

PENDER HARBOUR DOCK MANAGEMENT PLAN ENVIRONMENTAL REVIEW

PENDER HARBOUR, BRITISH COLUMBIA

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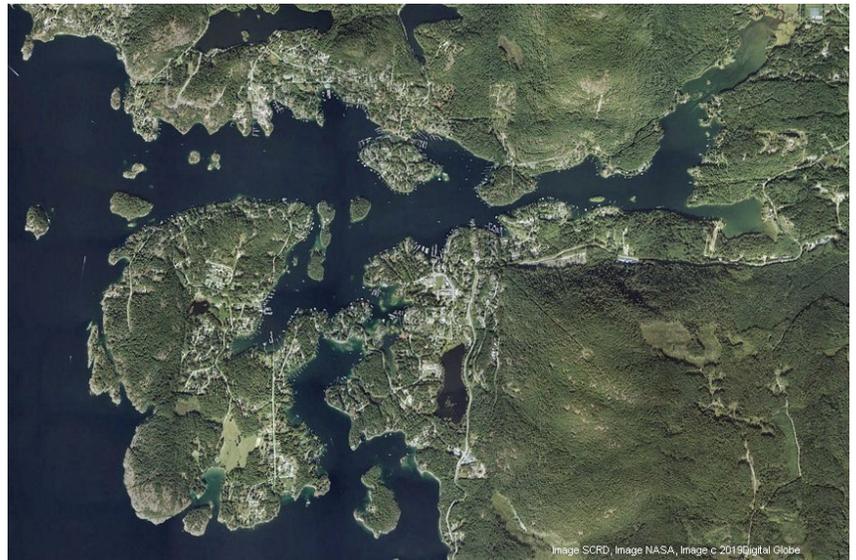
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EXECUTIVE SUMMARY

This report represents a review of the Pender Harbour Dock Management Plan (DMP) from an environmental perspective and includes comments concerning:

- Environmental reports and studies used in the creation of the DMP;
- definitions within the profession of biology; and,
- applicability of legislation.

The reports and studies used in the creation of the DMP do not support the stated objectives of the DMP. The information provided through the background review and field assessments is not sufficient to fully understand the impacts of docks on the Pender Harbour marine ecosystem, and do not account for the effects of other stressors within Pender Harbour or the Salish Sea. DMP Zone requirements state that applications must address impacts to Critical Habitat yet there is no supporting evidence that Critical Habitat exists within the DMP area. Without a greater understanding of habitat values it is unclear how the DMP addresses its objectives of protecting the environment.

The DMP, unlike other shoreline planning processes in British Columbia, does not provide the opportunity to accommodate site specific circumstances by allowing for project specific measures to mitigate or off set adverse environmental effects. The DMP offers no direction on how to conduct the necessary archaeological or biophysical assessments in support of applications for dock tenures or mechanisms for measuring their success. It is unclear how the DMP would be effective in meeting its stated objectives, particularly with respect to the management of docks.

CLARIFICATIONS REGARDING SERVICES/FINDINGS

The intent of this Review is to provide environmental comment on behalf of the Pender Harbour and District Chamber of Commerce - Dock Management Plan Working Group (DMPWG) in support of their concerns regarding the Pender Harbour DMP. This report has been prepared by Balanced Environmental Services Inc. (Balanced) in accordance with generally accepted Qualified Environmental Professional (QEP) practices and is intended for the exclusive use of the DMPWG. The contents, implied or written, of this document and its' related media may not be utilized in part or in whole by parties other than the DMPWG without the signed written authorization of Balanced. The information contained within this report reflects Balanced's best judgment in light of the information available to it at the time of preparation and has been developed in a manner consistent with that level of care normally exercised by QEPs currently practicing under similar conditions. This report represents the opinion of Balanced. This report does not constitute approval under any municipal, provincial or federal legislation.

This report has been prepared by Balanced Environmental Services Inc.

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**PENDER HARBOUR DOCK MANAGEMENT PLAN
ENVIRONMENTAL REVIEW
PENDER HARBOUR, BRITISH COLUMBIA**

SECTION 1 INTRODUCTION

Balanced Environmental Services Inc. (Balanced) has been retained by the Pender Harbour and District Chamber of Commerce - Dock Management Plan Working Group (DMPWG) to review the Province of British Columbia's Ministry of Forests, Lands, Natural Resource Operations and Rural Development's (The Ministry) Dock Management Plan (DMP) for Pender Harbour, British Columbia.

