*2585.06/WP#T-401*

# Reconnaissance (1:20,000) Fish and Fish Habitat Stream Inventory of Goathead Creek

## Watershed Code: 480-027800-11600

**Kispiox Forest District Fish and Fish Habitat Inventory Project**

***Final Report***

*Prepared for:*

**Skeena Cellulose Inc.**
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and
**Ministry of Environment, Lands and Parks**
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June 1998

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## PROJECT REFERENCE INFORMATION

| | |
|---|---|
| **Project Code:** | 06-KISP-3068-0002-1998 |
| **Proponent:** | Ministry of Environment, Lands and Parks |
| **Inventory Program:** | Forest Renewal BC |
| **Contract Number:** | Section of CSK 3068, Skeena Region |
| **FRBC Project Number:** | SB96120 |

## WATERSHED INFORMATION

| | |
|---|---|
| **Stream Names:** | Goathead Creek |
| **Watershed Codes:** | 480 027800 11600 |
| **TRIM map sheets** | 93M.072, 93M.073 |
| **Total Number of Reaches:** | 98 |
| **Number of Reaches/Sites Sampled:** | 17 |
| **Fish Species Present:** | DV |
| **Biogeoclimatic Zone(s):** | ESSF |
| **Survey Dates:** | September 2 - 3, 1997. |
| **MELP Region:** | Skeena Region (6) |
| **Management Units:** | 6-7 |
| **Forest District:** | Kispiox Forest District |
| **Forest Licensee:** | Skeena Cellulose Inc. |

## CONTRACTOR INFORMATION

| | |
|---|---|
| **Survey Agency:** | Triton Environmental Consultants<br>Box 88, Terrace, B.C., V8G 4A2<br>(250) 635-1494 C172 |
| **Project Director:** | Adam Lewis, M.Sc., R.P.Bio. |
| **Project Manager:** | Arne Lorenz, B.Sc. |
| **Field Crew:** | Arne Lorenz, B.Sc., Sam Buchanan, D. Tech., Lloyd Dallyn and Chris Collins |
| **Data Entry:** | Lloyd Dallyn and Sam Buchanan, D. Tech. |
| **Inventory Mapping:** | Shannon Shields, B.A., and Michele Patterson, D. Tech. |

## DISCLAIMER

The Province has not accepted the contents of this product for the purposes of the Forest Practices Code, and reserves the right to dispute the validity of summarized results. The Province does not necessarily agree with the classification assigned to any individual stream reach, for use in logging plans, silviculture prescriptions or any other application.

## ACKNOWLEDGMENTS

Funding for this inventory was provided by Forest Renewal BC - a partnership of forest companies, workers, environmental groups, First Nations, communities and government. Forest Renewal BC funding - from stumpage fees and royalties that forest companies pay for the right to harvest timber on Crown lands - is reinvested in the forests, forest workers and forest communities.

We would like to thank Todd Mahon, Skeena Cellulose Inc. representative who was the contract administrator and provided valuable input throughout the contract, and Paul Giroux, Fisheries Inventory Specialist, Ministry of Environment, Lands and Parks, Skeena Region, who acted as contract monitor and provided technical expertise as well as valuable input throughout the project.

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# 1. INTRODUCTION

## 1.1 Project Objectives

Triton Environmental Consultants Ltd. was contracted by the British Columbia Ministry of Environment, Lands and Parks, Fisheries Branch to conduct stream inventories in select watersheds within the Kispiox Forest District. Information was collected on the biological and physical stream characteristics, fish species assemblage, and fish distribution. The purpose of the Reconnaissance (1:20 000) Fish and Fish Habitat Inventory is to describe watershed-wide fish distributions and habitat characteristics for the project area.

## 1.2 Study Area

The project area is within the Kispiox Forest District in northwestern central British Columbia (Figure 1). The project area covered 11 discrete working areas (Table 1). This report covers Project Working Area #2: Goathead Creek (Table 1). Goathead Creek flows west into Shedin Creek approximately 5.6km upstream from the Babine River - Shedin Creek confluence. The working area is approximately 110 km north-northwest of Smithers (Figure 1). Access to this area was by helicopter from Hazelton, B.C..

