Kispiox and Cranberry TSAs
WRP Document Review

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Listing and Preliminary Priorization of Outstanding WRP Projects

Prepared for: **Ministry of Forests**
Skeena Stikine Forest District
Bag 6000
Smithers, BC.
V0J 2N0

Prepared by: **Silvicon Services Inc.**
3560 Victoria Drive
Smithers, B.C. VOJ 2NO

Ralph Kossman, RPBio.
Greg Johnstone, RPF.

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1.0 INTRODUCTION

Silvicon Services Inc. was retained by Kitwanga Lumber Company Ltd. (KLC) to compile a compendium of all outstanding Watershed Restoration Plan (WRP) prescriptions and works in the Kispiox and Cranberry Timber Supply Areas (TSAs). Between ~ 1995 and 2002, WRP reports and publications had been prepared in the Cranberry, Kispiox, Kitseguecla, Kitwanga and the Suskwa River watersheds. There were no WRP reports for other significant watersheds in the Kispiox and Cranberry TSAs such as the Babine River, Sicintine River and Skeena River watersheds. The reports were reviewed and watershed priority lists were prepared of the outstanding WRP recommendations, prescriptions, projects and works for each major watershed with previous WRP reports. The restoration activities were then listed in descending order from Very High to Low on the watershed priority lists.

Priority rankings were taken directly from the original reports except where interest groups identified specific sites as high priority sites. The Very High and High priority sites were placed on an Arc based overview map. The Level 1 IWAP completed for the Kispiox Expert Water Panel was reviewed and numerical values added for the impact categories so the 4th order watersheds could be ranked in order of impacts. Digital files of the report and maps were submitted along with hard copies of each as the final deliverables. Funding for this project was supplied by the Forest Investment Account (FIA) through Kitwanga Lumber Company Ltd.

2.0 REPORT FORMAT

Deliverables include a compendium report with comprehensive lists of outstanding WRP projects in the five watersheds in the Kispiox and Cranberry Timber Supply Areas for which there were WRP reports completed between approximately 1995 and 2002. Along with the compendium report a map in Arc format is supplied which shows the Very High and High priority WRP project site locations, the site number, the data source and year (ie. Site 43, Oikos 1999). Also attached to the database; but not presented on the map, are the Level 1 IWAP scores and priority ranking.

At the outset of this project, it was envisioned that these projects/prescriptions would be priorized as part of the compilation process and the deliverables. However; due to the uncertainty associated with the availability and quantity of funding in the future and the individual priorities of the various government

and non-government interest groups, it was felt that determining the final priority rankings was best decided after consultation between the interest groups had occurred and funding levels were known. For the most part, the various government and non-government interest groups are represented on the Kispiox Expert Water Panel (KEWP) to whom this report has been submitted and whose input will determine the final sites that will receive funding to complete high priority WRP prescriptions or works.

To assist in the final priorization process, spreadsheets were prepared for the outstanding WRP works (prescriptions, assessments, riparian restoration, in-stream works, Routine Effectiveness Evaluations, etc.) and the projects were listed by the priority given them by the authors of the different watershed restoration publications. Priority rankings were taken directly from the original reports except where interest groups identified specific sites as high priority sites. This preliminary priority ranking was considered a good starting point to determine which projects should receive funding. Ratings generated from the Level 1 Interior Watershed Assessment Procedure completed by Glen Buhr (MoF Skeena Stikine) for the KEWP were also included in the spreadsheets for each of the 4th order watersheds to further assist in the final priorization process.

2.1 OVERVIEW COMMENTS

Not all WRP reports were reviewed or were able to be located. In instances where other reports superceded, summarized and/or otherwise referred to previous reports and prescriptions, the newer report was used to compile the list of high priority, outstanding WRP work for the watershed. This also follows the natural progression of an overview assessment followed by detailed or level 2 and 3 assessments and then detailed prescriptions for implementation of site specific WRP activities. The original reports should be referred to for more explicit information on conceptual and detailed prescriptions.

A large number of WRP projects had been summarized and located on 1:20K maps by Shannon Herman, a fisheries technician filling a temporary auxiliary position in the Kispiox Forest District. This was especially useful in the Suskwa watershed as the old watershed code system had been used to identify streams which made locating the sites difficult for those not familiar with the old watershed code system. It was also very useful in producing the digital maps of the high priority sites and served as a check to see that we had captured most of the outstanding high priority WRP projects.

2.2 LEVEL 1 IWAP

A Level 1 Interior Watershed Assessment Procedure on all 4th order sub-basins in the Kispiox and Cranberry TSAs was completed by Glen Buhr, RPF, MoF – Skeena Stikine Forest District as preliminary information to be considered by the Kispiox Expert Water Panel (KEWP) in the preparation of the Kispiox SRMP. Silvicon ranked the 4th order watersheds based on the sum of the scores greater than or equal to 0.5 (the threshold) for the 4 impact categories; Peak flow, Surface erosion, Riparian buffer and Mass wasting. Stream temperature concerns (from KEWP Watershed recommendation list) were included as an impact category however no score was attributed to temperature concerns. The watersheds were ranked in the "Cumulative Impact Category Score $\geq$ 0.5" column from highest to lowest, secondarily by the number of impact categories per 4th order watershed that equaled or exceeded the 0.5 threshold value, and thirdly by alphabetical order.

To show these scores, Silvicon modified the KEWP Recommendations List. All changes to the KEWP Recommendations List are shown in red text while the original text remains in black. In the four "Risk Indicator" columns we added the actual scores from the Level 1 IWAP. Two new columns were then added to the recommendations list. One column was titled "Cumulative Impact Category Score $\geq$ 0.5" and summed the scores greater than or equal to 0.5 for the Impact Categories. The second column was called "Number of Impact Categories $\geq$ 0.5" and simply shows the number of impact categories that equal or exceed the 0.5 threshold value for each 4th order watershed. These two new columns were then sorted from highest to lowest in order to rank the 4th order watersheds. Another column was added to the recommendations list called "IWAP Priority Rank" which shows the overall rank of the 4th order watershed based on the impact category scores and the number of impact categories which equal or exceed the 0.5 threshold value for each 4th order watershed. The "IWAP Priority Rank" column is in blue font. Lastly another column (in red font) was added to the recommendations list which indicates whether there are WRP prescriptions or works in the 4th order watershed that are on the MOE "Potential Stream Restoration Activities for FIA Funding – Kispiox Forest District" list prepared by Chris Broster, MOE, 2005. The ranked Level 1 IWAP watersheds can be found in the modified KEWP Recommendations List in Appendix 1.

For whatever reason, both the Lower Suskwa and Steep Canyon 4th order watersheds do not appear in any of the Level 1 IWAP forms from Form 1 through to Form 11. We were unable therefore to obtain any numerical values to rank these two watersheds although the riparian, fish habitat and stream channel

components in the Lower Suskwa have likely been highly impacted from agriculture, rural development, forest harvesting and road development. The KEWP Recommendations List identifies high impacts from forest harvesting in the Steep Canyon Creek watershed and riparian buffers are identified as an impact category.

There are several watersheds in the Level 1 IWAP that ranked highly but for which there are no known previous WRP reports or riparian assessments. The highest ranked of these is the Andi watershed at fourth. The Andi watershed appears to be located principally within the Nash-Y chart area. This is a heavily developed watershed unit with a high road density and lots of early seral stage vegetation (KEWP Recommendations List 2005). The extent of fish bearing streams in the watershed is unknown. The riparian, surface erosion and peak flow impact categories all are greater than the 0.5 threshold value. A systematic fish inventory followed by a Fish Passage Culvert Inspection is recommended for this watershed.

Other highly ranked watersheds which have no WRP reports or riparian assessments are Blackstock, Borden and Xsan, all ranked 8th; Burdick and Carrigan ranked 13th; Bretson and Chicago ranked 15th; Aluk, Flint and Sterritt all ranked 16th; and Hazelton and Luno ranked 17th. The Blackstock watershed is in an early seral stage due to a large fire and consequently the Equivalent Clearcut Area (ECA) is high. This has driven several of the impact categories over the 0.5 threshold value. In the short term this watershed has a low likelihood of future forest development due to the early seral stage of the stands. For those watersheds listed which have unknown fish distributions, systematic fish inventories are recommended followed up by either a FPCI or a Level 2 IWAP. These watersheds should be priorized by the degree of development in the watershed, ie. more development, higher priority.

3.0 MAJOR WATERSHEDS

Watershed Restoration Reports were prepared for portions of (or all of) five of the major watersheds in the Kispiox and Cranberry Timber Supply Areas. WRP documents for the Cranberry River, Kispiox River, Kitseguecla River, Kitwanga River and the Suskwa River watersheds were reviewed and a spreadsheet of outstanding WRP projects and works was compiled. The spreadsheets are titled "watershed priority lists of potential restoration activities for FIA funding" and were prepared for each of the five major watersheds. The spreadsheets have 8 columns with the following headings; *4th Order Watershed*

and Site Number; *Sub-Basin, Stream or Location*; *Estimated Cost*; *Project*; *Comments*; *Source and Date*; and *Source Priority*.

The first column, *4th Order Watershed*, identifies the 4th order watershed from the Level 1 IWAP in which the project is located. The second column, *Site Number*, identifies the site number of the project as it appears on the overview location maps. Only the sites preliminarily ranked Very High or High have been put onto the map(s). The third column, *Sub-Basin, Stream or Location*, is used to provide more detailed information on the location of the project site such as a specific kilometer on a specific road, a specific creek, UTM co-ordinates, etc. Column four, *Estimated Cost*, is for the estimated cost to complete the project, determined at the time the report was prepared. The year of the cost estimate is added as a comment. The fifth column, *Project*, gives a brief description of the recommended action at the site while the sixth column, *Comments*, allows us to add comments relevant to the recommended action(s). The seventh column, *Source and Date*, lists the report and publication date where the WRP project was taken from. Often the projects are listed in more than one report, particularly where a detailed assessment and/or prescription follow the initial overview assessment. The last column, *Source Priority*, shows the priority assigned to a project by the author(s) of the reports. The Level 1 IWAP ranking for the 4th order watershed that the project is in is also shown in this column.

A watershed priority list of potential restoration activities for FIA funding was prepared for each of the five major watersheds. The WRP projects are listed in order of Very High to Low priority. All **Very High** priority projects have been highlighted in dark gold/yellow shading. **High** priority projects are highlighted in pale yellow. Projects on which the Gitanyow Fisheries Authority and Gitxsan Fisheries Authority commented are highlighted in bright yellow. Gitxsan Fisheries Authority comments came from Kenny Rabnett of the Suskwa Restoration Society. The Watershed Priority Lists are contained in the report in Appendices 2 through 6.

3.1 CRANBERRY RIVER WATERSHED

All of the reports on the Cranberry Watershed cite significant history of harvesting in the riparian zone and floodplain along the mainstem of the Cranberry River and its tributaries, particularly in the reaches along Highway 37 and the Nass FSR. This harvesting in the riparian zone adjacent to the watercourses has impacted the lower and middle reaches of the Cranberry River through increased bank erosion and the subsequent sediment transport and deposition. The cause stems primarily from the lack of a LWD supply and a stabilizing root structure from large mature deciduous and coniferous trees.

Ten of the restoration activities prescribed in the Cranberry River watershed were ranked as High priority and one activity was ranked Moderate-High priority by the respective authors of the various watershed restoration reports for this watershed.

No Fish Passage Culvert Inspections (FPCIs) are known to have been completed for any of the sub-basins in the Cranberry River Watershed to date. However, the Gitanyow FA have applied to the Pacific Salmon Commission for funding to undertake FPCIs in the Cranberry River Watershed this year.

Gitanyow Fisheries Authority (GFA) have reviewed the Cranberry and Kitwanga Watershed Priority Lists (pers. comm. Derek Kingston, March 3, 2006) and have indicated that removal of the two culverts on McKnight Creek (Oikos March 2000) and McKnight Road (McElhanney Map Reference #20) are high priority issues for the Cranberry watershed that should be addressed. The Gitanyow FA rates the McKnight Creek site (Oikos March 2000) as high as it is a major fish producer in relation to its size. They (Gitanyow FA) also see the prescription to alleviate the beaver dammed culvert on the Weber FSR (McElhanney Map Reference #1) as another high priority issue for the Cranberry watershed. These sites have been highlighted with bright yellow on the Cranberry Watershed Priority List found in Appendix 2.

3.2 KISPIOX RIVER WATERSHED

Seven of the restoration activities prescribed in the Kispiox River watershed were ranked as High priority and seven activities were ranked Moderate priority. McElhanney, 2001, ranked sixteen of the 4th order watersheds in priority order for rehabilitation from 1 through 13. Silvicon ranked the first five as High priority and next three as Moderate priority. As well there were two High priority FPCI sites and three Moderate priority FPCI sites.

It is important to note up front that all works on the Kispiox Trail must be co-ordinated with the Ministry of Transport and Highways (MoTH). The Kispiox Trail is a public highway up to a point approximately 100m beyond the start of the Hodder Lake FSR at about 87.8km. Beyond that point the road is a non-status road, i.e. no tenure, therefore at no point is the Kispiox Trail a FSR (Al Harrison pers. comm., Mar 24, 2006). Due to the non-FSR status of the Kispiox Trail, proposed WRP works on stream crossings on the Kispiox Trail are unlikely to be eligible for FIA funding. As well, the lower reaches of many of the

Kispiox River tributary streams, especially in the Lower Kispiox, are on private land. This will require the consent and co-operation of the property owner before any WRP activities can be carried out on the lower reaches of the tributary streams.

Fish Passage Culvert Inspection assessments were completed by Triton in 2001 for the Cullon, Ironside, Corral and Clifford sub-basins. Two sites were ranked as High priority and three sites were ranked moderate priority. These sites have been highlighted with pale yellow on the Kispiox Watershed Priority list found in Appendix 3. No FPCIs are known to have been completed for the remainder of the sub-basins in the Kispiox River Watershed. Ken Rabnett of the Gitxsan Fisheries Authority indicated that the Gitxsan FA plans to conduct FPCIs on the remaining sub-basins in the Kispiox River Watershed this year (pers. comm., Mar 21, 2006).

As mentioned earlier, the Steep Canyon Creek watershed does not appear in any of the Level 1 IWAP forms from Form 1 through to Form 11. We were unable therefore; to obtain a numerical value to rank this watershed, although there reportedly are high impacts from forest harvesting and riparian buffers were identified as an impact category on the KEWP Recommendations List. Previous WRP work has been implemented in the Steep Canyon Creek watershed and further assessment of in-stream structures at sites 02, 08, 34, 36 and assessment of the upper watershed and impacts is recommended (McElhanney 2001). The upper watersheds of Brown Paint and Beaverlodge Creeks are also recommended for further assessment and impacts (McElhanney 2001). The Kispiox Watershed Priority List is located in Appendix 3.

3.3 KITSEGUECLA RIVER WATERSHED

Seven of the restoration activities prescribed in the Kitseguecla River watershed were ranked as Very High priority, twenty one were ranked as High priority and twenty two were ranked Moderate priority by the authors of the various watershed restoration reports for this watershed.

Ken Rabnett of the Suskwa Restoration Society reviewed the Kitseguecla Watershed Priority Lists (pers. comm., March 21, 2006) and indicated that there were six priority areas of concern to the Gitxsan FA. Two of these sites require ongoing Routine Effectiveness Evaluations on completed works; the hillslope stabilization at ~9.5km on the Kitsequecla FSR and the deactivation works in the Kits Creek community

watershed. The other four sites need detailed field assessments and prescription development. These include a failing box culvert on the Shandilla FSR, a large slide into West Kitsuns Creek at ~0.5km on the Slim Jim FSR, a slope failure below a landing on the Andimaul South FSR and tension cracks on steep gully crossings on the upper-most road on the Andimaul North. These six sites have been highlighted with bright yellow on the Kitseguecla Watershed Priority List found in Appendix 4.

Works at Kitseguecla South Site 3 have been previously undertaken but monitoring is required and possibly more complexing of the channel is needed (dependent on monitoring results). This site should be a High priority for Routine Effectiveness Evaluations.

The Gitsegukla Planning Unit Restoration Plan, Rivers and Creeks Consulting Services, January 31, 2001 cites a report titled "Kitsguecla River Watershed Restoration Program Sub-basins Andimaul and Shandilla - Modified overview assessment, modified sediment source survey, and access management plan" which was prepared for the Ministry of Forests by the Gitsegukla Band Council and Cedarvale Resources Ltd. in 1998. This document does not appear on the list of WRP publications that we received from Darren Fillier and is not referenced in any of the other material reviewed. Al Harrison (pers. comm., Mar 22, 2006) at BCTS, Skeena Business Area, Hazelton Field Team has indicated that the only work that BCTS is aware of in the Andimaul was the deactivation of the North Andimaul Road and work on the Kits Creek Community watershed. The Shandilla 4th order watershed includes the Andimaul Creek drainage and is ranked 14th in the IWAP priority ranking with 2 impact categories that exceed the 0.5 threshold value. Darren Fillier (pers. comm., March 31, 2006) confirmed that the Ministry of Environments Skeena Region office in Smithers had a copy of the document referred to above. The document should be reviewed to confirm whether there are other outstanding issues in the Shandilla watershed and to determine if there are outstanding prescriptions for WRP eligible works. Alan Harrison, BCTS, Engineering Technician, Hazelton Field Team, Skeena Business Area should be consulted in conjunction with the review of said document as he has knowledge of the road deactivation activities in the watershed.

No Fish Passage Culvert Inspections (FPCIs) are known to have been completed for any of the sub-basins in the Kitseguecla River Watershed.

3.4 KITWANGA RIVER WATERSHED

Three of the restoration activities prescribed in the Kitwanga River watershed were ranked as Very High priority, 26 activities were ranked High priority and 7 activities were ranked Moderate-High priority by the authors of the various watershed restoration reports for this watershed.

No FPCIs are known to have been completed for any of the sub-basins in the Kitwanga River Watershed although Gitanyow FA prepared a Road Assessment in 2001. This report appears to have focused on the Tea Lake FSR, the Mill Lakes FSR and the 26 Mile FSR systems but was not a Fish Passage Culvert Inspection.

The Gitanyow Fisheries Authority (GFA) has expressed concerns that tributary streams to the west shore of Kitwancool Lake be evaluated/assessed for water quality, sedimentation, fish passage u/s, etc. The Gitanyow FA has done a lot of work on improving sockeye salmon stocks through habitat improvement and the stream inlets on the west shore of Kitwancool Lake are important sockeye salmon spawning habitat. "Another area of importance is the stream area in the upper Kitwanga River between the 26-mile FSR bridge and the Weber FSR bridge. Beavers have overtaken this area and created over 20 large beaver dams that Gitanyow FA breaches yearly to give adult coho access to their native spawning grounds depending on funding. The area now has no defined channel." (pers. comm. Derek Kingston, March 3, 2006).

The Gitanyow FA have identified 6 sites that they regard as high priority sites for WRP work. These sites have been highlighted with bright yellow on the Kitwanga Watershed Priority list (found in Appendix 5). The first is on the mainstem of the Kitwanga River in reach 6 where isolation of fish has been known to occur in late summer. The second site is in reach 10 of the mainstem beginning 600m down-stream of the Weber FSR bridge and continuing up-stream. The other 4 sites include two tributaries to the west shore of Kitwancool Lake and two tributaries to Kitwancool Lake's northeastern shore. Assessment of the two tributary streams to the west shore of Kitwancool Lake includes determination of the history of the area, fish populations, sources of sediments, effects of sediment on fish passage, and water table levels, and possible remedial measures. There is also a threat of channel movement down the old road. The two tributaries to Kitwancool Lake's northeastern shore have fish passage issues. The culvert outlet drop on Trib 44 under Highway 37 is an impediment to fish passage u/s while the culvert on Trib 38 under the

east Kitwancool Lake access road is blocked and requires removal of the material blocking the culvert. These sites have been highlighted with bright yellow on the Kitwanga Watershed Priority list found in Appendix 5.

3.5 SUSKWA RIVER WATERSHED

The Suskwa Restoration Society has produced the bulk of the WRP reports for the Suskwa River watershed. Thirty six of the restoration activity sites prescribed in the Suskwa River watershed were ranked as High priority. Of the thirty six high ranked sites only sixteen were ranked high by the authors of the various watershed restoration reports for this watershed. The other 20 sites were not ranked in the reports but as they all had conceptual or detailed prescriptions completed for them we ranked them as high priority.

Ken Rabnett of the Suskwa Restoration Society reviewed the Suskwa Watershed Priority Lists (pers. comm., March 21, 2006) and indicated that there were six priority areas of concern to the Gitxsan FA. They include hillslope stabilization at 1.5km, 14.5km and ~ 15.5km to 17.0km on the Suskwa FSR, a bridge failure into Jumbo Creek at ~ 11km on the Natlan A Road, a slide into the Suskwa River down-slope of ~ 6.5km on the Hamblin Main and the Skilokis Creek fan bridge at ~ 0.3km on the Hamblin Main. The Ministry of Environment has called for the replacement of the bridge at the Skilokis Creek fan site (Ken Rabnett, pers. comm., March 21, 2006). The above six sites have been highlighted with bright yellow on the Suskwa Watershed Priority list found in Appendix 6.

No Fish Passage Culvert Inspections (FPCIs) are known to have been completed for any of the sub-basins in the Kispiox TSA of the Suskwa River watershed to date.

As mentioned earlier, the Lower Suskwa watershed does not appear in any of the Level 1 IWAP forms from Form 1 through to Form 11. We were unable therefore to obtain any numerical values to rank the watershed although the riparian, fish habitat and stream channel components in the Lower Suskwa have likely been highly impacted from agriculture, rural development, forest harvesting and road development. The other 4th order watersheds (sub-basins) in the Suskwa River watershed are Natlan, Madii Lii, Iltzul, Denison, Upper Suskwa and 15 Mile. The Roche 4th order watershed was included with the Suskwa River sub-basins as the first ~ 1.5 – 2.0km of the Suskwa FSR go through this watershed which is a sub-

basin of the Bulkley River before entering the Suskwa River watershed. The Level 1 IWAP rankings for the 4th order watersheds are as follows; Madii Lii 15th, Iltzul 21st, 15 mile 25th, Natlan, Roche, Denison and Upper Suskwa are not ranked.

