April 20, 2005 Meeting Summary

The fifth meeting of the Vancouver Lake Watershed Partnership was held on Wednesday, April 20, 2005 4:00-6:30pm at the Port of Vancouver Administration Offices.

Attending
Partnership members in attendance:
Ron Wierenga for Pete Capell, Brian Carlson, Carl Dugger, Nancy Ellifrit, Don Jacobs, David Judd, Gary Kokstis, Lee McCallister, Thom McConathy, Debra Marriott, Clark Martin, James Meyer, Iloba Odum, Patty Boyden for Larry Paulson, Randy Phillips, Doug Quinn, Jane VanDyke, Victor Ehrlich

Partnership members absent:
Lisa Faubion, Bruce Wiseman, Vernon Veysey

Public Information Committee:
Loretta Callahan, Allison Shultz, Maureen Chan-Heflin, Jeanne Lawson, Amanda Garcia-Snell

In the audience:
Nancy Baker, Dvija Michael Bertish, Jim Comrada, Dick Carroll, Justin Clary, Pat Doncaster, Jacquelin Edwards, Annette Griffy, Chris Hathaway, Lehman Holder, Dave Howard, Jeroen Kok, Lenora Oftedahl, Madya Panifilio Kent Snyder, Bill Stewart, Ed Strohmaier, Rod Swanson

Action Items
This meeting will focus on the habitat uses of Vancouver Lake.
- David Judd will notify the group of when is an appropriate time to write letters of support for the grant.

Committee Business

Jeanne reminded members that information regarding the presentations is from the presenters themselves and not to be considered official partnership information.

03/16/05 Meeting Minutes
Corrections are
- Pg 1 Doug Quinn was absent from the last meeting
- Pg 1 Lee McCallister was absent from the last meeting

- Pg 14 Brian Carlson said “folks” not “boats” went up and down the flushing channel

Suggestions were made to have a decision summary or list of action items be listed at the beginning of the meeting minutes. Others suggested that the minutes be less detailed and the recorded tapes of the meetings be made available to those who are interested. It was also mentioned that the detailed minutes were a valuable resource to have available on the website.

Jeanne asked the partnership to have a definitive opinion regarding the length and detail of the minutes at the next meeting.

Thom inquired about a Steering Team meeting update and whether or not they had discussed if they plan to enter into a memorandum of understanding or if not, why they do not intend to. Jeanne mentioned that the Steering Team discussed the May and June partnership meeting agendas and received a funding update from Patty Boyden. She also reminded Thom that the MOU issue would be revisited once there was available funding for a potential project.

Patty stated that initially a MOU was going to be developed as part of the Centennial grant application. Although it does not appear that the VLWP will get that specific grant, there are other funds that the Port will pursue which will likely require a MOU at some stage of the funding process.

Funding Update
Patty Boyden
The Port made a request through Representative Baird’s office for funding, for the VLWP, through the Corps’ aquatic ecosystem program. Those funds include a reconnaissance portion to review existing data and begin to identify what the issues are. It also includes potentially additional studies and a feasibility study. There could also be funds available for construction whatever solution that the VLWP identifies. This will also include several detailed documents of measurement, monitoring and follow-up. At this point the Port has applied for the funding but do not know if they will receive it. The Vancouver-Clark Parks and Recreation Department will be the lead agency, although Patty mentioned that this is a collective agency effort.

Deb asked whether or not this is existing money or if it is a request for the Corps next fiscal budget.

David clarified that this amount is for the next fiscal year.

Thom asked how much money the grant is for.

Patty answered that the reconnaissance portion is $100, 000 and funded by the Corps. The feasibility study and the construction have cost-sharing element, she

was unsure about the exact percentages. The cost would be shared between the Corps and the agencies that enter into agreement. She also stated that she is not aware of any ceiling on the amount that they can ask for.

Jeanne clarified that there is no assumed solution here and that the intent is to go into this funding agreement with the flexibility to move forward on whatever the VLWP proposes.

Patty also mentioned that the Corps was very clear that the VLWP needs to drive the process and the funding does not predetermine any work plan.