**Table 1. Watershed working areas within the Kispiox Forest District**

| Working Area # | Working Area | Stream Network | Watershed Code |
|---|---|---|---|
| **1** | Shedin Creek | Unnamed Creeks, Sperry Creek, Rosenthal Creek, Damsumlo Creek ⇒ Shedin Creek ⇒ Babine River ⇒ Skeena River ⇒ Pacific Ocean | 480 027800 |
| **2** | Goathead Creek | Unnamed Creeks ⇒ Goathead Creek ⇒ Shedin Creek ⇒ Babine River ⇒ Skeena River ⇒ Pacific Ocean | 480 027800 11600 |
| **3** | West Kitsuns Creek Tributary | Unnamed Creeks ⇒ Unnamed Creek ⇒ Kitsuns Creek ⇒ Kitseguecla River ⇒ Skeena River ⇒ Pacific Ocean | 450 318200 18200 45700 |
| **4** | Kitsuns Creek | Unnamed Creek ⇒ Kitsuns Creek ⇒ Kitseguecla River ⇒ Skeena River ⇒ Pacific Ocean | 450 318200 |
| **5** | Larkworthy Creek | Unnamed Creeks ⇒ Larkworthy Creek ⇒ Skeena River ⇒ Pacific Ocean | 400 593800 |
| **6** | Cranberry River Tributaries | Unnamed Creeks ⇒ Cranberry River ⇒ Nass River ⇒ Pacific Ocean | 530-000000 |
| **7** | Carrigan Creek Tributaries | Unnamed Creeks ⇒ Carrigan Creek ⇒ Skeena River ⇒ Pacific Ocean | 400 519600 |
| **8** | Skeena River Tributaries (S. of Larkworthy Cr.) | Unnamed Creeks ⇒ Skeena River ⇒ Pacific Ocean | 400- |
| **9** | Deep Canoe Creek | Unnamed Creeks ⇒ Deep Canoe Creek ⇒ Skeena River ⇒ Pacific Ocean | 400 574200 |
| **10** | Skeena River Tributaries (S. of Sicintine R.) | Unnamed Creeks ⇒ Skeena River ⇒ Pacific Ocean | 400 |
| **11** | Moonlit Creek | Unnamed Creeks ⇒ Moonlit Creek ⇒ Kitwanga River ⇒ Skeena River ⇒ Pacific Ocean | 400 694900 48600 |

**Figure 1. Project overview map**

### 1.3 Review of Existing Information

The Fisheries Information Summary System (FISS) Map 93M/13 has no fisheries information for Goathead Creek.

## 2. METHODS

Standard methodology as outlined in Reconnaissance (1:20 000) Fish and Fish Habitat Inventory: Standards and Procedures (RIC 1997) for performing stream inventories were followed. The reconnaissance level fish and fish habitat inventory is a sample-based survey covering whole watersheds as defined from 1:20,000 scale maps and air photos. The project includes 6 phases as listed below:

Phase 1: Data Review: A review of all available background information was completed. All known fisheries information is summarized in this report; new data were transcribed onto the 1:20,000 TRIM maps, and 1:50,000 NTS maps to update Fisheries Information Summary System (FISS) database (DFO).

Phase 2: Classification and Sampling Design: A comprehensive map and air photo review was completed for all waterbodies identified on 1:20,000 TRIM maps. Reach characteristics (gradient, order, pattern, confinement) were recorded for all streams within the project area and recorded on the Reach Table (RIC,1997). The Reach Table was used to generate a sample size (a subset of reaches to be sampled) within the working area based on RIC guidelines. The Reach Totals and Sample Size Sheet (RIC, 1997) was generated which provides a summary of the number of reaches of each type (based on gradient class, size and pattern/confinement) to be sampled. Detailed Reach Forms were completed for selected reaches to be sampled.

Phase 3: Project Plan: A field sampling plan was developed to sample sites in a variety of stream gradients and stream orders. The purpose of the plan was to describe watershed wide fish distribution, not necessarily to sample all potential fish bearing reaches. Data from Phases 1 and 2, and the Project Plan were presented to and approved by Paul Giroux, MELP Fisheries Inventory Specialist.

Phase 4: Field Inventory: Field sampling of selected sites was completed from September 2-3, 1997.

