

Columbia Slough Fish Advisory
2003 Survey and Outreach Report

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Introduction

Project Goals

The primary goal of the 2003 fish advisory survey was to collect current angling data along the Columbia Slough. Using this data, our analysis will determine how much fishing occurs on the Slough, if anglers are aware of the Columbia Slough fish advisory, and identify consumption pathways of the fish. Overall, the goal of the survey was to educate the angling community on the proper ways of cooking Slough fish, so that they can reduce their health risk.

Previous outreach has been directed towards anglers and fish consumers, and results have indicated a contingent of non-English speaking residents that may be unaware of the advisory and consume Slough fish. BES began to direct outreach towards non-English speaking communities using educational pamphlets translated into languages represented in the Columbia Slough communities. Translations included Vietnamese, Cambodian, Laotian, Spanish, and Russian.

Although many communities both recreate in and inhabit the Columbia Slough watershed, past studies have indicated a contingent of subsistence fishers – those that fish the Slough to provide food for themselves and their families.

By incorporating multi-lingual surveyors, the program ensures that the communities that use the slough will have increased access to important health advisory information.

In addition to the surveys, advisory brochures were left at several boating and fishing retailers and an advisory information table was set up at various public events.

Methods and Procedures

Multi-Lingual Surveyors

Advisory survey teams consisted of Portland area students with skills in several languages: English, Polish, Spanish, Russian, and Ukrainian. Adolfson's study in 1995 (Ochsner, 1996) indicated most anglers from non-English-speaking communities to be of Asian, Latin or Eastern European descent. A Vietnamese speaker was sought to participate in the program, but no Vietnamese students applied. Future outreach efforts should include emphasis within the Vietnamese community.

Surveys / Questions

Teams of (up to) three surveyors drove by car along the Columbia Slough to fishing points on randomly selected days and hours. Teams sought anglers at each survey site, often parking roadside and walking through the known fishing locations. Since some areas along the Columbia Slough are difficult to access, teams used binoculars to aid in the search. A canoe was also used on one occasion to further survey the slough from the water.

The order of the survey questions was structured to create a non-threatening, conversational approach to anglers. Surveys included questions regarding demographics, fishing location, angling habits, fish preparation habits (when applicable), and advisory information (see appendix A for survey). Finally, the 2003 survey data will indicate any change in angling trends along the Columbia Slough since the 1995 angler study. (See Appendix B for raw data gathered in this survey.)

Survey Dates / Times

Teams conducted surveys during August and September of 2003. Survey days were randomly selected. Survey hours for each date were randomly selected from the following set: 8:00am – 12:00pm; 10:00am - 2:00pm and 2:00pm – 6:00pm. Dates and times were modified over the course of the survey months to focus on times when angling activity had been most evident. Mid-way through the survey dates, more survey times at various hours of the day were scheduled to obtain a broader representation of the survey day. Adjustments were also made to the daily schedule based on findings from the first half of the surveys. Surveys were conducted earlier in the day to reach more anglers and surveyors no longer surveyed from two to six in the afternoon as no activity was seen during that time.

Survey Locations

The survey team initiated outreach based on locations used in the survey performed by BES and Adolphson and Associates in 1995. Popular angling locations in the 1995 as well as the 2003 survey were bridges that crossed the Slough waters, allowing anglers an easy access point to reach by vehicle. These locations include bridges, boat ramps, and banks. People found angling the slough in the 2003 survey were mainly fishing from banks along the Slough. The survey team also utilized certain sites as viewpoints, such as 14th Ave., which allowed visibility from Martin Luther King Jr. Blvd. to NE 21st Avenue.

The Columbia slough fish advisory team used angling sites identified during the 1995 advisory survey. A map from the previous survey included all major streets crossing the slough and survey locations, based on evidence of people fishing. Despite the previous survey project, the surveyors had to adapt and explore the slough terrain on their own. They discovered new survey locations, and dropped old ones that were not currently used. (See Appendix C for the map used to locate angling locations for these surveys.)

Site Assessment

The survey team performed site assessments of each access point along the Columbia Slough that the 1995 survey had found popular. Teams documented accessibility, visibility, evidence of angling activity, and characteristics of the site. The assessment allowed the surveyors to more quickly examine each site during the following survey days. While the initial site assessments took more than two trip days to complete the route, subsequent survey days would include an entire tour of the Slough sites. Many survey locations had difficult bank access due to heavy growth of blackberry or other obstruction. (See Appendix D for Site Assessment notes.)

