YUKON COLLEGE

YUKON RIVER SALMON & ENHANCEMENT FUND
EDUCATIONAL PROJECT
YUKON FISHERIES FIELD TECHNICIAN PROGRAM
FINAL REPORT

CRE-132-N-10

5th Offering (2010)

Whitehorse/Dalton Post, Y.T.

Prepared by: D. Otto

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INTRODUCTION

The fifth offering of the Yukon Fisheries Field Assistant Certification Program (Fish Tech), developed and delivered through Yukon College, was conducted in Whitehorse and Dalton Post, Yukon between April 16 and June 11, 2010. The first portion of the course April 16 – May 21 was in online format, originating from the Ayamdigut Campus in Whitehorse, with the remainder delivered in a field camp format over a 3 week period at Dalton Post.

The overall goal of the Fish Tech program has been, and continues to be, to provide students from a wide range of academic and employment backgrounds with basic skills and knowledge to work in Yukon salmon (anadromous) and freshwater fisheries as fisheries field technicians. Students finishing the program are equipped with skills and knowledge related to salmonid biology, fish identification, fisheries techniques including electrofisher certification, as well as fish and fish habitat inventories, assessments and restoration techniques. The course is also intended to provide students with the opportunity to acquire skills related to project planning procedures, permit applications, project administration and proposal development pertaining to typical Yukon fisheries fieldwork. The original intent was for the course to be offered on an annual basis in Yukon communities, with the goal of increasing the quality of salmon restoration projects within the Territory, as well as building community capacity in terms of stewardship and the move toward more community-based fisheries management.

The course is relatively intense, and initially consisted of a combination of classroom lectures and fieldwork over a 5-week period, with several extra weekend sessions. The course has been funded primarily through The Yukon River Panel Salmon Restoration and Enhancement Fund, student tuition, and in-kind contributions from Yukon College. The first offering of the course was in Dawson City, in August and September of 2003. A second offering was successfully completed at the same location in May and June of 2004. The third offering took place in Teslin in 2005, and the fourth in Pelly Crossing in 2007. There had been a three-year gap in Fish Tech offerings previous to 2010.

Program History:

At the time of the first offering of the course in August of 2003, the Yukon-based curriculum had not been developed to a point where it would effectively meet student needs as outlined above. In order to permit the program to run that year, course coordinators in Dawson contacted Malaspina University-College's Fisheries and Aquaculture Extension Program, who have for many years offered a Fisheries Field Technician Certificate Program. An arrangement was then made for two Malaspina instructors to come to Dawson to deliver the course in conjunction with a Yukon resident instructor who was to serve as an assistant and "instructor-in-training" for the second offering of the course. At the end of the course, successful students were awarded Malaspina's Fisheries Field Technician Certificate. Following the first offering further work was done by the Yukon “instructor-in-training” to attempt to complete a Yukon-based curriculum for the course over the fall of 2003. However, this curriculum was not completed to a point where it could be offered in 2004. Malaspina's instructors and curriculum were utilized again during the 2004 offering. The original intent of the program was to develop and deliver a wholly Yukon-based curriculum designed to specifically meet the needs of anadromous and freshwater fisheries, in a northern aquatic environment. The Malaspina curriculum, while very effective and appropriate for fisheries located in a more temperate climate, has been developed to meet the needs of a wide range of applications and is relatively "generic" in its approach. The Malaspina curriculum did not fully address some of the specific scenarios and problems unique to the Yukon.

The 2005 offering was a joint offering between the two institutions with a 50:50 split between curriculum developed and delivered by Malaspina, and course materials developed and delivered by a Yukon College instructor. Since 2007 the Fish Tech program has consisted solely of Yukon College curriculum The Yukon College course was also developed specifically to meet the needs of mature students, First Nation members and those who have been working as field technicians, but lacking formal training and wishing to expand their skills and abilities. Typical of many Yukon College courses, Fish Tech students span a wide range of ages and academic, or other learning

backgrounds. The 2010 offering saw the initiation of a conversion of the classroom-based portion of the program to online format. Development of the online learning component was initiated for several reasons but primarily to give individuals residing in rural communities throughout the Territory, especially those already employed on a full-time basis, an opportunity to completed the program successfully and increase their skills and employment options while spending a minimum amount of time away from their jobs and respective communities.