Phase 5: Data Entry and Analysis: Field sampling data (including site cards, fish cards, and photodocumentation) were entered into the FDIS database. 1:50,000 scale NTS maps of the study area were updated with new information as per the FISS Data Compilation and Mapping Procedures (DFO, 1997).

Phase 6: Reporting and Final Mapping: Field and office data were mapped using Arc View and Arc Info software, photographs were scanned and printed, and draft and final reports were completed.

## 2.1 Changes To Methodology

### 2.1.1 Phase 2

The required number of sample sites as determined by the Reach Sampling Summary were chosen with bias (rather than randomly) to incorporate biological concerns (fish distribution) and access issues. Reach Sampling Summary totals were generated by lumping 9 working areas rather than using totals generated by the individual working area. Additional reaches were chosen upstream and downstream of known barriers to determine limits of fish distribution.

### 2.1.2 Phase 4

All sample site locations (except for no visible channel sites) were marked in the field with flagging tape and with the ILP and site numeric identifier (NID) on a steel tag fixed to a blaze on a tree.

### 2.1.3 Phase 5

Photographic data were edited when entered into FDIS from the original field data forms to reduce duplication of photographs and to eliminate poor quality photographs. Field data forms remain unaltered as a permanent record for the sample site. All photos were taken with 35mm slide film, and scanned using a Nikon LS-1000 film scanner. Slides were scanned at 300 dpi, and saved as *.JPG files (.8 compression). Stored photo files are ~300kb, and uncompress to ~5mg each. Digital photos were printed as thumbnails using Corel Mosaic. All site photos were copied to CD, 2 copies have been sent to MELP Smithers, and Triton will retain 1 copy on file.

### 2.1.4 Phase 6

The inventory and interpretative maps were combined to produce one map. The working area is indicated by blue coloured stream lines. Fish presence is represented by light red highlighting over stream lines (sampled: solid or inferred: dashed) and no fish presence is represented by light blue highlighting over stream lines (sampled: solid or inferred: dashed). Stream classifications are provided for sampled reaches only. Stream summary symbols provide the following information for each sampled site:

- sample site ID,
- fish species presence, not sampled or no fish caught,
- stream or wetland,
- reach confinement,
- reach gradient,
- reach pattern,
- site gradient,
- site channel width,
- site morphology,
- site dominant substrate type,
- site disturbance(s) if applicable, and
- stream classification.

## 2.2 Field Assessments

The Goathead Creek watershed was surveyed on September 2nd and 3rd, 1997. Field assessments followed procedures outlined in Reconnaissance (1:20 000) Fish and Fish Habitat Inventory: Standards and Procedures (RIC, 1997). Generally, the process we followed in the field was to:

- assess the watershed during a helicopter overflight to confirm reach boundaries, identify access points, and photograph reaches at a watershed scale.
- assess each reach on the ground by completing a standard site card, sampling for fish presence, completing a fish collection card and photographing representative habitats.
- identify key features such as barriers to fish migration, spawning locations and bridges; photograph and recorded features on site cards with a unique numeric identifier (NID).

Sample site lengths were equal to the greater of 100m or 10 bankfull widths. Stream widths were determined by measuring the channel width with a tape measure, or by visual estimate. At least 6 channel width measurements were made within each reach, each one at least one channel width distance apart. These measurements were averaged

to determine the average channel width. Stream gradients were measured using a clinometer. Stream morphology was determined using the *Channel Assessment Procedures Guidebook* (MOF 1996). Depths were measured using a folding meter stick. Water quality (pH and conductivity) was assessed using a Hannah pHTestr2$^{TM}$ and TDSTestr3$^{TM}$. Turbidity was assessed by ground estimate. Habitat quality was assessed for rearing, spawning, overwintering and cover, each of these habitat types was rated as either Good, Fair, Moderate or Poor. Wildlife observations were noted.

### 2.3 Fish Sampling

Fish presence was determined by electrofishing at least 100m$^2$ or the equivalent of 10 bankfull widths of habitat in each reach using a Smith Root Model 12B electroshocker. Captured fish were measured (nose-fork length) and keyed out to species using the *Field Key to the Freshwater Fishes of British Columbia* (McPhail and Carveth, 1994). Fish collection forms were completed for each site where fish sampling occurred.

## 3. INVENTORY DATA

### 3.1 Survey Information

A total of 98 reaches were identified within the Goathead Creek working area. A total of 17 sample sites were visited for inventory purposes.

