a woman could safely fish alone. Both U.S. and Canadian residents spoke highly of the friendships they had formed on the shoreline with those from the opposite side of the border. One Canadian fisherman, who raved about the shoreline cookouts of fish, steak and ribs shared with U.S. friends, described the close ties between himself and his companions from the States:

Usually as soon as I say we’re going fishing, we’re on the telephone calling Eddie and Johnny in the US, “We’re coming up.” They’re up there when we’re there or they’re there shortly after. Or if they’re in the mood to go fishing, they’ll call me, “Are you going up?” “Maybe tomorrow or the next day.” “All right then, call us and let us know you’re going up, we’ll be up there.”

Fishing on the St. Clair may have been popular with both locals and those from out of town. It was also widely accepted, however, that fishing the river was challenging and that a certain degree of skill, dedication, and familiarity with the local area was needed to catch fish with any kind of regularity. One fisherman, when asked if he considered the fishing to be good on the river, replied, “Most people would say no, ‘cause they don’t know where to go, what to use, what time to go, how to use what they’re using. Most people around here say no, the fishing’s horrible. I love the fishing around here, you can’t beat it”. One woman described fishing the St. Clair as “discouraging” while another admitted that one could “go days and days and days and not even get a bite” and a third claimed, “I think between 3 and 10% of the fishermen are catching 90 to 95% of the fish”. Another, when asked what he would tell newcomers about fishing

the river, replied “Don’t catch any fish, tough, that’s just the way it goes down there”. Certain species, like salmon and trout, were illusive and wily. Others, like walleye and perch, were only available at certain times of the year and from particular locations. Successful fishermen had done their “homework”; they understood fish migration patterns, the relationship between fish and weather, what bait to use for particular species, fish habits and preferences, and did not let rain or snow deter them from putting in a few hours at a productive fishing hole. This necessary blend of intuition, experience and perseverance did not come quickly to those who fished the St. Clair; interviewees spoke of accumulating this detailed and highly specific knowledge over decades spent consistently fishing the same spots along the river. Fishermen may have done their homework and willingly—even eagerly—accepted the challenge of fishing a river as temperamental as the St. Clair. But there was a frequently aired concern that fishing on the river was becoming progressively more difficult because of a decrease in fish stocks. Conversations recorded in field notes and captured on tape show that while participants noted some exceptions to the trend of declining numbers—sheephead, rainbow trout, sturgeon, brown trout and gobys—those species sought by the most fishers—including walleye, yellow perch, smelt, pike, and bass—were almost unanimously believed to have been in decline for a period of time which varied from 1992 to the early 70s. “When I was a kid”, young and old interviewees alike would begin, pailfulls of yellow perch could be pulled from the river in the span of a couple of hours. Jumbo perch would bite—“a double every five minutes”—on nothing more than a line and hook. And one could catch 30 or 40 walleye a day, even from shore. In 1996 and 1997, however, things weren’t looking so good. One had to “fish hard”, perhaps over a number of days, for a limit of walleye. Yellow perch, most admitted, were much harder to come by. “I don’t recall anybody coming along in

recent years and saying it was a tremendous smelt run or that they got a 5 gallon pail full of perch in the last little while”, one interviewee acknowledged, adding, “People seem to be very elated over 25 perch. Which is, according to my recollection, not very much perch”.

Participants offered a number of hypotheses for the decline in the numbers of fish in the river. Many blamed the commercial fishery on lower Lake Huron and local Aboriginal fishermen, while others attributed the decline at least in part to the greed of all anglers during the boom years. Some saw the downward trend in St. Clair stocks as sadly in keeping with the national and even global crisis in fishery management and one fisherman in particular saw it in the context of a highly exploitative Great Lakes fishery of the past. The research assistant who interviewed him wrote: “Another senior who has fished the area all his life is concerned about dwindling fish stocks. His dad, born in 1910 remembers taking wagon loads of herring from the lake and plowing them into fields as fertilizer. ‘Now the smelt and perch are gone, and who has ever heard of herring in Lake Huron?’”. Some participants blamed exotic species introductions while others focussed on shoreline development which had destroyed fish habitat and spawning areas. Salmon, stocked for “big shots with boats to catch”, was also a suspect in the decrease of choice species like panfish. But some fishermen, while they recognized a decrease in numbers and a period of flux in the fishery, were unclear as to the cause. As one fisherman admitted, “There’s something sure out there changing our waters. And I don’t have the answers. Definitely don’t have the answers”.

Most interviewees had only positive comments to share regarding the amount of shoreline access available to fishermen along the St. Clair River. One participant, when asked about access, remarked, “I can still pretty much fish anywhere.

Well, there’s a lot of parks along here, from Sarnia all the way down”. Another explained, “I think the access around here’s fairly good. Like the Parkway here is great. I don’t have any difficulties getting to the water”. Only the occasional interviewee complained about increasing amounts of private property, new housing developments, the marina in Sarnia Bay, inaccessible industrial land and vacant areas posted ‘no trespassing’ along the waterfront. While not overly concerned about the quantity of public access, interviewees did offer critical comments about its quality. Steel breakwalls used to reinforce shoreline, often installed as part of park development or other construction projects, were criticized for destroying fish habitat. Railings at some parks were deemed unfriendly to fishermen. The back-to-nature ambiance of certain spots, fondly remembered from childhood, had been destroyed by manicured park development and the marina at Sarnia Bay. The ability to fish close to one’s car was particularly important for the bank fisherman who might need to seek shelter from torrential downpours, lug a lot of equipment, and—especially in the case of seniors—could not walk long distances carrying rods, a chair and the day’s catch. One interviewee, for example, was distressed at the decision to block car access at Port Lambton; he believed that this policy had affected the willingness of sturgeon fishermen to visit the community and consequently had hurt local merchants reliant on the fishermen’s business. Erosion also affected the quality of access along the river. Wave action, run-off from rain, and the flow from discharge pipes resulted in publicly accessible fishing spots—like Cathcart Park, Mooretown Centennial Park, Baby Creek, the Courtright Supply Dock and north of both Seager Park and the ferry dock at Sombra—which were virtually useless for fishing during much of the year. One of our research assistants wrote:

Some of the impacts [of erosion] appear to be reduction of the use of docks, parks, beaches etc. downstream of these areas. Aesthetically,

these areas seem to be less appealing to swimmers, anglers and those who picnic, sit or read along the river. This was noted by a consistent

lack of recreational activity along these areas at all times during the summer, particularly after a hard rain.



5.0 ENJOYMENT OF FISHING

One might automatically assume that a report which is written about an Area of Concern and discusses fishing in the context of health would be focussed on physical health and negative things: health risks and health effects. But we were reminded repeatedly during our two years of surveying on the St. Clair River that fishing itself was about psychological benefit and the positive things: relaxation, strong families, life-long learning, continuity with culture, and social interaction.

5.1 Fishing as a de-stressor

The top three responses offered by St. Clair River participants to the questionnaire query “why do you fish?” were—in order of popularity from most to least—‘fun or pleasure’, ‘peace and quiet/get away’, and ‘something to do/hobby’. All of these reasons for fishing clearly connect to mental health benefits. In fact, the data suggest that St. Clair River interviewees may seek more of an escape through their fishing than their counterparts in other survey areas; almost a third (32%) of St. Clair River participants offered ‘peace and quiet/get away’ as a reason for fishing compared to an overall survey finding of 22%. Only those interviewed on the Detroit River showed a similar appreciation of the peaceful ‘get away’ qualities of fishing.

Tape recorded interviews and field note jottings of conversations with St. Clair River fishermen suggest that interviewees valued fishing as a way to cope with stress; they fished to “relax”, “get outside”, “take the stress out”, “get away from the bills”, “forget problems”, “get out of the house”, as “meditation”, for “therapy” and “to find my centre”. As one fisherman admitted, “It’s through stress and everything that caused my health

problems, so getting out relaxing and just taking it easy, helps out”. A number admitted that fishing kept them from drinking, “out of trouble” and “out of jail”. Fishing was “cheaper than bars” and was a much better way to spend time than indoors and glued to the tv. One of our RAs offered this assessment of fishing as a form of escapism: “I’ve often heard men say that they fish because it keeps them away from alcohol, spending money, their troubles. Even the excuse ‘to pass the time’ or ‘to relax’ I often feel means getting away from the real world of problems and other people, or generally their lives”.

Many claimed that catching fish was “a bonus” and not the primary reason to fish. The rod held in one’s hands and the well-equipped tackle box open nearby indicated that an individual was engaged in purposeful, meaningful activity and therefore provided a guilt-free cover for those who would not otherwise sit for hours on end on the shoreline. To fishermen who “didn’t care” if they “caught any”, fishing was a convenient way to legitimize and defend time spent sitting still and relaxing outdoors in a high paced world of multiple responsibilities and busy-work.

Many fishers mentioned the therapeutic qualities of being by the water. “I get the thrill of catching the fish”, one woman told us, “but just the water and the peacefulness down there. I like it”.

Another, when asked what he liked most about fishing, remarked, “Just being by the water. The water has a calming effect. I can relax, I can think and I don’t have a care in the world. Cliché as heck, but it’s true”. A third asserted, “From a stress relieving perspective, when I look over the river, it’s—I relax”.

Fishing allowed these folks the freedom to get

inside their minds and work through the confused tangle of obligations, changes, pressures, hopes, worries, aspirations, and losses in their lives. This seemed especially important for those who worked long hours at demanding jobs; those who had been recently struck by tragedy among family or close friends; those who had full-time care of dependent children or spouse; and those who were recovering from illness, coping with chronic conditions like arthritis or high blood pressure, or managing pain because of acute injury or long-term ailments. We talked to fishermen who had undergone major surgeries, were recovering from heart attacks, strokes, cancer or serious car accidents, and had recently lost a spouse. Fishing was a key coping mechanism for all of these interviewees. One research assistant included this summary of a conversation in her field notes:

A retired guy dangling his line at the government docks told me about how he had chronically high blood pressure and was told by his doctor that he “was a candidate for a stroke”. He retired early and when a friend asked if he would come along fishing he agreed. Subsequently, he noticed that when he went for check-ups the blood pressure readings would be “way down” if he had been “doing some fishing” in the preceding days. “I don’t do nothing else stressful the rest of the time, but the fishing seems to work better than anything else”. He gave numbers: 180/96 for one non-fishing check-up and 134/70 following fishing.

Stress, however, can result from understimulation and boredom as well as overstimulation and a crisis-paced lifestyle. People who were laid off, on disability, on strike, retired, or out of school for the summer often mentioned that fishing gave them something to do with their extra free-time.

One senior, who had suffered a stroke and had devised an ingenious contraption involving shopping cart wheels, a seat, a rod holder and some extra clamps to enable him to bait his hook, asserted, “If you go sit in a corner, then that’s where you are going to be”. Those who were unemployed or had jobs which accorded them little societal respect could be experts on the shoreline, envied and sought after for their fishing skill and environmental knowledge. Fishing was a productive activity which gave these individuals a sense of role fulfillment. As one fisherman explained, “Fishing gives you a sense of being a real man”.

5.2 Social Interaction

Participants told us that not only did fishing get people outdoors, but that an appreciated aspect of shoreline fishing in urbanized areas was that it got people out talking to each other. Fishermen, as a group, were very often described as “nice”, “friendly”, “helpful” and “good people”; the low refusal rate and engaging, lengthy conversations our research team experienced attests to the gregarious and helpful attitude of many fishermen encountered along the St. Clair River. Interviews were often interrupted by side-conversations with neighbouring fishermen, people trading and sharing bait, fish donations, requests to borrow lighters or fishing equipment, advice on where and how to fish, and the excitement of another’s catch. Those fishing close by did not hesitate to contribute their two cents worth when they overheard an RA ask a question which piqued their interest. One interviewee, when asked what he liked best about fishing, replied, “Meeting people and just being generous and giving people help when they want to learn to catch fish, just everything. The whole thing. Everything. I’ve made tons of friends, people I know. Old people that have passed on and young people that I’ve taught how to

fish". Another remarked, "That's one thing about around here, they're pretty friendly. But some parts of the country, you'll go fishing, if you don't have the right coat on they'll kick you right off the water. But down here it don't matter what you're doing, they'll help you out". Fishermen were content to "recognize faces", to know each other on a first-name basis only, and to become part of a group at a particular location which came together at the height of a fish run and dissolved when the fish moved on. Such social interaction on the shoreline was not emotionally demanding or intrusive, and did not require any commitment of time and effort away from fishing. It was, however, an appreciated aspect of the pastime and one which likely heightened the relaxation and escapism possible in the sport. One fisherman commented:

Tonight I went out and was tossing the lure around just after work. I met a guy on Saturday and he saw my truck sitting out there and he was on his way home from work and wheeled over and come down to see how it was. We just fished together for about an hour on Saturday and [that was the] first time I ever saw him.

Through fishing on the St. Clair River, people from many different backgrounds and ages met and interacted—black and white, English speaker and non-English speaker, old and young, able-bodied and disabled, employed and unemployed, rich and poor. There was, unfortunately, evidence of understated or explicit racial, ethnic or generational conflict on the river. Recent immigrants were accused of pretending not to speak English so they didn't have to follow the rules. Youngsters were said to be the targets of old-timers who complained that inexperienced kids were interfering with the fishing. We heard at-times bitter and often derogatory comments about Americans: they fish illegally, throw their garbage around and kept

"everything". But most anglers, happily, saw the variety of people and inevitability of contact as an advantage to fishing from shore. They spoke fondly of casual small-talk with strangers; of long-term friendships made through chance shoreline encounters; of a safe, trusting atmosphere and camaraderie on the waterfront.

5.3 Community connectedness

Along the St. Clair River, more than in any other area we surveyed, fishing was a high profile pastime and there appeared to be a very strong connection between outdoor activities like fishing and hunting and the history of families and even communities along the river. Many anglers grew up in the local area—often near the river—and reminisced fondly about childhoods spent fishing in the company of dads, grandparents, uncles, siblings and friends. As one acknowledged, "I think it's in the blood. Like my dad—I got uncles that have boats, that work down off the docks. Like my whole family's been fishing".

RAs frequently commented on an interviewee's immersion in the local fishing scene, sometimes using terms like "he's a real fixture", "a regular", or "a real presence on the shoreline" and therefore "knows everybody". It was common for interviewees to refer our research assistants to others who fished the river and their field notebooks were full of contact names which had been jotted down in hopes of future meetings. Interviews occasionally ended in revelations that the RA and fisherman were somehow connected through family or friends, an invitation to take an RA fishing, and even the admission that the fisherman had himself applied unsuccessfully for a position on our research team.

Part of this is likely a reflection of life in a small

town, where everybody knows everybody else and there is little need to be guarded with and suspicious of strangers. But it is also undoubtedly indicative of the commitment these fishers had to the sport and the intensity with which they pursued their pastime locally. We have previously noted that of all the fishermen we surveyed, those fishing the St. Clair River were the most dedicated in terms of the number of years they had fished and number of days per year they spent with a line in the water. The passion these anglers possessed for fishing was clearly conveyed in confessions like “I live to fish”, “fishing is what we do”, and “I’m addicted”. One fisherman admitted, “It isn’t a hobby anymore, either. It’s just a way of life for me. If I don’t get to go out fishing, I’m a very unhappy camper”. When asked if he considered himself a sport fisherman or a recreational fisherman he replied, “I’m neither. I’m just a fisherman. Someone who loves to catch fish”, and added with a laugh, “More than just about anything in the world”. One fisherman admitted that he met people he knew wherever he went fishing, even up north. “Right from around town”, he admitted. “Some of the godawfullest places up there and run into people from work”. Another fisherman characterized those fishing the St. Clair in this way:

If they’re a rainbow fisherman? When the rainbow are in, they’re going to be there diligently. They’re going to take time off work, they’re going to plan their vacations around it. They would be there every morning in that same spot and they probably, like myself, they’ve been there for 30 years. If he’s a pickerel man, you can guarantee that he’s going to fish every day, every spare minute, he’s going to fish nights, he’s going to fish days, his wife isn’t going to see him. If he packs a lunch, she’s not going to see him for 2 days.

The connection between fishing and local life was also seen in the regularity with which RAs would encounter those involved economically in “the outdoors”. Some worked in the fishing industry as an employee at the local commercial fishery, proprietor of a local bait store, or hunting safety course instructor. Others were self-employed guides, duck cleaners, or trappers. Others ran an “out of the garage” enterprise as a rod builder and repairer, fly tier and lure maker, and bait seller. One interviewee, who grew up “right on the river bank”, had collected worms and sold them to anglers as a child. The RA who interviewed him wrote, “He has known at least 3 generations of anglers on the St. Clair River”. Those actually making their living from fishing and hunting may have been in the minority, but there were many dreamers among those we interviewed who spoke of their proposed inventions and schemes to profit from the sport fishing industry, individuals were sick of the rat race or “working in the dirty plants” and had realized that their aptitudes and interests lay in the outdoors.

5.4 Fishing with kids

Only 4% of St. Clair River respondents replied that they fished ‘to spend time with family’, although those who didn’t eat St. Clair River fish were more likely to report this reason for fishing (8%) than were those who ate their St. Clair River catch (2%). Tape recorded interviews and field notes, however, convey the extent to which fishing and family were connected for many of the St. Clair River fishers we encountered.

A number of interviewees—all of them men—joked that they fished to escape the demands of wife and kids and were frustrated when forced to fish with tots in tow. Fishing with kids required patience and self-sacrifice. It meant focussing on their fishing

rather than your own, going for regular catches of panfish or gobys rather than waiting patiently for the big salmon or rainbow to strike, and often required cutting a fishing trip short because the kids were bored. One woman admitted to regularly counselling her husband prior to a trip out with the children. She told us: "He takes hours to be able to fish, not do it on their level. That's why I keep saying, 'You have to go out without the expectations of fishing. Pretend you're not going fishing, you're just going out with the kids somewhere'".

Those who fished fewer than 10 days a year were more likely to report that they fished 'to spend time with family' (17% versus 7% of those who fished 10-24 days, 3% of those who fished 26-74 days and 1% of those who fished 75 or more days per year). Perhaps, then, it was the "weekend fisherman", the "part-time fisherman" and the "fairweather fisherman"—those who were not seriously involved in fishing—who made fishing with children a priority. In fact, a number had taken up the sport or had renewed their waning interest at the inspirational urging of their children, grandchildren, nieces, nephews and neighbours. Parents appreciated fishing for giving them "quality time" with their kids and, especially for parents of teenagers, fishing was a point of contact and shared experience at a time when very little seemed to bring the generations together. One fisherman explained, "To me, there's nothing better for families. It's not just a man thing. Entire families can go fishing for a day and really have a good time on the water. And it's not that expensive to take someone out to have a great time".

Fishing was applauded for giving kids a constructive alternative to hanging out in the mall; for teaching them patience, self-sufficiency, independence, and

respect for nature; for keeping them busy, away from the TV, and outside in the fresh air. As one interviewee, speaking about her son, asserted:

Because you know for a kid to go hang around and stay at the malls and do [stuff] like that, they get in trouble. You get them interested in stuff like this and they'll do it forever. He loves to come down here and just sit and fish and fish and fish. Plus, it teaches the kids a lot, too, you know. It just teaches them nature stuff. He learns everything off the land.