The surroundings of particular sites may have played a role in their assessment. Many sites contained sewer outfalls and multi-lingual warning signs about sewage and contamination posted in direct view which were noted in the assessment. Some sites had very difficult access. For example, St. John's Landfill has been closed since 1991 and the only entrance to the Slough is by an access road. This was also noted in the assessment.

Survey Route

The survey route started out at St. John's Landfill boat ramp off of Columbia Blvd. The route then loops up to Kelley Point Park, Smith and Bybee Lakes, and back to N. Portland Rd. After that loop, the route then zigzags along all major streets that cross the slough heading east; eventually ending up at 185th Ave.

Our surveys indicated no angling activity in the Upper Slough. Survey teams restructured the survey route mid-way through the project to help find more anglers fishing the Lower Slough. This new route started at St. John's Landfill boat ramp, looped towards Kelley Point Park, and led back down to N. Portland road. The Lower Slough route ended at the Martin Luther King, Jr. bridge, or the Middle Slough viewpoint at 21st Avenue. As a result, survey teams could revisit the Lower Slough several times in one day, finding anglers coming and going at different times.

Findings

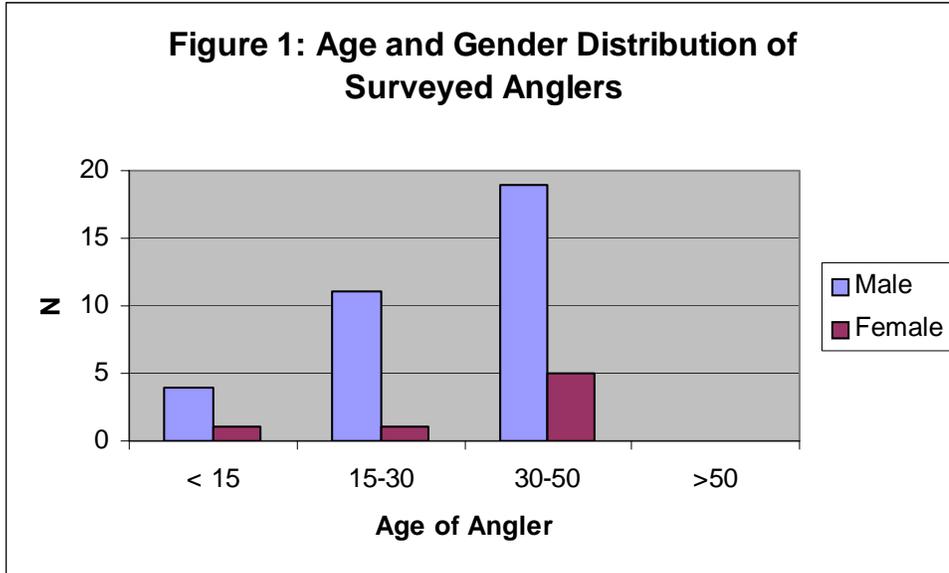
The information gathered from the surveys was used to determine: 1) the characteristics of anglers along the Columbia Slough, including age, gender, and ethnicity; 2) the reports of fish consumption by the anglers along the Columbia Slough; 3) angling behavior, including daily, weekly, and seasonal angling behavior; and 4) recommendations for a more effective outreach program.

A total of 41 anglers were interviewed throughout the two-month process. There was marginal angling activity observed by the surveyors.