Project inventory maps are presented in Appendix A - Inventory Map. Individual site card information and fish collection data is presented in Appendix B - Stream Site Data from FDIS and Fish Collection Data. Individual site photographs and contact sheets are presented in Appendix C - Photograph Captions and Contact Sheets.

#### 3.1.1 Problems

Watershed codes were not available at the time of mapping and have therefore not been included. All streams were identified with a numeric interim locational point (ILP), ILP's are used throughout this report to identify specific streams.

### 3.2 Fish Distribution

Dolly Varden char (*Salvelinus malma*) were captured in the mountain plateau area of Goathead Creek and many of its tributaries. A 2.5m waterfall at the mouth of Goathead Creek (map sheet 93M.072) may limit upstream migration from Shedin Creek. Goathead Creek is considered fish bearing to the Reach 1 - 2 break approximately 5.3 km upstream from the mouth.

Aerial reconnaissance of Reach 2 did not note any barriers. However, no fish were captured in the steep section (gradient 8%) of Goathead Creek, upstream of the Reach 1 - 2 break.

### 3.3 Fish Habitat

Goathead Creek and its tributaries contains fish habitat throughout the mountain plateau area downstream of the abrupt Shedin Creek valley wall. A small lake and several non classified lakes south of Goathead Creek within the mountain plateau area are included as fish habitat based on sampling. Goathead Creek becomes steep upstream of the mountain plateau and the headwaters are a series of high elevation alpine lakes (1450m).

Reach 1 of Goathead Creek has the best habitat to support Dolly Varden char. Only rearing habitat was encountered during field sampling. No definitive spawning areas were noted although spawning habitat exists in Reach 1 of Goathead Creek and in Reach 1 of unnamed creek ILP 28 (map sheet 93M.073).

### 3.4 Fish Condition

All captured fish appeared to be healthy. Dolly Varden char ranged in size from 35mm - 170mm, all were considered to be rearing. No attempt was made to examine captured fish internally for the determination of maturity. No fish were exhibiting spawning colouration.

### 3.5 Rehabilitation/Enhancement Opportunities

There are no rehabilitation or enhancement opportunities for this working area.

### 3.6 Follow-up Sampling

No follow-up sampling is recommended for any sampled reaches in the Goathead Creek working area. The sampling rate and locations of sites was sufficient to infer fish distribution at the 1:20,000 level for the entire watershed. Where forest harvesting is planned adjacent to inferred fish bearing or non-fish bearing stream reaches with average reach gradient less than 20%, 1:5,000 scale riparian area classifications should be performed to confirm fish presence or absence.

### 3.7 Other Concerns/Interest Points

No concerns or interest points were noted for this working area.

### 3.8 Non-Fish Bearing Reaches

Non-fish bearing reach reports are provided for relevant reaches including intermittent streams (Table 2). The most downstream reach of a stream which was determined to be non-fish bearing is identified in the report. All subsequent reaches upstream are non-fish bearing by default and are not identified separately. No reports are provided for the TRIM anomaly of a no visible channel - a channel that appears on a TRIM map but was not found in the field.

**Table 2. Non-Fish Bearing Status Report for the Goathead Creek Watershed**

| Initial Sampling Date | Follow-up Sampling Date | Watershed Code or ILP Number | Stream Name | Reach Number | Site Number | Map Sheet Number | Capture Method (elecrofishing settings) | Area Covered ($m^2$) | Sampling Effort | Cond. (µS) | Water Temp. (deg. Celsius) | Flow Stage (VO) | Turbidity (V0) | Known Fish Presence (u/s-d/s) | Obstructions to Fish Migration | Seasonal Habitat Availability | Seasonal Fish Use |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 03/09/1997 | - | 1 | Goathead Creek | 2 | 3040 | 93M.073 | EF, 400/60/8 | 625 | 440 seconds | 90 | 9 | Medium | Clear | DV in Reach 1 downstream of gradient break | Gradient barrier at the Reach 1-2 break | All | None |
| 03/09/1997 | - | 2 | Unnamed | 1 | 1050 | 93M.073 | no habitat to sample for fish | - | - | 80 | 12 | Low | Clear | DV downstream in Goathead Creek | 30% gradient at mouth for first 200m | None | None |
| 02/09/1997 | - | 9 | Unnamed | 1 | 3036 | 93M.073 | EF, 500/60/8 | 180 | 245 seconds | 40 | 11 | Low | Clear | DV downstream in Goathead Creek | 30% gradient at mouth for first 50m | All | None |
| 03/09/1997 | - | 3 | Unnamed | 1 | 1048 | 93M.073 | EF, 400/70/6 | 55 | 75 seconds | 100 | 9.5 | Low | Clear | DV downstream in Goathead Creek | 25% gradient at mouth for first 50m | None | None |
| 02/09/1997 | - | 4 | Unnamed | 1 | 1049 | 93M.073 | no habitat to sample for fish | - | - | - | - | - | - | DV downstream in Goathead Creek | 25% gradient at mouth for first 50m | None | None |