The Ministry has implemented the DMP in Pender Harbour as an instrument of policy to provide guidance in relation to docks authorized or proposed under the Land Act. The stated objective of the DMP is to promote responsible and appropriate dock development by:

- helping to minimize and mitigate impacts to marine resource values;
- protecting archaeological resources from disturbance;
- contributing to address impacts, including cumulative impacts, of dock development on Aboriginal interests; and
- advancing collaborative management between the shishalh Nation and the Province of British Columbia.

This review focuses on the documentation supporting the DMP specifically the justification, applicability and validity of referenced information provided to date including:

- impacts of docks on eel grass and other critical habitat;
- light penetration in dock design;
- DMP zones;
- shading and boathouse impacts;
- timing of maintenance and replacement activities; and,
- requirements relative to other regulatory authorities and coastal jurisdictions.

Referenced information included:

- Pender Harbour Dock Management Plan, April 4, 2018, by Ministry of Forests, Lands, Natural Resource Operations and Rural Development and shishalh Nation;
- Impacts of Docks in Pender Harbour: Phase 2 Assessment, March 2018 by M.C. Wright and Associates (MCW);
- Information Bulletin, April 4, 2018, Ministry of Forests, Lands, Natural Resource Operations and Rural Development;
- Pender Harbour Environmental Study Summary, Ministry of Forests, Lands, Natural Resource Operations and Rural Development; and,
- Review of Draft Pender Harbour Dock Management Plan, November 8, 2015 by Penner Pacific Advisory Services (Penner).

SECTION 2 REVIEW FINDINGS

2.1 Impact of Docks

Penner recommended that the Ministry “conduct an in-depth environmental study of the impact of docks in Pender Harbour, with a focus on but not limited to Zone 1 as defined by the DMP. Such a study should, among other things, examine whether sewage from boats or onshore dwellings and commercial operations is having an impact. Ongoing monitoring of environmental conditions and habitat impacts should be undertaken, and an annual limit on new tenure applications should be considered depending on the outcome of the studies/monitoring”. Based on this recommendation MCW was awarded a contract to summarize results of a literature review of dock impacts and to conduct field surveys to characterize intertidal and subtidal habitats and community composition in Pender Harbour and identify evidence of impacts to these communities from docks or urban development.

The scope of the MCW study does not allow for a full assessment of the current condition of Pender Harbour’s environmental status or of appropriate measures to protect and/or improve its productivity or potential. In the absence of any assessment of other impacts, such as water quality issues related to upland activities, the DMP appears to conclude that historical impacts to eelgrass and other habitats was a result of dock construction and associated activities. Although there is no doubt that the natural productivity has diminished from earlier times as suggested by traditional knowledge and earlier reports, such impacts cannot be assigned to docks without a much more rigorous study that includes an assessment of the harbour in the context of Georgia and Johnstone Straits as well as other changes within the harbour and neighboring lands over the last decades.

MCW makes no mention of the broadly acknowledged declines in coastal resources within the Salish Sea (including Georgia Strait), the ongoing studies of those declines, and the likely connection between the declines at Pender Harbour and the declines elsewhere in the Salish Sea. The declines of Salish Sea coastal resources have been the subject of joint Canada – U.S.A studies since at least 2014, including studies by the Salish Sea International Kelp Alliance, and the comprehensive science based studies under the Salish Sea Marine Survival Project, which includes over 150 scientists and technicians from over 60 federal, state, tribal, academic, and non-profit, non-government organizations. The causes of the declines are not yet understood (studies are ongoing), but working theories include climate change, stormwater impacts, sedimentation, and competitive interactions.

MCW did not show a relationship between habitat types and value to specific species, species uses, species dependency, or general ecosystem function and value. It suggests some connection between docks and vessel traffic and adverse environmental effect; but it does not consider other factors and, does not establish clear cause and effect.

MCW did a statistical analysis of the impact of Pender Harbour docks on the abundance and diversity of marine algae and animals. While there is statistical evidence that there is some impact, the significance of that impact is undetermined and requires further analysis. For instance, the effects of dock proximity on the number of shoots observed in eelgrass beds suggests that there are more shoots observed at 10 metres from the dock than closer in, but it also suggests that the number of shoots decreases 15 and 20 metres from the dock. There is no explanation for this result, but it does suggest that there are other factors affecting eelgrass distribution.

