

Public information Forum
Water—Environment - Change
Summary Notes of Speakers' Presentations and Q & A Session

Tuesday November 27, 2007

7:00 – 9:30 pm

Otter Point Fire Hall

44 in attendance

Trevor Wicks – “From Source to Tap... Understanding and Protecting Your Water Supply. ”

Trevor Wicks has lived and worked in the Parksville/Qualicum Beach area for 27 years. He is actively involved in land and water management, land use planning and participates in many committees and organizations. His passion is the advancement of knowledge and information relating to sustainable water resources and watershed management.

(Mr. Wicks spoke using a series of power point slides. These slides are available in print form if requested.)

Mr. Wicks began by indicating that he would explain about how watersheds function, and how aquifers and well fields are recharged. He noted that although many of his examples are from the Parksville and Qualicum areas, the general principles are applicable elsewhere.

Mr. Wicks emphasized that both surface water and groundwater originate from precipitation and should not be considered separate. Surface water, in lakes, rivers and streams often interchanges with groundwater, as the water moves through and over the earth.

A watershed is defined as the area of land from which water flows toward a common body of water such as a creek, river, lake or an ocean; basically all land is part of a watershed. Activities such as logging, landscaping, road building, ditch digging, and construction affect the flow of surface water and absorption of water into the ground.

Mr. Wicks described the Mount Arrowsmith watersheds that drain into the Englishman River, Little Qualicum River and French Creek. An aerial photo indicated that about 90% of the Mt. Arrowsmith watersheds have been affected by land uses and development. Disturbances to the soil, changes in water run-off, the introduction and subsequent absorption of contaminants from human activity greatly increase the risks to water quality and quantity. The three major watersheds supply drinking water that is extracted near the estuaries.

If problems are being experienced with water supply, a diagnosis often begins with a look at the top of the watershed. Activities such as road building and land clearing can lead to erosion and increased water runoff. Increased runoff can, in turn, lead to a build up of contaminants lower in the watershed. Natural minerals, some of which are

harmful, are released by soil disturbances and can form a solution. Fine particles of sediment are picked up by the water and are not always filtered out as the groundwater moves through the soil, as was previously believed. Chlorine used to treat water that has organic material can create carcinogens in the water. Contaminants can move with surface water that becomes groundwater. Well fields can be contaminated from sources that are kilometers away.

The ease or speed with which water travels underground is affected by the type of soil and rock it moves through. Where the rock is cracked, water moves easily. After an earthquake, if there are changes to the rock, one well may fill and another may empty as a result of the changes water flow. The absorption of surface water is important to recharging an aquifer or well field. Many land activities cause precipitation to run off too quickly as surface water instead of being absorbed as groundwater. Ditches designed to move water quickly can prevent absorption into the ground. More ditches can mean less water available to recharge an aquifer.

In summer, when no or only limited rain is available, streams often depend for their flow on groundwater. If winter water runoff isn't absorbed as groundwater, such summer streams become ephemeral and dry up sooner after the rains cease for the summer.

Groundwater recharge areas can be large, measuring many square kilometers. recharge areas and water tables can be significantly lowered by a few wells that draw a lot of water. A high demand well usually develops a "cone of depression" around it. Wells that are shallower may go dry if they draw from within a neighboring well's cone of depression.

In the Parksville area, well-monitoring records show that in some wells the water table has dropped about 16 feet between 1992 and 2003. This is a serious situation as an aquifer can "settle" if it is emptied and not recharged. It will not then refill to its earlier capacity.

Often, people do not know where local watershed and aquifer boundaries are. Government jurisdictions and laws dealing with watersheds are unclear, meaning that no jurisdiction takes responsibility for their management or protection. However, when local wells go dry, local property values also drop. This is happening now in parts of Vancouver Island. Development needs to be slowed or limited until water flows and their sources are better understood. We need to manage water quality by protecting watersheds and drinking water sources.

Public education and action on water management are important. Watersheds have varied degrees of protection in different jurisdictions. For example, access to the Greater Victoria Water District watershed is controlled, whereas access to the Parksville area watershed is wide open. Community education is important to protect water sources. Educational projects can be organized to identify community drinking water supply watersheds, to map and name all the streams and ditches in the watershed, and to put up signage to make people aware of the drinking water source area. Get people out on a rainy day in the wet season to look at where the water is and where it flows. Recognize that highways, ditching and other development activities may be changing the direction of drainage and its affects on seasonal streams.

