



Parks Canada Agency - Basic Impact Analysis

1. PROJECT TITLE & LOCATION

Marsh Boardwalk Area Renewal – Phase 1 – Point Pelee National Park of Canada
(Phase 1 will include the stationary section of the Marsh Boardwalk Trail, as well as the fill access causeway that is associated with the Marsh Boardwalk Tower and Marshville.)

2. PROPONENT INFORMATION

[REDACTED]
Project Delivery Services – East
Strategic Policy and Investment Directorate (SPI)
Parks Canada, Government of Canada
5800 Hurontario St. Box 4. Mississauga, ON. L5R 4B4
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Project Delivery Services - East
Strategic Policy and Investment Directorate (SPI)
Parks Canada, Government of Canada
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Point Pelee National Park
Parks Canada, Government of Canada
407 Monarch Lane, RR#1, Leamington, ON, N8H 3V4
[REDACTED]

3. PROPOSED PROJECT DATES

Planned commencement: 2018-01-01
Planned completion: 2019-03-31

4. INTERNAL PROJECT FILE

PPNP-2016-08

5. PROJECT DESCRIPTION

The iconic Marsh Boardwalk area in Point Pelee National Park's (PPNP) will undergo a renewal in two phases over the next 2-3 years. This Basic Impact Analysis (BIA) will cover off the first phase of the project, while a separate BIA will be required for the second phase which is expected to include works/activities along the shoreline and terrestrial portions of the Marsh Boardwalk and Blue Heron day-use areas. The scope of the Phase 2 works remains to be determined until the archaeological observational and impact assessments are completed.

Phase 1 will occur from January 2018 to March 2019. The Phase 1 work area includes the current fill bridge and island to the tower and "Marshville" building (interpretive exhibit), as well as the stationary section of the boardwalk (Appendix 1). The renewal of the Phase 1 area is intended to:

- address deferred maintenance of major assets while incorporating ecologically feasible solutions (e.g. green building materials/technologies) into the design (Parks Canada 2010);
- increase revenue; and





- improve public safety by replacing unsound or failing assets, and bringing other structures up to code.

The site redevelopment will include:

- demolishing and constructing (or re-constructing) a new stationary section of the boardwalk, access bridge, platform, an accessible ramp to Marshville, and the base of the pergola; and
- upgrading the lookout tower's stairs and some railings.

Stationary Boardwalk:

The stationary boardwalk was originally constructed in 1961, and is considered to be in very poor condition. Contractors will replace this section of the boardwalk over a period of several months. The existing dimensions (~500m X 1.8m) will for the most part be maintained and include the same wider expanses and bridge that are currently there. This project will include the base of the pergola, which was constructed in 2010 as part of the replacement of the floating section of the boardwalk. In 2010, the pergola was constructed on the old piles and stringers, therefore the base will need to be replaced as part of this project.

The old treated decking, cross beams and railings will be completely removed and taken off-site for disposal, while the old creosote treated piles will be left intact in the marsh (i.e. the new boardwalk will be built just over top of the old piles). The untreated Douglas fir stringers will be kept by Parks Canada. Approximately 300 steel screw piles will be used for the boardwalk (~6m apart), as well as for the new bridge, platform, and accessible ramp. Where applicable in the work area, the steel screw piles will be drilled into the marsh's substrate nearby the old wooden ones. New steel framing will be placed on the steel piles, and new white cedar decking and railings will overlay the steel frame for the boardwalk, bridge, platform, and accessible ramp structures.

Access Causeway and Platform:

Contractors will excavate and remove the existing compacted fill (14m length/ 3m width/ 2m depth) access causeway to the fill island on which the tower, Marshville, and boardwalk trail are located on. Clean gravel will remain with Parks Canada, muck soil and unclean gravel to be disposed of off-site by contractor. As well, the rubber mat used for the boat launch on the southwest side of the fill bridge will be removed and disposed of. The new bridge (~3m X 15.9m) and platform (~11.2m X 9.6m) will extend over the water from the shoreline to the island. The old water and electrical lines will be removed (i.e. those running to the tower and floating boardwalk). The new bridge will serve to improve visitor safety in an area that has been prone to drainage and erosion issues.

Lookout tower and Marshville upgrades:

The lookout tower, constructed in 1971, underwent some recent structural repairs in 2011-2012. Contractors will completely replace the bottom six stairs, treads, and railings of the tower, as well as the remaining treads on the stairs of the tower. Any railings that are deemed unsafe will have further structures added on to bring them up to current building/safety codes. The old staircase to Marshville will be replaced with a new accessible ramp. Materials removed to be disposed of off-site by contractor.

In General:

Contractors and/or Parks Canada Agency (PCA) staff will carry out the project, and ecological and/or Species at Risk (SAR) assessments will be completed prior to the works commencing to ensure potential resources are protected. PCA staff will handle any required vegetation removals (i.e. mowing down a 1.0 m width of cattails near boardwalk, removal of shrubs near island/bridge) adjacent to the work area prior to the work commencing.





Various standard/specialty machinery, equipment, and hand tools will be required to complete the vegetation removal, demolition, construction, excavating, backfilling, grading, compacting, drilling, and directional boring/knifing/trenching works/activities including a backhoe, bobcat, pickup trucks, dump truck, mechanical lift, excavator, crane, silt fencing, mobile generators, ladders, brush saws, chainsaws, etc. These machinery, equipment, and tools, as well as the various project activities, will require the use of chemical based products such as gas, diesel, oil, lubricant, and other hazardous materials.

Standard construction materials and methods will be applied to PCA projects, but when feasible, more environmentally friendly options will be utilized (i.e. for this project untreated white cedar wood products as per the most current PCA guideline/standards, steel piles, and galvanized steel attachments will be used). Green solutions will be explored for possible alternatives to energy use, green building materials, and waste/recycle disposal. Only clean, local soil and aggregate materials will imported into the park for construction. Some elements of the project (e.g. metal frames for boardwalk, new bridge/platform/ramp) may be constructed off-site and then brought into the park for installation, which will act to reduce impacts on the local work area.

Various degrees of excavating, backfilling, grading, and compacting will take place around the old structures. In-water works (i.e. in the form of excavating, backfilling, grading, drilling in screw piles, placing of silt fences, etc.) will be required for the construction of the boardwalk, bridge, platform, and accessible ramp. Excavated compacted fill (e.g. from the existing causeway) from the work area will be disposed of off-site. All debris will be captured and disposed of properly from the project. Special catchment equipment will be required for any demolition/construction works in the marsh (e.g. around the boardwalk, island, bridge, shoreline) to ensure all old wastes (i.e. pressure treated lumber, metal components such as nails, screws, etc.), as well as new construction materials/equipment (i.e. metals, tools, garbage), do not fall into and contaminate the marsh environment.

The contractors will use washrooms at Blue Heron or Northwest Beach, and the parking lot and/or other affected areas can be used for staging and storage. Federal and provincial regulations for the storage of materials and equipment on the grounds will be followed, and a spill kit with personnel trained to use it will be available on-site. The work site will be closed off while under construction and foot traffic will be directed away from work area in order to maintain the site's safety conditions. After the works/activities are completed, the contractors and PCA staff will demobilize and clean up all wastes and recyclables.

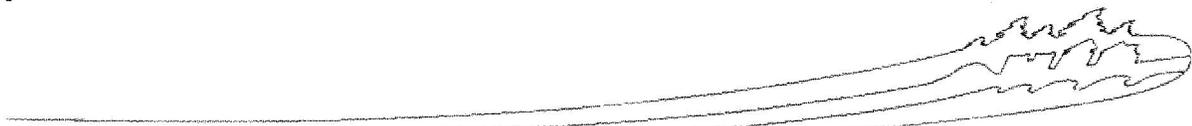
Ongoing operational maintenance of the day-use area will include repairing structures, cleaning up garbage/recycle, and trimming vegetation to PCA standards as needed. Various groups [e.g. Friends of Point Pelee (FOPP), YMCA], that have Licences of Occupation (LOO), will continue to operate out of these day-use areas as per the outlined LOO conditions, although parking area may be limited for the duration of the construction period.

