REPORT ON THE STATE OF CONSERVATION OF

WOOD BUFFALO NATIONAL PARK WORLD HERITAGE SITE (CANADA)

Property ID 256

IN RESPONSE TO:
WORLD HERITAGE COMMITTEE DECISION 44 COM 7B.190

1 FEBRUARY 2022

Peace-Athabasca Delta, Wood Buffalo National Park - September 2020 (Photo: Parks Canada)

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List of Acronyms

AB: Alberta
AER: Alberta Energy Regulator
BC: British Columbia
CBM: Community-based Monitoring Program
CCVA: Climate Change Vulnerability Assessment
CEC: Committee for Environmental Cooperation
CMC: Cooperative Management Committee for Wood Buffalo National Park
DEM: digital elevation model
ECCC: Environment and Climate Change Canada
eDNA: environmental DNA
EFH WG: Environmental Flows and Hydrology Working Group
EIS: Environmental Impact Statement
FPTI: Federal-Provincial-Territorial-Indigenous
IAA: Impact Assessment Act
IAAC: Impact Assessment Agency of Canada
IK: Indigenous Knowledge
JRP: Joint Review Panel
KNWPP: Kitaskino Nuwenëné Wildland Provincial Park
LARP: Lower Athabasca Regional Plan
MCFN: Mikisew Cree First Nation
MRBB: Mackenzie River Basin Board
MSIKTT: Monitoring, Science and Indigenous Knowledge Task Team
National Park: NP
NWT: Northwest Territories
OSM: Oil Sands Monitoring Program
OSPW: Oil sands process-affected water
OUV: Outstanding Universal Value
PAD: Peace-Athabasca Delta
PCA: Parks Canada Agency
SOC: State of Conservation
SEA: Strategic Environmental Assessment
SDM: Structured Decision Making
SOAER: State of the Aquatic Ecosystem Report
TISGs: Tailored Impact Statement Guidelines
TMF: Tailings Management Framework
UNESCO: United Nations Educational, Scientific and Cultural Organization
WPP: Wildland Provincial Park

1.0 Executive Summary

This State of Conservation (SOC) report was developed by Canada and its Action Plan partners, and responds to the request of the World Heritage Committee in 2021 (Decision 44 COM 7B.190) to provide an update on the state of conservation of Wood Buffalo National Park (NP) World Heritage Site ("the property").

Wood Buffalo NP is Canada's largest national park and will be marking its 100th anniversary in 2022. The park is home to the largest free-roaming, self-regulating wood bison herd in the world, the only remaining, naturally-occurring nesting ground of the endangered whooping crane, the biologically rich Peace-Athabasca Delta (PAD), extensive salt plains unique in Canada, and some of the finest examples of gypsum karst topography in North America. The presence of such rare and superlative natural phenomena led to the park's inscription as Canada's eighth UNESCO World Heritage site in 1983.

Importantly, Wood Buffalo NP is located in the traditional territory of First Nations and Métis peoples of the region. Eleven Indigenous communities have traditionally relied on areas within Wood Buffalo NP to maintain their ways of life and all of those communities continue to see the lands and waters of Wood Buffalo NP as important to their cultural survival. Canada recognizes the rights of Indigenous communities within Wood Buffalo NP, while acknowledging that the park's establishment and management over the past century has caused hardship for Indigenous peoples. Canada has committed to a new relationship with the Indigenous peoples of Wood Buffalo NP and specific examples of that commitment are described in this report.

For many decades, a number of factors, most of which are located outside of the boundaries of the property, have threatened important elements of the park's Outstanding Universal Value (OUV). Most recently, the Committee expressed concerns about an absence of effective inter-jurisdictional water governance, lack of clarity on flow regulation that considers OUV, absence of an adequate risk assessment for the large tailings ponds upstream of the property, and uncertainty regarding long term resourcing for corrective actions. This report speaks to these issues, and incorporates the perspectives of government and Indigenous partners who are working collaboratively to protect Wood Buffalo NP.

Canada and its Action Plan partners are deeply committed to protecting the OUV of the property and to do so in a way that demonstrates stronger partnerships with Indigenous peoples. At the heart of this commitment is the Wood Buffalo National Park World Heritage Site Action Plan ("the Action Plan"), which was developed in response to the 2016 Reactive Monitoring Mission, and was informed by the 2018 Strategic Environmental Assessment for the property. The Action Plan is a comprehensive, multi-jurisdictional response to protect and maintain the OUV of the property. It is an ambitious and long-term plan, outlining some 140 actions across 7 thematic areas to be implemented by 2026, with ongoing actions to be implemented thereafter.

This report covers the period since the Action Plan was developed in 2019 through December 2021. During this period, Canada and its partners have been working collaboratively to address issues of concern raised by the Committee through advancing the Action Plan's implementation. Notable accomplishments include:

- Establishment of over 16,000 hectares in new protected areas adjacent to Wood Buffalo NP (since 2018) – resulting in the largest contiguous protected boreal forest in the world at over 60 million hectares;
- Parks Canada, Environment and Climate Change Canada (ECCC), the Government of Alberta (AB) and Indigenous partners in Fort Chipewyan are undertaking work to co-develop an integrated monitoring program for the Peace-Athabasca Delta (PAD); Parks Canada and Indigenous partners are also undertaking work to co-develop an integrated monitoring program for other areas of the property.
- The Indigenous communities of Fort Chipewyan have undertaken significant collaborative work to articulate and advance their vision of developing a monitoring and research initiative that could lead the delivery of the integrated monitoring program for the PAD.
- Parks Canada, ECCC, AB and Indigenous partners have collaborated on assessing existing and proposed water control structures for key areas of the PAD. Currently, the partners are advancing to the design and evaluation phase of two proposed water control structures, which are important means to improving water management to support ecological gains and improve Indigenous use and access in key areas of the PAD.
- Parks Canada and Indigenous partners are advancing work to transition to a stronger partnership of shared governance for Wood Buffalo NP, through collaboration within the Cooperative Management Committee (CMC) and bilateral engagement processes.
- The Government of Canada's commitment to ensuring that all current and future environmental assessments conducted pursuant to federal environmental assessment legislation explicitly consider potential specific and cumulative impacts of upstream development on the OUV of Wood Buffalo NP.
- The development of the Action Plan and its implementation is supported by $87.4 million (CDN) in federal funding until the spring of 2024.

At the time of writing, two-thirds (67%) of the identified actions detailed in the Action Plan are either completed or underway. This includes actions which are fully completed, or which are largely completed with some elements on-going, as well as actions that are being implemented (either in early stages or well advanced). A further 23% of actions in the Action Plan are "not due yet", meaning that either precursor actions are required for these to commence or they are not due to start yet according to established timelines in the Action Plan. Implementation delays (including those related to the COVID-19 pandemic) have affected 10% of actions which are considered "not started". Figure 1 provides an overview of the current status of all actions under the Action Plan. A list of all the actions in the Action Plan complete with the status of each can be found in Appendix B to the present report.

Action Plan Implementation Progress – Summary			
Completed Implementation is completed or initial implementation is completed with part of the action on-going.	Underway Implementation is underway and progress is being made.	Not Started Implementation has been delayed.	Not Due Yet Implementation is not yet due to begin.
25%	42%	10%	23%

Figure 1: Summary of Action Plan implementation progress as of December 2021.

This figure demonstrates the progress that Canada and its partners have made on Action Plan implementation to date. Canada considers this to be reasonable progress, taking into account the COVID-19 pandemic and other factors, while progress in some areas has been substantial.

The state of conservation for the property remains unchanged from the conclusions of the 2018 Strategic Environmental Assessment, which confirmed that while some elements of the OUV are stable or increasing, several of the desired outcomes for a number of these elements are not currently being met and that the trend direction for the PAD, a key element of the property's OUV, is negative (for additional details see section 2.2 of the present report titled *Update on Trends and Stressors Affecting Wood Buffalo NP's OUV*).

Canada and its partners are committed to making real and effective progress to address ongoing negative trends and to ensure the continued protection of the property's OUV for future generations. Efforts are focused on addressing issues relating to environmental flows, inter-jurisdictional water governance, environmental monitoring, partnerships with Indigenous communities, and other concerns identified by the Committee through a collaborative approach with federal, provincial, territorial and Indigenous partners.

The Government of Canada recognizes the scale and complexity of challenges facing the property, and remains committed to leading collaborative efforts with provincial, territorial and Indigenous partners to ensure the ongoing protection of the property's OUV for future generations. The Action Plan is a long term commitment developed specifically to address these challenges.

2.0 Wood Buffalo National Park: State of Conservation

This section of the report provides commentary on the state of conservation of Wood Buffalo NP. In section 2.1, Indigenous perspectives on the importance of the lands and waters of the property to Indigenous communities and their cultural way of life are presented. Section 2.2 presents an update on the stressors and trends for each element of Wood Buffalo NP's OUV, as related to key findings of the 2018 Strategic Environmental Assessment regarding the specific elements of OUV for which the site is inscribed.

2.1 Indigenous Perspectives on the State of Conservation of Wood Buffalo National Park

The Indigenous peoples who call Wood Buffalo NP home have known and stewarded this ecosystem, including many of its OUV elements, since time immemorial. This area, including the Peace-Athabasca Delta (PAD), forms the heartland of the First Nations and Métis homelands of northern Alberta and the southern Northwest Territories.

Because of their unique knowledge and the interrelationship between the site's OUV elements and the ways of life of First Nations and Métis peoples in the area, Canada recognizes Indigenous communities as essential partners in the implementation of the Action Plan and the management and governance of Wood Buffalo NP. In many ways, no entity, scientific or governmental, knows this landscape as well as Indigenous peoples. All partners in the Action Plan recognize that Indigenous leadership and continued engagement are critical to advancing reconciliation and the success of the Action Plan over the long term. While Parks Canada acknowledges that it has further work to do to build stronger partnerships

with the Indigenous communities of the area, this report seeks to reflect the perspectives of Indigenous partners in new and expanded ways from earlier reports, beginning with this section.

The establishment of the park in 1922 has significantly impacted how the 11 First Nations and Métis communities within Wood Buffalo NP are able to rely on the area to support their ways of life. Despite the promises of Treaty 8 that Indigenous peoples and their descendants could continue their livelihoods and "be as free to hunt and fish after the treaty as if they had never entered into it"[1], upon the park's establishment, traditional practices and harvesting were restricted in the park, and in some cases, prohibited; and many Indigenous families including the Métis, were expelled from the area. The formation of this park further severed Indigenous peoples from the stewardship of their lands, and the management of the park over the past decades has caused hardship for Indigenous peoples.

Against this background, Wood Buffalo NP continues to be important to the physical, economic, cultural and spiritual well-being of First Nations and Métis people in the region. Indigenous peoples are an integral part of the ecosystem within which they live. They are intimately familiar with its lakes, rivers, creeks, marshes, fish and wildlife, and seasons and cycles. Their detailed personal and historical knowledge of the park, their acute observational skills and the time First Nations and Métis spend travelling, hunting, trapping and fishing enable them to mark changes as they occur. In many instances, Indigenous peoples have noted changes that have resulted in a fundamentally altered relationship between their community members who depend on the PAD system and the PAD itself.

The First Nations and Métis people of the area regularly reiterate that water is fundamental to their ways of life and the protection of the OUV of Wood Buffalo NP. Ensuring there is clean, abundant water in the area has always been the first priority and concern for First Nations and Métis. Clean, abundant water is required for safe drinking, sustaining the ecosystem of the PAD, and enabling First Nations and Métis to travel freely throughout the area in winter and summer. First Nations and Métis explain that they have a responsibility for taking care of the *gift* that is water and the life that it supports, a value that aligns well with the World Heritage Convention.

The Indigenous peoples of Fort Chipewyan refer to the PAD as their home, their grocery store, their classroom, their medicine cabinet, their church, their highway, their photo album, and the place where their happiest memories live. For many Elders and land-users, how they think and how they see the world comes from the PAD.

> *We were all born in different areas out on the land… [in] the delta, that's why I love the delta so much… this is where you're born and it's such a beautiful feeling when you go out there. It's like going home.*
>
> *Mikisew Cree First Nation member*

Perspectives such as this one offer an important reminder that the Action Plan, and requests of the World Heritage Committee related to strengthening Indigenous partnerships and implementation of

[1] Report of Commissioners for Treaty No. 8. Winnipeg, Manitoba, 22 September 1899. Accessed 7 January 2022 at: https://www.rcaanc-cirnac.gc.ca/eng/1100100028813/1581293624572.

measures to address the decline of the property's OUV have very real linkages to the ability of the Indigenous communities in the area to support their ways of life.

During their involvement in processes arising from decisions of the World Heritage Committee, Indigenous communities have highlighted that the nature-based criteria for which the site was inscribed on the World Heritage List are narrower than holistic Indigenous worldviews. Specifically, through the process to develop the SEA, Indigenous partners stressed that considerations that were important to them require a broad interpretation of the natural criteria reflected in World Heritage concepts and processes. In the context of the SEA, this led Canada and the Indigenous communities to define desired outcomes for OUV elements that include: the recognition of treaty and Aboriginal rights; access to healthy lands and resources; the role of Indigenous peoples in ecosystem relationships; and the interconnection of all species to the ecosystem.

The Indigenous communities of the area remain deeply concerned that the state of conservation of the park continues to be in a perilous position and is not meeting a number of desired outcomes for OUV elements. The Indigenous communities of the area continue to urge Canada to ensure that there is the strongest foundation possible for achieving a future where the conservation status of the park is improved and where there are genuine partnerships with Indigenous communities. As described in later sections of this report, important discussions and processes, such as those relating to the Cooperative Management Committee for Wood Buffalo NP, proposed water control structures, and a unique research and monitoring partnership for the PAD, have advanced more concretely in 2021 and hold potential to assist with these efforts.

2.2 Update on Trends and Stressors Affecting Wood Buffalo NP's OUV

In its 2017 decision, the World Heritage Committee requested that Canada undertake a Strategic Environmental Assessment (SEA) of Wood Buffalo NP to better understand the potential threats from climate change, and proposed developments on the OUV of the property. This assessment was completed in 2018. The SEA used a "desired outcomes" approach to translate the three criteria for which the property has been inscribed on the World Heritage List, and the specifics of the OUV for each of these criteria (below) into elements of the property's OUV that can be measured over time.

- Criterion vii: "the great concentrations of migratory wildlife are of world importance and the rare and superlative natural phenomena include a large inland delta, salt plains and gypsum karst that are equally internationally significant."
- Criterion ix: "the most ecologically complete and largest example of the entire Great Plains–Boreal grassland ecosystem of North America, the only place where the predator-prey relationship between wolves and wood bison has continued, unbroken, over time."
- Criterion x: "the only breeding habitat in the world for the whooping crane, an endangered species brought back from the brink of extinction through careful management of the small number of breeding pairs in the park. The park's size (4.5 million ha), complete ecosystems and protection are essential for in-situ conservation of the whooping crane."

These desired outcomes helped to identify areas of focus for the Action Plan and are guiding the development of the integrated monitoring program for the OUV of Wood Buffalo NP that is subject to on-going collaboration with partners. It is this integrated monitoring program which will ultimately gather the key information required to undertake periodic assessments of the condition and trend of the OUV over the long term.

For each of the desired outcomes of the OUV elements, the SEA identified current trends and stressors, and indicated a trend direction using the green and red arrows seen below. Figure 2 denotes the OUV elements for the property as identified in the SEA.

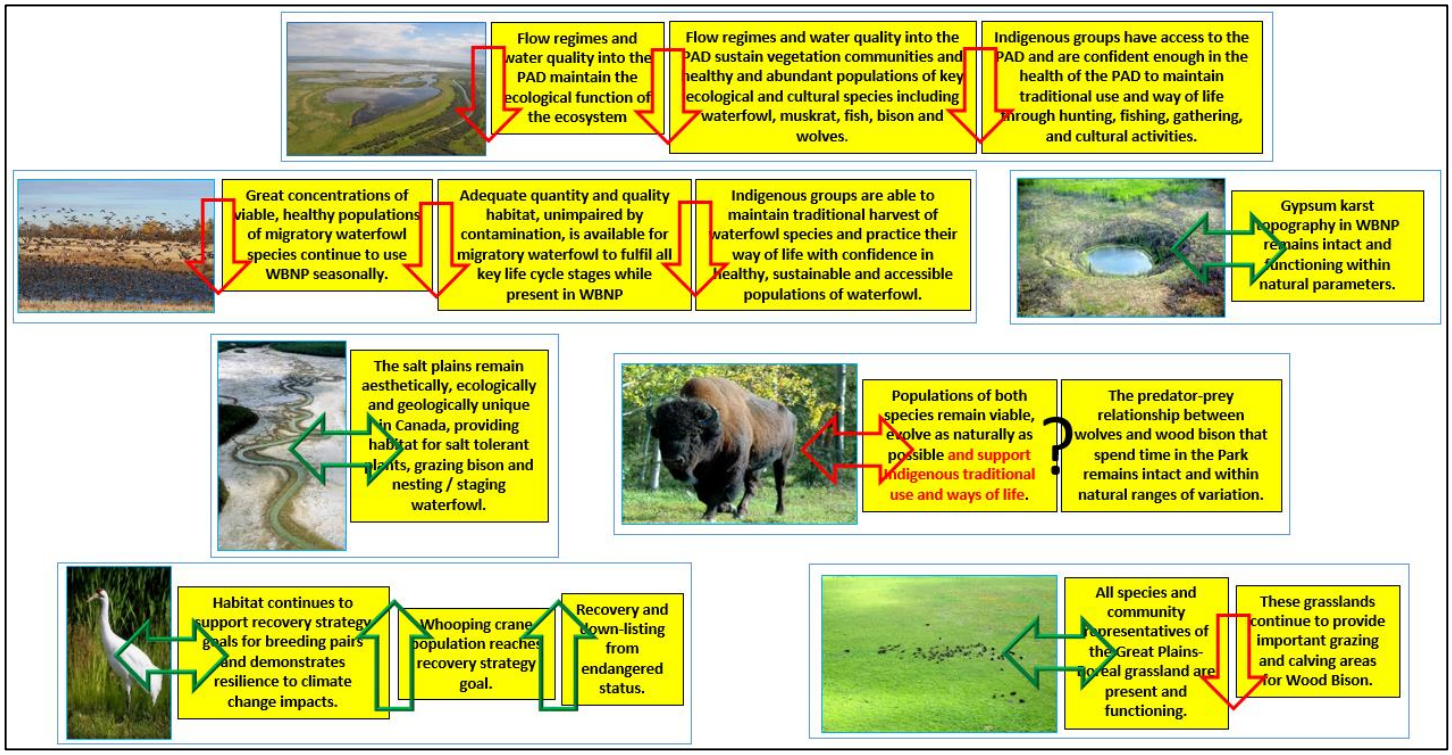


Figure 2: Desired outcomes and trends for OUV of Wood Buffalo National Park World Heritage Site. Source: SEA, 2018

Notably, the SEA concluded that the desired outcomes for the karst and salt plains are being achieved and that the trends related to these elements of the OUV are stable. Similarly, the SEA identified that whooping crane breeding range continues to expand, and that populations are continuing to increase, underscoring a positive trend for this OUV element.

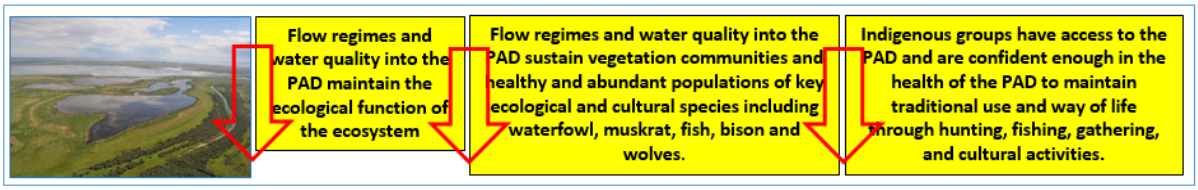
Conversely, the SEA identified that desired outcomes for three key elements of the OUV for which the site was inscribed are not being met, specifically for the PAD, migratory waterfowl, and the wolf-wood bison relationship. The SEA further identified that the grasslands are declining in extent and quality as a result of water recharge impacts in the PAD.

While the SEA remains the most comprehensive evaluation of OUV trends for the park, this section of the report provides a preliminary analysis of additional available data about the PAD, migratory waterfowl, Great-Plains Boreal grassland and the wolf-wood bison relationship which are the OUV

elements of greatest concern. The overarching influence of climate change on all elements of OUV is also discussed.

The integrated monitoring program being co-developed by Canada and Indigenous communities will support periodic assessment of condition and trend of OUV based on these desired outcomes. The Monitoring, Science and Indigenous Knowledge Task Teams within the framework of the Action Plan are working to identify indicators and measures using an approach which braids Indigenous Knowledge (IK) and science. This approach to implementation of a monitoring program aims to reflect the vision of the Indigenous communities regarding monitoring and evaluation of OUV trends. The full co-development and implementation of this monitoring program is anticipated to be completed in 2024, along with the establishment of a more formal partnership between the Government of Canada and Indigenous communities of the PAD which could support the monitoring program's implementation.

Peace-Athabasca Delta: desired outcomes and trends (SEA, 2018) and ongoing condition assessment.