4.0 MAPS

Along with the compendium report a map in Arc format is supplied which shows the Very High and High priority WRP project site locations, the site number, the data source and year (ie. Site 43, Oikos 1999). Also attached to the database; but not presented on the map, are the Level 1 IWAP scores and priority ranking. The data base for the map(s) can easily be modified so that annual updates of the WRP projects and status can readily be entered.

The maps also show all the water information, the roads and the 4th order watershed boundaries. Although it could have been plotted at a scale that would fit on a single A0 sized sheet, a larger scale (1:50,000) was used so that the map information was easily legible. This resulted in a single map for each major watershed except for the Kispiox River watershed which required two maps due to the length of the watershed. The Very High and High priority site maps are located in Appendix 7. Appendix 8 has a key map of the fourth order watersheds with the watersheds that have had WRP activity in them highlighted in pale yellow.

5.0 SUMMATION

Some of the WRP publications reviewed are 10 or even 11 years old now and relatively few of the recommended prescriptions have been implemented or acted upon to date. There is a huge backlog/information base of prescriptions, both conceptual and detailed, which could be implemented to restore in-stream and riparian function, enhance fish habitat and restore water quality. Overall there are 10 Very High priority sites and 102 High Priority sites listed on the Watershed Priority Lists. Also important is continued monitoring of completed works through routine effectiveness evaluations to provide feedback so implemented and conceptual prescriptions can continually be refined for improvement.

Of the five main watersheds in which there have been WRP assessments completed to date, Fish Passage Culvert Inspections were only completed in four sub-basins in the Kispiox River watershed within all of the Kispiox and Cranberry TSAs. Darren Fillier (pers. comm., March 10, 2006) has stated that often the "best bang for buck" comes from Fish Passage assessments and addressing the fish passage issues identified in the assessments. He suggests that it may be an idea to implement FPCIs (Fish Passage Culvert Inspection Procedures, WRTC No. 11, Parker, 2000) for the watersheds/sub-basins that have not previously been the subject of this type of assessment. Based on Silvicon's previous experience with FPCIs, we would concur with Mr. Fillier's views. Another aspect is that FPCIs present the opportunity to train personnel in various aspects of fish inventory (electroshocking, minnow trapping, fish ID, fish barrier identification, air photo review, etc.) and technical work (stream measurements and morphology, culvert parameters, data recording, GPS, etc.).

Encouragingly, the 4th order watersheds which ranked highest priority based on the Level 1 IWAP scores generally correspond to the higher priority outstanding WRP project sites, at least for the 4th order watersheds in which WRP assessments and reports were completed. By adding numerical values to the Level 1 IWAP, we were able to identify several high priority 4th order watersheds where previous development had impacted the watersheds and which have not been the subject of any previous WRP assessments. If there is sufficient funding, WRP assessments should begin in these watersheds as early as possible. While this compendium report has identified many high priority sites for watershed restoration activities that are eligible for FIA funding, other high priority sites will come up in the future as stream crossing structures age, previously unassessed watersheds are assessed and natural soil disturbances and stream processes occur. As these sites become apparent, they should be added to the list of outstanding high priority sites and the list be reviewed annually to determine the sites/projects that will receive FIA and/or Northwest Forest Restoration Program funding for stream restoration activities.

6.0 LIST OF WRP LITERATURE REVIEWED

Suskwa River Watershed

Potential Stream Restoration Activities for FIA Funding – Kispiox Forest District. Broster, Chris, MOE, 2005.

Km 34 Creek, Fish Assessment Project 2001, McCarthy, Mike. September 2001

Suskwa Watershed Restoration Program. Assessment and Prescriptions, Surveys and design, and Works. Jacobs, Mike. March 1998.

Suskwa Watershed Restoration Program. Assessment and Prescriptions, Riparian Planting, Instream Works and Monitoring. Jacobs, Mike. March 1999.

Level 1 Interior Watershed Assessment Procedure for 4th order watersheds in the Kispiox and Cranberry TSAs, Prepared by Glen Buhr, RPF, Skeena Stikine Forest District, for the Kispiox Expert Water Panel, 2005.

Ken Rabnett, Suskwa Restoration Society., pers.comm, March, 21, 2006.

Kispiox River Watershed

Watershed Restorative Plan for the Kispiox Watershed, Triton Environmental Consultants Ltd., 2001.

Kispiox Watershed Restoration Project – Monitoring and Assessment, Rehabilitation Detail and Design, McElhanney Consulting Services Ltd. 1999.

Riparian and Aquatic Detailed Assessment and Prescription Development for Identified Sites in the Kispiox River Watershed, Oikos/SKR 1999

Potential Stream Restoration Activities for FIA Funding – Kispiox Forest District. Broster, Chris, MOE, 2005.

Kispiox Watershed Restoration Project – Survey and Design of Stream Rehabilitation Projects. McElhanney Consulting Services Ltd., March 2001.

Kispiox Watershed Fish Passage Culvert Inspection Assessment for Cullon, Ironside, Corral and Clifford Sub-Basins, Triton Environmental Consultants Ltd., December 14, 2001.

Kispiox District Fish Passage Rehabilitation: Survey and Design, Freshwater Resources, March, 2000.

Kitsegukla River Watershed

Kitsegukla River South WRP. Level 1 Detailed Assessment of Fish and Fish Habitat, BioLith Scientific Consultants Inc., 1997.

Gitsegukla Planning Unit Restoration Plan. Rivers and Creeks Consulting Services, January 31, 2001.

Level 1 Assessment for the Kitseguecla Watershed, Vols. 1 and 2, Wild Stone Resources Ltd., Nov. 30, 1995.

Potential Stream Restoration Activities for FIA Funding – Kispiox Forest District. Broster, Chris, MOE, 2005.

Site Survey and Design for Reach 1 of Tributary 1, Kitsequecla River South Sub-Basin, Hydroglyphic Terrain Analysts and Biolith Scientific Consultants Inc., March 31, 1999

Kitwanga River Watershed

Level 1 Assessment for the Kitwanga Watershed, Vols. 1 and 2, Wild Stone Resources Ltd., Nov. 30, 1995.

Enhancing Environmental Values – Watershed Restoration Plan – Kitwanga River Watershed, McElhanney Consulting Services Ltd., October 2001.

Channel Stability Assessment of Reach 5 of the Kitwanga River and Identification of Potential Sites for a Side Channel Development, Hydroglyphic Terrain Analysts, March 1999.

Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999. (**Not reviewed**, McElhanney October 2001 summarized riparian segments with High rehab opportunities in Tables B3 and C3.)

Summary of Stream Restoration Activities at Sites 14 and 15 in the Kitwanga River South Sub-Basin to March 1999, BioLith Scientific Consultants Inc., March 26, 1999.

Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith Scientific Consultants Inc., March 31, 1999.

Potential Stream Restoration Activities for FIA Funding – Kispiox Forest District. Broster, Chris, MOE, 2005.

Monitoring of Water Levels and Dissolved Oxygen Concentrations at Site #1 of the Kitwanga River 2001/2002. Kingston, Derek. Gitanyow Fisheries Authority, March 28, 2002.

Kispiox Watershed Restoration Project – Survey and Design of Stream Rehabilitation Projects. McElhanney Consulting Services Ltd., March 2001.

Cranberry River Watershed

Cranberry River Watershed Level 1 Detailed Fish, Fish Habitat and Riparian Zone Assessment, Final Report, Oikos Ecological Services Ltd., Chris Schell and Irene Weiland, Mar. 2000.

Watershed Restoration Plan – Cranberry River Watershed, McElhanney Consulting Services Ltd, October 2001.

Potential Stream Restoration Activities for FIA Funding – Kispiox Forest District. Broster, Chris, MOE, 2005.

Level 1 Fish Habitat Assessment Procedure for an Unnamed Cranberry River Tributary (Watershed Code 530-253400), Located at 4.2 km of the Nass Forest Service Road. Final Report. Gitanyow Fisheries Authorities, 2001.

Nass Forest Service Road 5.8 KM (WSC-530-224300), Cranberry River Tributary, Level 1 Detailed Fish and Fish Habitat Assessment, Final Report, McElhanney Consulting Services Ltd, Dec 2000.

Cranberry River Watershed Overview Fish, Fish Habitat and Riparian Zone Assessment, Oikos Ecological Services Ltd. and Joseph DeGisi and Associates, 1999.

7.0 REFERENCES

1. Darren Fillier, Ministry of Environment, pers. comm. and e-mail, March, 10th and 31st, 2006.
2. Derek Kingston, Fisheries Biologist, Gitanyow Fisheries Authority, pers. comm., e-mail, March, 3, 2006.
3. Ken Rabnett, Suskwa Restoration Society., pers.comm, March, 21, 2006.
4. Alan Harrison, BCTS, Engineering Technician, Hazelton Field Team, Skeena Business Area, pers. comm., e-mail, Mar 24, 2006.

8.0 APPENDICES

APPENDIX 1

KEWP RECOMMENDATIONS LIST WITH LEVEL 1 IWAP SCORES

4th Order Watershed	LU	Comm. Wat. Y/N	Main FV	Trib FV	Risk Indicator Impact Cat. #1 ≥ 0.5	Risk Indicator Impact Cat. #2 ≥ 0.5	Risk Indicator Impact Cat. #3 ≥ 0.5	Risk Indicator Impact Cat. #4 ≥ 0.5	Cumulative Impact Cat. Score ≥ 0.5	Number of Impact Cat's. ≥ 0.5	IWAP Priority Rank	Level 2 IWAP Req'd?	WRP	On MOE Stream Resto List for FIA$$	Assessment	Pre-Development	Monitoring	Comments
Cullon	Kispiox		VH	VH	Surface erosion (1.0)	Riparian Buffers (1.0)	Peak Flow (0.6)	Temp.	2.6	4	1st	Yes	Y	Yes. Structure replace-ment. $ NA	Channel assessment for Cullon Creek Main.	Maintain riparian buffer. SCQ. Effective riparian reserves on class S4 & S 6.	Repeated channel assessments. IBI Site Code KIS19 & KIS20.	Marked recapture of Coho. Beaver complexes throughout. Intensive logging has led to increased seral and beaver activity.
Tea	Kitwanga		VH	VH	Peak Flow (0.6)	Surface Erosion (1.0)	Riparian Buffer (1.0)		2.6	3	2nd	Yes	Y		Road & SCQ. Channel Assessment. Riparian Assessment.	Maintain Riparian Buffer.	SCQ.	Stream has been torn to pieces. Coho and steelhead. Continue partial cutting. Future harvesting contingent upon channel assessments and SCQ. Recent beaver dam failures.
Corral	Kispiox		VH	VH	Surface erosion (0.9)	Riparian Buffers (0.9)	Peak Flow (0.5)	Temp.	2.4	4	3rd	Yes	Y		ECA. Review WTP for blowdown with respect to establishing riparian reserves on class S4 & S6 streams.	Maintain riparian buffer. SCQ. Effective riparian reserves on class S4 & S 6.	SCQ	Water user. Water heating up in ditchlines, consider additional cross drains. Target 2006 for additional ECA. Intensive logging has led to increased seral and beaver activity.
Andi			VH	VH	Riparian (1.0)	Surface Erosion (0.8)	Peak Flow (0.6)		2.4	3	4th	Yes	N		Fish inventory. If fish value mod. Or high do WAP on trib. Road assessment. SCQ.	Reduce ECA	SCQ and road assessment.	Heavily developed watershed unit with high road density.
Clifford	Kispiox		VH	VH	Riparian Buffers (1.0)	Surface Erosion (0.8)	Peak Flow (0.5)	Temp.	2.3	4	5th	Yes	Y	Yes. Backwater culvert outlet. $7000.00	ECA . Review WTP for blowdown with respect to establishing riparian reserves on class S4 & S6 streams.	Maintain riparian buffer. SCQ. Effective riparian reserves on class S4 & S 6.	Sediment monitoring. Coho escapement monitoring.	History of burn. Difficult to pass wooden stave culverts at junction of Kispiox trail. Water heating up in ditchlines, consider additional cross drains. Target 2006 for additional ECA. Intensive logging has led to increased seral and beaver activity.
Lower Kispiox	Kispiox	Y (part)	VH	VH	Surface erosion (0.7)	Riparian Buffers (1.0)	Peak Flow (0.6)	Temp.	2.3	3	6th	Yes	Y	Yes. Murder Crk. Installn of new X-ing structure and REEs.	Assessment of sediment from roads. SCQ. Overview for temp. sensitivity; roadwork and riparian activity.		IBI. Roads for sediment production, temp. and SCQ. Murder Creek IBI Site Code KIS21.	Dale and Quinmas Creeks are community watersheds. Extensive agriculture and logging. Cleared land has more impact than logging. Review Wilford recommendations. Review Murder Creek channel assessment, detailed watershed assessment. Assessments are drainage specific.
Cranberry West	Cranberry		VH	VH	Riparian Buffers (1.0)	Surface Erosion (0.6)	Peak Flow (0.6)	~~Mass Wasting~~	2.2	3	7th	Yes	Y		Terrain Stability field assessment.	Terrain Stability field assessment.	Site level monitoring of landslides of Class IV and V blocks	Large chunk of operable is burnt causing ECA and riparian to be high. Suggest Category I blocks not be approved until past recommendations implemented; channel stability and riparian assessments, deact. non-ess. roads, replant stream banks, rehab sediment sources, etc. (Carmanah, 1999). This is a face unit to cranberry with extensive burn and logging in riparian.
Blackstock	Tenus		VH	unk	Surface Erosion (0.6)	Peak Flow (0.5)	Rip Buff (1.0) ~~Mass Wasting~~		2.1	3	8th	Yes	N					Low likelyhood of future development. Large Fire has increased ECA above trigger
Borden	Nass Kalum		VH	unk	Peak Flow (0.5)	Surface Erosion (0.9)	Rip Buff (0.7)		2.1	3	8th	Yes	N		Terrain Stablility	Field Terrain Stability Ass, Maintain Riparian Buffers, Reduce Sensitive Crossings	ECA Road Density SCQ	Oikos reported extensive terrain instability
Hazelton East (same as Two-mile?)	Skeena Crossing/Hazeelton	Y	VH	H	Peak Flow (0.6)	Surface Erosion (0.7)	~~Mass Wasting~~ (0.0)	Riparian Buffer (0.8)	2.1	3	8th	Yes	N				IBI Site Code KIS38 (2 mile u/s) & KIS39 (2 mile d/s)	Large portion of Timber Landbase is within the Two Mile Community Watershed.

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Kitsegukla	Kitsegukla		VH	VH	Riparian Buffers (0.9)	Surface Erosion (0.7)	Peak Flow (0.5)		2.1	3	8th	Yes	Y	Yes. Kitseguekla River South, Trib 1. REEs. $2500.00	ECA, including Bulkley portion and area above Kitsuns. Assess Chinook population.	Review terrain mapping. Fan assessments.	Chinook count on a regular basis.	Significant fisheries watershed. Impacted by forestry in the '70's.
Xsan	Tenas		VH		Peak Flow (0.6)	Surface Erosion (0.8)	Riparian Buffer (0.7)		2.1	3	8th	Yes	N					Face units associated with the west banks of Skeena River. Face unit with mulitiple small watersheds. Bench terrain. Not much operable landbase, not high fisheries values. Significant CMT's. Gentle over steep associated with main channel. Benign undulating with few stability concerns.
Cataline	Gail		VH	M	Peak Flow (0.6)	Surface Erosion (0.5)	Riparian Buffer (0.9)		2	3	9th	Yes			Road Assessment. SCQ. Riparian Assessment. Fish Inventory.		Repeat sediment source. IBI Site Code KIS01& KIS02	Gentle over steep.
Derrick	Cranberry		VH	High	Suface Erosion (0.9)	Riparian Buffers (0.6)	Peak Flow (0.5)		2	3	9th	Yes	Y	Yes. Road Deac. $3700.00	SCQ	Deactivate sensitive stream crossings.	SCQ	Review of WRP recommendations.
Ironside	Kispiox		VH	VH	Surface erosion (0.9)	Riparian Buffers (0.6)	Peak Flow (0.5)	Temp.	2	3	9th	Yes	Y		ECA. Review WTP for blowdown with respect to establishing riparian reserves on class S4 & S6 streams.	Maintain riparian buffer. SCQ. Effective riparian reserves on class S4 & S 6.	SCQ. IBI Site Code KIS16.	Significant Coho spawning. Water heating up in ditchlines, consider additonal cross drains. Target 2006 for additional ECA. Intensive logging has led to increased seral and beaver activity.
Cranberry East	Cranberry		VH	VH	Riparian Buffers (1.0)	Surface Erosion (1.0)	Peak Flow (0.4)	~~Mass Wasting~~	2	2	10th	Yes	Y		Terrain stabilty assessment focussing on gentle over steep. Class IV gully system.	Road de-activation as per WRP.	SCQ	Many recommendations from past WRPs. Restoration focus should follow up on WRP and terrain stability assessment.
Kits	Kitsegukla	Y	VH		Peak Flow (0.4)	Surface Erosion (0.7)	~~Mass Wasting~~	Riparian Buffers (1.0)	1.7	2	11th	Yes	Y	Yes. REEs. $2000.00		Consultation with water users until all restoration activities have been completed. Field review of restoration work.	Continuous water quality monitoring.	Recent WRP has improved quality of drainage in Kits creek. Minor amount of operable landbase remaining. History of landuse issues. Past issues with watershed boundaries. LRMP boundaries were larger.
McKnight	Cranberry		VH	High	Riparian Buffers (0.9)	Suface Erosion (0.8)			1.7	2	11th	Yes	Y	Yes. Culvert removal. $4200.00	Road assessments from C&E and, engineering files	SCQ & fish passage. Road and structures review.	SCQ	Active fan at 2 km of the upper Nass FSR
Brown Paint	Kispiox		VH*	VH	Surface Erosion (0.8)	Riparian (0.8)			1.6	2	12th	Yes	Y		SCQ	Riparian Management Plan	Coho censes Temp. IBI Site Code KIS13.	Highest fish value in Kispiox. Beaver work has provided extensive Coho ponds
Hevenor	Kispiox		VH	VH	~~Peak Flow~~	Surface Erosion (0.7)	Riparian Buffer (0.9)		1.6	2	12th	Yes	Y		Road review looking at temp., sediment and stream crossings.	Confirm fish passage issues on Date and Sunday Lake FSR.	As per site level reviews. IBI Site Code KIS26, KIS27, KIS28.	Peak flow related to road density. Agriculture impacts in the lower end. Inherently sensitive to upland activity.
Burdick			VH	VH	Surface Erosion (0.7)	Riparian (0.8)			1.5	2	13th	Yes	N		SCQ - New WAP	Maintain Riparian Reserves, reduce sensitive crossings and deactivate roads	SCQ. IBI Site Code KIS45.	A lot of old development with minimum deactivation
Carrigan	Tenus		VH	high	Surface Erosion (0.9)	Riparian (0.6)			1.5	2	13th	Yes	N		SCQ	Maintain Riparian Reserves, Reduce Sensitive Crossings	Temp	Barrier to Anadmous Fish, High value resident fish.