Deb asked if it would be helpful for the VLWP members to write letters in support of the grant.

David mentioned that he thought it would be good but was not sure when that would be the right time for that.

Action Item – David Judd will notify the group of when is an appropriate time to write letters of support.

Patty also suggested that the VLWP invite the Corp to some of the meetings. She also circulated information concerning the Vancouver Lake lowlands walk being led by Thom on April 30th.

Public Comment
Dvija Micheal Bertish wanted to provide follow-up to a couple of questions that were raised in response to his presentation at the last VLWP meeting. The first answer was regarding the potential for CSO into the Willamette to cross-over into the lake. He referred to a LCREP study regarding Willamette River sediments which indicated that the Willamette River has ultra fine sediments that are unique to that particular water body and do not exist up-river in the Columbia. They have been located in Vancouver Lake which indicates that there is flow going across the Columbia and through the flushing channel. The second answer was in regards to concern about the Frenchman's Bar spill. He mentioned that there was a spill at the beginning of April which had been reported by fisherman a few weeks after it occurred. He said he and Pat Doncaster went to the beach on the day that the article was in the paper and found a used syringe on the shore inside the mouth of the flushing channel. He interpreted this to indicate that regardless of where the source is, it is working its way into the lake through the flushing channel. He also mentioned that he wrote about this problem and would provide this article to Amanda to share with the VLWP. He suggested that, based on a newspaper article that was published on 4/20/05 regarding another spill, that the Camas wastewater treatment facility may be a potential source. He reiterated that there are multiple occurrences of this type of debris being strewn up and down Frenchman's Bar and that this situation needs to be addressed with emergency response flushing channel gate closure.

Lehman Holder questioned about whether or not the Corp is supposed to be involved in the VLWP process. He has noticed that they have not attended any of the meetings. He would like to know more about their level of involvement. Jeanne referred to Loretta, who was out of the room. Patty mentioned that there were discussions concerning which branch of the Corp should be involved, Portland or Seattle. Brian also mentioned he had heard through second hand sources that the Corp felt that they might be in a regulating role and this may be conflict of interests. Loretta returned and referred to Iloba who had spoken to them. Iloba mentioned that eventually they will participate in the process but there is an issue of staff resources and that will participate when it is most helpful

Presentations

Columbia River – Chris Hathaway- LCREP Handout attached

Chris began with background on the Columbia River which is primarily snow melt driven. These points are mentioned in the handout. The area that he is most familiar with is the lower Columbia River. The geography is broad and it includes a few elongated islands with similar shape. There are also sloughs and side channels as well as historic wetlands. It is part of complex system of sloughs and wetlands, a list of these is included in handout.

Vancouver Lake historically had two connection points, Mulligan Slough and Lake River. Mulligan Slough has been closed off and diking and development have made it more difficult for the historic pattern of overflow. The river has changed a lot over time as well. As mentioned, development, diking, draining, dredgeing, and dam building have affected the flow, quality and timing of the water in the River. We control how water moves down the Columbia River for three primary purposes; flood control, fish migration, and power needs. Other factors in the decision making about how water moves down the River include navigation, irrigation, recreation, water supply and water quality. In many cases, these are conflicting objectives which result in this being a very complicated system to manage. He provided examples of conflicting objectives which are included in the handout.

Chris then discussed changes in flow over time. There are two main factors that have impacted the change, volume and timing. There has been a significant water loss due to irrigation, about 17% less water since 1933. The timing of the flow has changed more significantly than the volume. The spring freshete, snow melt, has decreased and flow throughout the rest of the year has increased. He then showed different hydrographs that depicted the annual flow at Bonneville dam and the Dalles. He showed some figures that included percentages of flows at specific times of year related to climate change. This series of graphs illustrated the previous slides, the graphs indicated seasonal changes in the water flow, at different locations. He also showed charts from the Cooper report from 1985 and compared that data to previous data collections. He pointed out that all charts showed a peak in flow during January. He suggested that

Bonneville dam has power draws that may impact the amount of water that is available. He then showed a typical tidal cycle and mentioned that the tidal influence on Vancouver Lake from the Columbia River is one to two inches.

