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STAFF REPORT TO COUNCIL

PRESENTED:	November 19, 2024	**REPORT:**	24-101
FROM:	Climate & Environment	**FILE:**	0340-01
SUBJECT:	PRIORITY HABITAT FRAMEWORK AND MAPPING UPDATE		

RECOMMENDATION FROM THE CHIEF ADMINISTRATIVE OFFICER

That the recommendation of the General Manager of Climate Action, Planning and Development Services be endorsed.

RECOMMENDATION(S)

That Council receive Information Report No. 24-101 with the Priority Habitat Framework, attached as Appendix A, and update on the recent Priority Habitat mapping.

PURPOSE OF REPORT

The purpose of this report is to inform Council about the Priority Habitat Framework (PHF) and recently updated Priority Habitat (PH) mapping.

☒ Information Report ☐ Administrative Report (Decision or Direction)

DISCUSSION

Introduction

Whistler's Vision, as articulated in the Resort Municipality of Whistler's (RMOW) Official Community Plan (OCP), speaks to a future where "nature is protected". The PHF (Appendix A) builds upon many years of municipal efforts and provides a strategic guiding document to identify, protect, restore and connect Whistler's most important natural areas in support of key local species and biodiversity. The PHF and the updated 2024 PH mapping series are valuable tools to support better, more informed decision-making for habitat, biodiversity and climate resilience.

Background

PH is critical for supporting important species such as species at risk, keystone species, umbrella species and other species of local importance. Biodiversity, the variety of life in all its forms, is intrinsically linked to the habitats where species live and supports essential ecosystem services, ecological stability and functionality. Habitats provide the essential resources – food, water, shelter, space – that species need to survive, grow and reproduce. The link between biodiversity and habitat is fundamental: habitats sustain the lives of species, while biodiversity supports whole ecosystems. Protecting diverse habitats is critical not only for individual species but also for maintaining biodiversity and the benefits it provides to all forms of life, including humans.

Protecting nature is also key to meeting the challenges of climate change. Healthy, diverse ecosystems increase resilience against climate change impacts and are better at adapting to change and maintaining ecological functions, such as water purification and soil fertility. Natural ecosystems (i.e., forests and wetlands) absorb and store CO_2 from the atmosphere, which can help in reducing net greenhouse gas emissions. Natural landscapes also help mitigate extreme weather events, which are becoming more common with climate change. For example, forests and wetlands reduce the risks of flooding and help to regulate local air and water temperatures.

The RMOW has a deep history of valuing nature and striving to protect important natural habitats. In 1999, the Whistler Environmental Strategy (WES) discussion paper (see Appendix B for 2002 version) highlighted the importance of a network of protected ecosystem types to retain critical habitat and natural areas. Following the development of the WES, collaborative community efforts were made to develop a protected areas network to identify, protect and connect important natural habitat. This was the first coordinated municipal approach to identify protected habitat and while a comprehensive network to protect all the identified key areas was not formally adopted at that time, this work has proved fundamental to future efforts.

Flowing these initial efforts, the RMOW introduced a new zoning designation: Protected Areas Network (PAN1) Zone in 2000. PAN1 specifies nature conservation and passive recreation as the primary intent. The first PAN1 zoned parcels, including the Emerald Forest Conservation Area, were designated in 2000 and are still recognized and valued as one of the most important valley bottom habitat areas in Whistler. The majority of existing PAN1 parcels were zoned in 2000-2001, including RMOW owned or managed parcels with environmental value such as the Golden Dreams Conservation Area, several parcels in Stonebridge, a parcel west of Alta Lake Park and a portion of the Millar Creek/Alpha Creek wetlands. Two more RMOW-owned parcels were rezoned as PAN1 in 2020-2021: a riparian area along Alpha Lake south, as part of a Land Use Contract discharge; and a riparian area along the Cheakamus River as part of the Cheakamus Crossing Phase 2 project. All combined, including a privately owned parcel above Creekside, there are currently 10 parcels zoned PAN1 within the RMOW.

