

Dialogues on Drinking Water Quality

Anacla and Bamfield

July 29-31, 2009

Final Report



**Final report on 'Dialogues on Drinking Water Quality' held on July 29-31 in Bamfield and
Anacela BC**

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Introduction

Access to clean, safe drinking water is key to a community's health. When water quality is compromised it can harm the physical health of community members. It can also negatively impact residents' perceptions of their community, especially if drinking water problems occur frequently.

In British Columbia (BC), rural and remote communities' access to clean and safe drinking water varies. Because of the many glaciers, lakes, and rivers in BC, many communities rely upon surface water sources for their drinking water. While it is a readily available source of drinking water, surface water, like ground water, is also at risk of pollution from agriculture, industry, and other sources that can pose as a threat to human health.

Despite the perceived abundance of clean water, BC has the highest number of boil water advisories per capita in Canada, with 528 occurring in the spring of 2008 alone. This constituted almost one third of all boil water advisories in Canada at that time. Boil water advisories may be issued when there are unacceptable levels of disease-causing bacteria, viruses or parasites in the water system (anywhere from the source to the tap), or unacceptable levels in the cloudiness (turbidity) in the water at the source. Boil water advisories can also be issued as a precautionary measure when there is concern that contamination may occur, for example local emergency repairs in the distribution system. While they are meant to serve only as temporary measures to ensure drinking water safety, some communities have been on boil water advisories for years.

The security of water in the future is also a concern. Climate change and water management may impact the availability of water to communities. At the same time, tourism and other drinking water-dependent industries are growing in some communities. Together with population growth this can place stress on the water supply. Water restrictions are put in place when supplies fall or are expected to fall below secure levels, resulting in bans on activities that can range from watering lawns on certain days to the filling of bathtubs, depending on the severity of the restriction. Water restrictions have become increasingly common in BC. How communities, as well as the provincial and federal governments, deal with both of these issues will determine the health of BC's population into the future.

The purpose of this report is to summarize the results from four 'dialogues on drinking water' held in two small, coastal BC communities in July, 2009. The communities of focus were Bamfield and Anacla, both of which are located on Vancouver Island's west coast. These communities were chosen because of existing connections of the researchers with the communities. The dialogues were intended to probe rural BC community members' thoughts and concerns about drinking water quality and availability, including its relation to health and to provide a venue for information exchange.

Context

Bamfield and Anacla are two remote communities on the west coast of Vancouver Island, accessible only by boat, floatplane, or a 60 km logging road.

Anacla is the main village of Huu-ay-aht First Nations and is home to approximately 150 people. It is situated at the head of an internationally-renowned hiking destination, the West Coast Trail, and experiences seasonal fluctuations of visitors who use the adjacent Pachena Bay Campground, which is owned and operated by Huu-ay-aht First Nations. Anacla's water comes from a local aquifer (ground water). Although the water from the aquifer is clean, like many First Nations communities across Canada, Anacla has a history of inadequate, if not dangerous, water treatment facilities. The water also did not taste or smell well. The community has experienced numerous boil water advisories in the past, which has forced residents to find other drinking water options and eroded the community's confidence in their water. Anacla has recently overhauled its water infrastructure with a state of the art water treatment plant and pump to address this issue, and now has clean, safe drinking water available to its residents and campers.



Bamfield is a small unincorporated village with a population of approximately 250 people located just 3 kilometres from Anacla. Its size fluctuates over the year as seasonal residents, tourists, recreational fishermen, day-trippers, and students and researchers staying at the Bamfield Marine Science Center, swell the number to more than a 1000 in the summer. The community draws its drinking water from nearby Sugsaw Lake, which is now part of Huu-ay-aht land under a recently concluded treaty. Unlike Anacla, Bamfield has historically had the necessary resources to develop an infrastructure to provide the community with high quality drinking water, cultivating a strong confidence in the community's water. Power outages do occasionally shut down the pumps though.

