Quesnel River Watershed Science Town Hall Meetings Summary

February 2013

What did we learn from the Town Hall meetings?

The three Science Town Hall meetings that we conducted late last year in Likely, Horsefly and Williams Lake provided us with a glimpse into the lives of the people who are personally connected to, and affected by, changes in the Quesnel River Watershed. A total of 38 people attended our three meetings. We had representation from local residents, ranchers, government, industry and consultants (please see Table 1). Not surprisingly we heard about a wide range of issues from the very specific to the very broad. People shared with us concrete examples of changes that are occurring today, as well as expressing deeply held concerns about what may happen in the short-, medium-, and long-term as we enter into a period of economic and ecological uncertainty.

Table 1. Who came to our Town Hall meetings?

Affiliation	Number
Academic Institutions	1
Small Business Owners	3
Consultants	4
DFO	6
Industry	2
Ranchers	5
Residents	17

Please note that these numbers do not include UNBC faculty, staff, or students. In addition, some people attended more that one meeting

These meetings exposed the complexities and potential conflicts that occur when humans interact with the natural world, be they issues that we can physically see today (e.g., patterns of timber harvest) or fears for the future (with climate change will there be enough water to irrigate my fields?). In each meeting there was an over-riding concern that the way in which we are interacting with the watershed may put its ability to deliver the ecological goods and services that we rely on at risk. In other words, there was an undercurrent of concern regarding the ability of the watershed to continue to provide the products (e.g., timber, salmon) and services (e.g., habitat for game species, clean drinking water) for the people both directly and indirectly linked to this watershed.

In addition to discussions related to ecological goods and services, there were concerns raised that related more specifically to social issues. These ranged from the ability of individuals to gain access to pertinent information (e.g., gaps in the physical communication network), to how populations are aging and how this may affect watershed uses, to the long-term viability of the rural communities in the watershed. We have summarized and grouped the issues relayed to us at the three Town Halls in Table 2, which is attached.

Our research: how does it align with community concerns?

Given the depth and breadth of the concerns raised, our challenge will now be to develop approaches and community partnerships, which address the issues and potentially integrate them into our research program at the QRRC. We were pleased to determine that many of the concerns raised by workshop participants overlap with some of our current and proposed research projects. Several of the issues also relate to discussions we had at the three "research to policy" workshops held in the watershed in 2011 on issues relating to water, climate and salmon.

Current research: We are already engaged in a number of research projects that overlap with the concerns raised at the Town Hall meetings. Our current research areas include: the role that returning salmon play in the biological productivity of interior streams and lakes; how climate change may affect long term water resources; downstream impacts of past and present mines; the effects of different land uses on the movement of organic and inorganic contaminants; and how climate change and forestry impact sedimentation in riparian wetlands.

Proposed research: Gathering the information at these meetings has provided us with a list of potential research ideas that we have been able to compare with opportunities for funding, thus enabling us to address some immediate concerns. For example,

throughout the Town Hall series it became apparent that members of the regional community would like easier access to existing research and information pertaining to the Quesnel River Watershed – aka a 'data hub'. As an initial attempt to begin addressing this need, a UNBC student has been employed to gather research materials pertinent to the watershed from academic and government databases. This information will be compiled into a database with annotated bibliographies and summarized into a review document. All database materials as well as the summary will be uploaded to the QRRC website for easy access. These materials will also be available from staff at the QRRC

A second example of this relates to the concerns raised regarding the interaction between forest harvest practices and small stream hydrology. As a result of this concern, the QRRC has submitted a grant application to monitor two streams near Big Lake Ranch, BC (Nels and Guy Creeks) downstream of proposed forest harvesting sites. Monitoring these streams for water level, temperature and suspended sediment before, during and after harvesting will provide valuable data on the interaction between small stream hydrology and forest harvesting.

Apart from examining what could be considered small-scale projects, we are also seeking funding to examine the cumulative effects of how sediment and associated chemicals move through landscapes that have been influenced by climate change and other activities such as forestry, agriculture and mining. This watershed level research project has multiple objectives that will provide a much needed understanding of how watersheds respond to cumulative effects in a rapidly changing world, and will help to protect Canadian water resources

Further steps

In many ways it was exciting for us to realize that our research interests overlap with many of the concerns raised at the meetings. Our challenge will be to continue to develop partnerships, which allow our research program to further address the concerns that were raised during these Town Hall meetings. While a challenge, this is also an exciting opportunity. We were encouraged to be so well received in each of the communities we visited. Sam Albers, manager at the QRRC, will work to maintain connections with individuals and organizations in each community in order to explore opportunities and develop partnerships. As a concrete first step in this process Sam will be joining the Horsefly River Round Table as a representative of UNBC/QRRC.

We look forward to seeing and working with you in the watershed in the near future.

Regards,

Ellen, Phil, Sam, Stephen, and Barry

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Table 2. A Summary of the Concerns Brought Forward at the Horsefly, Likely and Williams Lake Science Town Hall Meetings

Introduction

Listed below are the concerns that were raised by participants who attended the three science town hall meetings. Instead of listing the concerns by meeting site, we have combined the concerns from all the meetings into this one table. Many of the concerns that were raised were brought up at more than one meeting. While we noted similarities of issues, we also noted that there were concerns that were unique to specific locations.

