Society for Conservation Biology

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GPT/BNSF Custer Spur EIS Co-Lead Agencies
c/o CH2M HILL
1100 112th Avenue Northeast, Suite 400
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RE: NEPA Scoping Comments on the Gateway Pacific Coal Export Terminal at Cherry Point and the Custer Spur Rail Projects

To whom it may concern:

Please consider this letter from the Society for Conservation Biology[1] as part of the public record for the scoping process for the Gateway Pacific Terminal coal export project proposed at Cherry Point, Washington. If constructed, the Cherry Point coal terminal would become the largest coal export facility in North America, sending approximately 48 million tons of coal annually to Asia, where it would be used primarily to generate electrical power at power plants with limited to zero pollution control. The negative impacts on biological diversity of coal exports from the proposed terminal at Cherry Point are likely to extend far beyond the localized impacts resulting from the construction of the export terminal. Significant impacts, including cumulative impacts and indirect impacts, to biological diversity would occur along the entire length of the rail line between the coal mines and the export terminal, including on the Columbia River system and Puget Sound; in the marine environment of the Pacific Ocean from atmospheric deposition of pollution; to potentially the entire planet from the impacts of climate change that will be exacerbated by the continued long-term use of coal as a combustion fuel for generating electrical power.

Because of the extensive federal involvement in the mining of coal, its transport on the rail system, federal involvement in foreign shipping, and the fact that none of the projected impacts will occur but for the issuance of a permit by the Army Corps of Engineers, the Army Corps must consider all of the reasonably foreseeable offsite impacts that will likely occur as a result of granting a permit to construct a coal-export terminal.[2] In particular, this review must include the cumulative impacts on biological diversity caused by: (1) coal-dust pollution resulting from the transport of coal from the Powder River Basin; (2) the development and operation of the export terminal itself; (3) coal-dust pollution and possible hydrocarbon spills during river and nearshore transport in the Salish Sea by

[1] The Society for Conservation Biology is an international professional organization whose mission is to advance the science and practice of conserving the Earth's biological diversity, support dissemination of conservation science, and increase the application of science to management and policy. The Society's 5,000 members include resource managers, educators, students, government and private conservation workers in over 140 countries.
[2] *Sierra Club v. Hodel*, 544 F.2d 1036 (9th Cir. 1976)

assume that in the absence of the Cherry Point project the coal in the Powder River Basin will be mined and sent somewhere else at the same rate or to the same extent. Therefore, the Corps must consider the effects on sensitive species such as sage grouse; degradation of local aquifers and water supply; groundwater contamination; and pollution.

II. Rail expansion

The EIS should consider impacts of rail expansion to accommodate increased coal train traffic. The number of coal trains required for to transport coal to the export terminal is estimated at 16-18 coal-trains per day, with each train carrying 125-150 railcars loaded with coal. The coal is transported in open rail-cars, which allow for coal dust to blow off the top of the load, and then be deposited into the environment nearby. In addition, each train requires 4-5 locomotive engines in order to operate, thereby increasing the amount of emissions along the train routes of diesel exhaust. Other routine impacts include the effects of accidents such as derailments. Specific impacts that must be considered include the following:

- ***The EIS should consider ecological impacts of diesel particulate pollution.*** Diesel particulate pollution (hydrocarbons, nitrogen oxides, sulfur dioxide, carbon monoxide) from train locomotives is known to have deleterious effects on human health, and may have impacts on local biodiversity. The effects of these emissions should be analyzed for their impacts on terrestrial and aquatic ecosystems.
- ***The EIS should consider ecological impacts of coal dust contamination.*** Coal cars travel uncovered, and escaping coal dust is a major known source of pollution along coal transport rail lines. Each train is estimated to lose between 500 pounds to 1 ton of coal dust en route. This yields a conservative estimate of 2.6 *million* pounds of coal dust lost over the course of a year (500 lbs per train x 16 trains per day x 325 days per year). At the Roberts Bank Terminal in Delta, British Columbia, Canada, residents as far away as Port Roberts (>5 miles) complained of coal dust contamination escaping from incoming rail cars, conveyor belts, open stockpiles, and the loading process of trains.[5] Permits filed by Westshore Terminals Ltd. requested permission to discharge "unknown and immeasurable" quantities of coal dust because there are currently no effective measures for dust control. The proposed terminal is more than twice as large as Roberts Bank Terminal and would ship approximately 48 million metric tons of coal annually, compared to Roberts Bank Terminal's capacity of 21 million metric tons. The EIS should quantitatively evaluate the effects of blowing and leaching of coal dust along the entire length of the route, evaluating effects on all ecosystems and in particular on water quality and aquatic ecosystems. This is an understudied area of particular relevance since the proposed route follows long stretches of the Columbia River and Puget Sound.
- ***The EIS should consider ecological impacts of heavy metal contamination associated with the leaching of toxins from coal dust.*** Many metals occur as small particulates that may represent a significant fraction of coal dust particles. It is unknown whether and to what extent toxic heavy metals (arsenic, cadmium, barium, chromium, selenium, lead, mercury) from coal and coal dust leach into water. Coal dust appeared to negatively affect

