

Report prepared at the request of Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association, in partial fulfillment of UBC Geography 419: Research in Environmental Geography, for Professor David Brownstein

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For too long, hard-working rural communities have bared the brunt of development. The interests of a few large companies have been protected over the rights of many. Disregard for rural residents has led to the degradation of their homes and resources across British Columbia. Given the small size, and limited access to information of many of these communities, formal action against industry is nearly impossible. The political clout of rural communities is waning, and the geographic dispersal of these communities makes organizing coherent political action that much more difficult. One such community is the Hatzic Valley. This research focuses on protecting drinking water in the Hatzic Valley. My goal is to assess whether or not Community Watershed Management Status is a viable means of protecting the groundwater resource in the region. This report highlights key issues in the history of the community; profiles the Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association; describes the current state of water quality; and addresses the role of the Fraser Valley Regional District in order to establish the foundation for policy recommendations.

Hatzic Valley is a rural community that lies just North of the Fraser River, about 80km east of Vancouver, BC. There are 1,339 residents, living in an area of 2,030 square kilometers.<sup>1</sup> The upper slopes bordering the valley are generally used for forestry activities, while the lower slopes are mainly used for residential purposes. The bulk of the land in the valley itself is agricultural, supporting activities like dairy farming and Christmas tree farming. There are also several mining projects underway in the valley.<sup>2</sup>

This range of activities has raised concerns among residents about whether or not their interests and rights are being protected. One such cause for concern to valley residents is landslides, and debris flows. The topographic and geologic conditions of the valley are prone

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<sup>1</sup> Fraser Valley Regional District. Electoral Area F Official Community Plan Bylaw No. 0999. 2010. Web. <<http://www.fvrd.bc.ca/InsidetheFVRD/CommunityPlanning/>>. 10.

<sup>2</sup> Ibid 16.

to,”natural instabilities and flood hazards,” due to the combination of steep slopes and unconsolidated soils. In the last century these natural occurrences have increased in frequency and severity mainly due to forestry activities, but also because of the expansion of agriculture.<sup>3</sup>

Very little has been done by the provincial government to protect small rural communities from the impacts of resource extraction; however, the Forest Practices Code, and related pieces of legislation have altered the allowable logging practices in British Columbia in an attempt to remedy environmental concerns. Consequently, logging in the Hatzic Valley has decreased, forestry related flood hazard has decreased, and the landslide frequency in newly harvested cutblocks has almost returned to natural levels.<sup>4</sup> Despite this marked improvement in forest practices, small communities may still be vulnerable to the ill effects of resource extraction activities.

As a result, community organizations have been forced to keep a watchful eye over forestry companies and the like to ensure that their well being is considered when new projects are launched. Even in the absence of support from the provincial government, the people of Hatzic Valley have shown their commitment to maintaining their quality of life and protecting their interests.

Community groups like the Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association have adopted the role of watchdog and ensured the due diligence of forestry and mining companies. The Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association is a community organization of land-owners that represent the interests of residents each respective region. They have set long term and short term goals for maintaining their lifestyle, and preserving the social and natural make-up of the region. In addition, the Ratepayers work with

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<sup>3</sup> Ibid 78.

<sup>4</sup> *Terrain and Hydrologic Hazard Assessment Report for Blocks LC100 - LC 103*. Tech. Madrone Environmental Services Ltd.: Drew Brayshaw, 2010.

the regional government to set growth goals that are in line with their rural lifestyle.

Unfortunately, the Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association have no legal resources at their disposal, and very little money to seek out any legal expertise.<sup>5</sup>

Under the scrutiny of the community, these companies provide venues for public comment, and engage in research to reduce the likelihood of detrimental environmental impacts. There are obvious flaws with the current regime. For one, comprehensive water quality protection is not guaranteed to the community. Forest companies are regulated, but rarely monitored. Assuming access to legal resources, the community would only have legal recourse to act against industry, in the event of a major tragedy (widespread water contamination). The goal of the community, and the Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association is to attain Community Watershed Management Status as an alternative to volunteer community stewardship.

Community Watershed Management Status is a designation that recognizes multiple land use claims while protecting water resources that are used for human consumption. Communities holding valid water licenses where a majority of the land is Crown Land are eligible to acquire this designation.<sup>6</sup> In addition, regional governments have no jurisdiction to regulate activities on Crown Land, so it would seem that Community Watershed Management Status is an important part of preserving ground water quality for rural communities, and protecting water sources from the impacts of forestry.