Initial PH Report (2018)

In 2018, the RMOW worked with consultants Snowline Ecological Research (SER) and Palmer Environmental Consulting Group on a scientific approach to identify key species for habitat conservation in Whistler with a broader objective of biodiversity conservation. Through a detailed analysis of local species with high conservation value and the habitats they required, the first iteration of Whistler's PH areas was defined and identified. This first version of science-based, systematic and comprehensive PH identification culminated in a report entitled *Species and Habitat Priorities for Biodiversity Conservation in the RMOW* (2018 PH Report) (Appendix C). The RMOW uses PH in reference to natural areas that are the most important to conserving key local species and biodiversity.

The 2018 PH Report reviewed and ranked local species according to attributes such as: Federal/ Provincial species at risk status, keystone species, umbrella species, indicator species, species of local concern and local threat levels. Following this assessment of local species, the critical habitat needs associated with supporting the highest ranked priority species were identified. These habitat types were then assessed, scored and ranked in a matrix based on specific habitat criteria, resulting in an overall PH score for each habitat type. The top scoring habitat types were identified as Whistler's PH types and included: lakes, rivers, streams, riparian areas, wetlands, coastal western hemlock (CWH) old forest, forested floodplain, large/old cottonwoods, unlogged core forests, ecosystems at risk and connectivity corridors. The 2018 PH Report was accompanied by a series of maps indicating the general spatial delineation of the various PH types within the RMOW.

Notably, the 2018 PH Report and associated maps helped to inform the mapped designation of the Protection of Sensitive Ecosystems (PSE) Development Permit Area (DPA) in the 2020 OCP. The sensitive ecosystem types addressed within this DPA are largely aligned with the PH types outlined in the 2018 PH Report. As such, the RMOW has been able to make more informed decisions, including reviews and assessments of proposed development, with a view to minimizing negative impacts to PH areas. The 2018 PH Report maps have also played an important role for staff when planning or evaluating proposed development and are used regularly as a resource by applicants and professionals in relation to development permit applications, particularly within the PSE DPA.

PH Framework (2023)

The PHF adds to past efforts by providing a comprehensive, proactive and strategic approach to protect and restore Whistler's most important natural habitat areas.

In 2022, staff initiated the development of the PHF as a strategic approach to protecting Whistler's PH areas. The PHF aims to fulfill Policy 7.1.2.2 in the OCP and Action A.3.1.1 in the Big Moves Climate Action Implementation Plan (CAIP) as well as contributing to Whistler's climate resilience and the Community Vision as articulated in the OCP. Diamond Head Consulting was retained to support staff with the development of the PHF, and to lead the engagement of various internal and external parties. The PHF was finalized in August 2023.

The PHF contains a robust background section which includes a review of existing RMOW environmental protection policies and programs and an overview of the current state of Whistler's natural areas. The PHF refers to the 2018 PH Report and generally describes the types of PH identified therein, including water features (lakes, rivers, streams, wetlands, floodplains) and associated riparian areas, mature and old forests, ecosystems at risk and species at risk habitat.

The PHF summarizes key threats to PH and biodiversity in Whistler including urban development, wildfire, drought, flooding, forest harvesting, forest thinning to reduce wildfire risk, recreation and invasive species. Recognizing these pressures, particularly in the face of climate change which is creating more extreme weather events and altering conditions for local species, it is more important than ever to protect Whistler's remaining PH areas.

The PHF is a high-level guiding document outlining five strategic goals with subsequent recommendations to help protect Whistler's PH. The five strategic goals of the PHF are:

1. Clearly define and map Whistler's PH.
2. Protect, restore and monitor PH.
3. Develop and update policies and other planning tools to protect and enhance PH during land use planning and development.
4. Minimize the impacts of outdoor recreation on PH.
5. Increase knowledge about PHs and promote stewardship to protect them.