[5] Johnson R, Bustin RM. 2006. Coal dust dispersal around a marine coal terminal (1977-1999), British Columbia: the fate of coal dust in the marine environment. International Journal of Coal Geology 68: 57-69.

dust mitigation and clean-up, including financial costs, must likewise be addressed in the EIS. As mentioned above, evaluation of potential for heavy metal contamination related to coal dust deposition at the coal port should be addressed in the EIS.

- ***The EIS should consider impacts related to the loss of wetlands.*** Construction of the terminal and new rail loops will destroy wetlands at Cherry Point, with estimated permanent impacts to 140.6 acres of wetlands due to filling, grading, and cutting to raise areas or rail embankments. These changes will affect two coastal watersheds, the Gateway Pacific Terminal watershed and Birch Bay watershed. Birch Bay watershed includes extensive wetlands adjacent to Terrell Creek and Lake Terrell, including a 1,500-acre wildlife area managed by the Washington Department of Fish and Wildlife for wintering waterfowl (Canada geese, ducks, trumpeter and tundra swans, pheasants). This area also includes the second largest heron rookery in Washington State. Loss of wetlands will produce unestimated costs through the loss of ecosystem services such as flood control, water filtration, wildlife provisioning, carbon sequestration, and nutrient cycling. Wetland loss will also have indirect effects on downstream aquatic ecosystems, via altered stormwater management; altered erosion and sedimentation pathways; movement of oil and other pollutants produced on-site at the terminal into wetlands; and fugitive dust. The EIS should evaluate the full effects of wetland loss on aquatic ecosystems, the multiple costs of loss of ecosystem services, and costs and responsibility for mitigation, management, and pollution clean up.
- ***The EIS should consider impacts of destruction of nearshore marine habitat.*** Destruction of nearshore marine ecosystems is an unavoidable outcome of this project. The Cherry Point Environmental Aquatic Reserve, directly adjacent on all sides of the proposed terminal, extends to state-owned tidelands. A lease from the Washington Department of Natural Resources (WDNR) is therefore required to construct the proposed terminal wharf and trestle. The WDNR Management Plan identifies protection of the Cherry Point Environmental Aquatic Reserve as the primary WDNR management objective, and WDNR has responsibility under state law to withhold lands from leasing that it finds to have significant natural values.[8] These specific areas, as well as general impacts of terminal construction on the nearshore environment, should be considered in the EIS.
- ***The EIS should consider impacts to regional air pollution in Washington State and Canada.*** Increased air pollution is unavoidable according to the proposed plan. The terminal would become the largest single source of sulfur dioxide in the airshed of the larger Georgia Basin due to the volume of diesel particulates from coal trains and burning bunker fuel from marine transport vessels. Negative effects of air pollution will extend to immediately adjacent regions and more remote (e.g. alpine) environments where contaminants will be aerially deposited on land and water.

IV. Increased marine traffic

The EIS should consider ecological impacts of increased marine traffic related to coal export. The coal export terminal would load coal onto large oceanic vessels, which would travel past the Discovery Islands to the north, and San Juan Islands to the south, along narrow channels of the

[8] Cherry Point Environmental Aquatic Reserve Management Plan. 2010. Washington Department of Natural Resources.

that have the potential to result in shading, clearing, disturbance, changes in salinity, turbidity, or other water quality variables, and loss of macroalgae and seagrass in nearshore areas, which will reduce primary productivity and deplete oxygen levels, thereby damaging marine populations and fisheries at Cherry Point. In the process, the EIS must consider impacts on marine invertebrates (micro and macro).