1. Angler Characteristics

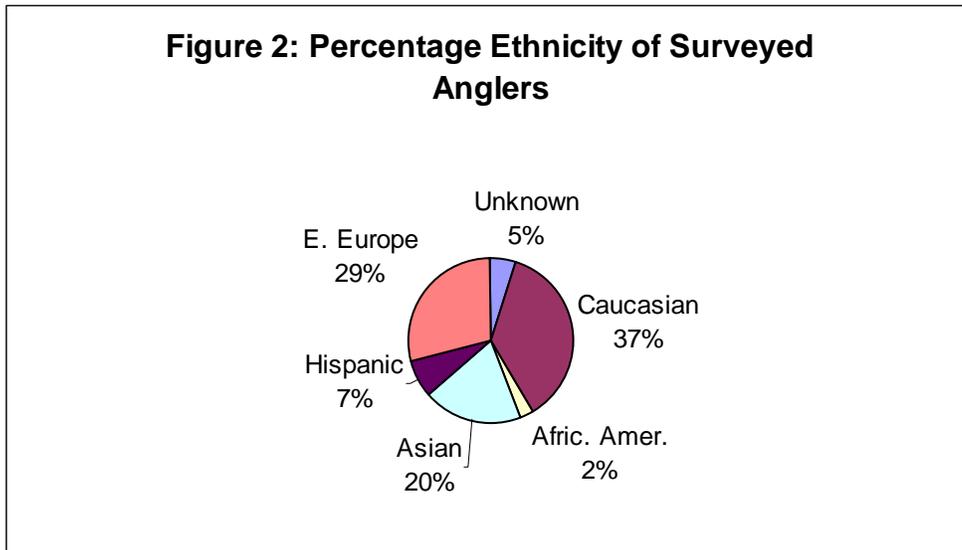
Age and Gender

Figure 1 shows the distribution of angler age and gender for anglers surveyed. Survey teams gathered gender and estimated age information by observation only. Surveys resulted in a total of 34 male anglers and 7 female anglers. Sixty percent of the Slough anglers that were interviewed fell within the 30-50 years old category.



Ethnicity

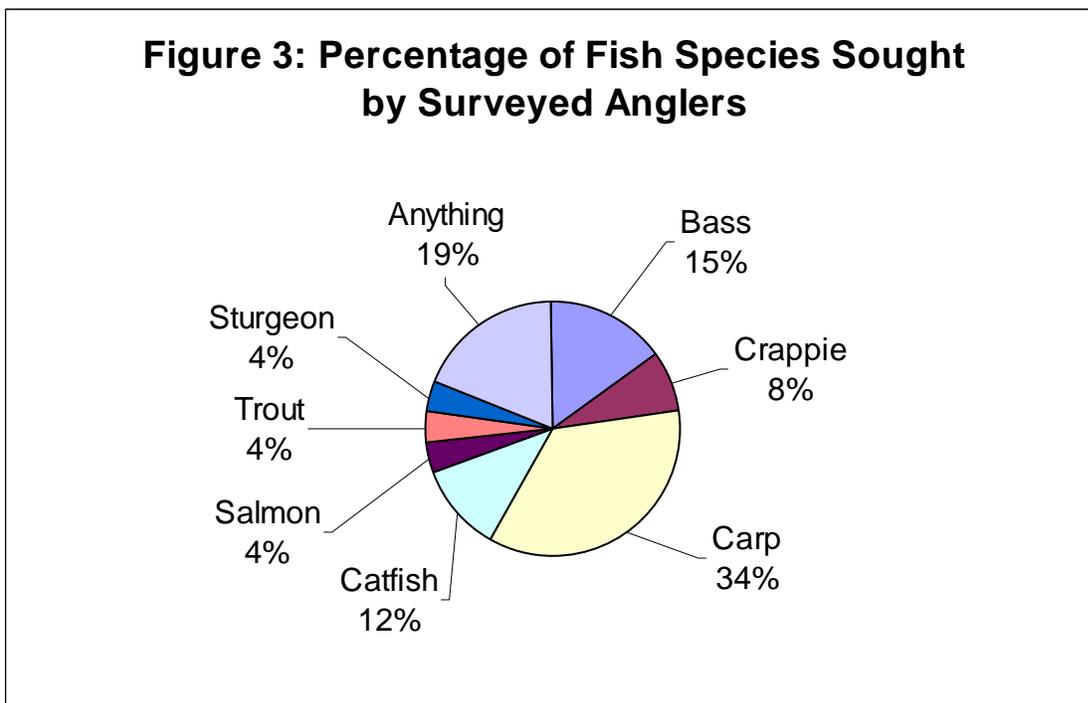
Figure 2 shows the distribution of ethnic groups represented in the surveys taken on the Columbia Slough. A total of 41 anglers were observed during the survey period. When the ethnicity of an angler was unclear, it was not included in the final tally. This occurred twice during the survey trips.