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Shandilla	Skeena Crossing		VH	VH	Surface Erosion (0.7)	Riparian Buffer (0.7)	~~Mass Wasting~~		1.4	2	14th	Yes	N		Gulley assessment. SCQ.		Monitor fan stability. SCQ.	Alluvial fans. Number of creek crossings and gulleys. Forested slope downstream of Kitseguecla is an extensive active slump flow. High probability of accelerating deep seated slump earth flow.
Bretson	Tenus		High	unk	Surface Erosion (0.6)	Rip Buff (0.7) Temp			1.3	2	15th	Yes	N		Road and SCQ	Maintain Riparian Reserves, Reduce Sensitive Crossings	SCQ	Excessive road density within 100 m of stream. Significantly more sensitive soils than units directly south.
Chicago	Skeena Crossing		VH	VH	Surface Erosion (0.6)	Riparian Buffer (0.7)			1.3	2	15th	Yes	N		Fan Assessment on all creeks. CN fish passage assessment.		Monitor fan stability.	Site level sediment production. Seeley Lake stocked. Hatchery on Chicago Creek. Cuthroat & Coho populations. Community Watershed. No logging in Chicago Creek fan. Number of fish barriers by C N Rail.
Lower Kitwanga	Kitwanga	Y	VH	VH	Peak Flow (0.3)	Surface Erosion (0.6)	Riparian Buffer (0.7)		1.3	2	15th	Yes	Y	Yes. Site 14+15. REEs. $2500.00 Mill Lks FSR Beaver ponds. $72,000.00 HWY 37. Off-channel habitat. $63,000.00	Review WRP.		Repeat Channel Assessment.	Mainstem assessment done. Includes community watershed for Gitanyow. Terrain concerns. Follow recommendations from WRP restoration Lower Kitwanga. High fish values (pink, chum). Look at Gilchrist Channel Assesment and FPCI by MELP 2002 Doug Johnson.
Madii Lii	Suskwa		VH	VH	Peak Flow (0.5)	Surface Erosion (0.3)	Riparian Buffer (0.8)	~~Mass Wasting~~	1.3	2	15th	Yes	Y		SCQ		Road Deactivation on Parker Mainline SCQ	Past bridge failure at 11km on Kenny's road. Concerns about Parker mainline.
Aluk	Cranberry R		High	High	Surface Erosion (0.7)	Rip Buff (0.5) Temp			1.2	2	16th	Yes	N		Riparian Assessment. SCQ. Road assessment including spurs.	Maintain Riparian Reserves, Reduce Sensitive Crossings	Temp	4 Stream crossing sites at risk. High level of riparian logging
Flint	Seven Sisters		VH	VH	Surface Erosion (0.5)	Riparian Buffer (0.7)	~~Mass Wasting~~		1.2	2	16th	Yes	N		Road & SCQ. Review gentle over steep.		SCQ.	Portion is within Coyote, Hell's Bells Mgt. Zone. Some info. In LRMP. Domestic water use.
Sterritt	Tenas		VH		Surface Erosion (0.6)	Riparian Buffers (0.6)	~~Mass Wasting~~		1.2	2	16th	Yes	N		Same recommendations as Sidina.		IBI Site Code KIS05. McCutcheon Creek IBI site code KIS04.	No fisheries concerns.
Douse	Cranberry		VH	High	Surface Erosion (0.6)	Riparian Buffers (0.5)			1.1	2	17th	Yes	Y		SCQ. Riparian assessment Reach 1.		SCQ	
Hazelton			VH	VH	Surface Erosion (0.5)	Riparian Buffer (0.6)			1.1	2	17th	Yes	N		SCQ - New WAP.Terrain Stability.	Maintain Riparian Reserves, reduce sensitive crossings and deactivate roads	SCQ	Hazelton Creek has unstable banks at 1 km. A lot of old development with minimum deactivation
Luno	Hazelton		VH	VH	Surface Erosion (0.5)	Riparian Buffers (0.6)			1.1	2	17th	Yes	N		SCQ on large block in Cordouroy ck.	Maintain Riparian Reserves, Reduce Sensitive Crossings	SCQ	Rock failure up Luno creek. No andamous above highway bridge in Luno. Contains Community Watershed in north end. Glacial Lacustrin at conflunence of Bulkley and Suskwa

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Upper Kitwanga	Moonlit		VH	VH	Temp	Surface Erosion (0.6)	Riparian Buffer (0.5)		1.1	2	17th	Yes	Y		SCQ	Deactivate sensitive stream crossings. New WAP for upper Kitwanga mainstem above lower fan.	SCQ. Temp. Coho juvenile density.	Decommission 26 Mile Road and other roads across the floodplain. Obstructing waterflows on the floodplain, significant fish habitat & temp. issues. Alternate routes into the area should be explored. Low gradient and channels being impacted by current road systems and drainage systems aggravating temp. issues. Work is underway with Gitanyow and potential future funding from DFO.
Cutoff	Larkworthy		VH	H	Riparian Buffer (1.0)				1	1	18th	Yes	N		Same recommendations as Sidina. Moderate priority. SCQI on smaller tribs., new development, and gentle over steep. Assess deactivation of most recent roads.		Moniter gentle over steep for mass wasting and slides into Skeena.	Gentle over steep. No fisheries concerns.
Kiteen	Cranberry		VH	VH	Surface Erosion (0.5)	Riparian Buffers (0.9)			0.9	2	19th	Yes	Y		Terrain Stability field assessment. CAP for Reach 3	Deactivate sensitive stream crossings.	SCQ	At least 1/2 of remaining timber on Class IV & V
Babine SW W?	Babine R		VH	unk	Surface Erosion (0.9)				0.9	1	20th	No	N				ECA	No issues at this time
Iltzul	Natlan			High	Surface Erosion (0.8)	~~Mass Wasting~~ (0.0)			0.8	1	21st	No	Y		New WAP-SCQ	Reduce Sensitive Crossings	SCQ. IBI Site Code KIS35 & KIS 36.	Significant unstable terrain on north side of creek. Gentle over steep. Significant stream crossings. Excessive roads within 100m of streams
Sidina	Tenas		VH		Riparian Buffer (0.8)	~~Mass Wasting~~			0.8	1	21st	Yes	N		Block level Terrain Stability. Forestry impact assessment; roads, stream crossings. Low priority.		Pinenut IBI site code KIS06.	Burn history (1947). Not high fisheries value. No previous forestry assessments.
Kitsegukla East	Kitsegukla		VH	VH	Riparian Buffers (0.7)	Peak Flow (0.4)			0.7	1	22nd	Yes	Y		Review of WRP evaluation.		Gentle over steep monitering of harvest below the road.	Mass wasting at 9.5 km. Extensive WRP work. Gentle over steep.
Shahnagh					Riparian Buffer (0.7)				0.7	1	22nd	Yes						
Boulder	Seven Sisters		VH	VH	Surface Erosion (0.2)	Rip Buff (0.6) ~~Mass Wasting~~			0.6	1	23rd	Yes	N			Maintain Riparian Reserves between Price and Boulder ck		Within Seven Sisters Park. Deactivate Coyote Rd. Flint Ck culvert at highways crossing needs replacement. Portion within Coyote, Hells Bells Mgt. Zone. Domestic water use.
Kuldo Mountain	Kuldo		VH	H	Surface Erosion (0.6)				0.6	1	23rd	No			Road assessment including stream crossings.			Class V terrain. Gentle over steep. Fish presence in small tribs is generally limited to fans on the Skeena valley floor. Road maintenance is an issue.
Sik-E-Dak	Skeena Crossing	Y	VH	VH	Surface Erosion (0.3)	Riparian Buffer (0.6)	~~Mass Wasting~~		0.6	1	23rd	No	N					Community Watershed. Numbers don't reflect actual Sik-E-Dak watershed. High numbers in riparian buffer reflect high development outside forested landbase.

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Date	Kispiox		VH	VH	Riparian Buffers (0.5)	~~Mass Wasting~~			0.5	1	24th	Yes	Y	Yes. Removal of lock blocks and sed. wedge. Construct-ion of pool riffle structures.		Maintain riparian buffers.	Repeat sediment source mapping. IBI Site Code KIS29 & KIS30.	Gentle over steep. Review existing Small Business adaptive management for hydrology. Sensitive chum spawning area. Extensive main channel bar, lateral channel movement, bank failures and debris jams. #3 in the Skeena Watershed for chum.
Deep Canoe	Deep Canoe		VH	H	Surface Erosion (0.5)				0.5	1	24th	No			SCQ. Review terrain on ESA polygons. Temperature Assessment including ditchlines.			Gentle over steep.
Deep Canyon	Kitsegukla		High	High	Suface Erosion (0.5)				0.5	1	24th	No	Y		Review terrain stability map. Channel assessment.	SCQ	Monitor channel assessment.	Confirm water users. Failure at Deep Canyon creek crossing. Gentle over steep CP 124 block 4.
Shelly East	Shelagyote				Riparian Buffer (0.5)				0.5	1	24th	Yes						Cayuse Jack fire. Undulating terrain with moderately extensive wetlands. Natural temperatures may be moderately high.
Utsun	Tenas		VH		Riparian Buffer (0.5)				0.5	1	24th	Yes	N		Same recommendations as Sidina.			Significantly steep watershed. Operable landbase located on face units of trib. No major issues with Salmon FSR.
Wilson	Seven Sisters		VH	VH	Surface Erosion (0.4)	Riparian buffer (0.5)	~~Mass Wasting~~ (0.0)		0.5	1	24th	Yes	N		Instability in Wilson creek, investigate upslope logging.			Domestic water issues. Falls 1km up Wilson creek, fish barrier. Bill Golding has info on Wilson Creek.
15 Mile	Suskwa		VH	High	Surface Erosion (0.5) ~~Mass Wasting~~	Rip Buff (0.4) Temp			0.5	0	25th	No	Y		CAP specific to 15 mile. Road assessment. SCQ.	Remove Bridge	Channel Ass	Bridge Failure restricting flows and road failing into creek 2 km from Suskwa on 15 mile ck.
Atna	Babine R		VH	unk	Surface Erosion (0.5)				0.5	0	25th	No	N		SCQ	Reduce Sensitive Crossings	SCQ	29 stream crossings - 5 > than trigger. Erosion potential and stream power are key factors rather fish presence (down steam fish values)
Shewiliba	Tenas		VH		Surface Erosion (0.5)				0.5	0	25th	No	N		Same recommendations as Sidina.			No fisheries concerns.
Tsugwinselda	Cranberry		VH	VH	Surface Erosion (0.5)				0.5	0	25th	No	Y		SCQ	Deactivate sensitive stream crossings.	SCQ	High goat values. Restrict future harvest. Gentle over steep terrain.
Denison	Natlan			H	Surface Erosion (0.2)	Riparian Buffer (0.2)	~~Mass Wasting~~	Peak Flow (0.1)	0	0	Not Ranked	No	Y		Road assessments in entire unit.		Monitor based on assessments.	Irene Whalen undertook WRP geomorphic assessment. Investigation of snow avalanches CP 200. Harvesting has increased runout of snow avalanches. Concerns about level of deactivation.
East Kispiox	Upper Kispiox		VH	VH					0	0	Not Ranked	No	Y					All in Park.
Lower Suskwa Not in Form 11 or other indicator Forms	Suskwa		VH	VH	Surface Erosion	Riparian Buffers	Mass Wasting			Unknown. Not in Form 11	Not Ranked	Unknown. Not in Form 11	Y	Yes. Skilokis Crk. REEs on in-stream and riparian rehab. $5000.00	Road and drainage structure review. Skliolkis Fan Assesment. Channel assessment of entire mainstem.	Assessment of mainline if future harvesting is contemplated in the Bulkley.	Fan stability. Skilokis Creek IBI site code KIS37.	Existing Debris torrent on road access at 13 km + significant fan at Skilokis creek. Failure into Suskwa at 8 km. Dave Wilford will draft a letter to deal with erosion/hydrology issues related to past forest harvesting given the demise of the major licensees in the Kispiox. Limited opportunity for future development. Focus on restoration.
Babine E	Babine R		VH	High	Rip Buff (0.3) Temp					0	Not Ranked	No	N			Maintain Riparian Reserves	Temp	Future logging needs to maintain riparian reserves due to temp concerns.

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Babine N	Babine R		VH	unk	Rip Buff (0.1) Temp					0	Not Ranked	No	N			Maintain Riparian Reserves	Temp	Future logging needs to maintain riparian reserves due to temp concerns.
Babine S	Babine R		VH	unk	Surface Erosion / SC (0.4)					0	Not Ranked	No	N		SCQ	Reduce Sensitive Crossings	Sedimentation	
Big Slide	Babine R		High	unk						0	Not Ranked	No	N		SCQ	Reduce Sensitive Crossings	Sedimentation	Likely that stream Crossing Rehab will be required. Road systems only partially rehab.
Calamity	Kuldo			H						0	Not Ranked	No			Terrain Stability			No known forestry development.Glaciers in watershed. Fish significance high. Unlikely to be accessed in near future. High level of natural instability. Within East Kispiox/Kuldo SMZ.
Cranberry	Cranberry		VH	VH	~~Mass Wasting~~					0	Not Ranked	No	Y		Channel Stability and Riparian assessment. SCQ.	Deactivate roads in lower reaches.	Channel Stability	High spawining values. Monitor stability of the blocks & roads in Class IV terrain.
Damsumlo	Shedin			H	Surface Erosion (0.2)					0	Not Ranked				Road assessment. Road review with recommendations for winter road.		Sediment production and hydrological impact of mainline and spurs.	Roading through wetland mosaics. Maintenance issues. Winter roads in rough shape.
East Kuldo	Kuldo			VH						0	Not Ranked				Road assessment.		Repeat sediment source.	Within East Kispiox/Kuldo SMZ. Gentle over steep. Class IV and V. Mainline road where it enters watershed goes through Class IV and V terrain.
Gail	Gail		VH							0	Not Ranked	No			Fish inventory. Road review of upper crossing.		Repeat sediment source. IBI Site Code KIS03.	Gentle over steep.
Ginmiltkun	Cranberry		VH	VH						0	Not Ranked	No	Y		Review road and cutblock erosion and make recommendations			Remaining wood on Class IV & V Terrain. Naturally active watershed. Class IV & V adjacent to stream. Directly tributaried to the Cranberry.
Goathead	Shedin		H	H	~~Mass Wasting~~					0	Not Ranked	No	N		Road review of mid watershed spur off Shedin FSR. Assess stream crossing and sediments.			Resident fish populations. Lower reach of road is "soupy". Eastern half of watershed in Atna-Shelagyote RMZ - No harvest zone.
Hanawald	Hanawald		VH	H						0	Not Ranked	No						Possibly natural temperature issues. Central portion is undulating terrain. High stream density and future wap calculations will identify as hazard. Future drainage structures should focus on limiting channel impacts and sediment delivery.
Insect	Skeena West		VH	VH						0	Not Ranked	No	N		SCQ		Sediment monitoring into Insect at crossing.	Crossing issue in Riparian reserve zone, Steelhead hole.

4th Order Watershed	LU	Comm. Wat. Y/N	Main FV	Trib FV	Risk Indicator Impact Cat. #1 ≥ 0.5	Risk Indicator Impact Cat. #2 ≥ 0.5	Risk Indicator Impact Cat. #3 ≥ 0.5	Risk Indicator Impact Cat. #4 ≥ 0.5	Cumulative Impact Cat. Score ≥ 0.5	Number of Impact Cat's. ≥ 0.5	IWAP Priority Rank	Level 2 IWAP Req'd?	WRP	On MOE Stream Resto List for FIA$$	Assessment	Pre-Development	Monitoring	Comments
Java	Larkworthy		VH	H	~~Mass Wasting~~ (0.0)	Surface Erosion (0.3)				0	Not Ranked	No	N		Terrain Stability. General review of road including structures.	Clarify longevity of road. Quick in/out? Investigate other options for access. Justify use of existing roads.	Gentle over steep monitoring.	Roads through gullies. Issues with East to West stretch of Sam Green FSR. Significant sediment movement blocking ditchlines. Serious mass wasting with impacts on Skeena. Concerns with maintenance of deactivation of road. Slump at west end of Sam Green. Road in deep clay ridge. Lots of old landslides. Road passes through head scarps. Long term issues with road. No high value fisheries. Review proposed access due to stability issues.
Juniper	Kitsegukla	Y	High	High						0	Not Ranked	No	Y		Road review.			Burn history.
Kitsuns	Kitsegukla			VH	~~Mass Wasting~~					0	Not Ranked	No	Y		Gulley assessment. Gentle over steep post harvest review. Ensure recommendations from DeBeck have been implemented.	Re-evaluate access in south portion.	Repeat sediment source mapping below blocks and roads.	Gentle over steep terrain. Potential road crosses Class V terrain at creek crossings. Known to have many natural slides and slumps into main channel of Kitsuns and West Kitsuns(REK).
Kitwancool	Kitwancool		H	VH						0	Not Ranked	No	Y		Terrain stability mapping. Channel Assessments.		Monitor slope stability in approved block.	Operable landbase is all along creeks. Steelhead habitat. Possible high bedload. Block on north east trib. Requires field assessment.
Kuldo North	Kuldo			H						0	Not Ranked	No						
Larkworthy	Larkworthy		VH	H						0	Not Ranked	No			Road assessment.		Repeat sediment source.	Review proposed access to Java, Sam Green, and Smokee due to stability issues. Concern about harvest taking place in Class IV that has tribs going directly into Skeena. Proposed blocks (24,23,26) directly above Skeena have gentle over steep terrain with class IV & V. No past harvesting. Very useful study would be to determine whether burn has resulted in an acceleration of erosion in gentle over steep. Block 27 consideration should be given to ensuring a windfirm boundary on Northwest edge adjacent to the floodplain.
Laura	Kitsegukla		High	High						0	Not Ranked	No	Y		Review of Class IV that has been logged or roaded.	Review of Class IV.	To be determined after road review.	High proportion Class IV & V.
Leclair	Babine River		VH		Surface Erosion (0.0)	Mass Wasting (0.0)				0	Not Ranked	No	N		Site level drainage plan.		Repeat Sediment Source.	No development thus for. Gentle over steep. Proposed block 384 Hectares will have impact on site specific hydrology and potentially mass wasting. Highly significant area due to proximity to Babine-sediment transport capability is high.
Lorne	Skeena West		VH	VH						0	Not Ranked	No	N		Terrain mapping			Gentle over steep. Maintain reserves on gentle over steep.
Lower Kuldo	Kuldo			VH						0	Not Ranked	No			Road assessment		Repeat sediment source.	Fish values in lower reach. Chinook & Coho. Gentle over steep. Within East Kispiox/Kuldo SMZ.

4th Order Watershed	LU	Comm. Wat. Y/N	Main FV	Trib FV	Risk Indicator Impact Cat. #1 ≥ 0.5	Risk Indicator Impact Cat. #2 ≥ 0.5	Risk Indicator Impact Cat. #3 ≥ 0.5	Risk Indicator Impact Cat. #4 ≥ 0.5	Cumulative Impact Cat. Score ≥ 0.5	Number of Impact Cat's. ≥ 0.5	IWAP Priority Rank	Level 2 IWAP Req'd?	WRP	On MOE Stream Resto List for FIA$$	Assessment	Pre-Development	Monitoring	Comments
Lower Shedin	Shedin		VH	VH						0	Not Ranked	No	N		Long term access review.	Sediment and Stream Crossings.	Monitor road post construction. Monitor gentle over steep for approved cutblocks in southern portion.	Issues with riparian reserve zones on Toad Main (Mary Creek). Lots of early seral on east side. Known high fisheries values in mainstem. Cascades after reach 2 of Shedin. Resident fisheries (dolly, rainbow) above cascades, populations possibly at risk. Gentle over steep. Part of West Babine SRMP area Concerns with maintenance of high quality natural water partially addressed by ecosystem network.
Lower Shelagyote	Shelagyote			VH						0	Not Ranked	No	N		Detailed road drainage plan.	Detailed surface erosion assessment maps.	SCQ.	Proposed block is in class IV. Assume tourism node will not be logged. Gentle over unstable in small corner of block. Bulltrout values. Fair amount of commercial timber. Harvesting won't affect stream flow significantly, focus on water quality. High soil moisture levels indicates surface erosion issue. Small streams draining from productive forest area provide refugia from glacial mainstem. Special construction techniques may be required if sensitive materials are encountered.
Lower Sicintine	Sicintine		VH	unk	~~Mass Wasting~~					0	Not Ranked	No	N		1:50,000 overview Fish Inventory on map D12 by season.	Detailed drainage mapping 1:5000. Detailed terrain mapping on Class IV + V	Repeat sediment source mapping prior/post harvest.	Gentle over steep terrain. If Stewart-Omineca access road goes in reconcile alignment with proposed logging road.
McCully	Kispiox		VH	VH	~~Mass Wasting~~					0	Not Ranked	No	Y			No logging on floodplain.	Monitor plan blocks for gentle over steep. IBI Site Code KIS25. Helen Lake IBI site Code KIS17 & KIS18. Compass IBI site codes KIS22, KIS23, KIS24.	Approved blocks are gentle over steep. Floodplain extensively cleared.
Mill	Kitwanga		VH	VH	Riparian Buffer (0.4)					0	Not Ranked	No	N		SCQ. Road assessment. Potential fan assessment in upper watershed.	Maintain riparian buffer with emphasis on cedar.		Cuthroat & Dolly Varden in lakes.
Moonlit	Moonlit			VH	Riparian Buffer (0.3)					0	Not Ranked	No	Y		Channel & Fan Assessment if picking up instability as result of pre/post monitoring.		Pre/post Gentle over steep.	Chinook in bottom end.
Nangeese	Sweetin		VH	VH	~~Mass Wasting~~	Riparian Buffers, not captured by analysis (0.3)				0	Not Ranked	No	Y	Yes. Lower Nangeese rearing ponds REEs. $3000.00 Nangesse River. LWD placement. Design and implemtn. $50,000.00	Baseline Reference for all fish species populations / habitats. Riparian and Channel assessment esp. in lower reaches.	This committee be involved in re-development process in SMZ. Should be adhering to all LRMP direction for RMZ.	Adhere to monitoring commitments in FDP. RMZ direction is for monitoring water temp. IBI Site Code KIS10 & KIS11. Beaverlodge IBI Site Code KIS13	Nangeese is key salmonid trib. of Kispiox. Chum noted in system. SMZ on west side of unit, recommendations in LRMP. Review FDP to ensure consistency with LRMP recommendations and original prescriptions. FDP was approved prior to an assessment to determine if remainder of Kispiox watersheds had recovered hydrologically. Past forestry history on mainstem and removal of LWD. Would like RMZ direction applied to entire watershed.