- ***The EIS should consider impacts on Pacific Herring.*** Cherry Point provides critical holding and spawning habitat for herring (*Clupea pallasii*), a key prey species that is currently a candidate for protection under the Endangered Species Act (due to regional population declines of roughly 90%). Herring also serve as a key food source for endangered Puget Sound Chinook salmon. Therefore, the Corps should develop an analysis of the potential impact upon the Puget Sound Chinook salmon. That analysis should present the key data and issues that would be necessary for the development of a Biological Assessment to guide a formal consultation with the wildlife agencies under the Endangered Species Act. Research indicates that the Cherry Point herring population is distinct from other Puget Sound herring populations in its spawning time (average peak in mid-May rather than early March) and in spawning in open, high-energy shoreline areas (WA DNR 2010). As a result, the Cherry Point herring population appears to be genetically divergent and isolated from all other WA and BC herring populations studied.[11] The evidence for managing the Cherry Point herring population as a discrete management unit is strong, and since 1997 the population has averaged barely 10% of its historical (pre-1970) numbers.[12] The EIS must examine the likely impacts of terminal operations (including both noise and physical disturbance) and vessel movements on herring pre-spawning holding areas and their spawning grounds. According to the Washington Department of Fish and Wildlife, conservation of herring spawning habitat and minimization of disturbance in pre-spawning holding areas are critical to preserving herring in the region. According to a 1998 letter from the Washington Department of Natural Resources to Pacific International Terminals, WDNR would "allow construction of the Terminal only if the completed regional ecological risk analysis shows that construction and operation activities will not pose an unacceptable risk to the Cherry Point herring stock." The EIS should maintain this same standard in assessing possible impacts of the Terminal proposal on Cherry Point herring as well as federally listed Chinook salmon and Coastal bull trout populations.

[11] Beacham T.D., Schweigert J.F., MacConnachie C., Le K.D., Labaree K., and K.M. Miller. 2002. Population structure of herring (*Clupea pallasi*) in British Columbia determined by microsatellites, with comparisons to southeast Alaska and California. *Canadian Science Advisory Directorate, Research Document:* 2002/109; Small, M.P., Loxternman, J.L., Frye, A.E., VonBargen, J.F., Bowman, C. and S.F. Young. 2005. Temporal and Spatial Genetic Structure among Some Pacific Herring Populations in Puget Sound and the Southern Strait of Georgia. Genetics Laboratory, Washington Department of Fish and Wildlife, Olympia, Washington 98501-1091, USA: Transactions of the American Fisheries Society 134:1329–1341, 2005; Mitchell, Danielle M. 2006. Biocomplexity and metapopulation dynamics of Pacific herring (*Clupea pallasii*) in Puget Sound, Washington. Master's Thesis submitted in partial fulfillment for the requirements of Masters of Science, Aquatic and Fisheries Science Program, University of Washington. Hard copy on file with Washington Department of Natural Resources, Olympia, WA; Dinnel P, Hoover R, Lechuga L, Tobiason K, Elphick J. 2008. Development of larval Pacific herring, *Clupea pallasi,* bioassay protocols: refinement, validation, refinery effluent and Cherry Point ambient water testing during 2007. Western Washington University Shannon Point Marine Center. Final Report for Washington Dept of Ecology.

[12] Washington State Department of Natural Resources. 2010. Cherry Point Environmental Aquatic Reserve Management Plan. 181 pp.

Washington coast. A single cargo vessel can contain 100,000-10,000,000 gallons of ballast water, all potentially containing invasive species. The United Nations has identified the introduction of marine invasive species via ship ballast waters as one of the four greatest threats to the world's oceans. Coal transport vessels must comply with the newly published U.S. Coast Guard regulations on ballast water discharges.[16] However, the EIS should also consider whether additional mitigation measures are required to further reduce the risk of aquatic invasions caused by coal-transport vessel discharges. US Coast Guard has yet to mandate a clear ballast water discharge standard to help vessel operators comply with ballast water management practices (e.g. International Maritime Organization's guidelines). The Federal Government through Executive Order 13112 has had in place since early 1999 requirements that Federal agencies demonstrate that they have considered and adopted measures to prevent the introduction or transmission of invasive species, such as high seas ballast water exchange, in federally approved or funded projects.[17] Thus the Corps should assess what those might be in the current case and how to implement them. Estuaries and nearshore environments are particularly vulnerable to invasive species because ships are the main vectors of introduction.[18] Trying to control or eliminate invasive species will likely cost the local and regional economy millions of dollars annually.[22]

V. Airborne pollution returning from Asia

The EIS should consider impacts of atmospheric deposition in the Pacific Ocean from the burning of coal in Asia as a result of projected coal exports. Predominant winds bring most airborne pollution from Asia to the Pacific Northwest. China, the primary market for coal export, would burn billions of tons of coal over the lifetime of the project. In addition to greenhouse gases, this will result in the emission of vast quantities of particulate matter, polycyclic aromatic hydrocarbons, sulfur dioxide, arsenic, and mercury as well as increasing ground level ozone.[19] Mercury is naturally found in coal. Following combustion, mercury can be carried long distances in the atmosphere without degrading before being deposited at Earth's surface. Once on land (especially in aquatic systems), mercury can bioaccumulate and become highly toxic. China is the

[16] Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters, 77 Fed. Reg. 17,254 (Mar. 23 2012).

[17] Executive Order 13112, 64 Fed. Reg. 6,183 (Feb. 8, 1999).