Streams and Rivers

Scale of concern	Concerns expressed
Watershed level	• There appears to be a lack of landscape level planning by government and forest companies with respect to cutting plans. This can place specific basins and sub-basins at risk. • Is there any effort being made to identify areas of greatest concern due to accelerated cutting? • Should restoration efforts be made to address watershed level alterations to hydrology?
Stream level	• Changes in peak flow are being seen on specific streams due to accelerated cutting because of pine beetle affected stands. • Agriculture is resulting in decreased stream bank stability and increased bank erosion.

Water Quality and Quantity

Specific issue	Concerns expressed
Sufficient water for irrigation	• How will climate change affect water quantity? • There is a lack of information on base flows of creeks. This makes determining the quantity of water available for all needs (e.g. sufficient water for fish and capacity for withdrawal for agriculture) problematic.
Water temperature, especially as it pertains to salmon	• How will climate change contribute to water temperature increases? • How may forest harvesting affect water temperature? • Can small stream restoration projects improve salmon habitat, particularly by helping to regulate water temperatures?
Increased sedimentation and its effects on water quality	• Agriculture is contributing to sedimentation as a result of cattle along streams or because hayfields that immediately abut creeks. • Increased industrial forestry activity is leading to alteration of hydrology (both in terms of harvesting and silviculture) that in turn lead to increases in sedimentation.
Ground and surface water contamination	• Discharge from mines (current and proposed) may adversely affect drinking water, fish and wildlife species, and water for irrigation. • There is a perceived lack of baseline sampling of water to monitor both ground water contamination and discharges from mines.
Macrophyte (weed) growth in Quesnel Lake	• Is the weed species in the lake an invasive species? • Is the growth noticed a result of increased nutrient inputs into the lake?

Quesnel River Research Centre QRRC

Streams and Rivers

Streams and rivers provide pathways for water, energy, nutrients and organisms. The ability of these to withstand water from snow pack melt and storm events are a key component of their ecological value. Changes in stability as a result of land use activities can have significant ecological and social costs.

Water Quality and Quantity

Clean water in sufficient quantity to meet the needs of people and the other species that occur in the watershed is of critical importance.

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Wildlife

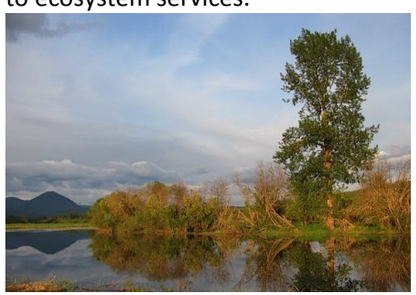
The presence of plants and animals for subsistence and commercial hunting activities have long been ecological services relied upon by humans. Sharing the landscape with wildlife results in frequent interactions and overlap of values. Healthy watersheds provide crucial habitat for a range of species, especially salmon.

Cumulative Effects

There are a number of different types of development taking place in the valley (e.g., forestry, mining, agriculture). It is important to consider how these developments may act together to affect ecological goods and services, rather than in isolation.

Other Issues

There were other concerns that were raised that were not necessarily tied to ecosystem services.



Wildlife

Scale of concern	Concerns expressed
Quantity & quality of habitat - terrestrial	• Silvicultural practices (e.g. use of herbicides) are resulting in a decrease in the amount of food for wildlife. This can result in changes in predator-prey dynamics, and hence the ability to hunt.
Quantity & quality of habitat - rivers and creeks	• A range of activities (forestry, agriculture, road building) has had negative effects on salmon through changes to the structure and function of rivers and creeks.
Distribution of wildlife	• Climate change and industrial activity may change how habitat occurs within the watershed, which can negatively affect the ability to hunt.
Ambient environment	• Operation of mines can cause noise that affect wildlife populations and human enjoyment of the watershed.
Numbers of returning salmon	• Decline of numbers of salmon may be affecting a variety of parameters including lake and forest productivity, tourism, subsistence fishing.
Human interactions and salmon	• Are jet boats negatively affecting salmon habitat in rivers?
Invasive aquatic species	• How may smallmouth bass affect salmon species?

Cumulative Effects

Scale of concern	c
Watershed level impacts	• Are the combined effects of resource extraction on all of the ecological goods and services being considered?

Other issues	Concerns expressed
General economic and social health	• How do we keep people working on the landscape so that people can remain in their communities? This relates to the continued ability to extract resources and how differing landscape uses may affect tourism and tourism operators.
Communication of concerns and issues	• Gaps in communication network in region (VHF, land lines, cell network, internet) make communication challenging. • Effective communication of issues (effective extension) is wanting at times. Are the messages getting out effectively?
Community engagement	• How do we engage the general community more effectively?
Changing demographics	• How may changes in the way the public will recreate in the future affect the natural environment?
Human error and how it may affect the natural environment	• How to deal with mistakes at all levels (institutional and site specific)?
Easy access to information pertaining to watershed issues	• Given some of the challenges with access to the internet in smaller communities, there is a need for a centralized hub/ site to find pertinent information, a place to store and present data, research papers, and a locale to advertise up-coming events (e.g., public meetings).

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