Each strategic goal is accompanied by a series of recommendations. Further, an internal work plan for PHF implementation has been developed by staff, outlining detailed actions towards achieving these strategic goals and recommendations through to 2030. With respect to resourcing this project, implementation of the PHF will be led by Climate and Environment Department staff and includes contractor hours for specific components of the project (e.g. mapping and analysis).

PHF Implementation

Implementation of the PHF began in fall 2023, starting with the first strategic goal: to clearly define and map Whistler's PHs. Recommendations under this goal include:

- review and refine the definitions and criteria for PH types outlined in the initial 2018 PH Report;
- prioritize all identified PH types according to their relative importance; and
- update the PH mapping based on refinements to types and prioritization.

In fall 2023, staff contracted SER to complete the work required to achieve these recommendations. This work has now been completed and is summarized in the report entitled *PHs in Whistler 2024 Update – Mapping and Technical Report* (see Appendix D), along with an updated PH mapping series on RMOW GIS (2024 PH Update).

2024 PH Update

The 2024 PH Update makes some refinements to the PH types as initially defined in the 2018 PH Report. The first four types of PH are based on watercourses and include:

- lakes and wetlands;
- streams;
- riparian areas; and
- floodplains.

These water-based PH types remain unchanged from the initial 2018 PH report, except for minor improvements to support habitat prioritization and mapping. For example, there is a new distinction of Shallow Shoreline habitat within the Lakes and Wetlands PH type, particularly related to Whistler's larger lakes. This specific habitat is important to shorebirds at risk which require shallow shoreline areas for feeding; as such, this habitat merited a separate distinction to support more accurate prioritization.

Some refines were made to Whistler's forest-based PH types to reflect growing knowledge about Whistler's forests and how they support key species and biodiversity. First, the term Ancient Forest has been added to the existing Old Forest PH type; this revised PH type is now called Old and Ancient Forests. Old growth forests (250-399 years) are increasingly rare in B.C. and the rest of the world, and they have many characteristics that make them important both from a biodiversity and a climate perspective. Ancient forests (>400 years) are even more rare and unique, and as such warrant a higher priority ranking in terms of their ecological importance.

Also related to forest-based ecosystems, the PH type previously titled Unlogged Core Forests has been revised to Largest Old Forest Patches for clarity, and the related mapping formula was adjusted to capture the largest contiguous areas of intact (i.e., unlogged and undeveloped) forests remaining in Whistler. Large intact forest patches are needed to provide interior habitat needs of certain species and they also support a more connected landscape.

Furthermore, two new forest-based PH types have been added in the 2024 PH Update:

- Yellow Cedar Ancient Forests – these forests provide globally rare and significant forests and identifying them also help to more accurately delineate local ancient forests; and
- Big Tree Forests – the presence of large and tall trees is among the most important habitat characteristics of Whistler's forests.

Protecting local old, ancient and big tree forests will support biodiversity and climate resilience goals.

With respect to the Ecosystems at Risk PH type, a revision has been made to include only Provincially Red-Listed ecosystems at risk. In the 2018 PH Report, both B.C. Blue-Listed and Red-Listed species were included; however, most of the forest ecosystems in Whistler are Blue-Listed and therefore are

not locally rare. As the PHF aims to prioritize the most ecologically important habitat, this PH type now considers only Red-Listed ecosystems.

A range of species-based PH types has been identified and delimited in the PHF. These new species-based PH types reflect key species of local importance in relation to the project's broader biodiversity conservation objectives.

All combined, here is the current list of Whistler's PH types:

PH Types

Ecosystem-Based	Species-Based
Lakes and Wetlands	Beaver-Affected Wetlands
Streams	Red-Legged Frog & Western Toad Ponds
Riparian areas	Salmonid Fish Habitat (Streams / Lakes)
Floodplains	Shorebirds at Risk
Old and Ancient Forests	Tailed Frog Streams
Largest Old Forest Patches	Cottonwoods & Screech-Owl Habitat
Yellow Cedar Ancient Forests	Goshawk Habitat
Big Tree Forests	Whitebark Pine
Red-Listed Ecosystems at Risk	Mountain Goat Habitat
	Grizzly Bear Habitat

Individual base maps for each of the above PH types have been added to the RMOW GIS Map.