4th Order Watershed	LU	Comm. Wat. Y/N	Main FV	Trib FV	Risk Indicator Impact Cat. #1 ≥ 0.5	Risk Indicator Impact Cat. #2 ≥ 0.5	Risk Indicator Impact Cat. #3 ≥ 0.5	Risk Indicator Impact Cat. #4 ≥ 0.5	Cumulative Impact Cat. Score ≥ 0.5	Number of Impact Cat's. ≥ 0.5	IWAP Priority Rank	Level 2 IWAP Req'd?	WRP	On MOE Stream Resto List for FIA$$	Assessment	Pre-Development	Monitoring	Comments
Natlan	Natlan		VH	VH	Surface Erosion (0.5)	~~Mass Wasting~~				0	Not Ranked	No	Y	Yes. REEs @ 34km Suskwa FSR. $2500.00	SCQ. CAP.	Field stability map.	SCQ. CAP.	Natural and logging related landslides. Mainline through this watershed in poor condition. Road has had landslides and produces sediment to Natlan Creek. Road upgrade required. Road goes through Class IV in lower third of watershed. Act on any recommendations from Gottsfeld 95 and Jacobs 96. Road failure at 16km and 27km.
Nine mile	Hazelton		High		~~Mass Wasting~~	Temp				0	Not Ranked	No	N		Terrain	Field Check Terrain	Temp	
O'dwyer	Sheladamus			VH						0	Not Ranked	No						No proposed development. Lots of terrain issues.
Oliver	Seven Sisters		VH	VH						0	Not Ranked	No	N		Repeat sediment source mapping on portion of block that overlaps ES/Class IV.	Ensure adequate size and number of drainage structures.		Seven Sisters Park.
Poison	Sheladamus			VH						0	Not Ranked	No						No proposed development. Lots of terrain issues.
Porphyry	Hazelton		VH		Riparian Buffer (0.4)					0	Not Ranked	No	N		Detailed terrain stability.			Riparian buffer is primarily on a small tributary to the Bulkley River at the south end of the unit. Timber in upper Porphyry not accessible because of soils. ES along stream channel with potential for gentle over steep erosion.
Price	Seven Sisters			VH	~~Mass Wasting~~					0	Not Ranked	No	N		Road review		Gentle over steep sediment source.	Very unstable watershed.
Quill	Skeena West		VH	VH						0	Not Ranked	No	N		Assess Gentle over steep adjacent to blocks			Main stem is canyon like - dominated by high elevation snow melt so timber harvesting is NOT expected to impact water quality. 5 m Falls 1Km from confluence of Skeena.
Roche		Y	VH	VH	Surface erosion (0.4)					0	Not Ranked	No	N		SCQ		SCQ. IBI Site Code KIS42 (Station Waterfall), KIS44 (Station d/s), KIS43 (Station d/s), KIS41 (Waterfall Cr. Above CN) & KIS40 (Station reference).	Failure at 1.5 on Suskwa FSR is significant sediment input into Bulkley. Should be addressed. Mud Creek is domestic water source. Ensure roads and development do not impact water supply. Old road in lower reaches of Mud Flat Creek is failing directly into the creek. Recommend assessment for rehabilitation. Timber on Station Creek Community Watershed. Committee strongly support DFO recommend pipe under Hwy 16 be rehabbed to allow fish passage.
Rosenthal	Shedin			H						0	Not Ranked	No	N		Site drainage plans.		Gentle over steep and SCQ.	Active avalanche tracks drain through class 4 & 5.
Sam Green	Shedin									0	Not Ranked	No	N				Monitor Sam Green crossing. Road stability. Monitor gentle over steep in approved cutlblocks.	Gentle over steep. High amount of Es1. Issues with Sam Green crossing. Overall low fisheries values, though high fisheries associated with reach one of Sam Green. Merchantable timber above unstable terrain. Review proposed access due to stability issues.
Sedan	Skeena West			VH						0	Not Ranked	No	Y		Terrain Stability			

4th Order Watershed	LU	Comm. Wat. Y/N	Main FV	Trib FV	Risk Indicator Impact Cat. #1 ≥ 0.5	Risk Indicator Impact Cat. #2 ≥ 0.5	Risk Indicator Impact Cat. #3 ≥ 0.5	Risk Indicator Impact Cat. #4 ≥ 0.5	Cumulative Impact Cat. Score ≥ 0.5	Number of Impact Cat's. ≥ 0.5	IWAP Priority Rank	Level 2 IWAP Req'd?	WRP	On MOE Stream Resto List for FIA$$	Assessment	Pre-Development	Monitoring	Comments
Sediesh	Tenas				~~Mass Wasting~~					0	Not Ranked	No	N		Same recommendations as Sidina.			Gentle under steep. No major fisheries concerns.
Shedin East	Shedin		H	H						0	Not Ranked	No	N		Road and structures review.			SMZ through West Babine SRMP. Recommend mainline road be deactivated post harvest. Lower road in Shedin East is Sperry mainline and may be involved in re-evaluating location of Toad mainline (which is access for Lower Shedin).
Shegisic	Babine River		H	H						0	Not Ranked	No	N		Road drainage review for spur roads.		Gentle over steep monitoring for existing cutblocks.	Gentle over steep in category I block. Low fisheries value. Limited opportunity for future development.
Shegunia	Shegunia			VH	~~Mass Wasting~~					0	Not Ranked	No	N		Assess amount of fish habitat for past logging impact. Is pop. decline related to habitat loss?	Zero risk of landslides in presently undeveloped portions. Avoid development in sensitive areas associated with Shegunia mainstem.	Monitor Chinook populations, potenially endangered. IBI Site Code KIS07, KIS08, KIS09.	Class V. Gentle over steep associated with prevoius logging. Fan at mouth. Chinook spawning areas. Survival of stock highest concern of Gitxsan. Population restoration attempted in 1980's. Ensure address code requirements for riparian buffers.
Sheladamus	Sheladamus			VH						0	Not Ranked	No			Confirm terrain stability.			Class IV & V terrain. Gentle over steep. Concern re: road crossing over Sheladamus Creek. Potential channel destabilization at the crossing.
Shelly West	Shelagyote									0	Not Ranked	No	N					No operable landbase
Shenismike										0	Not Ranked	No						
Smokee	Larkworthy		VH	H	Surface Erosion (0.4)					0	Not Ranked	No			Road assessment.		Repeat sediment source.	300-400 h aggregate proposed in northern Smokee. Concern regarding roadwork and bridge going over lower Sicintine and lower Smokee. Review proposed access due to stability issues.
Sperry	Shedin			H	Riparian Buffer (0.0)					0	Not Ranked	No	N		Site drainage plans on south side of Sperry Creek and on north side where trib. Drains through class 4 terrain.		Gentle over steep and SCQ.	Mostly covered by SMZ. 30 year deferral on development in SCI FDP 1999. South side of Sperry Creek is class 4 & 5 terrain. Gentle over steep/unstable.
Steep Canyon Not in Form 11 or other indicator Forms	Kispiox		VH	VH	Riparian Buffers					0	Not Ranked		Y		Riparian assessment.	Maintain riparian buffers.	IBI Site Code KIS14, KIS15.	High coho value at the confluence with Kispiox. Protect floodplain. Review Triton and previous studies to identify key risks to fish. Reported high impact from previous logging. Review of gentle over steep.
Swan Lake	Upper Kispiox									0	Not Ranked	No						Small portion that's outside the park subject to recommendations for Upper Kispiox SMZ. See Nangeese.
Sweetin	Upper Kispiox		VH	VH						0	Not Ranked	No	Y		Channel assessment in lower portion.		Moniter de-activation of the re-activation on the floodplain at 79 km.	Parts are included in the Upper Kispiox SMZ. Lots of Class IV. 79 km bridge crossing, restriction of channel.

4th Order Watershed	LU	Comm. Wat. Y/N	Main FV	Trib FV	Risk Indicator Impact Cat. #1 ≥ 0.5	Risk Indicator Impact Cat. #2 ≥ 0.5	Risk Indicator Impact Cat. #3 ≥ 0.5	Risk Indicator Impact Cat. #4 ≥ 0.5	Cumulative Impact Cat. Score ≥ 0.5	Number of Impact Cat's. ≥ 0.5	IWAP Priority Rank	Level 2 IWAP Req'd?	WRP	On MOE Stream Resto List for FIA$$	Assessment	Pre-Development	Monitoring	Comments
Thomlinson	Gail		VH		~~Mass Wasting~~					0	Not Ranked	No	N				Monitor road and crossing for sediment production. SCQI on road within Babine SMZ.	Linked to Babine SW access. Low fisheries values. Thomlinson is glacially-headed river. Water quality is issue because it flows into Babine at a key fishing hole. Potential gentle over steep. Road in SMZ needs special attention for sediment production.
Tommy Jack	Atna			High	~~Mass Wasting~~	Surface Erosion (0.1)				0	Not Ranked	No	N		1:50,000 overview Fish Inventory on map D12 by season.	Detailed drainage mapping 1:5000. Detailed terrain mapping on Class IV + V	Repeat sediment source mapping prior/post harvest.	Connected geomorphology and unstable terrain connected to channel. Timber values mainly pulp. Wet soils. Highest fish values in lower reaches. Gentle over steep terrain. More information on fish values for this area required.
Upper Kispiox	Upper Kispiox		VH	VH						0	Not Ranked	No	Y	Yes. Hodder Crk. Struct. Replace. $ NA Skunsnat Crk. REEs - focus on fish migratn. $3500.00			Monitor blocks within Class IV.	Significant portion in Swan Lake Park. Road building and logging took place before park designation. Some proposed blocks that require access through the park. Also see Nangeese comments for recommendations in Upper Kispiox SMZ portion of watershed.
Upper Kuldo	Kuldo			H	Mass Wasting (0.3)					0	Not Ranked	No	N					Potential for forest development is very low due to extensive road required. Highest score of all sub-basins for mass-wasting impact category
Upper Nichyeskwa	Babine			VH	Surface erosion (0.3)					0	Not Ranked	No	N		Stream crossing assesment. Surface erosion hazard mapping.		SCQ. IBI Site Code KIS31, KIS32, KIS33, KIS34.	Development in Upper Nichyeskwa affects Lower Nichyeskwa. Should be treated as one hydrological unit. Highest fish values tributary in lower Babine River Watershed. Special construction techniques may be required if sensitive materials are encountered.
Upper Shedin	Shedin			H	Surface erosion (0.1)					0	Not Ranked	No	N		Road assessment. Road review with recommendations for winter road. Detailed soil erosion mapping for road construction.		Sediment production and hydrological impact of mainline and spurs.	Extensive wetlands below Damsumlo lake. Roading through wetland mosaics. Maintenance issues. Main source of clear water to Babine. Special construction techniques may be required if sensitive materials are encountered.
Upper Shelagyote	Shelagyote			VH						0	Not Ranked	No	N		Detailed road drainage plan.	Detailed surface erosion assessment maps.	SCQ	Same comments as Lower Shelagyote. Outstanding Bulltrout values. In addition to surface erosion there's clas 4 & 5 within commercial forest land.
Upper Sicintine	Atna		VH	VH	~~Mass Wasting~~ (0.0)					0	Not Ranked	No	N		1:50 overview Fish Inventory on map D12 by season.	Detailed drainage mapping 1:5000. Detailed terrain mapping on Class IV + V	Repeat sediment source mapping prior/post harvest.	Connected geomorphology and unstable terrain connected to channel. Timber values mainly pulp. Wet soils. Highest fish values in lower reaches. More information on fish values for this area required.
Upper Skeena	Sheladamus			VH						0	Not Ranked	No						No proposed development.
Upper Suskwa	Suskwa		VH	VH	Channel Stability					0	Not Ranked	No	Y		Channel & Fan Assessment		Channel Stability	Channel stability in lower floodplain and fan. Irene Weiland & Don McClellen have done a report on mid-watershed tributary.

4th Order Watershed	LU	Comm. Wat. Y/N	Main FV	Trib FV	Risk Indicator Impact Cat. #1 ≥ 0.5	Risk Indicator Impact Cat. #2 ≥ 0.5	Risk Indicator Impact Cat. #3 ≥ 0.5	Risk Indicator Impact Cat. #4 ≥ 0.5	Cumulative Impact Cat. Score ≥ 0.5	Number of Impact Cat's. ≥ 0.5	IWAP Priority Rank	Level 2 IWAP Req'd?	WRP	On MOE Stream Resto List for FIA$$	Assessment	Pre-Development	Monitoring	Comments
Weber	Cranberry			High	~~Mass Wasting~~ (0.0)					0	Not Ranked	No	Y		Terrain Stability field assessment. Fan assessment.	Terrain Stability field assessment.	Site level monitoring of landslides of Class IV and V blocks. Monitor lower Weber creek fan.	Rearing habitat in Reach 1. 30 % of alluvial fan has been logged in Reach 1.
West Kitsuns	Kitsegukla		VH	VH	~~Mass Wasting~~ (0.0)					0	Not Ranked	No	Y		Review / Re-do existing terrain mapping.	Road de-activation .	Monitor chinook.	Gentle Glacio-Fluvial material overlying steep glacial till deposited on hillslopes directly coupled to the mainstem are highly unstable. Consider in & out harvest with road de-activation. High impact by past harvesting.
Willow Flat	Sheladamus		VH	H						0	Not Ranked	No			Road assessment.		Moniter block and road crossing on northside of Willow Flat Creek. Repeat sediment source.	Future development concerns, road going through unstable terrain.

APPENDIX 2

CRANBERRY WATERSHED PRIORITY LIST

Cranberry Watershed Priority List

List of Potential Restoration Activities for FIA Funding – Cranberry Watershed							
4th Order Watershed & Site #		Sub-Basin, Stream or Locatn	Estimated Cost	Project	Comments	Source and Date	Source Priority
Cranberry West	**1**	AA – 04 Weber FSR		Two CMPs, beaver dammed inlets, water and woody debris over road. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map Reference #1	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	H 7th on IWAP GFA ranks High
McKnight	**20**	Az – 01 McKnight Road		Deteriorating WBC, parts of bank have eroded into stream. 1.9m plunge on d/s side. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map Reference #20	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	H 11th on IWAP GFA ranks High
McKnight Creek	**?**	McKnight Creek WSC 530-274400	$4,204 2000 Cost base	Culvert removal ultimately leading to increased spawning habitat downstream of culverts.	GFA - would rate high, major fish producer in relation to its size	Oikos March 2000 and Chris Broster, MOE, 2005.	GFA ranks High 11th on IWAP
Not sure which 4th order watershed this reach is in.	**?**	Cranberry mainstem Reach 12, Rip Segs 231, 232		Re-assess channel stability in 3-5 yrs Bank and bar stabilization recommended (at that time) if operable	Time frames are from date of Oikos Level 1 Detailed Fish, Fish Habitat and Riparian Zone Assessments, March 2000.	Cranberry River Watershed Level 1 Detailed Fish, Fish Habitat and Riparian Zone Assessments, Oikos, March 2000.	H
Not sure which 4th order watershed this reach is in.	**?**	Cranberry mainstem Reach 9, Rip Seg 125 Reach 12, Rip Segs 1000, 1001, 250, 253, 254	$14,850 (over 5 years) 2000 Cost base	Riparian Implementation. Walk thru, assess for release and Sx leader weevil damage, suitability for restoration to a mixed conifer-Ac stand. Site prep, planting of AC and Sx along 500m length, install of brush mats, maintenance for 4 years, and supervision.	Recommendation made in Level 1 Detailed Fish, Fish Habitat and Riparian Zone Assessments, Oikos, March 2000 (see Table 24, pp53). Good access, M/H probability of success with H cost benefit.	Cranberry River Watershed Level 1 Detailed Fish, Fish Habitat and Riparian Zone Assessments, Oikos, March 2000. Chris Broster, MOE, 2005.	H
Not sure which 4th order watershed this reach is in.	**?**	Cranberry mainstem Reach 9, Rip Seg 125 Reach 12, Rip Segs. 250, 253, 254	$3,456 2000 Cost base	Determine site suitability for debris catchers for reaches 9 and 12. Detailed design if sites suitable.	Recommendation made in Level 1 Detailed Fish, Fish Habitat and Riparian Zone Assessments, Oikos, March 2000.	Oikos March 2000 and Chris Broster, MOE, 2005.	H
Derrick	**11**	BB – 08 –A Unnamed Road		Washout ~2m beside CMP, some debris has fallen into stream. 3m fill depth. Safety issue, also poss. obstruction to fish passage. Fish presence unknown. (prob. fish bearing)	Map Reference #11	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	H 9th on IWAP

List of Potential Restoration Activities for FIA Funding – Cranberry Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Derrick	**12**	BD – 02 Unnamed Road		600mm CMP, beaver dammed inlet, road starting to erode into stream. Over 5m fill depth. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map Reference #12	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	H 9th on IWAP
Not sure which 4th order watershed this reach is in.	**?**	Cranberry mainstem Reach 3		Further assessment including review by a fluvial geomorphologist.	Degradation upstream and aggradation downstream.	Table C1 in: Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	H
Kiteen	**24**	AZ – 18		Sidewall failure.	Map Reference #24. No other information.	Table C3 in: Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	H 19th on IWAP
Kiteen	**27**	AZ – 22 - E		Hillslope failure.	Map Reference #27. No other information.	Table C3 in: Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	H 19th on IWAP
Not sure which 4th order watershed this reach is in.		Cranberry mainstem Reach 1		Determine disturbance history, assess conifer stocking.	Minor riparian impacts.	Table C2 in: Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M
Not sure which 4th order watershed this reach is in.		Calvin Creek Reach 2, 0.61km long section		Assess conifer stocking.	Lacks LWD due to logging.	Table C2 in: Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M
Derrick		BB – 08 – A Halfway Lake		Washout. Small stream flowing across road, no drainage structure present. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map Reference #10	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 9th on IWAP
Derrick		BD Derrick Lake Road		Beaver dam is blocking all motorized traffic including ATV, pond depth is 0.85m. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map Reference #14	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 9th on IWAP
Derrick		BD Derrick Lake Road		Double CMPs have been removed and stream is flowing over the road, debris has formed 0.8m plunge on d/s side of road. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map Reference #15	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 9th on IWAP

List of Potential Restoration Activities for FIA Funding – Cranberry Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Derrick		BD Derrick Lake Road		Structure has been removed and stream is flowing over the road, debris has formed 2.4m plunge on d/s side of road. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map Reference #16	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 9th on IWAP
Cranberry East		AJ – 06 – C Unnamed Road		Slump along road. No other info on site.	Map Reference #4	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 10th on IWAP
Cranberry East		AL Wagon FSR		Debris at both ends of Wood Box Culvert. Poss. obstruction to fish passage. Fish presence unknown.	Map Reference #5	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 10th on IWAP
Cranberry East		AL Wagon FSR		Small 0.25m plunge pool at outlet of 600mm CMP. Poss. obstruction to fish passage. Fish presence unknown.	Map Reference #6	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 10th on IWAP
Cranberry East		AL Wagon FSR		Large 1.1m plunge pool at outlet of 450mm CMP. Poss. obstruction to fish passage. Fish presence unknown. (unlikely)	Map Reference #7	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 10th on IWAP
McKnight		AZ – 01 – D Unnamed Road		Culvert inlet buried under mud, some water over road, 1.4m plunge on outlet. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map Reference #17	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 11th on IWAP
McKnight		AZ – 01 – D Unnamed Road		Washout, no culvert, poss. collapsed WBC, water flowing over road. 1.3m plunge on d/s side road. Safety issue, also poss. obstructn to fish passage. Fish presence unknown.	Map Reference #18	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 11th on IWAP
McKnight		AZ - 01 McKnight Road		Twin CMPs, both plugged and inlets not visible. Half of road washed out, stream banks sliding into stream. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map reference #19	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 11th on IWAP
McKnight		AZ – 05 Unnamed Road		No info in Table B3.	Map Reference #21	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 11th on IWAP
Aluk		BB – AR – 13 Unnamed Road		Prescription to removed debris around inlet. No fill directly over the CMP but there is 0.5m fill on both sides of the slump	Map Reference #9	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 16th on IWAP
Kitten		AZ - 18		No other information.	Map Reference #23. No other information.	Table C3 in: Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 19th on IWAP

List of Potential Restoration Activities for FIA Funding – Cranberry Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Kiteen		AZ - 18		No other information.	Map Reference #25. No other information.	Table C3 in: Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 19th on IWAP
Kitten		AZ - 22		No other information.	Map Reference #26. No other information.	Table C3 in: Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M 19th on IWAP
Ginmiltkin		AZ - 11		No other information.	Map Reference #22. No other information.	Table C3 in: Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	M Not ranked on IWAP
Derrick		BC Bonus Lake Road		Beavers have dammed ditchline of spur road 20m beyond above bridge. Water is washing out road and eroding into stream. Safety issue, also poss. obstruction to fish passage. Coho and RB presence known.	Map Reference #13 (20m past bridge above)	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	L-M 9th on IWAP
McKnight		AU Unnamed Road		Small creek has been diverted from original channel and crosses road 100m north, road washed-out for ~15m, ~2m fill over doubled CMPs, prob. blocked. Safety issue, also poss. obstruction to fish passage. Fish presence unknown.	Map Reference #8	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	L 11th on IWAP
Cranberry East		AJA – AJ Unnamed Road		WBC with lots of debris at outlet, structure sound but need to remove debris at outlet for fish passage (if fish present). Poss. obstruction to fish passage. Fish presence unknown.	Map Reference #2	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	L 10th on IWAP
Cranberry East		AJA – AJ – 01 Unnamed Road		Small 0.3m plunge at outlet of 1500mm CMP, outlet pool depth is 0.3m, CMP grad. is 9%. Stream ~ 2m wide. Prob. obstruction to fish passage, esp. juveniles. Fish presence unknown.	Map Reference #3	Watershed Restoration Plan-Cranberry River Watershed, McElhanney, 2001	L 10th on IWAP
McKnight		unnamed trib at 4.2km (WSC 530-253400) and 5.8km (WSC 530-224300) on Nass FSR.	$2,500 2000 Cost base	Routine Effectiveness Evaluations (REE). Fish passage at unnamed tribs at 4.2 and 5.8km on Nass FSR.	Believe the prescriptions to improve fish passage at 4.2 and 5.8km have been implemented.	Chris Broster, MOE, 2005.	L 11th on IWAP
Cranberry West (530-601800) Tsugwinselda (530-634400)		Unnamed Stream WSC 530-601800 Unnamed Stream WSC 530-634400	$8,708 2000 Cost base	Construction of culvert tail water devices on two unnamed tributaries, WSC 530-601800 and WSC 530-634400	~$4,500 for each creek. Cost effective to complete both sites at same time. Detailed design poss. req'd. Coho spawning reported in streams 530-601800 and 530-634400.	Oikos March 2000 and Chris Broster, MOE, 2005.	7th on IWAP

List of Potential Restoration Activities for FIA Funding – Cranberry Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Derrick Creek		Derrick Creek WSC 530-169500	$3,604 2000 Cost base	Road deactivation and water bar construction.	Prevention of vehicle traffic and water-barring will reduce sediment inputs into fish bearing stream which has excellent spawning and rearing habitat.	Oikos March 2000 and Chris Broster, MOE, 2005.	9th on IWAP

APPENDIX 3

KISPIOX WATERSHED PRIORITY LIST

Kispiox Watershed Priority List

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Lower Kispiox	**23**	Murder Creek (2nd order stream, part of Lower Kispiox Sub-Basin)	$15,000 to $30,000 for culvert replace-ment. $10,000 for riparian Rx and collection of whips in Jan/ Feb. (Cost base 2001). $2,000 for REEs.	Highest priority is replacement of stream x-ing structure on Kispiox Trail FSR. 2nd priority is implementation of detailed riparian prescription (site 126A – Oikos 2000). - Enhance rock weir and log structures, elevate rock weir height so water depth is at least 0.23m above the lowest culvert elevation Routine Effectiveness Evaluations on Murder Crk Project.	Culvert crossing will likely need to be managed and implemented by Ministry of Highways. Extensive floodplain development in the first 2 reaches among the cultivated fields and private land (ranching, grazing and agricultural use). Culvert modified with baffles and plunge pool excavated. Unknown (0% ??) of roads deactivated as of Oct. 2001	Watershed Restorat[N] Plan for the Kispiox Watershed, Triton 2001. Kispiox Watershed Restoration Project – Monitoring and Assessment, Rehabilition Detail and Design, McElhanney Consulting Services Ltd. 1999. Chris Broster, MOE, 2005. Kispiox District Fish Passage Rehabilitation: Survey and Design, Freshwater Resources, 2000.	H (ranked 1st priority) 6th on IWAP
Upper Kispiox	**47**	Upper Kispiox / Hodder Creek	$19,100* (Cost base 1999)	Replacement of stream x-ing structure on Kispiox Trail FSR with an open bottom structure and to rehab rearing and potential spawning habitat near the crossing. (Freshwater Resources, 2000).	Replacement will result in substantial benefit to juvenile fish by permitting access into high quality rearing habitat in Hodder Lake and it's inflow streams. On MoTH portion of Kispiox Trail. Survey and Design completed. 5% of roads deactivated as of Oct. 2001. Few roads present in sub-basin.	Watershed Restorat[N] Plan for the Kispiox Watershed, Triton 2001. - Riparian and Aquatic Detailed Assessment and Prescription Development for Identified Sites in the Kispiox River Watershed, Oikos/SKR 1999. Chris Broster, MOE, 2005. Kispiox District Fish Passage Rehabilitation: Survey and Design, Freshwater Resources, 2000.	H (ranked 2nd priority) Not ranked on IWAP

