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North Coast Net Fishery Catch Monitoring - Final Report November 15, 2017

The project has been completed successfully.

We have sent in two previous reports, one on April 28, 2017, and another on July 19, 2017, which also included a request for extension. We thank the Fund for allowing an extension of time for this project.

Project Description: The purpose of the North Coast Net Fishery Catch Monitoring project was to develop and test a software program that would enable fish buyers to input their sales slip data along with the fishers' logbook data directly into DFO's systems.

Presently, the fisherman must purchase from a designated provider a paper logbook for $400, fill it out after each opening prior to delivery and at the end of the season mail in the paper logbook to the service provider. If the fisherman does not mail in the logbook, a license is not issued for his vessel for the following year. Each fisherman must also call in his start fishing / end fishing / daily catch report and offload reports to the service provider during the season. Upon receipt of the phone call, the service provider contacts DFO who provides a confirmation number which is given to the service provider who passes it along to the fisher who records the confirmation number in the logbook.

The north coast fish harvester usually delivers to a packer or on-shore offloading station connected with a fish buyer where their catch is unloaded and a sales slip is produced. These slips are most accurate as they are the record of the buying and selling of the product and there is no advantage to the buyer nor seller to have falsify a sales slip as this is the basis for the financial transaction. The fish buyer must send in all sales slips to DFO at the end of the season.

This project is to merge the logbook with the sales slip. A paper Super Sales Slip (SSS) has been created with the information required both for the logbook and the sales slip. The fish buyer will enter both the logbook and sales slip information directly into DFO's system within 24-48 hours after the end of the fishery. This will give the DFO more timely and accurate information on fish harvests than the present system.

The DFO has two systems that presently receive this information. The logbook information is delivered by the service provider into one system and the sales slip data may (or may not) be entered by DFO into another.

Computer software and connection to DFO: The North Coast Net Fishery Catch Monitoring project was to set up a computer program for use by fish buyers to input both the sales slip and logbook information directly into DFOs computers. Fish buyers already promptly enter their sales slip information into their internal systems in order to pay the fisherman. The plan is to have this sales slip entry sent to DFO

simultaneously; the logbook information also would be entered by the buyer at the same time and forwarded to DFO's logbook system.

The DFO had reassured us that their computer had been set up in 2015/2016 to receive this information. Our project was to create the Super Sales Slip and the computer program for the fish buyers to use. We were going to enter the prior year's data into the system using the program to test it.

However, to get the software program to 'talk' to DFO's program has been much more difficult than expected.

- DFO had not communicated to us that they had two independent computer systems that received the information generated by the logbook and by the fish slip.
- DFO had not prepared their fish slip system to accept the company generated information
- Not all DFO's information requirements in accordance with their 'Conditions of License' had a receptor field in their computer systems and so it became confusing: DFO managers expected the Super Sales Slip to include information for which their computer systems had no receptor fields.

  By December, 2016, the Ecotrust software program had been developed and initially trialed with a few fish buyers and with DFO and worked well with DFOs systems accepting all the company generated information. In January, DFO identified additional requirements and by February, 2017, we felt again that the software program was complete and we began to schedule trials with all north coast fish buyers. However, in March 2017, DFO communicated to us that they had additional information requirements which meant further changes to the Ecotrust software.

- DFO also decided in April that confirmation numbers generated by the input of the logbook data would not be sent to the fish buyer but must be sent directly to the fish harvester for entry into their paper SSS. This was not expected and the program had not been built to meet this specification. Another solution was finally worked out.
- DFO has also had issues about what kind of information they can receive: 'made up information'; real data from past seasons; data from the present season. They finally created a test system to accept test information, however it has been an ongoing problem between DFO and Ecotrust/company tests on which information should be sent. Privacy concerns on past and present real data were raised strongly by DFO while 'made up information' was rejected by their system as not having a real vessel name or real fishery attached. This was an ongoing problem for each system test with every company.

However, all north coast fish buyers have now been given training on the Ecotrust software program and Ecotrust has received very few requests for change (inconsistent way to enter d/m/year; automatic entering of fishers information such as VRN/Vessel Name/ crew etc). Now all the testing is complete, Ecotrust is in the process of making the few changes requested by the buyers. However, their costs have all been invoiced and any future alterations will be covered by Ecotrust.

Please refer to their the Ecotrust Report to the UFAWU-Unifor which is appended to this report.

Industry involvement:

UFAWU-Unifor: The Union committee along with Area C Harvest Committee members and Chris Cue from Canadian Fishing Company worked on producing a Super Sales Slip which held all DFO required information to be entered into the Ecotrust software. Versions seven through ten were worked on and vetted through the committee since September of 2016. Because DFO had additional data requests, the SSS was changed many times.