Nevertheless, a lot has changed within the province, and the original definition was altered when the provincial government decided to “incorporate many of the Community

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5 "Personal Communication with Heather Morlacci." Telephone interview. 12 Apr. 2011.

6 British Columbia. Ministry of Forests. Forest Practices Code of British Columbia : Community Watershed Guidebook. 1996. Web.

<<http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/watrshed/watertoc.htm>>.

Watershed Guidelines relating to forestry activities into the Forest Practices Code.<sup>7</sup> This measure also made the process much more ambiguous, and placed decision making power in the hands of the Minister of Forests, and later in the hands of the Minister of Environment. Since then, the list of community watersheds has been amended very few times, and only a fraction of BC's rural population lives in protected watersheds.

Despite the questionable status of the province's community watershed policy, the Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association has set their sights on acquiring the designation. The most important first step then, is to assess the current situation in terms of water quality, and the residents' perception of water quality. Any evidence of existing issues with the groundwater that could be attributed to forestry and/or mining activities would demand immediate action on the part of the provincial government.

Most of the community uses groundwater from private wells. Assessing the groundwater quality of the entire region is difficult due to the limited resources available to researchers and the community. No comprehensive study has been undertaken; however, this research relies heavily on a master's thesis done by Simone Magwood. Her work combines chemical test results from drinking water throughout the region with land use data, and a survey on water quality perception.

According to the results of Magwood's investigation, only one potentially hazardous chemical was present in the groundwater samples in the study area, nitrate. Two of the seventy-five wells in the valley exceeded the Maximum Allowable Concentration (MAC), as defined by Canada's drinking water quality standards.<sup>8</sup> Additionally, several other wells indicated elevated

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7 British Columbia. Ministry of Environment. Water Stewardship Division. *Community Watersheds*. Web. 25 Feb. 2011. <<http://www.env.gov.bc.ca/wsd/>>.

8 Magwood, Simone B. "Groundwater and Surface Water Management and Drinking Water Issues in the Hatzic Valley." Thesis. University of British Columbia, 2004.

levels of nitrate and other contaminants. However, these contaminants are generally attributed to agricultural practices, not forestry related practices. Studies conducted elsewhere in the Lower Fraser Valley concluded that excessive nitrogen applications in agricultural areas can lead to the pollution of groundwater.<sup>9</sup> Despite this well documented correlation, agricultural activities in the Hatzic Valley were not geographically correlated with the contaminated wells; however, there was a strong correlation among contaminated wells and more developed areas of the valley. The likely cause of this contamination is septic systems. At certain points in the year, the water table rises, “which may impede the proper functioning of septic systems, causing nitrate to leach into the groundwater.”<sup>10</sup>

As noted earlier, there no exhaustive study has been done on the water quality of the region, so it is difficult to conclude anything with certainty, but it appears that water quality has remained high despite resource extraction activities in the area. So far, forestry has had no measurable effect on water quality that could cause harm to the residents of the Hatzic Valley. It is possible, that agricultural practices in the region have contributed to groundwater contamination, but once again, there is no definitive proof either way. The tremendous lack of data and information presents the biggest hurdle to communities, policy makers, and scientists. It is difficult for governments to rectify the concerns of the people in the face of uncertainty.

One useful tool in assessing the potential for Community Watershed Management Status, is surveying public opinion. Along with chemical testing, Simone Magwood performed a survey of valley residents to gather data on the perception of water quality in the region. The results of the survey showed that perception of water quality was also very high. Seventy-nine percent of

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9 Berka, C., Hans Schreier, and Ken J. Hall. "Linking Water Quality with Agricultural Intensification in a Rural Watershed." *Water, Air, and Soil Pollution* 127 (2000): 389-401. Print.

10 Magwood, Simone B. "Groundwater and Surface Water Management and Drinking Water Issues in the Hatzic Valley." Thesis. University of British Columbia, 2004.

“residents of the valley felt their water quality to be 'good' or 'excellent.’”<sup>11</sup> Those who felt otherwise, often had wells that tested for elevated levels of compounds that affect the flavour of well water, namely iron.<sup>12</sup> While it is clear that the community cares about preserving their water quality, it appears as though there are no widespread pre-existing issues with well water in the Hatzic Valley.

All in all, the case for Community Watershed Management Status is a hard one to make. The current state of the provincial government is discouraging for communities because of several reasons. First, the current state of the provincial government and bureaucracy is such that achieving CWMS is almost impossible. It is unclear as to what communities should do to initiate an application. The process used to require contacting the BC Ministry of Environment regional water manager. Following this step, if the regional water manager felt that the application was legitimate it would proceed to higher level decision makers and be left to the discretion of high-up provincial authorities; however, the restructuring of the BC provincial bureaucracy has further confused this process.

