Enbridge Northern Gateway Project
JRP Hearing Notes

Day 43 – December 10, 2012 – Prince Rupert – Vol 111

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Contents

Order of Appearances

Northern Gateway Panel 1

Marine, Environmental & Socio-Economic Assessment

Mr. John Carruthers	Ms. Andrea Ahrens	Mr. David Fissel
Mr. Jeffrey Green	Mr. David Hannay	Mr. John Thompson
Dr. Tom Watson	Mr. Paul Anderson	

Introduction by Ms. Laura Estep of Northern Gateway Pipelines Panel 1 8087
Examination by Mr. Chris Tollefson for BC Nature & Nature Canada 8206

Opening remarks by Sheila Leggett, Chairperson for the Joint Review Panel 7986

The Chairperson welcomed everyone and introduced her fellow Panel members, Mr. Kenneth Bateman and Mr. Hans Matthews. She stated that the focus in Prince Rupert will be on the marine component of the proposed projects. The issues to be covered and the panels put up by the Proponent include:

- Marine, Environmental & Socio-Economic Assessment (Volumes 5B, 6B, 6C & 8B)
- Marine Emergency Preparedness & Response (Vols 7C & 8C)
- Kitimat River Valley
- Aboriginal Engagement & Public Consulation (Vols 4 & 5A)
- Shipping & Navigation (Vol 8A)

The Chairperson reminded questioners to avoid preambles to their questions. That's unfortunate for these summary notes since it is often the preamble that gives the questions context. She also reminded people not to ask questions that have already been asked, an admonition to questioners to read the transcripts.

Introduction by Ms. Laura Estep of Northern Gateway Panel 1 8087

In her introduction, Ms. Shannon introduced the witness panel members, and described their areas of expertise, beginning at paragraph 8088 in the transcript. ran through the information listed in pages 10 & 11 of Exhibit B136-2 which contains a full list of Northern Gateway Pipelines' witness panels, titles and responsibilities, issues and evidence, including the Application.

Examination by Mr. Chris Tollefson for BC Nature & Nature Canada 8206

Bird species in the OWA and the CCAA

Mr. Tollefson asked for confirmation that the evidence shows 124 marine birds species in the open water area (OWA) and 105 species in the confined channel assessment area (CCAA). Mr Green said that the CCAA information comes from field surveys and published literature, but the OWA information comes completely from published sources. 8206

Albatross

Mr. Green said that albatross are in the OWA with incidental observations in the CCAA, though none were located. He confirmed that two of the three species of Diomedadae are listed under the Species at Risk Act (SARA), and that the third is provincially red-listed. 8236

Key Indicators – effects on marine birds are not significant

Mr. Tollefson noted that the key indicator (KI) avian species are the marbled murrelet, the surf scoter, and the bald eagle. Mr. Green said that the first two are "used for" marine transportation, and the bald eagle is used at the terminal site. The spotted sandpiper and the black oystercatcher are "only used as indicators in the assessment of marine oil spills." 8251

According to Mr. Green, the key indicator birds are "intended to reflect the vulnerabilities of marine birds to the construction and operation of the marine terminal and the operation of marine transportation." 8262

Mr. Tollefson asked, “So to be clear then, it’s the Proponent’s position today that none of the project’s effects associated with the routine operations on the marine terminal are significant for the three KIs that we just mentioned; marbled murrelet, surf scoter and bald eagle?” Mr. Green: “That’s correct. Our conclusion was with mitigation, the effects of the construction, operation, decommission of the marine terminal on marine birds are not significant.” 8271

Mr. Tollefson: “In terms of marine transportation in the open water area [you concluded] it was [not] necessary to employ a KI analysis.” Mr. Green said, “We do not believe that there are effect pathways of importance in the open water area.” 8284

When and why did NGP decide which KIs it was going to use?

Mr. Tollefson asked when a number of questions relating to the timing of the decision on KIs with respect to the timing of the vessel surveys. 8306

He also asked some short questions about the resident marbled murrelet (8328), the migrant surf scoter (8348) and established that they both tend to stay relatively close to shore. Mr. Tollefson then asked about species that are being represented by key indicator species, such as the short-tailed albatross, the black-footed albatross and the pink-footed shearwater, all pelagic species whose primary habitat is offshore. Mr. Green agreed that “these same species, apart from when they’re breeding, they spend their entire life cycle out on the open water area, on the open ocean?” 8358