Mr. Wicks described a variety of ways to retain water on site and increase its ground absorption. Sub-division design can provide for contouring the land to retain water and assist slow runoff by incorporating ponds. Permeable surfaces such as crushed road rock and porous cement sidewalks can be used to assist with greater water absorption. Landscaping should include rain gardens and appropriate plantings. Cisterns can be used for water storage and later use. As many of the Gulf Islands have limited water, we can also learn from them about practical water conservation practices.

It is better understood now that the local hydrologic cycle also affects local climate. Local water cycles are changed when vegetation is removed and replaced by development. Because less water is retained in the soil, there is less evaporation and the air is drier. Some areas of eastern Vancouver Island are receiving less summer rain, and the range of local plant species is changing accordingly. Changes to land surface leads to changes in climate, both locally and globally.

Dr Tony Boydell “Community Environmental Stewardship”

Tony Boydell is currently the Director of the School of Environment and Sustainability at Royal Roads University. Initially a research scientist in the Geological Survey of Canada specializing in permafrost processes, terrain inventory and satellite remote sensing, he was subsequently appointed Regional Director General for Environment Canada in the Pacific and Yukon Region. He has experience as a consultant in both the public and private sector dealing with environmental, land and community development issues. In the mid-90s, Tony was also the Chair of the Willis Point Community Association and was involved in the planning for the Highlands Municipality. His expertise includes: environmental impact assessment, environmental management systems design, risk assessment, sustainable community design and development. He has extensive experience in the management of public review processes and has worked with federal, provincial and local levels of government.

Dr. Boydell decided he could dust off his experiences in Willis Point to speak to the issue of community environmental stewardship. From an environmental protection point of view, there is good news and bad news. The bad news is that most environmental protection legislation is two levels removed in government: either federal or provincial. Generally, land use planning happens at a high level. The good news is that local governments can find a way around it if the more senior government does not act.

Dr. Boydell set out to trace where we have been, for example with the disposition of crown land and the protection of sensitive areas. He read the following quote from David Loukidelis and Ann Hilyer which shows that land use decisions have been controversial for some time:

Land use issues have long occupied a central role in environmental disputes in British Columbia. How land and its resources are managed and whether land will be subject to any human impact at all are questions that frequently generate heated public debate. Increasingly, citizens and conservation organizations are interested in the preservation or conservation of land for a variety of reasons including:

- *Preserving wilderness areas;*
- *Preserving important plant or wildlife habitat;*
- *Maintaining a particular use of the land such as agricultural use; and*
- *Conserving green spaces for recreational and aesthetic purposes.*

Using Conservation Covenants to Preserve Private Land in British Columbia
David Loukidelis and Ann Hilyer
West Coast Environmental Law Research Foundation, 1992

Although many things have changed since 1992, West Coast Environmental Law is still very useful for information. Dr. Boydell recommends the WCEL web site.

Dr. Boydell described some of the stewardship initiatives from the 90s. In 1991 the Commission on Resources and Environment (CORE) was established to develop a land use strategy. This led to the creation of some protected areas, mostly forests. In June 1993, the provincial government established a Protected Areas Strategy. This involved companies collecting info about what was on land as starting point for what should be protected. The goal was to setting aside 12% of land area for parks following a guideline of 12% set at a UN conference in Rio.

The NDP government also set up a Land Use Coordinating Office to bring large-scale land use plans to a more local level and involve communities in local planning. This led to the Vancouver Island Land Use Plan. The Land Use Coordinating Office no longer exists.

How well do the government initiatives and land and resource management plans work? Sometimes they don't work well—it depends on who is involved, their interests, the funds available and so on. They do provide a framework for land use planning for protecting land. It is important that communities get involved in land use planning.

What has happened over the last 15 years?The provincial government has moved away from stewardship initiatives. Now much depends on the local populations and on money available. Dr. Boydell described some of the current initiatives and tools for community stewardship.