For a number of interviewees, fishing with children was about continuity with the past and learning skills for the future. One father told us, "I hope that she [his daughter] can learn patience and persistence coming out here. If she learns it and learns how to fish maybe she will get married and pass that on to her kids". His daughter then added, "I know why you like fishing. It's to pass on the tradition. He used to go fishing with his dad, my grandpa. I think we owe it to grandpa to carry on the tradition". Another, in discussing how he felt about fishing with his boys, stated, "What father wouldn't want his kids to enjoy what he enjoys? It's something you can do for a lifetime".

A surprising number of children, however, fished without adult supervision. Numerous field note entries describe kids—many under 14 and therefore not eligible to participate in our study—who had ridden bikes or hitched rides to come fishing by themselves or with buddies. Some of these children developed relationships with unrelated elders on the shoreline who taught them the tricks and techniques of catching and cleaning fish. But often these kids were, as one RA put it, "without mentors" and were not overly proficient at fishing but came down for fun with friends. "None of us knew what we were doing", one interviewee

admitted, looking back on his childhood fishing experiences. “I guess I still don’t know much about it but I still enjoy it”.

5.5 Fishing for food

Twelve percent of St. Clair River interviewees reported that one of the reasons they fished was ‘for food’. This proportion was the highest of all the areas we surveyed; ‘for food’ responses were next highest along the Detroit River (10%) and Niagara River (5%) and lowest among interviewees fishing Hamilton Harbour (1%) and in Metro Toronto (2%). Those who had fished for 20+ years were more likely to report fishing ‘for food’ (16%) than were those who had fished fewer than 20 years (7%). Seven percent of those who fished fewer than 10 days a year stated that they fished ‘for food’, compared to 13% percent of those who fished more than 10 days a year. And, unsurprisingly, those who ate more fish reported fishing ‘for food’ with greater frequency; 7% of ‘non-eaters’ claimed to fish ‘for food’ compared to 12% of those who had eaten 1-25 meals and 24% of those who had eaten 26 or more meals annually.

But fishing was not merely a means to an end, a

goal-oriented activity with the sole purpose of getting fish to eat. It was the fun of catching fish—time spent outdoors, fresh air, sunshine, the company of friends and family—combined with the pleasure of eating it which seemed to appeal to most interviewees. In fact, when asked what they liked about fishing, most fishermen offered a two-part response which coupled the enjoyment of fishing with the taste and freshness of the post-fishing feast. One fisherman, for example, responded, “It’s a relaxing thing for us. It’s a bunch of little things that you can do and have a good time doing. Yet you know when you come home you’re going to have something that the family’s going to benefit too because they’ll have a nice meal”. A woman, when asked if she ever purchased fish, replied: “You get fish all year round so why go to the store and buy it when you can go out and spend a beautiful day and catch it. Or even if it’s a freezing day and it’s ice fishing it’s great because they’re popping up left and right and you’re just so busy you don’t feel the cold. So yeah, it’s a nice time. I’d rather catch it than buy it”. Further discussion of the fish-food connection, particularly from the qualitative findings, can be found in sections 7.2 and 8.0 below.



6.0 THOSE WHO DIDN'T EAT ST. CLAIR RIVER FISH

This section of the report takes a close look at those interviewees who had not eaten fish from the St. Clair River survey area in the 12 months prior meeting one of our RAs on the shoreline. We first compare the demographic information provided by those who had eaten fish from the river and those who had not kept any over the past year. The section concludes with a discussion of why these participants chose not to eat their catch.

Just over a third (36%) of St. Clair River interviewees had not eaten fish from the river over the 12 months prior to the interview. In contrast, 80% of fishers interviewed in Hamilton Harbour, 77% of Metro Toronto respondents and 68% of those fishing in Niagara River locations had not eaten fish caught in their survey area. Just under a half (48%) of Detroit River respondents released or gave away all of their catch.

6.1 Demographic differences between 'eaters' and 'non-eaters'

Below we present a demographic comparison of those who had eaten St. Clair River fish in the 12 months previous to the interview ('eaters') and those who had not eaten any fish during that time period ('non-eaters').

Interestingly enough, there were few demographic differences between those who had eaten fish from

the river and those who hadn't. There was no discernible relationship between fish consumption and main activity, annual household income or sex for St. Clair River respondents. Equal proportions of 'eaters' and 'non-eaters' appeared to report having children under 18 at home. And there was little difference between eaters and non-eaters when the data was examined by language spoken at home and residency (Canada or US). However, non-eaters appeared slightly more likely to have been born outside of North America (17% compared to 12% of eaters). Immigrants who ate fish from the river were more likely to have arrived in Canada during the decade 1960-69 (25% versus 14% non-eaters) while non-eaters were more likely to have emigrated during the 80s (29% versus 10% of eaters).

Non-eaters did appear slightly more likely than eaters to possess a college or trade diploma (17% versus 12%), while those who had eaten fish from the river seemed slightly more likely to have started college or university (13% versus 8% of non-eaters). Marital status was another area of slight difference between the two groups; 63% of eaters were married compared to 70% of non-eaters.

The most striking differences between those who had eaten St. Clair River fish and those who had not, however, were found in the duration and intensity of their fishing activity. Non-eaters appeared to have fished for fewer years than their shoreline companions who had eaten St. Clair

	METRO TORONTO	HAMILTON HARBOUR	NIAGARA RIVER	DETROIT RIVER	ST. CLAIR RIVER	TOTAL PARTICIPANTS
'NON-EATERS'	1186 77%	454 80%	420 68%	482 48%	333 36%	2875 62%
TOTAL PARTICIPANTS	1531	565	618	999	924	4637

TABLE 3. PARTICIPANTS WHO DID NOT EAT THEIR CATCH BY SURVEY AREA

River fish. Almost one quarter (23%) of the non-eaters we interviewed had fished for fewer than 10 years, compared to 14% of eaters. Those who had eaten fish from the river appeared more likely to have fished for 10 to 29 years (47% versus 35% of non-eaters). But close to equal proportions of eaters and non-eaters had fished for 30 or more years. Non-eaters appeared much more likely to fish fewer than 25 days each year; just over half (53%) of non-eaters gave this estimate of their annual fishing activity compared to 16% of eaters. Eaters appeared much more likely to fish 100 or more days a year (37% versus 15% of non-eaters).

6.2 Why not eat fish from the river?

Pollution related reasons

As part of our questionnaire, those interviewees who reported they did not eat any fish from the St. Clair River survey area were asked to give their reasons for not keeping their catch. When these responses are compared to the overall survey results, it is apparent that a strikingly smaller proportion of St. Clair River fishers focussed on poor quality fish and water than was the norm, especially in comparison to the Lake Ontario locations we

	ST. CLAIR RIVER (N=316)	SURVEY TOTAL (N=2769)
NOTHING CAUGHT	176 56%	263 10%
DON'T LIKE FISH	40 13%	411 15%
WATER POLLUTED/DIRTY	29 9%	1297 48%
FISH DIRTY/CONTAMINATED	27 9%	825 31%
FISH TOO SMALL	19 6%	175 6%
FISH STOCKS DWINDLING	14 4%	124 5%
SPORT ONLY/NO KILLING	11 3%	106 4%
CLEANING/COOKING	9 3%	90 3%
TUMORS/DEFORMITIES	6 2%	62 2%
FISH TASTE OR SMELL BAD†	5 2%	28 1%
FISH TOO BIG/ OLD	1 <1%	20 1%

TABLE 4. WHY ST. CLAIR RIVER PARTICIPANTS DON'T EAT THEIR CATCH*

* more than one response was recorded. Ten percent of St. Clair interviewees gave 2 responses and 1% gave 3 responses.

† responses in the 'survey total' column were not available from the 1995 survey in Metro Toronto, Hamilton Harbour and along the Niagara River since 'fish taste/smell bad' was added as an option in 1996. 'Fish taste/smell bad', as well as similar responses in 1995, are included in the 'fish dirty or contaminated' line.

surveyed. While 9% of St. Clair River 'non-eaters' offered 'water polluted/dirty' as a response, 47% of those interviewed on the Niagara River, 45% of those fishing the Detroit River, 55% of Metro Toronto and two-thirds (66%) of Hamilton Harbour 'non-eaters' gave this answer. Nine percent of St. Clair River 'non-eaters' responded that the fish were 'dirty/contaminated', compared to 40% of Niagara River, 37% of Metro Toronto, 33% of Hamilton Harbour and 17% of Detroit River 'non-eaters'. In fact, Table 4 shows that 85% of St. Clair River participants offered an explanation that had nothing to do with pollution or contaminants.

Field notes indicate that St. Clair River interviewees who offered pollution-related reasons for not eating fish from the river were most often concerned about the historical and ongoing conduct of local chemical companies. While some fishermen mentioned specific perpetrators and a few had worked for particular plants and were suspicious of their corporate conscience, the simple presence of factories was enough to dissuade a number from eating the fish. Many interviewees referred to "spills", several spoke about the poor quality of Wallaceburg water and the need to occasionally shut down the water intakes, and others referred to beach closings as evidence that there was something wrong with the water which must ultimately affect the fish. Some were turned off by catches covered in "blisters", "boils", "marks" and "cancer"; others had heard of "green goo", "blobs" and "gobs and goo" on the river bottom or had seen a "rainbow effect" on its surface. Many attributed their fear of eating fish to information published in the media, "rumour", "hearsay", and the political activism of the Walpole First Nation, whose high profile struggles against local companies were often a topic of conversation.

In the face of uncertainty, rumour, negative press and risk, these interviewees chose to take control in the only way guaranteed to eliminate any hazard: they abstained from eating fish from the river.

'Circumstantial eaters'

Far more frequently, however, St. Clair River interviewees reported not eating their catch for reasons unrelated to pollution. We can refer to these participants as 'circumstantial eaters'—individuals who hadn't ever eaten the fish but might if the circumstances were right, those who hadn't yet sat down to a St. Clair River meal but planned to catch enough "today", those who wanted to eat the fish but hadn't been lucky enough to catch any. The existence of these 'circumstantial eaters' is evidence that those who ate St. Clair River fish and those who didn't were not two discreet groups. Instead, 'eating' and 'not-eating' would be better described as end points on a continuum, or intersecting circles, like a Venn diagram.

Our questionnaire was not designed to ask specific questions of these potential fish consumers. We asked 'what do you do with the fish you catch from this area?' and 'why don't you eat what you catch?' but not 'would you eat in the future?' or 'what would need to be different for you to eat this fish?' or 'did you eat in the past?'. Information from tape recorded conversations and field notes, in combination with responses to the questionnaire query 'why don't you eat what you catch?' can, however, highlight the circumstances under which a participant, originally classified as a 'non-eater', might decide to fry one up for supper.

Table 4 offers an obvious clue. More than half (56%) of St. Clair River 'non-eaters' admitted that they hadn't eaten any fish because they had not yet caught any. Earlier in this report we discussed the

challenge of fishing a river as deep, fast-moving and temperamental as the St. Clair. It appears, then, that the most prevalent reason for not eating St. Clair River fish was “poor luck” or “getting skunked”. Field notes indicate that those recently introduced to the sport, those who did not usually fish the St. Clair River, those who fished only a few days a year, those who hadn’t been out fishing for a while, and those who lacked a fishing mentor frequently offered this reason for not eating fish from the river. The existence of this substantial group of interviewees is a partial explanation for our finding that 7% of St. Clair non-eaters reported that a reason for fishing was ‘for food’. The desire for a meal of St. Clair fish, on its own, was not enough to ensure success; the weather, fish and fate had to cooperate first.

Other ‘circumstantial eaters’ included those who released or gave away all their catch because of size or species preference. Six percent of those we interviewed on the St. Clair River, for example, claimed not to eat the fish because they were ‘too small’. Field notes reveal that perch was frequently the species of concern; consensus was that perch stocks were dwindling and that it was difficult to catch any “big enough” to warrant keeping for a meal. Three percent of St. Clair River ‘non-eaters’ explained that they didn’t eat the fish because it was ‘not the kind wanted’ and were quoted in field notes as stating, “I’d eat a perch or pickerel (or occasionally bass) if I caught one”. A repeated complaint was that the fish caught were “not worth keeping”, were “junk fish”, and “inedible”.

Those who didn’t like fish

The second most frequently offered reason for not eating St. Clair River fish was that the respondent did not like fish. The proportion of St. Clair anglers who gave this response (13%) was compar-

able to that in all other survey areas except on the Detroit River, where 22% of anglers reported their reason as ‘don’t like fish’.

Field notes offer some elaboration of the ‘don’t like fish’ responses we received. A number of interviewees admitted a preference for salt-water or sea fish over the freshwater varieties available in the St. Clair River. Others were uncomfortable eating something they’d caught themselves, preferred other kinds of meat, were afraid of bones, or had eaten “too much fish as a kid”.

Fishing for fun, not food

Many ‘non-eaters’ characterized fishing as a dichotomy: one either fished “for fun” or “for food”. Rather than see eating the fish as part of the pastime, these interviewees were adamant that fishing “for sport” or “for enjoyment” meant keeping the stringer and fish cooler at home. Eating fish necessitated planning ahead to have the means to keep the fish; targetting particular species; making decisions about which ones to keep; and cleaning, storing and cooking the fish. Some interviewees obviously felt such restrictions and requirements interfered with their enjoyment and equated keeping the fish with work rather than pleasure.

Some of these same ‘non-eaters’, however, spoke with nostalgia and reverence of trips “up north” where fish—still flapping in the pan—was fried up for breakfast, lunch and dinner. Perhaps, for these ‘non-eaters’, it was the location and purpose of the trip rather than the labour of cleaning and cooking which was important. To keep fish from presumably pristine northern spots while camping, canoe tripping, or cottaging was to play at subsistence living and procuring food from the wild. Fishing in the city, however, was an urban and civilized

experience. Field notes record comments such as: “I buy my fish from the store” and “I don’t need to eat this fish” and “it’s just not something you’d do at home”. For these anglers, need—real or manufactured in the context of an “up north” experience—was required to warrant keeping any fish for consumption.

Four percent of St. Clair River ‘non-eaters’ reported that concern over dwindling stocks was a reason to release all fish. Instead of believing that eating a fish completed the experience of fishing,

these interviewees felt that consumption “ruined the fun” because it constituted a threat to a fragile fishery. Although perhaps to a lesser extent than in some of the other areas we surveyed, exclusive practice of catch and release was still a powerful religion in the St. Clair area with a number of dedicated converts. Catch-and-release guaranteed the continuation of the fishing cycle: one released a fish so that it could be caught again. By protecting St. Clair fish stocks, these fishermen believed they were protecting the “fun” of fishing for years to come.



7.0 THOSE WHO ATE FISH FROM THE ST. CLAIR RIVER

This section of the report combines data from questionnaires, tape recorded conversations and field notes to describe those St. Clair River interviewees who ate the fish they caught from the river. We present information on how much participants ate; how they differed demographically depending on their level of consumption; what they liked about eating fish from the river; the species they ate; how they prepared their fish; and, finally, their concerns about St. Clair River fish and how they coped with these concerns.

Forty-seven percent of St. Clair River fish consumers had eaten between I and II meals in the past year ('rare' consumers); 24% fell into the occasional consumption category (12-25 meals annually); 24% reported between 26 and 95 meals ('frequent' consumers); and 4% were 'very frequent' consumers (96+ meals annually). St. Clair River participants were more likely than their counterparts in Metro Toronto and along the Niagara and Detroit River shorelines to be 'frequent' consumers and were less likely to fall into the 'rare' consumption category. Hamilton Harbour fishers were the least likely of all survey areas to be rare consumers and were the most likely to be frequent and very frequent consumers of fish from their survey area.

7.1 Demographic details by level of St. Clair River fish consumption

The following analysis compares two levels of annual St. Clair River consumption: 1-25 meals ('occasional') and 26+ meals ('frequent'). Overall, there were few differences between these two consumption groups. Marital status, residency in Canada or the United States, language spoken at home, household size, sex and whether there were children under 18 at home did not appear to vary with level of consumption. There were no apparent differences related to age, with the exception that occasional consumers were more likely to be 65+ years old (12% versus 7% of frequent consumers). There was also little apparent difference between participants at each consumption level regarding main activity, save that frequent consumers were marginally less likely than occasional consumers to be retired (12% versus 18%). There was no discernible relationship between level of consumption and household income, except that slightly fewer frequent consumers reported a household income of \$15,000-29,999 (18% versus 25% of occasional consumers).

There were some minor differences regarding level of education. Those in the frequent consumption category appeared less likely to have only a grade 1-8 education (6% versus 12% of occasional consumers) but were slightly more likely to have

	RARE (1-11 MEALS)	OCCASIONAL (12-25 MEALS)	FREQUENT (26-95 MEALS)	VERY FREQUENT (96+ MEALS)	TOTAL FISH-EATERS
ST. CLAIR RIVER	279 47%	142 24%	144 24%	26 4%	591
SURVEY TOTAL	911 52%	386 22%	368 21%	97 6%	1762

TABLE 5. NUMBER OF MEALS OF ST. CLAIR RIVER FISH EATEN OVER THE PREVIOUS YEAR AS REPORTED BY ST. CLAIR RIVER PARTICIPANTS

completed only to grade II (29% versus 24% of occasional consumers) and to have at least some post-secondary education (35% versus 30% of occasional consumers). Country of birth varied slightly with level of consumption, with frequent consumers more often reporting that they had been born in Canada (86% versus 79% of occasional consumers).

Fishing activity was the only area of distinct difference between participants in the two consumption categories. Those in the occasional consumption group appeared much more likely to report fishing fewer than 50 days a year (45% versus 15% of frequent consumers) and were much less likely to report fishing 100+ days a year (29% versus 59% of frequent consumers). However, there were no such noticeable trends when level of consumption was compared to the number of years spent fishing.

7.1 Why eat the fish

Superior quality

Almost half (45%) of those who had eaten fish from the St. Clair River over the 12 months prior

to being interviewed stated that they liked the fish they ate because it ‘tastes good’. Add to this the 8% who specified that they liked St. Clair River fish because it was ‘fresh’ and we see that the taste and quality of fish from the river were by far its most appreciated aspects. Frequent consumers of St. Clair River fish appeared only slightly more likely than occasional consumers to say that the fish ‘tastes good’ (49% versus 44%). Frequent consumers did, however, appear less likely to say that they liked ‘nothing in particular’ about the fish (13% versus 24% of occasional consumers). It is interesting to note, however, that a greater proportion of those fish consumers interviewed in Metro Toronto (68%), along the Detroit River (69%), in Hamilton Harbour (77%) and along the Niagara River (81%) reported that they liked the fish they caught because it ‘tastes good’.

A few interviewees were clear that the taste of St. Clair River fish was motivation enough to keep their catch. As one raved, “Down at St. Clair River they used to have some barbecues set out and we’d go prepared and barbecue it, oh it was so good. Yeah, fresh. Oh god, it was good. Perch is so good

	ST. CLAIR RIVER5(N=551)	SURVEY TOTAL (N=1716)
TASTES GOOD	252 45%	1084 63%
NOTHING IN PARTICULAR	118 21%	284 17%
OKAY TO EAT/UNCONTAMINATED	62 11%	113 7%
FRESH	44 8%	120 7%
CHEAP/FREE	39 7%	89 5%

TABLE 6. WHAT ST. CLAIR RIVER ‘EATERS’ LIKE ABOUT THEIR CATCH*

* more than one response was recorded. Fourteen percent of St. Clair interviewees gave 2 responses and 1% gave 3 responses.

when you fry it fresh. Oh god. Pickerel too". Another stated, "There's nothing better than a nice yellow perch. Heaven", and his fishing companion added, "This guy here, he thinks he's died and went to heaven every time he eats it." Descriptions of recipes and preparation methods—whether for every day consumption or for special occasions when fish were "dressed up" for a feast with friends—were shared with enthusiasm and often accompanied by the sounds of lip smacking and phrases like "really tasty", "just melts in your mouth", "you can't beat it" and "whew, it's good".