Spill is another factor that may have an impact as well although there is no data which indicates how spill affects Vancouver Lake. Spill, which is when water is allowed to flow over the dam to give fish passage without going through the turbines, is fairly consistent with the seasonal changes in water levels. This information came from the Northwest Fish Passage Center and the spill charts are included in the handout. Chris has also heard that Bonneville spills water at times that for power. He does not know the answer and was not able to get info from Bonneville and the Corp about when they spill water out for power and at what level. He mentioned that he would provide this information to the VLWP if he is able to get it.

Other things that impact flow include climate change and global warming. Over the last six years the Columbia River has had the lowest accumulated volume on record. Irrigation is another factor and could become more significant with future development.

He also provided background on the Willamette River as well. It is a much smaller river than the Columbia. It is primarily a rain driven system, tidally influenced and highly managed. He showed a graph of Willamette flow which indicate that the peaks are more in the wet period of the year. More detailed information is included in the handout.

In terms of what this means for Vancouver Lake, he said there isn't much information showing how much Columbia River water is getting into the lake. There are still a lot of unknowns about the hydrology of the lake and what affects the River has on that hydrology. What we do know is that the hydrograph has not really changed since 1969. The flow of the Columbia is complex with so many things going on, power management, snow pack, fish management etc. and it is difficult to determine what the primary influences are.

He also mentioned that based on the flows of the Willamette River in comparison to the Columbia River that he thinks that the Columbia is too powerful for the Willamette to cross all the way over into the flushing channel. He illustrated this with an analogy suggesting that the Willamette flowing into the Columbia was like a Yugo crashing into a semi-truck traveling at high speeds. This concluded his presentation and members asked questions.

Gary asked about significance of the year 1969. Chris said that this was the time when the last dam on the Columbia River was constructed.

Thom asked about water quality and mentioned that the fine silts that in the Willamette are specific to the Willamette River. He said that these are associated

with the Missoula floods and their presence in the mouth of the flushing channel indicates that Willamette water does cross over the Columbia. Carl suggested that putting oceanographic dye into to the Willamette to see where it goes throughout the year could provide an answer to this question. Thom mentioned that this had been tried in the Cooper report but that wind had created problems with the outcomes.

Doug asked about the location of the Mulligan Slough. Thom showed on the map that it would be just south of Alcoa. Chris mentioned that Jennifer Burke, with the Oregon Natural Heritage Council, is doing historic flood plain mapping of the Columbia River. He said that he would try to get in touch with her to find out what area she is focusing on. The discussion continued concerning where the sloughs were historically. Chris suggested that this area may have looked similar to the floodplains and wetlands that are lower in the river.

Nancy suggested that, although anecdotal, tug captains and netters would have ideas about where the currents are in the rivers.

Dave Howard – WA Department of Ecology Lake River handout attached
Dave gave a brief description of fish habitat in Lake River. He showed four different maps that illustrated Chinook, Coho, Steelhead and Cutthroat salmon use in Lake River and its tributaries.

The tidal influence of Lake River is not that large, he said, as we are well up river and this is an estuarine situation. When discussing tidal impact on Lake River it is necessary to look at river flow, the spill-out of the dams and realize that the differential is not very large. Dave reiterated that Vancouver Lake is part of a complex water system and it is important to know where the fish go within the system.

Lake River is a glide habitat; there are not a lot of pools or woody debris. The stream has an average depth of 12 feet. It serves as a transport reach for anadromous fish. It would take a few decades to see any impact if long term riparian growth and woody debris were added to the area. He mentioned the sand and fine silt that has resulted from the Missoula floods.

The Lake River is very significant due to the lack of development that could usually be seen in a high development area. This provides opportunities for action that would not generally be available.