Ecological reserves are created for science and may seem/may be very small but they are for research. Parks are larger. Money limits the ability to protect lands: less and less money is available and the price of land is going up as well. Partnerships are being formed to purchase private land which is otherwise not likely to be set aside for conservation.

The provincial *Local Government Act* (LGA) allows regional, municipal and local governments to designate environmentally sensitive areas for protection in their Official Community Plans. The OCP also makes provisions for human health and safety through environmental stewardship of water, soils and so on. It is a planning document. It has to be approved by the provincial government, which might request changes prior to approval. An OCP requires zoning and other bylaws to support it.

Communities can also create regional growth strategies and forest land policies and can ensure that Environmental Impact Assessments are done to inform land use decisions and bylaw enforcement.

Another tool available even closer to home is an ecological covenant. Generally, a covenant, created under the *Land Act*, sets land aside for future use or prevents a use on the land. An example is when rights-of-way for highways, railways, or pipelines are established. Land can also be set aside in an ecological covenant. In the 1990s, covenants were set to preserve land “in perpetuity.”

The Land Conservancy (TLC) uses Environmental Covenants as a way of preserving lands—there are pros and cons. It can get politicized. The idea is to assign particular use in perpetuity through a trusted third party. The covenant may not work in practice; it can be ‘abused’.

The first important step to Environmental Stewardship is finding out what is there. This is the first challenge. The most expensive and reliable method is to hire experts to observe what is on the ground and transfer the information to maps. It is better if someone has already done the work: for example areas on south Vancouver Island are mapped for soils; there are terrain maps; there is an ecological inventory; there are air photos and satellite photos; Google Earth can be used. Before such data can be used, we need to know when and how it was collected, the scale of the maps and the purpose of the study, so that the data can be adapted for our use. Royal Roads University has helped develop stewardship plans. An environmental stewardship plan for watershed management is important. The second challenge is deciding what we want to preserve. Dr. Boydell reminded us that we need to keep in mind that the local knowledge of people who live in the area is an extremely valuable resource.

Felice Mazzoni “Implementing Sustainable Policy: the Ucluelet Experience” Development Pressures & Parallels in Ucluelet”

Felice Mazzoni was born and raised on Vancouver Island. He is currently the Director of Planning and Deputy Approving Officer of the District of Ucluelet and has accumulated twelve years of municipal planning experience. He runs his own private consulting company, “Mazzoni and Associates Planning” and is in the process of completing an Official Community Plan project in Golden and in commencing the same process in Sooke. His interests include: comprehensive development zoning, development negotiation, sustainable subdivision design, innovative neighbourhood concepts, parkland/amenity zoning and density bonusing. In 2007, he was awarded “Planner of the Year” in British Columbia by the Planning Institute of British Columbia.

Mr. Mazzoni apologized for arriving late, noting that he lost his way in the dark. Mr. Mazzoni said he would make an informal presentation using the example of how Ucluelet has responded to development pressure and the initiatives that were put in place to maintain the character of Ucluelet.

TimberWest was the timber giant in the Ucluelet area and is now replaced by Weyerhaeuser. The company had large, underdeveloped land parcels. The community

did not want to lose its character and sense of place but did want an expanded tax base to provide recreational land and other facilities.

Fifteen years ago the Council was broke and had to lay off half their staff. When Mr. Mazzoni started working in Ucluelet as planner, he saw the need to create policy to protect the community vision and to control future development.

Mr. Mazzoni mentioned that he sees our area in the news almost daily with the “accidental subdivision”, school closings and Western Forest Products sale of private lands. He recognized we face many of the same things Ucluelet was facing but Otter Point and Shirley are unincorporated and don’t have the same powers as a municipality. Our Official Community Plans are administered through the Capital Regional District.

Otter Point and Shirley will need policies in place to protect the vision and character of the area.

Ucluelet recognized it is important to have the right strategies in place. These are hard and fast policies. For example, all development must go through phase 1 and phase 2 environmental protection assessments which lists all features such as wildlife corridors and view points and water resources as well as an inventory of wild life, birds, and plants which defines how an area can be developed. Their riparian protection code was created by Ucluelet, not written by the province. Its application is tailored to each water feature.

Zoning is written and applied to respond to the environmental assessment and regulates what kind of development can occur. There is a "green commitment".