2. Fish Sought and Fish Consumption

Fish Species Sought by Surveyed Anglers

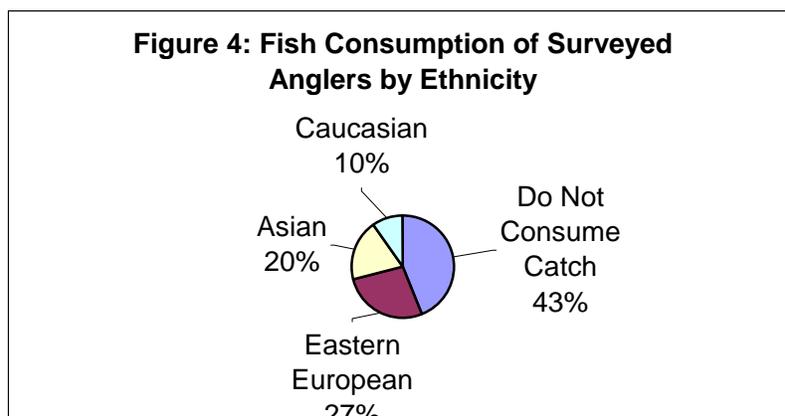
Anglers were asked about fish species sought in the Columbia Slough. While all fish will be affected by contaminated waterways, certain fish species may store more toxic chemicals because of their higher fat content.



Thus, they may pose a greater health risk when consumed. Surveys indicated that carp was the most sought after species of fish for surveyed anglers. Anglers were educated about the recommended way to prepare fish (remove skin and fat) regardless of the fish they catch.

Fish Consumption

Anglers were asked whether or not they consumed the fish caught in the Columbia Slough. Twenty-three anglers out of 41 anglers surveyed stated that they consume Slough fish: 11 Eastern European, 4 Caucasian, and 8 Asian anglers.



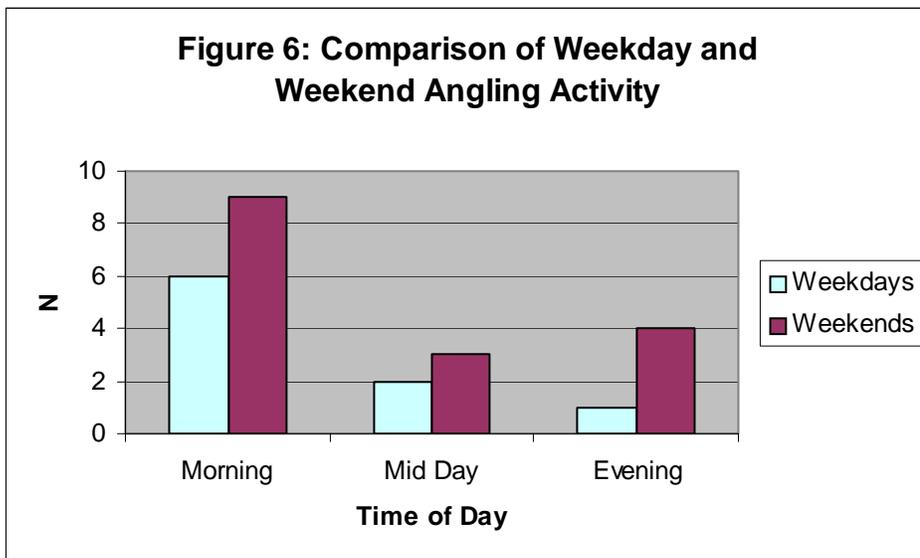
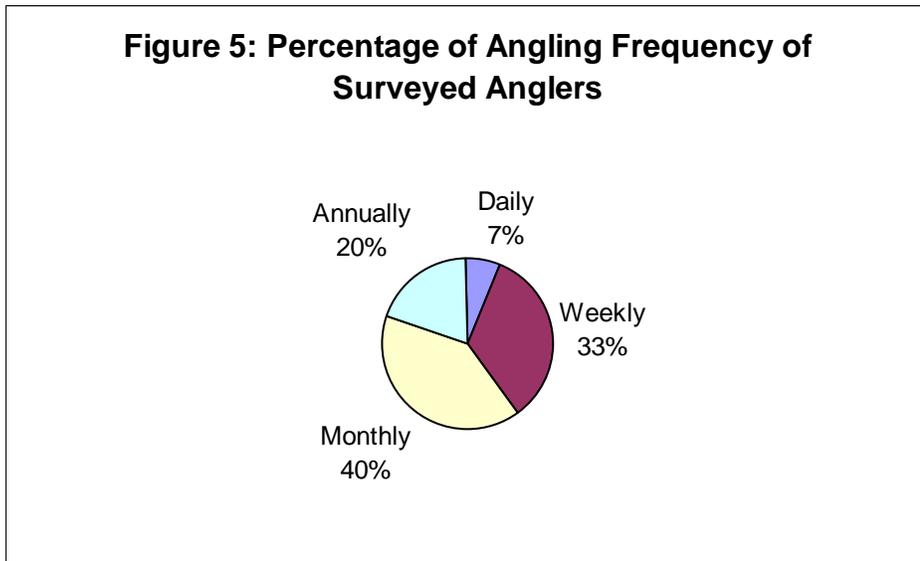
Additionally, **three anglers stated that they sold the fish to local Asian markets.** This information identifies a potential and alternative consumption pathway, and should be examined further.