He also discussed water quality. The temperature has a natural fairly sizable increase in temperature, up to 21.8 degrees centigrade. This is very warm but is what is naturally there and we need to think about what things can be done in regard to that. Although one of the major cooling effects has to do with ground water flow. With the current width of the river it will be difficult to address this issue. He very clearly stated that there is no real knowledge, as far as in-depth

monitoring over the years. Although the several studies have been conducted and recommendations about monitoring have been made, nothing has been done. This concluded Dave's presentation.

Keith Seiders – Contaminants in Fish Tissue from Vancouver Lake handout attached.
Keith gave an overview of monitoring efforts regarding toxic chemicals and fish tissue data. There has been increasing concern about toxic chemicals in the environment and specifically in fish. Although many toxic chemicals have been banned for several years, they are still being found in sediments and fish. It is important to know that Vancouver Lake does not meet Washington's water quality standards for toxic chemicals in fish tissue.

For many areas of Washington there is very little information about what is in the fish, sediments or water. In response to this there have been a variety of monitoring programs to obtain this information. He focused on programs that looked at freshwater fish in the state. There have been three different monitoring programs that include earlier and present screening studies that sampled fish from Vancouver Lake. One was also a statewide mercury study conducted to help the department of health to evaluate the risks to humans from eating mercury- contaminated fish. There is currently a statewide advisory on large mouth and smallmouth bass due to mercury levels.

He then showed a map of Washington, with the current monitoring stations depicted. For most of these sites there is no information at all, the goal is to conduct monitoring every five years in different locations. Vancouver Lake is part of this effort.

The chemicals that are of concern are listed on the handout. They are all persistent, biocumulative and toxic. The newest concern is regarding flame retardants, which are also known as PBDEs, they behave like PCBs in the environment. The primary question is related to the concentration levels at which these chemicals become dangerous. These levels have been determined through scientific research. Risk assessment studies have been conducted to derive values that pose a risk to human health and they are adopted as regulatory criteria. The water quality standards in Washington State are related to water and reference fish tissue. The state did not create its own regulations for toxic chemicals in fish tissue; they use the National Toxics Rule, which was created in the 1990s to promote compliance with the Clean Water Act. This is in the federal code of regulations (40CFR131.36) and this is a list of 126 chemicals that is used as a reference to compare monitoring results. In Washington, fish criteria only apply to fillets of fish, some ecological studies sometimes use entire or whole fish, but for human health concerns they primarily use filets.

In Vancouver Lake, in 1993 during the first screening study, large mouth bass and common carp were sampled in the lake. They found PCBs, chlorinated

pesticides like DDTs and chlordanes. In the carp they also found dieldrin which is a fungicide used to treat wood for termite control. In 2002, they collected one 10-fish composite sample of large mouth bass from the mercury study. They analyzed this sample for organic chemicals and found PCBs, DDTs, mercury and PBDEs. He showed a graph comparing PCBs in fish from Vancouver Lake in 1992, 1993 and 2002 based on different samples from the same location. This illustrated a significant difference in PCBs but the levels were still above the National Toxics Rule criterion. These are included in the handout.

A question was raised concerning the difference in levels if the whole fish had been analyzed rather than just the fillet and the affect of the food chain. Keith answered that yes, the level would be higher but it depends of the species of fish.

He showed another graph with DDTs levels in fish from Vancouver Lake. He mentioned that DDT breaks down in the environment into a couple of different compounds that are equally as toxic and more persistent. It breaks down into DDE and DDD. He explained that there were higher levels in the whole fish than the fillet. In some years the DDD levels were below the criterion but DDE levels were not. Levels of toxic chemicals in fillet tissue (large mouth bass in this case) are generally what is used for regulatory decisions, not whole fish (the carp sample). This is because the criteria are developed for protection of human health and it is assumed that fillets are consumed by humans rather than whole fish.

Thom mentioned that this does not take into consideration minority populations that may consume and use fish in different ways than we are used to as well as different types of fish than we are used to eating. Keith agreed that this does need to be taken into consideration, and he will address this further near the end of the presentation.