# 4. REFERENCES

Department of Fisheries and Oceans. 1997. Fisheries Information Summary System Data Compilation and Mapping Procedures.

McPhail, J.D. and R. Carveth. 1994. Field Key to the Freshwater Fishes of British Columbia.

Ministry of Environment and Department of Fisheries and Oceans. 1995. Fisheries Information Summary System. Map sheet 93M/13.

Ministry of Forests. 1988. Biogeoclimatic and Ecoregion Units of the Prince Rupert Forest Region.

Ministry of Forests. 1995. Fish Stream Identification Guidebook.

Ministry of Forests. 1996. Channel Assessment Procedures Guidebook.

Province of British Columbia, Resources Inventory Committee. 1997. Reconnaissance (1:20,000) Fish and Fish Habitat Inventory: Standards and Procedures.

## Appendix A - Inventory Map

## Appendix B - Stream Site Data from FDIS and Fish Collection Data

## Appendix C - Photograph Captions and Contact Sheets

| Photo Date | Watershed/ Working area | Stream Name or ILP | ILP Mapsheet | Card Site # | Site or Feature NID | NID Mapsheet # | Roll # | Frame # | CD# | Folder | Image | Focal Length (St, Wd, Te) | Dir (Up, Dn, Xs, Fish, Ae) | Comments ( Description and/or scale item) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 97-Sep-2 | Goathead | Goathead C | 93M.072 | 1045 | 02015 | 93M.073 | 18 | 21 | KISPIOX | 18 | 21 | St | Ae | Falls at mouth of Goathead Creek. |
| 97-Sep-2 | Goathead | Goathead C | 93M.072 | 1045 | 02015 | 93M.073 | 18 | 22 | KISPIOX | 18 | 22 | St | Ae | Falls at mouth of Goathead Creek. |
| 97-Sep-2 | Goathead | 00005 | 93M.073 | 1043 | 01043 | 93M.073 | 18 | 24 | KISPIOX | 18 | 24 | St | Dn | Poor photo, focus on branches, channel not clear. |
| 97-Sep-2 | Goathead | 00005 | 93M.073 | 1043 | 01043 | 93M.073 | 18 | 25 | KISPIOX | 18 | 25 | St | Dn | Alder swale, extensive O/H vegetation. |
| 97-Sep-2 | Goathead | 00014 | 93M.073 | 1046 | 01046 | 93M.073 | 18 | 26 | KISPIOX | 18 | 26 | St | Dn | Stream with instream veg, SWD in foreground. |
| 97-Sep-2 | Goathead | 00014 | 93M.073 | 1046 | 01046 | 93M.073 | 18 | 27 | KISPIOX | 18 | 27 | St | Dn | Stream covered by O/H veg. |
| 97-Sep-2 | Goathead | 00005 | 93M.073 | 1043 | 01043 | 93M.073 | 18 | 28 | KISPIOX | 18 | 28 | St | Ae | Aerial view of stream. |
| 97-Sep-2 | Goathead | Goathead C | 93M.072 | 1045 | 01045 | 93M.073 | 18 | 29 | KISPIOX | 18 | 29 | St | Up | Step pool with mossy boulders. |
| 97-Sep-2 | Goathead | Goathead C | 93M.072 | 1045 | 01045 | 93M.073 | 18 | 30 | KISPIOX | 18 | 30 | St | Up | Step pool with person's arm on right side of photo. |