6. VALUED COMPONENTS LIKELY TO BE AFFECTED

Natural resources will be directly and indirectly affected by the project works/activities, and there are numerous SAR and critical habitats, as well as known/potential cultural resources in and/or nearby the renewal area to consider (Appendices 2-3)

Terrestrial and Aquatic Habitats:

The Phase 1 work footprint that will be affected is in an Outdoor Recreation (Zone 4) area where visitors can experience a broad range of opportunities for experiencing, understanding, and enjoying the park's natural and cultural heritage, with available essential services/facilities/motor vehicle access and minimized impacts on ecological integrity (Parks Canada 2010).





Species at Risk/Provincially Rare Species:

Species at risk with critical habitat in the project footprint include: eastern foxsnake [*Pantherophis gloydi* – endangered (END)], five-lined skink (*Plestiodon fasciatus* – END), least bittern (*Ixobrychus exilis* – THR), spotted gar (*Lepisosteus oculatus* – THR; COSEWIC: END), as well as the spotted turtle (*Clemmys guttata* – END – considered extirpated from PPNP), Blanding's turtle (*Emydoidea blandingii* – THR; COSEWIC: END), spiny softshell turtle (*Apalone spinifera spinifera* – THR; COSEWIC: END), and eastern musk turtle [*Sternotherus odoratus* – THR; COSEWIC: Special Concern (SC)] (Appendix 2).

Other SAR that are may be affected, and are considered from a mitigation measures standpoint are the: lake chubsucker (*Erimyzon sucetta* – END), little brown myotis (*Myotis lucifugus* – END), tri-colored bat (*Perimyotis subflavus* – END), northern myotis (*Myotis septentrionalis* – END), swamp rose mallow (*Hibiscus moscheutos* – SC), warmouth (*Lepomis gulosus* – SC; COSEWIC: END), grass pickerel (*Esox americanus vermiculatus* – SC), monarch (*Danaus plexippus* – SC), snapping turtle (*Chelydra serpentina* – SC), northern map turtle (*Graptemys geographica* – SC), and barn swallow (*Hirundo rustica* – COSEWIC: THR).

Provincially rare species that potentially could be affected in/nearby the project are black terns (*Chlidonias niger* – SARO: SC) and large yellow pond-lily (*Nuphar advena* – SRank: S3 - ≤80 populations in province) (Dougan & Associates 2007).

Herpetofauna:

The Marsh Boardwalk and adjacent marsh are heavily utilized by several of PPNP's herpetofauna for the various life processes including: foraging, mating, ovipositing, nesting, hatching, moving around, taking shelter, basking, shedding, and overwintering. Five-lined skink, eastern foxsnake, eastern gartersnake (*Thamnophis sirtalis sirtalis*), DeKay's brownsnake (*Storeria dekayi*), northern watersnake (*Nerodia sipedon sipedon*), snapping turtle, Midland painted turtle (*Chrysemys picta marginata*), map turtle, Blanding's turtle, spring peeper (*Pseudacris crucifer*), green frog (*Lithobates clamitans*), bullfrog (*Bufo americanus*), American toad (*Anaxyrus americanus*), and northern leopard frog (*Lithobates pipiens*) are the common and SAR herpetofauna that have been noted around the areas.

Snapping and painted turtles frequently nest in the lawn and parking lot around the day-use area. To a lesser extent map and Blanding's turtles have nested within a 1km of the project's footprint. Skinks are frequently seen foraging and basking around the boardwalk/Marsh Concession building, and are believed to be mating/nesting/hatching young around the site, especially in the vicinity of rotten logs/boards that are in contact with the ground. There are no known hibernacula in the work area but heavy snake activity in the summer/fall indicates they are likely still using old/new hibernacula located within 1km of the project's footprint. Road mortality of these herpetofauna in this area can be abundant due to the proximity and access to/from the marsh environment, especially when the weather conditions are just right (i.e. warm/hot temperatures, humid, rainy).

Visitor Experience:

Visitor experience will be affected on a temporary basis while the project is underway since there will be limited and/or no access to the parking lot, boardwalk loop, and lookout tower/Marshville area, and increased park and contractor vehicles/equipment/machinery/materials/personnel presence on-site. Visitors will need to be directed away from the machinery/equipment for safety reasons, and the noise from the works/activities may detract from the public's enjoyment around this area of the park, which will include nearby Northwest Beach and Blue Heron day-use areas as well as the Centennial Multi-use Trail. Mitigation may include a temporary boardwalk linking the mainland to the floating portion of the existing boardwalk. Over the long-term, the project is expected to improve visitor experience, safety, and local socioeconomics due to the upgraded facilities available at PPNP.





Cultural Resource Management:

Since the bridge, island, and lawn area immediately adjacent to the marsh/Marsh Services building are fill and the stationary boardwalk is in the marsh, the Parks Canada Terrestrial Archaeology Representatives (PCTAR) do not require archaeology to be completed for Phase 1. The laydown area for Phase 1 contains a known archaeological site though the site is protected by the gravel parking lot surface. There are also many known cultural resources (from pre- and post-contact eras), in and/or nearby the overall Marsh Boardwalk Renewal Area that will be considered for the purposes of project staging and storage.

7. EFFECTS ANALYSIS

Potential Key Effects:

Components of the environment that will/may be affected:

The project environmental effects will vary depending on the type of work or activity, and where it is taking place within the national park.

Flora, Fauna, Species at Risk, Habitat

1. Some of the Zone IV will be affected by the project works/activities but the project's footprint should be approximately the same as it currently stands;
2. Trampling/destruction of vegetation primarily within the work area from equipment/machinery, parking, and people on-site (i.e. PCA staff/contractors);
3. Machinery/equipment that are not properly cleaned before going on-site, as well as soil/aggregate/ other materials that are used for site preparation/demolition/construction/demobilization/etc., could potentially introduce invasive and/or exotic species to PPNP;
4. Potential harm to wildlife from chemical use or accidental leaks or spills (e.g. machinery/equipment fuel, diesel, grease, lubricants, etc.). Nearby water bodies (i.e. marsh, Lake Erie) are within close proximity to the renewal area;
5. The transportation of machinery/equipment/materials to and from the work area could result in some road mortality that is associated with all vehicular traffic at PPNP;
6. Noise and human presence will disrupt wildlife in the area;
7. Access of wildlife to human food, garbage, and recycling;
8. There will/may be effects to wildlife and/or SAR that migrate, disperse, bask, feed, nest, hatch, take shelter, and overwinter around the work area, for example: barn swallows will forage around and nest on the tower/Marshville from mid-May to August; bats may roost in/around the work area; reptiles (e.g. five-lined skinks, eastern foxsnakes, turtles), amphibians, migrating/breeding birds, mammals (e.g. muskrats, beavers), and fishes may be dispersing, basking, foraging, nesting, hatching, and/or overwintering in the work area; and other wildlife lives in/on vegetation/soils to be removed (e.g. invertebrates, fungi, etc.). These wildlife/SAR may be displaced, harmed, and/or killed during the project from the machinery/equipment/people used to carry out the works/activities;
9. The project site is located within critical habitat for eastern foxsnake, five-lined skink, least bittern, spotted gar, and spiny softshell, eastern musk, spotted, and Blanding's turtles. Although this activity will temporarily and/or minimally affect the vegetation/substrates/water turbidity of the critical habitat for these species, it will not destroy the critical habitat for any of the SAR. The biophysical attributes will not be affected to an extent that it will impact the functionality of the overall area for these species;
10. Fish species in the marsh are spring spawners;
11. Excavating marsh substrates in the summer and fall could disturb, harm, and/or kill wildlife in the organic materials/muck removed (e.g. invertebrates, fish, turtles, amphibians, etc.);
12. Amphibians, reptiles, and invertebrates overwinter in the marsh substrates (i.e. bury themselves down into the organic materials/muck) from mid-October to March. Excavating in these marsh substrates could harm these sensitive overwintering animals;