The SEA identified flow regulation, water withdrawals, climate change and industrial development as key stressors that are negatively impacting the hydrology and water quality of the delta, and preventing achievement of the associated desired outcomes for the PAD. The monitoring program under development includes measures that will support periodic reassessments of the impacts of these stressors on the PAD.

These measures include remote sensing which is being deployed to provide a long term record of surface water extent in the PAD over time. Figure 3 indicates the general, long-term trend toward drier spring conditions in the PAD (since 1984, the first year of available satellite imagery) while also demonstrating the year-over-year variability that is naturally present in the system. Figure 4 is a visual representation of this data comparing water extent in 2016 (the year of the Reactive Monitoring Mission) with water extent following the spring and summer floods of 2020, showing the positive short-term impact of flooding on PAD hydrology and associated desired outcomes.

Furthermore, Indigenous knowledge holders report that the flood of 2020 was a welcome and needed event to fill dry or cleanse stagnating inland lakes. They note that the flood's ultimate ability to restore decades of drying trends and subsequent habitat loss is uncertain and that they continue to see indications that the drying trends in the PAD are ongoing. Navigational access to important harvest areas remains challenging as a result of declining water levels and Indigenous knowledge holders continue to report that quality habitat in the PAD that supports Indigenous ways of life is declining

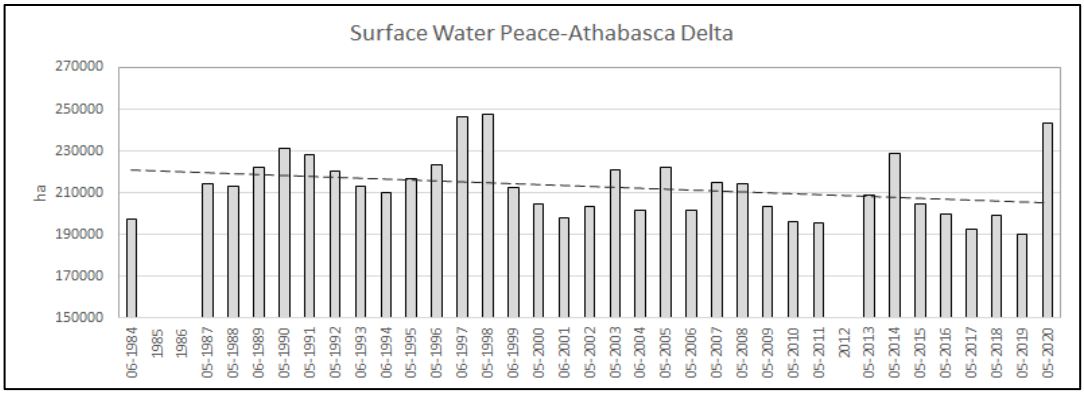


Figure 3: PAD surface water extent, 1984-2020. Global Surface Water (LANDSAT Satellite 30 m resolution) derived from May or June images of surface water within the PAD; linear regression trend (b=-432.6, p=0.08) presented. Source: Parks Canada.

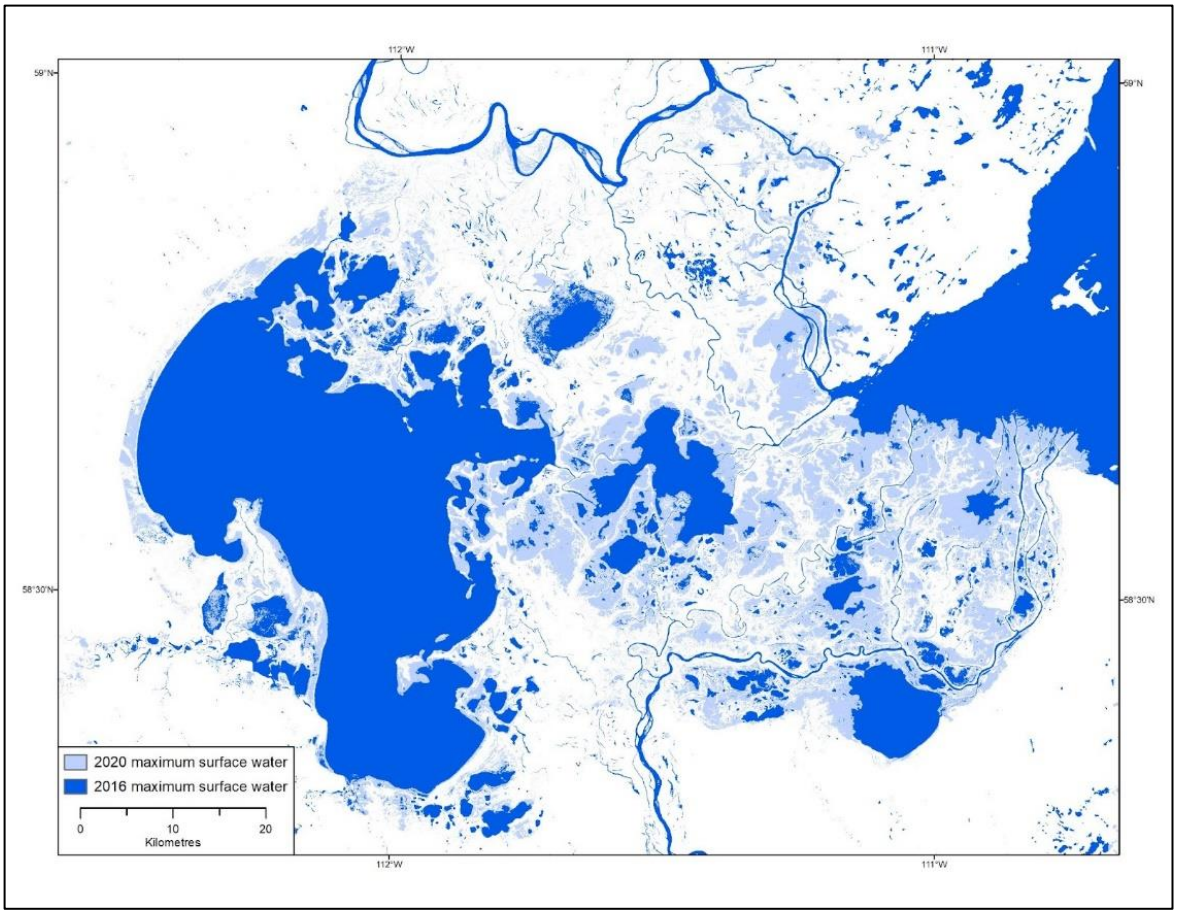


Figure 4: Preliminary comparison of PAD surface water extent, 2016 and 2020 (post-flood). 2020 flood waters detected with PLANET Scope satellite (3 m resolution; light blue) and the seasonal maximum surface water from 2016 using Global Surface Water (Landsat 30 m resolution; dark blue) - PLANET Scope not available in 2016. Source: Parks Canada

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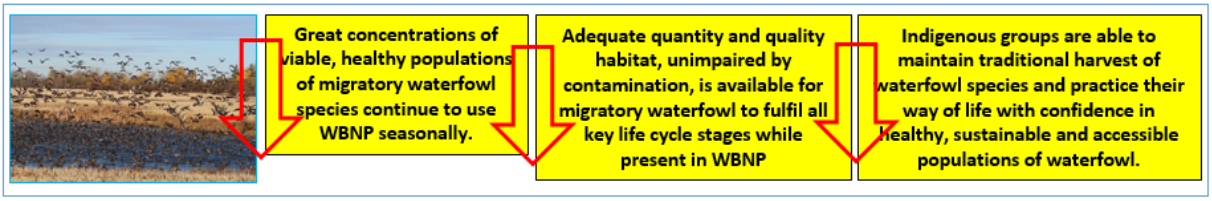
Great concentrations of migratory waterfowl: desired outcomes and trends (SEA, 2018) and ongoing condition assessment.



Waterfowl occurrence, abundance and diversity in Wood Buffalo NP is focused specifically on the PAD and results from the diversity and abundance of wetland habitats there. The SEA identified five key stressors and local pathways of effect for migratory waterfowl populations that underlie the SEA's assessment of declining trends in the desired outcomes related to this element of the OUV. These stressors are generally tied to water levels within the PAD and habitat conversion outside of the PAD and along local migratory pathways due to human activities outside of the park (i.e. oil sands development, agriculture, etc.), and include the following:

- Changes in habitat and food availability in the PAD;
- Exposure to contaminants in water, food and sediments in the PAD;
- Short-term exposures to contaminants in local migratory habitat;
- Changes to habitat and food availability in local migratory habitat; and
- Changes in local migration routes.

The monitoring program being developed includes measures allowing for periodic reassessments of migratory waterfowl occurrence, abundance and diversity in the PAD. Preliminary results are providing some insight into waterfowl abundance both over the short and long term. For example, annual counts of waterfowl undertaken since 1956 show a high degree of variability over time (with expected increases following flood events) with a slight (though statistically insignificant) negative trend in abundance of waterfowl overall (see figure 5). Analyses are underway to determine if stressors or habitat condition being monitored in the PAD are driving variability or any potential trend.

Furthermore, Indigenous elders continue to note a decline in waterfowl that they attribute to loss of emergent shoreline habitat and suitable goose grass for feed in the PAD, coupled with having to avoid the oil sands development on the migration route south of the park.

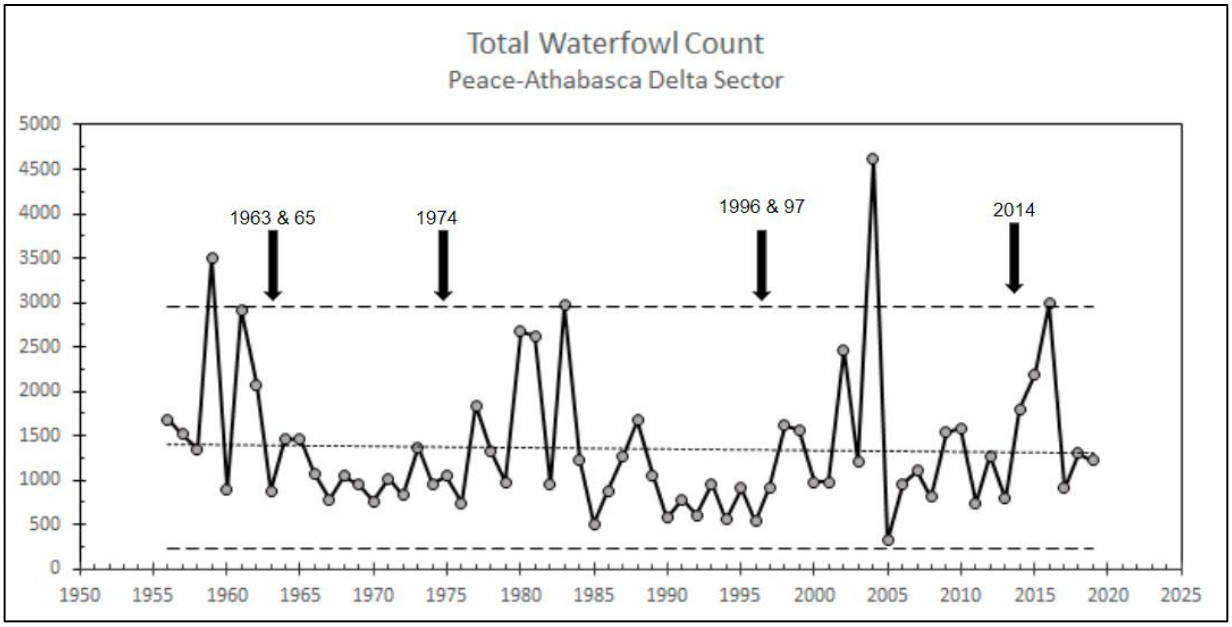
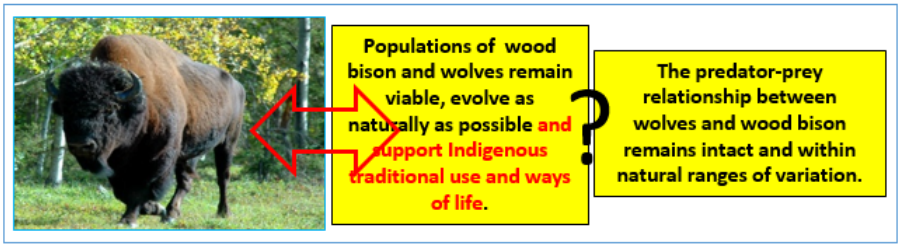


Figure 5: Total breeding waterfowl counts in the Peace-Athabasca Delta sector (#20) from 1956 - 2019. Data from Canadian Wildlife Service conducted in June each year. Dashed lines represent ±2SD. Linear regression not significant and presented for visual reference only (p=0.7). Black arrows show years with significant floods associated with ice jams. Source: United States Fish and Wildlife Survey (USFWS), Migratory Bird Data Center - https://www.fws.gov/birds/surveys-and-data/migratory-bird-data-center.php. (data accessed November, 2021)

Wolf-Bison Predator-Prey Relationship: desired outcomes and trends (SEA, 2018) and ongoing condition assessment.



The SEA identified four potential pathways of effects on the wolf-bison predator-prey relationship that underlie the SEA's assessment of the condition and trend of the related desired outcomes. These include habitat change resulting from drying and fewer flooding events; increased linear corridor density and habitat changes outside of Wood Buffalo NP; disease management and hunting outside Wood Buffalo NP; and changes in populations of other prey species.

Since the SEA's assessment, and with the flooding of 2020 (figures 3 and 4, above), the extent of water within the PAD bison habitat has increased. In addition, the decision by Teck Resources Limited to

withdraw the proposed Frontier Oil Sands Mine Project in 2020 has meant that linear disturbance outside of Wood Buffalo NP from industrial development has not increased in the last few years.

The establishment of a new protected area adjacent to the park and south of the PAD within a portion of the current range of the Ronald Lake bison herd has contributed to improved protection for this OUV element, although oil exploration and other industrial activities continue to be permitted within significant portions of the range of the herd outside of Wood Buffalo NP. Non-Indigenous hunting of the Ronald Lake bison herd continues to be prohibited.

The Ronald Lake bison herd is of key conservation interest, because it is not affected by tuberculosis and brucellosis like the Wood Buffalo NP herds. Ongoing separation of these herds continues to mitigate the risk of disease transmission. Figure 6 denotes results from GPS radio-collar data showing the continuing separation of these herds' ranges since 2013. Continued monitoring to understand the risk of disease transmission remains a key area of focus for Parks Canada and its partners.

Indigenous communities note that the desired outcomes for wood bison are not currently being met and that former bison habitat in the PAD has been degraded by the ubiquitous growth of Canadian thistle. While thecontinued disease-free status of the Ronald Lake bison herd is encouraging, communities remain concerned that the future prospects of the herd are uncertain.

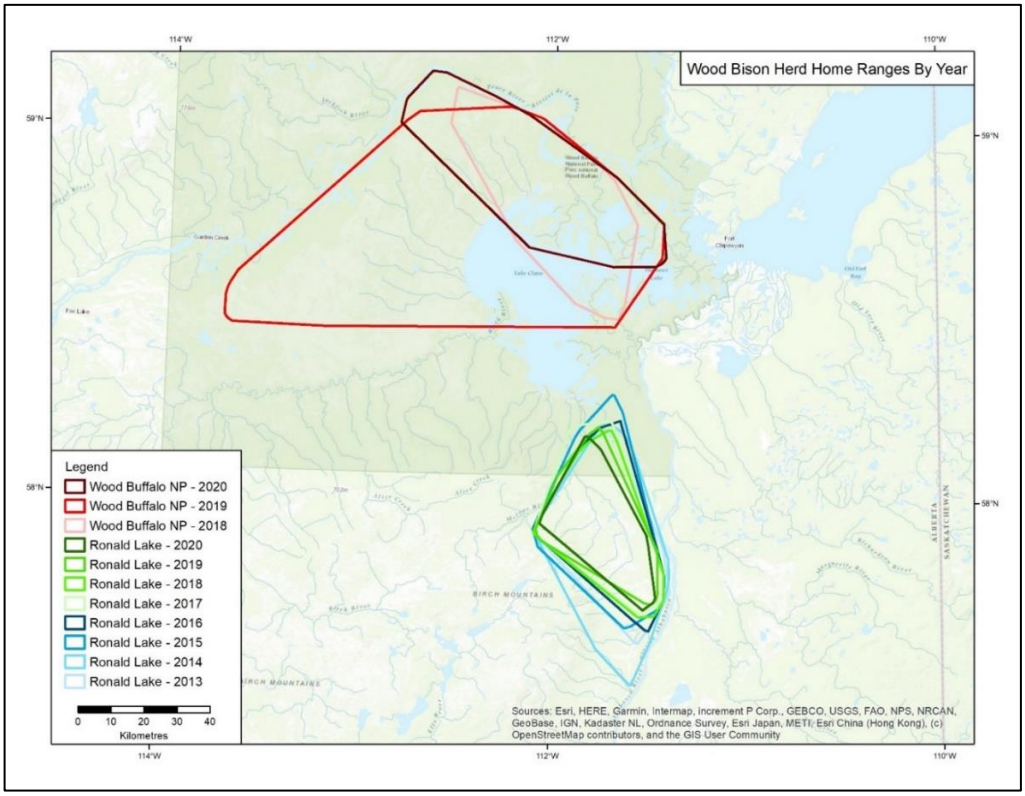
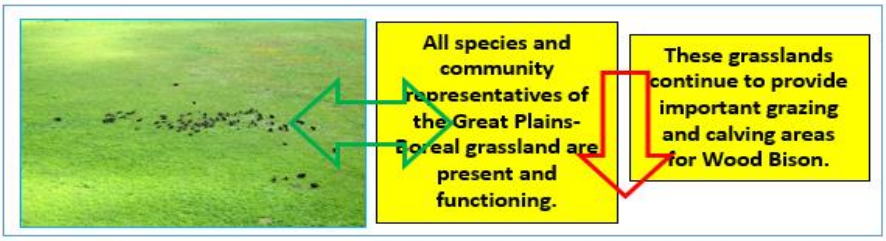


Figure 6: Ranges of the Wood Buffalo NP delta herd (red) and the Ronald Lake wood bison herd (blue, green), showing separation. Data from 2013 -2020. Source: data provided by Alberta Environment and Parks and Wood Buffalo NP, analysis conducted by Parks Canada, 2021.

Great Plains-Boreal Grassland: desired outcomes and trends (SEA, 2018) and ongoing condition assessment.



The SEA identified concerns about the ability of PAD grasslands to provide important grazing and calving areas for wood bison due to the long-term drying trend in the PAD and the resulting incursion of native willow and invasive thistle species. Both willow and thistle abundance increase as the time between flood events increases (and grasslands dry out), and decrease during the wetter conditions created by flooding.

The monitoring program under development includes implementation of a protocol that incorporates ground and remote sensing-based surveys to track changes in PAD vegetation cover (including these important grazing and calving habitats) over time. The baseline for this protocol was established in 2017 (figure 7) following the standard classification scheme employed across northern Alberta and the boreal regions of Canada. This protocol will confirm if wetter conditions created by the flooding of 2020 (figures 3 and 4, above) limit willow and thistle incursion into PAD grasslands while these conditions persist.

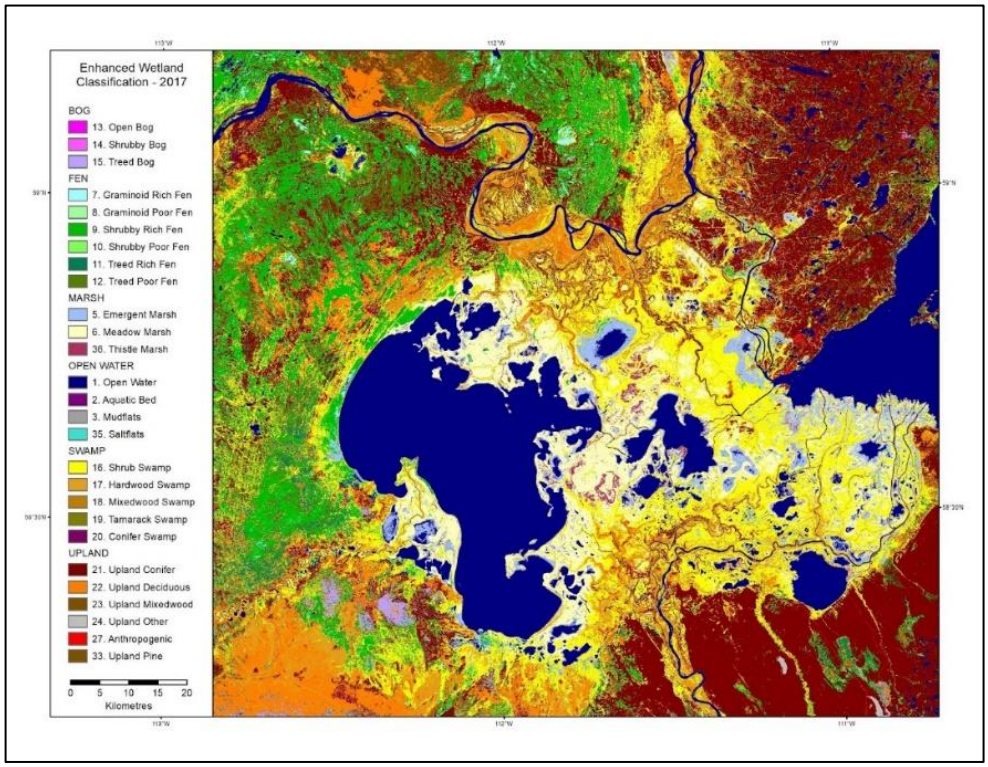


Figure 7: Enhanced wetland classification for the PAD, 2017. "Wood Buffalo National Park Enhanced Wetland Classification User's Guide." Source: Ducks Unlimited Canada, prepared for Parks Canada, 2019

Climate change and OUV

Climate change is having, and will continue to have, an impact on Wood Buffalo NP. Temperatures have increased in Wood Buffalo NP since the mid-20th century (figure 8), reflecting the increasing temperature trends generally across Canada's north (figure 9). Climate models predict warmer temperatures (figure 10) and increased annual precipitation (figure 11), with a shift toward drier conditions overall (figure 12) as evapotranspiration is predicted to exceed precipitation inputs.