In regards to the differences in levels of contaminates between 1993 and 2002, he mentioned that it is complicated and there are several factors involved. These are listed in the handout. The biocumulative nature of chemicals also play a role as the longer a fish lives the more time they have to store these chemicals in their bodies. The amount of fat content in fish also is important as chlorinated organics can be soaked into lipids like a sponge. He also mentioned that environmental conditions, such as prey base, and contaminant availability can change over time. Contaminants can be bound up in sediment, work into algae base and be transferred into the fish population. All of these factors can change over time.

He showed a graph of length, weight and lipids of large mouth bass samples to illustrate what the samples looked like for each year. A question was raised about the size of the carp. Keith reiterated that he is only focusing on large mouth bass since these data were from fillets which is what drives the regulatory process.

The levels of PCBs in large mouth bass from Vancouver Lake do not meet water quality standards. The Clean Water Act requires periodic assessment of the state's water, every two to four years, section 303d of the Clean Water Act states that any waters that do not meet the standards must go on a list. The waters that are listed need clean up actions in order to be fishable and swimable.

The next steps are to work with the Department of Ecology Vancouver field office to evaluate the information that is available. They are recommending follow-up monitoring so that they can collect more information to help guide them in their next decisions. They have submitted a monitoring proposal to collect fish and sediment from four locations around the lake and three species of fish to get a total of 12 fish samples. They would analyze this for the suite of contaminants as well as conduct sediment analysis if necessary. If the proposal is selected they will conduct monitoring in the fall and report the results next year. He suggested that the VLWP members can lobby their local Department of Ecology office in support of this proposal. He also mentioned that there is a need for local knowledge such as who is fishing in the lake, how are people using the fish and who is most at risk.

Jeanne asked to wrap up with identifying characteristics of the system that may help the group drive options for what to envision with the lake.

Keith mentioned that water quality standards may not be appropriate for certain locations and certain uses. He suggested that depending on what the final vision of the lake is, temperature or fish toxin regulations may not be appropriate and these types of situations should be considered.

Doug asked about comparisons between fish from Vancouver Lake and other water bodies, such as Columbia River. Keith explained that the large mouth bass in Vancouver Lake is in the bottom 10th percent compared to fish fillet data from other parts of the state.

Clark mentioned that it is difficult to interpret that data and wanted to know they have made any attempt to sort that out statistically. Keith said that no, they have not given that this is a screening level study. Clark asked if they will standardize for lipid content in the future. Keith responded saying that standardizing for lipid content is a fairly controversial technique. In general they try to choose fish that are similar but are also indicative of a sample of fish that people will come across. Clark also asked Keith how much confidence he has in the data being representative of reality. Keith clarified that he does not think it is a good representation of what people are actually fishing for and catching.

Thom mentioned that LCREP conducted a fish tissue sample study in 1992. One of the samples that they collected was a single specimen, whole fish, carp taken from the Vancouver Lake flushing channel that exceeded eight out of eleven

different EPA categories. Keith mentioned that there have been several studies conducted going up the Columbia but he was not aware of this particular study. Thom also mentioned that there are findings that suggest that many species of fish are not completely viable. Chris mentioned that studies conducted by LCREP are available in hard copy in their office and will be on the web within the next two months.

Nancy suggested that adult fish are not the only concern but salmonids and juveniles are going in and out. Vancouver Lake used to be, and may still be a big nursery area for sturgeon.

Brian wanted to clarify if the VLWP should lobby Iloba or someone else regarding the Department of Ecology proposal. Dave clarified that there will be a public comment period in June and he would notify the VLWP with the contact person.

Brian also wanted to know how we can break the cycle of contaminants, is it from a sediment removal standpoint or what can be done. Keith could not say with certainty but clarified that if it is a sediment issue, then dredging may be a viable option for breaking the cycle of contaminants.

Clark asked for clarification about toxin removal for fish farmed for fertilizer. Keith could not answer that now because he did not have enough data and information.

Ron asked what the mercury levels in fish sampled from Vancouver Lake were. Keith answered that the level was on average 160 parts per billion which compares to the water quality standard which is 825 parts per billion. This compares to recent EPA recommendations which suggest 300 parts per billion. Ron also asked about the state recommended mercury level. Keith mentioned that the Department of Health has an interim level of 150 parts per billion that they use in developing their fish consumption regulations.