Seasonal and year to year variation should also be considered. MCW conducted the Phase 2 baseline assessment field work, including characterization of marine and foreshore habitats and species, during a single assessment period, October 8–22, 2017.

The MCW results are shown largely relative to one another. However, the single year assessment conducted during October might not have been the optimal approach to establishing the baseline for eelgrass, kelp, and salt marsh presence/condition, and impacts on those habitat types as:

- eelgrass, kelp, and salt marsh species are all plants exhibiting seasonal and year-to-year variations in growth;
- eelgrass and kelp exhibit winter die-back with peak growth likely during late summer;
- winter die-back of some salt marsh species is extensive;
- kelp and eelgrass aggregations can exhibit extensive die back if subjected to harsh storm events;
- kelp aggregations can show substantial year to year variation, depending on the extent of propagule settlement and annual recruitment;
- eelgrass can grow rapidly in response to favourable conditions; and,
- aggregations can show substantial year to year variation due to eelgrass growth response to local growing season conditions.

The MCW desktop exercise noted numerous impact pathways that could affect the biological productivity in Pender Harbour and noted that there is very little data available on the current levels of water and sediment contamination from sources other than docks.

The current DMP does not seem to have considered MCW comments regarding the lack of information concerning other stressors and the likelihood that other anthropogenic activities are also contributing to the loss of complex habitats. The DMP does not reflect the context and limitations under which the MCW work was completed.

2.2 Dock Management Zones

The DMP does not provide any information justifying the use of zones for dock management. It does state that the entire harbour is rated as highly sensitive archaeologically, but does not explain what the zones are based on.

MCW was commissioned to study impacts of docks with *“a focus on but not limited to Zone 1”* but the report is silent on any biophysical comparison between the zones, with the exception of a recommendation that the area south of Bargain Bay be included in Zone 3. It is noted that the final DMP reduced the number of zones from four to three but did not explain the objective or basis for doing so. Based on the habitat work conducted by MCW, it does not appear that the zones are based on biophysical characteristics. The western shoreline of the Francis Peninsula is an active coastline with steep drop offs and Gunboat/Oyster Bays are protected shallow bays comprised mainly of mudflats. Both areas have fewer docks than the rest of Pender Harbour yet are the only areas within Zone 1. Differences in habitat sensitivity between Zones 2 and 3 are not apparent.

Without any biophysical justification for the zones and accepting that the entire harbour has high archaeological values, it is not clear why dock construction and maintenance guidelines differ between zones. As noted by MCW, *“the first step in curtailing adverse effects of docks on the marine environment is to prohibit the construction of new docks over eelgrass or saltmarsh”*. This is regardless of the zone.

2.3 Light Penetration

The effect of light penetration on eelgrass and other aquatic species in Pender Harbour is unclear. MCW referred to studies done on the eastern seaboard where light penetration effects were somewhat affected by the orientation of docks with a north- south orientation being preferable.

MCW concluded from their field studies that dock orientation in Pender Harbour did not seem to be a factor but still recommended dock orientation as a Best Management Practice. Water depth and dock height may be more effective ways to maintain light penetration and would require site specific assessments rather than implementing orientation or zone limitations.

2.4 Critical Habitat

As noted by Penner, the public has suggested there is nothing particularly unique about Pender Harbour from an environmental perspective to warrant the additional requirements contained within the DMP, nor does the Plan acknowledge the declines in coastal resources within the entire Salish Sea and the likely connection between the declines at Pender Harbour. Additionally, MCW's repeated use of *“critical habitat”*, not only in reference to eelgrass and saltmarsh, but as a general unspecified ecosystem feature, might be misleading with respect to the ecosystem value of habitat features within Pender Harbour.

The term *“critical habitat”* has special meaning with respect to ecosystem values and species habitats that is internationally recognized.

In Canada *“critical habitat”* is by normal convention reserved for habitat features associated with species listed under schedule 1 of the Federal Species at Risk Act (SARA).

Under SARA, to be critical habitat, an ecosystem feature must be:

- habitat that is necessary for the survival or recovery of a schedule 1 listed species; and
- identified as the species' critical habitat by federal authorities; and
- identified as critical habitat in a formal recovery strategy or action plan for the species.