To better understand the impacts of these changes on the property and its OUV, Parks Canada is undertaking a Climate Change Vulnerability Assessment (CCVA). This work is pursued in partnership with NatureServe and will apply leading edge methods to assess climate change vulnerability for wildlife,[2] habitats and ecosystems.[3] These CCVAs will incorporate IK and science to assess the exposure, sensitivity and adaptive capacity of OUV elements to climate change. Results will inform a range of actions including the design of the integrated monitoring program, monitoring objectives, indicators and targets, and landscape-scale connectivity assessments of the network of protected areas within the Wood Buffalo region.

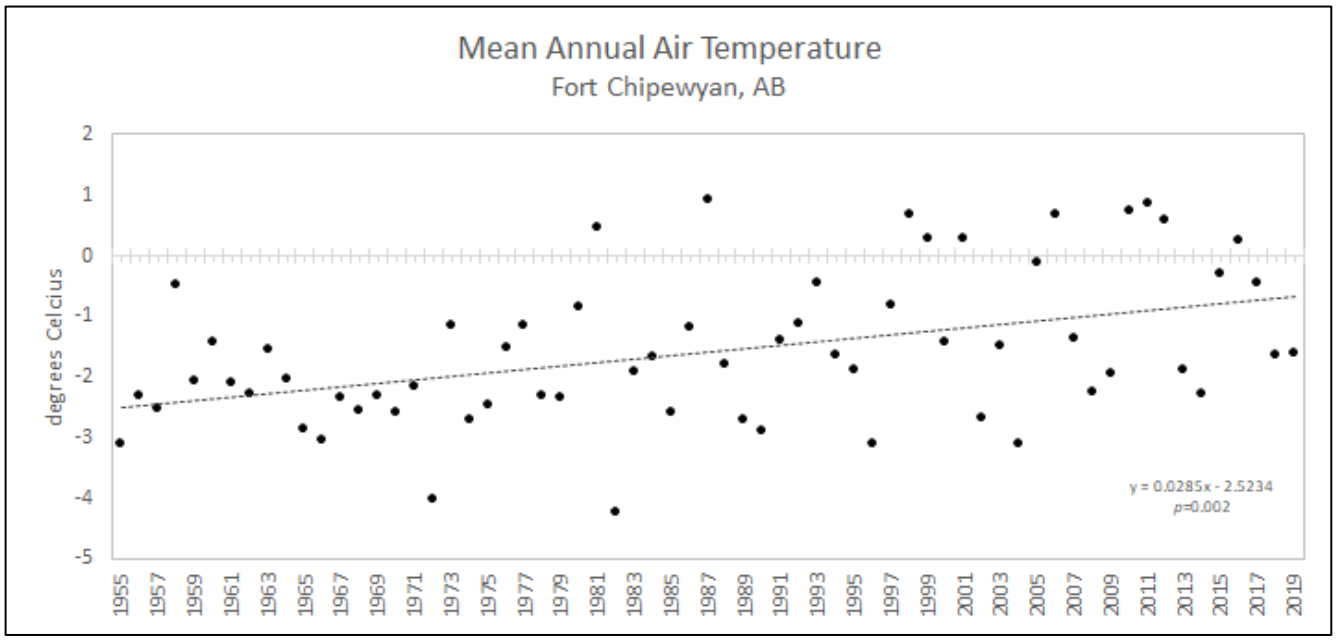


Figure 8: Mean annual air temperature measured at Fort Chipewyan, AB from 1955 to 2019. Linear regression trend line presented (p=0.002). Annual temperature increasing at 0.028 degrees per year over the sample period. Source: Environment and Climate Change Canada observed at Fort Chipewyan, AB. https://climate.weather.gc.ca/historical_data/search_historic_data_e.html (data accessed November, 2021)

[2] https://www.natureserve.org/ccvi-species

[3] https://www.natureserve.org/ccvi-ecosystems

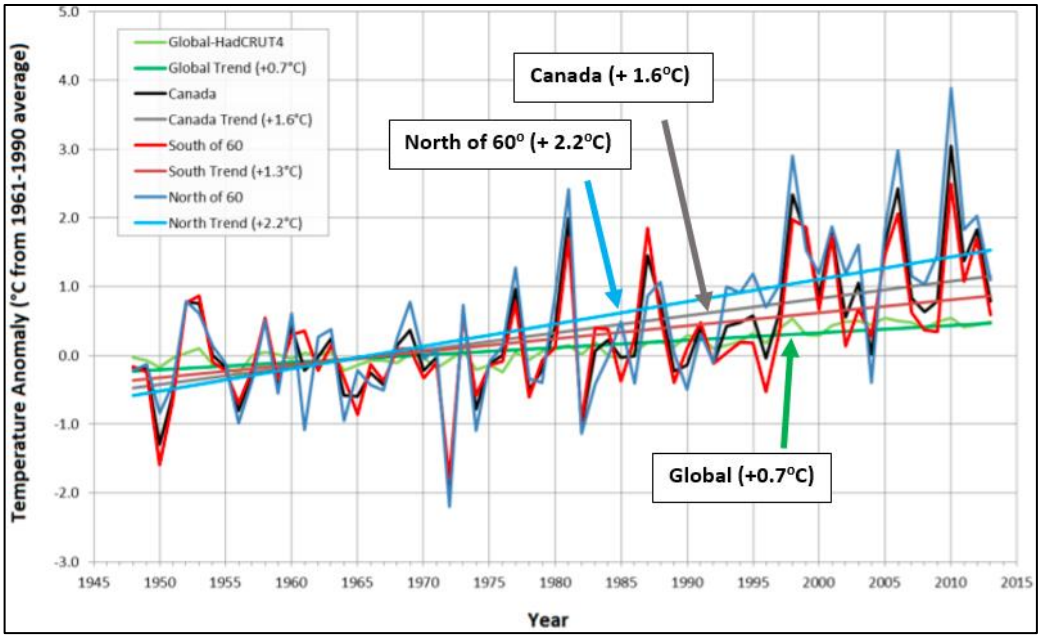


Figure 9: Temperature trends in Canada, 1948-2012. Climate data and scenarios for Canada: Synthesis of recent observation and modelling results. Source: Environment and Climate Change Canada, 2016 https://publications.gc.ca/collections/collection_2016/eccc/En84-132-2016-eng.pdf

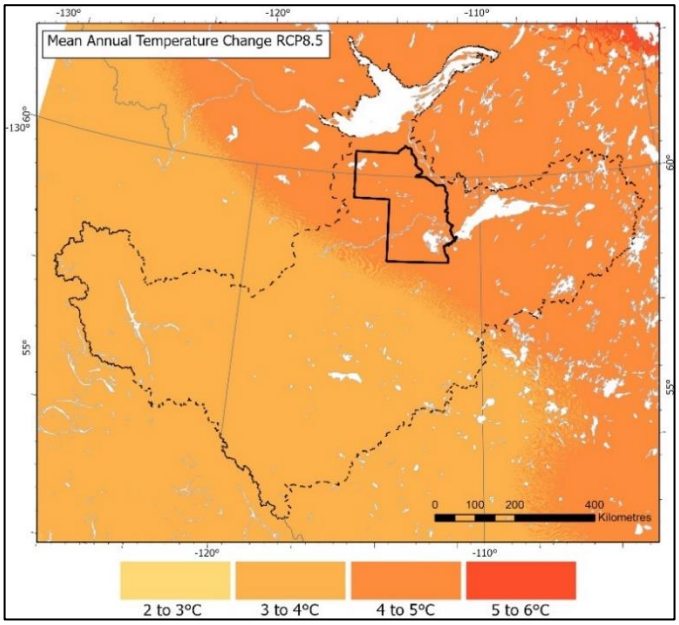


Figure 10: Predicted change in mean annual temperature at Wood Buffalo National Park from 1961–1990 to 2040–2069 from the Composite RCP 8.5 climate model. Source: Canadian Center for Climate Services, Wood Buffalo National Park Climate Projections, 2021. climatedata.ca

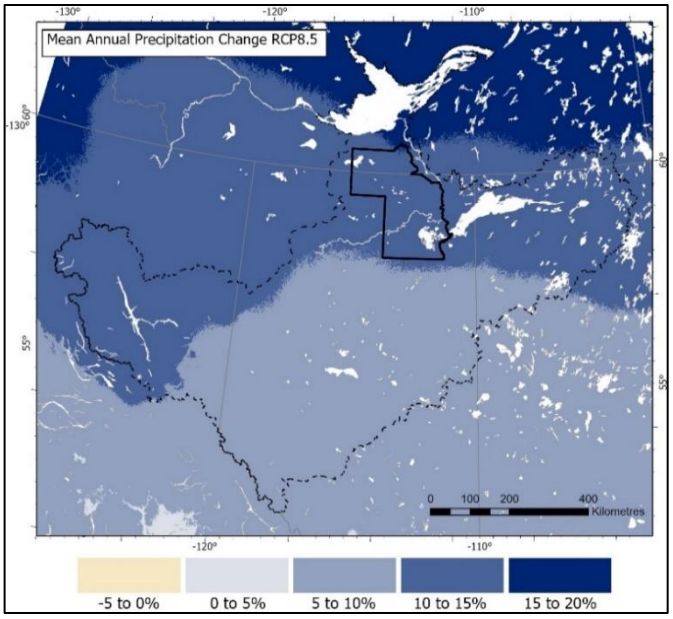


Figure 11: Predicted change in mean annual precipitation at Wood Buffalo National Park from 1961–1990 to 2040–2069 from the Composite RCP 8.5 climate model. Source: Canadian Center for Climate Services, Wood Buffalo National Park Climate Projections, 2021. climatedata.ca

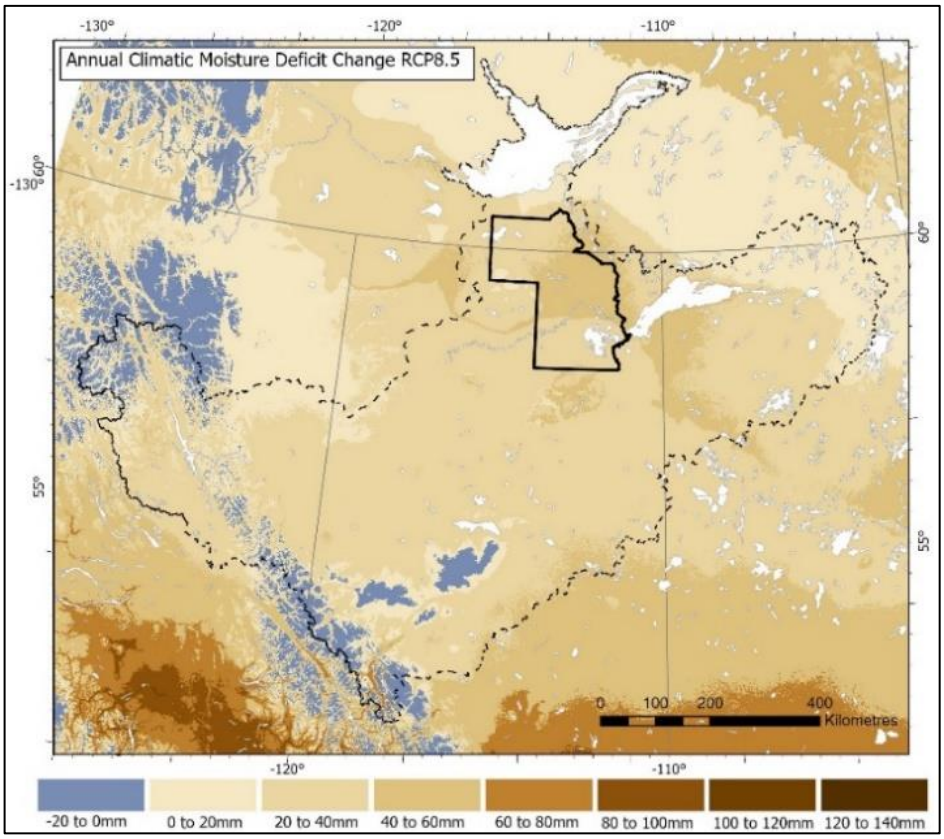


Figure 12: Predicted change in mean annual climatic moisture deficit at Wood Buffalo National Park from 1961–1990 to 2040–2069 from the Composite RCP 8.5 climate model. Source: Canadian Center for Climate Services, Wood Buffalo National Park Climate Projections, 2021. climatedata.ca

3.0 Overview of progress on Action Plan implementation

The main focus of the Wood Buffalo National Park World Heritage Site Action Plan is to address the threats to the property that were identified in the report from the 2016 Reactive Monitoring Mission, through a collaborative approach that brings together federal, provincial, and territorial jurisdictions and Indigenous partners. In its 2019 State of Conservation decision, the World Heritage Committee commended Canada for putting in place a well-structured Action Plan to address the major challenges affecting the property that was aligned with jurisdictional areas of responsibility.

The Action Plan recognizes the multi-jurisdictional nature of the conservation challenges impacting the property. The shared jurisdiction over natural resources in Canada requires cooperation and collaboration between different levels of government and with Indigenous peoples and stakeholders, which presents opportunities and also challenges. Actions are being advanced through collaborative initiatives with partners in support of the maintenance of the property's OUV, primarily through task teams and working groups comprised of representatives of Indigenous, federal, provincial, and territorial governments. Parks Canada, as the State Party representative for Canada to the *World Heritage Convention*, continues to work closely with Environment and Climate Change Canada (ECCC) and the Impact Assessment Agency of Canada (IAAC), with the governments of Alberta, British Columbia and the Northwest Territories, and with Indigenous partners to implement the Action Plan to ensure conservation of the property's OUV for current and future generations.

During the period covered by this SOC report, Canada and its partners have made progress in advancing specific goals under the Action Plan through the enhanced relationships developed between federal, provincial, territorial and Indigenous partnerss during Action Plan development and implementation. In providing an overview of this progress and the work to come, this report seeks to reflect and incorporate the perspectives of Indigenous partners, recognizing that Indigenous leadership and continued engagement is critical to advancing reconciliation and the success of the Action Plan over the long term. This report also describes how the results of the SEA and its "desired outcomes" approach are being used to identify areas of focus for the Action Plan and will guide the development of the integrated monitoring program for the OUV of Wood Buffalo NP.

The sub-sections below (organized according to the seven Action Plan themes) provide a summary of progress to date and highlights of recent work, building on the December 2020 SOC report. Responses to the specific requests of Decision 44 COM 7B.190 are presented in section 4.0. Appendix B classifies the status of each action in the Action Plan into the following categories: completed, underway, not started, and not due yet.

3.1 Strengthening Indigenous Partnerships in Wood Buffalo National Park

The First Nations and Métis relationship with the property has been significantly influenced by the park's establishment 100 years ago, whereby traditional practices and harvesting were restricted, and in the case of the Métis and some other instances, prohibited. This highlights the importance of meaningful

reconciliation and the importance of collaboration between Parks Canada and Indigenous partners in governance of Wood Buffalo NP.

The 2021 World Heritage Committee state of conservation decision requested that Canada *"Adopt a clear and coherent policy and guidance to enable the transition to a genuine partnership with First Nations and Métis communities in the governance and management of the property."* While the experiences and perspectives of the 11 Indigenous partners vary with respect to the park, they share such a "transition" as a common goal. Together they look for movement towards the Indigenous governance and management of the park.

A number of the Indigenous partners are also currently engaged in bilateral negotiations with Canada with the goal of addressing reconciliation and other long outstanding issues. Additionally, since 2014, Indigenous partners and Parks Canada have established the Cooperative Management Committee for Wood Buffalo National Park (CMC). The CMC is comprised of representatives from each of the 11 Indigenous partners in and around the park, and representatives from Parks Canada, and currently operates under a draft terms of reference, meeting primarily to share information.

The CMC jointly developed a hiring policy for the staffing of positions at Wood Buffalo NP which includes Indigenous participation on hiring boards. However, the Indigenous partners believe there is much more that can be accomplished in this area, particularly with respect to proactively supporting the development and strengthening of Indigenous applicants in advance of the recruitment process, as well as post-recruitment debriefing and follow-up. A similar proactive approach is required with respect to promoting meaningful opportunities for Indigenous participation in procurement.

The leadership of the Indigenous partners appreciated the opportunity in this past year to meet with Canada's Minister responsible for the Parks Canada Agency, and its President & CEO, to share perspectives and concerns, and identify actions.

The Minister acknowledged and apologized that Indigenous peoples have been negatively affected by the establishment and management of Wood Buffalo NP, and supported the pursuit of a model of shared governance for the park. Parks Canada's President & CEO has committed to following through with a number of initiatives and actions that are important to the Indigenous partners, including the following:

- *Strengthening Indigenous partnerships through shared governance.* Towards this goal, the Indigenous partners have designed a multi-step Indigenous-led process to first develop a shared vision and governance framework through a facilitated process, and then, working with Wood Buffalo NP, to implement such a shared governance framework.
- *Co-develop the new 10-year Wood Buffalo NP Management Plan.* Progress in this area will also support the development of a shared governance model for Wood Buffalo NP and provide the opportunity for Parks Canada to demonstrate its commitment towards a true co-management approach.
- *Work collaboratively with the Indigenous communities to continue to advance the work of the Action Plan through the CMC and Action Plan task teams*. The Indigenous partners will continue to participate in and contribute to the task teams and working groups and have made good

contributions. However, continued progress in this area will require commitments to stable and adequate funding for each of the Indigenous communities.

- *A commitment to advance development, training and mentorship opportunities aimed at increasing Indigenous representation in Wood Buffalo NP's workforce.* As previously noted, while acknowledging there has been some progress with the development of a hiring policy, the Indigenous partners observe that there is more that can be done to promote Indigenous candidates and higher levels of Indigenous representation at all levels of the parks administration and management.
- *Consideration of an Indigenous name for the park that better reflects the culture and people of the region.* While the re-naming of the park would be welcomed, it is only a part of broader and meaningful reconciliation actions that are required.

The Indigenous partners look forward to advancing the above initiatives, building trust and working collaboratively towards the successful implementation of the Action Plan. These commitments and objectives are shared by Parks Canada as well.

3.2 Environmental Assessment

The Action Plan includes several actions pertaining to impact assessment of specific projects in relation to the OUV of the property, including hydroelectric and oil sands projects upstream of the park. Many of these actions have been completed as described in the 2020 SOC report, while others are on-going. More broadly, the Government of Canada enacted new impact assessment legislation in 2019 which provides a strengthened process for assessing the impacts of federal designated projects, including positive and negative environmental, economic, health, and social effects of proposed projects, and impacts to Indigenous groups and the rights of Indigenous peoples.

<u>Withdrawal of Proposed Frontier Oil Sands Mine Project</u>

Teck Resources Limited withdrew its application for the proposed Frontier Oil Sands Mine Project on February 23, 2020. On February 25, 2020, Canada's Minister of Environment and Climate Change terminated the environmental assessment of the proposed project at the request of Teck Resources. Prior to this decision, Canada had undertaken a number of measures to ensure the impact assessment process would consider potential impacts on the OUV of Wood Buffalo NP, including the following actions:

- Submission of the SEA to the Joint Review Panel for the proposed Frontier Oil Sands Mine Project for consideration.
- Amendment of the Joint Review Panel Agreement for the proposed Frontier Oil Sands Mine Project to mandate the panel to consider and report on the potential environmental and cumulative effects of the proposed project on the OUV of Wood Buffalo NP, including on the PAD.

- Government of Canada evaluation of the potential effects of the proposed Frontier Oil Sands Mine Project on the OUV of the park and submission of this assessment to the Panel for its consideration in the environmental assessment.

Proposed Amisk Hydro-electric Project

The impact assessment for the proposed Amisk hydro-electric project proposal has not advanced since 2016 as the project is currently paused and the proponent has not yet filed its Environmental Impact Statement. Should the proponent decide to advance the project, Canada remains committed to amending the guidelines for the preparation of the Environmental Impact Statement report to include direct consideration of the OUV of the property, including the PAD. The impact assessment phase would likely take place over multiple years and the new amendments to the federal *Impact Assessment Act* will enable the Indigenous communities that intend to participate to have an enhanced role in that assessment with the federal government. At this stage, there is no new information to report to the World Heritage Committee on the status of this project.