The remainder of this report will summarize the 2010 offering of the Yukon Fisheries Field Technicians Course, and make recommendations intended to improve the efficacy and quality of the program during future offerings.

2010 Offering:

Interest in the Fish Tech program was very high. A total of 16 seats were made available. These filled quickly following the opening of course registration in early April. The number of applicants exceeded the seats available. In general interest in the course was high, and queries into the program continued to arrive even after the course had begun and even after it was completed in mid-June.

Of the 16 students who registered in the course, 14 successfully completed the program. Two of the successful students in the course came from the Vancouver area. They had seen the advertisement for the course in the online version of the Yukon News. They completed the online component of the course from there and then drove up to complete the field portion. Inquiries for the course came from across Canada including several from Ontario and Nova Scotia.

First Nation	Non – First Nation	Male	Female	Yukon Resident	Non-Resident
11	5	10	6	14	2

Table 1: Student demographics - Yukon Fisheries Field Assistant Program – 2010

First Nation	Carcross-Tagish	Champagne-Aishihik	Little Salmon Carmacks	Ross River Dena	Selkirk	Trondek Hwechin	Vuntut Gwich'in
#Students	2	1	3	1	1	2	1

Table 2: Fish Tech student representation by Yukon First Nation - 2010.

As outlined in the introduction, the 2010 offering of the Yukon Fisheries Field Technician's Course consisted of two components. A long term (3-year) objective of this project is to convert the existing and amenable classroom-based portion of the curriculum to online format. This conversion process was begun in early January 2010, and was continued up until the course began on April 16. At that time the first four course modules had been converted from text-based to web-based learning. The first module took the most time and effort, as the website format and other details related to the presentation of course materials and evaluation of student learning needed to be developed and tested. Subsequent modules underwent the text to web conversion more quickly. It was decided that due to time and logistical constraints that although Module 4 was web-ready it would be delivered in the field camp during this offering.

Feedback from students regarding the web-based portion of the course was very positive. From an instructor's perspective, as this was my first experience with online delivery of a course, I was somewhat leery of this format. The most significant difference between a web-based offering and delivery in a classroom setting is that with the latter there is constant (verbal and non-verbal) feedback from students. This doesn't exist in the online format and from an instructor's perspective I found myself "pitching into the dark" to a generic and unknown audience. However any qualms I may have had regarding the efficacy of online delivery quickly proved to be unfounded. With a single exception, students enrolled in the course were all internet-savvy and very comfortable utilizing a web-based format. Overall, their ability to access and absorb course materials was excellent. The use of quizzes installed directly in the website modules in conjunction with email as a medium for course evaluation allowed me to collect, mark and return assignments to the students very quickly – often within 24 hours. Providing students with

this type of fast feedback allowed them to know how well they had understood and absorbed course materials, and also served to keep their interest levels high.

The remaining course modules were delivered in the Dalton Post area using a wall-tent classroom and the streams feeding into the Alsek-Tatshenshini River drainage for field practicums. Fisheries and Oceans, Canada and the Champagne-Aishihik First Nation have operated an enumeration weir on the Kluskshu River for many years. Fish Tech students participated in the installation of the enumeration weir into Klukshu Creek. This area was chosen for the course field camp as it is very rich in fish habitat and populations, and therefore offered many opportunities for students to gain practical field experience.

Modules 4 through 16 were completed during the 3-week field camp. Students were active during evenings and weekends as well. The class project (module 16) for this year consisted of gee-trap and electrofishing sampling for juvenile salmonids in the Blanchard River and Poisson Lakes along the Haines Road. Students participated in the design and implementation of the field portion of the study and finally compiled the data into tables.

Addressing Project Objectives:

The project proposal submitted to the Yukon River Panel Restoration and Enhancement Fund outlined 6 major project objectives. This section of the project final report will attempt to address how those objectives were addressed.