Objectives

The dialogues held in Bamfield and Anacla had two main objectives. One was the identification of water related concerns and how community members and stakeholders speak about these issues. The other was for the dialogues to act as opportunities for three-way information exchange between the organizers and participants, and between the participants themselves, allowing for clarification and learning to occur amongst all groups.

The Dialogues

There were two dialogues held in Bamfield, a lunch session with five participants on July 29th and a dinner session with four participants on July 30th. The afternoon session was characterized by the attendance of professionals from the community whose jobs dealt directly or indirectly with water issues. The evening meeting provided a contrast to these views, as it was entirely made up of residents with no professional engagement with Bamfield's drinking water. The sessions were exclusively attended by adults. There was equal representation of men and women at both meetings.

There were two lunch meetings held in Anacla. The first was on July 30th, with seventeen participants, and the second was on July 31st, with twenty people attending. Both meetings were attended by a wide range of community members. There was a balanced representation of both men and women and a wide range of ages were present, as were both community leaders and residents.

Date	Location	Participants
July 29	Bamfield	5
July 30	Bamfield	4
July 30	Anacla	17
July 31	Anacla	20

While the dialogues were open in structure, the discussions focused on personal water use, past, current, and future water concerns, boil water advisories, and health related concerns.

Outcomes

Bamfield

While both groups (the key informants during the lunch meeting and the residents during the dinner meeting) agreed that the quality of drinking water in Bamfield was excellent, the participants brought very different concerns to the dialogues. The residents were not concerned with drinking water quality, seeing it as of good or better quality than 'city water', and were confident that it would remain so into the future. There were no concerns about their water posing a threat to their health. Their primary concern was instead about waste water and the lack of regulation surrounding its disposal, especially the discharge of effluent into the harbour. Residents also brought up logging practices as an issue related to water. This was not due to a decrease in water quality associated with sediment laden runoff from logged areas or forest roads, but instead from the threat stemming from remaining trees falling onto power lines during storms, disrupting the water pump's operation. Residents thought that better logging

practices that preserved a windbreak and greater distances between remaining trees and power lines could reduce the number of power outages, especially in the winter. However, this problem was seen to be better now than in the past, when six to eight power outages a winter were remembered as common occurrences.

Water planning was another concern raised by residents, which was tied into issues of tourism and development. Tourists were seen as disproportionate water consumers and a source of stress on the system. Waste water from tourism was also seen as an issue. It was also thought that some organizations consumed disproportionate amounts of water. The Coast Guard, but more importantly the Marine Science Centre, do not pay taxes, leaving many of the participants to feel as though Bamfield residents are supporting two of the biggest users of water, and not receiving adequate funds from them in return. One resident expressed concern about a lack of planning, claiming that Bamfield was "Tofino twenty years ago." Such a comment alludes to fears that increasing tourism and settlement, combined with a lack of foresight and planning, could threaten Bamfield with water shortages like Tofino (located further north on the west coast of Vancouver Island) has recently experienced. The other participants shared these concerns, and expressed that if a comprehensive water management plan did exist for the region, it was not well communicated to residents. The fear of future water shortages was not discussed in detail among the professionals attending the dialogue, whereby they agreed that there would be enough water available into the future.

There were unique concerns at the afternoon dialogue in Bamfield due to the professional duties of those present. Two participants were actively involved in managing and planning Bamfield's water infrastructure, and they brought their technical knowledge to the dialogues. Plans to upgrade the water system, which was seen to be inadequate and in slow decay, have been in the works for the past five years. They include installing a back-up generator for the pump (to ensure access to water during power outages), and an improved pump and reservoir system to accommodate future growth, but there has been a lack of action to implement the necessary changes. Costs have slowly increased as time has passed, and there are questions about how the upgrades will be funded. It was agreed that infrastructure renewal is needed. It was pointed out, for example, that the lack of a back-up generator can pose a health risk as safe drinking water may not be available for days and there is not presently a stock of 'emergency' drinking water in the community at large or within the health clinic to be used during such a period.