In addition, the provincial government has outlined criteria for assessing the eligibility of a watershed for CWMS, and deemed that “there may be little value in designating the area as a community watershed” where “sediment sources (e.g., landslides, ravelling banks) are the main influence on water quality in the watershed and are likely to mask any damage from land use.”<sup>13</sup> Unfortunately, this profile matches the Hatzic Valley pretty closely. This is especially damning

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11 Magwood, Simone. *Proceedings of the 2005 Puget Sound Georgia Basin Research Conference*. Drinking Water Quality and Well Owner Perceptions of Quality in a Rural Watershed in British Columbia, Canada. Web. 22 Feb. 2011. <<http://deckard.engr.washington.edu/>>.

12 Ibid.

13 British Columbia. Ministry of Forests. *Forest Practices Code of British Columbia : Community Watershed Guidebook*. 1996. Web. <<http://www.for.gov.bc.ca/tasb/legsregs/fpc/fpcguide/watrsheed/watertoc.htm>>.

because, since the adoption of the Forest Practices Code, forest management in BC has adapted to minimize the harm of forestry activities in geologically sensitive areas. Therefore, future landslide/ debris flow events that may affect water quality will likely not be attributed to logging.

Another reason why the Hatzic Valley might be ineligible for achieving Community Watershed Management Status is the fact that groundwater contamination has been linked to septic systems. The aforementioned chemical testing performed by Simone Magwood was conducted on private land, and Community Watershed Management Status only regulates activities on Crown land. Thus, it would be difficult to present a case against forestry activities. The community watershed handbook recognizes that a watershed must be evaluated based on all of the activities that may effect a watershed, and mentions that, " [f]orestry impacts on water quality may be overshadowed by impacts from activities on private land."<sup>14</sup> From the minimal data available, this appears to be the case.

Given the above information, it is difficult to conclude much. On the one hand, the Hatzic Valley community is vulnerable to a lot of problems with drinking water. British Columbia lacks formal, comprehensive legislation surrounding groundwater protection and management, so it is difficult for communities to bring up grievances against industry.<sup>15</sup> If industries are not strictly regulated to protect groundwater, there is not much incentive for them to do so. Nevertheless, these companies have respected their due diligence, at least in the case of Hatzic Valley. It would be nice for the Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association to find a long term solution to the community's concerns.

On the other hand, their case for Community Watershed Management Status is not a very

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14 Ibid.

15 Berardinucci, Julia F. "Local Groundwater Management for British Columbia: Linking Data to Protection Practices." Thesis. University of British Columbia, 1997. Print.



strong one. As outlined earlier, there are tremendous gaps in information and knowledge that prevent any definitive action from occurring. In light of this, my formal recommendations for the Ratepayers are to embrace some non-regulatory approaches to watershed management. These approaches are adapted from the thesis work of Julia Berardinucci, from the University of British Columbia. The goal of these recommendations is to further secure the future of clean drinking water in the Hatzic Valley, and potentially increase the knowledge base on which a stronger case for CWMS can be made in the future.

Non-regulatory approaches include: Public Involvement, Vulnerability Mapping, Groundwater Monitoring, Hazardous Waste Collection, and Contingency Planning.<sup>16</sup> In light of the survey results, and chemical testing results, it is clear that more of the community needs to be involved in the protection of their drinking water. There is a disconnect between being concerned about industry, and regular and thorough well testing. If more members of the community actively test their wells, and keep records on the quality of their drinking water, it will be apparent to governing authorities that the community does in fact care. Currently however, despite the work of the Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association, there has not been a concerted effort to monitor water quality. The obvious barrier to this is money. Regardless, regular testing is an important first step, and may help establish a serious case for CWMS. Investment now could save money and lives in the future.

The lack of information, and resources is a major barrier to rural communities across BC. The provincial government has done little to help these communities overcome this barrier, as an almost deliberate means of protecting the interests of industry. This institutional hurdle in conjunction with the lack of supporting evidence makes the case for Community Watershed Management Status nonviable at this time. The adoption of community based watershed

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<sup>16</sup> Ibid.

stewardship, and more thorough monitoring may help the community develop a better case for moving forward. The Hatzic Prairie, Durieu, McConnell Creek Ratepayers Association are advised to find ways to improve their understanding of their watershed before seeking any government designation. Regardless of the outcome, the vigilance and strength of the Hatzic valley community will prevail. This community should serve as the precedent for community empowerment across the province and the country.

## Works Cited

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