In Ucluelet, all kinds of residential and commercial zoning and densities are used. Six years ago there was almost no development in Ucluelet. Mr. Mazzoni said in his first year on the job, he had to do one lot line adjustment. At the end of 2007, there was \$900 million in development on the books to be built out.

Mr. Mazzoni said that Ucluelet requires builders to build to a silver LEEDS standard for all but residential homes. This is a first for a community in British Columbia but with a population of only 1900 people, Ucluelet has managed to establish this precedent. Other communities can follow their lead and they have partnered with the government to create legislation for the rest of the province.

Mr. Mazzoni described some of the techniques used to maintain the character and protect the values of the community. Subdivisions use narrow roads and there are paths beside them, not sidewalks. Residential roads are surfaced with crushed, rolled rock which is pervious to rain instead of surfaced with asphalt. French drains are used to manage water run off. These are rock filled ditches or trenches instead of the traditional 100 year storm drains which seem to fail every six months. The French drain can handle 14 feet of rain per year which is usual in Ucluelet. With slower drainage, water does not blow out the creeks and streams.

Ucluelet is not a pro-development community and refuses as many developments as it passes. It has raised the bar for what is required. The Ucluelet Council has been consistent over the past 10 years. Their support for the planning staff is critical.

A new Pan Pacific Hotel being built in Ucluelet is the first in Canada to meet LEED Gold standards. The hotel will use less water, create less sewage, use less power and be built using local materials. Mr. Mazzoni is surprised that this has not been done elsewhere but is pioneered by a small community such as Ucluelet.

Affordable housing and staff housing built to CMHC standards at developers' expense are requirements for such projects. The municipality defines affordability in terms of a percentage of the buyer's income. The municipality will not approve occupancy of the project until additional staff or affordable housing is ready.

Mr. Mazzoni told us that development is heading to the Juan de Fuca Electoral Area. Communities can't stop forest companies from selling their land for development. Real estate is where the money is, not forestry. What is needed is to put policies in place for green development. In Ucluelet, the 700 acre development by Weyerhaeuser is 60% green space. This was achieved by building in very small dense blocks which are cheaper to sustain, to build, and to maintain. Ucluelet required public participation in the planning of the project. All ended up better off.

Question & Answer Period

Q & A What does Ucluelet do for water and is the water supply protected in contrast to Tofino?

F. Mazzoni: Tofino experienced 10 years of unabated development. It was not a not a surprise when it ran out of water in 2006. In 2005, it was down to two weeks supply at one point. Tofino draws water from an aquifer on Meares Island. Last summer, about 12 trucks pumped water round the clock to supply water to Tofino from Ucluelet.

Ucluelet is lucky as it has both Lost Shoe Creek and an underground aquifer to draw on. Ucluelet had enough water to support two fish processing plants in the past. Only one plant is operating now and there is still enough water for Ucluelet to expand up to three times its present size. Ucluelet considered its capacity and how to prevent contamination and shortages before making decisions about how it would allow building out.

At one time, Tofino viewed Ucluelet as a have-not-place or sort of ugly step-sister. Today, unlike Tofino, Ucluelet has sustainable development policies in place. Among other benefits, it maintains 100% public beach access with the Wild Pacific Trail going in front of all developments.

Q & A The current OCP treats any interference with the environment as a "no-no," but people want to be here so changes will occur to the environment. How can aquifers be refilled and what remedial actions can we take to recharge groundwater?

T. Wicks: Many bylaws design new development foot prints to absorb water so that the hydrologic balance is maintained. Big cities have traditional run off and storm water drainage systems. Comox has said these cannot continue. One improvement would be to have the largest allowable underground pipe at 6 inches. Water from the roof level

has to go into the landscape. Without traditional drainage, the land can handle 95% of storm water and the six inch pipes can manage the excess. The drainage problems can be solved with an understanding of the water flow. There need to be areas where the water is captured and then slowly released to increase recharge of ground water. This involves the use of “dry” ponds which or areas where water can stand for a few days after an heavy rain without problems. The systems cannot permit run off that is a cumulative loss to the local water cycle and had serious long term consequences. Subdivisions should not be built on wetlands and should not have large paved areas. Hornby Island has a watershed mapping project to help resolve flooding and erosion problems.