After the first Nass opening in June, the Union distributed Version 10 of the SSS amongst the fleet with each interested fisherman receiving 3 copies to fill out for the following openings. At three catch monitoring meetings (Lax Kw'alaams, Gingolx, and Prince Rupert) and in numerous meetings on Prince Rupert and Port Edward floats in mid-June, we spent much time ensuring that fishermen understood how to fill out the SSS. The Union received feedback and altered some parts of the form as per the fishermen's request to make it easier to fill in the required information. The Union received over fifty SSS back from fishermen, recorded their suggestions, and turned a few over to Ecotrust to use as test data for the software demonstrations. Fishermen were invited to familiarize themselves with the software program in July of 2017; few did as there were no fisheries in July on the north coast and most fish harvesters left for the central coast.

The UFAWU-Unifor wrote letters and talked to north and central coast fish buyers to ensure that they were aware of the project and to solicit their support. Ecotrust and DFO contacted the buyers when the time came for training on the software.

The Union participated in many of the discussions between DFO and Ecotrust to ensure that all the required information was on the SSS and in the software program. To keep track, we copied the email strings into a Word Document – it is 50 pages long. We were on many calls with DFO managers, north coast stock assessment staff and IT workers. When DFO provided the conditions of licence and the new requirements in March, the Union ensured that the new information was included in the SSS and in the Ecotrust program.

The UFAWU-Unifor staff presented the software to Regional DFO and to the 100 people at the North Coast Season Review.

The Union staff has spent well over one hundred fifty hours exclusively on the project; we stopped logging time after July 1st, 2017.

Fish Harvesters:

Fishermen were involved in the project from the very beginning. They have critiqued many versions of the SSS. We handed out Super Sales Slips to over 100 fishers and 50 completed forms came back to the Union Hall. Fishermen have poured over the forms to see how easy they are to fill out – three fishermen timed themselves to see how long the SSS will take to fill as the logbook portion of the form must be filled out prior to unloading to a packer.

Fish Buyers:

Fish buyers have supported this project and have gladly had their staff enter the information from a SSS into the DFO test systems. Each buyer had to arrange a time with Ecotrust and DFO IT staff and then had their staff member learn the program. The training was less than one hour at each plant. As some of the buyers input their information in Prince Rupert and others at their operations in Vancouver or on Vancouver Island, Ecotrust travelled to their plants to make sure that the person whose job is to input the data was trained.

Objectives of the Project:

We believe that the project, while taking much longer to complete, is a big success. The software program has been tested and it has been found by the fish buyers to be very easy to use and maintain. It has all the information fields that DFO requires for both sales slip and logbook data. It can generate confirmation numbers for fishers.

We have completed our objectives as written in our July 19, 2017, letter:

1. Trial run with all fish buyers and DFO to see if 'real 2017 logbook and fish slip' data as collected on the Super Sales Slip can be easily entered and correctly delivered to DFO's receiving fields.
2. An evaluation of the company direct-entry trials has been made and the few software changes requested have been done or are being done.
3. Final bill and report.

The next stage will be a demonstration project with all processors and with as many fishers as each of the companies think that they can handle. We are working now with DFO to set up this trial for 2018.

We thank the Northern Fund for the grant that has led to the development, testing and completion of the software and the Super Sales Slip needed for this project. As a result of this project, the future data delivered to DFO will be the most complete, accurate and timely data on the coast and will provide managers with the best information possible to make their fisheries decisions.

If there is any information lacking, please let me know directly and I will certainly get it to you right away.

Thanks for your patience. Without the grant from the Northern Fund this important project would not have succeeded. We believe that once it has been used on the north and central coasts (Area A and C) successfully for a few years, that we will see south coast fishers and DFO managers using it as well.

Yours truly,

Joy Thorkelson
Northern Representative
UFAWU-Unifor

Financial Report:

Due to the ongoing data changes and additions as required by DFO, the software has taken more time to develop. We realized this and in our July extension of time request we also requested to move $7,000 from Labour category (payments to fish buyers) to the Sub-contractor category (payment to Ecotrust). However, due to ongoing issues during the summer with DFO on data inputs and encryption keys again the cost has gone up.

Our solution is not to forward the buyers any money – their training sessions have taken less than one hour each as the software is so user friendly.

Please also look at the attached Financial Report on the PSC Budget / Expense sheet.