Related to Recommendation 1.2 of the PHF, initial implementation efforts included the prioritization of PHs – because not all PH types have equal value from an ecological perspective. A scoring system was developed to determine and highlight Whistler's most important habitat areas, regardless of any overlap in PH types. All areas within each of the 20 base maps (one for each PH type listed in the table above) were assessed and scored in one of four categories: Very High, High, Moderate or No Score which created a Scoring Map for PH types highlighting areas ranked as Very High or High.

The Very High ranking areas with the highest relative ecological value, based on the following criteria:

- rarity – for example, ancient forests, big trees and Red-listed ecosystems;
- connectivity – such as the largest old forest patches on the landscape; and
- importance to key local species – for example, streams and lakes with salmonid fish, breeding ponds/lakes for Western toads and Red-legged frogs, beaver-affected wetlands and highest value habitat for species at risk (e.g., grizzly bears, goshawks).

While Whistler's PH does not currently include areas that rank as Moderate or No Score, this does not mean that they have no habitat value. Rather, the focus of this work is to identify Whistler's most important habitat and through the scoring system, the areas ranked highest (i.e., scoring as Very High or High) are determined to be the most ecologically important for local biodiversity conservation.

The scoring for each individual base map all feeds into one main overview map, which provides a snapshot of Whistler's highest-ranking PH – with top-scoring Very High areas shown in red and second place ranked High areas shown in orange. At a glance, the Overview map clearly illustrates Whistler's most important PH areas.

The updated 2024 PH mapping series also includes several connectivity-focused maps, including:

- recruitment and future forests;

- east and west mountainside greenbelts; and
- cross-valley greenbelts.

Landscape connectivity is a fundamental concept in conservation ecology and is increasingly important as climate change and human activities alter natural habitats. Connectivity facilitates the movement of species and ecological processes across different habitats and is critical to biodiversity and ecosystem resilience. These connectivity maps are conceptual only and are not scored or factored into the PH overview map. The connectivity maps can play an important role in helping us to look ahead and to see how we might maintain key habitat connections across the community into the future.

The 2024 PH mapping also includes a map of Existing Conservation Areas (ECAs) within and around the RMOW which is important for the PHF implementation. The types of conservation areas shown on this map meet the Federal criteria for a formally recognized protected or conserved area and include:

- BC Conservancy areas;
- BC Provincial Parks;
- Old Growth Management Areas;
- Sea to Sky Wildland Zones;
- Ungulate Winter Range; and
- RMOW conservation zoning – PAN1, Leisure Park 2 and Leisure Conservation Buffer 1.

The updated PH mapping covers an expanded area beyond municipal boundaries, including subalpine and alpine areas. The base mapping has been updated based on best available data resulting in improved accuracy for multiple base layers in the GIS system. The updated mapping provides the RMOW's first ever species-based PH maps for multiple species of local importance available on the public GIS. And based on the highest-ranking habitat for local biodiversity, the overview map presents a clear snapshot of Whistler's most important PH areas. Overall, the updated mapping provides the most comprehensive and informative series of ecological maps in RMOW history. These maps are currently available on the internal and external RMOW GIS system and serve as a critical resource for staff, development applicants, environmental professionals, students, residents and others, providing information about biodiversity values and important habitat areas in Whistler.

The PH maps are intended for use primarily as a land use information tool to indicate where important sensitive ecosystems may be present on the landscape. These maps are used regularly by internal staff to support land use planning, review of development proposals, policy development and regulations and environmental monitoring, restoration and stewardship projects. Externally, these maps are used by environmental professionals (as a resource for development applications and monitoring) and community partners, interest groups, students, residents and visitors (as an information source).