None of the KIs represent pelagic species

Mr. Tollefson and Mr. Green resolved nothing in a discussion about whether the black-footed albatross exhibits significantly different vulnerabilities to chronic oiling than does the marbled murrelet. Mr. Green asked, what is chronic oiling? Mr. Tollefson said: "I would define "chronic oiling" as distinct from a catastrophic or an acute oil event of -- of a major proportion. Chronic oiling is oiling that arises in the context of routine operations.” Mr. Green said that the limit they use for oil discharges during routine operations is 15 parts per million, defined as no visible sheen on the water surface.” 8363

Following more questions about differences between pelagic and non-pelagic birds, Mr. Tollefson stated, “So there is no KI that represents pelagic species.” Mr. Green replied, “No, because we do not believe there is an effect between pelagic species and marine transportation that would be significant to any of the species under routine operations.” 8385

Rhinoceros auklet, ancient murrelet, great blue heron

Mr. Tollefson asked questions about rhinoceros auklet and ancient murrelet, nocturnal species. Mr. Green said, “We do not believe, in the open water area, that there is an effect on those species that is of significance.” Similarly, with the heron, “there is no potential for a significant effect.” 8392

Effects of routine activities

Mr. Green said it is important to talk about the effects of routine activities of shipping on marine birds. He named the wake effect and sensory disturbance from the moving

vessels, collisions and discharges. “Those are the effects and we do not feel that any of those effect pathways in the confined channel assessment area, will result in a significant effect on any of the species that you’re referring to. And in the open water area, we think the potential for any of these effects is far lower and therefore we did not assess them.” 8415

Why the marbled murrelet and surf scoter were selected as KIs

We do not think there’s an effect pathway between marine shipping and the open water area that will result in any significant effects or -- on these species. And so we did not select key indicators for the open water area. 8431

For the confined channel assessment area, where we think there is an enhanced potential for marine vessels to interact with marine birds, we chose surf scoter and marbled murrelet because they represent summer and winter species. So they’re present and they tend to be in the areas where our vessels would be moving.

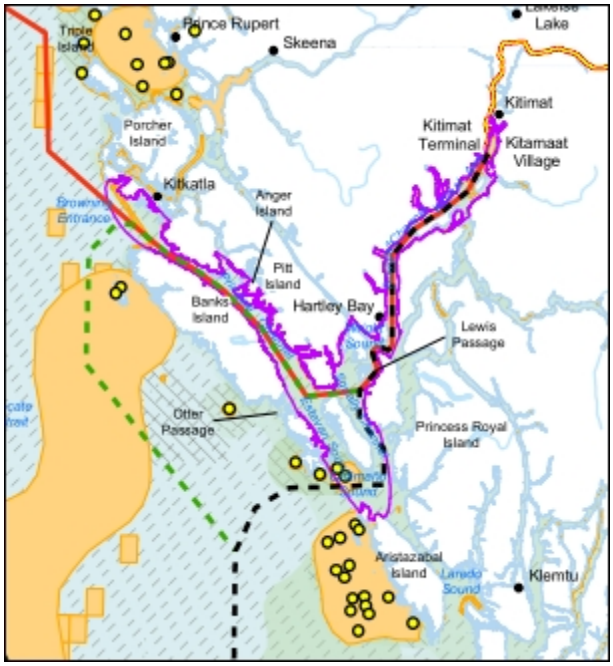
At the terminal, we used the same two species for the same reasons, that they’d be close to shore where the terminal is being built and we also added in bald eagle as a representative of the predatory species

BC coast hosts most of worlds population of some birds

Mr. Tollefson noted that the BC coast hosts about 80% of the world’s population of Cassin’s auklets; 75% of ancient murrelets, and between 50% and 60%world population of rhinoceros auklet. 8435

He noted that seabird species which aggregate are more susceptible to oiling, than are species that don’t aggregate for feeding or foraging. Mr. Green agreed about their susceptibility, but said it was to small oil spills – a topic for the next panel. 8448

Mr. Tollefson observed that there are significantly more avian species in the open water area than in the confined channels. Mr. Green added that there are a number of globally important species and put up a map, Figure 3-1 from Exhibit B9-15. Mr. Tollefson put up another map, Figure 8-3 from Exhibit B3-39 (at right) 8454



No baseline marine surveys in OWA

Mr. Tollefson mentioned that many parties have registered concern about NGP’s decision not to do baseline marine surveys in the open water area. Mr. Green said he was aware of

it. “We disagree with the need to conduct surveys in the open water area in order to complete the environmental assessment.” 8491

Mr. Tollefson spoke about Scott Islands Provincial Park, that it is an important bird area (IBA) and the proposal to designate the park and surrounding area as a marine national wildlife area. Mr. Green said the southern shipping route is 50 km to the north. 8506

Mr. Tollefson also spoke about Lucy Islands Marine Conservation Area and Triple Island, which Mr. Green noted is the pilot station for the area. (top of map above) 8535