In contrast to the perceptions of Bamfield's residents, the professionals reported far fewer official boil water advisories: only one in 2006 following the severe winter storms that season. This is a drastic difference from the belief of the community members at the evening meeting that boil water advisories follow every big storm in the winter, and raises the issue of ineffective communication concerning the presence or absence of boil water advisories in the community.

The issue of communication was common to both Bamfield meetings, with all participants agreeing that when boil water advisories were issued, no one was sure of how they were communicated. In fact, the unofficial networks seemed to inform people that there were boil water advisories when there were no official boil water advisories and that there could be water

restrictions when there was no official water restriction issued. Posters and a phone-chain were seen as the most likely methods for distributing an advisory, but these were seen as inadequate due to gaps in the community's social network and a general ambivalence towards staying informed via posters. Those at the lunch meeting agreed that a boil water advisory would be widely adhered to by community members, while the second meeting saw participants split on the issue. Some residents were emphatic in their belief that Bamfield's water was so safe that a boil water advisory was superfluous, and would be widely received as such by members of the community. However, others had followed boil water advisories in the past and would continue to do so. Both this split in opinion regarding advisory adherence and the general uncertainty regarding reliable communication methods indicate that communication is a real issue in Bamfield. More carefully established networks of clear communication that provide better explanations of advisories whenever they are issued should be adopted to ensure and improve adherence in the community.

Despite concerns surrounding the infrastructure and planning, all the participants agreed the quality and flavour of the water in Bamfield was excellent, and it was believed that most residents drank it. Some suggested that the yellowish colour of the water may be unpleasant for visitors, while one saw the tannins as a sign that the water was "filtered by cedars" and therefore healthier. One of the professionals at the lunch meeting reported that water quality testing showed that chlorination byproducts were so low that they did not register on the tests. The people at the lunch time meeting also agreed that test results like these should be communicated better.

A health professional mentioned that patients (with gastrointestinal complaints) would sometimes ask if the local water could be the source of their illness. The water has been tested following these inquiries, but tests have never confirmed these worries. While this is a good sign, it does indicate that the local drinking water and human health are connected in some community members' minds.

Finally, the transfer of ownership of Sugsaw Lake and its watershed to Huu-ay-aht First Nations under a recently concluded treaty was interpreted by a few participants as a threat to Bamfield's future water security. However, most participants were not concerned about the transfer of ownership as they felt Huu-ay-ahts were good neighbours. Also, participants were generally unconcerned with the impact of past logging practices on their water quality, with only one person citing alder poisonings in the watershed as a source of concern, but they agreed that granting legal protection to the watershed would create a stronger sense of security about their water source.

Overall, the meetings in Bamfield established that the community was happy with the quality of their drinking water and that most people drink the tap water. Better regulation, planning, infrastructure and communication networks were all of greater concern to participants than the drinking water itself.

Anacla

Participants at the meetings in Anacla were acutely aware of the poor state of drinking water on First Nations reserves across Canada. Some participants were proud of the drinking water in Anacla. It was seen as cleaner and better tasting compared to both Bamfield and the nearest city, Port Alberni. However, for others the water was commonly seen as undrinkable. A clear connection between drinking water quality under the former treatment system and health was clearly made, as the residents' refusal to drink tap water was primarily for health and safety, in addition to aesthetic, reasons. One of the elders described the quality of the former water briefly by stating that the water made the worst tea. Others mentioned that the water used to smell bad as well.