13. Conducting in water works (i.e. excavating fill/marsh substrates, drilling in screw piles, constructing siltation fences, etc.) could affect drainage, erosion, and sediment build up in the water column that could affect wildlife (i.e. bury, smother, and/or asphyxiate fishes, invertebrates, amphibians, turtles, etc., in the egg, young, and/or adult stages of life);
14. Turtles migrate through/nest/hatch in/around the lawn and parking lot of the Marsh Boardwalk day-use area from the end of May to mid-October. Some turtle species overwinter in the nest chamber and emerge the following spring. Turtle mothers, nests, and hatchlings could be disturbed, harmed, and/or killed depending on when/where the project works/activities take place;
15. Five-lined skinks may breed/nest/hatch in/around the island and bridge where there are logs/rotten boards that are in contact with the ground from June to mid-August;
16. Migratory and/or SAR birds primarily nest in/around the work area from April to August. Generally birds tend to nest successfully regardless of high visitor use in the lookout tower and Marsh Boardwalk area. Therefore, the impacts on nesting birds from the project works/activities are anticipated to be similar to those from high visitor use of the Marsh Boardwalk area;
17. Monarch butterflies use milkweed (*Asclepias spp.*) plants scattered in/nearby the work area for various aspects of their biology including feeding, reproducing, and shelter. If these plants are harmed from the works/activities, then they could affect eggs, larvae, and/or pupae of the Monarch butterfly;
18. There may be effects to wildlife utilizing the area during the site's operation (similar to the current situation at this day-use area); and
19. Vegetation will continue to be affected by ongoing operational maintenance around the Marsh Boardwalk (i.e. standard lawn mowing and cattail/herbaceous/shrub/tree trimming practices).

Air & Soil Quality, Water Quality & Quantity (Surface/Ground), Drainage, Erosion

1. Potential for increased dust, greenhouse gas, and other exhaust emissions from the machinery/equipment used during the project works/activities;
2. Potential for soil/water contamination as a result of refuelling, accidental fuel/oil/diesel/other chemical leaks or spills, and refuse. Generated project related sediments, chemicals, wastes (e.g. metals, pressure treated wood), and harmful substances may enter the soil, water, and nearby water bodies (e.g. marsh, Lake Erie) after rainfall events, dewatering, and watering procedures, which could result in impacts on soil/water qualities;
3. Increased turbidity levels due to mechanical disturbance of sediment;
4. Temporary effects to soil quality and drainage due to compaction from machinery/equipment, temporary storage piles of heavy debris, as well as from people on-site;
5. Soil compaction may result in reduced water/soil infiltration rates increasing surface runoff and potential siltation to surface water (e.g. in drainage systems during wet weather events); and
6. Refuse from the project will add to waste generation and ultimately consume more landfill space.

Cultural Resources

Potential adverse effects to known/potential cultural resources resulting from:

1. Excavation of any sort outside of the approved boardwalk area.
2. Trampling/parking/vehicles/temporary facilities/equipment/storage of heavy materials;
3. Puncturing the ground for the installation of signage or other items; and
4. Directional boring, knifing, and/or trenching.

Visitor Experience, Safety, Socio-economics

1. Potential for short-term, negative effects on visitor experience, other contractors working in the park, and nearby residents outside of the park as a result of the project (i.e. reduced access to certain areas in/around PPNP; noise from the set-up, demolition, construction, and demobilization; and the





- increased presence of machinery/equipment/debris/contractors on-site). The work and increased noise may affect the peace/enjoyment of visitors and detract from the park's natural atmosphere;
- There is potential for an increased risk to the public and staff if the work area is not well fenced, signed, and/or closed off, and to the workers if they are not wearing personal protective equipment (PPE). The risks to occupational health and public safety increases with: the movement of machinery/equipment/materials to and from the work area; heavy equipment operations; flying debris from demolition activities; possible storage of materials on-site; handling of chemicals/harmful substances; exposure to harmful biota (e.g. ticks that could transmit Lyme disease, biting insects, poisonous/thorny vegetation like poison ivy and raspberry) and inclement weather; and from accidents and malfunctions; and
 - Positive effects to visitor experience, public safety, and socioeconomics may arise as a result of the new and upgraded facilities.

8. MITIGATION MEASURES

Timing Windows for Project Works/Activities

Project Phase	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Mechanical Vegetation Removal (i.e. shrubs/herbaceous). Mitigations to include trimming of vegetation to create 1 meter buffer along length of boardwalk prior to bird nesting window				Work allowed but mitigations in place	Work allowed but mitigations in place							
In Water Works (installation of screw piles and removal of causeway (working within existing footprint), but sediment control measures for removal of causeway must be in place prior to April 1)										Work to mid-Oct		
In Water Works (shoreline reshaping in marsh muck around causeway and bridge area, removal of rubber matting)							work to start after the 15 th			work to mid-Oct.		
On-site construction and demolition on viewing tower and Marshville building								Work may begin after August 15				
Construction & Demolition (on-site, out of water logs in contact with the ground)								work at end of month only				
Construction & Demolition (off-site at contractor's facility & out of water in staging area)												

- Grey - Work can take place all month
- Yellow - Work can take place for a portion of the month (*see mitigating measures to accommodate for nesting birds)
- Black - Work cannot take place for the month

Flora, Fauna, Species at Risk, Habitat

- Vegetation removal is the responsibility of PCA and its employees.
- Machinery/equipment/contractors will be restricted to the defined staging and work areas (as delineated by fencing) to minimize any further impacts to the surrounding vegetation, unnecessary trampling, and soil compaction. Any significant damage to the surrounding manicured lawns or vegetation will be restored to prior or better site conditions by the contractor under the direction of the PCA staff. In the case of herbaceous or woody vegetation, native species should be used and must be approved by Parks Canada Resource Conservation staff.