T. Boydell: Once you lower the water table it takes years to recharge.

Q & A We have a groundwater situation. The neighbourhood is on an aquifer. A sand and gravel operation wants to begin running of a well for a gravel washing operation. Is there a means to enforce a study on the aquifer or limit the use of groundwater?

Discussion: The provincial government doesn't really regulate groundwater. There is a section of the Water Protection Act dealing with groundwater but it has never been enacted so any legal recourse is difficult. One option is to try to determine what happens to the water after it is used-- the water goes to a settling pond where it evaporates or goes straight into the ocean. There is a need to monitor what is going on in existing wells over a long period of time because there are natural fluctuation in rainfall each season and year. People need to know if the recharge is able to keep up. By monitoring what is happening, it is possible to see if there are health hazards which should be taken to the health authorities. You must recognize that water and sediments can travel quickly and a long way from the gravel washing area. It is difficult to find a legal remedy for such issues. Is it possible to work something out with the gravel operation?

Q & A:When can we expect Mr. Mazzoni's book?

He doesn't know. From his experiences, he could write two books, one about Ucluelet and one about developers--good, bad and ugly. Some developers are in it for the buck and have a lost sight of the triple bottom line. Some are great. In Ucluelet, Council has raised bar so high that developers say “what do you want”. It gives the planner power.

Q & A:Ucluelet's policies make me drool. To what extent do policies depend on municipal status versus electoral area status?

FM: Regional Districts have less power to approve subdivisions. The Ministry of Transport often acts as the approving authority. Municipalities are innovative as they have more control. MoT may just follow a rule book because they have less staff and less local knowledge. Mr. Mazzoni is the approving officer in Ucluelet. He has the power to influence design. An electoral area can require Environmental Impact Assessments, archeological assessments, and view assessments. Ucluelet has been able to create different parks such as interpretive parks for natural history, historical parks and view points. A regional district can appoint an approving officer for the electoral areas and otherwise take control. Some are short staffed. Some don't want to.

TB: The provincial government has more power than local governments. North Vancouver enacted an environmental protection bylaw in 1992. It has never been challenged in court although it assumes more power than is actually delegated from the province. Saanich requires an environmental and social review and hires a consultant to conduct the review at the developer's expense. This avoids conflict with the province.

FM: The Ministry of the Environment (MOE) has delegated powers on the west coast. Ucluelet developed its own bylaw on riparian areas in 2006. This was reviewed by the Department of Fisheries and Oceans and the MOE. Developers bring in registered biologists to assess the riparian areas and they bring the information to Ucluelet planners. Every stream is unique so regulations are unique to each stream. There are covenants, protected zones and access tailored to each situation.

Q & A: Who owns water flows down a creek? How can property owners on De Mamiel Creek protect their water from logging upstream?

TW: The province owns the right to license water and considers that people have the right to take water. Many streams are over extracted because too many licenses have been granted on the same stream. The province does not extend the right to protect water upstream.

TB: The water protection act is a bit weird. When someone applies for a water license, the province can look at all licenses on the stream but generally don't. They usually just issue the license on a guess. Water extraction licenses are issued for the whole year not taking account of low flow. You can challenge developments legally if you can show you are negatively affected by the new upstream license. The province will most likely change the upstream license. You can talk with the water manager. In recent years, if you can say there will likely be a problem, a meeting may be called for all users before there is a new license issued.

A. Campbell clarified that the question relates to impending logging, not water licenses.

A member of the audience commented that logging companies don't have to follow regulations.

Speakers: There is no real protection. Sometimes the summer flow is drained of in the winter due to the changes in the watershed caused by new roads being built and the logging. People can seek legal recourse afterwards if you can clearly show that your water supply was damaged. There doesn't seem to be a way to prevent such damage in advance other than talking to the logging company.

Q & A: He has heard that old zoning bylaws are the worst enemy of green development. Is this true?