Huu-ay-aht First Nations recently installed a 'Cadillac' water pump and treatment system. Despite the overhauled system, many participants indicated they rarely drank the tap water, preferring to stick to their habit of drinking bottled water. This suggests more effective communication regarding the improvements and the good state of the water is needed. Some participants fetched their water from a spring eight kilometres away sourced from a local waterfall. Elderly participants indicated that they had never tried the tap water even though the system had been overhauled, and some of those new to the community said they too did not drink the tap water. Most participants knew the source of their drinking water and who is in charge of their drinking water in terms of treatment. The earlier water quality problems in the community seem to have left a legacy of bottled water consumption by residents. One participant expressed concerns about the use of plastic water bottles and the leaching of chemicals from the plastic into the water.

The need to instil confidence regarding the current state of drinking water between those responsible for the water and the community members was contrasted with the good network present to disseminate boil water advisories. It was agreed that boil water advisories were well communicated in the community when they occurred in the past, which was remembered to be one or two times every summer. At the second meeting, it was clarified that there has been only one boil water advisory in the past four years. While people were aware of the boil water advisories, few people followed them as they relied upon bottled water in the past when they occurred. The water operator was present at the second meeting and used the opportunity to demystify the new system. He explained the way the system worked, and then volunteered to give participants a tour following the dialogue, which two thirds of the participants attended.

The drinking water situation in Anacla was perceived to be steadily improving, with the new system being part of an upward trend in capacity and quality. A new housing development and the campground's continued demand for water has the community planning for the installation of a second, larger reservoir some time in the near future. Anacla has had to truck in water from Bamfield to meet the needs of campers, a situation the community is confident it can avoid in the future. While campers were seen to be large consumers of water, this was not a source of concern or resentment.

Water usage by the residents was also discussed. This included a discussion on where most water is used in the house (toilet flushing) and ways to reduce water consumption. Some community member felt that if water would be metered they would use less.

Overall, the meetings in Anacla established that the community is proud of their current water system (pump and chlorination facilities) but that many people still do not drink the tap water. It was felt that the community has overcome the drinking water issues from the past.



Pictures of the Anacla tour

Common Messages

Both meetings served as sites of information exchange between participants. This ranged from the first Bamfield meeting, where technical and professional views and knowledge of water and water usage were exchanged, to the final Anacla meeting, where an impromptu field trip to the water pump was given by the water operator to clarify the workings of their water system. In all four of the 'dialogues', the meeting organizers learned a great deal from the participants, and were also able to answer water-related questions.

People in both communities seemed to be proud of their water. While the people in Bamfield regularly drink tapwater, the legacy of water problems has many people still drinking bottled water in Anacla. There was little worry about the supply of water in the area, although the reference to "Tofino twenty years ago" did indicate an awareness of the importance of proper

water management. While tourists were seen to be large consumers of water in both communities, the forum in Anacla had a much less worried tone about tourism impacts.

While drinking water in both communities was not seen to have any reoccurring negative impacts on health, there were instances where connections were made between the two. A health professional in Bamfield found that patients would ask if their drinking water could be the source of their illness, and one participant in Anacla made a connection between her water being "bleachy" and instances of gastrointestinal problems. The certainty with which a Bamfield participant discounted the potential health impacts of not following a boil water advisory suggests that better explanations of the health risks must also be attempted.

Communication issues were present in both communities, but were very different in nature. While leaders in Anacla might consider using their highly effective communication channels to advertise the high quality of the community's water and promote its use for drinking water, Bamfield administrators might be well-served to establish a reliable communication network to ensure all of its residents are aware of boil water advisories and water restrictions when they occur and to explain why they matter.

Summary

The meetings in Bamfield and Anacla were great opportunities for information exchange and to establish what water issues are important to community members. In Bamfield, this was succinctly summarized as "our biggest concerns are the sewage and the roads." Concerns about infrastructure funding and decline were the biggest concerns in the afternoon meeting with the professionals. Drinking water itself is not an issue in the community. This was echoed in Anacla, where it was largely a matter of habit, lack of confidence in perceived quality and taste that had residents still relying on bottled water, not the actual quality of the water itself. Based on participants' perspectives at these meetings, people in both communities seem satisfied with their water and expect to continue to have an abundant supply of it into the future.

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