Night lighting on tankers

Mr. Tollefson asked about tankers at anchor and night lighting. Mr. Green said that anchoring is not a preferred usage, and that vessels will adjust their speed and schedules to avoid it. He described some of the techniques intended to limit night lighting, including using the minimum number of lights for navigational safety, shielding lights on deck from upward lighting because that’s what attracts birds to a vessel, schedule work for daytime, cover up portholes and other openings on the vessel so that you essentially are blacking out the vessel as best you can. 8545

Rhinoceros auklet as a key indicator

Mr. Tollefson asked, “Why not use the rhinoceros auklet as a key indicator?” Mr. Green replied, “We looked at every interaction on this project. We screened out that effect from a further assessment because we do not believe it’s an important effect to the species.” 8570

Mr. Tollefson said, “I’m sure that the JRP is also concerned about cumulative impacts and tipping points and special vulnerabilities to birds like rhinoceros auklet. What assurance can you give that questions in terms of cumulative impacts are being attended to here?” Mr. Green said, “We are using mitigation measures which we believe will minimize our effect on the species, and our incremental contribution will be very small. If this is an issue to the region, there would be operational statements [to ensure that] all shippers would be asked to follow the exact same types of mitigation.” 8580

Chronic oiling, authorized discharges, small spills

Mr. Tollefson and Mr. Green have different definitions for “chronic oiling” Mr. Green excludes illegal or accidental discharges and said that chronic oiling is a confusing term, and he prefers “authorized discharges” and “small spills.” He said, “About 50 percent of the oil in the Pacific region on this coast comes from seepage from natural sources. Not all chronic oiling, as you refer to it, is necessarily from vessels.” The Canada Shipping Act will only allow discharges if the oil content is 15 parts per million or less. Anything more than that violates a number of federal acts. 8582

Mr. Tollefson put up a 2008 article by O’Hara et al as an aid to questioning (AQ) and reviewed it with Mr. Green. The article is about the significance and extent of small scale oily discharges from ships. Mr. Tollefson followed this AQ with a second one, a 2007 DFO report with Johannson as lead author which stated “With the predicted increase in tanker and cruise ship traffic, as a result of upgrades to the Prince Rupert Port and

industrial activity at the Kitimat Ports, chronic oiling can be expected to increase…" These discussions begin in the transcript at paragraph 8605

Mr. Green followed up with his own authority which stated, "Recreational boating is believed to be one of the major contributors to chronic oil pollution, as more than 50 percent of the small harbours are used for recreational activities." He explained that part of why recreational vessels may have such a cumulatively large impact is that they do not have oil and water separators, unlike modern tankers which are designed and equipped to capture all water into the separators.

In Exhibit B15-2, NGP says that solid and liquid waste "will be managed according to relevant regulation and will not enter the marine environment". Mr. Tollefson said, That sounds almost too good to be true; sounds like a guarantee." Mr. Green replied, "What the Proponent is saying is under routine operations they will abide by the laws of Canada and the only discharges of oil under routine activities will be those that are authorized." 8663

Mr. Tollefson questioned whether NGP will have any control over the actions of the tanker owners or operators. Mr. Carruthers said, "They're all required to follow the laws of Canada." 8675

Mr. Green described some of the requirements of tankers which will dock at the terminal: that they must be vetted, including a review of their operational record; that no tanker within 50 miles of a coastline may discharge anything, even under the 15 parts per million restriction.

Mr. Tollefson asked about the federal government "stepping up enforcement in various ways through tracking by satellite, through aerial surveillance." Mr. Green referred him to Mr. Tollefson's AQ20, and the Transport Canada website.

The evidence on marine birds and key indicators

Mr. Tollefson turned to Exhibit B46-2 & Exhibit B46-37 which are 1) a NGP response to a request from the federal government for a table that summarizes all marine species in the CCAA and the OWA, and how each species may or may not be represented by the existing Key Indicator species, and 2) that table. 8703

The discussion includes the question whether or not NGP is moving away from using key indicators as a basis for assessing marine spills. Mr. Tollefson believed that may be the case because of a statement made by the federal government. Mr. Green said that they actually have four key indicators for marine spills. He suggested that the federal government had not read all the evidence that had been filed, and that NGP does want to shift away from key indicators for monitoring and response planning, not for the assessment. 8729 - 8782

Mr. Tollefson turned to Table 1, "Information Sources" in Exhibit B46-37 for a question about the sources of information used to assemble Table 3, "Tabular Summary of Marine Bird Species." He asked both about sources which do not appear in Table 1, to which Mr.