3. Machinery/equipment should be properly cleaned before going on-site, following the Ontario Invasive Plant Council's Clean Equipment Protocol, to avoid the potential introduction of invasive and/or exotic seeds to the park;
4. Any materials that pose a hazard to wildlife must be stored in secured buildings or containers as directed by PCA;
5. Vehicles are to adhere to the park's speed limits to minimize wildlife road mortality;
6. Contractors must notify PCA staff immediately of any wildlife encounters;
7. The feeding, enticement, or harassment of wildlife is prohibited;
8. Sealed garbage and recycling receptacles should be utilized to prevent wildlife access to waste products;
9. PCA staff and contractors will be diligent in monitoring for wildlife prior to, during, and after the works/activities. When possible, wildlife will be given the opportunity to escape the work site to the surrounding area to seek new shelter. If any wildlife is discovered that cannot escape quickly enough, then all work in the immediate area will cease until the PCA Resource Conservation staff is consulted, and any wildlife required to be moved will only be done so under direct supervision of PCA staff;
10. To reduce risk of turtles nesting in the construction area, PCA will install enclosure fencing around the construction area prior to June 15, and as directed by #9 above, any turtles found in the construction area will be removed by PCA staff to appropriate habitat outside the area. This enclosure fencing must be monitored on a daily basis and repaired immediately when required.
11. The disturbance, destruction, or removal of a nest or egg of a migratory bird; or to be in possession of a live migratory bird, or its carcass, skin, nest, or egg, is prohibited pursuant to the *Migratory Birds Convention Act*; (refer to mitigation measure # 9 above).
12. Work on the viewing tower and Marshville will be prohibited from April 1 to August 15 in order to avoid impacts on nesting migratory birds, with special emphasis, but not limited to, barn swallows.
13. Removal and subsequent reconstruction of the fixed boardwalk will be allowed to proceed through bird nesting windows (Apr. 1 to Aug. 15) provided that risks are mitigated by trimming the cattail mat to the extent of 1 metre on either side of the boardwalk beginning prior to April, and continuing throughout the construction season, in order to reduce the risk of birds nesting immediately adjacent to the boardwalk. Nest searches will be conducted by PCA within 5 days of construction on the boardwalk to confirm that no birds are nesting within the 1 metre buffer area. Vegetation removal and nest searches will be the responsibility of Parks Canada staff.
14. Structures scheduled for construction should be monitored for roosting bats at least two weeks prior to work, by Parks Canada staff. If any bats are found utilizing these structures, Parks Canada Resource Conservation staff must be consulted prior to the work proceeding;
15. With the exception of installation of screw pilings for the boardwalk, bridge, platform, and access ramp, no in-water works will be permitted during the spring spawning season which runs from March 15 to July 15 (as per the federal fisheries restriction. (Note: screw pilings and work on the causeway/bridge do not trigger a review by DFO due to the small area of impact);
16. The Contractor will be responsible for the installation and maintenance of sediment barriers, as per a pre-approved sediment and erosion control plan which will be prepared by the contractor and approved by PCA Resource Conservation Staff.
17. Organic materials or muck will only be removed/excavated for shoreline reshaping from July 16 to mid-October to avoid the effects to spring spawning fish species, as well as harming/killing sensitive wildlife that may be overwintering in the soft marsh substrates. When excavating the organic materials or muck, a PCA Resource Conservation staff will be on-site to sort through the substrate and remove any potential faunal by-catch prior to removing the materials from the park for disposal;
18. Workers will not be permitted to disturb rotting logs or boards in contact with the ground from June until the end of August to avoid any potential nesting five-lined skinks;

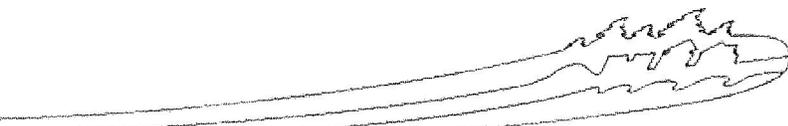




19. During work associated with the removal of the causeway, PCA staff will conduct daily morning surveillance for wildlife within the excavation area. Any species found will be removed from the construction area;
20. Avoid harming milkweed to protect them and potential monarchs using them during part of their lifecycles;
21. Mechanical vegetation removal will be conducted by PCA prior to April 1, and maintained until after Labour Day in order to avoid disturbance/destruction of nesting migratory birds. No vegetation removal or destruction beyond the 1 meter buffer along the boardwalk will be allowed from April 1 to August 15.
22. PCA will follow vegetation maintenance protocols in order to reduce the chances of damage, disease, and/or insect infestation to the affected plants; and
23. PCA staff will hold a briefing to inform contractors of the potential Species at Risk (SAR) that may be encountered during the project. It is illegal to harass or harm SAR. PCA will inform contractors of the requirements they must undertake should SAR be encountered during the project (e.g. protective measures such as the use of barriers).

Air & Soil Quality, Water Quality & Quantity (Surface/Ground), Drainage, Erosion

1. All creosote piles associated with the existing boardwalk will be left undisturbed and in place in order to avoid accelerating the leaching of creosote into surrounding waters;
2. Vehicles, machinery, and equipment must not be left to idle unnecessarily;
3. During all phases of project, surfaces may be wet down to minimize dust as needed (i.e. only water to be used for dust control – chemical based dust suppressants are not permitted);
4. Use of ethanol blended fuel/biodiesel is encouraged for all machinery/equipment;
5. Maintain consistent access route where possible, preferably a route previously disturbed. Avoid high risk areas with unstable slopes, and movement of heavy machinery on areas with sensitive slopes;
6. Prior to commencement of work, contractor will be responsible for implementation of a pre-approved sediment control program (see point #16 in previous section).
7. Erosion and sediment control measures shall be inspected daily, and maintained and upgraded as required. If control measures are found not to be functioning properly, all work should be stopped until corrective measures are implemented;
8. Keep excavation to a minimum to maintain vegetative cover; where possible maintain vegetated buffer at shoreline.
9. Phase work to minimize duration of exposure of disturbed areas. If prolonged period of exposure is expected, stabilize surface using temporary cover (e.g. mulch, gravel, erosion blanket, etc.). Limit the size of stockpiles, store piles away from shoreline, and cover them with a tarpaulin.
10. Remove accumulated sediments, debris, and/or waste prior to removing sediment control measures;
11. The operating, refueling, and maintenance of construction machinery/equipment, and the handling and storage of toxic materials (e.g. fuels) will be carried out in such a way as to avoid contamination of soils and water. All refueling of the machinery/equipment is restricted to designated areas (over an impermeable, paved area, if available) and will be at least 30m from any water body (i.e. marsh, Lake Erie);
12. A Spill Response Plan must be provided by the contractor prior to the commencement of work, and approved by PCA Resource Conservation Staff prior to the commencement of work. The contractor is responsible for having appropriate containment, spill kits, and clean up equipment on-site in accordance with the approved Spill Response Plan to ensure a rapid response to any spill. Ensure all personnel on-site are trained in the use of spill control and response procedures, including spill source and receptor recognitions, spill prevention techniques, and spill reporting protocol. Any spills will be immediately contained and cleaned up in accordance with provincial regulatory requirements. Report spills to the Ontario Ministry of the Environment and Climate Change – Spills Action Centre (1-800-268-6060) Environment Canada (613-239-6065) and PCA;





13. Use new or well-maintained machinery/equipment, preferably fitted with fully functional emission control systems/mufflers/exhaust baffles, engine covers, etc., to avoid introducing pollutants to the site;
14. Storage of hazardous materials must comply with the *Canadian Environmental Protection Act*;
15. Store all fuels and chemicals 30m from any drainage system (i.e. storm water drains) or water body (i.e. marsh, Lake Erie) in secure areas on impermeable pads/surfaces;
16. Potentially hazardous wastes will be separated from normal waste through segregation of storage areas and proper labeling of containers;
17. All compounds used for this project shall be utilized and stored according to the manufacturers' Product Technical Data Sheets, stating guidelines and methods for proper use and storage;
18. Prevent all old boardwalk debris (i.e. old pressure treated based lumber and sawdust, metals like old nails, screws, etc.) from falling/depositing in the marsh;
19. No waste is permitted to be buried or burned on-site; and
20. Recyclable materials and all waste debris shall be removed from the work area and disposed of off-site, in accordance with all federal, provincial, regional, and municipal regulations, to appropriate disposal facilities licensed to receive them.