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Cullon	**31, 112, 144**	Cullon Creek	N/A	- Highest priority – restoration of fish access to existing habitat through replacement/remediation of stream x-ing structures at 2.6 km (Cullon 2 - site 31, Freshwater Resources, 2000), Moonluck (site 144) and 15.6 km sites. - Reduce erosion risk from road and bridge x-ings by grass seeding, waterbarring and deactivation. - Riparian objectives – increase conifer recruitment and long term channel stability through conifer treatments in reach 1 of Cullon Creek and in the middle reaches of Tahltum Creek (Riparian Rxn by Tyhee for opening 093M051 – 062 in 1998 for this section, never implemented) - Instream objectives – assess reach 1 (site 108) for in-stream habitat complexity and severity of sedimentation on spawning habitat with view to increase steelhead holding/rearing habitat area and quality. Also examine Kuitan Creek (site 112) d/s of lake to evaluate impacts from logging to streambanks along 75% of creek. Evaluate additional work required to improve existing side channel project performance (site 18) in reach 1.	Existing Rx for the 2.6 km (Cullon 2 - site 31) site. Freshwater Resources 2000. Detailed prescriptions required for Moonluck and 15.6 km sites. Poss. side channel development u/s of Kispiox Trail in old remnant channel. Determination of dissolved oxygen levels critical prior to any prescription for side channel development. McElhanney 1999 Improvement of excavated channels d/s of Kispiox Trail through complexing by adding LWD and cover and excavating pools to create good rearing habitat. Supposedly channels were originally excavated as potential spawning habitat but entire length of both channels are “still” water. McElhanney 1999. Instead add instream features (complexing) to use for rearing. 20% of roads deactivated as of Oct. 2001.	Watershed RestoratN Plan for the Kispiox Watershed, Triton 2001. Kispiox Watershed Restoration Project – Monitoring and Assessment, Rehabilition Detail and Design, McElhanney Consulting Services Ltd. 1999. Chris Broster, MOE, 2005. Kispiox District Fish Passage Rehabilitation: Survey and Design, Freshwater Resources, 2000.	H (ranked 3rd priority) 1st on IWAP

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Clifford	**40**	Clifford Creek	N/A $7,000 ----------	- Highest priority – restoration of fish access (site 13) to existing habitat through remediation of stream x-ing structure at Kispiox Trail as per detailed Rxn (Freshwater Resources, 2000). - Riparian objectives – increase conifer recruitment and long term channel stability through conifer treatments in lower 2 km of Clifford and lower 1 km of Skunsnat Creek. - Instream objectives – assess and repair the instream works constructed in 1997 and evaluate if additional in-stream works required to improve habitat quality, develop off-channel habitat and add more instream structures. - Works to create backwater at culvert outlet. Enhance rock weir and log structures, elevate rock weir height so water depth is at least 0.23m above the lowest culvert elevation for better fish passage.	On MoTH portion of Kispiox Trail. Riparian Rxn by Tyhee Forest Consultants, 1997 for sites 12(a) and 12(b) on u/s tribs to Clifford Creek. 76% of roads deactivated as of Oct. 2001.	Watershed Restoration Plan for the Kispiox Watershed, Triton 2001. Kispiox Watershed Restoration Project – Monitoring and Assessment, Rehabilition Detail and Design, McElhanney Consulting Services Ltd. 1999. Chris Broster, MOE, 2005. Kispiox District Fish Passage Rehabilitation: Survey and Design, Freshwater Resources, 2000.	H (ranked 4th priority) 5th on IWAP
Lower Kispiox	**49**	Dale Creek Nortec Level 2 & 3 Site 49	$18,000 (Cost base 2001)	- Removal of Loc-blocs and step pools (if conditions worsen at culvert outflow) and restoration of fish access @ ~0.7 km on Date FSR. Potentially on IR land, therefore should be vetted to pertinent authorities.	Upstream degradation from water supply dam exacerbates fish access problems. This may be a difficult and expensive project but should be addressed to verify if investment is warranted by potential benefits to fish from improved access. Issues include impact on channel stability from water supply dam, amount of habitat isolated and spp. which would use habitat if accessible. May be higher priority than culvert replacements in Cullon sub-basin and likely higher priority for restoring fish access than Clifford and Hevenor Crks McElhanney suggests costs would be extremely high for benefit gained if trying to restore fish access u/s of Date FSR. Water quality issue is main priority. Fish passage is lower priority esp. for cost/benefit. 0% of roads deactivated as of Oct. 2001	Watershed Restoration Plan for the Kispiox Watershed, Triton 2001. Kispiox Watershed Restoration Project, Monitoring and Assessment, Rehabilition Detail and Design, McElhanney Consulting Services Ltd. 1999. Chris Broster, MOE, 2005. Kispiox Watershed Restoration Project, Survey and Design of Stream Rehabilitation Projects, McElhanney Consulting Services Ltd. 2001.	H (ranked 5th priority) 24th on IWAP

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		Sub-Basin, Stream or Locatn	Estimated Cost	Project	Comments	Source and Date	Source Priority
Cullon	**17**	Kuldo FSR 20k Site 17		Culvert is partial barrier to fish passage upstream. Baffle culvert and increase depth of outlet pool.	83% of stream barred. 5090m of stream length to be gained u/s of culvert.	Kispiox Watershed Fish Passage Culvert Inspection Assessment for Cullon, Ironside, Corral and Clifford Sub-basins., Triton Environmental Consultants Ltd., 2001.	H 1st on IWAP
Cullon	**14**	Kuldo FSR 15.6k Site 14		Culvert is full barrier to fish passage upstream. Replace with "fish friendly" structure.	90% of stream barred. 2100m of stream length to be gained u/s of culvert.	Kispiox Watershed Fish Passage Culvert Inspection Assessment for Cullon, Ironside, Corral and Clifford Sub-basins., Triton Environmental Consultants Ltd., 2001.	H 1st on IWAP
Cullon		Kuldo FSR 23.5k Site 23		Culvert is partial barrier to fish passage upstream. Replace with "fish friendly" structure.	44% of stream barred. 3030m of stream length to be gained u/s of culvert.	Kispiox Watershed Fish Passage Culvert Inspection Assessment for Cullon, Ironside, Corral and Clifford Sub-basins., Triton Environmental Consultants Ltd., 2001.	M 1st on IWAP
Corral		Corral ML 6.4k Site 12		Culvert is partial barrier to fish passage upstream. Replace with "fish friendly" structure.	64% of stream barred. 900m of stream length to be gained u/s of culvert.	Kispiox Watershed Fish Passage Culvert Inspection Assessment for Cullon, Ironside, Corral and Clifford Sub-basins., Triton Environmental Consultants Ltd., 2001.	M 3rd on IWAP
Clifford	**13**	Skunsnat Creek	$3,500 (Cost base ???)	- Routine Effectiveness Evaluation to ensure fish access is maintained through culverts and potentially over beaver dams throughout watershed. (Esp. u/s of Kispiox Trail x-ing.) - Enhance rock weir and log structures, elevate rock weir height so water depth is at least 0.23m above the lowest culvert elevation	Natural bedrock chute/cascade d/s of Kispiox Trail x-ing. Due to extensive beaver presence riparian restoration treatments are unlikely to be effective at converting present riparian stands to conifer dominated stands which could provide LWD. On MoTH portion of Kispiox Trail. 76% of roads deactivated as of Oct. 2001	Watershed Restorat[N] Plan for the Kispiox Watershed, Triton 2001. Kispiox Watershed Restoration Project – Monitoring and Assessment, Rehabilition Detail and Design, McElhanney Consulting Services Ltd. 1999. Chris Broster, MOE, 2005.	M (ranked 4th priority) 5th on IWAP Prob. a lower priority watershed

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Date		Date Creek	N/A	Instream – Assessment of sediment impacts and natural channel stability on fish habitat in the lower reaches of Date Creek (site 29) will provide better information to assess feasibility of instream restoration. Riparian – Brief overview-type assessment to determine extent of riparian logging in the alluvial reaches on Date Creek and identify land status limitations.	0% of roads deactivated as of Oct. 2001	Watershed Restoration Plan for the Kispiox Watershed, Triton 2001.	M (ranked 5th priority) 24th on IWAP
Lower Kispiox ???		Corral ML 0.6k Site 01		Culvert is full barrier to fish passage upstream. Resample for fish under higher flow conditions.	74% of stream barred. 2400m of stream length to be gained u/s of culvert.	Kispiox Watershed Fish Passage Culvert Inspection Assessment for Cullon, Ironside, Corral and Clifford Sub-basins., Triton Environmental Consultants Ltd., 2001.	M 6th on IWAP
Lower Kispiox		Twin Creek UTM: Zone 9 E:558200 N:6161400	$5300 (Cost base 1999)Oikos/SKR	Instream – (site 17) Monitor beaver dam activity and breach regularly to enable fish access and reduce overbank flooding and root damage to riparian treatments. Plan on-site visit to evaluate potential for rehab with subsequent planning. Riparian – For long-term fish habitat benefit, implement (site 107) riparian treatments (cluster planting of conifers) to achieve initial conifer stocking and follow maintenance and monitoring protocols to evaluate success and develop local riparian treatment skills in community partners or contractors. Reassess site due to stream's low gradient, the presence of beavers and the fine sediments. An FHAP and RAPP would be beneficial to collect analyze existing habitat and riparian communities info. Fish sampling would be helpful to determine what spp, if any, still utilize this stream. Comparing results with local and historic knowledge, a Rx can be formulated to address impacts.	Risk to fish habitat is M – H from impaired riparian function, animal grazing and bank erosion, siltation of rearing pools and spawning gravel, and beaver dam flooding. Benefit to fish is H through long term recovery of riparian function from instream and riparian rehab. Reassessment of completed works is high priority. Structure placement has high likelihood of failing due to small size of LWD used. 14% of roads deactivated as of Oct. 2001.	Watershed Restoration Plan for the Kispiox Watershed, Triton 2001. Riparian and Aquatic Detailed Assessment and Prescription Development for Identified Sites in the Kispiox River Watershed, Oikos/SKR 1999 Kispiox Watershed Restoration Project – Monitoring and Assessment, Rehabilition Detail and Design, McElhanney Consulting Services Ltd. 1999. Level 1 Detailed Assessment, Nortec 1997. Level 2&3 Assessment and Works, Nortec 1997.	M (ranked 6ath priority) 6th on IWAP

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Lower Kispiox		Ironside UTM: Zone 9 E:555800 N:6168200	$5300 (Cost base 1999)	Riparian – Treatment of site 2a, Opening # 103P.070 – 274, (site 106) calls for cluster planting in conjunction with brushing to establish conifers in the riparian area.	A more detailed prescription for this site can be found in Oikos/SKR 1999. Road de-ac of 52% of Ironside roads completed by 2000. 52% of roads deactivated as of Oct. 2001.	Watershed Restoratn Plan for the Kispiox Watershed, Triton 2001. Riparian and Aquatic Detailed Assessment and Prescription Development for Identified Sites in the Kispiox River Watershed, Oikos/SKR 1999	M (ranked 6b th priority) 6th on IWAP
Hevenor		Hevenor Creek and tribs. Nortec Level 2 & 3 Site 32/33 Oikos 1999 Site 50 Unnamed Crk 470-085600-39700 (trib to Hevenor Creek at Date Crk FSR)	N/A $19,050 (Cost base 1999)	Roads – objectives in **upper watershed** include reducing surface erosion at stream x-ings through ditch maintenance, also assess partial fish passage barrier at Date FSR with view for potential rehab. Key rehab objectives for **lower watershed** are to maintain fish passage on private land roads by preventing beaver blockage of culverts and to restore a stable stream channel. Riparian – Increase conifer recruitment and long-term channel stability through conifer treatments in reaches 1-3. Instream – Long-term objectives are to ensure fish access is maintained to valuable spawning (and rearing) habitat u/s (beaver dam breaching issue) and to improve habitat complexity and quality by instream treatments (esp in lower reaches on private agricultural land) Rehab rearing and potential spawning habitat at machine accessible locations. (Appdx 3a : Prescription 1)	Beaver issues may affect viability of riparian treatments. Examination of critical barriers to fish passage by a biologist and breaching of dams by local people may be undertaken as a high priority activity with little investment required. Critical for successful and efficient rehab of this sub-basin is coordination of activities with d/s landowners and obtaining outside funding and in-kind contributions for private land activities. Rxn filed for Site 50 (unnamed trib on Date FSR) 0% of roads deactivated as of Oct. 2001.	Watershed Restoratn Plan for the Kispiox Watershed, Triton 2001. Riparian and Aquatic Detailed Assessment and Prescription Development for Identified Sites in the Kispiox River Watershed, Oikos/SKR 1999	(ranked 7th priority) 12th on IWAP

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Mcully		McCully Creek	N/A	Riparian – Initial step is for further assessment. Based on outcome of fish habitat assessment, rehab impacted riparian zones for channel stability and wood (LWD) contribution. Instream – Obtain valid information to assess impacts to fish habitat, concurrently assessment and potential design of site 42 in the lower reach. As well Level 1 FHAP of lower half of watershed.	Limited fish habitat assessment work has been conducted on McCully Creek due to its relatively unstable nature. Level 1 Overview Assessment completed by Nortec 1995 (poss. 1997). Further assessment needed. 0% of roads deactivated as of Oct. 2001.	Watershed Restoratn Plan for the Kispiox Watershed, Triton 2001.	(ranked 8th priority) Not ranked on IWAP
Sweetin		Sweetin River	$10,000	Sweetin Bridge problem. The bridge potentially poses a substantial but currently uncertain level of risk to fish habitat, bank and channel stability, off-channel habitat and riparian vegetation. Bridge may be a velocity barrier at high flows and causing localized aggradation/degradation from channelization which may have substantial d/s impacts. Consequently investigations of impacts to fish habitat, bank and channel stability are recommended.	Bridging, dyking and road construction activities which constrict active alluvial channels can generate well documented negative impacts to fish habitat and reach (channel) stability. 26% of roads in sub-basin are de-activated (as of 2001). On MoTH portion of Kispiox Trail. 26% of roads deactivated as of Oct. 2001.	Watershed Restoratn Plan for the Kispiox Watershed, Triton 2001.	(ranked 9th priority) Not ranked on IWAP
Nangeese		Nangeese River Trib to Nangeese River (WSC 47-1400-100) Lower Nangeese Rearing Ponds Nangeese River	N/A $3,000 (Cost base ???) $50,000 (Cost base ???)	Roads – Reduce surface erosion through completion of de-activatn and revegetation of exposed soils and monitor success. Instream – Rehab rearing habitat (site 43) through H_2O monitoring on ground water channels per guidelines laid out by McElhanney and evaluate if additional works warranted. (Triton states this is low priority in 2001) Riparian – (Site 133) Increase coniferous dominated riparian forests by accelerating conifer recovery along fish bearing streams. Conduct walk-thru assessments in the lower 8km of the Nangeese River to determine feasibility and scope out total area for assessment/treatment. LWD placement – design and implementation.	Very high value for fish habitat and fish production with steelhead and all spp. of salmon found up to a barrier at 19 km (Nortec, 1997). Trib to Nangeese River (WSC 47-1400-100). Two ground water channels were excavated during the 1997 field season. In-stream cover in the channels is limited to the water depth and habitat within the channels is minimal with no pools or LWD present. Determination of dissolved oxygen levels critical prior to any prescription for remediation. Three options depending on dissolved oxygen levels. If good O_2 levels then complex channels, if marginal then leave as is, if poor then fill channels in. McElhanney 1999 0% of roads deactivated as of Oct. 2001.	Watershed Restoratn Plan for the Kispiox Watershed, Triton 2001. Kispiox Watershed Restoration Project – Monitoring and Assessment, Rehabilition Detail and Design, McElhanney Consulting Services Ltd. 1999. Chris Broster, MOE, 2005.	(ranked 10th priority) Not ranked on IWAP

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Steep Canyon		Steep Canyon Creek and trib to Steep Canyon Creek	N/A $31,050 (Cost base 1999)combined est. for the 4 watersheds to right.	Road – (Site 1) Culvert inspection in opening # 103P.069-013 along Mitten M/L to determine channel impacts and potential fish passage and fix in conjunction with structure maintenance. Instream – Instream structures (site 02, 08) need maintenance and likely do not rate as significant increases in instream habitat complexity. Instream objectives of increased rearing habitat quality may not be met and walk-thru stream assessment (site 34, 36) will identify scope of maintenance req'd. V..poor info about the upper watershed and impacts is available although they are steep with little fish habitat at mid-elevations. Conduct air photo review to assess if sig. potential exists for impacts to streams and riparian areas. Aerial reconnaissance and fish habitat assessments.(Includes Steep Canyon/ Beaverlodge/ Brown Paint/ Footsore watersheds) Oikos/SKR 1999 - Enhance LWD and log structures to enhance function and reduce erosion potential and future bank failures. McElhanney 1999	Beaver dam complexes in reach 1 of Steep Canyon Crk may limit u/s fish migration. Aggraded sediment up to 1m deep in reach 2 of Steep Canyon Crk. Mitten M/L stream X-ings are reported as being chronic maintenance problems due to heavy beaver activity, insufficient culvert size and siltation. 16% of roads deactivated as of Oct. 2001.	Watershed RestoratN Plan for the Kispiox Watershed, Triton 2001. Riparian and Aquatic Detailed Assessment and Prescription Development for Identified Sites in the Kispiox River Watershed, Oikos/SKR 1999 Kispiox Watershed Restoration Project – Monitoring and Assessment, Rehabilition Detail and Design, McElhanney Consulting Services Ltd. 1999.	(ranked 11th priority) No values in IWAP

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Brown Paint		Beaverlodge Creek	N/A $31,050 (Cost base 1999)combined est. for the 4 watersheds to right.	Remove bridge timbers used to construct instream structures in reach 2 of Beaverlodge Creek. Timbers were likely treated with preservative chemicals and should be removed from water due to chemical pollution concern (Don't know if removal has occurred). Road – (Site 1) Culvert inspection in opening # 103P.069-013 along Mitten M/L to determine channel impacts and potential fish passage and fix in conjunction with structure maintenance. Instream – Instream structures (site 02, 08) need maintenance and likely do not rate as significant increases in instream habitat complexity. Instream objectives of increased rearing habitat quality may not be met and walk-thru stream assessment (site 34, 36) will identify scope of maintenance req'd. V.poor info about the upper watershed and impacts is available although they are steep with little fish habitat at mid-elevations. Conduct air photo review to assess if sig. potential exists for impacts to streams and riparian areas. Aerial reconnaissance and fish habitat assessments.(Includes Steep Canyon/ Beaverlodge/ Brown Paint/ Footsore watersheds) Oikos/SKR 1999	Mitten M/L stream X-ings are reported as being chronic maintenance problems due to heavy beaver activity, insufficient culvert size and siltation. 15% of roads deactivated as of Oct. 2001.	Watershed Restoration Plan for the Kispiox Watershed, Triton 2001. Riparian and Aquatic Detailed Assessment and Prescription Development for Identified Sites in the Kispiox River Watershed, Oikos/SKR 1999 Kispiox Watershed Restoration Project – Monitoring and Assessment, Rehabilition Detail and Design, McElhanney Consulting Services Ltd. 1999.	(ranked 12th priority) 12th on IWAP
Corral		Corral Creek	N/A	Roads – Routine monitoring of de-ac'd roads necessary to ensure surface erosion potential and risk to fish habitat remains low. Instream and Riparian – Since little riparian or fish habitat impacts are known, this watershed is a low priority for further assessment until the H and M priority activities in other sub-basins in the LU are completed.	Likelihood of benefit to fish is low for instream and riparian rehab. Est. benefits are moderate from completed road de-ac projects due to reduced risk of surface erosion and debris torrenting. 38% of roads deactivated as of Oct. 2001.	Watershed Restoration Plan for the Kispiox Watershed, Triton 2001.	(ranked 13th priority) 3rd on IWAP

List of Potential Restoration Activities for FIA Funding – Kispiox Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Cullon		Kuldo FSR 12.8k Site 11		Culvert is partial barrier to fish passage upstream. Resample for fish under higher flow conditions.	59% of stream barred. 1100m of stream length to be gained u/s of culvert.	Kispiox Watershed Fish Passage Culvert Inspection Assessment for Cullon, Ironside, Corral and Clifford Sub-basins., Triton Environmental Consultants Ltd., 2001.	L 1st on IWAP
Cullon		Kuldo FSR 7.8k Site 04		Culvert is partial barrier to fish passage upstream. Resample for fish under higher flow conditions.	65% of stream barred. 143m of stream length to be gained u/s of culvert.	Kispiox Watershed Fish Passage Culvert Inspection Assessment for Cullon, Ironside, Corral and Clifford Sub-basins., Triton Environmental Consultants Ltd., 2001.	L 1st on IWAP
Cullon		Kuldo FSR 9.9k Site 07		Culvert is partial barrier to fish passage upstream. No conceptual prescription.	65% of stream barred. 43m of stream length to be gained u/s of culvert.	Kispiox Watershed Fish Passage Culvert Inspection Assessment for Cullon, Ironside, Corral and Clifford Sub-basins., Triton Environmental Consultants Ltd., 2001.	L 1st on IWAP