3. Angling

Angling Behavior

Anglers were asked how often they fish the Columbia Slough. Team members gathered data regarding temporal and seasonal habits of anglers. Figure 5 shows the frequency of surveyed anglers' fishing habits from daily to annual. Figure 6 shows a comparison of angling activity during weekdays and weekends.

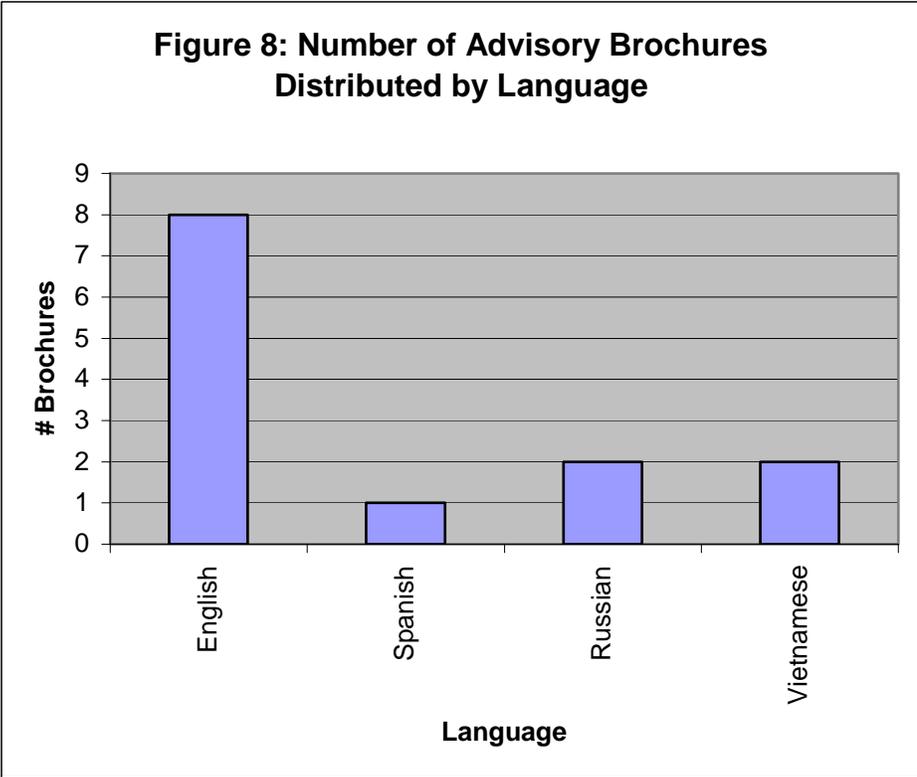
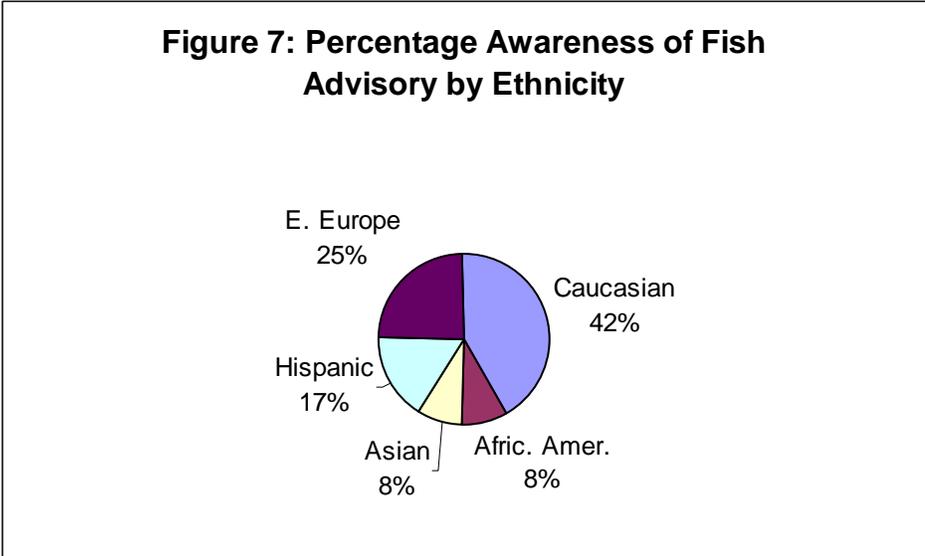
Additionally, five surveyed anglers stated that they fish year-round and 10 stated that they fish only during the warmer months.