Transactions:

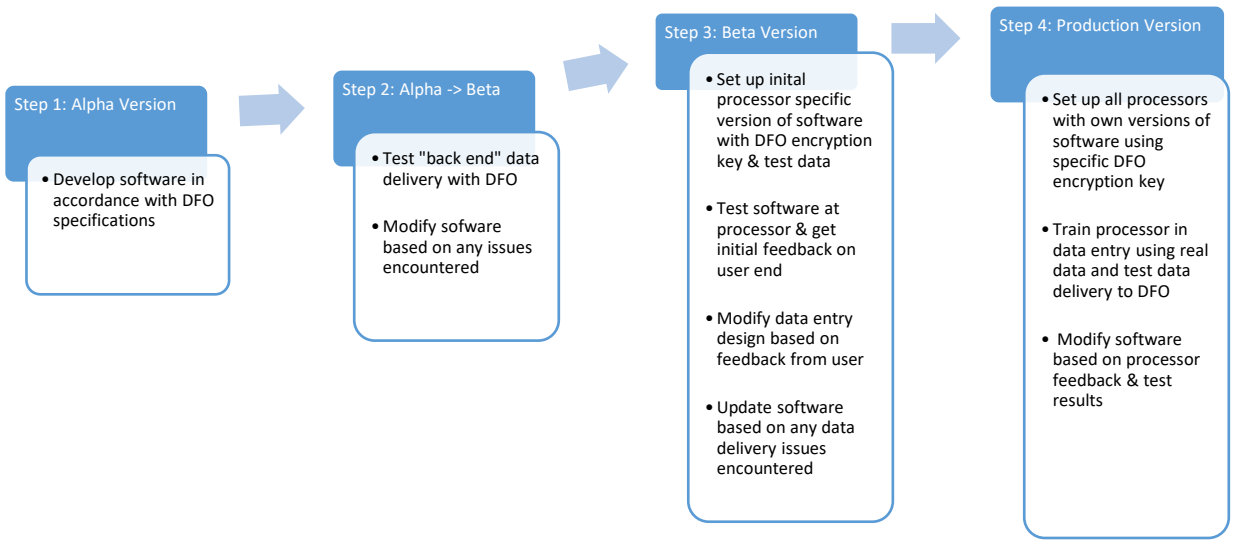
Date:	Information	Deposit	Expenses	Balance
Sept **15, 2016**	**PSC Funds deposited**	**50,335.00**		**50,335.00**
Sept 27, 2016	Ecotrust Ca. advance pd		26,325.00	24,010.00
Mar 1, 2016	**Credit Union dividend**	**0.12**		**24,010.12**
Mar 17,2017	Ecotrust inv # EC001475 Jly 15/16-Dec 15/16 pd		10,818.75	13,191.37
Oct 30, 2017	C/U charges Sept 1/16 – Oct 30 /16 pd		101.00	13, 090.37
Nov 14, 2017	Ecotrust inv # ECO001635 Dec 15/16-Jly 1/17 pd		10,229.36	2,861.01
***Nov 7, 2017**	**Ecotrust inv # EC001713 (Final)**		**6,212.85**	**-3,351.84**
***UFAWU-Unifor admin, liaison exp, C/U Nov/Dec**			**2,243.16**	**-5,595.00**
***Holdback**		**5,595.00**		**0.00**
Credit Union Balance				0.00

***Outstanding**

AREA “C” GILLNET and AREA “A” SEINE COMMERCIAL NET CATCH RECORDING SYSTEM DEVELOPMENT **UPDATE:**
ECOTRUST CANADA REPORT ON WORK THROUGH NOVEMBER 10, 2017

In August of 2016, Ecotrust Canada was contracted by United Fishermen and Allied Workers Union – Unifor (UFAWU-Unifor) to develop software that could be used by North Coast salmon processors to capture and send directly to the DFO sales slip database. The software developed not only sends data to this database but also to the DFO logbook database. All information is captured on a single form used by harvesters and processors and the data entered into the software and delivered to the two DFO databases includes information about catches, releases and offloads. The new reporting stream and software, called the ‘Super Sales Slip’, is being developed to provide DFO with faster and more reliable data for management purposes while reducing cost to harvesters. The Super Sales Slip is designed to deliver entered data to two users: logbook data is delivered to DFO as per their specifications and fish sales data is sent both to DFO and to the processors’ existing internal sales software.

Development Steps:



Software Development & Testing:

The first phase of development was two-fold. First a front end data entry system was designed using sample gillnet and seine logbook pages as well as sample sales slips. This data entry page

was designed to be as user friendly and customizable as possible, this was done to accommodate the multiple processors who could be using this software and to allow for future customizations should individual users want new internal fields added or new options added to existing fields.