Cultural Resources

1. When and where possible, PCA will demarcate and protect areas with known cultural resources (including archaeological resources and historic objects). This may include flagging tape, above-ground fencing, or other temporary structures, and/or signage to avoid sensitive areas as indicated by PCA officials and/or Archaeologist. Contractors will be informed of these resources and of measures that must be taken so as not to disturb or destroy them.
2. There are no cultural resources located in the immediate work area; however, there are many known/potential cultural resources in and/or nearby the overall Marsh Boardwalk Renewal Area. Taking this into consideration, PCA staff and/or contractors must remain in PCA designated staging/storage areas at all times.
3. Excavating, directional boring, knifing, and/or trenching, grading, backfilling, and puncturing the ground is prohibited without an assessment or discussion with PCA staff (i.e. to ensure no adverse effects to subsurface cultural resources). Non-intrusive temporary fencing or signage that does not puncture the ground are recommended.
4. Small tracked equipment will be used with care in order to minimize soil compaction and mitigate damage to landforms and buried cultural resources.
5. In the event that any significant features or cultural / archaeological artifacts are unearthed during the course of work, all work will immediately cease, the feature or artifact will be left in place, and the Parks Canada Project Manager will be immediately contacted. The Project Manager should then contact Parks Canada's Terrestrial Archaeology section for advice and assessment of significance that will in turn determine what will be required to mitigate the chance find. Should additional mitigation measures be required to protect the significant feature or artifact, Parks Canada will provide the Contractor with written notification of the required measures and will only permit the work to continue once it is satisfied that all mitigation measures are in place to ensure the protection of the significant feature or cultural artifact.

Visitor Experience, Safety, Socio-economics

1. PCA staff will be briefed on the project so they can provide information to visitors;
2. Mitigation of impacts on visitor experience, and on the Friends of Point Pelee operations will be implemented by PCA, including the potential to use a temporary floating boardwalk to connect the existing floating boardwalk to the mainland.





3. Visitor access to the work area will be restricted during the project. Appropriate signage and area closures will be in place, especially for higher risk activities (e.g. demolition of structures);
4. All stored/stockpiled materials will be kept in a safe and secure location for security and public safety reasons. All construction machinery and equipment will be secured to ensure public safety when workers are not present on-site.
5. All works pursuant to the project shall be governed by and constructed in accordance with all laws of Canada and the Province of Ontario (e.g. *Canada Labour Code*, *Workplace Safety and Insurance Board of Ontario*, *Occupational Health and Safety Act*, *National Fire Code of Canada*); and,
6. All equipment / tools / machinery shall be used only by individuals who are trained, licensed and / or otherwise qualified, in accordance with all applicable laws and regulations. All necessary Personal Protective Equipment is to be used at all times.

General Effects

1. All work must be performed in accordance with the Canada National Parks Act and Regulations and all applicable statutes, laws and regulations in force at the time.
2. An Environmental Protection Plan must be provided by the contractor, and approved by PCA Resource Conservation Staff prior to the commencement of work;
3. Parking and access routes to the work area must only be in PCA designated areas;
4. Vehicles are restricted to paved and graveled surfaces, or as directed by PCA officials; and
5. Machinery/equipment/materials must be staged/stored/secured at a location approved by PCA.
- 6.

9. PUBLIC/STAKEHOLDER AND ABORIGINAL ENGAGEMENT &/OR CONSULTATION

- 9 a) Indicate whether public/stakeholder engagement was undertaken in relation to potential adverse effects of the proposed project:
- Yes
 - No

Public consultations were completed in 2010 for PPNP's Management Plan that highlighted improving visitor experience and learning opportunities, revitalizing the Marsh Boardwalk facilities, and attracting targeted visitor markets to the site (e.g. utilizing the site as a unique outdoor education centre where children can experience and learn about PPNP's ecologically rich species and habitats).

The Point Pelee National Park Citizens Advisory Committee have been consulted on the project design and were supportive of the upgrades. Their comments were used to help shape the final design.

The Marsh Boardwalk Area is one of the most popular locations in PPNP, so interest from visitors and the general public is expected to be high and generally positive. Visitors and stakeholders will be kept informed of any changes or construction through public notices, website updates, and social media. Friends of Point Pelee run a concession building with canoe rentals and a store in the area. Mitigation of impacts on visitor experience, and on the Friends of Point Pelee operations will be implemented, including the use a temporary floating boardwalk to connect the existing floating boardwalk to the mainland.

- 9 b) Indicate whether Aboriginal engagement or consultation was undertaken in relation to potential adverse effects of the proposed project:
- Yes
 - No





PCA is committed to strengthening relationships with Indigenous Peoples and consulting with the Caldwell and Walpole Island First Nations in projects that may have an impact on the park, which lies within the Traditional territory of both First Nations. Therefore, projects including the Marsh Boardwalk Area Renewal have been and will continue to be discussed with PPNP's First Nations Advisory Circle throughout the duration of this Federal Infrastructure Initiative.

The project has been discussed with representatives from Caldwell First Nation and Walpole Island First Nation through the Point Pelee National Park First Nations Advisory Circle. Drafts of this BIA were shared with both First Nations. Furthermore, monitors from Caldwell and Walpole Island First Nations are presently engaged in archaeology in preparation for Phase II of this project.

10. SIGNIFICANCE OF RESIDUAL ADVERSE EFFECTS

Positive residual and cumulative effects from the Phase 1 project include improved visitor experience, safety, operational maintenance, and environmental conditions (i.e. use of green building products) through the reparation and upgrading of the Marsh Boardwalk Phase 1 assets. Other residual impacts will/may include:

1. There will be changes in the area's appearance from the renewal project;
2. Slight increase in greenhouse gas emissions from machinery/equipment;
3. Increased soil compaction from the use of heavy machinery/equipment;
4. Increased use of landfill space from the project debris;
5. Possibly some residual soil/water contamination from an accidental leak or spill;
6. Minor, short-term impacts on wildlife, visitor experience, and nearby residents during the physical works/activities; and
7. Augmented fish and aquatic habitat from the removal of the compacted fill bridge.

Due to the timing/location/nature of the project works/activities, it is not anticipated there will be any significant residual adverse effects on the cultural and natural resources (i.e. wildlife, terrestrial/aquatic habitats, landscape features, SAR, air/soil/water quality and/or water quantity, etc.), cultural resources, and/or visitor experience, as long as the mitigation measures within the BIA are adhered to.

11. SURVEILLANCE

- Surveillance is not required
- Surveillance is required

As needed, qualified PCA staff will monitor the project to ensure the mitigation measures of this BIA are enforced (i.e. particularly those for SAR and wildlife in the work footprint, and cultural resources in and nearby the overall Marsh Boardwalk Renewal Area), and to handle and note any situations as they arise.

12. FOLLOW-UP MONITORING

Follow-up monitoring is:

- not required
- legally required (e.g. under the *Species at Risk Act* or *Fisheries Act*)
- required in accordance with the *Parks Canada Cultural Resource Management Policy*

13. SARA NOTIFICATION

Notification is:

- not required
- required under the *Species at Risk Act*





14. EXPERTS CONSULTED

Department/Agency/Institution: PCA – National Office	Date of Request: February-Nov. 2017
Expert's Name & Contact Information: Joanne Tuckwell	Title: Species Conservation Specialist
Expertise Requested: Requested advice about effects on critical habitat, individual species at risk, and herpetofaunal protection/mitigation.	
Response: Reviewed/provided input on the project designs, BIA, SARA-Compliant Authorization Decision Tool, and herpetofaunal protection/mitigation.	
Department/Agency/Institution: PCA – National Office	Date of Request: January 2018
Expert's Name & Contact Information: Marie-Claude Martel	Title: Impact Assessment Specialist
Expertise Requested: Assistance in determining impact of in-water works (specifically helical piles and work on the causeway) on spawning fish	
Response: Project does not trigger DFO permitting requirement as it represents a very low risk of causing harm	
Department/Agency/Institution: ECGC – CWS	Date of Request: January 2018
Expert's Name & Contact Information: Christian Friis	Title: Biologist – Canadian Wildlife Service
Expertise Requested: Requested mitigations on working within nesting windows of migratory birds, specifically in a marsh boardwalk environment	
Response: Supplied advice on appropriate buffers for work along fixed boardwalk	
Department/Agency/Institution: PCA – PPNP	Date of Request: Sept. 2016-Nov. 2017
Expert's Name & Contact Information: Tammy Dobbie	Title: Ecologist Team Leader
Expertise Requested: Requested advice about effects of the project on the park's ecology, and possible mitigation measures.	
Response: Supplied a list of potential impacts on the park's ecology, and recommendations to avoid and/or mitigate for these effects.	
Department/Agency/Institution: PCA – PPNP	Date of Request: February-Nov. 2017
Expert's Name & Contact Information: Sarah Rupert (PPNP's bird expert)	Title: Promotions Officer
Expertise Requested: Requested advice about the park's migratory and/or breeding common/SAR birds that could possibly use and/or be disturbed around the renewal area.	
Response: Supplied a list of potential birds that may utilize/be disturbed in the area.	
Department/Agency/Institution: Upper Thames Region Conservation Authority	Date of Request: May-July 2017
Expert's Name & Contact Information: Scott Gillingwater	Title: Species at Risk Biologist
Expertise Requested: Requested advice about methodology for moving turtle nests.	
Response: Supplied updated methodology for moving turtle nests.	
Department/Agency/Institution: PCA – National Office	Date of Request: Dec. 2016-Nov. 2017
Expert's Name & Contact Information: Rachel Brooks	Title: Archaeologist
Expertise Requested: Requested an assessment of the renewal project to consult about the potential effects and mitigation measures for the significant archaeological/cultural resources and human remains in the area.	
Response: Reviewed project designs and provided recommendations for archaeological assessments for the renewal area. Rachel assisted PPNP/PCA staff with drafting a contract terms of reference for an	



archaeology contractor to assess the overall Marsh Boardwalk Renewal Area, as well as reviewing the contractor's findings, report, and attaining/cataloguing any artifacts recovered from the site. Rachel reviewed the Phase 1 BIA to ensure environmental effects regarding the archaeological/cultural resources and human remains in the area were mitigated for.

15. REFERENCE LIST

- Dougan and Associates. 2007.** Point Pelee National Park Ecological Land Classification and Plant Species at Risk Mapping and Status. Prepared for Parks Canada Agency, Point Pelee National Park, Leamington, Ontario. 109pp. + Appendices A-H + maps.
- Environment Canada. 2016.** Recovery Strategy for the Blanding's Turtle (*Emydoidea blandingii*), Great Lakes/St. Lawrence Population, in Canada [Proposed]. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. vii + 49pp.
- Environment Canada. 2016.** Recovery Strategy for the Eastern Musk Turtle (*Sternotherus odoratus*) in Canada [Proposed]. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. viii + 58pp.
- Environment Canada. 2016.** Recovery Strategy for the Spiny Softshell (*Apalone spinifera*) in Canada [Proposed]. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. viii + 57pp.
- Environment Canada. 2016.** Recovery Strategy for the Spotted Turtle (*Clemmys guttata*) in Canada [Proposed]. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. viii + 54pp.
- Environment Canada. 2015.** Recovery Strategy for the Eastern Foxsnake (*Pantherophis gloydi*) Carolinian and Great Lakes/St. Lawrence populations in Canada [Draft]. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. Xx pp. + Appendix.
- Environment Canada. 2014.** Recovery Strategy for the Five-lined Skink (*Plestiodon fasciatus*) – Carolinian Population in Canada [Proposed]. *Species at Risk Act Recovery Strategy Series*. Environment Canada, Ottawa. 27pp. + Appendices.
- Environment Canada. 2011.** Recovery Strategy for the Least Bittern (*Ixobrychus exilis*) in Canada [Proposed]. *Species at Risk Act Recovery Strategy Series*. Environment Canada. Ottawa. v + 34 pp.
- Parks Canada Agency. 2016.** Best Management Practice: Shoreline Excavation/Stabilization for the Rideau Canal and Trent-Severn Waterways. Parks Canada Agency, Ottawa. 4pp.
- Parks Canada Agency. 2016.** Multi-species Action Plan for Point Pelee National Park of Canada and Niagara National Historic Sites of Canada [Proposed]. *Species at Risk Act Action Plan Series*. Parks Canada Agency, Ottawa. iv + 34pp.
- Parks Canada Agency. 2010.** Environmental Assessment Screening Report – Upgrading the Marsh Boardwalk at Point Pelee National Park and Environmental Assessment Addendum (CEAA#: 09-01-47517). 38pp. and 3pp.
- Parks Canada Agency. 2010.** Point Pelee National Park of Canada – Management Plan 2010. 81pp.
- Parks Canada Agency. 2009.** Guidelines for the Use, Handling, and Disposal of Treated Wood. 28pp.
- Seburn, D.C. 2016.** Incorporating Herpetofauna Conservation to the Infrastructure Renewal Project at Marsh Boardwalk Site at Point Pelee National Park. Seburn Ecological Services. 37pp.
- Staton, S.K., A.L. Boyko, S.E. Dunn, and M. Burridge. 2012.** Recovery Strategy for the Spotted Gar (*Lepisosteus oculatus*) in Canada. *Species at Risk Act Recovery Strategy Series*. Fisheries and Oceans Canada (DFO), Ottawa. vii + 57pp.

16. ATTACHMENTS

Appendix 1 – SAR Critical Habitat Maps in the Phase 1 Marsh Boardwalk Renewal Area

Appendix 2 – SARA-Compliant Authorization Decision Tool





17. NATIONAL IMPACT ASSESSMENT TRACKING SYSTEM

- Project registered in tracking system
- Not yet registered

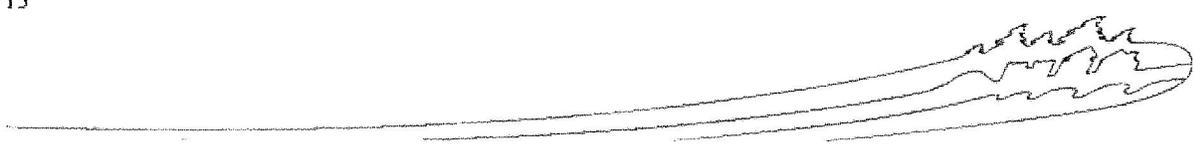
18. DECISION

Taking into account implementation of mitigation measures outlined in the analysis, the project is:

- not likely to cause significant adverse environmental effects.
- likely to cause significant adverse environmental effects.