But fishers frequently conveyed their respect and affection for St. Clair River fish, not by describing what it was, but rather by discussing what it wasn't. Fish from the river looked pretty good in comparison to the store-bought alternative; field notes and tape recorded interviews were rife with repulsed references to the well-aged, freezer-burned, slimy, mushy, cellophane-wrapped stuff on display at the local store or market. One fisherman, speaking about the fish he caught from the river, remarked, "It's just so much fresher. Half the stuff you buy in the store will be freezer burned or it's been in there so long, it's so dry when you cook it there's no moisture to it whatsoever. It's like anything else. Fresh is best. Most definitely". Another fisherman asserted, "You can go to the store today, buy a pack of perch. The sign says fresh perch and to you, you read the sign, it's fresh, meanwhile it's been sitting frozen in the cooler down at the fisheries for up to a year before it even gets to the market".

Every hour counted where the freshness of fish was concerned. In contrast to store-bought fish, fish caught from the river could be fried up on the shoreline or eaten immediately after arriving home, a fish prep policy one fisherman described as "straight from water to table". A number of

fishermen refused to put their fish in the freezer, preferring to eat their catch at its just-caught best. But even those interviewees who froze their catch often took special measures—precautions not taken by commercial outfits or grocery stores—to preserve the easily compromised "fresh taste", including double-wrapping the fish in plastic, freezing it whole, freezing it in water, and keeping it in the freezer for a very short time.

Freshness was about more than just superior taste, however. Many interviewees were suspicious of supermarket fish and feared that poor quality control on commercial vessels and sloppy handling by stores could lead to bacterial contamination, tainting, and eating fish "full of worms". Eating purchased fish added an element of uncertainty and risk to the experience for these fishermen. How long had the fish "been sitting out"? How much care was taken when it was cleaned? How big was the fish that fillet came from? Weren't commercial fish sold locally the ones that "didn't make the grade" to be shipped overseas?

Catching fish from the St. Clair River gave interviewees a measure of control. They knew the exact location from which the fish was caught; what it felt like on the end of the line and looked like once it was landed; the method and care taken in cleaning; and how long it had been since the fish was caught until it was refrigerated or frozen and eaten. As one fisherman noted: "I have a better chance of visually inspecting a fish before I eat it and see the general health of the fish". Another explained:

I think it would be better for you to do it that way [eat your own catch] ... You don't know what frigging salty sea dog has his dirty hands all over the fish or whatever. You don't know how clean it was or it could have been full of bacteria or something. You don't know what

it's like so I'd rather eat something that I've caught and cleaned and everything myself.

Productivity and culture

For many, eating St. Clair River fish was about self-sufficiency and pride; these interviewees liked the fact that "I caught it myself" and enjoyed filling the role of "food gatherer". Shopping at the local grocery store chain could not offer anything close to the feeling of "bringing home dinner", which interviewees described as "gratifying", "satisfying" and offering the opportunity to "show it off" and "brag". As one stated, "If I don't catch it, I don't eat it. It's not the same to eat fish that you bought from the grocery store. It would feel different, like big deal I bought it from the grocery store". Another stated, "Knowing you caught it, you're like, 'I'm proud of it. I caught this myself'. And you have a story to go along with it. What's your story? I went to the grocery store and the lineup was really busy and the fish looked like it was sitting there 5 years". While a couple of interviewees admitted that they could not subsist solely on the amount of fish they caught—one acknowledged with a chuckle that in that case he'd be "a very thin individual"—for others it was comforting and a matter of pride that "no matter how broke we are, we can always go out and go fishing and eat it".

The enjoyment of eating food which had been caught oneself appeared directly connected to the history of families and communities who had, for generations, sought sustenance from the fields, woods and water close to home. Interviewees told of grandparents who "never bought grocery stuff"; shared fond memories of baking bread, picking berries, and harvesting wild mushrooms; and recalled experimenting with species like raccoon, squirrel, possum and eel. As one interviewee explained, "It's just the way we grew up. You don't

have to go to the grocery store, you can make your own bread. You can make everything you need to survive and catch it and fishing and hunting and I like that. I always have".

Eating wild food—particularly fish and game—was an accepted and celebrated aspect of local life. Tickets for turtle suppers held at the local rod and gun club sold out in a matter of days; fish fries were held at community centers and churches. As one interviewee stated matter of factly, "You go and throw a deer steak or something around here and people would kill for it". Another asserted, "I think if you were to knock on every door, people would say, 'I love fish. I don't get enough fish.' I've never had anybody that I've ever offered a fish to ever say 'no'". One of our research assistants, in a flash of insight, wrote: "Hey, I would stake a wage that Sarnia has more fish and chip shops per capita than anywhere else in Canada. This has long been an observation. Maybe it's connected with the fish culture and perch & pickerel are white fish like halibut and cod". Fish donated to a local food bank by anglers participating in the Sarnia Salmon Derby was described by one angler as "a real treat for them". The research assistant interviewing him added in her notes: "Given Sarnia's fishing culture, he is probably right about it being a treat". In fact, the connection between fish and culture was more often articulated by interviewees along the St. Clair River than in any of the other four study areas. As one St. Clair fisherman asserted:

All I know is I enjoy eating certain species and I plan on keeping eating them 'cause I was born on them. Ever since I was born that's what I've been eating. And it's the same as you take people from Hungary and bring them here, they're going stick to the diet they were used to over there. Same with me. I was used to eating fish all the time so that's what I stay to.

St. Clair interviewees frequently made a distinction between the taste preferences of those living in urban areas and their own fondness for meat and fish which had been harvested themselves; often implicit in these statements was a defense of hunting and fishing against the value judgements of outsiders. One fisherman, explaining his preference for wild food, admitted: "It's just a difference of where you're brought up and stuff. People who say, 'This is cruel', or 'This is bad for you', to me, I like meat. Vegetables are fine but I wouldn't want to live on just vegetables". Another interviewee explained the inability of hunters and fishermen to engage the government in supporting the sport as being "'Cause they [politicians] don't eat it. They go buy their meat from the grocery store. And that's the biggest problem, is their awareness of it all".

Economic benefit

As shown in Table 6, only 5% of St. Clair River fish consumers responded that what they liked about fish from the river was that it was 'cheap/free'. Initially we were surprised at this small number, since it did not support our assumption that people ate fish from urban environments because they were poor and hungry. Analysis of field notes and tape recorded conversations, however, has given us a less simplistic and reductionist understanding of why people eat fish from locations considered by many to be contaminant hot-spots.

Some St. Clair River fish consumers were adamant that they did not 'fish for food'. In fact, only 15% of St. Clair River fish consumers gave the 'for food' response when asked 'why do you fish?'. As one interviewee, when the topic of economic benefit was raised, asserted: "I'm not in it for the food, I'm in it for the sport". The clearly conveyed message was that

these fishermen did not keep fish out of economic need. To eat their catch was a choice, not a necessity; the fish they took home was a supplement to their diet, not a staple item. But fishermen who were sensitive and even defensive regarding the connection between fishing and finances appeared to be in the minority. Those interviewed along the St. Clair River, more than in any other area we surveyed, seemed willing to acknowledge that fishing did help with the household grocery bill; they mentioned that the fish they caught "saves money", "brings in a portion of our groceries", was considered "a source of food" and "just something less we have to buy".

Fishermen unanimously considered purchased fish to be expensive and often referred to the price of fish—in dollars and cents per pound—in the marketplace. Fish purchased from Purdy's or at Kettle Point might be \$8, \$11 or \$14 a pound, we were told, and a hungry family could easily eat its way through 3 or 4 pounds of fillets at a sitting. Thus it could be prohibitively expensive to purchase freshly-caught commercial fish of a quality comparable to that caught by the fisherman him or herself. As one woman exclaimed, "If I had to go buy it [from Purdy's], you wouldn't be able to afford to feed the family. Oh god no". Another fisherman acknowledged, "To buy smoked trout in the store is very expensive. For what I do in the smoker would probably cost me \$50, \$60 and it doesn't last more than two hours around here. Pretty expensive meal". Questionnaire results indicate that those anglers who ate more fish from the river were more likely to appreciate their catch because it was 'cheap/free'. Only 5% of those who had eaten 1-11 meals in the past year, 7% of those in the 12-25 meal bracket and 9% of those who had eaten 26-95 meals offered this response, while 15% of those in the 96+ meal category stated that they liked the fish they caught because it was 'cheap/free'.

As we discuss later in the report, fish caught locally was something to share with others and fishermen proudly hosted large-scale events for friends and family where guests were encouraged to stuff themselves silly on fish. Such gatherings, a few noted, would be impossible without the contribution made by fishing. One fisherman put it this way: "We have Dave's dad and his aunt up and my mom and dad and some other friends come up for a big pickerel fry. I know if I wanted to have 6 or 8 people up and cook roast beef or something like that, my god, I'd spend like 20, 30, \$40 for a roast". Another offered this calculation: "Two fish fries, maybe 60 people at both fish fries, \$10 a person, that would be \$600 bucks, \$1,200 just for 2 fish fries".

It appeared that most interviewees would choose to spend money on beef or chicken before they would buy the bagged and frozen fillets of pollock, sole or snapper available at the store or purchase the premium-priced fresh fish available locally. As one fisherman admitted, "Fish is very expensive. For me to go buy a pound of perch is almost \$10. Where I'd probably prefer to have a nice big steak for that \$10 than the perch. So, if I didn't enjoy fishing, I probably wouldn't hardly eat fish at all. Maybe once in a while in a restaurant or something, I'd get fish and chips". Another offered a similar interpretation, asserting: "People are going to buy steak as opposed to fish if they can get a steak at the same price as fish...I think they see more value in a steak. I'm sure if you and I were to eat perch, we'd go through several pounds of it. I don't believe one pound of fish is going to furnish two people". A third fisherman concluded, "Fresh fish from Purdy's costs too much and if you're buying frozen fish, ocean fish, then you might as well buy chicken". Consensus was that without fishing, much less fish would be consumed by those we interviewed.

Fishing was not motivated entirely by economic concerns. Rather, it was "something we can all do together", and was described as "fun", "relaxing", and "time spent outdoors"; the economic benefit was an added bonus or motivation to fish but not the sole reason. Just as fishermen combined "food" and "fun" into a two-prong explanation for why they fished (see section 5.5), so they discussed the economic value of their catch in the context of their enjoyment of the sport when asked a question about the financial benefit offered by fishing. As one fisherman stated, "If I come home and I clean up my fish and I've got 5 pounds of fillets, I think well, there's \$50 worth of fish. Just for going out and having some fun". Another mentioned, "It costs me a few dollars for gas, bait and that, yet I can catch enough fish to justify the cost of that. Where I can't see going and paying \$8 for a pound of perch when I can come out here with a dollar's worth of minnows and catch 10 or 12 pounds. And enjoy myself while I'm doing it. Get some fresh air, relaxation". Another, when asked what he enjoyed about fishing, replied, "Total package. It's relaxing and if you catch something it's a bonus and then you've got a free meal a lot of times". A fourth summed up his thoughts on the connection between fun and finances this way:

If you want to eat pickerel out of the grocery store, it's going to cost you an arm and a leg. Same with perch. If you go down to the river, you spend a few hours and have fun and enjoy yourself and catch fish, clean them up, you're saving yourself money. Plus you're going to feel better about it too because it's something that you've accomplished by yourself. And you're not shelling out \$18 a pound or whatever it is.

Health benefits

It was rare for an interviewee to mention, without

prompting, that they liked to eat fish from the river because it was healthy. In fact, only 5% of St. Clair River questionnaire respondents volunteered that they liked their catch because it was 'good for health'. When asked directly about their thoughts on the link between fish and health, however, many interviewees were quick to comment.

Some were adamant that the decision to eat their catch was not at all motivated by potential health benefits. These interviewees stated that taste and habit were more important motivators than placating the pernicious god of health; health benefits were the purview of scientists and doctors, not fishermen. One interviewee, when asked about health benefits, replied, "I figure it's got to be good for you. But that really doesn't matter. Good or bad. I drink, I smoke". Another replied, "I just eat it 'cause it tastes good. It probably is really healthy. A lot more healthy than steak. Like I like that to eat, or like hamburger that I had for supper but I don't know", he laughed, "I just eat things based on their taste".

Most interviewees, however, advocated eating fish because it was a low fat alternative to the much maligned "red meats" like beef and pork; a few, however, remarked that their preparation method of choice—frying—nullified most of the low-fat advantage. Fat was a particular preoccupation of those trying to lose weight, both those who wished a slimmer profile and those who had been advised to cut down on fat to prevent an imminent heart attack. As one woman mentioned, "I can eat and eat and eat fish. I don't know. I like the taste and I know it's not fattening so I can eat as much as I want".

Other commonly mentioned health-oriented advantages of fish included the amount and quality

of its protein; its capacity to prevent heart disease; the benefits of "fish oil" and fatty acids; the vitamins and minerals it contained; and the fact that it was "light on your digestive system". Some recalled—usually with a sardonic laugh—the old adage that "fish is brain food" while others parroted the fish-once-a-week recommendation found in health promotion publications. One fisherman had heard that fish contained a chemical beneficial for children with attention deficit disorder.

7.3 Species and preparation

This section of the report describes the species that were eaten by respondents on the St. Clair River. We tackle the question of species preference—why some species were favoured over others—and present findings regarding the parts of fish and portion sizes which St. Clair River anglers consumed.

Specifics on species eaten from the St. Clair River

The first section of Table 7 (see following page) presents species consumption data for the St. Clair River as a whole. The top 5 species of St. Clair River fish consumed—in terms of greatest number of participants reporting them—were (1) walleye, (2) yellow perch, (3) rainbow trout, (4) coho salmon, and (5) smallmouth bass. The top 5 list for all survey areas, reported in the second half of Table 7, was quite similar to the St. Clair River list. Yellow perch, walleye and rainbow trout still topped the list, followed by smallmouth bass and rock bass.

On the St. Clair River, Detroit River and, to a lesser extent, the Niagara River, two or three species of fish were consumed by a large proportion of interviewees while the remaining species available locally were eaten by a much smaller percentage of participants. Table 7 shows that 69%

of St. Clair River fish consumers reported eating at least one meal of walleye, 61% reported eating yellow perch and 43% had eaten rainbow trout over the 12 months prior to being interviewed. Detroit River interviewees were similarly fixated on yellow perch (73%) and walleye (52%) while only 31% reported consuming the third most popular species, white (silver) bass. The species of choice on the Niagara River were yellow perch (57%) and smallmouth bass (40%) with the third and fourth most popular species—rainbow trout and walleye—being eaten by only 29% and 17% of Niagara River fish consumers respectively.

However, such blatant species preference was not evident among Hamilton Harbour and Metro Toronto interviewees, where a smaller percentage

of participants reported eating any one fish species and a wide diversity of fish were consumed in relatively equal proportions. In Metro Toronto, 35% of fish consumers had eaten rainbow trout, 28% had consumed largemouth bass, 26% had eaten at least one meal of smallmouth bass and 19% had eaten carp, brown trout, and chinook salmon. In Hamilton, 40% had consumed channel catfish, 39% had eaten rainbow trout, 27% had eaten yellow perch, white (silver) bass and smallmouth bass, and 23% reported at least one meal of chinook salmon. It is likely that these findings reflect a combination of the taste preferences of those fishing in Hamilton and Metro waters, the species available locally, and the ease with which these fish could be caught from the shoreline.

	ST. CLAIR RIVER (N=591)		ALL SURVEY AREAS (N=1763)		
	N	%	N	%	
Walleye	406	69	Yellow perch	947	54
Yellow perch	362	61	Walleye	769	44
Rainbow trout*	254	43	Rainbow trout	487	28
Coho salmon*	147	25	Smallmouth bass	438	25
Smallmouth bass	100	17	Rock bass	318	18
Brown trout*	97	16	White (silver) bass	283	16
Chinook salmon*	81	14	Largemouth bass	283	16
Rock bass	79	13	Channel catfish	262	15
Northern pike	76	13	Northern pike	226	13
Crappie	54	9	Coho salmon	224	13
Largemouth bass	53	9	Brown trout	208	12
Bluegill	50	8	Chinook salmon	192	11
White (silver) bass	45	8	Crappie	179	10
Rainbow smelt*	41	7	White perch	172	10
Channel catfish	31	5	Bluegill	166	9
White perch	21	4	Carp	113	6
Sturgeon*	20	3	Rainbow smelt	109	6
Unknown sunfish	19	3	Sheephead (Drum)	95	5
Lake trout*	17	3	Lake trout	72	4
Pumpkinseed	17	3	Pumpkinseed	69	4
Unknown salmon	10	2	Unknown sunfish	68	4
Sheephead (Drum)	8		Brown bullhead	67	4
			Unknown salmon	42	2
			Muskie	37	2
			Lake whitefish	31	2
			White sucker	30	2
			Sturgeon	26	1
			American eel	15	1

TABLE 7. FISH SPECIES† REPORTED CONSUMED BY ST. CLAIR RIVER PARTICIPANTS AND PARTICIPANTS IN ALL SURVEY AREAS

† tables include only those species which were reported by 5 or more participants

* indicates a species not included in the 1997–8 Guide to Eating Ontario Sport Fish for the St. Clair River

We not only collected data on what species were being eaten, but also on the number of meals which respondents had eaten of each species. We have chosen not to present this data here only because the enormous range of meals eaten for most species makes any calculation of average meals rather misleading. All species listed in Table 7 for the St. Clair River have one meal as their lowest reported level of consumption but examples of meal totals at the upper end include: 150 for yellow perch, 134 for northern pike, 102 for sturgeon, 100 for coho salmon and walleye, and 80 for rainbow trout. The extreme variance in consumption patterns offers a challenge to those who would attempt to describe the average, 'typical' or 'normal' amounts of particular fish species which are eaten by a sample of fishermen.

Why these species?

St. Clair River fishermen described favourite fish species as "sweet", "flaky", "fresh", "lean", "mild" and "firm". Frequently mentioned favourites were walleye, yellow perch, rainbow trout, pike, and sunfish species. Infrequently consumed or altogether rejected alternative species were considered "coarse", "tough", "fishy", "wild-tasting", "soft", "oily", "greasy", "bony", "dry", "strong-tasting", and "fatty". Sheephead, carp, suckers, shad, and dogfish were almost unanimously avoided. Consumption of other species—like salmon, bass, catfish and trout—were a matter of personal preference and, while not favourites, many interviewees would eat a few of these species simply because they were fun to catch, available from shore, and in season. Those who fished more often and were more familiar with locations on the river where favoured species were available, we were told, could afford to be more picky about which ones to keep.