While the DMP defines 'critical habitat', there is no supporting evidence that there is any Critical Habitat within Pender Harbour.

2.5 Federal *Fisheries Act* and Federal Interests

MCW's assertion that certain habitats are provided blanket protection under the *Fisheries Act* is incorrect and misleading: It suggests that the Federal Crown (as represented by Fisheries and Oceans Canada) places special protection status on those habitats, irrespective of the role of those habitats within local ecosystems, or other factors. Under the *Fisheries Act*, the prohibition of harm to fish habitat is a qualified prohibition: it is secondary to the prohibition of serious harm to certain – not all fish and is limited to permanent alteration and destruction of habitat. The prohibition does not extend to temporary alteration. Further, the prohibition of permanent alteration and destruction of fish habitat is subject to factors that are to be taken into account when considering such matters. Those factors include:

- the extent to which the fish associated with the habitat contribute to commercial, recreational, or Aboriginal fisheries;
- the extent to which the fish associated with the habitat factor into fisheries management objectives;
- measures and standards that can be applied to mitigate or offset serious harm to fish that are part of a commercial, recreational or Aboriginal fishery, or that support such a fishery; and,
- the public interest.

The *Fisheries Act* does not provide blanket protection for any fish habitat. The prohibition of harm to fish habitat is limited to:

- habitats that support fish that contribute substantively to commercial, recreational, or Aboriginal fisheries;
- the permanent alteration or destruction of those habitats; and,
- circumstances where permanent alteration or destruction of such habitats cannot be reasonably mitigated or offset.

The *Fisheries Act* and DFO policy allow for project and activity related permanent alteration and destruction of fish habitat where:

- the project / activity` is reasonably justified; and,
- there are no practicable alternatives to project/activity location and design; and,
- the loss of habitat will be mitigated and offset.

2.6 Other Shoreline Planning Processes

There are few examples of dock management planning in the Pacific Northwest. Examples from Puget Sound and north to Alaska would be more relevant to Pender Harbour than studies from the south-eastern States. There are examples of foreshore protection in coastal waters of B.C., notably the multi-government levels environmental plans for the Fraser River Estuary (Fraser River Environmental Management Program) and the Burrard Inlet (Burrard Inlet Environmental Action Program), both federal waters. Those programs took a broader approach, using zones that were based on habitat ecosystem function and sensitivity, and restricted activities appropriately. They did allow for innovation and allowed for developments that avoided, mitigated or offset any potential impacts. They also addressed all other stressors associated with urban, recreational, commercial and industrial activities.

The Central Okanagan Lake Foreshore Plan is a multi- government initiative, including First Nations, local community and recreational representatives. A focus of the Plan is the protection of kokanee spawning habitat along the shores of Okanagan Lake. All spawning habitat has been identified and mapped. Development, including wharves and docks, within the high, moderate, and low categories are approved when they can be shown to be compatible with natural features, environments in the location and kokanee spawning.

SECTION 3 SUMMARY

This Review has identified opportunities, issues and questions regarding the focus and function of the Pender Harbour DMP including:

- 3.1 The Dock Management Plan advocates a rigid static approach to avoiding dock-related adverse impacts on fish habitats (no go zones), rather than recommending flexible and dynamic approaches and measures to avoid, mitigate, and offset adverse effects as established for other shoreline planning processes in British Columbia.
- 3.2 It is unclear how the Plan addresses its objectives. Minimizing impacts to marine resources requires a sound understanding of the impact pathways and the appropriate corrective measures. The supporting studies do not take into account the effects caused by other stressors within Pender Harbour or the greater Salish Sea.

- 3.3 The Plan does not clarify how archaeological sites have been affected or described potential impact pathways. Does a dock floating above a sub-tidal midden pose an impact? Does a walkway across mudflats restrict cultural activities?
- 3.4 The Plan does not have a monitoring strategy to measure success.
- 3.5 There is no clear process for conducting archaeological or biological assessments in support of applications for dock tenures.
- 3.6 The zone objectives state that applications must demonstrate that docks do not impact/influence critical habitat without any supporting evidence that there is Critical Habitat in Pender Harbour.

SECTION 4 SIGNATURES

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