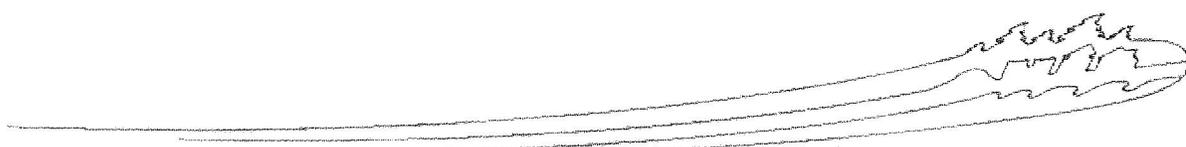
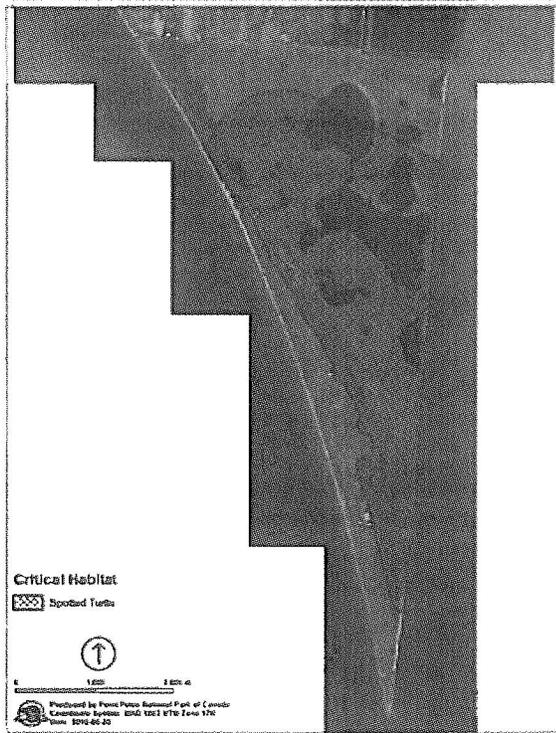
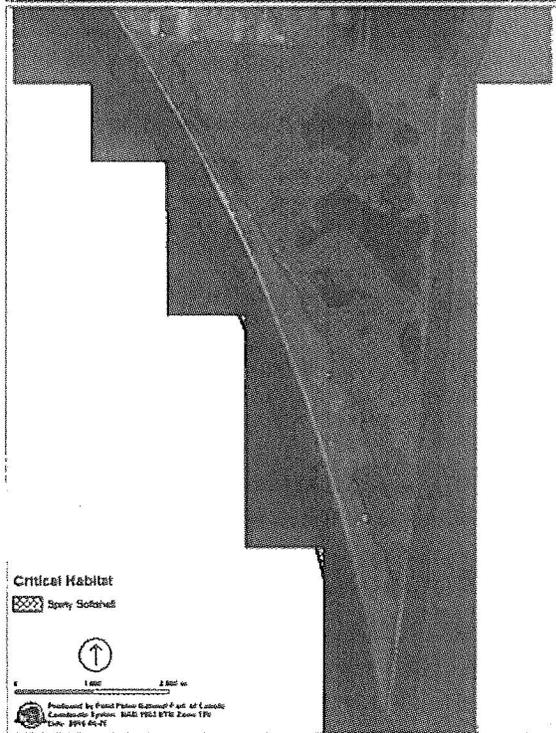
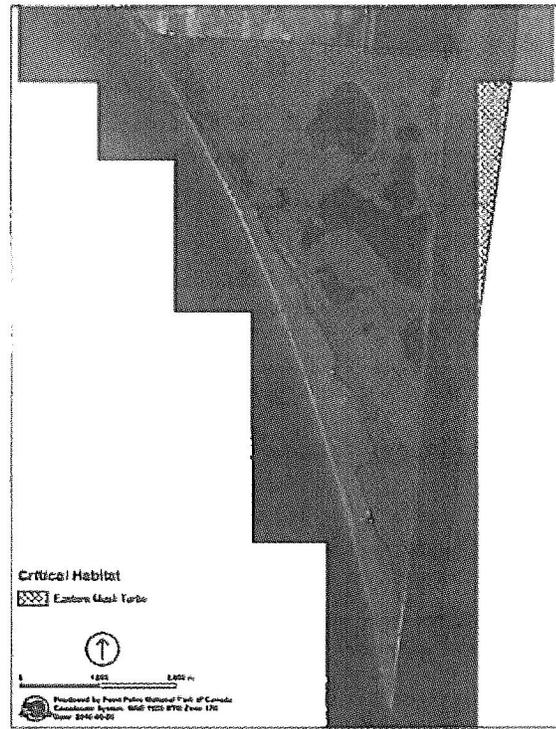
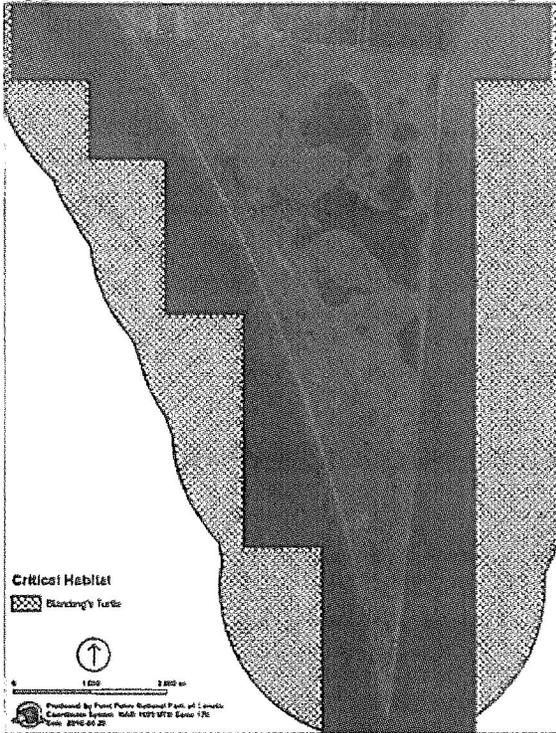
19. RECOMMENDATION AND APPROVAL