| 97-Sep-2 | Goathead | Goathead C | 93M.072 | 1045 | 01045 | 93M.073 | 18 | 31 | KISPIOX | 18 | 31 | St | Dn | Riffle with debris rafted on left bank |
| 97-Sep-2 | Goathead | Goathead C | 93M.072 | 1045 | 01045 | 93M.073 | 18 | 32 | KISPIOX | 18 | 32 | St | Dn | Step pool morphology with debris jam downstream. |
| 97-Sep-3 | Goathead | 00016 | 93M.073 | 1047 | 01047 | 93M.073 | 18 | 33 | KISPIOX | 18 | 33 | St | Up | Channel in shadow, instream veg. |
| 97-Sep-3 | Goathead | 00016 | 93M.073 | 1047 | 01047 | 93M.073 | 18 | 34 | KISPIOX | 18 | 34 | St | Dn | Reeds both banks. |
| 97-Sep-3 | Goathead | 00016 | 93M.073 | 1047 | 01047 | 93M.073 | 18 | 35 | KISPIOX | 18 | 35 | St | Up | Poor photo, person on photo right, channel in background. |
| 97-Sep-3 | Goathead | 00016 | 93M.073 | 1047 | 01047 | 93M.073 | 18 | 36 | KISPIOX | 18 | 36 | St | Dn | Reeds instream, alder trunk on right. |
| 97-Sep-3 | Goathead | 00016 | 93M.073 | 1047 | 01047 | 93M.073 | 19 | 2 | KISPIOX | 19 | not scan | St | Fish | DV 170 mm caught in minnow trap in lake (Reach 2 of LP00005, 93m.073) |
| 97-Sep-3 | Goathead | 00003 | 93M.073 | 1048 | 01048 | 93M.073 | 19 | 3 | KISPIOX | 19 | 1 | St | Dn | Small stream covered by alder swale |
| 97-Sep-3 | Goathead | 00003 | 93M.073 | 1048 | 01048 | 93M.073 | 19 | 4 | KISPIOX | 19 | 2 | St | Up | Small stream covered by alder swale |
| 97-Sep-3 | Goathead | 00004 | 93M.073 | 1049 | 01049 | 93M.073 | 19 | 5 | KISPIOX | 19 | 3 | St | Up | Small channel, ferns and mosses on banks. |
| 97-Sep-3 | Goathead | 00004 | 93M.073 | 1049 | 01049 | 93M.073 | 19 | 6 | KISPIOX | 19 | 4 | St | Up | Small channel, ferns and mosses on banks. |
| 97-Sep-3 | Goathead | 00004 | 93M.073 | 1049 | 01049 | 93M.073 | 19 | 7 | KISPIOX | 19 | 5 | St | Dn | Channel in devil's club patch. |
| 97-Sep-3 | Goathead | 00002 | 93M.073 | 1050 | 01050 | 93M.073 | 19 | 8 | KISPIOX | 19 | 6 | St | Up | Notebook in photo, ferns on banks. |
| 97-Sep-3 | Goathead | 00002 | 93M.073 | 1050 | 01050 | 93M.073 | 19 | 9 | KISPIOX | 19 | 7 | St | Up | Small stream, shallow with algae instream. |
| 97-Sep-3 | Goathead | 00010 | 93M.073 | 1051 | 01051 | 93M.073 | 19 | 12 | KISPIOX | 19 | 10 | Te | Fish | Dv 110 mm. |
| 97-Sep-3 | Goathead | 00010 | 93M.073 | 1051 | 01051 | 93M.073 | 19 | 15 | KISPIOX | 19 | not scan | St | Up | Small stream, alder pole on photo right side. |
| 97-Sep-3 | Goathead | 00010 | 93M.073 | 1051 | 01051 | 93M.073 | 19 | 16 | KISPIOX | 19 | 12 | St | Dn | Stream with alder over channel. |