Doug asked about difference in pollutant levels in fish tissue from bodies of water with less silt and suspended material that have clearer water with a more granular base. He also wanted clarification as to what degree is the source of the contamination the silt laden bottoms. Keith could not clarify because there are too many possibilities and there is no direct correlation given this site and the data that is available.

Jeanne asked the group to write their questions down to share at the end of the presentations.

Carl Dugger – Habitat around Vancouver Lake
Carl presented a brief overview of habitat around Vancouver Lake as well as a suggestion for what to do with the lake. This suggestion is not yet endorsed by the Department of Fish and Wildlife.

He began by reiterating that there are a lot of things influencing Vancouver Lake. It is the bottom of the Burnt Bridge Creek watershed. It is a heavily urbanized drainage basin. The lake area is a multiuse area and along the lake shore there are areas that are designed to create habitat for wildlife. There are Sandhill cranes, which are a state endangered species, large flocks of Canada geese and one or two heron rookeries. There are also recreational facilities, swimming, boat moorages and a public access boat ramp. There are also sports fields and playgrounds. It is a favorite area for watch-able wildlife. There are also bald eagles in the area.

Carl also mentioned that there are natural or artificial solutions. One of the artificial solutions is Chinese pheasants and other exotic species. They were planted by the Department of Fish and Wildlife, and there are likely millions in the state. They were planted to keep quality recreational hunting viable, although they do not do as well in western Washington as eastern Washington. He reiterated that this is a highly modified landscape.

Carl then addressed the question of whether we are going to work with nature or against it. There have been problems with some of the solutions that were developed in the late 1970s. One of the main problems in the lake is blue green algae, although Carl thinks it may have been there all along and we are just now noticing it. The lake is expensive to keep clean and may be impossible. It wants to eutrify, and he suggests that maybe we should let it.

His suggestion is to develop a smaller, deeper lake dedicated to recreational boating and water sports next to Vancouver Lake Park. With properly timed flows it would be easier to maintain a smaller, deeper lake, than it would be to maintain the lake that is currently there. The larger remaining portion of the lake could be separated from the smaller lake. He showed pictures of water control structures that are currently in place. The smaller deeper lake could be used recreationally. The rest of the lake could be turned into a wetland with large woody debris and more benefits to the natural wildlife. If the lake is allowed to eutrify, it will return to its natural habitat. Carl feels that we need to move from discovery to solutions. This concluded Carl's presentation.

Jane wanted to know what the Department of Fish and Wildlife management objectives are for the lake. Carl clarified that they have objectives for their own lands but not for the lake. It is being managed for hunting recreation and maintaining the habitat for the watch-able wildlife. The WDFW has elaborate plans that include both hunting and watching wildlife.

Clark asked how the growing literature about shallow lake management has impacted Carl's ideas about what should happen with the lake. Carl clarified that he has not looked through that literature and assumes that it would be expensive

to convert the lake. He also mentioned that once this process is complete, it would be self-maintaining.

A question was raised about whether or not it is easier to flush a smaller lake than a larger one. Carl stated that he had not looked into the hydrology of the process and was not exactly sure. A comment was made concerning Lake River and if it is possible, given its shallow depth, to get the water flowing forcefully enough to flush Vancouver Lake.

Jeanne then asked Carl if there were things the group should know, in terms of habitat when considering the options.

Carl clarified that the scenario he is describing concerns turning most of the lake intro a wetland area which would boost wetland wildlife species. In terms of fish habitat, it would be difficult to remove the carp from the lake. However, deepening the lake and making it more temperature friendly would be helpful for salmonids.

Nancy mentioned that Vancouver Lake has been referred to as an important bird area for state of Washington. The state Audubon office is developing a bird trail map for SW Washington and it will include Vancouver Lake.

Thom wanted to know if it is possible to plant fish in Vancouver Lake. Carl would not recommend this due to the current conditions and poor habitat of the lake.

Gary wanted to comment that there are many recreational uses of the lake and that there are several different groups of recreational users on the east side of the lake who use the whole lake.