Many St. Clair River fishermen denounced species like sheephead, catfish and carp with evangelical fervour, condemning these fish-sinners for being "garbage fish", "junk fish", "bottom feeders", "dirt fish", "polluted", "ugly", "gutter fish", and for "having a bad reputation". These fish were accused of eating an indiscriminate and distasteful diet of "scum and bugs", pop can tabs, golf balls, cigarette butts and generic "crap off the bottom". While some interviewees adamantly asserted that "no one eats those fish", a number of St. Clair interviewees admitted that their avoidance of these species was partly propaganda and the tastes of dads, uncles and grandpas that had been passed down through the years. Those with a more open mind had enjoyed sheephead fish patties made by American friends, had tried to fry up a carp or sucker, smoked a sheephead, or admitted "probably they taste okay if you prepare it right". But most of those participants who had given these fish "a try" were not happy with the end result. As one interviewee admitted with distaste, "Lots of people eat carp. I've tried it but it was no good, I didn't like it. Really greasy. Really fatty and disgusting. White, cloudy—not that clear kind of flaky, just blah. Like bad scrambled eggs".

Most of the participants who were repulsed by these fish were generations-old Canadians whose fish cuisine was largely limited to "frying in butter", deep frying and "throwing it on the barbecue". Many took a brand-name approach to fish prep; they used Lawrey's seasoning salt, store-bought fish crisp, Crisco oil, Kellogg's Corn Flakes, Aunt Jemima's pancake mix, and Shake 'n' Bake. Such simple preparation methods were designed to highlight the fish, rather than disguise it in a complicated, heavily flavoured dish. As one woman explained, "I like the taste of fish. When I cook it

it's just with butter so I can taste the different types". Another enthused, "I just love the taste of them [rainbow trout]. Don't put nothing on them. Just take them and fillet them out and fry them. No butter or nothing. Just fry them in a little bit of cooking oil, enough to keep them from sticking. Just the flavour of them alone is enough for me. I love them that way". A third described her preferred method as deep frying in an inch of oil. "That's my favourite", she explained, "because there's not a whole lot of other than fish. I don't like a lot of batter and stuff". These standard Euro-Canadian preparation methods would do little for bony fish that may have tougher flesh or a stronger taste and require grinding, boiling, marinating, and many more additives than just salt, pepper and lemon to taste appealing.

Lacking sufficient variety in their fish preparation repertoire and sufficient reason to rebel against generations-old teachings, these fishermen instead stuck to fish species that they could prepare according to their own North American culinary traditions, or simply went without. The exception to this rule was the tendency of St. Clair River fishermen to smoke fish like salmon, pike and even sheephead. Smoking was usually reserved for these more difficult "fishy-tasting" or "oily" species; the strong taste of the marinade and the extended cooking time made even less palatable fish taste good. One fisherman told us he smoked chinook salmon but not walleye. "That would be a waste", he explained, since "smoking is for second-best fish".

Parts of fish eaten and portion sizes

Thirty percent of St. Clair River fish consumers reported eating parts of their catch other than the fillet. Almost half (49%) of Hamilton Harbour fishers reported eating parts other than the fillet

while 23% of Niagara River and Metro Toronto fish consumers, and 17% of those who ate fish from the Detroit River reported consuming 'other parts'.

Field notes and tape recorded conversations indicate that the skin of panfish—particularly yellow perch—was among the more preferred 'other parts' eaten by interviewees on the St. Clair River. Larger fish like pike, sturgeon, catfish, salmon and trout were often gutted and cut into steaks before cooking and fish that were baked or smoked were often prepared whole. Smelt was most often eaten whole. The "cheeks" of larger walleye were considered a delicacy by a number of interviewees.

One of our research assistants regularly asked St. Clair fishermen how much fish they ate in a meal. While the Guide to Eating Sport Fish bases its advice on the assumption that fishermen eat no more than 8 ounces of fish at one time, data collected along the river indicates that fish meals were more like feasts and that 8 ounces is, in many cases, a gross underestimate of the quantity of fish consumed at one sitting. Most interviewees estimated their fish meals were well over a pound and that favoured species, especially when eaten immediately after returning home, were eaten "like candy" or "by the plateful" or "till it hurts". One interviewee admitted with a laugh, "If it was me, I could sit down and eat 50 pounds of Perch...I make fish and chips and he eats a great, big plate of French fries and about 4 pieces of fish. Me, I have about 20 pieces of fish and 3 French fries".

7.4 Concerns about eating St. Clair River fish

Those without concerns

Just over one half (51%) of St. Clair River fish consumers, when asked directly if they had any

'concerns' about the fish from the river, answered 'no'. We interviewed more unconcerned fish consumers along the St. Clair River than we did in Metro Toronto (40% were unconcerned), along the Niagara River (47% did not have concerns), and in Hamilton Harbour (49% were unconcerned) but the same proportion along the Detroit River (51% had no concerns). Our questionnaire was not designed to ask any follow-up questions of fishermen who were not concerned about eating fish from the river, but field notes and transcripts of interviews clearly indicate that our respondents often offered their reasons unsolicited.

Many interviewees without concerns felt there had been a marked improvement in the river environment since the 60s and 70s. Anglers spoke of catching active, healthy-looking fish which little resembled the sluggish and sore-covered catches of the past. They noted that the number and variety of species had improved in recent years. And their confidence was bolstered by the clarity of water which once gushed gooey-green from plant discharges and chunky-brown from sewer overflows, water which in the past left a black oily sheen on breakwalls, boats and fishing equipment. A few mentioned now feeling confident about swimming in the water and a couple even went so far as to state that they "wouldn't be afraid" to drink water taken "straight from the river" or at least to "rinse your mouth out with it".

A number of these interviewees placed confidence in the policy and practice of local industry which was regulated and enforced by the provincial government. Treatment of effluent, prompt spill response, and clean-up of historically contaminated sites were reasons these fishermen did not feel concerned about the quality of their catch. As one interviewee advised, "Don't be afraid of the plants

because I worked in most of them and I know that their water treatment's about all they can do.

Besides zero discharge, and that's not realistic".

Another, speaking about the Ministry of Environment, stated, "They've just clamped right down on the spills to the river by the companies up here". A third fisherman asserted:

I think, in general, the public awareness and everything else is really helping because the companies are taking more responsibility for themselves. And people in general. And I think we're in an upward swing, in a different direction anyways, from the old, well, just let it go, type thing. I think they're doing a heck of a good job. In general.

The migration of fish was another reason St. Clair River fishermen offered for their lack of concern. Some believed that fish caught in the St. Clair River were permanent residents of Lake Huron and Lake St. Clair; the St. Clair River was nothing more than a "staging area" and the fish were doing little more than "just running through the river between lakes", a seasonal swim which was not considered of long enough duration to result in substantial contamination. Others saw migration of fish as evidence that, while one could attempt to control contaminant intake by only eating fish from particular waterbodies, reality was that fish travelled. As one interviewee asserted:

I come out here, I catch my fish, take them home and eat them. A lot of people say you shouldn't be eating them fish because of the pollution in them and that, yet the next day you see them in the supermarket buying perch. Or buying a pound of pickerel. But they don't realize them pickerel come out of Lake Erie or Lake Huron. Them darn fish come into this river to spawn. So whatever pollutants they pick up here, they carry back there with them anyway.

Interviewees frequently explained that their lack of concern was because “I don’t eat enough to worry”. Only those who “overdo it” or “catch their quota per day” and those who ate “too many”, “a steady diet”, or “constantly every day” needed to be concerned about eating fish from the river. The old adage ‘all things in moderation’ seemed to be the underlying message from these interviewees. But what, exactly, was the accepted definition of moderation? Some interviewees restricted their consumption to fewer than 12 meals annually. But others, who similarly claimed not to eat enough to be concerned, had eaten anywhere from 26 to 72 meals in the past year. It seems, then, that the difference between moderation and “eating enough to worry” depended upon your perspective. For many of the St. Clair River fishermen we spoke with, eating fish from the river at least once—if not close to twice—a week was moderate and even restrained consumption.

Some St. Clair River respondents gauged their need for concern based on the presence or absence of empirical evidence that eating the fish was actually harmful. Such comments as: “I’ve been eating them for x years and they haven’t made me sick” or “I’ve never heard of anyone dying from eating St. Clair River fish” or “I see the old guys down at the river and they still look okay” were a running theme throughout tape recorded interviews and field notes. As one interviewee admitted, “I think about it a lot ‘cause you hear a lot of stories and stuff like that about the fish being dirty because of the plants and stuff like that. I think that if I was ever to get sick off it I wouldn’t eat it again. But I never have, so, so far, so good”. Another, when asked if he had concerns, replied, “Not right now. I haven’t gotten sick off of it. I’ll worry about it when I do”. Some fishermen looked first for evidence that contaminants were harmful to the

fish. If the fish could survive, these interviewees surmised, then the water/spills/blob/sediment couldn’t be so bad. As one interviewee explained:

I did see a spill at Sun [Suncor] and the guard just happened to come down. I said, “I saw something come out of your pipe, there”. And she looked and she got on her walkie talkie and scrambled back up and they shut it down. I don’t think it was nothing too toxic. I think it was in the paper. It was only 2 and a half litres or something. But it didn’t look, like even a little wee bit, it’ll spread right out if it’s oil based and it wasn’t a whole lot come out. I still kept fishing. There was fish in there and they weren’t turned up on their bellies or nothing.

Other anglers downplayed their concerns about St. Clair River fish in the context of other, equally important or uncontrollable risks they took or were exposed to daily. Some focussed on other pressing environmental issues—like air quality and contaminated well water—or offered specific comments about their lack of confidence in other foods. Prime candidates for an impromptu and intuitive comparative risk assessment were the meat, fish and produce available at the local grocery store. Fishermen specifically mentioned injections of hormones and antibiotics into cattle, chicken and pigs; chemical additives to animal feeds; chemicallybased pesticides, herbicides and fertilizers; tainting and bacterial contamination due to improper handling; and global pollution levels believed to affect imported fish. These interviewees, likely because of the sense of control which comes from eating what you catch and prepare yourself, claimed to be “more worried” or “more concerned” about commercially available food than they were about fish from the St. Clair River.

Some participants offered this risk-in-context

assessment in a thoroughly defeatist and fatalistic manner. "Everything these days is contaminated", we were repeatedly told. "Everything today will give you cancer". If not the fish, these interviewees predicted, it would be the air or lightning or a drive around the block. So, rather than attempt to control a thoroughly capricious world fraught with risks to life and limb, the reaction of these fishermen was to throw their hands in the air and resign themselves to what might come. As one interviewee stated, "If you're gonna die, you're gonna die". Another, when asked if he had concerns, asserted, "Oh well, what's done is done. I don't care to know. I just want to fish". A third mentioned, "I've been eating it all my life. It hasn't affected me yet. If it does, it does. If it don't, it don't".

For some this was not so much a resignation to fate as it was an eruption of laughter in death's face. It was somehow unmanly or cowardly to worry about one's health, to moderate one's diet and give up potentially poisonous pleasures like smoking, drinking alcohol or eating St. Clair River fish. "A lot of things aren't any good for you", one fisherman asserted when asked if he had concerns about the fish. "I'm smoking one of them right now, you know, a cigarette, and if you like it, you do it". Another noted, "I smoke a lot. I smoke a pack, a pack and a half a day. Sure there's chemicals in there. But hey, that's just the way I am. I don't worry about it. If you did, you wouldn't do anything. You'd sit in a chair. And you'd never move". Many interviewees had continued to eat St. Clair River fish through the 60s and 70s, the dark decades before any significant clean-up efforts or pollution controls had been instituted along the river. It was with a measure of pride and bravado that these interviewees offered statements such as: "I've fished here all my life and I've never turned a fish away", "the blob never turned me back", "I ate fish twice a week even when they told you not to eat

any", or "back in the 60s there was a problem with water being polluted and I ate it then".

Along the St. Clair River, perhaps more than in any other area we surveyed, the reaction of interviewees to questions about concerns was met by a shrug of the shoulders and a brief and sometimes defensive reply like "no", "not really", and "I never did pay too much attention to it". "Don't have any concerns. Never have", one interviewee replied, adding, "There is always something in the newspaper [about the plants] but I never paid it much mind". Another fisherman admitted, "I heard some things on the news, especially during the 70s, but I didn't give it much concern".

These interviewees considered negative press and public opinion about the river to be little more than rumour and hearsay, exaggerated for effect and perverted by repeated telling. Some reacted to these "stories" with suspicion and disbelief. One fisherman, who noted that the river was "supposed to be polluted like hell" with PCBs, was asked if that concerned him. His emphatic response? "I don't believe it". Typically, however, the reaction of these St. Clair River fish consumers was to ignore the hearsay and media hype and continue fishing and eating fish as usual. "Everybody talks about the crap they put in here", one fisherman stated. When asked if that made him feel differently about eating the fish he replied, "No, I don't really care". Another interviewee, after repeated prompting from our research assistant, finally admitted to having "heard talk" about "the plants". "I guess I did", this life-long resident of the St. Clair area admitted, "but I never asked any questions, I ignored it. What are you gonna do? All my friends fish. It's fun".

These often succinct and casual responses seem to indicate an active attempt to ignore or repress any bad news about the state of the river. But why,

when these interviewees had heard or read about spills, contaminants and pollution, did they choose to shrug off this information rather than pay attention to it? Qualitative data suggest two, related reasons for this reaction. For these interviewees, fish consumption may have been, as one fisherman put it, “a kind of in the back of your mind concern”. But perhaps the costs of succumbing to the worry, focussing on the concern or believing the stories were too high. To think about the risk from fish consumption posed an even greater risk if it meant one might ultimately “get scared” and give up eating fish. As one participant remarked, “I just don’t let it bother me. I’m not going to let that [chemicals in the fish] change my life”. Another, when asked if she was concerned about health effects, admitted, “No, it won’t stop me. It’s not that bad. I really like it so I don’t think it’s that bad. I don’t know though. I don’t read enough about it”. A third explained:

If I was worried about it I wouldn’t eat. Sometimes you stand there and wonder. You hear all this stuff and you read they spilt this into the river and they spilt that in the river, meanwhile you just finished eating 5 pounds of pickerel you caught there the same day the spill happened. You wonder. But I don’t let it worry me, no. You wonder about it but you don’t worry on it.

This brings us to the second, related reason for downplaying one’s concerns about St. Clair River fish: values. To maintain a fishpositive attitude and suppress the worry, these participants have chosen to disregard the valueladen judgements of others—the fish are bad for you, Chemical Valley is too far gone, you should take better care of yourself and your family. In turn, they defend their consumption with their own values—my health cannot be viewed apart from the activities I enjoy,

those that don’t eat the fish don’t know what they’re talking about, fishing and eating what I catch is important to me. These interviewees hear the arguments of others and turn away from them rather than engage in an emotional and ideological discussion where the values of one person are pitted against the values of another. Thus, what seems like a head-in-the-sand ostrich approach to risk or an almost proud refusal to jump on the ‘get healthy’ bandwagon is only the immediate, gut reaction defense of value-oriented choices. Behind this facade of happy indifference—conveniently erected to politely but firmly shut down a potentially disturbing and emotionally charged conversation—may be true concern about the state of the St. Clair and the quality of its fish.

Such an interpretation seems to be supported by the fact that many of the same individuals who glibly denied paying any attention to pollution-oriented issues did in fact claim to practice various strategies to manage and minimize the risks of eating St. Clair River fish. If these fishermen were truly unconcerned about the quality of the fish they were eating, or as blithely ignorant as their comments would suggest, it is not likely that they would be aware of or have adopted many of the risk reduction strategies discussed later in this section.

Fish consumers with concerns

Forty-nine percent of St. Clair River fish consumers replied ‘yes’ when asked if they had concerns about the fish they caught. Interestingly enough, while those who did not eat St. Clair River fish did not seem overly concerned with polluted water and contaminated fish, their peers who had eaten fish from the river did appear preoccupied with these issues. Forty-eight percent of those who had eaten St. Clair River fish, when asked to specify their concerns, mentioned ‘water polluted/dirty’

and 40% reported 'fish dirty/contaminated'. Proportions of St. Clair River fish consumers concerned with polluted water, contaminated fish, and tumors/deformities were consistent with overall survey results.

Concerns about pollution in the river

Overall, interviewees believed that there had been improvements to water quality in the St. Clair River since the 50s, 60s and 70s when companies "couldn't even test for some of the toxins that they were working with" and the river was an "open sewer", black with oily residue, globs of "paraffin" floating on its surface and globs of dry cleaning solvent "the size of 2 or 3 football fields" rolling around on its bottom. Some mentioned water clarity as a recent positive change, some said that the appearance of fish had improved, some who had themselves worked in "the plants" or had family members employed in local industry could cite specific measures that had been taken. But what fishermen had seen wasn't enough.

Those we spoke with were well aware of the sad and enduring legacy left by the post-war industrial boom in Chemical Valley and knew that there were contaminated sediments requiring remediation, worried that there were blobs waiting to be discovered, and were aware of ongoing pollution in the form of spills, dumping and sewage overflows. River clean-up would take years of concerted effort and significant financial outlay, and some expressed a mixture of pessimism and resignation about the future. One participant, asked for his opinion on pollution, announced, "This is the Chemical Valley of Canada. I think it's just a way of life".

Fishermen who were concerned about pollution believed that government regulation was too lax and that corporate polluters were allowed too many "accidents". As one asserted, "the government knows what they're doing but we're talking taxes to run this country, free trade, imports, exports. They know what's going on". There was a feeling that the public did not receive credible information about the state of the river or the consequences of a spill.

	ST. CLAIR RIVER (N=291)	SURVEY TOTAL (N=913)
WATER POLLUTED/DIRTY	141 48%	433 47%
FISH DIRTY/CONTAMINATED	116 40%	402 44%
FISH STOCKS DWINDLING	48 17%	130 14%
TUMORS/DEFORMITIES	48 17%	151 17%
FISH TOO SMALL	3 1%	30 3%
FISH TASTE OR SMELL BAD†	11 4%	23

TABLE 8. SPECIFIC CONCERNS ST. CLAIR RIVER FISH CONSUMERS HAD WITH THEIR CATCH

† The 1995 survey in Toronto, Hamilton and Niagara areas did not record "fish taste/smell bad" as a separate response. Therefore the "fish taste/smell bad" responses which are listed in the Survey Total column have also been included under the fish dirty/contaminated"line. For that reason a separate percentage has not been calculated for the "fish taste/smell bad" totals.

Certain hot potato issues, like the decision to allow ICI to release its pond water, were cited as evidence that improvements might be temporary. St. Clair River fishermen could name corporate polluters; they knew where outflows and discharges were located; chemicals like benzene, xylene, phenols, mercury oxide and BTX tripped off some of their tongues as easily as the names of fish species. Fishermen were still witness to oil spills, to strange coloured water discharging from pipes, to the contents of combined sewer overflows—unmentionable in polite company—gushing into the river at 20 minute intervals. They were concerned about tumours on fish, and fungus and skin infections which they attributed to the high bacteria levels in warm water outflows. They had lost fishing friends to cancer, buried a succession of pets who had a taste for St. Clair River fish, noticed that birds didn't seem to be "pairing up", and worried that they might be endangering the health of themselves or their family members.