PHF Implementation – Next Steps

Over the next six months, staff efforts to implement the PHF will first focus on sharing the updated PH mapping to increase familiarity with this important resource and its improved features. Raising awareness of the PH project and updated mapping among internal staff has been underway since late September. Staff will begin to share the maps with external partners. Providing orientation around the new maps is an important step towards building a greater understanding of Whistler's PH areas and how the community can work together to help protect them on the landscape. Staff will also work to improve external communication efforts and other related environmental stewardship programs.

Another significant long-term recommendation in the PHF is to assess the condition of specific PH areas, particularly within the Whistler Urban Development Containment Area (WUDCA). Such an

assessment would inform the development and implementation of a restoration strategy – for example, to restore instream and riparian habitat and/or to enhance invasive species control efforts.

Initial PH Hotspots

Although the land use analysis of PH areas is still in the very early stages, some notable initial hotspots (i.e., larger areas and/or smaller patches close to other patches) of Very High PH areas have been within and beyond the WUDCA. Here are a few examples:

- Emerald Forest / Whistler Nature Reserve / River of Golden Dreams corridor
- Rainbow Trail / Rainbow Lake / 21-Mile Creek watershed
- One Duck Lake area (above Emerald Estates)
- Base of Blackcomb Mountain to Wedge Mountain (Comfortably Numb trail area)
- West side of Whistler Mountain
- Callaghan Valley
- Jane Lakes / Black Tusk area

These are some key areas that represent some of the most important PH areas in Whistler.

Early analysis of mapped PH areas indicates that within the full administrative boundary of the RMOW (24,586 ha), approximately 30 per cent of the landscape is identified as Very High PH. Within the WUDCA (2,550 ha), approximately 19 per cent of the landscape is identified as Very High PH. The PHF is focused on working strategically to protect Whistler's PH areas.

Biodiversity and healthy ecosystems support Whistler's resilience in the face of climate change. When we support nature, nature can better support us. The PHF and improved mapping provide the RMOW with tools to make better, more informed decisions for land use, biodiversity and climate resilience. Anchored in the OCP and the community's climate action goals, the PHF provides a comprehensive and strategic approach to protecting Whistler's most valuable habitat for biodiversity – and for the community, visitors and future generations.

POLICY CONSIDERATIONS

Relevant Council Authority/Previous Decisions

The PHF directly supports the CAIP goals and their subsequent key initiatives and actions:

Adaptation Goal 3 – Protect, support and increase the resilience of local ecosystems, natural assets and biodiversity.

- Key Initiative A.3.1 – Develop policy, planning and legislative strategies to protect and restore local ecosystem health and support continued provision of natural infrastructure services.
  - The PHF and updated PH mapping provides strategic direction and practical resources to protect and restore ecosystem health.
- Action A.3.1.1 – Develop and implement the PHF to identify and protect key natural areas.
  - The PHF and updated PH mapping directly address this action.

2023-2026 Strategic Plan

The 2023-2026 Strategic Plan outlines the high-level direction of the RMOW to help shape community progress during this term of Council. The Strategic Plan contains four priority areas with various associated initiatives that support them. This section identifies how this report links to the Strategic Plan.

Strategic Priorities

☐ Housing

Expedite the delivery of and longer-term planning for employee housing

☒ Climate Action

Mobilize municipal resources toward the implementation of the Big Moves Climate Action Plan

☐ Community Engagement

Strive to connect locals to each other and to the RMOW

☒ Smart Tourism

Preserve and protect Whistler's unique culture, natural assets and infrastructure

☐ Not Applicable

Aligns with core municipal work that falls outside the strategic priorities but improves, maintains, updates and/or protects existing and essential community infrastructure or programs

Community Vision and Official Community Plan

The OCP is the RMOW's most important guiding document that sets the community vision and long-term community direction. This section identifies how this report applies to the OCP.