APPENDIX 4

KITSEGUECLA WATERSHED PRIORITY LIST

Kitseguecla Watershed Priority List

List of Potential Restoration Activities for FIA Funding – Kitseguecla Watershed							
4th Order Watershed & Site #		Sub-Basin, Stream or Locatn	Estimated Cost	Project	Comments	Source and Date	Source Priority
Kits	**A**	Kits creek	REE $2000 2001 Cost Base	Routine Effectiveness Evaluations	Monitor previously completed deactivation works, community watershed.	Gitsegukla Planning Unit Restoration Plan, Rivers and Creeks Consulting Services, January 31, 2001. Ken Rabnett, GFA, pers. comm. Mar 21, 2006.	H 11th on IWAP
Kitseguecla	**12**	Kitseguecla South Site 12 (Trib 9)	$2,378	Remove wood box culvert, replace with wide shallow cross ditch	Due to lack of stream gradient, and lack of fish due to likely barrier 2km downstream, erosion due to vehicle traffic should not be problem.	Kitsegukla River South WRP, Biolith 1997.	H 8th on IWAP
Kitseguecla	**10/11**	Kitseguecla South Site 10 and 11	$5,784	Site 10: Removal (and possibly replace) unsafe bridge. Site 11: Removal (and possibly replace) culvert. Both dependent on future access needs.	If removal only, cross ditch roads and armor ditch beds to minimize erosion into downstream fish habitat.	Kitsegukla River South WRP, Biolith 1997.	H 8th on IWAP
Kitseguecla	**6**	Kitseguecla South – Site 6		Works complete REE required		Kitsegukla River South WRP, Biolith 1997.	H 8th on IWAP
Kitseguecla	**7**	Kitseguecla South – Site 7		Works complete REE required.		Kitsegukla River South WRP, Biolith 1997.	H 8th on IWAP
Kitseguecla	**4**	Kitseguecla South – Site 4	$15,550	Works complete REE required		Kitsegukla River South WRP, BioLith 1997.	H 8th on IWAP
Kitseguecla		Kitseguecla South Site 3 (I,ii,iii)	$65,000	Complexing 0.55 km of stream using LWD structures	Detailed design has been prepared.	Gitsegukla Planning Unit Restoration Plan, 2001	M 8th on IWAP
Kitseguecla		Kitseguecla South – Site 5	$11,815	Requires prescription for re-establishing riparian forest by fill planting with conifers and cottonwood.	Trib 1 Reach 4 Cost base 1998	Kitsegukla River South WRP, Biolith 1997.	M 8th on IWAP
Kitseguecla		Kitseguecla South – Site 8	$11,815	Re-establish riparian forest in this area.	Fill planting of conifer, and partial removal of competing vegetation with existing conifers.	Kitsegukla River South WRP, Biolith 1997.	M 8th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitseguecla Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Kitseguecla		Kitseguecla South – Site 9	$9,340	Re-establish riparian forest surrounding Trib 6. Contribute LWD into stream in future, provide shading to reduce temps, and provide input of organic debris and insects, and stabilize the banks.	Creek was dry at time of assessment. In my opinion, are any works completed achieving beneficial goals?.	Kitsegukla River South WRP, Biolith 1997.	M (L in my opinion) 8th on IWAP
Kitseguecla		Kitseguecla South -- Site 1	$4,675	Fill planting of conifers along ~100m long strip or riparian zone. Existing Ac and conifers should be encouraged through partial removal of competing vegetation.	No prescription completed. Cost base 1998	Kitsegukla River South WRP. Level 1 Detailed Assessment of Fish and Fish Habitat, BioLith Scientific Consultants Inc., 1997	L 8th on IWAP
Kitseguecla		Kitseguecla South – Site 3	$3,700	Prescription to reduce source of sediment inputs by planting of Ac whips and conifer seedlings.	305 m2 of Ac whips on floodplain, 412 m2 of Ep,Sx,Cw nursery trees on upland portions.	Kitsegukla River South WRP, BioLith 1997.	Not stated 8th on IWAP
Shandilla		Andimaul / Shandilla	~$75,000	Road rehabilitation and landslide rehabilitation.	Existing prescription(s) to be implemented in a logical fashion. Potential disastrous consequences.	Gitsegukla Planning Unit Restoration Plan, 2001.	Not stated 8th on IWAP

From Level 1 Assessment Summary for Roads, Hillslopes and Gullies – Wild Stone Report 1995							
4th Order Watershed & Site #		Sub-Basin, Stream or Locatn	Estimated Cost	Project	Comments	Source and Date	Source Priority
Kitseguecla	10/11	Kitseguecla South Site 48	$2,000	Prescription Estimate	Debris in creek is a potential barrier to fish migration and impacts fisheries habitat.	Wild Stone, 1995.	VH 8th on IWAP
West Kitsuns	10	West Kitsuns Creek Site 10	$2,000	Prescription Estimate	Plugged damaged culverts; potential for large failure into the stream below.	Wild Stone, 1995.	VH Not ranked on IWAP
West Kitsuns	11	West Kitsuns Creek Site 11	$1,000	Prescription Estimate	Debris slump may impact fisheries habitat and alter channel.	Wild Stone, 1995.	VH Not ranked on IWAP
West Kitsuns	12	West Kitsuns Creek Site 12	$1,500	Prescription Estimate	Potential debris slump above road impacting road and stream channel	Wild Stone, 1995.	VH Not ranked on IWAP
Juniper	18	Juniper Creek Site 18	$3,000	Prescription Estimate	Distance between abutments may be too small, which may be a risk of failure. Possible sediment source if abutments fail. Armouring of banks at bridge insufficient.	Wild Stone, 1995.	VH Not ranked on IWAP
Kitseguecla East	33	Kitseguecla North Site 33	$4,000	Prescription Estimate	Bank erosion from road to the Kitseguecla River may result in impacts to downstream spawning habitat and affect channel configuration	Wild Stone, 1995.	VH 22nd on IWAP
Kitseguecla	44	Kitseguecla South Site 44	$1,500	Prescription Estimate	Rotten wooden culvert. Impact to riparian area.. May fail and result in significant impacts to fisheries values	Wild Stone, 1995.	H 8th on IWAP
West Kitsuns	13	West Kitsuns Creek Site 13	$1,500	Prescription Estimate	Unstable or eroding cut/fill slopes = debris source in stream channel which may be an existing barrier to fish migration.	Wild Stone, 1995.	H Not ranked on IWAP

From Level 1 Assessment Summary for Roads, Hillslopes and Gullies – Wild Stone Report 1995							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
West Kitsuns	**14**	West Kitsuns Creek Site 14	$1,500	Prescription Estimate	Natural drainage blocked. Eroding cut/fill slope is a sediment and debris source in stream channel. Possibly an existing barrier to fish migration.	Wild Stone, 1995.	H Not ranked on IWAP
Juniper	**1**	Juniper Creek Site 1	$3,400	Prescription Estimate	Ditchline road surface erosion. Sediment discharge into Juniper Creek caused by erosion of fill slopes and landings.	Wild Stone, 1995.	H Not ranked on IWAP
Kitseguecla	**34**	Kitseguecla North Site 34	$2,000	Prescription Estimate	Unstable or eroding cut/fill slopes. Culvert/flume plugged. Large failure could cause road safety concerns. Sediment transfer into stream.	Wild Stone, 1995.	H 8th on IWAP
West Kitsuns		West Kitsuns Creek Site 14	$200	Prescription Estimate	Plugged or no ditches. Plugged, damaged culverts.	Wild Stone, 1995.	M Not ranked on IWAP
Kitsuns		Kitsuns Creek Site 9	$400	Prescription Estimate	Unstable or eroding cut/fill slopes which is sediment and debris source in stream channel	Wild Stone, 1995.	M Not ranked on IWAP
Kitsuns		Kitsuns Creek Site 28	$2,000	Prescription Estimate	Debris slide. Sediment debris source may impact fisheries habitat	Wild Stone, 1995.	M Not ranked on IWAP
Kitsuns		Kitsuns Creek Site 37	$200	Prescription Estimate	Plugged, damaged culverts, potentially washing out road.	Wild Stone, 1995.	M Not ranked on IWAP
Kitseguecla		Kitseguecla South Site 41	$150 1995 Cost base	Prescription Estimate	No ditch blocks, plugged, damaged culverts Road could washout.	Level 1 Assessment for the Kitseguecla Watershed, Vols. 1 and 2, Wild Stone Resources Ltd., Nov. 30, 1995.	M 8th on IWAP
Kitseguecla		Kitseguecla South Site 43	$1,000 1995 Cost Base	Prescription Estimate	Bridge has collapsed. Debris in stream from collapsed bridge – potential barrier to fish migration. **Completed already????**	Wild Stone, 1995.	M 8th on IWAP

From Level 1 Assessment Summary for Roads, Hillslopes and Gullies – Wild Stone Report 1995							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Kitseguecla		Kitseguecla South Site 42	$200 1995 Cost Base	Prescription Estimate	Plugged damaged culvert. Unstable or eroding cut/fill slopes contributing sediment to trib. Potential barrier to fish migration.	Wild Stone, 1995.	M 8th on IWAP
Kitseguecla		Kitseguecla South Site 52	$1,500	Prescription Estimate	Debris slide, and impact to riparian area. Potential for sediment imput into stream. Loss of fisheries habitat.	Wild Stone, 1995.	M 8th on IWAP
West Kitsuns		West Kitsuns Creek Site 6	$200	Prescription Estimate	Fill and woody debris placed adjacent to stream. Potential sediment transfer to stream during peak flows.	Wild Stone, 1995.	M Not ranked on IWAP
West Kitsuns		West Kitsuns Creek Site 7	$1,000	Prescription Estimate	Plugged or no ditches – debris slumps. Insufficient culverts creating sediment sources – slumps may progress to creek impacting fisheries habitat.	Wild Stone, 1995.	M Not ranked on IWAP

Summary of Fisheries, Fish Habitat and Riparian Zone Assessment

4th Order Watershed & Site #		Sub-Basin, Stream or Locatn	Estimated Cost	Project	Comments	Source and Date	Source Priority
Kitseguecla	**33**	~ 9.5 km	---	Monitoring, REEs on completed hillslope stabilization project.	Monitoring above and below road, majority of stabilization work done below road.	Ken Rabnett, GFA, pers. comm. Mar 21, 2006.	H 8th on IWAP
West Kitsuns	**12**	Slim Jim FSR ~0.5 km	---	Assessment??? Quite sure this site has not been rehabbed.	Land slide below road into W. Kitsuns Creek. Poss. standing order from DFO to address slide.	Ken Rabnett, GFA, pers. comm. Mar 21, 2006.	H Not ranked on IWAP
Shandilla	**A**	Shandilla FSR ~?? km	---	Assessment of failing box culvert, poss. prescription for replacement or deactivation.		Ken Rabnett, GFA, pers. comm. Mar 21, 2006.	H 14th on IWAP
Shandilla	**	Andimaul South FSR	---	Assessment and prescription.	Slope failure below small business landing. Not located on map – check with K. Rabnett	Ken Rabnett, GFA, pers. comm. Mar 21, 2006.	H 14th on IWAP
Shandilla	**C**	Andimaul North FSR	---	Assessment and prescription.	Uppermost road on Andimaul North crosses 5 steep gullies. Tension cracks observed, potential for debris torrent right down to Hwy 16 and Skeena River. The only work I am aware of in the Andimaul was the deactivation of the North Andimaul Road (pers. comm., Al Harrison, Mar 22, 2006).	Ken Rabnett, GFA, pers. comm. Mar 21, 2006.	H 14th on IWAP
Kitsuns	**	Kitsuns Creek trib	--	Level II Assessment required	Eroding cut/fill slope is a sediment and debris source in stream channel. Debris in channel may be an existing or potential barrier to fish migration. Not located on map	Wild Stone, 1995.	H Not ranked on IWAP
Kitsuns	**	Kitsuns Creek	--	Level II Assessment required	Sediments / debris source area may result in impacts to downstream spawning habitat. Not located on map	Wild Stone, 1995.	H Not ranked on IWAP
Juniper	**	Juniper Creek	--	Level II Assessment required	Unnatural sediment discharge into Juniper Creek caused by erosion of fill slopes and landings. Not located on map	Wild Stone, 1995.	H Not ranked on IWAP

Kitseguecla	**55**	Kitseguecla South Reach 1- Trib 4 Site 55	--	Level II Assessment required	Removal of vegetation within the riparian zone has the potential to impact fish and fish habitat.	Wild Stone, 1995.	H 8th on IWAP
Kitseguecla	**56**	Kitseguecla South Reach 1,2,3 Trib 1 Site 56	--	Level II Assessment required	Removal of vegetation within the riparian zone has the potential to impact fish and fish habitat.	Wild Stone, 1995.	H 8th on IWAP
Kitseguecla	**57**	Kitseguecla South Reach 1 Site 57	--	Level II Assessment required	Removal of vegetation within the riparian zone has the potential to impact fish and fish habitat.	Wild Stone, 1995.	H 8th on IWAP
West Kitsuns	**11**	West Kitsuns Creek Reach 1 Site 11	--	Level II Assessment required	Debris slump. Unnatural erosion of waste site may impact fisheries habitat and alter channel configuration.	Wild Stone, 1995.	H 8th on IWAP
Kitseguecla	**44**	Kitseguecla South Reach 1 Site 44	--	Level II Assessment required	Old , decayed wooden culvert may fail and result in significant impact to fisheries values.	Wild Stone, 1995.	H 8th on IWAP
Kitseguecla	**A,B,C, D,E**	Reach 1 Trib 1 Kitseguecla South sub-basin WSC 450-389500 Sites A,B,C,D,E Branch 200 FSR	$127,571.13 1999 Cost Base	Instream works to improve fish habitat through improving bank stabilization, and increasing habitat complexity and variety. REEs if instream works are completed.	Area around Trib 1 was extensively logged from ~ 1974 to the 1990s. Stream was considered likely to once have been a very important salmonid stream. Note. *Determine if works have been implemented; follow up with REEs if instream works are completed.	Site Survey and Design for Reach 1 of Tributary 1, Kitsequecla River South Sub-Basin, Hydroglyphic Terrain Analysts and Biolith Scientific Consultants Inc., March 31, 1999	H 8th on IWAP
Kitseguecla	**43**	Kitseguecla South Reach 1 Site 43	--	Level II Assessment required	Bridge collapsed. Debris in stream is potential barrier to fish migration	Wild Stone, 1995.	H 8th on IWAP
Kitseguecla		Kitseguecla South Reach 1 Site 42	--	Level II Assessment required	Plugged, damaged culverts. Potential barrier to fish migration	Wild Stone, 1995.	M 8th on IWAP
Kitseguecla		Kitseguecla South Reach 3 Site 45	--	Level II Assessment required	Bridge may fail and result in sediment source and possible barrier to fish migration	Wild Stone, 1995.	M 8th on IWAP
Kitseguecla		Kitseguecla South Reach 2 Site 48	--	Level II Assessment required	Damaged unsafe bridge. Debris accumulation is potential barrier to fish migration and impacts fisheries habitat.	Wild Stone, 1995.	M 8th on IWAP

Summary of Fisheries, Fish Habitat and Riparian Zone Assessment							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Kitseguecla		Kitseguecla South Reach 1 Site 49	--	Level II Assessment required	Plugged or no ditches. Plugged culverts are a barrier to fish migration. Potential failure of wooden culvert will cause siltation and consequently impact fisheries habitat.	Wild Stone, 1995.	M 8th on IWAP
West Kitsuns		West Kitsuns Creek Reach 2 Site 6	--	Level II Assessment required	Fill and woody debris placed adjacent to stream. Potential transfer of sediment to stream during peak flows.	Wild Stone, 1995.	M Not ranked on IWAP
West Kitsuns		West Kitsuns Creek Reach 1 Site 13	--	Level II Assessment required	Unstable or eroding cut/fill slopes. Potential sediment and debris source in stream channel. May be an existing or potential barrier to fish migration.	Wild Stone, 1995.	M Not ranked on IWAP
West Kitsuns		West Kitsuns Creek Reach 2 Site 14	--	Level II Assessment required	Natural drainage blocked/diverted. Sediment and debris source for stream channel. May be an existing barrier to fish migration.	Wild Stone, 1995.	M Not ranked on IWAP
Juniper		Juniper Creek	--	Level II Assessment required	Erosion and sedimentation into Juniper Creek. Road crossing, located ~50m upstream of road failure, is washed out. Sediment discharge may occur during peak flows.	Wild Stone, 1995.	M Not ranked on IWAP
Kitseguecla		Kitseguecla South Reach 1 Site 47	--	Level II Assessment required	Plugged, damaged culverts could result in road washout.	Wild Stone, 1995.	L 8th on IWAP
Kitseguecla		Kitseguecla River Reach 2 Site 52	--	Level II Assessment required	Debris slide. Potential sediment transfer into stream. Loss of fisheries habitat.	Wild Stone, 1995.	L 8th on IWAP
West Kitsuns		West Kitsuns Creek Reach 1 Site 7	--	Level II Assessment required	Plugged or no ditches. Insufficient culverts are creating sediment sources. Slumps will continue and may progress to creek 100m away.	Wild Stone, 1995.	L Not ranked on IWAP

Summary of Fisheries, Fish Habitat and Riparian Zone Assessment							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
West Kitsuns		West Kitsuns Ck Reach 2 Site 10	--	Level II Assessment required	Plugged, damaged culverts. Potential for large failure into stream below.	Wild Stone, 1995.	L Not ranked on IWAP
West Kitsuns		West Kitsuns Creek Reach 1 Site 12	--	Level II Assessment required	Potential debris lump above road. Potential for large failure to impact stream channel.	Wild Stone, 1995.	L Not ranked on IWAP
Juniper		Juniper Creek	--	Level II Assessment required	New abutments are confining channel and may be at risk to failure. Possible sediment source if abutments fail. May be barrier to fish migration	Wild Stone, 1995.	L Not ranked on IWAP

APPENDIX 5

KITWANGA WATERSHED PRIORITY LIST

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed
Roads, Hillslopes and Gullies

4th Order Watershed & Site #		Sub-Basin, Stream or Locatn	Estimated Cost	Project	Comments	Source and Date	Source Priority
Lower Kitwanga	**9**	(05) Deuce Crk Sub-basin Site 09	$1500 (Cost base 1995)	Slumping cut-slope adjacent to road. Potential for siltation into Deuce Crk – 75m away and fisheries impacts. Also potential for failure onto road.	Roads, Hillslopes and Gullies. High Hazard Rating, V.High Risk and High Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	5 (H) 15th on IWAP
Lower Kitwanga		(05) Deuce Crk Sub-basin Site 08	$1000 (Cost base 1995)	Logged riparian area. Impact to terrestrial wildlife habitat. Any stream impacts? Level II Req'd. Professional Rx Req'd.	Roads, Hillslopes and Gullies. Mod Hazard Rating, Mod Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	4 (M-H) 15th on IWAP
Upper Kitwanga		(03) Kitwanga River North Sub-basin Site 12	$1500 (Cost base 1995)	Sloughing material infilling ditch. Culvert grade incorrect. Potential for slide above, on and below road.	Roads, Hillslopes and Gullies. Mod Hazard Rating, High Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	4 (M-H) 17th on IWAP
Upper Kitwanga		(03) Kitwanga River North Sub-basin Site 15	$1500 (Cost base 1995)	Surface erosion. Impact to riparian area. Potential sediment transfer into stream. Loss of wildlife habitat.	Roads, Hillslopes and Gullies. Mod Hazard Rating, High Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	4 (M-H) 17th on IWAP
Lower Kitwanga		(1) Kitwanga River Sub-basin Site 01	$200 (Cost base 1995)	Beaver dam plugged culvert. May result in road washout during peak flows which could impact d/s steelhead & coho spawning habitat (refer to WSC 40-2200-010)	Roads, Hillslopes and Gullies. Mod. Hazard Rating, Mod. Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	4 (M-H) 15th on IWAP
Lower Kitwanga		(05) Deuce Crk Sub-basin Site 05	$1500 (Cost base 1995)	Ditches blocked with woody debris. Potential for road washout. Level II Req'd. Professional Rx Req'd.	Roads, Hillslopes and Gullies. Mod Hazard Rating, Mod Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	3 (M) 15th on IWAP
Lower Kitwanga		(05) Deuce Crk Sub-basin Site 06	$200 (Cost base 1995)	Water ponding adjacent to block road. Potential for road washout. Level II Req'd. Professional Rx Req'd.	Roads, Hillslopes and Gullies. Mod Hazard Rating, Mod Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	3 (M) 15th on IWAP
Lower Kitwanga		(05) Deuce Crk Sub-basin Site 07	$500 (Cost base 1995)	Plugged/ damaged culvert. Potential for road washout.	Roads, Hillslopes and Gullies. Mod Hazard Rating, Mod Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	3 (M) 15th on IWAP
Upper Kitwanga		(03) Kitwanga River North Sub-basin Site 13	$200 (Cost base 1995)	Ditches blocked with woody debris. Potential for road washout.	Roads, Hillslopes and Gullies. Mod Hazard Rating, Mod Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	3 (M) 17th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed
Roads, Hillslopes and Gullies