[18] Carlton JT, Geller JB. 1993. Ecological roulette: the global transport of non-indigenous marine organisms. Science 261: 78-82; Ruiz GM, Fofonoff PW, Carlton JT, Wonham MJ, Hines AHI. 2000. Invasion of coastal marine communities in North America: apparent patterns, processes, and biases. Annual Review of Ecology and Systematics 31: 481-531; Williams SL, Grosholz ED. 2008. The invasive species challenge in estuarine and coastal environments: marrying management and science. Estuaries and Coasts: J CERF 31: 3-20; Ruiz GM, Carlton JT, Grosholz ED, Hines AH. 1997. Global invasions of marine and estuarine habitats by non-indigenous species: mechanisms, extent, and consequences. Am Zool 37: 621-632.

[19] Millman A, Tang D, Perera FP. 2008. Air pollution threatens the health of children in China. Pediatrics 122: 620-628; Kang Y, Liu G, Chou C, Wong MH, Zheng L, Ding R. 2011. Arsenic in Chinese coals: distribution, modes of occurrence, and environmental effects. Science of the Total Environment 412-413: 1-13; Finkelman RB. 1994. Modes of occurrence of potentially hazardous elements in coal: levels of confidence. Fuel Process Technology 39:21-34; Qiu G, Feng X, Jiang G. 2012. Synthesis of current data for Hg in areas of geologic resource extraction contamination and aquatic systems in China. Science of the Total Environment 421-422: 59-72; Qiu G, Steding DJ, Flegal AR. 2002. Mercury concentrations in coastal California precipitation: evidence of local and trans-Pacific fluxes of mercury to North America. Journal of Geophysical Research – Atmospheres 107 .

VII. Cumulative impacts on biodiversity

The EIS should consider cumulative impacts on biodiversity. The National Environmental Protection Act (NEPA) requires an assessment of the cumulative impacts associated with the project. The EIS should consider that this project is one of seven proposed coal export terminals in the Pacific Northwest. As noted earlier, export of coal to regions with lower environmental standards is the future of coal in America. Coal combustion in the US is currently declining due to environmental protections, new technologies, and competition from natural gas; therefore the industry sees export of coal (that would otherwise go unburned) as its only viable strategy. It is reasonably foreseeable that, if constructed, these terminals would enable more and more coal and energy export, with pervasive cumulative negative effects on local and global environments. The EIS should therefore consider in a programmatic fashion the cumulative effects of all seven proposed coal export terminals. The EIS should also consider impacts of the facilities (both construction and operational impacts) on terrestrial, freshwater, and marine environments, analyzed relative to the existing stressors (e.g. shipping traffic) as well as potential increases in traffic associated with the proposed Enbridge-Northern Gateway Pipeline.

NEGATIVE EFFECT ON GREEN ECONOMIC DEVELOPMENT

The EIS should consider green economic development as an alternative to activities related to the proposed terminal, which perpetuate an environmentally harmful economic model.
Assessment of economic impacts of the proposal should include effects on the entire public and also future generations, both regionally and locally. Cumulative financial costs are estimated at over 500 billion dollars annually in the US alone for health and environmental damages from coal mining, processing, transport and combustion. Additionally, coal terminals are recognized as financially risky ventures due to the traditional volatility of coal markets. This has been identified as a key risk in economic assessments of the Gateway Pacific Terminal. Even discounting environmental externalities, the net economic benefit of the proposed terminal is highly sensitive to several questionable assumptions. Under even modestly inflated estimates of economic benefits, the net economic effect of the proposed terminal could become negative due to direct negative effects, opportunity costs for alternative economic growth, and massive infrastructure investment. Directly at risk is Whatcom County's reputation as an epicenter of outdoor recreation and green entrepreneurialism. The Army Corps must consider the following:

- ***The EIS should include opportunity costs of deferred or displaced "green" innovation and economic development*** (regional and national) that would result from damage to existing green infrastructure and the loss of migration to the region resulting from damage to its green and clean reputation.
- ***The EIS should include an evaluation of the negative environmental and social costs of allocating taxpayer funds to support a harmful economic model*** rather than alternatives. This should include evaluation of lost economic opportunities to promote green economic growth if taxpayer funds are forced to go towards coal export infrastructure rather than programs to support innovation and green economic development. The EIS should include full financial cost accounting for:
    - State tax exemptions or rebates

export terminal. Significant, cumulative impacts to biological diversity would occur along the entire length of the rail line between the coal mines and the export terminal, including on the Columbia River system and Puget Sound; in the marine environment of the Pacific Ocean from atmospheric deposition of pollution; to potentially the entire planet from the impacts of climate change that will be exacerbated by the continued long-term use of coal as a combustion fuel for generating electrical power. Given these likely impacts, we urge the Army Corps to carefully review the merits of this project as it moves forward with the development of its Environmental Impact Statement.

Sincerely,

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