Interestingly, it was not only those interviewees who claimed to have concerns about the fish they ate who had thoughts to share regarding pollution of the river. Those interviewees who reported having 'no concerns' about the fish, far from being complacent or content about the state of the local environment, often expressed opinion and shared experiences similar to those who claimed to 'have concerns'. For these interviewees, however, concern was motivated less by a sense of personal risk or threat and more by a sense of stewardship and responsibility towards the river.

Tainted fish

St. Clair interviewees reported a concern that 'fish tasted or smelled bad' slightly more often than did fishermen interviewed in any of the other four survey areas. Tape recorded interviews and field notes also included a considerable number of

references to fish tainting. Descriptions of this phenomenon ranged from nonspecific comments—fish "smelled bad", "didn't smell/taste right", and had an "indescribable" smell—to highly specific references to a "urine" or "chemical" smell, "mercury taste", or petrochemical odours and flavours like "oil", "crude", "petrochemicals" and "gasoline".

Some fishermen, while they had caught bad smelling or tasting fish "years ago", had not experienced such problems recently. Others could not comment on any improvement in fish tainting at a particular spot, since the vividly remembered experience had caused them to swear off fishing that area ever since. A number of fishermen, however, reported catching fish tainted with petrochemical smells and tastes during the previous year or two.

Fishermen usually reported the location from which the offending fish was taken. One mention was made of a rainbow trout caught at "the grain elevators" in Sarnia which tasted like "gasoline", two separate accounts were made of fish caught at the Bluewater Bridge which smelled of "chemicals" and another report was made of a "BTX" smell in trout, young yellow perch and "scavenger fish" caught at the Imperial Oil dock. When the subject of tainting arose, however, it was usually Talfourd Creek and the Lambton Generating Station which were the locations of concern. One interviewee reported catching silver bass from Talfourd in 1994 which smelled "like gas". Another related this experience catching a tainted catfish at Talfourd in the summer of 1995:

It was about a 5 pound catfish I took out in this area here, around Talfourd Creek, and it just—I cut it up and it smelled a little funny. It has that fish odour but it had a little bit more of a distinct smell and I just couldn't figure out

what it was until I started cooking it and you could smell the oil, eh? Yeah, and it was really, really bad. I had to throw it out.

One fisherman reported that “five years ago” he caught a few large walleye from Lambton Generating Station. “I had to throw out the pan”, he reported. “The whole kitchen smelled like diesel fuel”. A regular at the Bluewater Bridge, “desperate for fresh fish last winter”, made the trek to the Generating Station and caught a couple of 5 pound rainbow trout. “When he cut one open”, one of our RAs recounted, “it smelled of benzene and when he cooked the other it tasted of benzene, ‘Like you took a cork out of a bottle of benzene and took a whiff, that’s what it tasted like’”.

While most interviewees referred to tainting incidents as isolated and idiosyncratic, several advised that fish caught at the Generating Station regularly smelled or tasted “oily”, especially during particular times of the year. Rainbow trout caught at the Hydro “later in the season”, one fisherman explained, often had an “oily taste”. Spawning chinook salmon and the resident population of walleye caught at the Generating Station in December and January, another fisherman asserted, smelled like “crude”.

Managing the risk from fish consumption

Tape recorded interviews and field notes clearly indicate that those who ate fish from the St. Clair River did not normally do so without taking particular precautions to manage and minimize their risk. In fact, many who responded that they had no concerns about eating St. Clair River fish immediately explained that their lack of concern was precisely because of their personal risk management strategy. “See, I don’t worry about it at all because I know

how to clean the fish”, one fisherman told us. Another, when asked if he “worried” about eating fish from the river, replied, “No. I don’t actually. But I don’t eat bigger ones”.

While most of those we interviewed were aware of and practiced ways to reduce the risk from chemical contaminants, the exceptions appeared to be individuals who had recently taken up the sport, those who seldom fished and those who, as one research assistant commented, “didn’t take fishing beyond dropping a line or dangling a worm”. It would appear, then, that those who were more involved in fishing were more likely to have given some thought to risk reduction and to have been exposed to information and advice regarding prudent fish consumption. What follows is a brief description of the more frequently mentioned approaches to risk management, some of which correspond to ‘expert’ advice regarding risk reduction and some which have been uniquely developed by our interviewees.

A very popular method of risk management was to place restrictions on the sizes of fish consumed. Many participants kept smaller fish, believing that younger fish not only had superior taste and texture, and were less important as “breeders”, but that they contained lower levels of contaminants. This held true for walleye and other larger fish but not often for panfish like perch, crappie and bluegill which were regarded as “small” even at their maximum size. A number of fishermen admitted to keeping larger fish during the salmon derby, and when hosting dinners for friends and family. A few interviewees noted that the source of information on fish size was Ontario’s fish advisory, the *Guide to Eating Ontario Sport Fish*. Most, however, could not recall where they learned of the smaller is better rule. A large number of interviewees took care to remove

“belly meat”; the “lateral”, “mud”, “blood” or “centre” line; fat; skin; and any “grey”, “brown” or “dark” coloured meat. Most fishermen did this as part of the cleaning process. Some, however, left darker coloured meat and skin on their plate, having picked through the cooked fish and chosen the portions they wished to eat. Again, the decision to “trim” selected portions of fish—especially the fat and “mudline”—was in part motivated by the desire to improve the taste of fish. Although the Guide contains information on filleting fish to minimize contaminant intake, few anglers were able to identify Ontario’s advisory as the origin of their practice. Cleaning fish also offered an opportunity to inspect one’s catch for parasites, worms, internal growths or deformation of organs, and to judge the quality of the fish by the colour of its flesh.

Most fish consumers were careful to release any fish that didn’t pass an initial visual inspection. These interviewees claimed that their wealth of experience with a particular species, location, or with fishing in general gave them an almost intuitive ability to distinguish what was normal from what was deviant. It was common for participants to react to sores, strange fish behaviour, tumors, worms, fungus and other mystery marks with some variation on ‘I don’t know what it is or what it could do, so why take a chance?’. However, some species, no matter how “clean-looking”, were seldom put on the stringer. Concern over contaminants was one of a myriad of reasons some interviewees offered for releasing all the “bottom feeder” species like carp, sheepshead, sucker and to a lesser extent catfish and sturgeon. Many fishermen preferred to keep species which they considered migratory—like silver bass, salmon, trout, smelt, walleye and yellow perch—rather than species thought to reside year-round in the river or at warm water outlets. Choice of location was another very popular form

of risk management among those who ate fish from the river. Many preferred to eat fish caught “upriver”, “upstream”, “above” or “north” of “the plants” and were firm devotees of locations like the Bluewater Bridge, Sarnia Bay, the government docks and the grain elevators. Some admitted to fishing south of the plants when fishing close to the mouth of the river was less rewarding. Others acknowledged that fish migration somewhat nullified the benefits of fishing upstream of industry. But for most, the constant and powerful rush of water from Lake Huron—“the cleanest of the Great Lakes”, as one fisherman crowed—and the location of industry downstream made those spots near the mouth of the river highly attractive from a risk reduction standpoint.

But fishermen along the St. Clair were not merely attuned to visible industry as an indicator of pollution. Many were acutely aware of the specific location of the much more invisible discharge points and water intakes for local industry that dotted the shoreline and used this information when deciding whether to keep or release the fish from a particular spot. Warm water “outlets” or “outflows”, as they were called, were often places interviewees claimed to fish “strictly catch and release” or didn’t fish at all. Talfourd Creek and the Lambton Generating Station were infamous as warm water discharges and fishermen were concerned that the warm water released into the creek caused worms in fish, tainting of fish flavour, and mushy-textured fish flesh. Contaminated sediment and spills were specific concerns expressed about Talfourd. One mentioned, “You see oil bubble up from the bottom all the time”. Another stated, “I’d never eat fish from there. For years and years and years there was oil slicks coming out of there and I would hate to go down there right now and just scoop some of that soil off the

bottom. I'm not saying the first foot, but underneath that I know there's going to be a lot of toxic waste under there". Migratory species, some fishermen asserted, were okay to eat from Talfourd and the Generating Station because, as one interviewee put it, "they're not hanging around there all the time".

A large number of interviewees had no concerns about fish taken from Mitchell's Bay. Some felt the delta acted as a "filter system" and the wetlands improved water quality; many felt that any spills or contamination had been "diluted" before reaching Lake St. Clair; and others felt that contaminated sediments were of lesser concern this far down the river.

Some interviewees approached food safety from a different angle and took care to minimize their risk from bacteria and parasites which could cause food poisoning or other acute illness. These participants were careful to avoid eating fish from warmer summer temperature water, did not keep any fish with sores or parasites which could indicate infection, cleaned and froze their fish immediately upon returning home, and ensured that their fish dishes were thoroughly cooked at a high temperature.

Perhaps one of the most prevalent ways to minimize the risk, however, was to restrict the consumption of St. Clair River fish. By keeping their number of meals to a level about which they needn't be concerned or worried, interviewees could feel more confident that they would not experience any ill effects from their consumption. As one fisherman noted: "I would eat more if I weren't so concerned. I think everyone would". As discussed previously, however, assessments of 'safe' consumption levels varied greatly among the fishermen we interviewed and seemed to be based on individual risk tolerance and the intensity of worry or fear rather than

on information from scientists, government or physicians. While some restricted their consumption to one or two meals a month from the river, others offered little more than old adages like "you have to eat fish with moderation", or "better safe than sorry" and comments like "I know that it won't hurt you unless you eat it 3 times a day".

The stigma associated with eating St. Clair River fish

Earlier in this section we suggested that the reaction of supposedly 'unconcerned' St. Clair River fish consumers to our questions about fish, pollution and contaminants was at least partly rooted in a defense of value-oriented choices. It is important to note, however, that for the vast majority of fish consumers we spoke to, the interview was not the first time they had been asked to speak on these potentially sensitive subjects. Contaminant-talk was a part of shoreline culture, and a number of interviewees had regularly felt obliged to defend a way of life that neighbouring fishermen, curious strangers encountered on the shoreline, co-workers, and even family members had already intimated was stupid or dangerous. Participants reported that reactions to their local fish consumption ranged from incredulous disbelief: "You eat the fish?" to disgusted judgements: "How could you eat it? It's all got chemicals in it" to strict admonishments: "Well, you shouldn't eat the fish out of the river" to morbid curiosity: "Why are you eating that fish?". Such comments were received by participants with disturbing frequency. "I hear it all the time. I heard it even today", one interviewee noted. Another stated, "I meet people all the time that say: 'You eat fish out of the river?'". "I get that from the girls at work all the time", a third interviewee admitted. "They're saying, 'Oh, you really eat the fish out of the river? I wouldn't eat those fish, they're full of mercury'". A fourth offered

this summary of the impression most have of Sarnia:

People know what Sarnia's all about. It's a chemical depot, is what it is, right? We provide and we supply everything from plastics all the way to gasoline to benzene to everything that makes everything, you know, xylene, all your chemicals and stuff like that. It all comes from Sarnia. So, people know what Sarnia's about and as soon as you say you're eating the fish out of the water, and they know the plants line the chem—you know, the Chemical River (chuckles), the St. Clair River. You know, that's one of their biggest things is they always say, "I wouldn't eat the stuff out of there".

In response to the stigma of eating fish from the river, a number of participants chose to adopt the language of the oppressor. They laughed and joked—sometimes with biting sarcasm, sometimes with a sardonic chuckle—about glowing in the dark, feeding the fish to their enemies and growing extra limbs. Some claimed wryly, "I'm not dead yet". Some retorted to derogatory comments about the quality of fish from the river with lighthearted

comments like, "If you don't want to eat them, good, leave them in the water 'cause I'll eat them", or "fine, that leaves more for me".

On one level, this gallows humour was a coping strategy. On another level, however, it was an acknowledgment of the negative image of local fish consumption and symbolic of the threat posed to an already-tenuous link between fishermen, their local environment, and a valued food source. Eating fish from the St. Clair River—regardless of its connection to family and community tradition—was not necessarily something to feel good about. As one fisherman admitted, "As soon as you take a bite into a big fish then that's the first thing you think of is, you know, how many chemicals has this thing sucked up through the St. Clair River?". Another, who admitted she was "kind of scared to eat the fish" and had concerns about tankers leaking oil, said this of a recent walleye meal: "It was good but I would have enjoyed it more if I didn't have to think about it". It is unfortunate that those choosing to eat meals of St. Clair River fish could not do so without the censure of others and the nagging voice of worry in the back of their own minds.



8.0 SHARING FISH

Those we interviewed along the St. Clair River appeared more likely than those in any other survey area to report that they “gave fish to others” when asked what they did with their catch. Forty-one percent of St. Clair River interviewees said they gave fish away while only 7% of Metro Toronto and Niagara River interviewees, and 5% of Hamilton Harbour participants, offered this response. Only the respondents on the Detroit River had a similar sharing pattern; 39% of Detroit River interviewees reported giving fish to others.

Tape recorded interviews, field notes and direct experience on the St. Clair River shoreline revealed the operation of an interesting and vibrant informal fish economy. Some catch-and-release purists and avid conservationists were adamant that fish should not be shared with strangers, but many anglers would regularly donate their catch to others for a number of reasons: because they had already caught their limit; because they had injured or accidentally killed fish they didn’t want themselves; because they hadn’t caught enough to warrant taking any home for a meal; because they caught species they considered undesirable; because the fish, although a favoured species, was thought too small to warrant keeping; and because they were responding to requests from their shoreline neighbours. One interviewee claimed to have “made a lot of friends” through his fish donations. He explained:

People really get upset around me if I’m catching all these fish and I’m throwing them all back and they’re not catching anything so they just say, “Give me a fish”. So I give it to them because they’ve been fishing for—some people go down there and fish from 5 in the morning until 5 at night and never had a hit or they have

one sheephead in the cooler. And a sheephead is—anybody can catch a sheephead so if you’re keeping that and you only have one of them you know you’re not doing too good (laughs). So I feel sorry for some people so I give them all the fish I catch.

Once back at home, fish were often shared with others. Sometimes giving fish away was a way to share the chore of fish cleaning and helped make room in an over-full freezer. Some St. Clair River fishermen, however, gave fish away for charitable reasons: to “senior citizens”, those subsisting on a meagre welfare or disability cheque, those with “medical problems” who were unable to catch fish themselves, and those who loved fish but couldn’t afford what was available in the store. As one fisherman noted, “Usually the older people, you’ll take them a few fillets, stuff like that. Makes their day”. Another reported, “Older folks who can’t get out to fish now...they really love getting a nice fish ready to cook”. Donating St. Clair fish to the Inn of the Good Shepherd—a local food bank—was an annual event organized through the Sarnia Salmon Derby.

Giving fish away to appreciative friends, neighbours and family members was a way to “share the wealth” of a successful day or season, to highlight one’s fishing prowess, and establish, renew and reinforce relationships. As one interviewee wryly bragged, “I think I supply half of Wallaceburg sometimes”. Fish could be given uncooked, in packages of ready-smoked fillets or pickled in jars. But a very popular way to share fish was via the fish fry. Fish fries could be spontaneous or planned well in advance and eagerly anticipated. They could be held on the shoreline, at home, or at a community centre, church or the local rod and gun club. They could entail dedicated stockpiling over weeks or be bring-your-own-fish affairs. They could have a restricted

guest list or be inclusive free-for-alls. But regardless of when, how and where they occurred, fish fries were always an opportunity to gorge on platefuls of fresh fish in the company of people that mattered. The clear message underlying these fables of fish feasts was the generosity of the hosts and their pleasure at providing for others. One of our RAs offered this recap of a conversation with a St. Clair fisherman: "His fish fry last Christmas required 57 pounds of perch, with some crappie and bluegill included. These were saved especially for the occasion. The party included 2 local bagpipe bands, most of the respondent's teachers and about 30 friends and family members". Another participant shared this tale of bountiful harvest and passion for fish:

I can't throw fish back. I got a family here that are just fish fanatics. I got a lot of guys coming over like [friends' names] upstairs and their wives and friends of mine and all my family. When I have a fish fry I got to make sure I got enough fish to feed everybody. Nobody leaves hungry...As an average I usually have a fish fry a month. Those who've got fish, they usually bring some. You know, a couple of days in advance so have them to get them prepared but I don't ask anybody to bring any. If I got enough, just come and eat. I came home one day, between [friend's name] and myself, we had about 250 bluegill, rock bass, some perch, bass, pickerel, pike, muskie. We had some nice size muskie and pike and some walleye but our basket was just chuck full of rock bass and bluegill. It took 12 hours to fish and 4 hours to clean them (laughs). We sat there and we cleaned them all and cooked up a couple of the pickerel while we were cleaning. We ate that and then just cleaned up all the rest of them and then 2 days later we had a big fish fry. There was, what, about 15 of us at that one.

Fish fries were sometimes conceived as events

which took fish out of the domestic and private sphere and into the wider community. One participant spoke of "putting on" the Walpole Island fish fry "just because I have an outdoor cooker".

Another mentioned hosting a shoreline feast open to all those who happened to be at the Lambton Generating Station:

Back when the Jumbos [perch] were running a month and a half ago, me and a friend and his brother were fishing the Hydro every day and we were feeding just about everybody down at Hydro that come down. With fish crisps. We'd have one box of fish crisps would do 14 pounds of fish and we'd go through a box a day. We were going through a lot of perch. Everybody really enjoyed it...people we didn't even know. We ate our fill and then we just started handing it all out. People enjoyed it. Came back...Some of them were fishing, some of them weren't. Some of them were just down there to see the sights, watch the boats go by.

An interesting finding was that the more St. Clair River fish one ate, the more likely one was to report giving fish away. Of those non-consumers who had caught fish from the St. Clair River over the previous 12 months, 26% reported giving fish to others. In comparison, 35% of 'rare' consumers (1-11 meals/year), 48% of 'occasional' consumers (12-25 meals/year), 51% of 'frequent' consumers (26-95 meals/year) and 58% of 'very frequent' consumers (96+ meals/year) reported giving their catch away. It also appeared that frequent consumers spread their catch more widely outside of their immediate family than did 'occasional' consumers. Those in the 26+ meal category were less likely to state that they alone consumed the fish caught in the river (3% versus 10% of those in the 1-25 meal category) and were more likely to say that fish from the study area were eaten by neighbours (17% of

frequent consumers versus 8% of occasional consumers), friends (46% versus 27%) and relatives other than spouse, parents, siblings and children (24% versus 14%).

8.1 Should you look a gift fish in the mouth?

Almost one quarter (22%) of those respondents who didn't eat their catch because of concerns about fish or water quality reported giving this fish away to others. One interviewee, for example, considered it "too scary" to eat fish from the St. Clair River. When the research assistant conducting the interview queried, "You leave it up to your friends to decide whether they should eat?" he replied, "Exactly. They don't seem to have too many concerns because they never refuse them".

Tape recorded interviews and field notes, too, reveal that even among those who ate some of their catch, gift fish were sometimes those considered too risky to be consumed by the donor him or herself. Fish which were "too big", had tumors, were caught near "the plants", or were caught in warmer summer water were sometimes given away rather than kept. One fisherman, for example, refused to eat fish caught at Lambton Generating Station and Talfourd Creek. "That's why I gave all of those perch away", he told our research assistant, pointing to the fish swimming in the bucket of another angler. Some interviewees were more comfortable sharing the risk with others; they restricted

their own consumption by ensuring that fish of questionable quality were consumed at fish fries or family dinners. As one interviewee put it: "That way you're not consuming so much of it. You know, you can go down and catch a limit of 3, 4 pounders, 2, 3 pounders and still it goes through your mind that you want to get rid of fish, you know. In a manner that you're not consuming everything yourself".

