

Notes from the May 19, 2005 Meeting of the Scientific Advisory Panel Burns Bog Ecological Conservancy Area

In attendance

SAP members present: Richard Hebda, Allan Dakin, Geoff Scudder (by phone), Bert Brink and Bob Peart

SAP members absent: Hamish Kimmins

Planning Team Members: Greg Paris, Verne Kucy, Tom Bell.

Guests: Hugh Fraser

1. Notes from the April 14, 2005 Meeting. Approved as previously circulated.
2. Agenda approved as distributed.
3. Gateway Program South Fraser Perimeter Road-Southwest Delta Segment. Representatives from Gateway (Robin Taylor, Malcolm Smith, Don Chorley (sp?) and Malcolm Smith distributed a discussion guide and made a short presentation about the option of the SFPR coming near the NW corner of Burns Bog and what/if any mitigation would be required. They recognized the existence of the Covenant and didn't want to run afoul of it. Gateway also wanted to know if there was anyway that the proposed construction might assist with the Panel's concerns regarding water flow and hydrology. It was determined after the presentation there wasn't a need for immediate follow-up with the presenters and Bob would report at the next meeting regarding any contact from them.

Recommendation: A follow-up presentation in September/October from Gateway would be useful.

Following are the key points raised by Panel members in discussion with the Gateway representatives:

- Even though the proposal doesn't actually enter the partnership lands, any adjacent land use may have an effect on the hydrology of the perimeter. Any interaction with the periphery would have to be examined closely. Conventional construction won't therefore be suitable.
- Have there been any calculations about the pressure the roadway would have on the Bog and its mound? Even a shift of a few centimeters, because of depression, would be harmful to the Bog.
- What would the granular material be so that construction material wouldn't change the water chemistry? You need a non-reactive material.
- What have you learned from the Hwy 91 bridge and highway construction? Has there been any analysis/monitoring that would be useful? A key point was the level of the culverts *vis a vis* the water level.
- The important elements about water to consider are: flow, flux, chemistry and hydrology patterns.

- There is virtually no data along the north part of the Bog, so how will you determine the highway's effects if you have no comprehensive data as a baseline?
- Could you work an arrangement to link with our research...how can what we need to know and what you need to know link?
- "Snapshot" research 'in spots' isn't adequate. You need data that is a minimum over a year, but preferably two years. In particular winter data is crucial. Also not random plots only because they are accessible, but carefully selected plots with more reason.
- Have you considered animal movements --- corridors? The highway can't be a barrier to the movement of animals. Ecological connection is essential. We understand the CWS is concerned about this --- both for fish and wildlife.
- You can't isolate the hydrology of the Bog from other ecological processes, which is why the lagg is so important. Type I and Type II water are both critical. We are concerned about the Bog AND the lagg.
- What is the prevailing wind --- concern about dust, salt and fumes?
- If construction is 4-5 years away, how could you time your research to gather the necessary data? You must do hydrological monitoring for at least a year. (Gateway at this point stressed that in order to gather the best data they need access to the Bog, and so far that access has been denied.) They need to have a research program in place by this fall to gather data over the winter.

In summary the concerns of the Panel members were:

- The data is too fundamental, random and short term.
 - Too hydrology focused...what about fish, wildlife, conductivity, transition ecosystems and ecological integrity in general.
 - They haven't set a research framework that sets a baseline, establishes indicators, monitors conditions over time, etc.
 - Didn't give much confidence.
4. Future of Critical Lands. A map was distributed that indicated the lands recommended for purchase by Hebda and McDade for hydrology, bog features and biodiversity. These lands were recommended for purchase, weren't purchased and as a result are not part of the partnership lands. Delta mentioned that any of their adjacent lands have an excellent chance of becoming incorporated into the partnership lands. Key points raised were:
- The south connection to Boundary Bay is important.
 - The western lands (Sherwood Forest) are important for raptors, which are the top carnivores in the Bog.
 - The natural lagg all the way around the Bog needs to be protected/restored as well --- example Crescent Slough.
 - The NW lands are where the red backed vole was located.
 - The SE is important as we want to try to coincide with the original Bog margin.
 - If any of the adjacent lands are 'natural bog' they are important as too few areas are intact.

Recommendation Bob was requested to put in the management plan that these lands should be purchased for the reasons outlined above and that precise border determinations are required before appraisal/purchase.

Delta requested some advice on the Pineland Peat lands regarding purchase/covenant/rezoning. Members advised that the northern 1/3 of the property is important for lagg protection and water collection. Delta will follow through as appropriate.

The importance of the lagg was stressed by all members. Single ditching the boundary is a short term solution that might be considered as an alternative if lagg isn't available to support the necessary ecological systems.

Recommendation It is necessary to have lagg all the way around the Bog and this should be stressed in the management plan.

5. 80th Street Concerns. Hugh Fraser raised a number of concerns related to water levels, existing steel plates, beaver blockages, flooded fields and roads.

Recommendation Delta raise the level of the road 1-2 feet in critical portions, as this would assist in flooding the Bog and resolve a number of other issues. Panel members wanted the fill to be fresh and as free from minerals as possible. Perhaps use clean hog fuel.

6. Invasive Species. Both plant and animal invasive species could be a problem in the future. Presently not of concern. Those invasives that would interfere with bog forming complexes are of most concern and need to be addressed immediately. The core of the Bog must have no invasives, the periphery isn't as important. A status, monitoring and management report is needed to determine the next steps. Concern expressed regarding green frogs and bull frogs as well.

Recommendation Greg and Bob to discuss the costs of producing such a report and implementing it, the availability of budget, GVRD capacity, etc and bring some thoughts back to SAP in the fall.

Recommendation In the meantime staff should be trained to recognize key invasive plants and pull them out and remove them from the site (example sedge, commercial cranberry and blueberry, heather, broom, Blackberry).

Recommendation The management plan needs a section on the management of invasive species.

7. Ecosystem Restoration Monitoring. Most of the transects are set up and monitoring measurements are being taken. The control plots are yet to be established. Munson to produce his report for early summer.

8. Next Meetings
 - August 18 2005 430-730
 - September 15 2005 430-730

9. Future Agenda Items
 - Fisheries research
 - John Jeglum's role
 - Longer term perimeter drainage issues
 - Potential research projects --- connecting with universities/colleges
 - Budget discussion --- required to meet SAP's needs and to do the long term restoration that is required. This includes land purchase.