4th Order Watershed & Site #		Sub-Basin, Stream or Locatn	Estimated Cost	Project	Comments	Source and Date	Source Priority
Upper Kitwanga		(03) Kitwanga River North Sub-basin Site 14	$400 (Cost base 1995)	Unstable or eroding cut/fill slopes. Tension cracks in road. Potential for failure.	Roads, Hillslopes and Gullies. Mod Hazard Rating, Mod Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	3 (M) 17th on IWAP
Upper Kitwanga		(03) Kitwanga River North Sub-basin Site 10	$200 (Cost base 1995)	Plugged/ damaged culvert. Natural drainage blocked. Water flowing through partially plugged culvert. Road depression adjacent to culvert is ponding water.	Roads, Hillslopes and Gullies. Low Hazard Rating, Low Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	1 (L) 17th on IWAP
Upper Kitwanga		(03) Kitwanga River North Sub-basin Site 11	$150 (Cost base 1995)	Damaged culverts. Ephemeral stream is potential sediment source. Potential for road washout.	Roads, Hillslopes and Gullies. Low Hazard Rating, Low Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	1 (L) 17th on IWAP
Lower Kitwanga		(1) Kitwanga River Sub-basin Site 03	$200 (Cost base 1995)	Plugged/ damaged culvert. Potential for road washout.	Roads, Hillslopes and Gullies. Low Hazard Rating, Low Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	1 (L) 15th on IWAP
Lower Kitwanga		(1) Kitwanga River Sub-basin Site 04	$200 (Cost base 1995)	Plugged/ damaged culvert. Potential for road washout.	Roads, Hillslopes and Gullies. Low Hazard Rating, Low Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	1 (L) 15th on IWAP
Lower Kitwanga		(1) Kitwanga River Sub-basin Site 02	$200 (Cost base 1995)	Insufficient or no culvert. Potential for road washout.	Roads, Hillslopes and Gullies. Low Hazard Rating, Low Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	2 (L) 15th on IWAP
Lower Kitwanga		(1) Kitwanga River Sub-basin Site 16	N/A (Cost base 1995)	Impact to riparian zone. Removal of forested vegetation within the riparian zone has the potential to impact fish and fish habitat.	Roads, Hillslopes and Gullies. N/A Hazard Rating, N/A Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	15th on IWAP
Lower Kitwanga		(1) Kitwanga River Sub-basin Site 17	N/A (Cost base 1995)	Impact to riparian zone. Removal of forested vegetation within the riparian zone has the potential to impact fish and fish habitat.	Roads, Hillslopes and Gullies. N/A Hazard Rating, N/A Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	15th on IWAP
Upper Kitwanga		(03) Kitwanga River North Sub-basin Site 18	N/A (Cost base 1995)	Old bridge structure within channel. Debris accumulation in creek is a potential barrier to fish migration and impacts fisheries habitat.	Roads, Hillslopes and Gullies. N/A Hazard Rating, N/A Risk and Consequence rating	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	N/A

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed
Fisheries, Fish Habitat and Riparian Zone Assessment

Sub-basin # and Site #		Sub-Basin, Stream or Locat[n]	Reach Number	Fisheries hazard site number	Hazard description	Fish Species present	Stream Class	Source and Date	Existing or potential impact to fisheries	Hazard Rating
Lower Kitwanga	?	Unnamed trib to the Kitwanga River	02	16	Impact to riparian area.	Unknown	C	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	Removal of forested vegetation within the riparian zone has the potential to impact fish and fish habitat.	High 15th on IWAP
Lower Kitwanga	?	Unnamed trib to the Kitwanga River	02	17	Impact to riparian area.	Unknown	C	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	Removal of forested vegetation within the riparian zone has the potential to impact fish and fish habitat.	High 15th on IWAP
Upper Kitwanga		Unnamed trib to the Kitwanga River	01	14	Unstable or eroding cut/fill slopes. Tension cracks in road.	Unknown	C	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	Potential for failure	Mod 17th on IWAP
Upper Kitwanga		Kitwanga River	09	15	Surface erosion. Impact to riparian area.	CT DV RB	A	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	Potential sediment transfer into stream. Loss of wildlife habitat.	Mod 17th on IWAP
Upper Kitwanga		Kitwanga River	05	18	Old bridge structure within channel.	CO* PK* CM* CH* CT* SK* RB DV	A	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	Debris accumulation in creek is a potential barrier to fish migration and impacts fisheries habitat.	Mod 17th on IWAP
Lower Kitwanga		Unnamed trib to the Kitwanga River	02	01	Plugged culvert.	Unknown	C	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	Beaver dam has plugged culvert and may result in road washout during peak flows. May impact downstream steelhead and coho spawning habitat (refer to watershed code 40-2200-010).	Mod 15th on IWAP
Upper Kitwanga		Unnamed trib to the Kitwanga River	02	11	Damaged culverts	Unknown	C	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	Ephemeral stream is potential sediment source. Possible road wash out.	Low 17th on IWAP
Lower Kitwanga		Deuce Creek	03	09	Slumping cut-slope above road.	Unknown	C	Level 1 Assessment for the Kitwanga Watershed, Wild Stone Resources Ltd., 1995	Siltation to Deuce Creek – 75 meters away. Potential for failure onto road and fisheries impacts.	Low 15th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Lower Kitwanga	**17**	Trib 18 Reach 1 Map Ref # 17 0.51km long segment	N/A	Stream restorative activities – Type 1 project, improve fish passage at culvert with deeper pool, channel spanning log	Logged riparian area, bank erosion, no LWD, barrier culvert. Recommend monitoring and evaluation plan.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	VH 15th on IWAP
Tea	**3**	Tea Creek Reach 1 Map Ref # 3	N/A	Complex stream with LWD, fill plant, pull back slope, armour, re-seed and plant, install weir to provide access	Cleared riparian area, erosion from old bridge x-ing, barrier culvert. Further assessment by Marsden and Co 19XX, recommended installing culvert extension. Prescription # 5(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	VH 2nd on IWAP
Tea	**5**	Trib 26 Reach 3 Map Ref # 5	N/A	Re-seed and plant riparian area, complex stream using log weirs and boulders, pull back banks and bio-engineer to increase stability of banks.	Cleared riparian area, bank erosion and lost complexity. Prescription # 8(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	VH 2nd on IWAP
Lower Kitwanga	**2**	Mainstem Reach 3 Map Ref # 2	N/A	Fill plant, pull back bank, armour slope, re-seed and plant	Cleared riparian area, bank erosion. Prescription # 2(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	H 15th on IWAP
Tea	**4**	Tea Creek Reach 2 Map Ref # 4	N/A	Fill plant riparian area and complex stream with LWD, remove or replace culvert, install weir if perching is unavoidable.	Cleared riparian area, lack of LWD, barrier culvert, damaged culvert and eroding banks. Prescription # 6(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	H 2nd on IWAP
Lower Kitwanga	**10**	Mill Lake FSR beaver ponds Site 1 Map Ref # 10	N/A	Off-channel habitat development. Mill Lakes Road, Kitwanga River off-channel habitat beaver pond development.	Isolation of back channels. Pers. Comm. Pat Hudson: (Aug 7, 2001): Survey and design of off-channel habitat for Mill Lakes Road Beaver Pond Development Site completed by McElhanney, 2001. Monitoring of water levels and dissolved O_2 concentrations by GFA, 2002.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001. Kispiox Watershed Restoration Project – Survey and Design of Stream Rehabilitation Projects, McElhanney Consulting Services Ltd., 2001. Monitoring of Water Levels and Dissolved Oxygen Concentrations at Site #1 of the Kitwanga River 2001/2002., Gitanyow Fisheries Authority, March 2002.	H 15th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed							
4th Order Watershed & Site #		Sub-Basin, Stream or Locatn	Estimated Cost	Project	Comments	Source and Date	Source Priority
Lower Kitwanga	**15**	Trib 15 Reach 1 Map Ref # 15 15m long segment	N/A	Stream restorative activities – Type 1 project, improve fish passage at culvert with deeper pool, weirs, LWD, bank stabilization and seeding (Gitsegukla Band Council 1999). Recommend monitoring and evaluation plan	Cleared riparian area causing erosion, barrier culvert	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	H 15th on IWAP
Lower Kitwanga	**	Mainstem near Duece Creek confluence Map Ref # 1	N/A	Side channel development.	Pers. Comm. Mark Cleveland, GFA biologist (Sept 13 2001) Not located on map	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	H 15th on IWAP
Lower Kitwanga	**	Mainstem Reach 5 Map Ref # 16 13.6km long segment	N/A	Potential sites identified for side channel development.	Hydroglyphic Terrain Analysts (1999) assessed channel stability of reach 5. LWD jams present, highway was eroding into a side channel and channel instability concerns. Ongoing monitoring of 2 sites for side channel development occurred in 2001. Not located on map	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001. Channel Stability Assessment of Reach 5 of the Kitwanga River and Identification of Potential Sites for a Side Channel Development, Hydroglyphic Terrain Analysts, 1999.	H 15th on IWAP
Lower Kitwanga	**20**	Trib 18 Reach 3 Map Ref # 20	N/A		High fish hazard – issue not identified.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	H 15th on IWAP
Lower Kitwanga	**21**	Trib 18 Reach 3 Map Ref # 21	N/A		High fish hazard – issue not identified.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	H 15th on IWAP
Lower Kitwanga	**25**	Mainstem Reach 6 Map Ref # 25 3.8km long segment	N/A	Fill plant, stabilize bank and fill plant.	Cleared riparian area, bank erosion. Prescription # 4(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	H 15th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Lower Kitwanga	**27**	Mainstem Reach 6 Site 27.2km Map Ref # 27	N/A		Fish isolation in late summer. Pers. Comm. Mark Cleveland, GFA biologist (Sept. 13, 2001).	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	H GFA ranks High 15th on IWAP
Lower Kitwanga r	**28**	Mainstem Reach 5 Map Ref # 28	N/A	Side channel development	Fish isolation in late summer. Pers. Comm. Mark Cleveland, GFA biologist (Sept. 13, 2001).	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	H 15th on IWAP
Upper Kitwanga	**12**	600m below Weber FSR bridge and u/s	$17,814	Assessment includes determination of history of area, fish populations, sources of sediments, effects of sediment on fish passage, and water table levels, and possible remedial measures.	Prescription 4 for Reach 10	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H 17th on IWAP
Lower Kitwanga		Hwy 37 off channel habitat 0.5km south of Mill Lakes FSR Map Ref # 13	N/A	Off-channel habitat development. Highway 37, Kitwanga River off-channel habitat development, meadow site.	Lack of rearing and over-wintering habitat. Survey and design of off-channel habitat for Hwy 37 Meadow Site completed by McElhanney, 2001.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001. Kispiox Watershed Restoration Project – Survey and Design of Stream Rehabilitation Projects, McElhanney Consulting Services Ltd., 2001	M-H 15th on IWAP
Lower Kitwanga		Mainstem Reach 1	N/A	Side channel development	Pers. Comm. Mark Cleveland, GFA biologist, Sept. 13, 2001.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Lower Kitwanga		Mainstem Reach 2 Map Ref # 1 2.7 km long segment	N/A	Fill plant & re-assess road with a specialist	Logged riparian area and road slumping. Prescription # 1(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Tea		Tea Lake FSR Map Ref # 6	N/A		Plugged culvert may cause road washout and impact d/s steelhead and coho spawning habitat	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 2nd on IWAP
Tea		Tea Lake FSR Map Ref # 8 1.8 km long segment	N/A		Wood Box Culvert – fish passage issue	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 2nd on IWAP
Lower Kitwanga		Trib 9 Reach 1 Map Ref # 9	N/A	Install weir to provide fish access	Barrier culvert. Prescription # 9(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Lower Kitwanga		Trib 14 Reach 1 Map Ref # 14 364m long segment	N/A	Fill plant, complex system using LWD and define channel	Cleared riparian area and altered stream complexity. Prescription # 12(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Lower Kitwanga		Km 16 on Hwy 37 north at Trib 14 confluence Map Ref # 14A	N/A	Monitoring of suitability of sites for future work – off channel habitat design and development.	Lack of rearing and over-wintering habitat.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Lower Kitwanga		Trib 18 Reach 2 Map Ref # 18 211m long segment	N/A	Brush and fill plant the riparian area and complex with channel spanning LWD.	Cleared riparian area and altered stream complexity.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Lower Kitwanga		Trib 18 Reach 3 Map Ref # 19 4.927km long segment	N/A	Remove log jam.	LWD jam. Prescription # 17(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15tth on IWAP
Lower Kitwanga		Trib 19 Map Ref # 22	N/A	Oikos 1999 recommends riparian rehabilitation prescriptions that will establish a nurse tree shelterwood system.	Cleared riparian area and debris. Prescriptions were developed for the establishment of nurse tree shelterwood systems. Prescription # 19(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Lower Kitwanga		Ten Link Creek Reach 2 Map Ref # 23 0.428km long segment	N/A	Slide into stream.	Reassess with geoscientist. Prescription # 21(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Lower Kitwanga		Ten Link Creek Reach 3 Map Ref # 24 2.43km long segment	N/A	Weir and baffle culvert, construct fishway.	Culvert barrier and dam barrier. Prescription # 22(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Lower Kitwanga		Trib 23 Map Ref # 26 0.48km long segment	N/A	Partial brushing around present conifers, brushing and fill planting of conifers, weir construction to provide fish access.	Logged riparian area, altered stream complexity and culvert barrier. Prescription # 23(ref to Level 1 Assessment)	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Moonlit		Lower reaches of Moonlit Creek	$9,546	Pull back eroding bank at the old bridge site by hand, ensuring that no sediment enters the stream. Place and anchor three logs parallel to the bank to stabilize the pulled back bank. Grass seeding of bank	Prescription 1 for Reach 7	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	M Not ranked on IWAP
Moonlit		Lower reaches of Moonlit Creek	$4,132	RPF to assess and prescribe treatment for the riparian area on the eastern side of the river. Objectives of treatment are bank stabilization, increased LWD input, organic debris and insects into the stream, restoration or riparian habitat for terrestrial wildlife, and increased shade and cover.	Prescription 2 for Reach 7	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	M Not ranked on IWAP
Upper Kitwanga		Upper watershed accessed by Jackson Main FSR	$4,999 (Cost Base 1999)	Pull back of stream bank to reduce sediment delivery to stream. Rip rap and logs will prevent further erosion.	Prescription 5 for Reach 13	Level 1 Field Assessment for the N. Kitwanga River Sub-basin	M 17th on IWAP
Upper Kitwanga		Mouth of river into Kitwancool Lake to 600m downstream of Weber FSR bridge	$10,235	Planting of young coniferous and deciduous trees on higher and drier sites, and protection of planted and existing trees from beaver	Prescription 3 for Reach 9	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	L 17th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Lower Kitwanga		Site 14 On Tributary 15	N/A	Assess fish habitat values above culvert.	Stream channel below culvert relatively steep and appeared to provide little fish habitat. Placing wood in this channel would be expected to have a low chance for meeting the goal of increasing fish habitat. Creating passage at the culvert should be delayed until fish habitat values above the culvert are determined. Recommend determining if there are other high priority areas where work could be done. Appdx. E, Biolith 1999.	Summary of Stream Activities at Sites 14 and 15 in the Kitwanga River South Sub-basin to March 1999, BioLith Scientific Consultants Inc, March 26, 1999.	L 15th on IWAP
Lower Kitwanga		Site 15 on Tributary 18	N/A	Anchoring of LWD to imported boulders. REEs.	It is recommended that LWD installed at site 15 should be anchored to imported boulders >65cm in their b-axis, using steel cable >1.5cm dia. Epoxied into 15cm deep holes drilled into the rock using the Hilti Epoxy system.	Summary of Stream Activities at Sites 14 and 15 in the Kitwanga River South Sub-basin to March 1999, BioLith Scientific Consultants Inc, March 26, 1999.	? 15th on IWAP
Lower Kitwanga		Mainstem Reach 2 Riparian Seg 83 Mapsheet 103P030 0.14km long segment	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; fish habitat assessment of the back channel is required.	On Crown land. Recommended for Level 1 riparian assessment.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001. Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	15th on IWAP
Lower Kitwanga		Mainstem Reach 3 Riparian Seg 96 and 109 Mapsheet 103P030 0.50km long segment	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting	On Crown land. Recommended for Level 1 riparian assessment.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001. Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	15th on IWAP
Lower Kitwanga		Mainstem Reach 2 Riparian Seg 4, 5, 6, 8, 9, 10 Mapsheet 103P020	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting	On Private land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	15th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Tea		Tea Creek 400-364900-10700 Reach 1 Riparian Seg 7 Mapsheet 103P020	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; check land status.	On Private land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	2nd on IWAP
Lower Kitwanga		Unnamed Trib 400-364900-xxxx16 Reach – Riparian Seg 107, 108 Mapsheet 103P030	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	15th on IWAP
Lower Kitwanga		Mainstem Reach 5 Riparian Seg 181, 182, 183 Mapsheet 103P040	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; check land status.	On IR land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	15th on IWAP
Upper Kitwanga		Unnamed Trib 400-364900-xxxx36 Reach – Riparian Seg 187, 188 Mapsheet 103P040	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; check land status.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP
Upper Kitwanga		Unnamed Trib 400-364900-589000 Reach – Riparian Seg 195, 196 Mapsheet 103P040	N/A	Assess channel stability and opportunity for vegetative stabilizing techniques; assessment team requires a fluvial geomorphologist and riparian ecologist.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP
Upper Kitwanga		Mainstem Reach 8 Riparian Seg 226 Mapsheet 103P050	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Upper Kitwanga		Mainstem Reach 8 Riparian Seg 227 Mapsheet 103P050	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP
Upper Kitwanga		Mainstem Reach 9 Riparian Seg 228, 229 Mapsheet 103P050	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP
Upper Kitwanga		Unnamed Trib 400-364900-678000-xxxx43 Reach – Riparian Seg 212, 213 Mapsheet 103P050	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP
Upper Kitwanga		Unnamed Trib 400-364900-678000 Reach – Riparian Seg 220, 221, 224, 225 Mapsheet 103P050	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP
Upper Kitwanga		Unnamed Trib 400-364900-678000 Reach – Riparian Seg 218, 219, 222, 223 Mapsheet 103P050	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP
Upper Kitwanga		Unnamed Trib 400-364900-xxxx44 Reach – Riparian Seg 230, 231 Mapsheet 103P050	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Upper Kitwanga		Unnamed Trib 400-364900-678000-xxxx43 Reach – Riparian Seg 214, 215, 216, 217 Mapsheet 103P050	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP
Upper Kitwanga		Unnamed Trib 400-364900-702000 Reach – Riparian Seg 236, 237, 240, 241 Mapsheet 103P050	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP
Upper Kitwanga		Unnamed Trib 400-364900-xxxx28 Reach – Riparian Seg 162, 163, 164, 165 Mapsheet 103P039	N/A	Assess for suitability for conifer or mixed conifer/hardwood planting; assess flooding regime and impact on conifer growth.	On Crown land. Recommended for Level 1 riparian assessment.	Riparian Overview Assessment for the Kitwanga River Watershed, Oikos, 1999.	17th on IWAP

South Kitwanga River sub-basin Priority Road Sites (Source: Gitanyow Fisheries Authority 2001 Road Assessment)							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Upper Kitwanga	**1**	16.0 – 10.2 Map Ref # 1 GPS: 09/0555334/6133791	N/A	Address obstruction and prob. fish barrier concerns with twinned CMPs.	Two round metal culverts, left CMP is 95% plugged, right CMP has a plunge at both ends; d/s = 0.4m and u/s = 0.65m. Velocity for right CMP = 1.93m/s. Left CMP is 900mm x 23.5m long, right CMP is 500mm x 23.5m long. 4 – 5m fill depth. Fish presence known.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	**H** **17th on IWAP**
Upper Kitwanga	**15**	16.0 – 16.2 (Kitwancool FSR) Map Ref # 15 GPS: 09/0555334/6133791	N/A	Address obstruction and public safety concerns and poss. fish barrier at washout. Determine fish presence before further action.	Wash-out 27m long. Road and ditches plugged with woody debris. Creek flowing over road, no structures. A log d/s blocks fish passage. D/s wetted width = 2.4m x 1.75m deep, u/s wetted width = 3.4m x 1.2m deep. Velocity = 1.46m/s. Fish presence unknown.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	**H** **17th on IWAP**
Upper Kitwanga	**19**	16.0 – 16.4 Map Ref # 19 GPS: 09/0544609/6136517	N/A	Address road obstruction and public safety concerns. Poss. sediment source. Potential landslide (slump?) from steep road cut-slope.	Cut-slope = 72%. Bank above road unstable, sediment falling into ditchline; downhill slope also unstable. Poss. sediment source. Potential landslide 10m high x 109m long. No fish presence.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	**H** **17th on IWAP**
Upper Kitwanga		16.0 (26 – Mile FSR) Map Ref # 17 GPS: 09/0546529/6139060	N/A	Address culvert gradient and small drop at outlet. Determine fish presence before further action.	Metal culvert with steep gradient (12%) and 0.3m plunge at outlet. CMP is 1250mm x 18.9m long. Fill depth 1.6m. Stream 1.0 – 1.3m width. Fish presence unknown.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M – **H** **17th on IWAP**
Tea		2.0 – 2.1 – 3.9km Road Map Ref # 29	N/A	Address poss. fish barrier/obstruction and public safety concerns with WBC.	Wood Box Culvert, some debris inside. Partial barrier, 0.5m plunge at outlet. WBC is 11m long x 0.3m high, 1.3m fill over culvert. Fish presence unknown.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M – H 2nd on IWAP
Tea		2.0 (Tea Lake FSR) Map Ref # 7	N/A	Address fish barrier. Some erosion at outlet side.	900mm CMP, outlet is hanging 1.2m, barrier to fish passage. Culvert is 12.2m long. Fish presence known.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 2nd on IWAP

South Kitwanga River sub-basin Priority Road Sites (Source: Gitanyow Fisheries Authority 2001 Road Assessment)							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Lower Kitwanga		Mill Lakes Road Map Ref # 11	N/A	Address public safety concerns with land slide (and prob. water quality concerns with intro of seds into Duece Creek – Silvicon 2006).	Land slide is on south side of the road and is eroding sediment into the ditchline which flows into Duece Creek, a known fish-bearing stream, 100m d/s. Fish are not present in the ditchline. Some material (rocks and stumps) has fallen on road.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Lower Kitwanga		Mill Lakes Road Map Ref # 12	N/A	Address poss. fish barrier/obstruction concerns with WBC.	Wood Box Culvert, outlet has lots of debris, blocking flow, therefore obstructed. WBC is 2.7 x 1.5 x 11.2m long, 0.5m fill over culvert. Fish presence unknown.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 15th on IWAP
Upper Kitwanga		16.0 (26 – Mile FSR) Map Ref # 10 GPS: 09/0552609/6140923	N/A	Abundant release of sediments in a Coho/Trout stream due to beaver activity.	Beaver dam is releasing an abundance of sediment in a coho/trout stream. Dam has been breached, but if rebuilt it will cause a fish obstruction, lots of water in the ditchline. Beaver dam is 42.4m long and 5.8m wide. Fish presence known.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 17th on IWAP
Upper Kitwanga		16.0 (26 – Mile FSR) Map Ref # 11 GPS: 09/0551886/6140758	N/A	Some sediment caused by beaver dam at culvert. Determine fish presence before further action.	Metal culvert with wire mesh (outlet) and steel grid (inlet). Some sediment caused by beaver dam. CMP is 600mm x 13.5m long. 0.75m fill depth. Fish presence unknown. If fish present, Mod priority.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 17th on IWAP
Upper Kitwanga		16.0 (26 – Mile FSR) Map Ref # 14 GPS: 09/0545046/6137126	N/A	Landslide (slump?) at culvert inlet relases sediment into trib to Kitwanga R. Determine fish presence before further action.	A land slide at the culvert inlet releases sediment in the stream which flows into the Kitwanga R. The slide is 15m high x 20m wide. CMP is 1040mm x 20.4m long. Fish presence unknown.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 17th on IWAP
Upper Kitwanga		16.0 (26 – Mile FSR) Map Ref # 16 GPS: 09/0545216/6137698	N/A	Address poss. fish barrier at outlet. Determine fish presence before further action.	Metal culvert with two plunges at outlet. First drop is 0.9m, second drop is 1.0m. Would be an obstruction to fish passage if fish present. CMP is 825mm x 23m long. Fill depth 2.75m. Very small stream, 0.4m wetted width. Fish presence unknown.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 17th on IWAP