Second, the backend of the database had to be designed so that users could easily deliver required data to DFO in their specified format. In order to achieve this phase of development and testing we required data specifications for two databases (sales slip and logbook) from DFO as well as access to their databases for test delivery of data. **Please note that the software was designed with the ability to submit data to four federal databases – to the Fisheries Operating Systems (FOS) which is the real (also called 'production') database used by DFO and for delivery to FOS-TEST (a test environment for checking data delivery) for both the sales slip and the logbook databases** (see Image 1)**.**

The software was design to send to two databases so that all catch and sales data could be captured on one 'Super Sales Slip' and to both test and production databases so that any changes to back-end specifications or front-end entry tools could be rolled out and tested in real-time for multiple software users. When the user pushes the 'Send to DFO' button data goes to the two FOS databases, and when the user pushes the 'Test Submit' button data goes to the two FOS-TEST databases.

This phase of development is complete including test submissions from North Coast processors using both DFO generated test data and real data from 2017 Area C fishing trips. The Super Sales Slip software includes all the information required of Area A and C fishers in 2017: all logbook data, fish slip data and Area A and C Condition of License information including a method to transmit FOS generated offload confirmation numbers, and has been deemed complete by DFO.

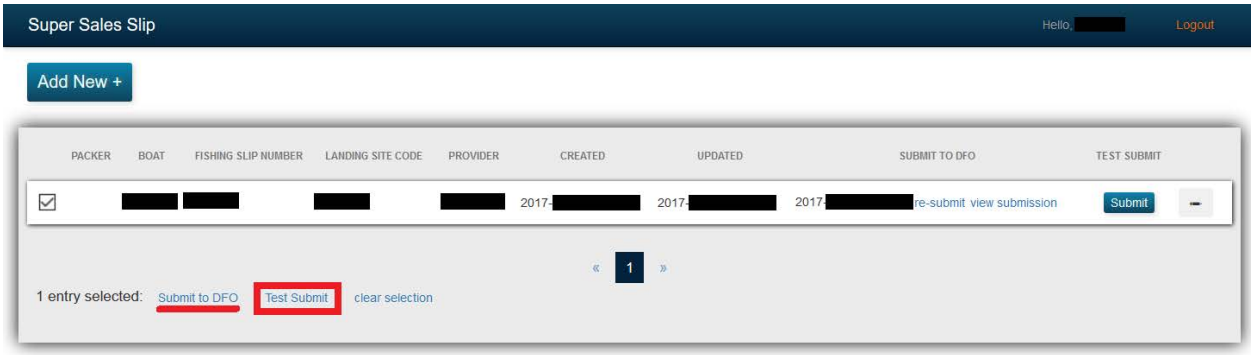


Image 1: Super Sales Slip data entry page

The second phase of development was to set up versions of the software for each processor. In order to set up these software versions and test the delivery data to DFO several pieces are required: 1) a data encryption key for each version of the software produced (i.e. one for each

processor) as well as the password for the encryption key from DFO; 2) permission from the processor for DFO to give the encryption key and password to the software developer; and 3) data to enter into the software to ensure that data delivery works, ideally test data is generated by DFO for submission via the 'test submit' button but real data can also be used for submission to FOS.

North Coast processors have been trained on how to use the software and processor specific versions of the software have been developed and tested. Feedback from processors on the front end of the software was collected during software training and small updates to the data entry page are being finalized. South Coast processors also have their software versions developed and training is almost complete.

Delivery to budget:

Initial software design was slightly over budget due to the large number of revisions necessary in the beta phase, i.e. updated and additional fields from DFO and the necessary testing to go along with those updates. The development budget is just over $4,000.00 off budget due to the issues noted above and due to issues and misunderstandings during training/test data delivery from processors. Project management and delivery is also over budget due to more interactions with harvester committee and DFO than anticipated and some issues with processors and trying to set up training times and communicating the technology and its use. Final training and testing is schedule to take place the week of November 13th on Vancouver Island and budget below shows the real and projected costs for this as well as projected costs for final software updates based on all processor feedback with data entry page. Please see table below for details.

Subcontractors & Consultants	# of crew	# of work days	hrs per day	rate per Hour	Budget	Actual
Software Design	2	19	7.5	90	12,825	13,660.00
Software Development	2	28	7.5	90	18,900	23,104.75
Project Delivery (installs, training etc)	2	7.5	7.5	90	5,063	5,748.75
Project Management	2	6	7.5	90	4,050	6,663.75
Server hardware & Hosting Costs					600	500.00
Travel Costs (for training)					1,062	1,357.00
Insurance if applicable	rate	0%		Sub total	42,500	51,034.25
				GST*	2,125	2,551.71
					44,625	53,585.96

**Joy – comment – I have added the GST to each line item in our report instead of a separate line item.*

For any questions or comments regarding this report please contact Ecotrust Canada project lead, Amanda Barney. amanda@ecotrust.ca (250) 624-4191