4. Outreach Indicators

Brochure Distribution

The final questions in the survey were specifically related to the Fish Advisory. Figure 7 shows the percentage of anglers that were aware of the Fish Advisory by ethnicity. Figure 8 shows the number of English and non-English brochures distributed to anglers.



Other Outreach Methods/Efforts

Information Table

In addition to outreach to anglers along the Slough, outreach and education about the health advisory were also conducted at other community events. Team members presented a fish advisory information table at seven community events throughout the summer. The events included Explorando el Columbia Slough, the Children's Arboretum picnic, the Columbia Slough Regatta, the Interstate Avenue Fair, the 42nd Avenue Fiesta, the 2nd Annual Kenton Festival, and the BES picnic. The "Flip the Fish" display was designed to educate Columbia Slough communities by illustrating a healthier preparation of Slough fish. The table was geared toward children and consisted of a game called flip the fish. Including three skilletts, a hibachi and two broiler pans, participants were challenged to "flip the fish" onto the cooking apparatus that reduces the amount of oils and fat within the fish. Multi-lingual signage advertised the game and a prize that one could win.

The display also included an interactive map of the Columbia Slough. Participants were asked to pinpoint areas along the Slough where they participate in angling activities. Results were to identify any possible angling locations that had not been included in the survey route. One angler participated in this activity and identified Kelley Point Park as the site of his angling.

Brochure Distribution

The survey team distributed foreign language fish advisory brochures to fishing and boating retailers in and near the watershed. The intention in doing so was to get the information into the hands of people fishing or consuming fish from the Columbia Slough. Teams obtained permission of store managers before leaving brochures. Teams visited the following stores and distributed pamphlets: West Marine, 1176 N Hayden Meadows Drive, 10 brochures of each language available; G.I. Joe's, 1140 N. Hayden Meadows Drive, 9 brochures of each language available; and Fisherman's Marine and Outdoor, 1120 N. Hayden Meadows Drive, 10 brochures of each language available. Both West Marine and G.I. Joe's provided racks to display the information, while Fisherman's Marine and Outdoor displayed them on the customer service counter. The brochures were placed so that portions of each language's brochure were visible. Future teams may revisit these locations and assess the demand for the pamphlets.

References

Ochsner, Jean (Adolfson Associates, Inc.). 1996. Technical Memorandum on the results of the 1995 fish consumption and recreational surveys -- Amendment No. 1. Technical memorandum to Chee Choy of City of Portland, BES, April 19.

Appendix A: Survey Form

Date ___/___/___ Time ___:___ am/pm Surveyor:_____ Interview# ___

Site:_____ (refer to map) Mode: Bank Boat Bridge Dock Other_____

Interview Status: 1. Agree 2. Decline 3. Language Barrier 4. Previously Interviewed

Group Type: 1. Alone 2. Family 3. Friends 4. Both

Ethnicity: A. Caucasian D. Asian
B. African American E. Hispanic
C. Native American F. Eastern European
G. Other _____

Sex: A. Male (#) _____ Approx Age: < 15 _____ 15-30 _____ 30-50 _____ over 50 _____

B. Female (#) _____ Approx Age: < 15 _____ 15-30 _____ 30-50 _____ over 50 _____

Hello. We are students from Portland State University, and we're conducting surveys of people fishing along the Columbia Slough. Would you have time to answer a few questions?