Objective 1:

Convert classroom-based portion of the existing Fish Tech curriculum to online format to the largest degree possible to minimize the amount of time students need to be away from their community and to provide opportunities for individuals from across the Territory to complete the program.

As mentioned above, a total of 4 of the 16 course modules have now been converted to online format. It should be kept in mind approximately half of the course modules are field-based and therefore not amenable to online offering. The online format proved to be

very popular with the students and allowed them to complete a significant portion of the course from their respective communities. Students in the course came from 6 different Yukon First Nations all outside of the Whitehorse area. (Table 2) Two of the non-Aboriginal students came from Vancouver and the remaining three from the Whitehorse area.

Five of the students in the course were employed on a full-time basis by their First Nation. Several others had jobs waiting for them pending successful completion of the course. Reducing the field portion of the course from 5 to 3 weeks minimized the time full-time working students needed to be away from their jobs. Without the online component of the course these students would have had to be away from their jobs for a longer period of time (5-weeks versus 3-weeks) and might not have been able to attend at all.

Objective 2:

To provide an opportunity for Yukon residents to complete a Yukon Fisheries Field Assistant certification program within the Territory.

The demographic breakdown (Table 1) and home communities of the students (Table 2) show that a wide cross-section of students from across the Territory were able to access and successfully complete the program. The introduction of the online learning and the "hands-on" aspects of the course were likely important factors in achieving success with this objective. Further development and availability of online learning modules in future offerings will reduce the amount of time spent in field camp and make Fisheries Field Assistant certification available to more Yukon residents.

Objective 3:

To equip students with skills and knowledge of salmon biology, fish identification, stock assessment, fish and fish habitat inventories, assessments, and restoration techniques.

These are core skills developed in the Fish Tech program. The concepts related to these areas of fisheries work are initially introduced to students in the web-based/classroom portion of the program, and the related fisheries techniques are practiced in a field setting. There should be ongoing consultation with relevant fisheries-related government agencies and consultants to make sure the curriculum offered in the program is up-to-date and provides students with training that is relevant to current employer needs.

Objective 4:

To give students an opportunity to acquire skills in planning procedures, permit applications, project administration, and proposal writing as this pertains to fisheries fieldwork.

The course currently contains a module which specifically addresses these areas. Additionally project planning is covered in Module 16 – Project Practicum. In this module students participate in a project development where a project is taken from the conceptual to implementation level. Some students were interested in, and saw the value of project management while others had little or no interest in this aspect of fisheries work in Yukon.

Objective 5:

To draw on local knowledge and expertise to instruct and provide locally relevant material.

A Champagne-Aishihik member had been asked to come to the field camp and discuss the local First Nations history and continued use of local fisheries. Unfortunately due to the death of a community elder two days before that talk was cancelled. Sandy Johnston

from Fisheries and Oceans came to the camp and gave a half-day presentation on Pacific salmon Stock Assessment in the Yukon

Objective 6:

To build on the knowledge and expertise gained in offering this course to students in Dawson during August 2003 & May 2004, Teslin in 2006 and Pelly Crossing in 2007.

The early offerings of the Fish Tech program utilized curriculum developed at a southern educational institution (Malaspina U-C) which focused exclusively on southern fisheries. Since 2007 the Fish Tech program has utilized curriculum developed entirely at Yukon College focusing on issues and needs related to northern fisheries. By operating the field component of the program in different areas of the Territory we have increasingly come to understand which streams and other resources are available to us that can provide relevant and beneficial learning experiences for students. Feedback from students at the end of each delivery has provided ongoing opportunities to refine and expand course curriculum. The 2010 offering which introduced the online learning component and the Alsek-Tatshenshini River drainage for field exercises has certainly allowed us to further develop our knowledge and expertise and improve the quality of future course deliveries. The online component has proven very popular with students and we would like to continue to convert more of the curriculum to this format in the future.

Suggestions for Future Offerings:

Based on experience gained in delivering the Fish Tech program this year combined with feedback from students I would like to make the following suggestions for future offerings of the program.