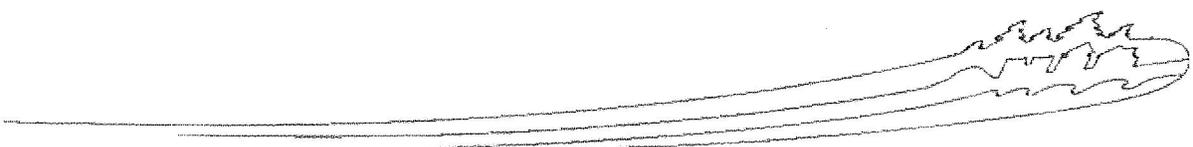
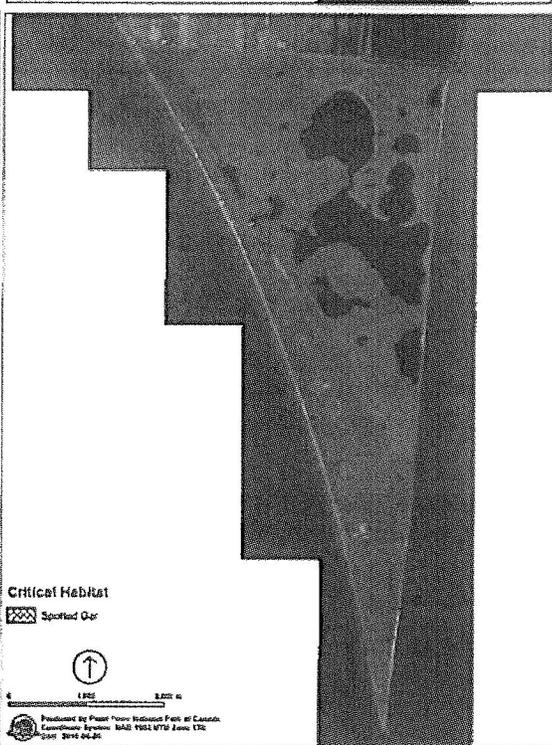
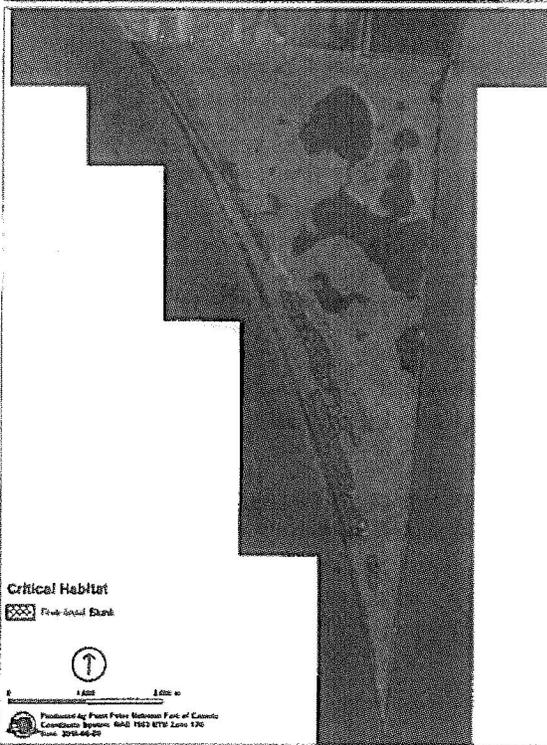
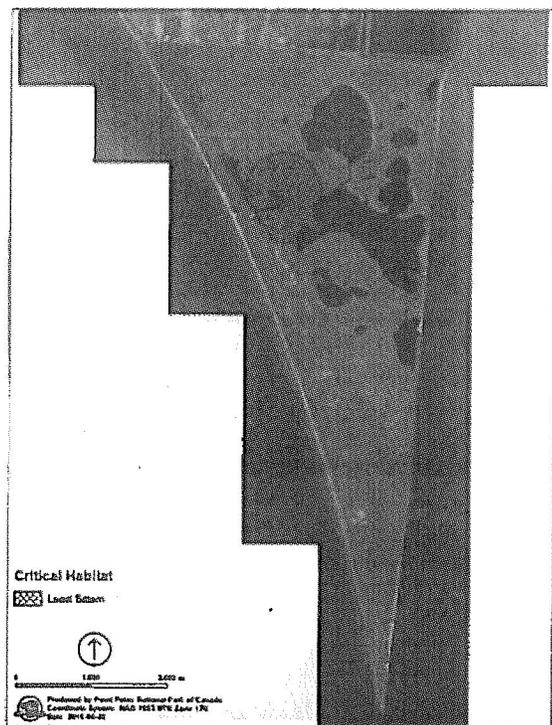
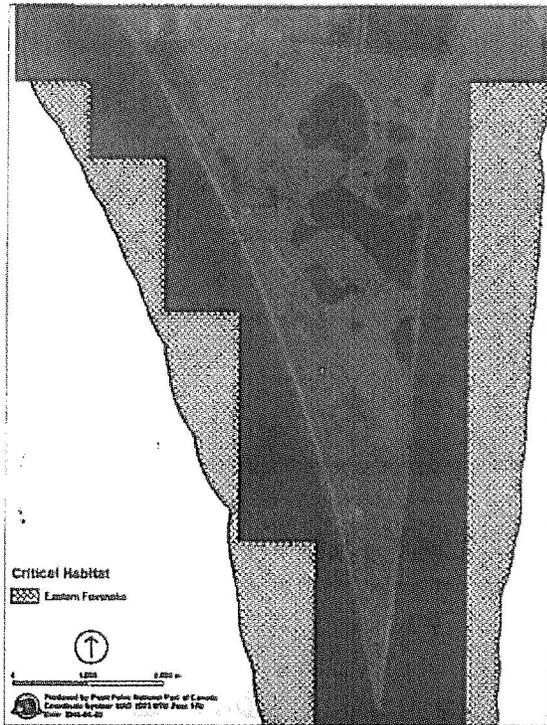
Prepared by: [Redacted] Resource Management Officer II – Impact Assessment Coordinator, PPNP	Date: 2018-01-24
Recommended by: [Redacted] Project Manager, Project Delivery Services - East; and [Redacted] Project Coordinators, PPNP	Date: 2018-01-24
Approved by: [Redacted]	Date: 2018-01-29
Signature: 	





Appendix 1 – SAR Critical Habitat Maps in the Phase 1 Marsh Boardwalk Renewal Area







Appendix 2 – SARA-Compliant Authorization Decision Tool

Date this document was completed:	Where this activity will occur:	SAR implicated by this activity:	Title of proposed activity:	Author of this document:	Collaborators involved in drafting this document:
November 2017	Marsh Boardwalk at PPNP	N/A	Marsh Boardwalk Area Renewal – Phase 1	Kelly Scott	Joanne Tuckwell

Part A – Does a SARA authorization need to be considered for this activity?

1. Will the activity lead to residual adverse effects that contravene a SARA prohibition for a listed endangered (En), threatened (Th) or extirpated (Ex) species at risk, its residence or its critical habitat?

SARA prohibitions: s 32 - Cannot kill, harm, harass, capture, or take individuals; possess, collect, buy, sell or trade individuals or parts of individuals; s 33 - Cannot damage or destroy residences; s 58 - Cannot destroy any part of critical habitat; s 80 - Cannot carry out an activity that is prohibited under a protection order.

Yes. Residual adverse effects of the activity will contravene a SARA prohibition.

2. Is the activity authorized under S. 83 of SARA?

Yes. A SARA authorization is NOT required. The activity is authorized in a recovery strategy or action plan; OR

Yes. A SARA authorization is NOT required. The activity is required for public safety, health or national security AND authorized by or under another Act of Parliament.

No. A SARA authorization is required. Continue to Part B.

Part B – Is the activity eligible for authorization under SARA?

****Complete ONLY if you have answered NO to Question 2, above****

3. Does the activity fall into one of the following three categories?

Select the appropriate box (check only one) and continue to Question 4 OR, If the proposed activity DOES NOT fit in any of the three categories below the activity CANNOT be authorized, and you can check the second box in Part C and submit for approval.

The activity is scientific research related to the conservation of the species and conducted by qualified persons; OR

The activity benefits the species or is required to enhance its chance of survival in the wild; OR

Affecting the species is incidental to the activity (i.e. the purpose of the activity is not to engage in an activity that is prohibited under SARA (e.g. kill, harm, harass...an individual; destroy a residence or critical habitat). For example, fishing for a listed species cannot be permitted, but accidental by-catch may be.

4. Alternatives that would reduce the impact(s) on the species have been considered and the best solution adopted

5. All feasible measures must be taken to minimize the impact of the activity

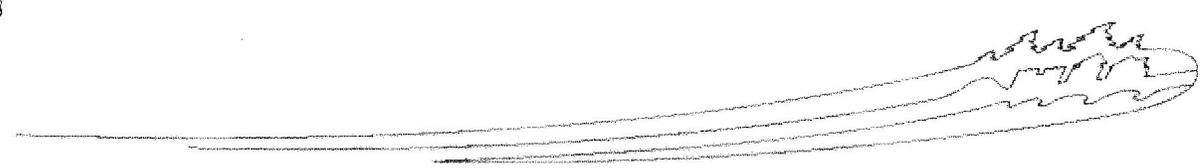
6. Will the activity jeopardize the survival or recovery of the species?

Yes. The activity CANNOT be authorized.

No. The activity CAN be authorized.

No. The activity CAN ONLY be authorized with the implementation of an offset to avoid jeopardizing survival or recovery of the species.

****Check the third box in Part C and submit for approval.****





Part C – SARA Authorization Decision
Select the appropriate answer and continue to Part D.
<input checked="" type="checkbox"/> This activity does not require a SARA authorization, as indicated in Questions 1 and 2.
<input type="checkbox"/> This activity requires a SARA authorization but cannot be authorized because it does not fit into one of the three required categories (see response to Question 3) OR it does not meet one of the SARA pre-conditions (see responses to Questions 4-6).
<input type="checkbox"/> This activity requires a SARA authorization and can be authorized (see response to Questions 3-6).

Part D - Prepare the SARA authorization and posting explanation
7. Prepare the authorization
8. Provide description for posting

Part E – SARA Authorization Recommendation and Approval	
Prepared by: [Redacted] Resource Management Officer II – Impact Assessment Coordinator, PPNP	Date:
Recommended by: [Redacted] Resource Conservation Manager, PPNP	Date:
Decision Approval	
Signature: 	Date: Jan 29, 2018