1. Where do you fish? Are there any other place that you fish along the Columbia Slough? (*show map*)

2. What are you fishing for? (*show ID chart*)

A. Bass B. Sunfish C. Crappie D. Carp E. Catfish
F. Crayfish G. Salmon H. Trout I. Sturgeon J. Other

3. How often do you fish the Slough?

Daily Weekly Monthly Annually

4. When is your best fishing time?

Weekdays Morning / Mid-Day / Evening
Weekends Morning / Mid-Day / Evening

5. During which seasons do you fish?

Year-round Warmer Months Colder Months

6. Do you and your family eat the fish? Yes No

7. Do you ever sell or give the fish away? Yes No

8. Do you cook the fish? Yes No

Who cooks the fish? _____

How do you cook the fish? _____

9. Are you aware that fish in the Columbia Slough have chemicals in them that could be bad for your health?

Yes

No

10. Have you seen this brochure regarding the Columbia Slough Fish Advisory?

Yes

No

Can I give you this information to take home to your family? (Ask which language)

Thank you for your time. Please take this contact card if you are interested in more information.

Appendix B: Site Assessment Notes

Travel Notes for the Columbia Slough

Kelley Point

Bank access point for the slough is the second turn off from the paved road that leads to Kelley Point Park. Visible evidence of people having fished this site. Visibility is good. From the bank one can see the bridge and where the slough meets the Willamette. Binoculars would be useful at this site. There are two visible outfalls from this bank as well as several warning signs about the contaminants in the slough.

Smith and Bybee

Poor visibility due to dense foliage. Visible evidence of people having fished this site found at access points off the main paved trails.

St. John's Landfill

Not accessible as of August 2003, due to road construction work.

North Portland Road

A paved trail runs along the road and continues east along the slough. There is a pedestrian bridge over the slough east of North Portland Road. Visibility is great from the pedestrian and road bridges. Great bank access to the slough from both sides east of N. Portland Rd.

North Denver Road

Northeast side of Denver has easy bank access. Good visibility to the east. It is necessary to get out of car to view the west side under the bridge.

I-5

Accessible only on south side. Access to slough elsewhere gated off by private property.

Vancouver Boulevard

Good visibility. No access on the east side of the bridge. Southwest side of bridge has good bank access for fishing.

Martin Luther King Jr. Boulevard

Northeast from bridge, access to slough gated off by private property. East access on foot, no parking access. Inaccessible from the west side of the bridge. Good visibility to the east.

14th Avenue

Excellent visibility. 21st Avenue, levy and MLK are visible with the aid of binoculars from this point. Looks like a good fishing spot.

Elrod

Gated off by private property.

21st Avenue

No east bank access. West access is possible but hindered by dense foliage. Some fishing done from the bridge.

33rd Avenue

Difficult to access by car. Use 21st and head north to access 33rd Avenue. The only slough access here is from bridge.

47th Avenue

Bank and dock access from Whitaker Ponds on east side. West side only accessible near bridge.

Cornfoot Road follows from 47th and passes 55th, 63rd on the way to Alderwood. If driving, all these points are visible from Cornfoot, keep right on the road. Cornfoot Road runs along the slough and there are several footbridges crossing the slough along this stretch.

82nd Avenue

Very difficult to access both by foot and car. Not recommended.

92nd Avenue

92nd is only accessible from Columbia Blvd. Only fishing access would be from or near to the bridge.

Johnson Lake

Accessible by Glass Plant Road. Good visibility with binoculars.

105th Avenue

Slough is shallow and narrow here. Visibility is fair.

108th Avenue

Slough is shallow and narrow here. Visibility is fair.

112th Avenue/Prison Pond

Possibly unsafe. Not recommended.

122nd Avenue

Crosses the slough twice. South part of the slough is very narrow. North side is accessible by bridge and bank.

138th Avenue

Slough is very narrow and shallow here during August, not a good fishing spot. Both east and west side have bank access.

148th Avenue

West and East sides have minimal bank access. Though, visibility is good from both sides of the bridge.

158th Avenue

East and West sides of the bridge have good access off the banks. Both sides also have good visibility. A trail runs along the NE side of the slough.

40 Mile Loop Trailhead

Good parking access. Excellent access from dock and the bank under the bridge. A trail runs along the North side of the slough.

185th Avenue

2 visible outfalls East of the bridge. Both East and West sides have bank access.