1. There were some problems during the field camp related student behavior and one student was clearly not physically capable of doing fisheries field work, even though this had been clearly stated as a course prerequisite. Students who followed rules and participated in all aspects of the program expressed exasperation with those who were less serious, “acted out” and interrupted course

2. Currently 16 seats are made available with each offering of the program. Experience in other field courses has shown that the maximum number of students that can participate productively in a field exercise at one time is eight. Beyond this number it becomes difficult to manage the group and keep all students actively involved in the exercise. Because of this a second instructor is employed in the field component of the Fish Tech program. Some of the students have suggested that the number of students in the field camp should be reduced. I am not convinced that is a workable or necessary option, however we should seek to find ways to keep all students involved in all hands-on aspects of the field course at all times. With the current system of using two instructors this may require that two full sets of sampling gear (electronic meters etc.) be made available.

3. Section 9.26 of the Yukon Worker's Compensation Health and Safety Board Occupational Health and Safety Regulations requires that all persons certifying for electrofishing have valid and current First Aid/CPR. To achieve this we offered First Aid/CPR as one of the first modules in the field camp segment of the Fish Tech Program. There are two problems related to offering First Aid/CPR at the field camp. Firstly, six of the Fish Tech students had recently certified or recertified their First Aid/CPR. To accommodate them they were allowed to come to the field camp two days later than those requiring certification. This meant that those 6 did not participate in setting up camp and other activities carried out during the first two days. In any field course a cohesive group is important for a

4. Government agencies and consulting firms involved in fisheries field work are increasing being required to provide relevant training for their employees. The required training involves the safe use of firearms and all-terrain vehicles and First Aid certification. By its very nature, fisheries field work puts people into areas where bears are actively feeding and inevitably into contact with bears. Bear Awareness courses are available in Yukon and it is worth considering making this a module in the Yukon Fisheries Field Assistant Program. Having Bear Awareness certification would certainly increase the employability of program graduates.

5. The current Yukon Fisheries Field Assistant Program curriculum has heavy emphasis on salmonids, and more specifically, Pacific Salmon and their habitats. There is also a considerable amount of fisheries work undertaken in the Territory that focuses on resident salmonids and other freshwater species. To increase employment opportunities for students it might be prudent to consider developing course modules that focus on these areas. The first area that should be addressed is fish and fish habitat assessment in lakes. Currently techniques related to lake fisheries are not covered at all in the course.

6. With 5 offerings of the Fish Tech program now completed, we have a good idea of the areas within the Territory best suited for completion of the field camp portion of the course. The Pelly/Carmacks area offers some major advantages for our field camp. There are a number of road-accessible and highly productive spawning and rearing salmon streams in the area (e.g. Tatchun Creek and

Conclusions:

Overall, the 2010 offering of the Yukon Fisheries Field Assistant Program was a success. While there were some issues related to student suitability and behavior in the field camp portion of the course, the program was effectively delivered and student satisfaction with the course was high.

The conversion of the first 4 course modules to online format proved very popular with students and clearly met the projects longer term objective of allowing students from the communities to complete as much of the course from home as possible and to reduce the time they would need to be away from their jobs and from fieldwork during our relatively short open water season in Yukon. The program is very popular and continues to elicit inquiries from potential students. There were more qualified applicants than available seats (16) in 2010. It is recommended that valid and current First Aid/CPR certification be made a prerequisite to the program and that a Bear Awareness module be added to increase employment potential of course graduates. Freshwater and resident salmonid fisheries have not been adequately addressed by the Fish Tech program in previous offerings. Because there are employment opportunities in the Territory in these fisheries a lake assessment module should be developed for future offerings.

The most suitable location for the field camp would appear to be in the Pelly/Carmacks area. This area has excellent fish habitat and tends to warm up earlier in the spring which would allow students to complete the field course early in the open water season and return to their communities and jobs.
For 2011 Fish Tech program Yukon College would like to continue the conversion of course curriculum into online format and reduce the time in field camp from 3 down to 2 weeks. We would also continue to develop our capacity to provide students interested in training for work in fisheries field work with the required skills and knowledge.