The PHF directly supports the RMOW's Community vision and the following OCP goals:

- ***Goal 7.1*** *– Whistler's sensitive ecosystems, wildlife, habitat and biodiversity are protected, managed and restored.*
  - The PHF is a science-based approach to protecting and restoring local sensitive ecosystems, wildlife and habitat.
- ***Policy 7.1.2.2*** *– Explore a PH Management Strategy that prioritizes connectivity and protects and manages sensitive ecosystems.*
  - The PHF is a direct response to achieve this Policy statement, with a focus on protecting and connecting sensitive ecosystems.
- ***Goal 7.2*** *– Natural areas are proactively managed for and resilient to climate change.*
  - The PHF targets the protection of natural areas and important habitat, which supports resilience to the impacts of climate change.
- ***Goal 7.3*** *– Water quality and quantity in local water bodies, streams and groundwater are protected.*
  - The PHF directly targets the protection of water-based ecosystems, riparian areas and forest habitat to support good water quality and quantity in waterways.
- ***Goal 10.5*** *– Increase the resilience of Whistler's infrastructure, natural environment and socioeconomic assets from the potential impacts of a changing climate.*
  - The PHF directly aims to protect Whistler's natural environment to support resilience in the face of climate change.

BUDGET CONSIDERATIONS

A total of $25,000 of approved budget was spent in 2023 on the PHF and covered consulting costs for development of the PHF, stakeholder engagement and some initial mapping work.

For 2024, the total proposed budget for implementing the PHF is $45,000. These funds are allocated to consulting costs for research, mapping and initial land use analysis work.

We anticipate a budget request of approximately $50,000 per year from 2025 through 2029 for continued implementation of the PHF. Specific initiatives related to implementation may require additional budget (e.g., ecological restoration works).

LÍĽWAT NATION & SQUAMISH NATION CONSIDERATIONS

The RMOW is committed to working with the Líl̓wat People, known in their language as L'il'wat7úl and the Squamish People, known in their language as the Skwxwú7mesh Úxwumixw to: create an enduring relationship; establish collaborative processes for planning on unceded territories, as currently managed by the provincial government; achieve mutual objectives and enable participation in Whistler's resort economy. This section identifies areas where RMOW activities intersect with these relationships.

To date, the RMOW has reached out to the Líl̓wat Nation and the Squamish Nation through letters and their respective referral portals to share draft and final versions of the PHF. The Líl̓wat Nation has responded with expressed support for the project and an offer to engage and contribute further information. No response has been received by the Squamish Nation. Continued and deeper engagement with both the Líl̓wat Nation and the Squamish Nation is anticipated in future years regarding specific implementation components of the PHF.

COMMUNITY ENGAGEMENT

Level of community engagement commitment for this project:

☒ Inform ☒ Consult ☐ Involve ☐ Collaborate ☐ Empower

The level of general public engagement for the PHF is to provide information.

With respect to engagement on the PHF, an internal staff group from the following RMOW departments participated in developing and reviewing the plan: Climate and Environment, Planning, Parks Planning and Infrastructure Services. Drafts and final versions of the PHF were provided to the Líl̓wat Nation and the Squamish Nation through their respective referral portals for their review and information. The draft PHF was presented twice to the RMOW Forest and Wildland Advisory Committee. In May 2023, a workshop was held to review, discuss and invite feedback on the draft PHF with a group of interested community organizations including: the Association of Whistler Area Residents for the Environment, the Cheakamus Community Forest, the Sea to Sky Invasive Species Council, SER, the Whistler Off Road Cycling Association and the Whistler Naturalists. These consultation efforts gathered input and feedback to develop and improve the draft PHF before being finalized.

REFERENCES

Appendix A – Priority Habitat Framework 2023
Appendix B – Whistler Environmental Strategy 2002
Appendix C – 2018 Priority Habitat Report
Appendix D – 2024 Priority Habitats Update Mapping and Technical Report

SUMMARY

This report provides an overview of the newly developed PHF, a high-level guiding document for the RMOW to identify and protect Whistler's most valuable habitat areas. The PHF outlines five strategic Goals and subsequent Recommendations to help protect Whistler's PH.

Implementation of PHF Goal 1 is well underway with recently updated PH mapping. The updated mapping supports the PHF and the protection of Whistler's most important natural areas for biodiversity conservation and climate resilience.

SIGN-OFFS

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