FM: He agrees that policies, OCPs and zoning that are out of date can be killers. Zoning bylaws that are more than ten years old are often not that protective of the environment. Much has changed since the 1980s. There are often newer and better ways to plan but many local governments have no staff resources to review such developments and

instead get locked into old policies. Local governments should consider contracting out the review of outdated policies and plans. Mr. Mazzoni has recently done this for the District of Golden and believes they now have the most progressive OCP and zoning bylaws in the province, surpassing Ucluelet's. There have been recent changes to the *Local Government Act* which should be considered when new OCPs are written.

What is needed for planning is the community's "wish list" which can be reflected in their OCP and implemented through their zoning bylaws. As a new Director of Planning in Ucluelet, he recommended throwing out the existing OCP and zoning bylaws. This was accepted by the Council and there was a new OCP done in 1998 and new zoning bylaw in 1999. This was done before development came to Ucluelet.

Q & A: Shouldn't there be an OCP before the zoning bylaws and the zoning bylaw before the neighbourhood plan?

FM: A neighbourhood plan can become the OCP. The OCP should come first and then the zoning bylaw to implement the OCP. However, amendments can and maybe should be made to the zoning bylaw before finalizing a neighbourhood plan. Developers will make their applications based on the policies of the day so those policies must be updated and current. The policies should shape and control development. Developers submit their applications in Ucluelet based on present zoning bylaws.

Q & A: Political support at the Council level and strong staff to provide good advice were identified as important to Ucluelet. What advice do you have for Otter Point and Shirley where political support is fragmented and spread across a big, diverse electoral area and where staff support is both very limited and has had much turnover? Individual zoning bylaws are not being allowed for Otter Point and Shirley but are planned for the larger electoral area which has very diverse interests

FM: You may want to turn a negative into a positive by creating your own defined area and planning for it. If decision-making is so spread out and watered down, maybe it is time to define your own area rather than having someone from outside making the decisions.

T. B: He recalled that in Willis Point. There was an effort by the provincial government to get rid of electoral areas by having them amalgamate with surrounding municipalities. This was resisted and never acted on. At one time there was the option of being recognized as a village, which was the lowest level of municipal organization. A village had more power than an electoral area but less than a municipality. It is no longer an option. He agreed with Mazzoni that the only way is for Otter Point and Shirley to create their own defined area with its own character is to start lobbying. It takes time and energy. OCPs are supposed to be reviewed every five years and provide a good opportunity for grass-roots organizations to raise issues. OCPs can be done on a shoestring as a way to get your vision out there and get support for establishing a distinctive area.

T. W: He was involved with an OCP in the Nanaimo Regional District. After 115 meetings for the OCP and zoning it got done. The area still has only one Regional Director to represent its 8000 people. The Director is not able to prevail with the

Nanaimo Regional District Board. For similar reasons, Lantzville recently incorporated. Mr. Wicks asked if Otter Point, and Shirley /Jordan River have the tax base to incorporate.

Q & A: We agree that water sheds are important but we have no control at all over streams. How can the community control its watersheds?How do we control and protect the Kemp Lake watershed.

TW:To protect a watershed, you first need to identify it. This is not as easy as it sounds. Remember that development and land use changes can also change the flow of water. Highways love to ditch roads and ditches may change the flow and direction of water. . Ground-truthing can determine what areas are in the watersheds. All of the streams, ponds and wetlands should be identified by name. Name the ditches. Identify seasonal creeks. Post the names so people will recognize and remember them. This will help identify risk factors and make people more aware when you talk to your local government and land owners about how what they do will affect the watershed. Use local knowledge.

Q & A:What about the problem of logging affecting water quality on De Mamiel Creek?.
Comment: The risk is identified, but there is not very much people can do.
Comment: The forest company is logging in a different land district, adjacent to Otter Point District.

T. W. : What is DFO doing about it?

A. : Fisheries aren't touching this one.

FM: Is there a watershed management plan for De Mamiel Creek and Kemp Lake as a riparian protection area?

A. Campbell gave the following new information:OPSRRA directors met with the CEO of WFP on Friday, 23 Nov. , 2007. They discussed De Mamiel Creek and the directors were told that once the area is staked and ribboned (yellow and white ribbons to show set backs from creek) for logging, residents can meet with Warren Littlejohn and talk to him about the set backs.

Q & A:Kemp Lake is not designated by the CRD. What are the is implications of not being designated by the CRD?