Environmental Management Frameworks

A second goal of the Action Plan in the Environmental Assessment theme relates to the environmental management frameworks developed and established by the Province of Alberta for the areas south and east of the property. The area south of the property includes the oil sands region of Canada. Of the actions under this theme, Alberta reports that it continues to implement the Surface Water Quantity Management Framework for the Lower Athabasca River (the Framework). The objective of this Framework is to manage cumulative water withdrawals in support of both human and ecosystem needs, considering an acceptable balance between social, environmental, and economic interests. Annual reporting is completed on implementation of the Framework's weekly management triggers and associated water withdrawal limits, as well as the long term adaptive management triggers. Since the Framework came into effect, no water withdrawal limits and no adaptive management triggers have been exceeded. The most recent annual report, covering 2019, was released in 2021. In 2019, weekly water withdrawals by mineable and in situ oil sands producers from the Athabasca River were less than 3% of the measured flow during the winter period, and less than 1% of the measured flow during the open period. A work plan has been completed to address ecological knowledge gaps identified in the Framework, and Alberta notes that it remains committed to further collaborative work on the Indigenous navigation component of the Framework. In 2021, Alberta gathered input on the development of a surface water quality management framework for the Upper Athabasca Region that, together with the Lower Athabasca Region surface water quality management framework currently in place, will provide insights on the overall water quality and health of the Athabasca watershed, including the PAD.

Indigenous communities of the PAD note that actions in the Environmental Assessment theme of the Action Plan relating to provincial environmental management frameworks continue to be an area where progress has been very limited. Despite a number of years of effort, the Framework has not been amended to address issues relating to climate change, Indigenous navigation or the health of the PAD. As such, Indigenous communities in the PAD remain concerned that a key performance indicator for addressing negative trends in one of the major tributaries of the PAD, the Athabasca River, has yet to see any measurable outcome with respect to the protection of the park's OUV.

3.3 Conservation Area Connectivity

The establishment of protected areas adjacent to Wood Buffalo NP constitutes an added layer of protection for the property's OUV through provision of significant landscape buffers and connectivity to Wood Buffalo NP, and through complementary legal and/or customary restrictions placed on their use.

As reported in earlier State of Conservation reports, the establishment of Richardson, Birch River, and Kazan Wildland Provincial Parks (WPPs) adjacent to Wood Buffalo NP in 2018 by the Government of Alberta protects approximately 13,293 km^2 of provincial crown land, contributing to the largest contiguous protected boreal forest in the world. The Government of Alberta continues to work with Indigenous partners on cooperative management for these WPPs with the intent of providing advice to Alberta's Minister of Environment and Parks on park-specific management plans, including recommendations on issues that affect traditional use and cultural practices.

Additionally, in March of 2019, the Government of Alberta, Indigenous and industry partners, and the Government of Canada announced[4] the establishment of Kitaskino Nuwenëné Wildland (KNW) which protects an additional 1,619 km^2 of land immediately south of Wood Buffalo NP. This was an area of interest specifically noted in the report from the 2016 Reactive Monitoring Mission which urged additional protection. The most significant progress since then has been the advancement of a proposed KNW expansion by an additional 1520 km^2 in 2021. The proposed expansion is the result of collaboration between the Government of Alberta, Indigenous and industry partners, and the Government of Canada, dating back to 2019. The Mikisew Cree First Nation led collaborative work on a potential expansion, and several companies surrendered Crown mineral agreements to make the expansion possible. The Government of Alberta completed consultation and engagement on the expansion proposal in winter 2021 and Indigenous communities eagerly await Alberta completing the final steps to implement the expansion. Once the expansion is finalized, Indigenous communities intend to undertake habitat restoration activities in the western portion of KNW, in the Birch River watershed area.

WPPs are established for the conservation of nature and associated cultural features in a relatively undisturbed state. Nature-based recreation opportunities are supported in WPPs and focus on remote backcountry/wilderness recreation experiences, hunting and fishing, and experiencing nature with few if any amenities. Existing rights of Indigenous peoples are also respected in all WPPs, which (as described above) remain open to hunting, trapping, fishing and other traditional use activities.

The creation of KNW offers recreation opportunities for Albertans, and helps to protect the landscape, watersheds and area wildlife, including bison and caribou. The area includes many natural values important to Indigenous peoples' culture and well-being that have a direct relationship with the OUV of Wood Buffalo NP, and support the cultural relationship with bison. The KNW is intended to support the exercise of treaty and harvesting rights for First Nations and approved Métis harvesters, as well as other

[4] See joint collaborative announcement: https://www.alberta.ca/release.cfm?xID=6367953C8FBEC-FE83-2C83-E9BD4ABC60EEE5DA

traditional uses, including cultural activities, for Indigenous peoples. Alberta will work with Indigenous communities and organizations to explore cooperative management opportunities for the KNW.

Together, these provincially-designated areas, along with Wood Buffalo NP, comprise over 60 million ha (61,432 km^2) of protected area (figure 13). This constitutes the largest, contiguous, formally protected area of boreal forest in the world. This is a globally significant achievement which will continue to improve landscape connectivity for species and ecosystems, support ecological integrity of Wood Buffalo NP and the broader region, and will continue to provide improved protection for lands and species on which Indigenous peoples depend.

While celebrating the expansion of KNW, Indigenous communities continue to advocate for further expansion of KNW to include currently unprotected portions of the Buckton watershed and Ronald Lake bison herd range adjacent to the Athabasca River. A provincial protective notation continues to be applied for this area, indicating that it is being identified as a potential future conservation area. These wildland provincial parks contribute to the connectivity needs of wildlife, which Parks Canada continues to evaluate to guide conservation planning and management at the landscape scale.

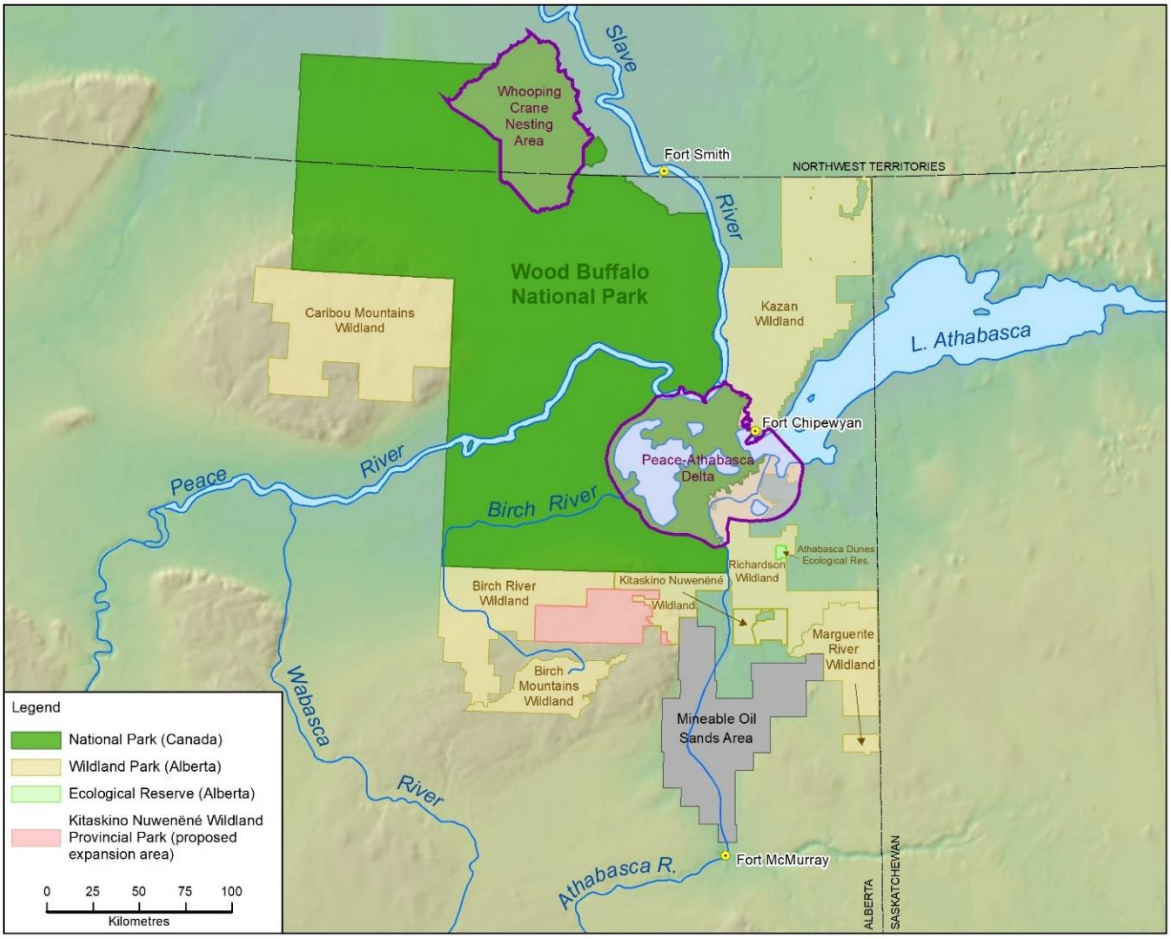


Figure 13: Kitaskino Nuwenëné Wildland Provincial Park and other provincial parks adjacent to Wood Buffalo NP.

Parks Canada continues work to identify the connectivity needs of wildlife represented in the OUV of the property, in order to guide conservation planning and management at the landscape scale. Connectivity needs assessments will target elements of OUV that represent specific species that are known to use existing and proposed protected areas adjacent to Wood Buffalo NP (wood bison, whooping crane) as well as OUV elements that represent major park ecosystems and other priority species (other species at risk, or species of conservation concern and/or of cultural importance to Indigenous peoples). These assessments will be based on emerging pan-Canadian standards and indicators for landscape connectivity through the National Connectivity Working Group (https://www.conservation2020canada.ca/home). Connectivity needs will also consider habitat and species range shifts through a partnership with NatureServe and the application of an updated "Habitat Climate Change Vulnerability Index" protocol (https://www.natureserve.org/ccvi-ecosystems).

Indigenous knowledge and engagement on habitat identification and mapping that will link to this theme will be led through the Monitoring, Science and Indigenous Knowledge Task Teams with coordination of knowledge gathering to be supported by community-based Indigenous Knowledge Coordinators and will include interviews and on-the-land knowledge gathering sessions targeting elders, land users and youth. If possible given COVID-19 restrictions, this work will be supplemented by workshops involving both science and Indigenous knowledge holders to promote knowledge integration and enhance the quality of the connectivity assessments. To support this work, an updated and expanded land cover map was developed in 2021 to represent the surrounding sub-basin watersheds (figure 14). An Indigenous knowledge-based version of this base map will be produced and used for upcoming connectivity assessments.

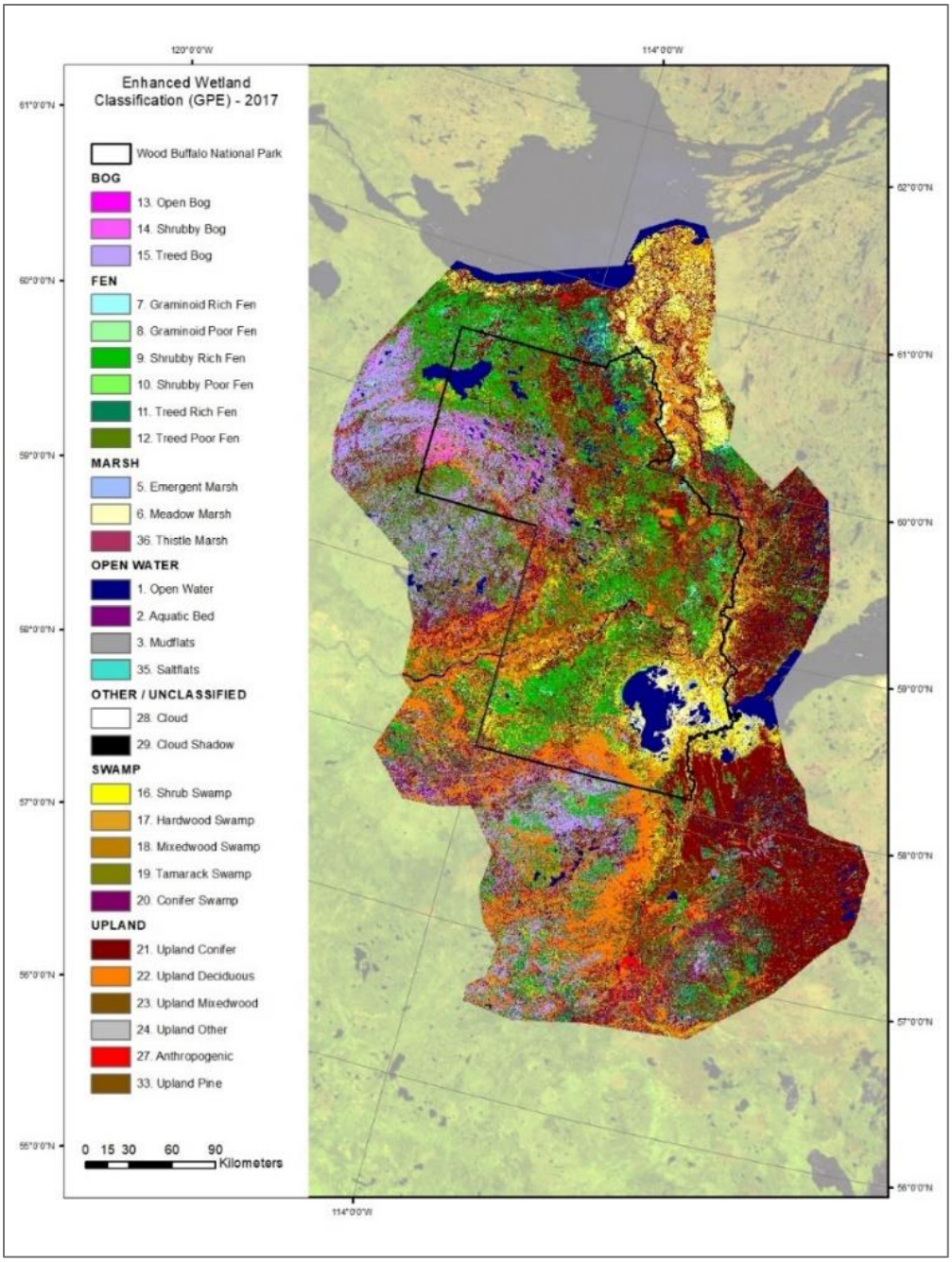


Figure 14: Newly developed enhanced wetland classification map for Wood Buffalo National Park's greater park ecosystem (GPE) based on sub-basin watershed boundaries. This map, developed in 2021, is based on 2017 satellite imagery to be consistent with available land cover data. Source: Parks Canada

3.4 Environmental Flows and Hydrology

The Environmental Flows and Hydrology theme encompasses a broad and varied set of actions. Actions within this theme are implemented by the multi-jurisdictional Federal-Provincial-Territorial Indigenous (FPTI) Committee and its supporting task teams (comprised of federal, provincial, territorial and

Indigenous representatives). The FPTI Committee is also supported by a secretariat consisting of representatives from Environment and Climate Change Canada (ECCC) and Parks Canada.

Key aspects of this work depend on strengthening relationships and building capacity in a respectful and effective way in order to maximise the collaborative delivery of the Action Plan commitments. As described in figure 15 below, the actions within this theme are directed and informed by the values and objectives of Indigenous partners and other stakeholders, and by understanding created through the braiding of IK and science.

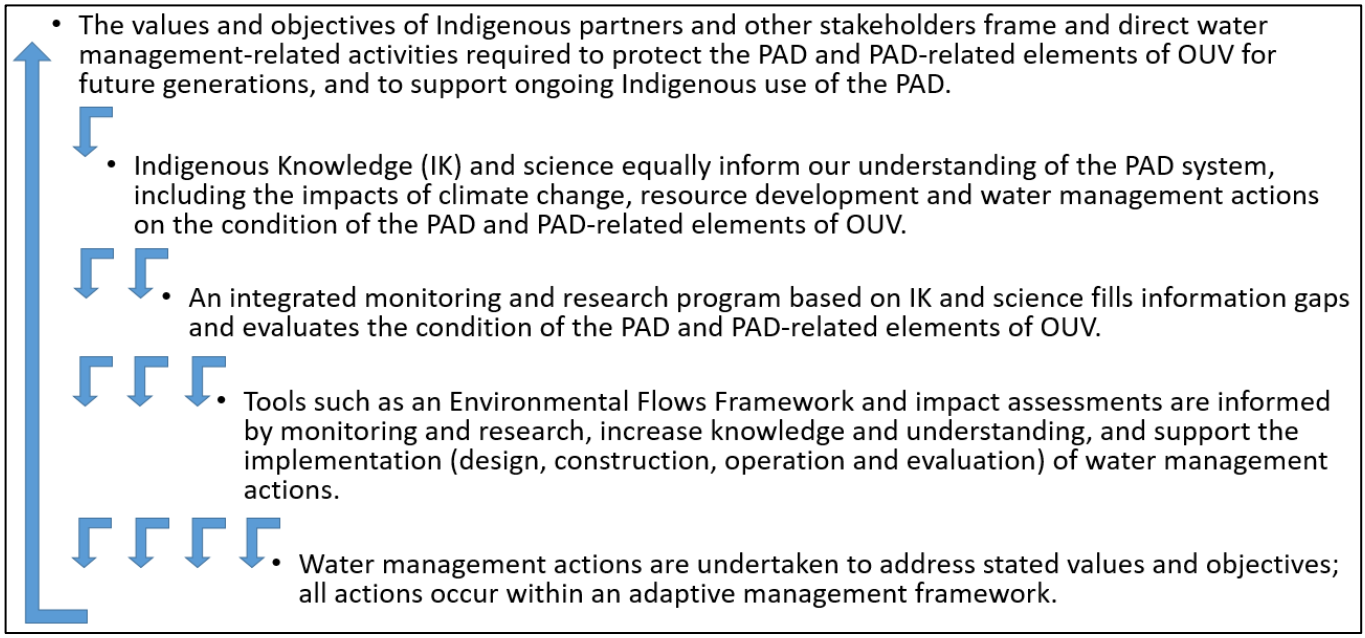


Figure 15: Values and knowledge-based approach to implementation of environmental flows and hydrology theme actions.

Much of the environmental flows and hydrology-related work in 2021 focused on designing and refining processes to support Action Plan partners for effective engagement in the next 1-2 years on implementing actions that address negative trends with the PAD and other OUV elements. The development of effective partnerships and collaboration on important foundational tools and processes is key to being able to drive the implementation of this theme. Efforts to build those partnerships in a multi-jurisdictional setting continue. These activities include the identification and acknowledgement of values and objectives, the creation of a shared base of knowledge and understanding through the braiding of IK and science, and the development and application of tools that support informed, defensible and transparent decision-making. All of these foundational activities in turn support the shared objective of Action Plan partners to develop momentum on the development of water quantity management options and in support of informed decision-making.

Acknowledging values and objectives:

The PAD is a complex multi-jurisdictional setting and consideration needs to be given to various, sometimes competing, values and objectives of the FPTI partners. Indigenous partners requested a third party consultant be hired with expertise in Structured Decision Making (SDM) to support decision making informed by a shared understanding of cultural, ecological and socio-economic values. SDM is a process and set of tools for supporting informed, defensible and transparent decision-making and can support identifying preferred management approaches and priorities. The consultant connected with participating FPTI Committee members in a planning exercise as an initial step towards a process for discussions relating to a strategic flow release protocol for the Peace River and for upcoming work relating to potential water control structures.

Recommendations resulting from the report developed in that process, *Environmental Flows and Hydrology Case Studies: Applying Structured Decision Making to the Wood Buffalo National Park Action Plan,* are being incorporated into the design of processes that are planned for 2022 relating to upcoming design work for water control structures and multi-jurisdictional engagement on the development of a strategic flow release protocol. SDM will be utilized in upcoming work with federal, provincial, territorial and Indigenous partners to support decision-making that is values-based, transparent and efficient, through dialogue and constructive debate informed by the best available information on how to braid IK and science.

Co-developing a base of knowledge and understanding:

The meaningful inclusion of IK in the implementation of the Action Plan is critical to its success. This requires careful consideration of best practices regarding the collection, sharing, and use of IK, and the braiding of IK and science.

Indigenous partners and knowledge holders have been provided with additional capacity to more fully support their engagement and the collection, sharing and use of their IK. The coordination of knowledge gathering is being led by Indigenous partners and is supported by funding for new Indigenous Knowledge Coordinators. Indigenous Knowledge Sharing and Use Agreements, co-developed by representatives from First Nations and Métis communities and the Government of Canada, are being put in place to protect the sharing and use of their IK. Furthermore, ECCC and the Parks Canada Agency (PCA) are working in partnership with Indigenous governments to explore approaches to braiding IK and science in the environmental flows framework (see below) and in assessment and reporting for actions under the Monitoring and Science theme.

Indigenous communities in the PAD have identified an opportunity to implement various actions in the Action Plan, including the establishment of a Knowledge Hub to make information about the PAD, including scientific data and IK more accessible, in a manner that is Indigenous-led and strengthens federal-Indigenous partnerships relating to decision-making on water management. Canada is working closely with Indigenous partners to further develop this initiative, which the communities have called the Peace Athabasca Delta Institute. Canada supports the vision for this initiative, which is to establish an Indigenous-led center for braided IK and science that can provide information to support conservation and management of the PAD. Key actions currently underway include co-designing a work

plan to assist with establishing a knowledge hub and co-developing principles and approaches to support this collaboration.