It is interesting and somewhat disturbing that individuals who believed the water quality too poor or the fish too contaminated to eat themselves would give these same fish to someone else to eat. It speaks, perhaps, to a twisted version of caveat emptor—recipient beware—operating on the shoreline, where the burden of responsibility for asking the right questions and determining the safety of fish donations falls on the shoulders of the recipient. The fish donor—who may willingly offer fish or may acquiesce with grudging distaste to requests from others—is thus let off the hook.

A number of our interviewees, however, did show concern for the well-being of others and demonstrated prudence and care when giving fish away. Fish which looked unhealthy—those with tumors, gill flukes, a strange smell or which otherwise looked abnormal—and those over a certain size were released by these fishermen rather than shared with others. As one asserted, "If I won't eat it, I don't give it away".



9.0 EATING FISH FROM OTHER ONTARIO LOCATIONS

Although the St. Clair River was a highly valued fishery which offered both variety of species and good shoreline access, many of those we spoke with had certainly travelled beyond the river to fish. In fact, when we asked survey participants who had eaten St. Clair River fish whether they had eaten fish from other locations in Ontario during the previous 12 months, 49% responded “yes”. Frequent consumers of St. Clair River fish were considerably more likely to report eating fish from other Ontario locations (62%) than were occasional consumers (44%). But even though a

great many of the participants who ate St. Clair River fish also ate fish caught elsewhere in Ontario, a calculation of the mean proportion of St. Clair River meals out of total Ontario fish meals indicates that an average of 69% of St. Clair River fish-eaters’ meals came from within the study area.

Table 8 indicates that Lake Erie/Lake St. Clair and Lake Huron were the most frequently reported locations, particularly for those who had eaten 26 or more meals of St. Clair River fish over the previous year. Northern and southern Ontario inland locations were also popular places from which to eat fish for participants at all consumption levels.

OTHER ONTARIO LOCATIONS FISH EATEN FROM	# OF MEALS OF SCR FISH		TOTAL PARTICIPANTS
	1-25 MEALS	26+ MEALS	
LAKE ERIE/LAKE ST. CLAIR	70 17%	48 28%	118 20%
LAKE HURON (INCLUDING GEORGIAN BAY)	56 13%	59 35%	115 20%
LAKE ONTARIO	15 4%	4 2%	19 3%
LAKE SUPERIOR	2 <1%	9 5%	11 2%
ST. LAWRENCE RIVER	1 <1%	0 0%	1 <1%
SOUTHERN ONTARIO INLAND†	49 12%	21 12%	70 12%
NORTHERN ONTARIO INLAND†	41 10%	24 14%	65 11%
NO OTHER ONTARIO LOCATION	235 56%	64 38%	299 51%
TOTAL NUMBER OF PARTICIPANTS	416	169	585

TABLE 9. NUMBER OF ST. CLAIR RIVER PARTICIPANTS WHO REPORTED EATING FISH FROM OTHER ONTARIO LOCATIONS BY THE NUMBER OF ST. CLAIR RIVER FISH MEALS THEY ATE

* more than one response was allowed

† southern inland waterways were defined as lakes and rivers south of Lake Nipissing and the French River and included all of Georgian Bay. Northern inland waterways were north of these waterbodies

9.1 Why eat fish from elsewhere?

It was clear, from field notes and tape recorded interviews, that many St. Clair River interviewees travelled to Lake St. Clair, Lake Erie, Lake Huron and other inland locations “up north” for what they perceived to be cleaner water and superior fish. The further one could get from industry and power plants, these interviewees asserted, the better. Exceptions to the ‘northern is better’ rule included the St. Mary’s River and Espanola—because of the pulp and paper effluent and a recent spill—and Lake Ontario—because of industry and unspecified “pollution”.

But fishing “up north”, on Lake Erie, or on Lake St. Clair was not only about cleaner water and better tasting fish. It was also about holidays away from the hum-drum grind of life at home in the city. In many ways these excursions could be the antithesis of urban shoreline fishing: natural surroundings instead of “city stuff”; peace and isolation instead of elbow-to-elbow jostle and lost tempers; easy catches rather than the challenge of fishing a deep and fast-moving river; deep water downrigging and the freedom of boat fishing instead of feeling tied to the shoreline. Fishing away from the home turf

was a chance to play survival games, to live in “the bush” and to subsist solely on whatever was caught, cooked over a smoky campfire.

Travel added adventure and novelty to fishing for many interviewees, as well as demonstrating a fisherman’s commitment to the sport in terms of the time and cash she or he spent. Some fishermen were keen to try a renowned hot spot advertised in a fishing mag or recommended by angling gurus like Bob Izumi or Henry and Italo. Others kept a rod in the car at all times; the accidental discovery of a creek or small inland lake while travelling new or even welltrodden roads was cause to pull over, grab the rod and tackle box, and investigate further. Die hard sport fishers were lured by out-of-town tournaments and many walleye, salmon and trout anglers mapped out their year according to fish runs in different areas of the province, following their prey into deeper water in the summer and into various rivers during the biannual spawn. Lake St. Clair offered an excellent ice fishery while superior bass fishing could be had off Walpole Island, at Kettle Point or Stoney Point. Sometimes, as one participant chuckled, where you fish “just depends how much gas you got in your car”.



10.0 USE OF THE GUIDE TO EATING ONTARIO SPORT FISH

The *Guide to Eating Ontario Sport Fish*, a close-to-200 page document published biannually by the Ontario Ministry of Environment (MOE), is designed to encourage safe fish consumption. It contains written text and charts which provide specific and detailed information about the contaminants in species and sizes of fish at over 1600 locations in Ontario. Table 9 indicates that just under a third (32%) of all fishers we surveyed used the Guide, while 36% of St. Clair River fishers reported using the MOE publication. In terms of our overall findings, only those interviewed while fishing in Metro Toronto locations reported a higher use of the Guide at 37%.

The 36% of St. Clair River respondents who “used” the Guide often commented that they found the publication “good”, “useful”, “informative” and “helpful”. As one remarked, “They give you pretty good information in that guideline book there. It tells you fairly close to what contaminants are in different fish and whether or not you should eat them and stuff...It gives you all the information you need”. Another commented, “I think that’s great, really helpful...Basically covers everything

that you need to know. Your basic need to know stuff”. A third noted, “It’s a good guide. I’d pay for it. I can’t believe they give it away”. A number connected their confidence regarding consumption of St. Clair River fish to the fact that they “used”, “followed”, “didn’t surpass” and “stayed well within” the advice contained in the Guide.

But even among those who claimed to be “users”, the Guide was usually discussed in very superficial terms, as resource material which was “skimmed”, “browsed”, “breezed through” or “glanced at” once, periodically, or every time a new edition was printed and then kept at home. Most of the fishermen we interviewed did not memorize the specific details contained in the Guide or religiously adhere to its recommendations. We heard comments like: “Not like a bible I follow it, but I do follow it” and “I don’t really stick to the Guide too much but I did pick it up and I read it” and “I use it to a point, but not totally”. Queries about specific information learned from the Guide or requests for recommendations to improve the publication were frequently met with blank stares, confused looks, and stammered apologies for being unable to remember exactly what had been read. Instead of reciting verbatim the lengths and meal restrictions for species caught at particular locations, most

 PARTICIPANT USES THE GUIDE	BY LEVEL OF EDUCATION COMPLETED						OVERALL TOTALS	
	GR. 1-8	GR. 9-11	HIGH SCHOOL	STARTED COLL/UNIV	COLLEGE/TRADE DIPLOMA	UNIVERSITY DEGREE	ST. CLAIR RIVER	ALL SURVEY AREAS
YES	10 18%	42 30%	67 36%	31 44%	37 53%	16 44%	210 36%	470 32%
TOTAL PARTICIPANTS	57	142	188	71	70	35	581	1453

TABLE 10. USE OF THE GUIDE TO EATING ONTARIO SPORT FISH BY HIGHEST LEVEL OF EDUCATION COMPLETED BY ST. CLAIR RIVER PARTICIPANTS*

* This table is based only on those participants who had eaten fish from the AOC in which they were surveyed in the 12 months previous to the interview. The question ‘Do you use the Guide to Eating Ontario Sport Fish?’ was added in 1996, thus the ‘all survey areas’ column does not include any data collected in 1995 from Metro Toronto, Hamilton Harbour and the Niagara River.

fishermen tended to develop general maxims and mottoes from the content of the advisory: don't eat the big fish, don't eat the black fish, don't eat the belly fat, don't fish in polluted areas, and don't eat too much fish.

It was clear, however, that anglers were actively processing the advisory information and testing it against their real-world experience and staunchly defended opinion. They weighed, compared, debated, adopted, altered and disregarded the Guide's advice according to what seemed appropriate, relevant and true to them. For example, the frequent acknowledgment that smaller fish were better eating because they were less contaminated was certainly supported by the widespread notion that the meat of larger fish was "mushy", "soggy", "soft" and "fishy-tasting" and that a true sportsman would let the big "breeders" go in the interest of conservation. Habit and tradition dictated that the size of a fish be quoted in pounds rather than the inches or centimetres used in the Guide. As a result, fishermen often invented a "common sense" safe weight range for a selection of species preferred for consumption, or applied a non-standardized conversion of weight to length to determine what size of fish was recommended in the Guide. While the Guide offered advice on the number of meals which should be consumed per month, it appeared that anglers were more willing to reduce the size of the fish they ate rather than restrict the number of meals they consumed or reduce their portion size to the recommended 8 ounces. Some anglers admitted to disregarding the Guide's advice on fish size if "all you get is the big ones" or "if I'm having a poor season". Many fishermen "used" the Guide for purposes other than fish consumption advice: species identification, determining what species were available in a particular area, and finding new places to fish—especially those spots where, accord-

ing to the size charts in the Guide, one had a good chance of catching a big one.

Some fishermen were aware of the existence of the Guide but did not consider themselves "users". For a number it was just another book on the shelf which they simply hadn't yet found the time to read. Some found the thickness, complexity, and minute print of the advisory daunting. One stated, "It could be a little easier to read" while another acknowledged, "If you read the instructions at the front of the book it'll teach you how to use it, but if you don't then it can be kind of confusing". A third, having previously received personalized instruction on the correct use of the Guide from a research assistant, admitted, "I remember you saying something about this, but I forget what you said, like how this works". Some bluntly stated that, even after reading Ontario's fish advisory, they were unsure of what to eat and what to throw back. As shown in Table 9, there was an association between level of formal education and Guide use, since those who had started or completed college or university were considerably more likely to report using the fish advisory than those whose formal education did not continue beyond Grade II.

Some interviewees, however, consciously ignored or refuted the advice in the Guide. At times these fishermen questioned the rigour of government studies and called for more information on the methods and assumptions used to generate conclusions which often seemed at odds with their own personal experience. Many asked important questions. Why, if the fish are so bad, haven't we got sick? What about hormones in beef and chemicals in bologna? Who is testing and regulating commercial fish? How is fish migration factored into the ministry's findings? How credible are government labs? What role does politics play in what gets

published? What do we really know about the health effects of chemical contaminants? How often is testing conducted? Others felt the Guide was an infringement on personal freedom, an attempt to dictate and regulate what was rightfully a private matter. As one fisherman asserted, "I never have [used the Guide] and I'm not going to change my eating habits now. After this long a period for anybody or anything". Another mentioned, "If you want to believe and go by what the Guide says, well, that's your prerogative. Same as me. I caught it, I think I want to eat it, I'm gonna eat it".

Many of the interviewees who did not use the Guide explained that the advisory had little relevance for them. Some knew to stick to smaller fish and to cut out the contaminant-carrying fat and therefore did not see a need for the advice; still others didn't use it because they didn't eat fish. Others felt that the information in the Guide was "common sense" and only of use to amateurs and fair-weather fishermen who lacked direct experience with fish and fishing. Many had checked the Guide once to compare their practices to those recommended by the experts; finding little difference between the two, they continued to eat fish as they had always done and never opened the advisory again. As one interviewee mentioned, "Oh, I've breezed through it but I've fished here all my life and my ways seem pretty good. Not supposed to keep big fish or eat too much according to the book, and I don't". Many fishers claimed to not eat enough to "worry" or "feel threatened" and therefore ignored the advice. In fact, the survey results reveal that 43% of those who had eaten 12-25 meals and 42% of those who had consumed 26-95 meals of St. Clair River fish stated that they used the Guide, compared to 31% of those who had eaten less than twelve meals. It is interesting, however, that only 31% of those anglers who consumed

more than 95 meals reported using the Guide.

St. Clair River interviewees also had recommendations for improving Ontario's fish advisory. These included: using weight rather than length as the unit of measurement for fish size; offering complete coverage of the sizes of fish available in the river; including recipes for fish; and integrating consumption information with fishery management issues including stocking, regulations and contact numbers for other ministries and organizations.

Those fishermen who found the ministry publication overly and unnecessarily complex recommended that the information be simplified. Others, seeking more detailed and comprehensive information from the Guide, recommended that information on the contaminants found in each fish be expanded, that specific information on local pollution problems be added, and that a "water quality overview" for the river be included in the MOE advisory. Those requesting additional data and details occasionally mentioned that their need for further information was not necessarily representative of the larger fishing population. As a compromise, a couple of fishermen suggested including appendices or publishing separate reports for those with inquiring minds. One admitted he would be happy if he could access detailed information—and even raw data—via a website, rather than have this information included in the Guide.

A key recommendation offered by St. Clair fishermen was to enlarge the species list in the Guide to include all those available on the river. One participant, for example, criticized the Guide because "they don't got all the species...I catch trout in the St. Clair River. They don't have any in there [the

Guide]”. Another claimed not to use the ministry publication because “trout and salmon aren’t in there anyway”. An asterisk is used in Table 7 to highlight the seven species which were consumed by those we interviewed along the St. Clair River but which were not included in the 1995-6 or 1997-8 editions of the Guide. Four of these species—rainbow trout, coho salmon, brown trout and chinook salmon—are among the ten most frequently consumed St. Clair River species. Overall, an average of one in four (25%) St. Clair River fish meals were of species not found in the Guide.

10.1 Favoured sources of information

Table 10 reports that when those who had eaten St. Clair River fish in the last 12 months were asked, “What sources of information help you make deci-

sions about eating fish that is caught?”, the most frequently offered response (38%) was a media source like TV, radio, newspapers, magazines or books. It is possible that participants reporting these sources were actually receiving information from Ontario’s fish advisory which had been distributed through press releases or used by authors of articles, pamphlets or books independent of government direction. The next most prevalent sources of information reported were interpersonal sources such as another fisherman, friends or relatives (37%) and government or organizational sources of information, including the Guide to Eating Ontario Sport Fish (31%).

It seems that St. Clair River interviewees relied more on media sources than did interviewees in any other survey area; the proportion of fish consumers who

 SOURCE OF INFORMATION	ST. CLAIR RIVER	ALL SURVEY AREAS
SELF (personal experience and appearance of fish)	104 21%	310 23%
INTERPERSONAL (another fisherman, friends, relatives, local people, word of mouth)	184 37%	406 30%
MEDIA (TV/radio, papers/magazines/books)	193 38%	426 32%
GOVERNMENT/ORGANIZATIONS†	154 31%	380 28%
NOTHING IN PARTICULAR	45 9%	201 15%
MISCELLANEOUS OTHER	9 2%	30 2%
TOTAL PARTICIPANTS	503	1347

TABLE 11. SOURCES OF INFORMATION USED TO MAKE DECISIONS ABOUT FISH CONSUMPTION BY ST. CLAIR RIVER PARTICIPANTS*

* this table is based only on those participants who had eaten fish from the AOC in which they were surveyed in the 12 months previous to the interview. More than one response was allowed. The question ‘What sources of information help you make decisions about eating fish that is caught?’ was added in 1996, thus the ‘all survey areas’ column does not include any data collected in 1995 from Metro Toronto, Hamilton Harbour and the Niagara River
 † includes responses “Guide to Eating Ontario Sport Fish”, “Fishing Regulations Guide”, “beer store”, “government agencies”, “fishing license office”, “OFAH/angling clubs/sportsman shows”, “bait/tackle shops”, and “Michigan Fishing Guide”

reported relying on the media were 17% in Metro Toronto and Hamilton Harbour, 18% on the Niagara River, 35% along the Detroit River and 38% along the St. Clair. Those who ate St. Clair River fish mentioned magazines, television shows, radio programs, books and newspapers as the media sources which helped them make decisions about fish consumption.

A number of interviewees were not entirely happy with the media's coverage of issues, however. Some mentioned a tendency to exaggerate and "sensationalize" stories to sell copy and increase viewers, while others questioned the accuracy of coverage or whether particular topics—such as spills and health effects—would be covered at all. Not all information gleaned from media sources was directly relevant to fish consumption. Fishing shows shot in pristine rural locations were accused of giving little information of consequence to the urban fisherman and anglers were often required to extrapolate from stories on generic environmental subjects in order to make the connection to fish caught in the St. Clair River.

Some interviewees, however, did mention learning fish consumption information from magazines, TV and radio programs. Specific mention was made of: the sizes, species, recommended number of meals and preferred cleaning methods to reduce contaminant intake; information about tumors and fish illnesses; consequences of exposure to particular chemical contaminants; and precautions to be taken by women and children.

As shown in Table 10, it appears that St. Clair River respondents relied more on interpersonal information sources than did participants in other survey areas. Tape recorded interviews and field notes, too, indicate that fishermen learned a great

deal about fish-oriented issues from the people around them: husbands, parents and grandparents, bait store owners, First Nations friends and fishermen, university students and other researchers conducting studies on the river, friends and family members who "work in the plants" and—perhaps most importantly—from "word of mouth" passed between fellow fishermen. Fishermen directed each other to where fish were biting and oriented first-timers to the popular locations; shared information and expertise regarding bait, equipment, species and even cooking; and occasionally offered advice on practicing 'safe' fish consumption. They also sought the advice and help of our St. Clair River research assistants. RAs assisted participants with species identification; using the Guide; finding locations to fish; and identifying where to catch preferred species. RAs were asked questions about the quality of the water; whether the fish were safe to eat; sources of pollution; and licenses, limits, and seasons. Information gathering and sharing had an altruistic component to it; several interviewees mentioned that the more they knew, the more they were able to share with others. Fishers who were less involved in the sport knew that they could rely upon friends who subscribed to magazines or spent Saturdays in front of fishing shows to pass on valuable information.

Credibility was a key issue. For some, "hearsay" or "rumour" passed among friends, co-workers or fellow fishers was contradictory, confusing, and something to dismiss or refute rather than believe. This was especially true when anglers who enjoyed eating fish from the river were told by strangers that the St. Clair was polluted and the fish "poisonous" or "toxic". But for most interviewees, the familiarity and accessibility of those who were well-known increased a fisher's confidence in the information shared. Someone who was "raised around here" or

“fished here all his life” or had “seen it with his own eyes”—like the “old guys” down on the river, the owner of a local bait shop, dad or grandpa, or a worker “in the plants”—was credited with expert knowledge. In fact, we heard of or witnessed numerous instances when information from the media or government was downplayed or disregarded as a result of a conversation with a friend or family member.