| Photo Date | Watershed/ Working area | Stream Name or ILP | ILP Mapsheet | Card Site # | Site or Feature NID | NID Mapsheet # | Roll # | Frame # | CD# | Folder | Image | Focal Length (St, Wd, Te) | Dir (Up, Dn, Xs, Fish, Ae) | Comments ( Description and/or scale item) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 97-Sep-3 | Goathead | 00012 | 93M.073 | 1052 | 01052 | 93M.073 | 19 | 17 | KISPIOX | 19 | 14 | St | Up | Seepage showing riparian vegetation, yellow glove left bank. |
| 97-Sep-3 | Goathead | 00012 | 93M.073 | 1052 | 01052 | 93M.073 | 19 | 18 | KISPIOX | 19 | 15 | St | Dn | Seepage showing riparian vegetation, yellow glove left bank. |
| 97-Sep-3 | Goathead | 00007 | 93M.073 | 1053 | 01053 | 93M.073 | 19 | 19 | KISPIOX | 19 | 16 | St | Up | Channel with small tree leaning, overhanging banks. |
| 97-Sep-3 | Goathead | 00007 | 93M.073 | 1053 | 01053 | 93M.073 | 19 | 20 | KISPIOX | 19 | 17 | St | Up | Mossy log over channel. |
| 97-Sep-3 | Goathead | 00007 | 93M.073 | 1053 | 01053 | 93M.073 | 19 | 21 | KISPIOX | 19 | 18 | St | Up | Stream flowing through marshy area. |
| 97-Sep-3 | Goathead | 00007 | 93M.073 | 1053 | 01053 | 93M.073 | 19 | 22 | KISPIOX | 19 | 19 | St | Up | Stream flowing through marshy area. |
| 97-Sep-3 | Goathead | 00007 | 93M.073 | 1053 | 01053 | 93M.073 | 19 | 23 | KISPIOX | 19 | 20 | St | Dn | Stream flowing through marshy area, log over channel. |
| 97-Sep-2 | Goathead | 00024 | 93M.073 | 3035 | 03035 | 93M.073 | 9 | 27 | KISPIOX | 9 | 27 | St | U | Bucket on bank |
| 97-Sep-2 | Goathead | 00024 | 93M.073 | 3035 | 03035 | 93M.073 | 9 | 28 | KISPIOX | 9 | 28 | St | D | Person in orange just visible downstream. |
| 97-Sep-2 | Goathead | 00009 | 93M.073 | 3036 | 03036 | 93M.073 | 9 | 29 | KISPIOX | 9 | 29 | St | Dn | Person behind downed log |
| 97-Sep-2 | Goathead | 00009 | 93M.073 | 3036 | 03036 | 93M.073 | 9 | 30 | KISPIOX | 9 | 30 | St | Up | Bucket behind log. |
| 97-Sep-3 | Goathead | 00028 | 93M.073 | 3037 | 03037 | 93M.073 | 9 | 31 | KISPIOX | 9 | 31 | St | Up | Bucket on LWD. |
| 97-Sep-3 | Goathead | 00028 | 93M.073 | 3037 | 03037 | 93M.073 | 9 | 32 | KISPIOX | 9 | 32 | St | Dn | Person in mid channel downstream |
| 97-Sep-3 | Goathead | 00028 | 93M.073 | 3038 | 03038 | 93M.073 | 9 | 34 | KISPIOX | 9 | 34 | St | Up | Person and bucket on stream bank. |
| 97-Sep-3 | Goathead | 00028 | 93M.073 | 3038 | 03038 | 93M.073 | 9 | 35 | KISPIOX | 9 | 35 | St | Dn | Person in bushes next to channel. |
| 97-Sep-3 | Goathead | 00028 | 93M.073 | 3039 | 03039 | 93M.073 | 9 | 37 | KISPIOX | 9 | 37 | St | Dn | No visible channel, person in orange. |
| 97-Sep-3 | Goathead | 00009 | 93M.073 | 3036 | 03036 | 93M.073 | 14 | 1 | KISPIOX | 14 | 1 | St | Ae | Aerial view of mouth |
| 97-Sep-3 | Goathead | Goathead | 93M.073 | 3040 | 03040 | 93M.073 | 14 | 2 | KISPIOX | 14 | 2 | St | U | Person in orange, back right. |
| 97-Sep-3 | Goathead | Goathead | 93M.073 | 3040 | 03040 | 93M.073 | 14 | 3 | KISPIOX | 14 | 3 | St | D | Alder overstream. |
| 97-Sep-3 | Goathead | Goathead | 93M.073 | 3040 | 03040 | 93M.073 | 14 | 4 | KISPIOX | 14 | 4 | St | D | S curve with riffle. |