Co-developing and applying tools

The Action Plan contains many initiatives that, individually and collectively, are intended to provide new tools to facilitate various management measures in a complex multi-jurisdictional environment aimed at addressing the negative trends with the Peace Athabasca Delta.

A focus of work in 2021 has been on advancing foundational steps to support a long term effort to build a basin-wide, holistic, inter-jurisdictional environmental flows framework to inform and guide water management in the PAD to achieve outcomes for ecological, hydrological, geomorphological and social-cultural integrity, and the exercise of Aboriginal and treaty rights.

An environmental flows framework is a values-based environmental and social process and decision-making tool addressing how water is distributed across the entire PAD system and is informed by braided IK and science. The framework can be used to guide the recommendation of specific flows, water levels, and/or surface water extents to restore or maintain ecological and socio-cultural objectives. Ecological and hydrological/hydraulic models are tools that form key parts of the framework, and will be used to assess how well different water management scenarios can meet these objectives. To progress this hydrodynamic modelling, ECCC is leveraging partnerships with existing federal, provincial and academic expertise and capacity. Work is advancing toward a comprehensive understanding of the physical hydrology of the PAD, particularly floodplain connectivity. For example, an updated digital elevation model (DEM) of the PAD is now available that will not only assist in Action Plan work, but is intended to be shared with Indigenous partners who can utilize it in the stewardship of their traditional territories.

Canada and its Action Plan partners are committed to co-designing the framework beginning with the engagement of communities to identify the specific values and objectives that will guide the framework's development (see "Acknowledging values and objectives" section, above). Work has commenced with Indigenous partners to articulate the process and areas of shared responsibility for advancing the application of the environmental flows framework. International expertise in water management and environmental flows is being leveraged to explore available knowledge and data to support the framework's development.

Taking Action

The Action Plan envisions the use of water control structures in the PAD as part of a suite of options to create hydrological conditions that support ecological functioning and Indigenous use, and this is a set of actions that Canada and its Action Plan partners have prioritized. The specific design, construction, and operation of these structures will be guided by a shared understanding of the values and objectives of the FPTI partners, informed by braided knowledge and supported by co-developed decision-making tools as part of the environmental flows framework.

Water control structures are being designed for two locations within the PAD. A contract to develop preliminary and detailed designs, as well as impact assessments for the Dog Camp and Big Egg Lake water control structures is expected to be awarded in March 2022. PAD First Nations and Métis partner representatives have participated in the contract Terms of Reference development, and are engaged in the bid evaluation processes. After contract award, these partners will work very closely with the contractor, Parks Canada and ECCC to ensure that IK and local perspectives inform the design of these water control structures.

First Nations and Métis representatives from the PAD and downstream communities will participate in a SDM process (see "*Acknowledging Values and Objectives"*, above) to transparently co-define the values, objectives (ecological and cultural) and operational regime associated with the Dog Camp structure. Indigenous partners are being provided capacity support to engage at a community level and contribute relevant IK related to fish, wildlife and biodiversity, water quality, water quantity, cultural resources, access and navigation (see "*Co-developing a base of knowledge and understanding"*, above) that will inform the structure design and assessment processes (see "*Co-developing and applying tools"*, above).

3.5 Monitoring and Science

Monitoring, Science and Indigenous Knowledge Task Teams (MSIKTTs) are established and are advancing actions outlined in the Action Plan. These task teams (one focused on the PAD and the other on non-PAD OUV elements) are comprised of representatives from federal, provincial, and territorial governments and Indigenous partners.

These task teams, through a co-development process, have identified priority actions and work plans, with the focus of upcoming work directed at co-developing integrated research and monitoring programs for PAD and non-PAD related OUV elements. Canada and Indigenous partners also share objectives, articulated by the PAD Indigenous communities, that the PAD integrated monitoring program be co-developed with Indigenous communities. Indigenous communities' support for the monitoring program is a key indicator of success.

The Indigenous communities of the PAD have undertaken a significant amount of work, in consultation with the federal government, to define and advance their aspirations relating to monitoring and science in the PAD. These Indigenous communities are developing a Peace Athabasca Delta Institute as the centrepiece of their vision for enhancing PAD research and monitoring programs. They have completed a legal structure, a governance arrangement and other foundational work to bring this vision to a point where Parks Canada, ECCC and Indigenous partners of the PAD are exploring opportunities for the implementation of key monitoring and research elements through Indigenous leadership. The Indigenous communities of the PAD have expressed considerable optimism and enthusiasm about discussions around the proposed Peace Athabasca Delta Institute with Canada, and how that vision may relate to the delivery of the integrated PAD monitoring program. Discussions to date have been productive and represent a significant opportunity to strengthen partnerships and support protection of Wood Buffalo NP's OUV through the Action Plan's implementation.

Key highlights of actions completed since the 2020 SOC report under this theme of the Action Plan include:

- A significant component of the PAD Integrated Monitoring Plan has been prepared in draft. Collaboration is on-going with PCA, ECCC and Indigenous partners to further the co-development of the Plan.
- Active compilation of PAD ecological, chemical, and physical data of potential monitoring indicators available from the Oil Sands Monitoring, ECCC, Alberta Environment and Parks (AEP) and PCA and university researchers;
- Geo-referenced active and past PAD monitoring plus research sample site locations have been obtained and compiled within the PAD wetlands, lakes and rivers. This data contributes to the evaluation and design of the detailed draft PAD integrated monitoring program considering individual hydrological and ecological indicator parameters;
- Completion of a feasibility assessment for the design of an acoustic tagging-based monitoring program to study the movements of fish from the PAD to the oil sands mineable area;
- Completion of collaborative spring river ice breakup monitoring in the Peace and Athabasca river corridors in 2020 and 2021; and
- Completion of water level monitoring in the PAD at 50+ wetlands and lakes in 2020 and 2021.

As reported previously in the 2020 SOC report, other important components of work completed or on-going include:

- Completion of an updated inventory of research and monitoring programs and projects in the PAD, including those incorporating Indigenous knowledge;
- Completion of an Enhanced Wetland Classification (EWC) for Wood Buffalo NP. This EWC provides baseline mapping for the Monitoring and Science theme actions and supports habitat and connectivity assessments for the Conservation Area Connectivity theme;
- Development of an invasive vegetation and plant community species monitoring program for the PAD area and the Salt Plains;
- Completion of a 35-year surface water assessment of the approximately 5000 perched basins in the PAD;
- Initiation of an analysis of waterfowl species and guild abundance to link trends to patterns of surface water extent in the PAD;
- Collaboration with academic partners to use eDNA to more effectively monitor trends in fish health, abundance and diversity throughout the PAD system; and
- Development of Indigenous knowledge gathering and engagement efforts on the health of OUV through community-led “knowledge camps”.

3.6 Wildlife and Habitat Conservation

Initiatives outlined under the Wildlife and Habitat Conservation theme of the Action Plan are focused on wood bison and whooping cranes, two of the key OUV elements of Wood Buffalo NP. These actions, which are underway at the time of writing, are aligned with Canada and Alberta’s obligations under the *Species at Risk Act* in Canada. In support of species recovery for wood bison, critical habitat identification for the Ronald Lake bison herd outside of Wood Buffalo NP was initiated in summer 2020

with anticipated completion in 2023. Critical habitat within Wood Buffalo NP is protected through the *Canada National Parks Act* and the federal *Species at Risk Act*.

Wood bison in and around Wood Buffalo NP have been infected with bovine tuberculosis and brucellosis since the 1920s and pose an ongoing risk of disease transmission to cattle and ranched bison in Alberta, as well as to disease-free conservation herds in Alberta and the Northwest Territories. The percentage of bison that are infected has remained relatively consistent since the 1950s. Parks Canada continues to monitor population size, distribution, productivity and health of wood bison herds in Wood Buffalo NP using aerial and ground surveys, and a monitoring program is underway to monitor and assess habitat and use of movement corridors, essential information required to understand the potential for contact between the diseased PAD subpopulation from Wood Buffalo NP and the Ronald Lake bison herd in Alberta. Additionally, Parks Canada is working closely with the University of Saskatchewan leading innovative research on diagnostic tests and potential vaccines for bovine tuberculosis. Alberta continues to implement a monitoring program for all wood bison populations that occur on provincial lands (outside of Wood Buffalo NP), including the Ronald Lake and Wabasca populations. Information is collected on wood bison population demographics, distribution, movement patterns, habitat use and disease occurrence for these populations.

Since the submission of the December 2020 SOC report, Canada continues to advance work with partners to address imminent threats to wood bison. As reported in the 2020 SOC, in January 2020, Canada's Minister of Environment and Climate Change announced that he had formed the opinion that wood bison are facing imminent threats to their recovery due to threats facing these two specific herds – Ronald Lake and Wabasca. The Minister identified an imminent threat to the Ronald Lake bison herd from the potential for disease transmission from the Peace Athabasca Delta herd in Wood Buffalo NP. In addition, the previous risk of potential disturbance from the proposed Frontier Oil Sands Mine project, if approved and built, would have exacerbated the threat of disease transmission because it could have resulted in habitat and range loss for the Ronald Lake herd. However, Teck Resources Limited withdrew its application for the proposed project on February 23, 2020, so it will not proceed, thereby significantly alleviating this risk. A third category of threat, additional habitat disturbance by oil sands development in the eastern portion of the herd's range, if undertaken, was also identified in the imminent threat assessment, but does not currently represent an imminent threat, based on best available information.

The Imminent Threat Assessment identified unregulated hunting as the threat to the Wabasca bison herd, which has fewer than 20 individuals. The Wabasca herd occurs some 50 km outside the south-west boundary of Wood Buffalo NP. On November 12, 2021, the Government of Alberta announced that disease-free wood bison are designated under the provincial *Wildlife Act* and Wildlife Regulations as threatened outside of Wood Buffalo NP in specific provincial Wildlife Management Units in Alberta. This provincial designation applies to both the Ronald Lake and Wabasca herds. Subsequently, the Government of Alberta also established the Wabasca Bison Protection Area to the southwest of the park and all hunting of the Wabasca herd is now prohibited. This will support recovery of the Wabasca herd.

Following the findings of imminent threat to these two herds, Canada and Alberta negotiated a draft Conservation Agreement under s.11 of the *Species at Risk Act* for the Wabasca and Ronald Lake bison

herds. This draft agreement outlines broad actions that will be taken by PCA, ECCC and Alberta to address threats to these two herds. This agreement includes the continued monitoring of these herds as well as management actions. Engagement with Indigenous partners on the draft agreement is underway. In addition, Canada continues to engage with Indigenous partners on conservation of wood bison, including the identification of critical habitat for the Ronald Lake bison herd and to identify opportunities for Indigenous participation in bison conservation.

Outside of the property and under the authority of the Government of Alberta, the Ronald Lake Bison Herd Cooperative Management Board was formally established in 2019. Members include Indigenous communities and organizations, provincial and federal government, non-profit, and industry organizations. The Board's purpose is to advise Alberta's Minister of Environment and Parks on matters related to the long-term sustainability of the Ronald Lake bison herd, including sustainability of Indigenous traditional use of and cultural connection to the herd. In developing its recommendations, the Board will consider both IK and science. At this time, the Board is working to finalize its Terms of Reference.

The Aransas-Wood Buffalo whooping crane population continues to recover, with its long term growth rate averaging 3.7%. Coincident with increasing population size, the extent of breeding range within and around Wood Buffalo NP has also been increasing. Annual monitoring conducted since 1966 via aerial surveys has recently been supplemented with analysis of very high-resolution satellite imagery; results from monitoring will inform identification of suitable breeding habitat within and adjacent to Wood Buffalo NP and designation of additional critical habitat. Critical habitat in Wood Buffalo NP is protected through the *Canada National Parks Act* and the federal *Species at Risk Act.*

3.7 Tailings Ponds Risk Assessment

The goal of this theme of the Action Plan is that tailings ponds associated with the oil sands region, located 150 km upstream of the property, are constructed, managed and maintained to limit impacts to the Athabasca River, and new and legacy tailings volumes are reclaimed in a timely manner, so that the risk of tailings ponds to the PAD is minimized.

All federal, provincial, territorial, and Indigenous partners recognize the importance of the measures under this theme of the Action Plan to the future of the PAD and the Indigenous communities that rely on the PAD for their ways of life.

The Government of Alberta is the jurisdictional lead for many of the actions in this theme of the Action Plan and discussions relating to the risks and management of tailings ponds are occurring through a variety of processes and tables led by the provincial government. Much of Alberta's work in the period covered by this report has focused on the ongoing implementation of the Tailings Management Framework under the Lower Athabasca Regional Plan. The objective of the Tailings Management Framework is to minimize fluid tailings accumulation by ensuring that fluid tailings are treated and progressively reclaimed during project life and all fluid tailings are ready to reclaim within 10 years following the end of mine life.

This work is complex, as it touches on complicated interrelationships between regulation and policy, and requires ongoing communication, transparency and engagement with Indigenous communities and stakeholders and, where necessary, consultation when government decisions may adversely affect the continued exercise of constitutionally-protected rights. Review of the Lower Athabasca Regional Plan will start in 2022.

The most recent State of Fluid Tailings Management for Mineable Oil Sands report that summarizes progress reports that companies are required to submit to the Alberta Energy Regulator (AER) by April 30 each year, for the previous calendar year, shows that fluid tailings at oil sands mines increased in 2020 compared to 2019, while bitumen production decreased. All companies were in compliance with AER requirements. A key policy outcome of the Tailings Management Framework is that the risk of environmental effects is minimized now and for future generations. This includes ensuring progressive reclamation of fluid tailings over the life of mining projects, and the consideration of end landscape objectives during planning and operation phases.

The Indigenous communities of the PAD and the Government of Alberta have engaged in discussions to seek to identify opportunities to more effectively engage on tailings management issues and implementation of associated actions in the Action Plan. Alberta has committed to working with Indigenous communities to develop a process that supports their participation and engagement in developing these policies and these discussions are in an early phase.

Considerable effort has been directed at determining how to advance the commitment in the Action Plan pertaining to pursuing a systematic tailings risk assessment for the PAD. In the first two years of Action Plan implementation, funding to initiate this work was sought through the joint Oil Sands Monitoring Program. Applications by Indigenous partners for funding were not supported by the Program's multi-stakeholder governance and this has contributed to this action being behind schedule. The federal government has initiated discussions with Indigenous communities and Alberta on advancing preliminary work that could inform a tailings risk assessment and will be continuing these discussions as a possible approach in support of moving this important action plan commitment forward.

AEP is supporting a phased approach to understanding issues related to tailings risks as proposed by ECCC. The first phase includes supporting Indigenous communities to articulate the issues they have specific to tailings ponds, recognizing that extensive research on tailings ponds has occurred and that tailings ponds are also the subjective of intensive monitoring and reporting through regulatory processes. AEP will work with partners, including Canada, through 2022 and 2023 to advance this first phase.

4.0 Responses to specific requests of Decision 44 COM 7B.190

Responses to paragraphs 3 through 12 of Decision 44 COM 7B.190 are presented below and should be read in conjunction with the information provided in earlier chapters of the present state of conservation report.

Paragraph 3:

While welcoming important State Party investment in the Wood Buffalo National Park Action Plan and its commitment to enhance the relationship and collaboration with First Nations and Métis, expresses its utmost concern that the major overarching threats and risks stemming from areas outside the property identified by the 2016 Reactive Monitoring mission have not been met with effective management responses, in particular the threats to the Peace Athabasca Delta (PAD) and thereby to the Outstanding Universal Value (OUV) of the property due to:

a) The absence of effective inter-jurisdictional water governance

b) The continuation of hydropower development in the absence of clarity on flow regulation that considers OUV,

c) The continued absence of an adequate risk assessment for the large tailings ponds upstream of the property despite new information on major risks;

Canada's Response to Paragraph 3: The purpose of the Action Plan is to address the threats to the property that were identified in the report from the 2016 Reactive Monitoring Mission and further summarized in the SEA from 2018. The Action Plan is a collaborative approach that brings together federal, provincial, territorial, and Indigenous partners. In its 2019 decision, the World Heritage Committee commended Canada for developing the SEA and Action Plan to underpin and guide collaborative efforts to protect the OUV and integrity of the property. The Committee also noted its ongoing concerns around oil sands and hydro-electric development, and encouraged further funding to implement the Action Plan and advance key measures aimed at protecting the site. Canada responded by allocating a further $59.9 million (CDN) for the Action Plan in December 2020 (bringing the total investment to $87.4 million CDN), representing an unparalleled federal investment to conserve a Canadian national park. Canada and its partners continue to collaboratively advance the Action Plan, in a way that braids together IK and science and reinforces partnerships.

Canada recognizes the World Heritage Committee's interest in ensuring that the Action Plan is implemented as quickly as possible, particularly with respect to the specific meaures that were requested in its 2021 decision; however, issues related to water governance, flow regulation, and tailings pond management are extremely complex and cannot be resolved by the federal government acting alone. Collaboration and partnerships are critical, and significant effort has been focused on ensuring there is an overall framework for Action Plan implementation that brings together all implicated jurisdictions and incorporates Indigenous perspectives and voices.

The World Heritage Committee has previously acknowledged in its decisions that the impacts of upstream industrial development are multi-jurisdictional and will require many years to address fully. Canada reiterates that the Action Plan is carefully structured according to agreed-upon and feasible timelines, with some actions

only expected to be completed by 2026. Canada and its partners are committed to this work. Further information related to the three issues raised is summarized below, and additional details on Action Plan implementation are provided in section 3.0 and Annex B of this report.

A. Interjurisdictional Water Governance

In response to the findings of the 2016 Reactive Monitoring Mission, the Action Plan includes 75 actions under the theme of Environmental Flows and Hydrology, many of which focus on the need for enhanced governance related to water issues. The governance approach under the Action Plan considers existing mechanisms and the need for new approaches that bring together jurisdictional authorities and Indigenous partners.

A Federal-Provincial-Territorial-Indigenous (FPTI) Committee is enabling the exchange of information relating to potential actions and discussions on the water-related components of the Action Plan identified under the Environmental Flows and Hydrology theme of the Action Plan. This Committee includes representatives from governments and Indigenous partners. Established task teams drive specific projects with appropriate jurisdictional authorities and Indigenous partners engaged at the working level. A Secretariat comprised of ECCC and PCA staff provides interim secretariat support to the Committee and to the task teams.

The current arrangement for inter-jurisdictional water governance beyond Wood Buffalo NP has been in place since 1997, when the Governments of Canada, Alberta, British Columbia , the Northwest Territories, Yukon and Saskatchewan became parties to the *Mackenzie River Basin Transboundary Waters Master Agreement*. This agreement "commits governments to work together to manage the water resources of the Mackenzie River Basin, and makes provision for neighboring jurisdictions to negotiate bilateral water management agreements to address water issues at jurisdictional boundaries (State of the Aquatic Ecosystem Report, 2021)." The PAD is within the Mackenzie River Basin.

The *Mackenzie River Basin Transboundary Waters Master Agreement* provides broad guidance for negotiating individual bilateral agreements. Provincial and territorial jurisdictions are responsible for the development of the bilateral agreements.

The objectives of bilateral agreements are:

- to effect cooperative watershed management among the jurisdictions which share the water resources of the Mackenzie River Basin;
- to sustain the ecological integrity of the aquatic ecosystems of the Mackenzie River Basin; and
- to facilitate equitable and sustainable use of shared water resources by establishing criteria and desired outcomes that address water consumption, flows, quality, ground water management and aquatic ecosystem health commitments.

The bilateral agreements commit jurisdictions to work cooperatively to achieve these objectives. Canada is setting the stage to support provincial/territorial jurisdictions by developing the modelling required to better understand environmental flow needs and cumulative effects in the PAD. Ecological and hydrological/hydraulic models are tools that form key parts of the environmental flows framework, and will be used to assess how well different water management scenarios can meet these objectives.

The 1997 *Master Agreement* also established the Mackenzie River Basin Board. In 2020, PCA became a member of the Board together with ECCC (the Chair) and other representatives of Canada, Alberta, British Columbia, the Northwest Territories, Yukon, Saskatchewan and Indigenous representatives. The mandate of the Board is to support water resource management of the basin in a way that maintains the ecological integrity of the aquatic ecosystem, while respecting jurisdictional authorities.

The Board reports on the state of the aquatic ecosystem through periodic State of the Aquatic Ecosystem Reports (SOAERs). The findings of these assessments flow from braided IK and science, and inform jurisdictional water management. The most recent SOAER (2021) presents comprehensive observations of change in the Mackenzie River Basin, including the PAD that, together with modelling, will inform water management. There are areas where work under the Mackenzie River Basin Board, such as the development of the SOAER, may be leveraged to inform next steps under the Action Plan. Additionally, PCA representatives now join regional partners on the SOAER Technical Steering Committee which will facilitate linkages for upcoming monitoring and reporting.

Indigenous representatives have articulated the need to develop longer-term governance models that can ensure that transboundary water management is guided by OUV health and that necessary actions are taken by inter-jurisdictional partners to implement corrective actions required to achieve desired outcomes for the PAD. Canada acknowledges these requests and is committed to continued exploration of options based on a path that partners support that may better reflect the OUV of the PAD. This work will proceed based on timelines and processes to be developed with Indigenous partners.