St. Clair River anglers also tended to use organizational sources of information in an interpersonal way. The knowledge of particular people was sought and believed not only because they had special skills or information but because of their interpersonal connection with the fishermen seeking answers. The word of “experts” like government employees, butchers, divers, university researchers, members of the Bluewater Anglers, and plant workers was given greater credibility because the expert was a well-known and trusted friend, relative, co-worker, or frequent fisherman.

Twenty-six percent of St. Clair River fish consumers mentioned government or a particular organization as source of information about eating fish. In interviews and field notes, specific mention was made of the Bluewater Anglers, Ontario Federation of Anglers and Hunters, the local health department, sportsman shows, signs posted to advise anglers of fish consumption issues, the Guide to Eating Ontario Sport Fish, representatives from local industry and government who had visited schools, and conservation officers who were asked questions while conducting routine license

checks along the shoreline.

Along the St. Clair River, perhaps more than in any other area we surveyed, there was an adamant and vocal distrust of government—even the Ministry of Natural Resources which, prior to recent reductions in staff, had been considered an advocate for fishermen and hunters. Interviewees still phoned MNR for advice and visited local offices bearing gifts of suspicious-looking fish to be tested or examined, but they appeared disheartened by slow response times and frustrated that assessments were often inconclusive.

Twenty-one percent of St. Clair River fish consumers reported reliance on their own experience and judgement when responding to our questionnaire query about sources of information on eating fish. In contrast, almost all the fishermen whose words were captured in field notes and interview transcripts relied to some extent on personal experience and the appearance of a fish when deciding whether to keep or release a particular fish and openly offered their personal criteria for judging a fish fit for food. When compiled, these criteria become a laundry list that includes “the fight” of a fish; colour of gills and skin; firmness of flesh; clarity of eyes; presence of tumors, parasites, worms on the outside of the fish or in the flesh, spots, “black moles”, “cancers”, lamprey marks, battle scars, wounds from mishaps with boat propellers and open sores; the overall configuration of the fish; colour and consistency of the flesh once cleaned; defects in internal organs; and the smell and taste of the fish once cooked.



11.0 AQUATIC WILDLIFE CONSUMPTION

Information contained in this section of the report was collected during the spring and summer shoreline survey conducted in 1996 and 1997 and also during the specific study of St. Clair River aquatic wildlife consumption carried out during the fall 1996 hunting season. (see Appendix C)

One hundred and six (11%) of the 924 St. Clair River participants had eaten aquatic wildlife—which we defined as ducks, geese, turtles, turtle eggs, frogs and snails—in the 12 months prior to being interviewed. In no other survey area was eating aquatic wildlife so prevalent. Eight percent of Detroit River respondents, 3% of Niagara River participants, 1% of those interviewed in Hamilton and less than 1% of those surveyed in Metro Toronto were aquatic wildlife consumers.

Interestingly, 87% (n=92) of the 106 wildlife consumers interviewed along the St. Clair River had also eaten St. Clair River fish in the previous 12 months. Most (30%) of these participants were 'frequent' fish consumers (26-95 meals annually), however 23% percent had eaten 1-11 meals of St. Clair River fish, 25% had consumed 12-25 meals and 9% had eaten in excess of 95 meals of St. Clair River fish in the previous 12 months. When these 106 participants are compared to the 591 participants who ate St. Clair River fish we can see that, overall, almost 1 in 5 (18%) of St. Clair River fish consumers also ate aquatic wildlife. Fourteen percent (n=14) of those participants who had not eaten St. Clair River fish in the last 12 months were aquatic wildlife consumers.

Those that ate wildlife did not tend to eat very much annually. Two thirds (66%) of St. Clair River

aquatic wildlife consumers had eaten 1 to 5 meals over the previous 12 months, while 17% had eaten 6-11 meals, 13% had eaten 12-25 meals and 4% had eaten 26 or more meals. Taped interviews and field note records of conversations with hunters indicate that the number of ducks consumed in a year was contingent on the quality of the hunting season, the amount of time a particular hunter had to devote to the sport, the circumstances under which the hunter consumed the birds and whether the hunter and his/her family preferred fresh duck over the potentially freezer-burned alternative. Even during a year of plentiful harvest—the result of the happy coincidence of good "bird action" and weekends or holidays free to shoot—the amount an individual consumed might not increase greatly if s/he saved birds for feasting or shared freshly killed fowl with friends and family. Several hunters we spoke with deliberately limited their consumption to hunting season so they could enjoy birds at their fresh or recently frozen best.

The hunters we interviewed commonly divided duck species into "puddle ducks"—including mallard, black and teal—and "divers"—to distinguish canvasback, redhead, bufflehead and goldeneye. "Table quality" was the central criteria used to judge the worth of a particular species of waterfowl and the diet of the duck—be it grain, water plants, white bread or fish—was considered to have a critical influence on this "quality". Grain-fed mallard was by far the most popular species consumed; seventy-two percent of wildlife consumers had eaten at least one meal of this bird. Canada Goose was the next favourite, with 44% of wildlife consumers reporting it. Eighteen percent ate wood duck; 14% percent ate green-winged teal; 9% reported canvasback; 7% each reported bufflehead and redhead; 3% each reported black duck, gadwall, goldeneye and lesser

scaup; 2% ate common merganser; and 1% reported eating greater scaup. Fifteen percent (n=16) ate a species which was classified as 'other duck' and included redwinged teal, bluewinged teal, bluebill, hooded merganser, shoveller, widgeon and 'species unknown'. Five participants (5%) reported meals of turtle, four (4%) reported eating frogs and one participant reported consuming duck/goose eggs.

Conversations with hunters rapidly revealed that hunting—especially on the St. Clair River—sometimes required a relinquishing of 'favourites' and a resignation to taking whatever flew within range. One hunter explained, "you don't usually 'pursue' ducks. You can't say, 'I'm going out and shooting canvasback today'. When you hunt the river, you have to take what comes down". The experiences of these hunters are corroborated by aerial surveys of migratory waterfowl use of the St. Clair River AOC. A 1996 report published by the Canadian Wildlife Service (Mullie et al. 1996) notes that during the fall of 1973 the most commonly encountered species was merganser, followed by redhead, scaup, mallard, canvasback, goldeneye and the ever-illusive black duck; all but the mallard and black are considered diving ducks and include the less desirable fish, mollusks and other crustaceans in their diet. Thus those that hunted the river and enjoyed eating wild duck required an adventurous palate and invested considerable time in creatively responding to the taste limitations of particular species. Hunters and their spouses experimented with marinades, stuffings, and cooking methods in the quest to make duck taste "as good as it can".

Participants were asked where the makings for their various wildlife meals had originated. The overwhelming majority of St. Clair River respondents (162%) reported that their aquatic wildlife was caught or shot within the boundaries of the AOC.

One quarter of respondents ate wildlife meals taken from southern Ontario inland locations, 10% from Lake Erie, 7% from Lake Huron, 5% from northern Ontario inland locations and 2% from the Detroit River AOC.

Lively conversations about contaminants in fish were commonplace during interviews for the summer shoreline survey. Not so for the fall hunter's component. Not one taped interviewee spontaneously raised the issue of chemical contamination of wildlife. And when queried about his or her thoughts on the subject, seldom was there the immediate legitimization of the topic and confident assertion of opinion seen during the previous season's conversations about fish. Responses to questions like, "do you have any concerns about the birds you eat?" or "some people worry about the fish they eat from around here. Do you think it's the same for aquatic wildlife?" were typified by on-the-spot theorizing and suspicion. A couple of hunters asked us directly: "is there a problem with the birds, then?". Others quickly passed over the wildlife issue and focused their response on concerns for fish. When it came to the effect of chemical contaminants on aquatic wildlife—particularly ducks—there was more rationalization and equivocation than acknowledgment that the hunter might need to re-think his or her consumption of wild game. This reaction—which superficially appears as a downplaying and dodging of the contaminant issue—makes sense when interpreted as a way of assessing and coping with a very complex and emotionally-charged issue about which there has been little, if any, "official" communication of information.

Hunters, when pressed to talk about the connection between chemical contaminants and the waterfowl, turtles or muskrat they consumed, often explained their lack of concern in a manner similar to the fish

consumers we interviewed. Interviewees claimed not to eat enough aquatic wildlife to warrant worrying. They expressed equal or greater concern over chemical preservatives in store-bought merchandise and the “force feeding” and injections given to accelerate the growth of domesticated animals. They felt that migrating waterfowl had not spent adequate time in the St. Clair area to accumulate contaminants. Some even suggested that certain precautions, modeled after advisories published for fish and large game, could be taken to minimize the consumption of contaminants: avoid consuming the internal organs and skin, take younger birds, and cook wildlife so that contaminant-laced fat could drip away.

The frequent lack of enthusiasm and forethought found in answers to contaminant questions was certainly not evident when the interviewee was able to steer the conversation in a different direction. Those we spoke with invariably chose to explore issues of habitat loss, decreased access due to privatization of public land and posting of St. Clair Parkway property as ‘no hunting’, the anti-hunting movement, and the importance of consumption to an ethical enjoyment of the sport. Hunters did not see themselves ‘at risk’ from contaminant intake. But they did see their sport ‘at risk’ from animal rights activists who, they believed, misunderstood the purpose and practice of hunting and from decision-makers who would limit and perhaps even eliminate hunting opportunities along the river.



12.0 OTHER PRESSING CONCERNS: EXOTIC SPECIES, SHORELINE ETHICS AND FISHERY MANAGEMENT

Informal conversations and more formal tape recorded interviews captured the viewpoint of St. Clair River fishermen on a number of topics related to the future of the fishery and fishing on the river. Exotic species introductions, shoreline ethics, fishery management and commercial fishing may not appear directly relevant to a study on the risks and benefits of fish consumption. For many interviewees, however, these topics were of greater interest and were felt to be a more tangible threat than were the chemical contaminants in the fish they ate.

12.1 Exotic species introductions

Exotic species were felt to play a significant role in the state of the fishery. Species indigenous to the St. Clair River had been affected by the introduction of zebra mussels and gobys; whatever natural balance still existed in the river had been thrown into a period of flux and adjustment as the effects of these newcomers were felt in the environment and the food chain. Frustrated and irate fishermen railed against these foreign creatures and the freighters which had brought them from Europe, and more specifically Russia, in ballast water.

In 1996 and 1997, the zebra mussel was old news on the St. Clair River and anglers appeared to have formed very definite opinions about the consequences of its arrival. Some of those we spoke with seemed to believe that mussels, while a problem in principle because of their status as illegal aliens in the river ecosystem, had not wreaked the havoc expected of them. Zebra mussels were considered, in fact, to be an unexpected boon to the river because

of their ability to “clean” the water. There was a tendency, here, to confound “clear” water with “clean” water. Many believed that, since they could now “see the bottom perfectly”, the zebra mussels had a positive effect on pollution levels in the river as well as the overall aesthetic of the St. Clair.

But the ability of zebra mussels to “super-clean the water” had a down side, too. Many fishermen sensed that the mussel population was “out of control” and had altered the river environment significantly for the worse. Not only were there ongoing challenges for municipal water treatment facilities and local industry, whose water intakes were consistently clogged with the small sharp mollusks, but there were indications that zebra mussels were damaging the fishery and affecting the catch per unit effort of the bank fisherman. Clear water meant increased light penetration and desirable species like walleye were suspected of staying in deeper water further from shore as a result. A number of fishermen associated enhanced light penetration with increased weed growth. While some thought this was beneficial, others offered criticisms which ranged from mild frustration at losing equipment in weeds and frequent grass-catches, to suspicion that weeds were eradicating spawning beds and altering fish habitat. Predator fish, like walleye, salmon, pike and trout could easily spot their prey in such clear water and populations of smaller fish were thought to be suffering. Mussels were also accused of filtering plankton from the water and thus competing with smaller, indigenous fish species like minnows who relied on the same food source. Mussels were also rumored to be highly contaminated and, since St. Clair species had now adopted the mussel into their diet, it was feared that these contaminants were moving up the food chain.

Gobys, however, were comparative newcomers to

the St. Clair River fishing scene in 1996 and 1997. Although a recent arrival, they were quickly gaining a reputation as irritating and even malignant. “The gobys have taken the fun out of fishing”, one exasperated fisherman stated. Other interviewees had given up pan-fishing because of the frequency with which gobys were caught. A common complaint on the river was that gobys stole the bait intended to catch other fish. “They stole about 2 dozen of my worms this morning. I seriously went down there with 2 dozen worms and came home empty-handed”, one interviewee admitted. Another ranted, “Can’t even use worms sometimes. You’ve got to use minnows or something. And even when you use minnows, they chew off their heads. Oh, they’re brutal. I hate them”.

Fishermen found their revenge, however. As an exotic species, gobys were not to be live released but could legally be killed for purposes other than consumption. Many anglers relished serving up the goby as a meal to hungry seagulls, or taking them home for pet food or fertilizer. One couple had made a hobby out of doing their part to eradicate the goby from the local ecosystem, fishing specifically for the species and depositing them in plastic bags to be measured and disposed of at home. They had kept careful records of the toll taken by their anti-goby campaign: over the previous three years they had caught 21,000 gobys. Memorable moments included an afternoon at the north slip boat dock in the summer of 1996 when they caught 585 and an early spring 1997 body count of 113, caught on one worm at the government dock.

Fishermen expressed considerable concern about the effect of gobys on the fishery. Aggressive, adaptable and omnipresent, the goby was feared to easily usurp the place of indigenous species like yellow perch and walleye in the food chain, to

compete for spawning beds, and eat the eggs of species like perch and rainbow trout. Gobys had been found in the stomachs of perch, walleye and rainbow trout and, like zebra mussels, were reputed to be highly contaminated and therefore a concern to fish consumers.

12.2 Shoreline ethics, conservation issues and stewardship

Many of the fishers we spoke with expressed concerns—ranging in tone from mild irritation to vehement condemnation—about activities and behaviour which they had witnessed on the St. Clair River shoreline. Many of these were offenses not only punishable in the eyes of the law but considered morally reprehensible by most interviewees: taking more than the daily limit of species like walleye and bass; fishing without a license; selling fish; fishing with more than one rod; killing undesirable fish—like carp, sheephead and sucker—before releasing them; taking fish out of season; and disrespectfully distributing garbage—including pop cans, coffee cups, worm containers, broken fishing line, and packaging from newly-opened fishing tackle—along the shoreline.

Not all complaints were supported by legislation, however; some were against behaviour permitted by law but seen by interviewees as a threat to a fragile fishery. Muskie was the only fish officially protected by a minimum size limit but participants were incensed at other fishermen who would keep smaller or “baby” fish of any species. Some spawning fish were legal to catch; even so, keeping any fish “full of eggs” was deemed disgusting. Interviewees were loudly critical of others for “eating everything”, even though many species were without possession limits.

Those who did not follow both the written and

unwritten rules of fishing were described as “ignorant”, “poachers”, “selfish”, and “butchers”. Particular ethnic groups were often blamed, as well as the more generic “foreigners”, part-time fishermen and fair-weather fishermen. In most cases these groups were typified as placing their own needs—for a full freezer, for bragging material or for a bit of cash—ahead of protecting the fishery. The clearly stated sentiment shared by many interviewees was that one who could not follow the rules should not be fishing.

Those we interviewed were not silent witnesses to such activities, nor did they simply mumble complaints under their breath or vent to others after the fact. These were individuals who used peer pressure as a form of social control, including direct confrontation and off-hand, sometimes-subtle-sometimes-snide comments to others which were meant to be overheard by perpetrators. Those who sought punishment of law-breakers and resource-abusers telephoned the local police or Ministry of Natural Resources office to report a crime in progress. Many claimed to role model responsible and ethical fishing: purchasing a fishing license; releasing all the big fish—or “breeders”—to perpetuate the species; releasing the “babies” so they had a chance to grow; never taking more fish than was needed; keeping only the males; keeping fish which had been injured or exhausted by an extended fight rather than releasing them to die; treating all species—even the so-called “garbage fish”—with respect; releasing fish which were full of eggs; eating everything which was kept; and cleaning up, not only their own garbage, but the litter left by others on the shoreline. A number suggested that they would be willing to police the fishery on a volunteer basis.

Stewardship was a key aspect of the fishing ethic

for many participants. These interviewees were prepared to deny themselves short-term gain in favour of long-term sustainability and in the interest of future generations. As one participant predicted, “That’s the future for my kids. If we don’t do something about it now, you get another 20 years and your kids come down here or mine come down here, we’re going to be able to show them pictures. See, that’s what the fishing here used to look like”. Another explained, “A sportsman’s going to take care of nature itself. He’s not going to abuse it because he wants it there for tomorrow. He depends on that. That’s his livelihood, that’s his enjoyment. Some people like music, I guess some people like hunting and fishing and he’ll do what he can to restore that”. Participants took their own kids fishing. They took the neighbours kids, their nieces and nephews, and those youngsters illusively defined as “friends”. The idea of conserving the resource for future generations was not some nice abstraction for those we interviewed. Rather it was a concrete desire to see a tradition of fishing which was being actively supported sustained into the future.

A number of participants, while passionate about their pastime and outspoken about changes they would like to see, were downbeat and dispirited when asked if they felt they could make a difference. Individual anglers felt ignored and silenced by a government that no longer seemed to care about them or their sport. A few, while they saw the potential in collective action, lamented that they lacked a force to organize fishermen and unite their voices. Some had become disillusioned with the work of local fishing organizations which had been promising in the early years but had lately devolved into small-minded political bickering. A number were concerned about the power wielded by high profile animal rights groups determined to

put a stop to fishing. One fisherman offered this summary:

Everybody says that baseball and hockey and football are our major pastimes of Canada. I don't think so. I think everybody in their life goes fishing at least once. They got to take their kids down there at least once. It's just tradition. We need someone in Parliament to fight for the fishing community, hunting community to help, to put some money into that.

12.3 Fishery management

The strong fishing ethic held dear by these interviewees was very clearly juxtaposed with recent changes in the Ministry of Natural Resources. There was consensus that the fishery must be a resource managed in partnership between fishermen and government. Unfortunately, while individuals on the shoreline struggled to follow the rules and protect the resource, government decisions were interpreted as short-sighted and an abdication of responsibility. A very common complaint was the slash-and-burn decimation of MNR staff and the resultant unresponsiveness of local offices to reports of resource abuse and dearth of game wardens to monitor illegal practices. Fiscal irresponsibility was another frequently-levelled accusation. Many felt that fishing licenses were too expensive and that little benefit had been seen from over a decade of license revenue. Participants called for increased ministry involvement in stocking programs, habitat restoration, enforcement, ensuring consistent and fair application of law, and in actively promoting fishing. Government regulation of the fishery was another hot topic. Many felt that laws governing seasons, size limits and possession limits could be strengthened. Others, however, vocally protested what they perceived as over-regulation. They feared that recent moves to strictly regulate boating and hunting signalled a trend that would ultimately

make fishing a very costly and complicated sport rather than a family-oriented pastime. Some were angered by government attempts to regulate a large-scale, independent stocking operation run by the Bluewater Anglers, a local fishing organization. These fishermen believed that a "put-and-take fishery" to which the ministry had offered no financial or in-kind contribution should not be subject to government regulation and restriction.