South Kitwanga River sub-basin Priority Road Sites (Source: Gitanyow Fisheries Authority 2001 Road Assessment)							
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Upper Kitwanga		16.0 Map Ref # 18 GPS: ---	N/A	Landslide (slump?) at culvert inlet relases sediment into trib to Kitwanga R. Determine fish presence before further action. **Same site as Map Ref # 14?** (same mapsheet, same CMP dimensions, same size slide, same stream width, same description)	A land slide at the culvert inlet releases sediment in the stream which flows into the Kitwanga R. The slide is 15m high x 20m wide. CMP is 1040mm x 20.4m long. Fish presence unknown.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 17th on IWAP
Upper Kitwanga		16.0 – 16.6 Map Ref # 20 GPS: 09/0543783/6135627	N/A	Address poss. fish barrier at outlet. Determine fish presence before further action.	Metal culvert with small 0.2m plunge at outlet. CMP is 1735mm x 13.9m long. Fill depth 0.75m. U/s wetted width = 2.0m, depth = 0.1m, d/s wetted width = 1.2m, depth = 0.25m. Fish presence unknown.	Enhancing Environmental Values - Watershed Restoration Plan – Kitwanga River Watershed, McElhanney, 2001.	M 17th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed								
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**McElhanney Map Ref #**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Upper Kitwanga	**12**	600m below Weber FSR bridge and upst	12	$17,814	Assessment includes determination of history of area, fish populations, sources of sediments, effects of sediment on fish passage, and water table levels, and possible remedial measures.	Prescription 4 for Reach 10	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H GFA ranks High 17th on IWAP
Upper Kitwanga	**6**	West shore of Kitwancool Lake	6	$17,814	Assessment includes determination of history of area, fish populations, sources of sediments, effects of sediment on fish passage, and water table levels, and possible remedial measures. Also threat of channel movement down the old road.	Prescription 6 for Trib 48	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H GFA ranks High 17th on IWAP
Upper Kitwanga	**7**	West shore of Kitwancool Lake	7	$17,814	Assessment includes determination of history of area, fish populations, sources of sediments, effects of sediment on fish passage, and water table levels, and possible remedial measures. Also threat of channel movement down the old road.	Prescription 7 for Trib 45	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H GFA ranks High 17th on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed								
4th Order Watershed & Site #		Sub-Basin, Stream or Locatn	McElhanney Map Ref #	Estimated Cost	Project	Comments	Source and Date	Source Priority
Upper Kitwanga	**13**	Kitwanga River – (Trib 57 mouth)	13	$1,217	Determination of fish presence below road. If fish, repairs may be eligible for funding through the Roads, Hillslopes and Gullies component of the WRP.	Prescription 9 for Trib 57	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H 17th on IWAP
Upper Kitwanga	**14**	Kitwanga River Reach 12 – (mouth of Trib 69)	14	$5,661	Logged portion of stream needs assessment to determine sediment history, fate of sediments emanating from the slide, effects on fish passage, and possible remedial measures to stabilize the slide	Prescription 10 for Trib 69	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H 17th on IWAP
Upper Kitwanga	**9**	Enters Trib 55 from NE	9	$3,912	Prescription to construct sandbag weirs below the highway culvert to raise the water level in scour pool below the culvert, thus reducing the height of jump for fish passage.	Prescription 13 for Backwater Highway Culvert on Trib 53	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H 17th on IWAP
Upper Kitwanga	**8**	Trib 44 flowing into Kitwancool Lake's northeastern shore	8	$3,912	Prescription to construct sandbag weirs below the highway culvert to raise the water level in scour pool below the culvert, thus reducing the height of jump for fish passage.	Prescription 14 for Backwater Highway Culvert on Trib 44	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H GFA ranks High 17th on IWAP
Upper Kitwanga	**5**	Trib 38 flowing into Kitwancool Lake's northeastern shore	5	$488	Removal of material blocking the culvert under the east Kitwancool Lake access road.	Prescription 15 on Trib 38 under Kitwancool Lake Access Road	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H GFA ranks High 17th on IWAP
Upper Kitwanga	**4**	Trib 37 flowing into Kitwancool Lake's Northeastern shore	4	$10,322	Prescription for restoration to determine quantity and quality of habitat available upstream from the culvert, determine hydrological and energetic nature of stream above culvert, and feasibility of assuring fish access above the highway	Prescription 16 on Trib 37	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	H 17th on IWAP
Moonlit		Lower reaches of Moonlit Creek	2	$9,546	Pull back eroding bank at the old bridge site by hand, ensuring that no sediment enters the stream. Place and anchor three logs parallel to the bank to stabilize the pulled back bank. Grass seeding of bank	Prescription 1 for Reach 7	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	M Not ranked on IWAP

List of Potential Restoration Activities for FIA Funding – Kitwanga Watershed								
4th Order Watershed & Site #		**Sub-Basin, Stream or Locatn**	**McElhanney Map Ref #**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Moonlit		Lower reaches of Moonlit Creek		$4,132	RPF to assess and prescribe treatment for the riparian area on the eastern side of the river. Objectives of treatment are bank stabilization, increased LWD input, organic debris and insects into the stream, restoration or riparian habitat for terrestrial wildlife, and increased shade and cover.	Prescription 2 for Reach 7	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	M Not ranked on IWAP
Upper Kitwanga		Upper watershed accessed by Jackson Main FSR	21	$4,999 (Cost Base 1999)	Pull back of stream bank to reduce sediment delivery to stream. Rip rap and logs will prevent further erosion.	Prescription 5 for Reach 13	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	M 17th on IWAP
Upper Kitwanga		Mouth of river into Kitwancool Lake to 600m downstream of Weber FSR bridge		$10,235	Planting of young coniferous and deciduous trees on higher and drier sites, and protection of planted and existing trees from beaver	Prescription 3 for Reach 9	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	L 17th on IWAP
Upper Kitwanga		Cher Nobel Creek, Reach 1		$10,235	Planting of young coniferous and deciduous trees on higher and drier sites, and protection of planted and existing trees from beaver	Prescription 8 for Cher Nobel Creek, Reach 1	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	L 17th on IWAP
Upper Kitwanga		Kitwanga River Reach 13 (mouth of Trib 79)		$2,961	Assessed by RPF to determine appropriate prescription, which might include fill planting of young coniferous trees where required. Objectives are to increase shade and cover, enhance riparian bavitat for terrestrial wildlife, increase LWD, organic debris and insects into stream, reduce transport of fines, and stabilization of stream banks.	Prescription 11 for Trib 79	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	L 17th on IWAP
Upper Kitwanga		Kitwanga River Reach 12 (Trib 73,71,70,68,64)		$5,961	Assessment to determine requirements for treatment of the riparian areas, stabilization of road crossings, and preparation of appropriate prescriptions.	Prescription 12 for Trib 73,71,70,68,64	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	L 17th on IWAP
Upper Kitwanga		Trib 33 crossing at Hwy 37		$10,262	Prescription for restoration of stream channel below Hwy 37	Prescription 17 on Trib 33	Level 1 Detailed Field Assessment of Aquatic and Riparian Habitat for the North Kitwanga River Sub-Basin, BioLith, March 31, 1999.	L 17th on IWAP

APPENDIX 6

SUSKWA WATERSHED PRIORITY LIST

Suskwa Watershed Priority List

List of Potential Restoration Activities for FIA Funding – Suskwa Watershed							
4th Order Watershed & Site #		Sub-Basin, Stream or Location	Estimated Cost	Project	Comments	Source and Date	Source Priority
Natlan	**	Reach 6 – Natlan Site 18 – Herman Map	--	Remove or replace bridge	2 bridge failures (one is complete) Not sure of location therefore not located on map.	Oikos - 1995	**VH** Not Ranked on IWAP
Natlan	A	Natlan Ck Suskwa ~15.5-17.0km	--	Prescription/assessment for hill slope stabilization	--	K. Rabnett personal communication	**H** Not Ranked on IWAP
Natlan	15	Natlan – Reach 3 Site 15 – Herman Map	--	Partial removal of log jam has been completed. Monitoring this site to ensure the jam does not occur is necessary	--	SRS - 1998	**H**** Not Ranked on IWAP
Natlan	16	Trib to Natlan Creek Site 16 – Herman Map	--	Weiland presents two options for remedial action – refer to report for info	Perched culvert – barrier to fish migration Impassable pipe arch culvert requires modification	Weiland Consultants – Cost Estimate, geomorphic and hydrologic assessment for Trib 130 - 1998	**H**** Not Ranked on IWAP
Natlan	18	Natlan reach 6 Site 18 – Herman Map	--	Replant riparian area over 826m	Cleared riparian	SRS - 1996	**H**** Not Ranked on IWAP
Roche	B	1.5km Suskwa FSR (just prior to bridge)	--	Bank Stabilization @ 1.5km	Slumping and sediment into Bulkley River	Ken Rabnett (pers. comm. Mar, 21, 2006)	**H** Not ranked on IWAP
Lower Suskwa	6	Hamblin FSR Trib 34 Site 6 – Herman Map	--	Replace Culvert	Collapsed culvert	SRS - 1996	**H**** Not available
Lower Suskwa	7	Hamblin FSR Trib 40 Site 7 – Herman Map	--	Remove Debris	In-stream debris	SRS - 1996	**H**** Not available
Lower Suskwa	4	~2km Hamblin on Trib 33 Site 4 – Herman Map	--	Replace Culvert	Culvert obstruction Prescription Site 4	SRS - 1996	**H**** Not available
Lower Suskwa	5	~3km Hamblin Main Trib 34 Site 5 – Herman Map	--	Replace Culvert	Culvert failing	SRS - 1996	**H**** Not available

List of Potential Restoration Activities for FIA Funding – Suskwa Watershed							
4th Order Watershed & Site #		Sub-Basin, Stream or Location	Estimated Cost	Project	Comments	Source and Date	Source Priority
Lower Suskwa	**C**	~6.5km Hamblin Main	--	Prescription/Assessment for slide into Suskwa River	--	K. Rabnett personal communication	**H** Not available
Lower Suskwa	**D**	~14.5km	--	Prescription/assessment for hillslope stabilization	--	K. Rabnett personal communication	**H** Not available
Lower Suskwa	**3**	Skilokis Ck – Reach 1 Site 3 – Herman Map	--	Clearing riparian, bank erosion road x-ing obstruction, poor stream complexity and cleared riparian	Complexing completed REE???	OKIOS – 1998 Fish, fish habitat, channel and riparian assessments	**H** Not available
Lower Suskwa	**3A**	Skilokis Ck Reach1 – Site A	--	Create cascade pool complex	Detailed prescription complete	SRS - 1998	**H** Not available
Lower Suskwa	**3C**	Skilokis Ck Reach 1 – Site C	--	Breach Berm	Prescription Site 3 ©	SRS - 1998	**H** Not available
Lower Suskwa	**3D**	Skilokis Ck Reach 1 – site D	--	Create cascade pool complex	Detailed prescription complete	SRS - 1998	**H** Not available
Madii Lii	**8**	Suskwa -Trib to reach 8	--	Further assessment required	Sediment transport from fluvial fan Cleared riparian Ditch and road x-ing barriers	SRS - 1996	**H 15th on the IWAP**
Madii Lii	**8**	Natlan A Road Trib 44 Site 8 – Herman Map	--	Replace wood box culvert	Failing wooden box culvert ****All Natlan road crossing issues deferred pending liability issues (taken from SRS-1998)****	SRS - 1996	**H** 15th on the IWAP
Madii Lii	**9**	Natlan A Road Trib 45 Site 9 – Herman Map	--	Sediment Deposition to high value rearing areas downstream	Cross ditch at Natlan (A) FSR (8km) ****All Natlan road crossing issues deferred pending liability issues (taken from SRS-1998)****	SRS - 1996	**H** 15th on the IWAP
Madii Lii	**10**	Jumbo Creek Trib 48 – Suskwa) Site 10 – Herman Map	--	Level 2 required on destabilized creek	Creek avulsion occurring Cleared riparian has completely destabilized this channel	SRS - 1995	**H** 15th on the IWAP
Madii Lii	**10**	Jumbo Creek Trib 48 Site 10 – Herman Map	--	Reconstruction of road x-ing, reinstatement of stream channel and riparian planting	De-composing bridge leading to downstream sedimentation	SRS - 1996	**H** 15th on the IWAP

List of Potential Restoration Activities for FIA Funding – Suskwa Watershed							
4th Order Watershed & Site #		Sub-Basin, Stream or Location	Estimated Cost	Project	Comments	Source and Date	Source Priority
Madii Lii	**27**	Suskwa – Reach 7 Site 27 – Herman Map	--	Level 2 Assessment required	Eroding cutbank	Oikos – 1995	**H** **15th on the IWAP**
Madii Lii	**27**	Suskwa – Reach 7 Site 27 – Herman Map	--	Streamside planting	Cleared riparian	Oikos - 1995	**M/H** **15th on the IWAP**
Iltzul	**19**	Iltzul (Trib 60) In Reach 3 Site 19 – Herman Map	--	Remove Debris Prescription completed	In-stream debris barrier One log needs to be removed to restore access to the tributary	SRS - 1996	**H**** **21st on the IWAP**
Iltzul	**20**	Iltzul Trib to Iltzul (in Reach 3) Site 20 – Herman Map	--	Remove Debris and create access structure	--	SRS - 1996	**H**** **21st on the IWAP**
Denison	**22**	Denison Ck Reach 3	--	Re-plant riparian	Channel migration due to extensive instream debris	Oikos - 1995	**H + M** Not Ranked on IWAP
Denison	**21**	Denison Reach 1 Site 21 – Herman Map	--	Remove debris	Debris obstruction, slope failures below culvert, and sediment accumulation Caution – debris may be stabilizing slope	SRS - 1996	**H**** Not Ranked on IWAP
Denison	**22**	Denison Ck Reach 3 Site 22 – Herman Map	--	Re-plant riparian	Cleared riparian	SRS - 1996	**H** Not Ranked on IWAP
Upper Suskwa	**11**	Trib to Suskwa (140)	--	Routine Effectiveness Evaluations	--	SRS - 1999	**H** Not Ranked on IWAP
Upper Suskwa	**11**	Trib to Suskwa Site 11 – Herman Map	--	Potential for further assessment	Debris jam	SRS - 1999	**H**** Not Ranked on IWAP
Upper Suskwa	**11A**	Trib to Suskwa Site 11 – Herman Map	--	Riparian planting	Cleared riparian	SRS - 1998	**H****
Upper Suskwa	**12**	Trib to Suskwa (144) Site 12 – Herman Map	--	Replace bridge with WBC Plant riparian over 675m	Perched culvert/collapsed bridge Cleared riparian	SRS - 1996	**H**** Not Ranked on IWAP

List of Potential Restoration Activities for FIA Funding – Suskwa Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Location**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Upper Suskwa	**13**	Trib to Suskwa (137) Site 13 – Herman Map	--	Pull back road grade and remove debris	Deactivation related debris clogging streams, filled in cross ditches, and channel avulsion occurring	SRS - 1996	**H**** Not Ranked on IWAP
Upper Suskwa	**13**	Trib to Suskwa (137) Site 13 – Herman Map	--	Recommend re-assessment of cross ditches vs. access, as the area is well used for recreation	--	SRS - 1996	**H**** Not Ranked on IWAP
Upper Suskwa	**13**	Trib to Suskwa (137) Site 13 – Herman Map	--	Riparian planting over 220m	Riparian cleared Works deferred pending assessment of cost	SRS - 1998	**H**** Not Ranked on IWAP
Upper Suskwa	**28**	Suskwa River (Netalzul Mt. Trib's) Site 28 – Herman Map	--	Cleaned up debris in each ditch while retaining vehicle access (fords)	In-filled x-ditches, adding sediment	SRS - 1998	**H**** Not Ranked on IWAP
Upper Suskwa	**30**	Jumbo Creek 2 Trib to Suskwa (48) Site 30 – Herman Map	--	X-ditch landing along spur B of branch 6-16	Cleared riparian, sediment accumulation, channel migration	SRS - 1998	**H**** Not Ranked on IWAP
Upper Suskwa	**31**	Jumbo Ck 2 Site 31	--	Breach berm in block 004, restore riparian function	Cleared riparian, sediment accumulation, channel migration	SRS - 1998	**H**** Not Ranked on IWAP
15-Mile		15 Mile Creek (Site 2) Herman Map	--	Replace Culvert and Replant Riparian area (40m)	Culvert obstuction	Suskwa Restoration Society (SRS0 – Level 2 Assessment and Prescription	**M** **25th on the IWAP**
Madii Lii		Suskwa – Reach 6 Site 27 – Herman Map	--	Riparian Assessment required	Cleared Riparian	Oikos Ecological – 1995 Fish, fish habitat, channel and riparian assessments	**M** **15th on the IWAP**
Iltzul		Iltzul Reach 5	--	Rehabilitate road crossing	Road crossing obstruction	Oikos - 1995	**M** **21st on the IWAP**
Iltzul		Iltzul Trib 46-0700-030-013-054	--	Rehabilitate road crossing	Road crossing obstruction	Oikos - 1995	**M** **21st on the IWAP**
Denison		Denison Creek Reach 1 , North bank	--	Level 2 required	Recurring surface erosion valley wall failure	Oikos - 1995	**M** Not Ranked on IWAP

List of Potential Restoration Activities for FIA Funding – Suskwa Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Location**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Denison		Denison Reach 1 Site 21 – Herman Map	--	Debris has breached itself Annual site investigation regarding slope failure	Scarp slope failure	SRS - 1998	**M**** Not Ranked on IWAP
Denison		Denison Reach 2 Site 23 – Herman Map	--	Level 2 required	Recurring erosion and failures x5	Oikos - 1995	**M** Not Ranked on IWAP
Denison		Denison Reach 2 Site 23 – Herman Map	--	Fill in berm and re-direct flows to original path	Failures contributing fines and sediment Only one of five failures is recommended for works	SRS - 1996	**M**** Not Ranked on IWAP
Natlan		Trib to Natlan (30-144) in reach 6 Site 17 – Herman Map	--	Rehabilitate entire crossing and includes riparian prescription over 70m	Collapsed bridge and cleared riparian	SRS - 1996	**M** Not Ranked on IWAP
Lower Suskwa		Skilokis Creek ~15km Suskwa FSR	$5,500 Cost base - Chris Broster, MOE, 2005	Routine Effectiveness Evaluations on in-stream and riparian rehabilitation.	Skilokis Creek Overflow	Suskwa Watershed Restoration Program, March 1999. Chris Broster, MOE, 2005	**L** Not available
Upper Suskwa		Grizzly Creek near Grizzly Main	$2,500 Cost base – C. Broster, MOE, 2005	Routine Effectiveness Evaluation	Evaluate the effectiveness of the log deflectors for diverting stream back to original channel.	Suskwa Watershed Restoration Program, March 1999. C. Broster, MOE, 2005	**L** Not Ranked on IWAP
15-Mile		15 Mile Creek	--	Bridge removal/replacement and poss. deactivation. May be completed already	Bridge failure restricting flows and road failing into creek 2 km from Suskwa on 15 Mile Ck. Prob. requires Rx, cost est. and poss. detailed design.	KEWP Level 1 IWAP	-- **25th on the IWAP**
Iltzul		Iltzul Reach 4	--	Remove Debris and create access structure	Ditch and road crossing sedimentation	Oikos - 1995	**L** **21st on the IWAP**
Iltzul		Entire north side of Iltzul creek	--	Level 2 required	Slumps along creek have greatest potential for serious damage to this watershed as a whole	Gottesfeld - 1995	**L** **21st on the IWAP**
Denison		Denison Creek	--	Level 2 required	Avalanche path causing erosion	SRS - 1995	**--** Not Ranked on IWAP

List of Potential Restoration Activities for FIA Funding – Suskwa Watershed							
4th Order Watershed & Site #		**Sub-Basin, Stream or Location**	**Estimated Cost**	**Project**	**Comments**	**Source and Date**	**Source Priority**
Natlan		Trib to Natlan Reaches 1-6 Site 17 – Herman Map	--	Rehabilitate channel	Sedimentation from ditch, FSR runoff and crossings	Gottesfeld Consulting - 1995	**L** Not Ranked on IWAP
Natlan		34km Suskwa FSR	$2,500 Cost base - Chris Broster, MOE, 2005	Routine Effectiveness Evaluations. Reassessment/re-prescription and implementation are suggested for this site with a view to span/bridge the stream.	Km 34 Creek Fish Passage Project 2001. D.Fillier notes this site was assessed in Oct., 2005 for fish passage and the restorative work undertaken is no longer functioning.	Km 34 Creek Fish Assessment Project 2001. Chris Broster, MOE, 2005	**L** Not Ranked on IWAP

APPENDIX 7

VERY HIGH AND HIGH PRIORITY SITE MAPS

APPENDIX 8

FOURTH ORDER WATERSHED MAPS