FM: It should be designated. Do inventory mapping. Put environmental guidelines. Get Kemp Lake defined as watershed.

TB: Get the watersheds included in a CRD land use planning exercise. Designate the area as a watershed. Then guidelines can be put in place. Get the CRD onside and get it designated.

Q: The province complicated the issue when Sooke annexed property from Otter District. Water from Kemp Lake goes to over 400 households in Otter Point, but much of the watershed is within the District of Sooke. Since Mr. Mazzoni is working on the Sooke OCP, can we look to him for help?

J. Hemphill, a Kemp Lake Water Works District Board Member made this clarification: Kemp Lake watershed is designated but not protected. A watershed plan is on the wish list.

Q & A: De Mamiel Creek also drains into Sooke District. Can the District of Sooke help regulate upstream issues?

FM: The Sooke OCP will be examining watershed sources from Sooke River to De Mamiel Creek. Land use planning is not cut off by political boundaries. People in areas around the District of Sooke will have input to the Sooke OCP.

Q & A: We are on a deep water well. How do we inventory where our water comes from and what limits there should be to local development that might affect the water supply.

T. W: You will need to look at the local geology. One option is to get a good assessment from someone familiar with the area. The best option is to have someone put in a monitoring well although drilling and monitoring such a well is expensive. A third option is to monitor existing productive wells: for example, does the rain fill the well or is it filling from groundwater. The most useful well logs are those that show a record for a number of years. Changes in water levels can be compared to changes in the area from which the well draws water. Use well-monitoring devices in and record levels in different seasons. Rapid well level increases after a heavy rain indicate direct flows to your well source. It is difficult however to clearly identify how surface water ends up in your well. Only in the last three years has there been a requirement that wells be sealed from surface water. Mr. Wicks further suggested that home owners may find they can use a simple, weighted string to measure well water depth. Other more sophisticated equipment is available. A pumping test will measure the well's recharge capacity.

T. B: In this region, water may flow into deep wells through very fractured rocks and water movement may sometimes be horizontal rather than vertical. Although Alberta has groundwater licensing processes and maps of large aquifers, BC doesn't. Monitoring for soil coliforms is sometimes used to determine if surface water is getting into a well. People need to keep on top of the local situation

Speakers' Concluding Comments

Mr. Wicks stressed the need to understand how water and the environment work in an area before development occurs. At this time, government jurisdictions do not have the understanding or tools to manage water supply. In areas such as Parksville, the Gulf Island and Ladysmith, there is evidence that the water supply is already compromised which will result in declining property values. He recommended a range of actions that residents can take to educate themselves and local authorities. For example: carry a camera and document your community water flows; use that information when attending CRD and JDF Electoral Area meetings; make presentations and invite politicians and planners to tour your community. Mr. Wicks said when people see the sites where there are concerns, they understand the need to act.

Dr. Boydell pointed out that municipalities have different powers than electoral areas. The residents of Otter Point and Shirley need to be aware of the powers that the CRD

can exercise on behalf of the electoral area and make sure that their interests are protected. As well, he advised us to push for recognition as a distinct social and geographic area and then push for zoning to suit the area. In developing and realizing a vision for our area we need to be aware of opportunities. He used the example of the Kemp Lake watershed which lies within Sooke District and provides domestic water for over 400 households in Otter District. The current revision of the Sooke OCP provides an opportunity to request protection of the Kemp Lake watershed.

Mr. Mazzoni suggested that Otter Point and Shirley need to develop a vision, to get political support for it, and then to put zoning in place. Without policies in place to protect what the community values, development becomes a free for all. Mazzoni used Ucluelet's recent experience to illustrate a win-win situation for community and developers. Six years ago, a group of developers did not take into account community values and were denied development permits. Weyerhaeuser later undertook development of a 700 acre property but realized they needed to work with the community. In nine months the whole consultation and approval process was completed. It went from a community wish list, to zoning and covenants in place on a master development agreement for the 700 acres that all parties were happy with. It created 60% parkland, affordable housing and a campus for a technical school. Ucluelet councilors have set standards and are not afraid to turn down applications that don't meet them. In 2007, this commitment to the community vision has resulted in Ucluelet having \$900 million in build-out on the books planned to silver LEEDS standards.