The Ministry of Natural Resources was perceived by many to be prejudiced against south-western Ontario, shoreline fishers and those who wanted to eat fish. Instead of investing in the specific communities which generated license money, the government was blamed for improving the fishing in northern Ontario and Toronto, improving fishing for boat fishers and catering to those who practiced catch-and-release. Decision-makers were felt to be out-of-touch with local issues; one irate fisherman characterized the government as "people who don't fish, who don't live by the water, people who live in Toronto, who drink cappuccino and take the bus". Many interviewees were disgruntled with a focus on salmon stocking. Salmon were voracious eaters whose insatiable appetites were blamed for the decline in the population of small fish like minnows, yellow perch and smelt. As one fisherman put it, "a 30 pound Salmon eats its body weight in fish a day". Other participants objected to salmon stocking because salmonids weren't preferred eating fish; because they weren't thought to be indigenous to the river; because they could not be fished all year round; and because they were difficult to fish from shore and therefore were the purview of rich anglers with boats and downriggers. Instead, a number of fishermen suggested stocking walleye or yellow perch in the river.

A number of fishermen contrasted Ontario's

approach to fishery management with the strict enforcement, large-scale stocking operations, intensive research and meaningful attempts to involve anglers in decision-making practiced in the U.S. As one interviewee quipped, "If you're a sportfisherman in the States, they treat you like king of the waters".

12.4 Commercial fishing

When the topic of selling fish came up in interviews, participants offered a range of responses. Some told stories of politely refusing to sell their catch while others used such moments as a platform to vociferously condemn the commercial fisheries operating on Lake Erie and Lake Huron, and the prevalence with which Aboriginal people were thought to sell their catch. While the specific content of responses and the vehemence of delivery differed, the unanimous message sent by interviewees was that Great Lakes fish, as part of a market economy, was not a positive development in fisheries management.

Threads of conversation about First Nations fishermen were often a tangle of generalized resentment and diatribe regarding treaty rights and special privileges. There were, however, specific criticisms and concerns related to fishing. While laws permitting Aboriginal fishermen to harvest fish for personal or ceremonial consumption were not a concern, fishermen we spoke with often accused Native fishermen of "greed" and "making easy money" by selling their catch locally and in the U.S. Concerns were expressed about gill and dip netting, "wasting" or "dumping" fish which could not be sold, harvesting during the spawn, and

refusing to institute quotas on their catch.

Equally resented, however, was Purdy's, a commercial fishing operation on lower Lake Huron. Purdy's was blamed for the drop in the walleye and perch populations and was resented for setting nets too close to shore, for taking the prized eating species, for applying for increased quotas, for "wasting" fish that were caught in notoriously indiscriminate gill nets, and for failing to "give back" to the community or the fishery. As one fisherman remarked, "I think my biggest worry isn't so much the contaminants or the pollution but it's the commercial fishery".

Big business, in general, was viewed as unfair competition for individual recreational fishers who seemed heavily regulated in comparison. One fisherman explained, "The sports fisherman puts as much or more money into the system as the commercial fishermen...If the commercial guys get a raise, give us another fish a day. If they can withstand a 70% increase for the commercial guys, surely we can grab another couple of fish". Another stated, "the fish industry is taking all the stock while our limits are going down. The fish industry is taking over". The fact that Canada continued to allow a sizable corporate catch was viewed as officially-condoned exploitation and, to those we interviewed, symbolized a valuing of commercial interests and overseas trade at the expense of a large and lucrative domestic sport fishing industry. Unlike commercial interests, which shipped resources out of the country and gave very little back to the community, sport fishers were seen as investing in local business and communities.



13.0 CONCLUSIONS

Shoreline fishing along the St. Clair River is about community, culture, and connectedness to the environment. It is about mental health maintenance, management of physical maladies and growing good families. Compared to so many activities, shoreline fishing is largely barrier-free. Fishers, however, perceive their pastime to be threatened—by environmental degradation, by exotic species introductions, by cutbacks in the Ministry of Natural Resources, by animal rights activists, by dwindling fish stocks. It is these subjects, and not issues of contaminated fish and health risks, which fishers are most interested in discussing. The potential risks to physical health posed by consumption of St. Clair River fish seem small in comparison to the incalculable risks to mental health if local fishing is decimated due to poor decision-making by fishery managers and other government decision-makers.

This is not to suggest that those who eat St. Clair River fish are ignorant or complacent regarding potential risk; although they are not preoccupied with questions of health risks, many are active about minimizing their exposure to both chemical and bacterial contaminants. It appears, however, that the primary method of communicating fish advisory information—the Guide to Eating Ontario Sport Fish—is not particularly effective at reaching those on the St. Clair River shoreline, especially those with less formal education. We recommend that to be effective, this important information be presented through communication channels fishers already employ, like the media, fellow fishermen, and fishing-related organizations and businesses. We suggest the information be simplified and locally-specific. And we believe that it should build on other interests, like resource management

issues, since fishermen often see their own health and the health of the environment—including the fishery—as related concerns and symptoms of a common problem which deserve integration.

In terms of their fish consumption, St. Clair River participants were quite different from those interviewed in Metro Toronto, Hamilton Harbour and along the shores of the Niagara River but seemed quite similar to those interviewed along the Detroit River. More St. Clair River interviewees ate fish from the river and those that didn't eat were less likely to offer pollution-related reasons for forgoing a fish meal. Those who ate St. Clair River fish were less likely to be concerned about fish and water quality than those fishing in Lake Ontario locations. It appears, then, that the connection to a local, urban waterway has not been so thoroughly severed among St. Clair River anglers. The stigma and shame attached to eating fish from the river, however, could ultimately cut this important cultural and social link to the environment and alienate anglers from a potentially high quality and certainly highly valued food source.

Local fishermen, particularly those who eat their catch, could be an incredible resource for the St. Clair RAP and other groups involved in fishery or environmental initiatives. They have hands-on understanding of environmental issues affecting the St. Clair River and a personal investment in river clean-up. Many fishermen are vocal, opinionated, creative, committed individuals. They bring garbage bags to the shoreline and clean up after their fellow fishermen, they devote time to local stocking programs, they donate their fish to the local food bank during the salmon derby, they confront law-breakers, and they would be willing to police the fishery on a volunteer basis. The fishermen we met could rarely be characterized as “joiners”, so some effort would have to go

into mobilizing them, but they demonstrated an almost instinctual understanding of “the ecosystem approach”, strongly believed in stewardship, and had interesting ideas—all of which make them an invaluable resource to those working on environmental cleanup initiatives. Those who invest the most in the sport—in terms of years fished and days per year spent fishing—appear to be the greatest allies for the river. It is these fishermen who seemed the least likely to have written off the resource, being more likely

to eat the fish and in greater quantities.

If our research strategy has shown one thing, it is the value of listening to the words of those who “use the resource”. Perhaps the most important point in this report is that questions regarding recreation, food, pollution, and risk assessment should be approached from the perspective of those closest to the issues, and those who may be impacted the most by particular policy decisions.



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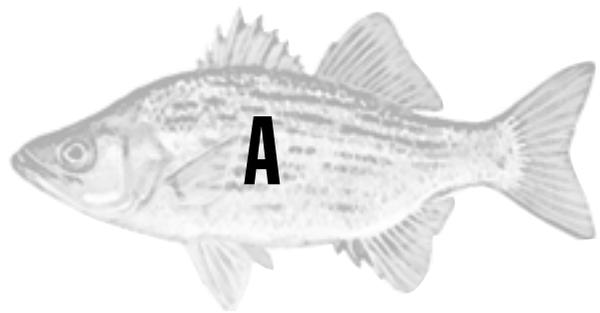
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**SPORT FISH AND WILDLIFE
CONSUMPTION STUDY IN AREAS
OF CONCERN TAPED INTERVIEW GUIDE**

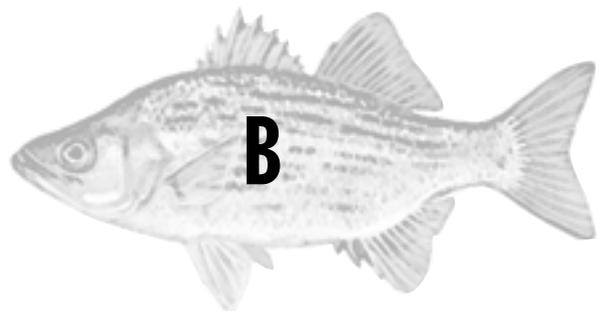
APPENDIX A: Sport Fish and Wildlife Consumption Study in Areas of Concern Taped Interview Guide

THEME	TOPICS TO EXPLORE	SAMPLE QUESTIONS	FOLLOW UP WITH
Benefits of fishing and eating fish	memories	What do you remember about the first time you went fishing/ came fishing here?	who was there? what happened? what was the occasion?
		Does a recent fishing experience stick out in your mind?	what made it memorable?
		What do you like about fishing?	what about eating fish?
	sharing fish with others	Who shares the fish you catch?	friends? family? people on shore?
		Have you ever given fish to strangers?	particular species? locations? do you say where it came from?
		Do you have any get-togethers around eating fish?	what happens? who comes? when?
	favourite ways to eat fish	What are some of the ways you cook fish?	fresh or frozen? what parts?
		Do you have any favourite recipes?	who cooks? who taught you/them?
		Is there a difference b/n market/store fish and what you catch?	what species?
		Are there some things you like about eating the fish you catch?	
		Have you eaten fish recently?	what was that meal like?
	health benefits	Do you think fish is good for you? In what ways?	how did you find out?
		Are some species better for you than others?	different benefits for different ages? sexes?
		Does it matter where you catch them?	
family traditions	How did you learn to fish?	who taught you? any specific	
	Have you taught anyone to fish?	lessons or info you remember?	
	Does your spouse/boyfriend/girlfriend fish?		
cultural significance	Did you fish where you used to live? What was it like?	how does it compare to here? # of fish, kinds of fish, type of people fishing, the local environment	
	Is fishing different for you than for others you see fishing?		
	What's the difference b/n fishing "for sport" and "for food"?		
	What is a "sportsfisherman"? How can you tell?	what is "fishing for sport?"	
financial benefit	Does bringing fish home help with the grocery bill?	in what ways?	
	What do you think about the price of fish in stores?		
	If you didn't fish, would you eat as much fish as you do now?		
experiences at different locations	Is eating the fish important to your overall experience of fishing?	more important at certain locations? certain times?	
	Is your experience different when you eat vs. when you release?		

THEME	TOPICS TO EXPLORE	SAMPLE QUESTIONS	FOLLOW UP WITH
Perceived risks of eating fish	worries about safety of fish	Is there anything you would tell people about fishing in this area? What do you think about the attention fish safety has received?	is it too much? too little? where have you heard about it?
		How would you feel if someone told you it was dangerous to eat the fish you caught in this area?	would it change anything? would you still fish here? would you still eat the fish you caught?
		Do you have any worries about the safety of the fish you eat?	why is this a concern? is it a bigger concern for people of different ages/sexes? how did you hear about it?
	signs of an unhealthy fish	What does an unhealthy fish look like? smell like? taste like? act like? Do pollution/ chemicals have anything to do with that?	different for different species? how do the fish here compare to that?
		When would you say that a fish caught here was unsafe to eat? <i>NOTE: follow up on any discussion of "fresh" or "unfresh" fish</i>	
	health effects	<i>NOTE: This may be a difficult topic to discuss with someone who eats fish s/he catches, so approach it sensitively and supportively</i> Some people wonder if eating fish from here is bad for them. Have you ever wondered about this?	what might some of the consequences be?
		Could eating fish have a negative effect on a person?	short term? long term?
	feelings about the area's environment	Do you have any concerns about the environment around here?	where do these problems come from? where do you hear of them?
		When you think of pollution, what comes to mind? If you had a concern, would you talk to anyone about it?	who? have you ever done this? what was the result?
		Have you heard much about chemicals in the environment?	what effect do they have (on water/ fish/animals/people)?
		What ones are the problems? Why are they a concern?	
	personal definitions of "risky", "dangerous", "unsafe"	what makes an activity or practice "risky"? How do you personally feel about taking risks? would you say that eating the fish you catch is "risky"?	when do you draw the line? why or why not?
Personal protection	preparation practices	How do you clean the fish you catch? Have you made any changes in your method over time? What tips would you offer someone just learning to clean fish?	reasons for this method? different for different species? who taught you?
		What do you do with the fish from when it's caught to when it's eaten? Describe the steps you take. Do you take any special precautions for chemicals that might be in the fish?	who does the cleaning? how about when you give fish away?
	signs of a healthy fish	What does a healthy fish look like? smell like? taste like? act like? What can you eat from around here? Have you ever decided not to eat what you've caught?	diff. for diff. species? how do the fish you catch here compare to that? do you avoid some things? can you remember one of those times? did you ask anyone about it? did you tell anyone about it?
		How do you decide whether a fish is safe to eat?	

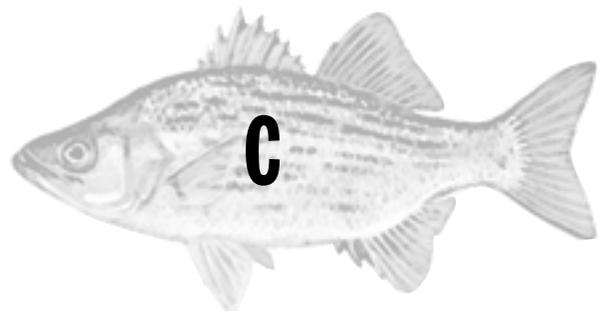
THEME	TOPICS TO EXPLORE	SAMPLE QUESTIONS	FOLLOW UP WITH
	comparisons between different locations	What specific things do you look for when you choose a place to fish?	things about the shoreline? water? the local area? the fish? are there additional considerations when you want to eat the fish?
		Do you prefer some places over others? Why? Does catching fish for eating require some planning, or is it a spontaneous decision?	
	where individual gets info and advice	How do you find out about good places to fish? Safe places?	specific sources? content of the advice? usefulness? trusted? what info does s/he share with others? who and why? anything to do with safety issues?
		Have you ever talked to your doctor about eating the fish you catch? Would you ever talk to him or her about it?	
awareness of advisories	If there were problems with the fish you were eating, how do you think you'd find out about them? Who is responsible for ensuring that those who eat fish are safe? What do you think of the Guide to Eating Ontario Sportfish? If you wanted more information, where would you go to get it?	how would you like to find out? what would you do with this info? what should be done? useful? believable? improvements? have you ever tried? were you happy with what you got?	
Management of the fishery	changes in the area	Have things changed since you've been coming fishing here?	size/type of fish, #/type of fishermen, look/smell of water, local area some changes more of a priority?
		What changes would you like to see?	
		How important is it to be able to catch and eat the fish here?	
		What changes would increase your confidence in the safety of the fish?	
	What do you predict will happen to fishing here in the future?		
components of an excellent fishing experience	What are the most important aspects of a fishing experience? What can be done to improve your experience at spots that lack these qualities?	why are these important? what locations have these qualities?	
responsibility for protection of fishery	What are some things you see on the shore when you're fishing?	should anything be done about it? Who should be responsible for it? ie. anglers, community, volunteer organizations, government at diff. levels, no one etc.	
	Are we all responsible for the fishery, or are some people more responsible than others?	what are some of these responsibilities?	
Feelings/practices regarding food in general	opinions about food	what makes food healthy? Unhealthy? do you prefer certain kinds of foods? Avoid others? what do you think about chemicals in food?	how did you find this out? can you relate that to your feelings about the fish you catch?
		what are your feelings about food you catch yourself? How does it compare to food you buy?	What is different? The same? Does food from the wild have special meaning for you or your family?
	behaviour and choices	where do you do most of your shopping? how do you choose the produce you buy? Meat?	what do you like about it there?
		have your eating habits changed over the years? have you made any changes to the ways you prepare food? <i>NOTE: you could ask how fish fits into any of these issues</i>	why? in what ways? why? in what ways?

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**SPORT FISH AND WILDLIFE
CONSUMPTION STUDY IN AREAS
OF CONCERN QUESTIONNAIRE**

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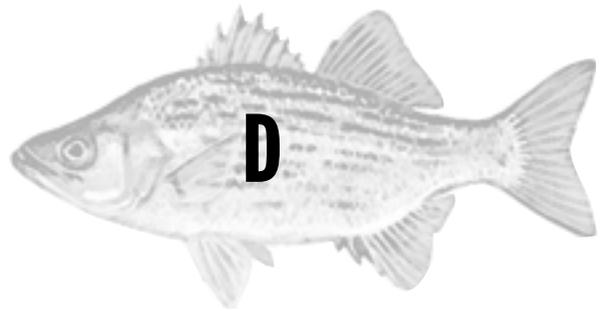


**INTERVIEW QUESTIONS FOR AQUATIC
WILDLIFE CONSUMERS
TOPICS TO BE EXPLORED WITH AQUATIC
WILDLIFE CONSUMERS (IE. DUCK HUNTERS)**

APPENDIX C: Interview questions For Aquatic Wildlife Consumers Topics to be Explored with Aquatic Wildlife Consumers (ie. duck hunters)

- Preferred species and why: contrast this with what the interviewee is actually shooting
- how wild game is prepared, cooked; different species different ways? probe on “fish ducks”
- collect any recipes
- parts consumed: probe on whether interviewee eats skin, makes gravy, “breasting” a bird vs. plucking it etc.
- when is wild game eaten? with whom?
- number of birds that comprise a meal, number of meals eaten in a year
- feelings about contaminants and aquatic wildlife: does the interviewee have any concerns? does s/he believe that consumption poses a health risk?
- what is the connection between hunting and eating what is shot?
- any illegal or distasteful practices witnessed: is there a difference between the interviewee’s attitude toward hunting and others s/he sees out hunting?
- how the interviewee learned to hunt, explore the family connection
- gender issues: what is the division of labour between the sexes? what does his/her partner think about hunting? who does the cooking?
- any other issues the interviewee wishes to explore i.e. decreased access, dwindling habitat, the anti-hunting movement

a p p e n d i x

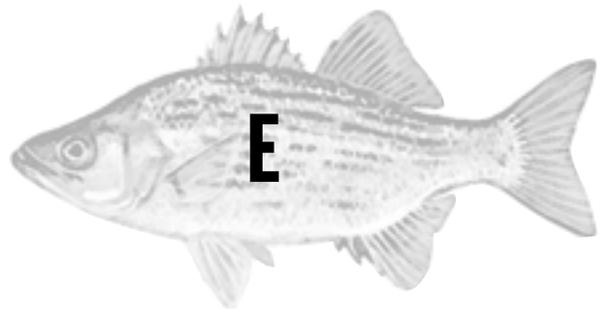


**MAP OF ST. CLAIR RIVER AOC AND
SURVEY LOCATIONS**

APPENDIX D: St. Clair River AOC and Survey Locations



a p p e n d i x



RELATED WORKS AND PUBLISHED PAPERS

APPENDIX E: Related Works and Published Papers

Burger, J., Gochfeld, M., Staine, K. "Fishing in Contaminated Waters: Knowledge and Risk Perception of Hazards By Fisherman in New York City". *Journal of Toxicology and Environmental Health*, 39:95-105, 1993

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Hansen H, De Rosa CT, Pohl H, Fay M, Mumtaz MM. Public health challenges posed by chemical mixtures. *Environmental Health Perspectives* 106 (Suppl 6):1271-1280, 1998

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