Green and the three sources listed in Table 1 which are concerned with routine project effects but which are not cited at all in Table 3. 8784

Mr. Tollefson's concern is that the information in Table 3 regarding project effects is not referenced, and this does not help in understanding the vulnerabilities of various species, some of which have never been mentioned prior to this document. 8835

The next text is concerned with an incorrect statement in the document, understanding some apparent contradictions in the evidence (is marbled murrelet pelagic or near-shore or both), and how one statement follows from a seemingly unrelated previous statement. On this last instance, Mr. Green was unable to provide an answer and took an undertaking (U-61 "to explain the results and numbers of the species in Exhibit B46-37, Adobe p. 27, Figure 4."). The last point was why the black oystercatcher was in "the marine bird assessment based on their vulnerability to routine effects of marine transportation" when it was not a KI species. Mr. Green's answer on this point suggested it was there because "the shift is now away from key indicators to … focusing on the habitat." Mr. Tollefson said "Thank-you" but did indicate whether this answered his question. 8936

How representative are the KIs?

The introduction to Section 3 of Exhibit B46-37 says that the report addresses the question of: "How representative the marine bird KIs, namely Surf Scoter, Marbled Murrelet, and Bald Eagle, are of the broader suite of marine bird species? In other words, does the presence or abundance of Surf Scoter, Marbled Murrelet, or Bald Eagle adequately predict the presence of other species?" Mr. Tollefson suggested that the second question is a different question. Mr. Green said, "Yes and no." 8956

The discussion is best followed in the transcript. Mr. Tollefson said, "This question goes to co-occurrence. It doesn't go to vulnerabilities to project effects. … [It] does not tell us anything about vulnerability of these target species to project effects." Mr. Green's explanations 8972

Ordination analysis

In Table 4, "Summary of Data, Before (Initial) and After (Final) Screening" in the same exhibit, Mr. Green said "we were focusing this analysis on the species that were most commonly seen during our surveys," in explaining the process of removing outliers. Mr. Tollefson said "For the spring … you reduced the final number from 50 to 17, in the summer it was reduced from 49 to 6, and in the other seasons similar reductions were found. That's a pretty significant culling of the data." Mr. Green said, "In environmental assessment the scoping of species down to this level is very common." 8980

Mr. Tollefson noted that the culling ended up taking the black oystercatcher out of the dataset for all seasons, and the marbled murrelet in the fall. Mr. Green took exception to the use of "culling." Discussion continues about the significance and use of key indicators.

When Mr. Tollefson questioned whether the Proponent gave consideration to using other forms of quantitative or statistical analysis, Mr. Green replied that they chose an ordination analysis because it was most appropriate. Mr. Tollefson said that "an ordination analysis cannot tell you if a KI has the same vulnerabilities to routine projects effects as other species in the community." 9036

Mr. Green replied, "That is not the purpose of an ordination analysis. It shows association, and by association, one then says would other species be affected in a similar manner. That is the full basis of a key indicator as it's defined for environmental impact assessment. It's the way in which since Beanlands and Duinker came up with the term "Valued Environmental Component". And it's been used for going on 35 years, successfully." 9043

Interpretation of stress

Mr. Tollefson focussed attention on Table 6, "Interpretation of Stress Following Clarke (1993)." The text reads, "Stress is an inverse measure of fit to the data, compared against randomized data. Low stress is better than high stress, and Table 6 provides general guidance for interpreting stress values."

Table 6 Interpretation of Stress Following Clarke (1993)

Stress	Clarke's Rule of Thumb
< 5	Excellent representation; minimal likelihood of misrepresentation; rarely achieved
5-10	Good ordination; no real risk of drawing false inferences
10-20	Generally corresponds to usable interpretation; upper values potentially misleading; do not rely heavily on details of plot
> 20	Likely misleading results; samples likely random with little relation to original ranked distances

From the report, Mr. Tollefson noted that the summer stress value is 28.15, in spring: 19.5, fall: 17.2, and winter: 16.6. He then put up an AQ by Lindenmayer et al and quoted, "Selection of the wrong or inappropriate indicators could give a false impression of scientific understanding, managerial knowledge and ecological sustainability."

Mr. Tollefson asked, "Do you agree, given the stress values that your ordination test has generated, that those words are apt?" Mr. Green said, "No, I do not, because … this is 'Indicators of Bio-Diversity for Ecologically Sustainable Forest Management'. This is not … for an environmental assessment." 9093

Mr. Tollefson asked, "Are you disappointed in the results in terms of those stress values?" Mr. Green replied, "They're not great values. They're based on a limited dataset. We're in the range of what most ecological studies tend to be in. We've committed to doing an additional three years of surveys prior to the start of operations of any marine vessels and three years after. And through discussions with Canadian Wildlife Service, the direction has been to focus on a habitat based approach and the species that are associated with those habitats."