B. Hydropower Development, Flow Regulation and Environmental Flow Assessments

As noted in section 3.2 of this report, no new hydropower development applications on the Peace or Athabasca Rivers are active at this time. The impact assessment for the proposed Amisk hydro-electric project has not yet been completed, as the project is paused and the proponent has not yet filed its Environmental Impact Assessment report. Should the proponent decide to advance the project, Canada remains committed to amending the guidelines for the preparation of the Environmental Impact Statement to include direct consideration of the OUV of the property, including the PAD. The impact assessment phase for this proposed project, should it proceed, would take place over multiple years.

Canada is advancing work under the Action Plan's thematic areas of "Environmental Flows and Hydrology" and "Monitoring and Science", as detailed in sections 3.4 and 3.5 of this report, with the intention to inform future discussions on flow regulation with inter-jurisdictional partners. This includes the initiation of work to develop an environmental flows framework for the Peace and Athabasca sub-basins, including the PAD, to support a better understanding of the hydrological, ecological, and Indigenous use relationships, as well as the cumulative effects on the OUV of existing flow regulation, water withdrawals and the current and future impacts of climate change. Canada will ensure that the development of the environmental flows framework continues to advance in a collaborative way that braids together IK and science. This work, specifically recommended in the 2016 Reactive Monitoring Mission report and requested by the World Heritage Committee (Decision 41 COM 7B.2) is intended to inform recommendations to inter-jurisdictional partners respecting potential future water management strategies for the PAD. Planned upcoming work to undertake an informed, defensible and

transparent decision-making planning exercise for development of a strategic flow release protocol on the Peace River with inter-jurisdictional partners will contribute to these efforts.

C. Tailings Risk Assessment for the PAD

The Government of Alberta has the jurisdictional authority and responsibility to ensure regulatory oversight of tailings associated with oil sands development, and is pursuing opportunities to assess the risks posed by tailings ponds to the PAD. See section 3.7: *Tailings Risk Assessment* of this report for more detailed information.

Paragraph 4:

Notes that the federal land manager of the property (Parks Canada Agency) has very limited authority beyond the property even though all major threats are outside the property's boundaries, and also expresses its utmost concern about:

a) The temporary suspension of oil sands monitoring at a time when the footprint of the oil sands continues to grow,

b) The findings by the Commission for Environmental Cooperation (CEC), including consistent evidence of seepage of oil sands processed water (OSPW) from tailings ponds into groundwater within the Athabasca watershed,

c) The intention to consider releasing OSPW into the Athabasca River,

d) The confirmation of an imminent threat to the recovery of wood bison due to disease risks and industrial activities;

Canada's Response to Paragraph 4: The Action Plan represents a multi-jurisdictional response to the threats affecting the property and is specifically designed to ensure collaboration between Parks Canada, Indigenous partners, and the federal, provincial, and territorial authorities that have jurisdiction outside the property's boundaries. Inter-jurisdictional working groups and committees have been established within the framework of the Action Plan with a goal of ensuring all responsible parties are working together effectively to protect the OUV of the property. Information on the specific issues raised in Paragraph 4 of the World Heritage Committee's decision is provided below.

A. Temporary Suspension of Oil Sands Compliance Monitoring due to COVID-19

As a result of the public health risks posed by COVID-19, the Alberta Energy Regulator (AER) implemented a temporary suspension of some compliance reporting and monitoring requirements for industrial operators who operate on-lease sites for oil sands activities south of Wood Buffalo NP between June 9 and July 15, 2020. AER compliance monitoring does not occur in the property itself, but occurs on industrial lease sites in the Mineable Oil Sands region located south of the park. These lease sites are managed by oil sands operators. These temporary suspensions on the lease sites were limited in scope and duration, and were undertaken to address government-mandated public health measures related to COVID-19. These temporary suspensions by AER represented between two and five percent of overall compliance monitoring requirements for on-lease monitoring and aimed to maintain the integrity of Alberta's long term environmental information systems. Since July 15, 2020, all monitoring on these lease sites has been fully reinstated.

More broadly, there are several monitoring programs around the oil sands region, including in the PAD. This includes the Oil Sands Monitoring (OSM) Program, which is collectively managed by the Governments of Canada and Alberta, together with representatives from Indigenous communities and industry. In 2020-21, the Program's annual work planning process and monitoring plan were responsive to government-mandated public health requirements to the COVID-19 pandemic. Specifically, the OSM Program's multi-stakeholder Oversight Committee directed a focus on monitoring activities required to assure immediate public and environmental health, including water quantity monitoring, long-term monitoring, and focused activities across thematic areas. Monitoring activities were dynamic through the course of the year in response to government-mandated public health requirements. The OSM Program's 2021-22 work plan was approved in June 2021, and its scope was commensurate with pre-pandemic years.

B. Factual Record from the Commission for Environmental Cooperation on Oilsands Tailings Ponds

The Government of Canada welcomes the findings of the 2020 factual record released by the Secretariat of the Commission for Environmental Cooperation (CEC) on September 4, 2020 related to Oil Sands Tailings Ponds. The factual record focused on Alberta's relationship with Canada with respect to enforcement in the oil sands region, the state of publically available peer-reviewed science on oil sands process-affected water (OSPW), and how the Oils Sands Monitoring (OSM) Program is carried out and fits into Canada's enforcement of the federal *Fisheries Act*. The report did not assess whether there were impacts to Wood Buffalo NP.

In recent years, federal government scientists have improved their ability to differentiate between natural and industrial sources of bitumen-impacted water. Federal science capacity continues to focus on the advancement of scientific methods to establish the sources of seepage and the risks such seepage poses in relation to groundwater and surface water. This science capacity is available to inform regulatory, policy, and enforcement activities. Of note, this science complements activities undertaken by Alberta, Indigenous governments, and academia, and collectively contributes to the broader understanding of OSPW.

Applying recent advances in science related to this issue, ECCC enforcement officers have been carrying out proactive inspections. To prove that an offence under the *Fisheries Act* has occurred, ECCC must be able to show that OSPW is being deposited into fish-bearing waters or in a place where it may enter these waters, and it must show that the process water is harmful and trace it back to oil sand activity. Inspections at oil sands operations continued in 2019 and 2020, utilizing the improvement in differentiating between natural and industrial sources of bitumen. Enforcement activities continue in relation to this issue.

The Government of Canada is committed to ensuring that natural resources are responsibly developed and that environmental decision-making is based on the best available science and IK.

C. Development of regulations for treated OSPW releases

The accumulation of OSPW in tailings ponds contributes to a number of environmental risks, including potential seepage, impacts to migratory animals, harmful air emissions (including greenhouse gases) and risk of dam failure. Further, recycling of tailings pond water is leading to an accumulation of salts, which creates challenges and delays for reclamation, and some oil sands mine operators are already nearing capacity in

their existing tailings infrastructure and may need to construct new tailings ponds in the absence of authorized release of treated OSPW. Reclamation of the tailings ponds is required to reduce these environmental risks and will necessitate a variety of approaches, of which treatment and release of tailings water is one component. The Government of Alberta requires that fluid tailings be ready to reclaim within 10 years of the end of mine life.

Subsection 36(3) of the *Fisheries Act* prohibits the deposit of deleterious substances to water frequented by fish. There is currently no *Fisheries Act* regulation in place for the oil sands mining sector and these facilities are therefore subject to the prohibition. The Government of Alberta currently has not authorized releases of OSPW.

The Government of Canada is developing proposed regulations under the *Fisheries Act* to authorize the release of treated effluent from oil sands mines under strict conditions that are protective of the environment, including Wood Buffalo NP and the PAD. Given the location of a number of First Nation and Métis communities in the vicinity of and downstream of the oil sands mining operations, Canada has launched a Crown-Indigenous Working Group as one part of Canada's engagement with First Nations and Métis communities in the oil sands region on the development of proposed federal regulations. The Working Group will ensure that the concerns and interests of First Nations and Métis communities are reflected in the proposed regulations. Canada is also consulting First Nations and Métis governments bilaterally on potential impacts to their Aboriginal and treaty rights. Federal regulations are targeted for completion in 2025.

The Government of Alberta is also developing a provincial policy framework to approve treated effluent releases from oil sands tailings ponds. Officials from Alberta and Canada meet regularly to share information and align regulatory development activities where possible. Until federal regulations under the *Fisheries Act* are established, the general prohibition against the deposition of deleterious substances in water frequented by fish continues to apply for oil sands mining operations.

While Indigenous communities are participating in the Crown-Indigenous Working Group and bilateral consultation processes with Canada, they have indicated that they do not support the release of treated effluent into the Athabasca River and view releases as a potential infringement of their rights and a significant threat to the park's OUV. The Indigenous communities in the region are requesting that the prohibition on effluent release be maintained and every possible alternative to effluent releases into the Athabasca River be rigorously evaluated before regulations are considered.

D. Recovery of Wood Bison

Canada continues to advance work with partners to address imminent threats to wood bison. The Governments of Canada and Alberta have negotiated a draft Conservation Agreement under section 11 of the *Species at Risk Act* for the Wabasca and Ronald Lake bison herds, which outlines broad actions that will be taken by PCA, ECCC and Alberta to address threats to these two herds. Details regarding this work and other actions in support of wood bison recovery can be found in section *3.6: Wildlife and Habitat Conservation* of this report.

Paragraph 5:
Requests the State Party to allocate adequate resources and establish mechanisms to enable effective coordinated management between the federal and provincial governments for the property and the adjacent existing and new provincial protected areas, and strongly encourages the State Party to further exploration of innovative conservation governance and management models in both the provincial parks and the federal national park;

Canada's Response to Paragraph 5: The establishment of Kitaskino Nunëwene Wildland Provincial Park directly on the southern boundary of the park, in addition to other wildland provincial parks near Wood Buffalo NP, provide opportunities for innovation in cooperative management, particularly in support of Indigenous priorities for this area. Parks Canada works regularly with partners across national park boundaries to share lessons in support of collaborative and cooperative models for protected areas management, and will continue to do so in this context.

The Government of Alberta is committed to working with Indigenous partners to develop cooperative management arrangements for the provincial protected areas in the Lower Athabasca Region adjacent to Wood Buffalo NP that are respectful of traditional land use and cultural values, including the exercise of rights recognized under section 35 of the *Constitution Act*, 1982. These efforts have not yet reached a point where they include discussions about resourcing and mechanisms for coordination between Wood Buffalo NP and KNW. Additional details are provided in section *3.3: Conservation Area Connectivity* of this report.

One of the goals of the Action Plan is to establish a Knowledge Hub to make information about the PAD, including IK and scientific data, more easily accessible. Canada is working closely with Indigenous partners to further develop this initiative. The vision for the Knowledge Hub is that it will be an Indigenous-led center for braiding IK and science, and can provide information to support decision-making to strengthen conservation and management of the PAD. This work is advancing in collaboration with Indigenous partners and provides opportunities for innovation regarding relationships between KNW, other wildland provincial parks, and Wood Buffalo NP.

Paragraph 6:
Reiterates its encouragement to the State Party to consider the designation of a buffer zone for the property, in particular towards the advancing development frontier;

Canada's Response to Paragraph 6: As indicated in Canada's 2020 SOC report, Parks Canada is not currently able to bring forward a proposal for formal designation of a buffer zone for the property. However, the measures that have been taken with respect to the establishment of new protected areas along the southern boundary of Wood Buffalo NP will serve to mitigate potential risks of development outside the property. These new protected areas include lands that are of cultural importance to Indigenous peoples and act as ecological corridors that will support the maintenance of the property's OUV. Additional details are provided in section *3.3 Conservation Area Connectivity* of this report.

Paragraph 7:
Takes note of the State Party announcement to dedicate substantial additional funding to the implementation of the Action Plan aver a three-year period and strongly requests the State Party to ensure adequate and reliable resourcing beyond the three-year term;

Canada's Response to Paragraph 7: Canada takes note of the request by the World Heritage Committee that adequate and reliable resourcing be made available to implement the Action Plan beyond the three-year term. Currently, Canada has invested, across two federal budget cycles, dedicated funds to support the Action Plan's implementation through to spring 2024. This includes, in aggregate, $87.4 million (CDN) to support the plan's development and implementation during this period. This is dedicated funding above and beyond the regular operating budget of Wood Buffalo NP, demonstrating the Government of Canada's strong commitment to natural heritage conservation and the protection of this World Heritage Site. Canada acknowledges that the Action Plan is a long-term initiative with important actions planned to be undertaken beyond 2024, including, for example, the construction and operation of proposed water control structures and delivery of an integrated monitoring program for the PAD. Canada is committed to the Action Plan's full implementation and will seek additional investment as required, in accordance with federal budget processes and cycles, in order to support on-going implementation of the Action Plan.

Paragraph 8:
Also takes note of third party information, including reports from First Nations, regarding ongoing challenges by the State Party in the involvement of stakeholders and rights-holders;

Canada's Response to Paragraph 8: Canada recognizes that many stakeholders and Indigenous rights-holders are deeply committed to the protection of Wood Buffalo NP, and have raised concerns about the cumulative effects of upstream development on the OUV of the property. Parks Canada, in its role as site manager, is working closely with partners to address these concerns and to improve the relationships that are foundational to the Action Plan's success, and ultimately to maintain the OUV of the site. As a priority, Parks Canada and Indigenous partners are working collaboratively to strengthen the governance and management of Wood Buffalo NP, recognizing the importance of continued efforts to protect the traditional territories of the 11 First Nations and Métis Peoples for whom the park is home. Further information reflecting the views and perspectives of Indigenous peoples is provided in sections 2.1 and 3.1 of this report, and in response to paragraph 9a) below.

Paragraph 9:
Reiterates its request the State Party to fully implement all mission recommendations as soon as possible, in particular to:

a) Adopt a clear and coherent policy and guidance to enable the transition to a genuine partnership with First Nations and Métis communities in the governance and management of the property,

b) Conduct environmental flows assessments to the highest international standards for the Peace, Athabasca and Slave Rivers as they pertain to the health of the PAD, in order to identify water flows needed to sustain the ecological functioning of the PAD under the circumstances of existing and planned future dams and water withdrawals,

c) Conduct a systematic risk assessment of the tailings ponds of the Alberta Oil Sands region with a focus on risks to the PAD, and submit this report to the World Heritage Centre, for review by IUCN, in accordance with Paragraph 172 of the Operational Guidelines,

d) Expand the scope of monitoring and project assessments to encompass possible individual and cumulative impacts on the OUV of the property and in particular the PAD;

Canada's Response to Paragraph 9: The Action Plan was developed to respond specifically to the recommendations of the report from the 2016 Reactive Monitoring Mission. The Action Plan is an ambitious, multi-jurisdictional and long-term plan which is being implemented according to established timelines, and in collaboration with a range of partners. Below Canada provides contextual information about how the specific concerns of the World Heritage Committee in this paragraph are being addressed directly through the implementation of the Action Plan.

A. Governance and Management of Wood Buffalo NP

Indigenous partners and Parks Canada are continuing to advance the evolution of cooperative management of Wood Buffalo NP. Current efforts are focused on designing a multi-step Indigenous-led process to first develop a shared vision and governance framework through a facilitated process, and then, working with Parks Canada, to implement such a shared governance framework. Another key area of focus is co-development of the new 10-year Wood Buffalo NP Management Plan. Progress in this area will also support the development of a shared governance model for Wood Buffalo NP and provide the opportunity for Parks Canada to demonstrate its commitment towards a true co-management approach.

Parks Canada has also committed to advance development, training and mentorship opportunities aimed at increasing Indigenous representation in Wood Buffalo NP's workforce. Indigenous partners have observed that there is more that can be done to promote Indigenous candidates and higher levels of Indigenous representation at all levels of the park's administration and management. Further efforts are being explored that will address the colonial legacies of the park's establishment, including the re-naming of the park, as a step towards implementing broader and meaningful reconciliation actions. More details on these actions and the work ahead for Parks Canada and Indigenous partners can be found under section *3.1: Strengthening Indigenous Partnerships* of this report, which was prepared by members of the Cooperative Management Committee for Wood Buffalo NP.

B. Environmental Flows Assessments

Environmental flow assessments (referred to as an environmental flows framework, moving forward) were requested by the World Heritage Committee (Decision 41 COM 7B.2) to improve understanding of water flows needed to sustain the ecological functioning of the PAD. This framework will capture the complex interactions among the ecological, hydrological, geomorphological and social-cultural components within the Peace and Athabasca River basins that influence the health of the PAD.

Development of the environmental flows framework is underway, led by ECCC and drawing from international expertise in the area of water management and environmental flows frameworks, and working collaboratively with Indigenous partners to explore available knowledge and data. An initial framework will be developed by early 2024 utilizing existing and available data and knowledge to provide a strong foundation, which can then be further refined as new data, models and knowledge become available.

Progress continues on a longer-term modelling (e.g. ecological and hydrological) effort to support the development of the framework. The structure and scope of the environmental flows framework will initially be co-developed with partners using braided IK and science. The framework will be designed to take into account relevant new information that arises through the course of delivery on the Action Plan.

Continued engagement and collaboration with Indigenous partners is recognized as critical to the development of the framework. Indigenous perspectives are an important part of creating a full understanding of the complex hydrology and ecology of the Peace and Athabasca River Basins and the PAD. An important focus of work in 2021 has been on formalizing agreements with Indigenous partners to ensure IK is used in accordance with the needs and wishes of the Indigenous governments. Another priority has been establishing agreements to address the capacity needs of Indigenous partners and knowledge holders in order for them to collaborate and engage meaningfully in the development and implementation of the environmental flows framework and the wider Action Plan. Initial engagement with Indigenous partners on the environmental flows framework has commenced.

To advance the necessary hydrological/hydraulic models for scenario simulations for environmental flows and water levels, ECCC is leveraging existing federal, provincial and academic expertise and capacity. While significant progress is being made, modelling development has been impacted by restrictions on field work due to COVID-19, and limits on some travel and in-person meetings. More details regarding progress on this work can be found in section *3.4: Environmental Flows and Hydrology* of this report.

C. Tailings Ponds Risk Assessment

The Government of Alberta has the jurisdictional authority and responsibility to ensure regulatory oversight of tailings associated with oil sands development, and is pursuing opportunities to assess the risks posed by tailings ponds to the PAD. See section 3.7: *Tailings Risk Assessment* of this report for more detailed information.

D. Scope of Project Assessments

Canada adopted new federal impact assessment legislation in 2019, introducing new processes to strengthen the review of the impacts of proposed projects that fall under federal jurisdiction. Projects undergoing a federal impact assessment are issued Tailored Impact Statement Guidelines (TISGs), which outline the specific impact assessment requirements for the proponent. TISGs are prepared in consultation and engagement with Indigenous organizations, federal departments, the public, and other interested parties prior to being finalized and posted publically. The focused and specific nature of the TISGs provide clear and specific information requirements for relevant factors and effects to be included in the impact assessment. Specific requirements to include potential individual and cumulative effects within Wood Buffalo NP and the PAD can be explicitly required within the TISGs issued to proponents. Parks Canada will continue to request this for all projects with relevant impacts on the OUV of the property. Additional information can be found under section *3.2 Environmental Assessments* of this report.

Paragraph 10:
Notes with regret that, despite the State Party's important efforts to date, progress has been insufficient in addressing the Committee requests, and regretting that the property continues to face severe threats with its conservation status having not improved since the 2016 mission and the conditions of OUV declining, considers that the property likely meets the criteria for inscription on the List of World Heritage in Danger in conformity with Chapter IV.B of the Operational Guidelines;"

Canada's Response to Paragraph 10: The conclusion by the World Heritage Committee that Canada has not made sufficient progress in addressing its requests is of great concern to the State Party, as federal, provincial, territorial and Indigenous partners are systematically working in a collaborative and responsible way to address the recommendations and requests stemming from the 2016 Reactive Monitoring Mission and subsequent Committee decisions through the implementation of the Action Plan. The Action Plan is supported with $87.4 million (CDN) in funding from the federal government, representing an unparalleled investment to conserve a Canadian national park, with two-thirds of the actions either completed or underway at this time.

Canada would like to underscore again that there have been significant achievements since the 2016 Reactive Monitoring Mission, including the following:

- Completion of the requested Strategic Environmental Assessment (SEA) for the property in 2018;
- Development of the Wood Buffalo National Park World Heritage Site Action Plan in 2019 – an ambitious, long-term program of collaborative work which aims to maintain the OUV of Wood Buffalo NP;
- Establishment of over 16,000 ha in new protected areas adjacent to Wood Buffalo NP since 2018 which, together with the property, constitute the largest contiguous protected boreal forest in the world at over 60 million ha;
- Progress advancing implementation of a number of the Action Plan's more than 75 hydrology-related monitoring and management actions required to meet ecological and traditional use objectives within the PAD;
- The Government of Canada's commitment to ensuring that all current and future environmental assessments conducted pursuant to federal environmental assessment legislation explicitly consider potential specific and cumulative impacts of upstream development on the OUV of Wood Buffalo NP, where appropriate;
- On-going work under the Action Plan to strengthen Indigenous leadership and collaboration in conservation at Wood Buffalo NP, including in the co-development of integrated monitoring programs for Wood Buffalo NP; and
- Continued efforts by Parks Canada and Indigenous partners to transition to a stronger partnership of shared governance for Wood Buffalo NP, through collaboration within the Cooperative Management Committee and bilateral engagement processes, and with an aim to advance reconciliation.