Carl wanted to clarify that he does not think it is possible to improve the water quality of Vancouver Lake if it remains at its present size.

Jim Comrada – City of Vancouver Lake flora
Jim gave a brief overview of the plant communities around the Burnt Bridge Creek watershed and around the lake. He showed several slides of the different plant species in the area. Plant communities are a diverse and distinct group of plants that grow together due to environmental limiting factors or constraints.

Diverse plant communities are important in attracting wildlife and recharging groundwater. If there are larger older plants, like cottonwoods, Oregon ash, and Oregon oak, they will absorb a lot of nutrients, tie up Carbon, and grow and hold onto water in that community. Large tree such as cottonwoods can also intercept precipitation that is absorbed instead of running off them onto the ground. This is all important given the limited amount of freshwater that is available. A diverse plant community will also provide a better filtering system for the groundwater. This is significant for dropping sediment load during flooding events. There will

also be less carbon in the atmosphere, less nutrients in the water and more water purifying bacteria and protozoa will naturally occur.

He then showed a photo of Vancouver Lake explaining the changes in the plant communities as the elevation increases. He mentioned that the Department of Natural Resources has designated plant communities, in every county in Washington, that are considered high quality and/or rare. Three of the eight in Clark County are found around Vancouver Lake. Jim then showed photos of the different species that are considered high quality and/or rare that grows around Vancouver Lake. He explained the differences between the species including what is and is not native. He also indicated which native and non-native species can be quite easy to identify. As he showed the different species he provided detailed information about each species. He mentioned that beaver do not like ninebark, which is important for restoration.

Jim suggested that there is hope for the area in terms of diversifying plant communities. He gave examples of a test plot that the Corps of Engineers dug in 1992 on the lower floodplain of Salmon Creek, which was never maintained. In three months time numerous plant species that had laid dormant under two feet of reed canary grass roots and soil began to germinate and grow. He suggested that with a little interim weed management, the area could be restored to a diverse plant community which would be beneficial for the groundwater and wildlife. This concluded Jim's presentation.

Thom asked about managing reed canary grass. Jim clarified that it is not very effective to try to manage it with over-watering. He also mentioned that Metro in Portland has been looking at ways to manage reed canary grass.

Due to limited time left for the meeting, Jeanne asked Jim to be present at the next meeting to answer any questions.

Jeanne also asked members to write down all of their questions concerning the presentations so that they could be added to the question bin, or addressed at the following meeting. A list of questions is at the end of the minutes.

Thom reminded the group that he will be leading a Vancouver Lake lowlands walk on April 30th, 2005 at 10:00am

Public Comment
There was no public comment at this time.

Next Meeting

The next meeting will be held Wednesday, May 18h, 2005 from 4:00pm to 6:30pm. The location will be confirmed and sent out via email meeting notice.

The focus of the next meeting will be to continue the discussion of how the watershed area is used with a specific focus on recreation, development and utilities.

Members Questions/Commnets

- Could we somehow establish volume of water that we could manage effectively and allow the rest to revert and develop for habitat enjoyment?
- Could fish farming be used to titrate chemical levels in the lake? Might pay for itself if it works.
- Restoration methods? – would like presentation
- What are the impacts to the lake from the Alcoa smelter? Fluoride?
- Are we looking at the minority community fishing?
- Volunteers to question fisher persons as to use of fish caught. Can they be used?
- Need more hydrology info on flows in flushing channel and Lake River.
- Willamette river influence on Vancouver Lake and Frenchman's Bar?
- Flow profile stratification?
- Would you like summary paper of health department testing for e coli and blue green algae for 2003-4? Randy Phillips
- Influence of Willamette River on water quality of Vancouver Lake?
- Reduction of open water and creation wetland mosaic was interesting.
- Deep water dredging of existing lake – possible?
- Lobby Iloba!
- Could we drain the lake, let the sediment stabilize and re-flood in controlled sections?
- Lake bottom sediment assessment –type depth quality
- Recreational use assessment
- Water budget?