Recent developments, notably the reduction in threats of proposed development south of Wood Buffalo NP with the withdrawal of the proposed Frontier Oil Sands Mine project in February 2020, and the creation of new protected areas on the boundaries of Wood Buffalo NP in 2018 and 2019 along with the current proposed expansion of KNW in 2022, represent important conservation gains since the 2016 Reactive Monitoring Mission. Further, the conservation actions outlined in the Action Plan, which are intended to maintain the OUV of the property, will need to be measured over the long term, as it may take 5 to 10 years to see resulting

changes in the condition and trend of elements of the property's OUV. See additional details in section *2.2: Update on Trends and Stressors Affecting WBNP's OUV* of this report.

With respect to Action Plan implementation, the timelines that have been proposed reflect engagement with partners and collaborative approaches that require investments of time, people and resources in building capacity and relationships. Canada and its partners will continue to develop credible and rigorous monitoring indicators for the health of the OUV of Wood Buffalo NP, braiding together IK and science, and to report on the long-term trends and the condition of the property's OUV elements. Canada is of the view that the final outcome of this comprehensive assessment of the "state of the OUV", expected in 2024, should inform any future consideration of inscription on the *List of World Heritage in Danger*.

Canada appreciates the ongoing commitment of the World Heritage Committee and its advisory bodies in helping to guide efforts to protect Wood Buffalo NP and looks forward to future dialogue on the timelines and measures being implemented in response to recent Committee decisions.

Paragraph 11:
Also requests the State Party to invite, as soon as possible, a joint World Heritage Centre/IUCN Reactive Monitoring mission to the property to assess its state of conservation, in particular in relation to the above-mentioned threats, and to confirm whether the property meets the conditions for inscription on the List of World Heritage in Danger, and to recommend the measures necessary to address the threats to its OUV;

Canada's Response to Paragraph 11: Canada looks forward to welcoming a joint World Heritage Centre/IUCN Reactive Monitoring Mission to visit the property at the earliest opportunity. Such a mission, following the first mission in 2016, will provide an important opportunity to review progress on the Action Plan's implementation, develop a fulsome understanding of the current state of and threats facing the OUV of the property, and provide an update on the status of key measures requested by the World Heritage Committee in its most recent decisions.

Taking into account diverse factors, including the sub-arctic climate of the area, restrictions imposed by the COVID-19 pandemic, and availability of key partners, it is anticipated that the earliest feasible window would be to hold the mission sometime between early July to mid-September 2022. Further discussions are underway with all partners to finalize the proposed dates.

Canada looks forward to working closely with the World Heritage Centre and IUCN to support the organization of this mission and will continue to engage the collaborating partners who have responsibility for advancing key components of the Action Plan and who are working together to ensure its successful implementation.

Paragraph 12:
*Finally requests the State Party to submit to the World Heritage Centre, **by 1 February 2022**, an updated report on the state of conservation of the property, including a pathway to address the governance challenges and multiple threats impeding the effectiveness of the implementation of the Action Plan and a broader response to the growing threats to the OUV of the property, for examination by the World Heritage Committee at its 45th session, **with a view to considering, in case of confirmation of potential or ascertained danger to its OUV, the possible inscription of the property on the List of World Heritage in Danger.***

Canada's Response to Paragraph 12: Informed by the 2016 Reactive Monitoring Mission and the 2018 Strategic Environmental Assessment, Canada and its partners developed a comprehensive framework for addressing the current governance challenges and threats to the OUV of the property. Canada considers the Action Plan to be the pathway requested by the World Heritage Committee and reiterates that it was carefully developed in collaboration with all involved partners, and with associated governance mechanisms that guide its implementation. Working closely with all partners, developing relationships and trust, and advancing the specific actions identified under the Action Plan are all complex endeavours that require sufficient time. The Action Plan is a long term venture, with actions running to 2026.

As the World Heritage Committee's decisions to inscribe properties on the *List of World Heritage in Danger* are based on credible evidence of ascertained or potential dangers to OUV, Canada recognizes the importance of having comprehensive and credible information on the status and trend of Wood Buffalo NP's OUV. As previously described in this State of Conservation report, particularly in section *2.2: Update on Trends and Stressors Affecting Wood Buffalo NP's OUV*, the Action Plan includes the development of an integrated monitoring program for all elements of the property's OUV, using both IK and science. This work is currently underway and is a foundational element of the Action Plan. The monitoring program, which is in development with partners, will include a suite of indicators that will measure the trend and condition of the valued components of OUV over time. It is this comprehensive assessment of the OUV, expected in 2024, which should inform any future consideration of inscription of Wood Buffalo NP on the *List of World Heritage in Danger*.

5.0 Other current conservation issues identified by the State Party which may have an impact on the property's OUV

There are no other current conservation issues identified by the State Party which may affect the property's OUV at this time.

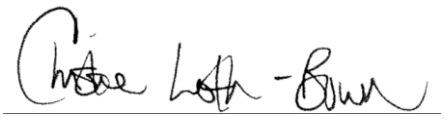
6.0 Potential major restorations, alterations and/or new construction(s) intended within the property, the buffer zone(s) and/or corridor or other areas, where such developments may affect the OUV of the property, including authenticity and integrity

There are no further potential developments that may affect the Outstanding Universal Value for this World Heritage property.

7.0 Public access to the state of conservation report

The State Party authorizes the World Heritage Centre to make this report public on its website.

8.0 Signature of Authority



Christine Loth-Bown,
Vice President, Indigenous Affairs and Cultural Heritage, Parks Canada
and
Head of the Canadian Delegation to the UNESCO World Heritage Committee

Appendix A: Decision 44 COM 7B. 190

Wood Buffalo National Park (Canada) (N 256)

The World Heritage Committee,

1. Having examined Document WHC/21/44.COM/7B.Add,

2. Recalling Decisions **39 COM 7B.18, 41 COM 7B.2 and 43 COM 7B.15**, adopted at its 39th (Bonn, 2015), 41st (Krakow, 2017) and 43rd (Baku, 2019) sessions respectively,

3. While welcoming the important State Party investment in the Wood Buffalo National Park Action Plan and its commitment to enhance the relationship and collaboration with First Nations and Métis, expresses its utmost concern that the major overarching threats and risks stemming from areas outside the property identified by the 2016 Reactive Monitoring mission have not been met with effective management responses, in particular the threats to the Peace Athabasca Delta (PAD) and thereby to the Outstanding Universal Value (OUV) of the property due to:

a) The absence of effective inter-jurisdictional water governance,

b) The continuation of hydropower development in the absence of clarity on flow regulation that considers OUV,

c) The continued absence of an adequate risk assessment for the large tailings ponds upstream of the property despite new information on major risks;

4. Notes that the federal land manager of the property (Parks Canada Agency) has very limited authority beyond the property even though all major threats are outside the property's boundaries, and also expresses its utmost concern about:

a) The temporary suspension of oil sands monitoring at a time when the footprint of the oil sands continues to grow,

b) The findings by the Commission for Environmental Cooperation (CEC), including consistent evidence of seepage of oil sands processed water (OSPW) from tailings ponds into groundwater within the Athabasca watershed,

c) The intention to consider releasing OSPW into the Athabasca River,

d) The confirmation of an imminent threat to the recovery of wood bison due to disease risks and industrial activities;

5. Requests the State Party to allocate adequate resources and establish mechanisms to enable effective coordinated management between the federal and provincial governments for the property and the adjacent existing and new provincial protected areas, and strongly encourages the State Party to further exploration of innovative conservation governance and management models in both the provincial parks and the federal national park;

6. Reiterates its encouragement to the State Party to consider the designation of a buffer zone for the property, in particular towards the advancing development frontier;

7. Takes note of the State Party announcement to dedicate substantial additional funding to the implementation of the Action Plan aver a three-year period and strongly requests the State Party to ensure adequate and reliable resourcing beyond the three-year term;

8. Also takes note of third party information, including reports from First Nations, regarding ongoing challenges by the State Party in the involvement of stakeholders and rights-holders;

9. Reiterates its request the State Party to fully implement all mission recommendations as soon as possible, in particular to:

a) Adopt a clear and coherent policy and guidance to enable the transition to a genuine partnership with First Nations and Métis communities in the governance and management of the property,

b) Conduct environmental flows assessments to the highest international standards for the Peace, Athabasca and Slave Rivers as they pertain to the health of the PAD, in order to identify water flows needed to sustain the ecological functioning of the PAD under the circumstances of existing and planned future dams and water withdrawals,

e) Conduct a systematic risk assessment of the tailings ponds of the Alberta Oil Sands region with a focus on risks to the PAD, and submit this report to the World Heritage Centre, for review by IUCN, in accordance with Paragraph 172 of the Operational Guidelines,

d) Expand the scope of monitoring and project assessments to encompass possible individual and cumulative impacts on the OUV of the property and in particular the PAD;

10. Notes with regret that, despite the State Party's important efforts to date, progress has been insufficient in addressing the Committee requests, and regretting that the property continues to face severe threats with its conservation status having not improved since the 2016 mission and the conditions of OUV declining, considers that the property likely meets the criteria for inscription on the List of World Heritage in Danger in conformity with Chapter IV.B of the Operational Guidelines;

11 Also requests the State Party to invite, as soon as possible, a joint World Heritage Centre/IUCN Reactive Monitoring mission to the property to assess its state of conservation, in particular in relation to the above-mentioned threats, and to confirm whether the property meets the conditions for inscription on the List of World Heritage in Danger, and to recommend the measures necessary to address the threats to its OUV;

12. Finally requests the State Party to submit to the World Heritage Centre, **by 1 February 2022**, an updated report on the state of conservation of the property, including a pathway to address the governance challenges and multiple threats impeding the effectiveness of the implementation of the Action Plan and a broader response to the growing threats to the OUV of the property, for examination by the World Heritage Committee at its 45th session, **with a view to considering, in case of confirmation of potential or ascertained danger to its OUV, the possible inscription of the property on the List of World Heritage in Danger.**

Appendix B: Action Plan Implementation Tracking Table

Action Plan implementation, as of the time of writing of this report, is highlighted by each thematic area of the Action Plan in the following table. The implementation progress of all actions identified in the Action Plan is presented in the same format as in the Action Plan's Appendix B - Implementation Schedule. Note that four actions under the Environmental Flows and Hydrology theme were discontinued, and will not be proceeding. These have been removed from the progress indicated.

Implementation progress for each of the 138 actions is reported as "Completed" (green), "Underway" (yellow), "Not Started" (orange) or "Not Due Yet" (grey) as per anticipated timelines in the Action Plan in the tracking table below. "Completed" indicates that an action has been fully completed or is completed with some part of the action which may be on-going. "Underway" indicates that an action is either newly underway or underway with good progress being made. "Not started" means that implementation is delayed. "Not Due Yet" means that an action is not yet due to begin either because there is a pre-cursor action that is required and/or it is not scheduled to begin as per the timelines of the Action Plan.

At the timing of writing, two-thirds (67%) of the measures in the Action Plan measures are either completed or underway. This includes 25% of actions which are now completed, with an additional 42% currently underway. A further 23% of the actions are "not due yet", meaning that either precursor actions are required for these to commence or they are not due to start yet according to established timelines in the Action Plan. Implementation for 10% of actions outlined in the Action Plan have experienced a delay (including those related to the COVID-19 pandemic) from established timelines. These percentages are provided to demonstrate the progress being made by Canada and its partners in implementing the Action Plan, and to underscore that significant effort is being dedicated to its implementation.[5]

Canada and its partners recognize that support for Action Plan implementation from all partners has been instrumental in implementation success to date, and these partners acknowledge that Indigenous partners, in particular, continue to advocate for fulsome and prompt implementation efforts as well as ongoing improvements in Action Plan implementation.

Action Plan Implementation Progress – Summary			
Completed Implementation is completed or initial implementation is completed with part of the action on-going.	Underway Implementation is underway and progress is being made.	Not Started Implementation has been delayed.	Not Due Yet Implementation is not yet due to begin.
36/138 = 25%	56/138 = 42%	15/138 = 10%	31/138 = 23%

[5] This tracking table provides an update on implementation of Action Plan measures but does not provide an analysis of positive or negative trends with respect to the site's OUV elements.

ACTION	LEAD ORGANIZATION	SUPPORTING ORGANIZATION	PROGRESS @ December 1, 2021	ANTICIPATED COMPLETION DATE, AS PER ACTION PLAN
THEME: Strengthening Indigenous Partnerships with Wood Buffalo National Park (IP)				
OUTCOME: Improved relationships between Wood Buffalo NP and its Indigenous partners results in improved, cooperative management of the park that meets the interests of all parties.				
IP1: CMC will identify core areas of immediate interest regarding the management of the site, and adjust its process as required to effectively address these areas of interest.	PCA	Indigenous partners	Completed	2019
IP2: CMC will develop and adopt policies to meet the interests of all parties, in particular related to the staffing of Indigenous persons and a contracting policy to ensure that opportunities for Indigenous persons are enhanced.	PCA	Indigenous partners	Completed	2019
IP3: Increase capacity for park management and staffing in Fort Chipewyan, to respond to the pressures facing the Peace–Athabasca Delta.	PCA		Completed	2019
IP4: Develop and implement a training program for Wood Buffalo National Park staff designed to improve the evolving relationship with Indigenous communities.	PCA		Underway	2020
IP5: Continue engagement through bilateral processes between First Nations and Métis groups where these have been established.	Indigenous partners	PCA	Underway	Ongoing
IP6: Co-develop (with Indigenous groups) options for enhancing the profile of Indigenous content in Wood Buffalo NP and for recognizing Indigenous contributions to Wood Buffalo NP.	Indigenous partners	PCA	Underway	Ongoing
THEME: Environmental Assessment (EA)				
OUTCOME: Ensure that the Outstanding Universal Value of the property is considered in environmental assessments where potential specific or cumulative impacts may occur on the OUV of Wood Buffalo NP, in particular in the Peace–Athabasca Delta.				
EA1: Refer the proposed Amisk Hydroelectric Project to an independent review panel.	IAAC		Completed	2016
EA2: Amend Guidelines for the Preparation of the Environmental Impact Statement for the Amisk Hydroelectric Project to direct consideration of potential effects of the project on the OUV of the park, including the PAD.	IAAC		Not Yet Due	2020
EA3: Conduct an SEA on the potential of all developments to impact the Outstanding Universal Value of the Wood Buffalo NP World Heritage Site, and submit to the World Heritage Centre.	PCA		Completed	2018
EA4: Submit the SEA to the Joint Review Panel for the Teck Frontier Oil Sands Mine Project for consideration.	IAAC	PCA	Completed	2018
EA5: Amend the Joint Review Panel Agreement for Teck Frontier to mandate the Panel to consider and report on the potential environmental and cumulative effects of the project on the OUV of the World Heritage Site, including the PAD.	IAAC, AER		Completed	2017

EA6: Evaluate the potential effects of the Frontier Project on the OUV of the park and provide assessment to the Teck Frontier Joint Review Panel for its consideration in the environmental assessment.	IAAC		Completed	2018
EA7: Ensure that all current and future environmental assessment reviews conducted pursuant to federal legislation consider the specific and cumulative impacts on the OUV of Wood Buffalo NP and are aligned with the IUCN World Heritage Advice Note on Environmental Assessment and World Heritage, to the extent possible.	IAAC	PCA	Underway	2023, + ongoing
Goal: Continue to work with Indigenous communities and stakeholders on Lower Athabasca Region environmental management frameworks.				
EA8: Continue to work with Indigenous communities and stakeholders on the Aboriginal navigation component of the Alberta's Lower Athabasca Region Surface Water Quantity Management Framework for the Lower Athabasca River. This will include further development of the Aboriginal Navigation Index.	AB		Underway	2020
EA9: Develop a work plan to address ecological knowledge gaps as identified in the Lower Athabasca Region Surface Water Quantity Management Framework for the Lower Athabasca River.	AB		Completed	2020
EA10: Conduct an analysis of Oil Sands Monitoring Program water quality stations and parameters in the oil sands region and including, where applicable, the Peace–Athabasca Delta to assess changes in water quality relative to limits of change and considering Indigenous community-based monitoring. This would be conducted for those elements that fall within the programs' scope and mandate and respecting the program's governance structure.	AB	ECCC, OSM	Underway	2020
EA11: Integrate the findings of Oil Sands Water Quality analysis to inform updates to the Surface Water Quality Management Framework.	AB	ECCC, OSM	Underway	2020
EA12: Complete development of a cumulative effects environmental monitoring framework for the Oil Sands Monitoring Program under the programs' scope, mandate and governance structure	AB	OSM	Underway	2023
THEME: Conservation Area Connectivity (CC)				
OUTCOMES: Improved connectivity for wildlife and supporting processes; Increased ecological integrity and resiliency of the Outstanding Universal Value of Wood Buffalo National Park World Heritage Site; Improved connectivity for the protection and exercise of Aboriginal and treaty rights; Strengthened relationships with Indigenous partners through respectful application of science-based and Indigenous Knowledge to conservation planning and management.				
Goal: Within individual jurisdictions, establish buffer zones around Wood Buffalo NP through the establishment of adjacent protected and conserved areas.				
CC1: Establish five new and expanded conservation areas under the Lower Athabasca Regional Plan, adjacent to Wood Buffalo NP, to increase functional connectivity for OUV within Wood Buffalo NP.	AB		Completed	2018
CC2: Develop cooperative management arrangements with Indigenous communities and organizations to help support traditional land use and cultural values, including the exercise of rights recognized under section 35 of the Constitution Act, 1982, for the five new and expanded wildland provincial parks under the Lower Athabasca Regional Plan.	AB		Underway	2020

CC3: Advance (through discussions with Indigenous communities and stakeholders) the proposal for an additional conservation area on the land base known as the Biodiversity Stewardship Area immediately south of Wood Buffalo NP.	AB		Completed	2018
CC4: Following months of collaborative discussions with Indigenous groups, industry and other stakeholders, the Government of Alberta to consult on the creation of the Biodiversity Stewardship Area, which will designate the area as a wildland provincial park (protected area) from a multiple use land base with industrial tenure. The proposed protected area is about 166,110 hectares located directly south of Wood Buffalo NP.	AB		Completed	2019
CC5: Develop cooperative management arrangements with Indigenous communities for management of the BSA that supports Wood Buffalo NP OUV (e.g., bison and watershed protection), as well as Indigenous cultural and traditional values, including the exercise of rights recognized under section 35 of the Constitution Act 1982.	AB		Not Started	2020
CC6: Integrate an Indigenous Guardian Program to support Indigenous Stewardship of the five new and expanded conservation areas under the Lower Athabasca Regional Plan, as well as the Biodiversity Stewardship Area.	AB		Not Started	2023
CC7: Advance conservation priorities under "Healthy Lands, Healthy People: Government of Northwest Territories: Priorities for Advancement of Conservation Network Planning – 2016 – 2021".	NWT		Underway	Ongoing
CC8: Advance regional land use planning processes in areas surrounding Wood Buffalo NP.	AB, NWT		Underway	2023
CC9: Enhance communication and explore opportunities for closer collaboration particularly under the Pathway to Canada Target 1 initiative.	Canada, AB, NWT		Underway	2023
CC10: In association with the Pathway to Canada Target 1 support efforts to establish new tools for conservation that contribute to conservation area connectivity in the Wood Buffalo NP region.	Canada, AB, NWT		Underway	2023
CC11: Consolidate Indigenous and scientific information on the habitat and dispersal requirements for key species through extensive literature review and community led workshops.	PCA		Underway	2019
Goal: Determine the ecological functional needs of the elements of OUV of Wood Buffalo NP as they relate to conservation area connectivity.				
CC12: Acquire existing data related to species occurrence and remote sensing for spatial analysis and mapping.	PCA		Completed	2019
CC13: Identify and confirm information gaps and identify plans to fill these gaps.	PCA		Underway	2019
CC14: Conduct analysis of assembled data and apply habitat and movement information acquired during workshops to develop a series of species-specific, landscape-scale, habitat suitability and connectivity maps.	PCA		Underway	2020
CC15: Peer review and gather feedback on spatial models. Peer review will include follow-up workshops to identify accuracy, strengths and weaknesses of resulting maps.	PCA		Not Started	2020

CC16: Generate a series of map packages for subsequent communications and planning purposes that describe the results of the modelling process and highlight habitat and movement needs for key species throughout the Wood Buffalo NP region.	PCA		Not Started	2020
Goal: Identify potential gaps necessary for the maintenance of OUV that can guide future conservation planning and/or management.				
CC17: Conduct workshop on spatial priorities for conservation including objectives for a gap analysis on areas in and adjacent to Wood Buffalo NP.	PCA		Not Started	2020
CC18: Undertake landscape gap analysis and spatial conservation prioritization exercise using current methods and tools (i.e., Marxan).	PCA		Not Started	2020
CC19: Produce maps and communication products that provide results of gap analysis and present design options for contributing to a regional network of protected and conserved areas, including a buffer zone adjacent to Wood Buffalo NP.	PCA		Not Started	2020
THEME: Tailings Pond Risk Assessment (TP)				
OUTCOME: Tailings ponds are constructed, managed and maintained to limit impacts to the Athabasca River, and new and legacy tailings volumes are reclaimed in a timely manner, so that the risk of tailings ponds to the PAD is minimized.				
TP1: Ongoing implementation of the Tailings Management Framework to promote progressive reclamation, accelerate tailings treatment and improve the water management system. Continue to support existing forums for including indigenous perspectives on advancement of this work. Consider results of the tailings risk assessment study (TP2) in future review and amendment of the Tailings Management Framework and Directive 085.	AB		Completed	On-going
TP2: Pursue a systematic tailings risk assessment by collaborating with Indigenous peoples, national/international experts, and industry to develop a landscape model considering tailings reclamation, hydrology, withdrawals, climate change, seepage, and cumulative effects. This is within the scope of the Oil Sands Monitoring Program and would be conducted through existing work planning and governance processes.	AB	ECCC, OSM	Not Started	2022
TP3: Amend the Water Ministerial Regulation, ensuring major water management infrastructure and tailings dams are safe.	AB		Completed	2019
TP4: Provide regulatory oversight to ensure tailings dams are safe and managed appropriately by operators.	AB		Completed	2023
TP5: Minimize fluid tailings accumulation by ensuring that fluid tailings are treated and reclaimed progressively during the life of a project and all fluid tailings associated with a project are ready to reclaim within 10 years of end of the mine life of that project. Supported through ongoing work undertaken as part of tailings management implementation.	AB		Underway	2023
TP6: Establish project-specific target, triggers and limit for new fluid tailings. Supported through ongoing work undertaken as part of tailings management implementation.	AB		Underway	2023
TP7: Develop plans to reduce legacy tailing volumes to a ready-to-reclaim state by end of mine life.	AB		Underway	2023

TP8: Tailings ponds are designed, constructed, operated, maintained, and decommissioned safely. Supported through ongoing work undertaken as part of tailings management implementation.	AB		Completed	2023
TP9: Conduct ambient environmental monitoring to inform a risk assessment on changes to environmental condition.	AB	OSM, ECCC	Completed	On-going
TP10: Establish Oil Sands Process Affected Water Science Team to provide credible scientific information to inform government and regulatory bodies on potential process water treatment and release. Create additional Science Teams as needed to support implementation of the Tailings Management Framework.	AB		Completed	2020
THEME: Environmental Flows and Hydrology (EFH)				
OUTCOMES: **Ecological and Hydrological Integrity** – Water quantity improvements, including variability, sustain ecological functioning and integrity of the PAD to support the OUV. **Exercise of Aboriginal and treaty rights** – Water quantity improvements sustain healthy and abundant traditional resources and Indigenous ways of life in the PAD. **Informed Decision-Making** – Improved baseline data/knowledge and comprehensive environmental flows assessments inform decision-making related to the ecological and hydrological integrity of the PAD.				
Goal: To establish renewed and effective partnerships through a cross-jurisdictional and Indigenous governance team to guide and inform management actions toward achieving the desired hydrology outcomes for the PAD and Wood Buffalo NP.				
EFH1: Convene and resource an FPTI Committee and Secretariat to oversee implementation of the EFH portion of the Wood Buffalo NP Action Plan.	ECCC		Underway	2020
EFH2: Develop FPTI Committee Terms of Reference	ECCC		Underway	2019
EFH3: Establish and task project teams to implement key actions (e.g., structural alternatives project team; target/objective-setting) outlined for the EFH theme. Note that timelines will be variable as the needs for various project teams change.	ECCC		Underway	2023
EFH4: Establish clear lines of communication and linkages to existing processes such as the Mackenzie River Basin Board, Wood Buffalo NP Cooperative Management Committee, Alberta–NWT Bilateral Management Committee, Alberta Watershed Planning and Advisory Councils, etc.	ECCC		Underway	2019
EFH5: Implement a progress reporting mechanism to Federal, Provincial, Territorial, and Indigenous governments.	ECCC		Underway	2020
EFH6: Communicate the findings of assessments, research, and modelling with stakeholders and Indigenous communities.	ECCC		Underway	2023
Goal: Identify and describe the areas and conditions where changes to water quantity would support the achievement of the Outcomes for ecological and hydrological integrity & exercise of Aboriginal and treaty rights				

EFH7: Document priority locations in the PAD (Figure 6) where ecological integrity is impacted and intervention is required, as well as areas from currently documented sites of navigational and/or cultural importance in the PAD, and identify which of these is appropriate for early action and monitoring for trends.	PCA, Indigenous Partners		Completed	2019
EFH8: Identify the key objectives for the selected early action locations.	PCA, Indigenous Partners		Completed	2019
EFH9: Initiate feasibility studies to assess what actions could be implemented to make progress toward these objectives, as described in actions EFH 32-33 (artificial ice dam) and EFH 56-57 (control structures).	PCA, Indigenous Partners		Completed	2019
EFH10: Undertake Indigenous use interviews to identify priority navigation routes and pinch points for all communities that travel within Wood Buffalo NP for the exercise of Aboriginal and treaty rights, where not currently documented.	PCA, Indigenous Partners		Not Due Yet	2022
EFH11: Undertake Indigenous use interviews to identify areas and timing of key contemporary and historic cultural importance including, but not limited to, medicine, hunting, fishing, gathering, spiritual and cultural practice.	PCA, Indigenous Partners		Not Due Yet	2022
EFH12: Identify key areas of Wood Buffalo NP where water quantity changes are required to restore ecological integrity.	PCA, Indigenous Partners		Underway	2020
EFH13: Document the information from all above activities and summarize the specific objectives in a final report(s).	PCA		Not Due Yet	2022
EFH14: Over time, using adaptive management (see section 7.1.2 in the SEA), learn through action, monitoring, and modelling what water quantity change supports achievement of these objectives.	FPTI CTTE		Not Due Yet	2023, ongoing
Goal: Set SMART water quantity targets and indicators toward achieving the objectives identified above.				
EFH15: Assess use of existing indicators developed with Indigenous expertise, such as by the Mackenzie River Basin Board, the NREI and NRBS, those in place in Wood Buffalo NP through Parks Canada and Community-Based Monitoring programs.	ECCC		Underway	2019
EFH16: Identify gaps in knowledge for indicators and targets and develop a plan to address these gaps.	ECCC, PCA		Underway	2019
EFH17: In conjunction with 'objectives' interviews, conduct interviews of elders and land users to inform development of Indigenous SMART targets and rights-based indicators for Indigenous use objectives identified above (e.g., abundance of harvested species and/or traditional use plants; navigability of priority routes).	PCA, Indigenous Partners		Not Due Yet	2022

EFH18: Informed by the objectives and baseline hydrological conditions identified below, develop SMART targets (or target ranges or thresholds) and indicators to assess: · progress toward intermittent high elevation recharge of the PAD's perched basins (including key sites of Indigenous cultural importance within these perched basins, if applicable) · progress toward low elevation recharge and connectivity (including key sites of Indigenous cultural importance) · navigability of seasonal priority routes.	PCA		Not Due Yet	2023
EFH19: Make the targets and indicators available via the Knowledge Hub (see EFH 69-75), with regular reporting.	PCA, Indigenous Partners		Not Due Yet	2023
Goal: Establish a monitoring regime that tracks the trend of indicators identified above across the extent of Wood Buffalo NP and the PAD and over time that evaluates the effectiveness of management actions, building on existing monitoring programs where possible.				
EFH20: Assess and inventory the historic and ongoing monitoring within Wood Buffalo NP.	ECCC, PCA	CBM	Completed	2019
EFH21: In coordination with actions taken pursuant to Monitoring and Science theme, identify gaps in the types and location of monitoring within Wood Buffalo NP required to support monitoring of: a. indicators, including navigability, b. baseline / reference parameters, c. parameters required for model operation and validation, and d. water management actions.	FPTI CTTE		Underway	2023
EFH22: Make monitoring data available, to local communities and decision-makers in a timely and transparent manner.	FPTI CTTE		Not Due Yet	2023
Goal: Establish protocols for, and identify circumstances under which, a strategic release of water from the Williston Reservoir behind the W.A.C. Bennett Dam could enhance an ice jam flood event within Wood Buffalo NP to encourage flooding of the PAD, including its perched basins, while minimizing unwanted upstream and downstream risks.				
EFH23: Create a protocol for a proposal from the Government of Alberta for a test flow (a release of water from the W.A.C. Bennett Dam) to influence an ice jam event in the PAD similar to the 1996 request.	AB, BC, BC Hydro		Underway	2020
EFH24: Assemble currently available data and information that could indicate if a test flow has a reasonable chance of being successful while minimizing the risk of unintended negative consequences.	AB, BC, BC Hydro		Underway	2019
EFH25: Identify gaps in knowledge, review assembled information and confirm gaps using a workshop format, and develop plans to fill knowledge gaps	AB, BC, BC Hydro		Underway	2019
EFH26: Communicate with all stakeholders about management actions within the Peace–Athabasca Delta System to ensure risks are understood and acceptable.	AB, BC, BC Hydro		Not Started	2021
EFH27: Implement the protocol as opportunities arise, including water release, if supported.	AB, BC, BC Hydro		Not Due Yet	2023 (after above steps completed)

EFH28: For each particular test flow, establish assessment criteria and appropriate monitoring.	AB, BC, BC Hydro		Not Due Yet	2023 (after above steps completed)
EFH29: Conduct analysis, modelling, and monitoring related to addressing knowledge gaps with the purpose of identifying more specific parameters that could be used to inform Alberta's request for a test flow release.	AB, BC, BC Hydro		Not Due Yet	2021, and ongoing
EFH30: Update the protocol for a request from Alberta for a test flow release to influence an ice jam event in the PAD with more specific parameters, or update based on lessons learned from any subsequent ice jams and/or test flows.	AB, BC, BC Hydro		Not Due Yet	2022, and ongoing
Goal: To enhance spring flooding using artificial ice damming within Wood Buffalo NP.				
EFH31: Establish ice dam project team.	PCA, Indigenous Partners		Completed	2020
EFH32: Review past attempt to create an ice dam and related recommendations, and confirm one or more locations where an ice dam(s) could support the desired outcomes	Project team		Completed	2020
EFH33: Establish goals and objectives and develop a plan (i.e., Terms of Reference) to install an ice dam(s) to meet goals and objectives.	Project team		Discontinued	Discontinued
EFH34: Obtain required equipment (spray ice pump(s), monitoring equipment, etc.), establish field team to implement plan.				
EFH35: Implement plan (given necessary environmental pre-conditions are met).				
EFH36: Monitor / document implementation and results, assess results against objectives, refine plan for implementation in future years. Assess the potential for ice dams to support improved ecological and hydrological integrity in other parts of the PAD.				
Goal: To enhance monitoring and to improve the assessment of current and future water quantity conditions in the Peace and Athabasca River Basins.				
EFH37: Assess the current state of knowledge and monitoring within the PAD.	ECCC		Completed	2019
EFH38: Assess the current state of knowledge and monitoring within the Peace and Athabasca River Basins.	FPTI CTTE		Underway	2020
EFH39: Develop a common understanding of the complex hydrological function of the Peace and Athabasca River Basins and the PAD.	FPTI CTTE		Underway	2020
EFH40: Conduct a water balance assessment of the Athabasca and Peace River basins.	FPTI CTTE		Not Started	2020
EFH41: Determine the appropriate reference time point and scale to define baseline(s) conditions, including: pre-development, present conditions, naturalized.	FPTI CTTE		Not Started	2020

EFH42: Determine if appropriate baseline indicators are being monitored and identify gaps.	FPTI CTTE		Underway	2020
EFH43: Develop plan to gather information to fill gaps in western and Indigenous Knowledge.	FPTI CTTE		Underway	2020
EFH44: Undertake elder interviews (in conjunction with other interviews) to inform the pre-regulation and pre-development state of hydrology within the Peace–Athabasca River Basins and Delta.	Indigenous Partners		Underway	2020
EFH45: Ensure identified hydrological indicators are being monitored at appropriate spatial and temporal scale. Integrate with target and indicator monitoring toward objectives wherever possible.	FPTI CTTE		Not Due Yet	2022
EFH46: Communicate findings from baseline assessment to modelling work and to decision-makers to inform decisions related to future development or management action.	FPTI CTTE		Not Due Yet	2023
EFH47: Periodically review and update baseline(s) as information becomes available and share results.	FPTI CTTE		Not Due Yet	2025, and ongoing
Goal: To identify, modify and, if necessary, produce environmental flows assessment models that incorporate state-of-the-art understanding of localized effects of the past, ongoing, and projected climate changes, to inform future and ongoing management actions that could impact Wood Buffalo NP.				
EFH48: Hold a workshop to facilitate a common understanding of the influence of oil sands withdrawals on Indigenous navigability.	ECCC, AB, MCFN		Not Started	2019
EFH49: Inventory and assemble relevant currently available hydrological and geomorphological data, existing models (e.g., Athabasca River Basin Initiative and ongoing work under LARP for the Athabasca River, AEP forecast model of the Peace River, Mackenzie River Basin Hydraulic Model, data from Community-Based Monitoring) and information for the Peace and Athabasca Rivers and tributaries and include this inventory (and data, as appropriate) in the knowledge hub.	ECCC		Underway	2019
EFH50: Hold a workshop(s) with science-based and Indigenous Knowledge experts to scope the variables and data required to produce: (1) a simplified (or geographically restricted) model(s) with existing data to predict and understand the effects of small-scale management options being considered. (2) a holistic, basin-wide, multi-jurisdictional environmental flows model.	ECCC		Underway	2019
EFH51: Review existing models and modelling results to identify options to achieve the identified objectives for Indigenous navigability and ecological outcomes in Wood Buffalo NP.	FPTI CTTE		Underway	2020
EFH52: Identify gaps and undertake a plan to address these gaps, including potential field studies, and develop finer-scale climate change scenarios for the longer-term holistic model, as requested in Recommendation 3.	ECCC		Not Due Yet	2023
EFH53: Develop a holistic, basin-wide, multi-jurisdictional model to the highest international standards to understand hydrological, ecological, and Indigenous use relationships in light of current and future climate change and cumulative effects of withdrawals and regulation.	FPTI CTTE		Underway	2023

EFH54: Make the model(s) and requisite data available to inform future management actions or decisions in the Mackenzie basin that could impede or support the achievement of the PAD objectives and outcomes.	FPTI CTTE		Not Due Yet	2025
EFH55: Update the model framework as data become available through study and management actions and share results.	FPTI CTTE		Not Due Yet	2025, and ongoing
Goal: Strategically-placed short- and/or long-term water management control structure(s) within the PAD create a local hydrological regime that supports the ecological functioning and Indigenous use in identified target areas.				
EFH56: Assemble and review overview of the existing data and information related to past, current, or potential control structures in the PAD.	FPTI CTTE		Completed	2019
EFH57: Obtain new information related to possible short-term or small-scale options to improve the hydrological regime in the PAD.	FPTI CTTE		Completed	2019
EFH58: Pending feasibility assessment results and consultation with local communities, select the most appropriate action and complete the full design for one or more pilot control structures. · Determine appropriate Indigenous and hydro-ecological indicators and monitor for effects of the control structure(s) · Learning from monitoring and implementation results, adjust timing and length of installation and/or site of installation	FPTI CTTE		Underway	2020
EFH59: Install one or more pilot control structures and/or repair existing weirs, as designed.	PCA, AB		Not Due Yet	2023
EFH60: Monitor and adapt installation as required to progress toward objectives.	FPTI CTTE		Not Due Yet	2023
EFH61: Identify remaining gaps in knowledge, including linkages between PAD with current or future structural scenarios, varying flow input, and impacts upstream and downstream.	FPTI CTTE		Not Started	2021
EFH62: Longer-term structural options will be assessed in the cumulative framework to test interactions with other management options. Continued monitoring of pilot structures, existing structures and ice damming efforts will provide key information.	FPTI CTTE		Not Due Yet	2023
Goal: Identify and assess the risk of alternative management options to provide recommendations toward achieving desired flows and water levels				
EFH63: Using or adapting models built and knowledge obtained from environmental flows assessments and early actions, assess the predicted impacts of potential management options, singly or in combination.	FPTI CTTE		Not Started	2021
EFH64: Select a set of priority scenarios to undertake more detailed evaluation including assessing what impact each has on the achievement of key selected ecological and traditional use objectives/outcomes (using indicators as identified above, such as muskrat).	FPTI CTTE		Not Due Yet	2023

EFH65: Assess the impact of priority scenarios on interests upstream and downstream of the PAD.	FPTI CTTE		Not Due Yet	2023
EFH66: Impact assessment and detailed analyses of desired management options.	Jurisdictional authority		Not Due Yet	2024
EFH67: Recommend the preferred management approach(es) to the relevant jurisdictional authorities that could support achieving the ecological and traditional use EFH objectives.	FPTI CTTE		Not Due Yet	2024
EFH68: Continue to monitor and adapt toward achieving the desired outcomes.	FPTI CTTE		Not Due Yet	2024, and ongoing
Goal: To establish a Knowledge Hub to make Peace–Athabasca Delta information and data from science-based and Indigenous Knowledge sources more easily accessible.				
EFH69: Complete a user-needs survey to assess what type of information and presentation the various users require or want.	ECCC		Completed	2019
EFH70: Establish an appropriate knowledge hub platform, informed by similar existing resources (e.g., Mackenzie Data Stream) that targets needs without creating redundancies.	ECCC		Underway	2020
EFH71: Establish data sharing protocols.	FPTI CTTE		Completed	2023
EFH72: Develop a basic ethics and data sharing agreement that can be adapted as needed.	FPTI CTTE		Completed	2019
EFH73: Update knowledge hub routinely with monitoring and study data from within Wood Buffalo NP.	FPTI CTTE		Not Due Yet	2023
EFH74: Establish communication mechanisms and frequency to exchange information with (a) communities, (b) jurisdictions and governments, and (c) stakeholders and the general public.	FPTI CTTE		Underway	2019
EFH75: Regularly review and evaluate the effectiveness of the Knowledge Hub and ensure links are up to date.	FPTI CTTE		Not Due Yet	2023
THEME: Monitoring and Science (MS)				
OUTCOME: An Integrated PAD Research and Monitoring program (using both WS and IK), supported by a community-based research and monitoring hub, is implemented to detect cumulative effects on the PAD and to generate information that informs land-use management and regulatory decision making.				
MS1: Coordinate PAD Research and Monitoring Workshops; develop and implement integrated PAD Research and Monitoring Program.	PCA	ECCC	Underway	2023
MS2: Initiate annual PAD Symposium to share findings of PAD-related science and monitoring work underway by various organizations.	PCA	ECCC	Underway	2020
MS3: Develop targets, indicators and specific objectives (using science-based and Indigenous Knowledge) required to evaluate the status and trend of the elements of OUV of Wood Buffalo NP.	PCA	ECCC	Underway	2020

MS4: Undertake Wetland Classification of the PAD and of Wood Buffalo NP to support ecological assessments of the PAD and other wetlands within Wood Buffalo NP.	PCA		Completed	2019
MS5: Obtain high-resolution digital terrain imagery of the PAD.	PCA, ECCC	OSM	Completed	2020
MS6: Advance the concept of a PAD monitoring hub to support better integration of science-based and Indigenous Knowledge of the PAD.	Indigenous Partners, PCA, ECCC		Underway	2020
MS7: Develop periodic State of the PAD reports.	PCA	ECCC	Not Due Yet	TBD
MS8: Expand invasive species monitoring and management to the Salt Plains as part of ongoing vegetation monitoring in Wood Buffalo NP.	PCA	ECCC	Underway	2019
MS9: Continue to monitor environmental indicators in the PAD through the Oil Sands Monitoring Program under the programs' scope, mandate and governance structure. Ensure this monitoring and reporting is coordinated with and leveraged as needed with the actions throughout this plan.	AB, ECCC	OSM	Underway	2023
THEME: Wildlife and Habitat Conservation (WH)				
OUTCOME: Support the recovery of wood bison and whooping crane within and beyond Wood Buffalo NP through the implementation of recovery actions and species management in collaboration with Indigenous groups and using Indigenous Knowledge.				
WH1: Complete the Recovery Strategy for Wood Bison.	ECCC	PCA	Completed	2019
WH2: Undertake an Imminent Threat Assessment for Ronald Lake and Wabasca wood bison herds.	ECCC		Completed	2019
WH3: Launch a collaborative multi-stakeholder bison disease management planning group to examine options and coordinate activities aimed at eliminating the risk of bovine brucellosis and tuberculosis transmission.	PCA		Not Started	TBD
WH4: Develop one or more Action Plans for wood bison.	ECCC		Not Due Yet	2022
WH5: Begin work to identify critical habitat for wood bison.	ECCC		Underway	2021
WH6: Develop a cooperative management arrangement with Indigenous communities, to help support traditional land use and cultural values, including the exercise of rights recognized under section 35 of the Constitution Act 1982, on the management of the Ronald Lake Bison Herd in conjunction with the BSA and adjacent conservation areas.	AB		Underway	2023
WH7: Develop an Indigenous Knowledge Research Process to complement the Ronald Lake Bison Herd Technical Team.	AB		Completed	On-going
WH8: Continue to monitor the nesting area of the whooping crane within Wood Buffalo NP and its wider ecosystem.	ECCC, PCA		Underway	2023
WH9: Conduct high-resolution remote sensing to assess the extent and use of whooping crane breeding habitat.	ECCC, PCA		Underway	2019

WH10: Update critical habitat identification for whooping crane.	ECCC	PCA	Not Due Yet	2022
WH11: Identify landing and stopover sites used by whooping cranes within the oil sands region during migration.	ECCC	PCA	Underway	2019