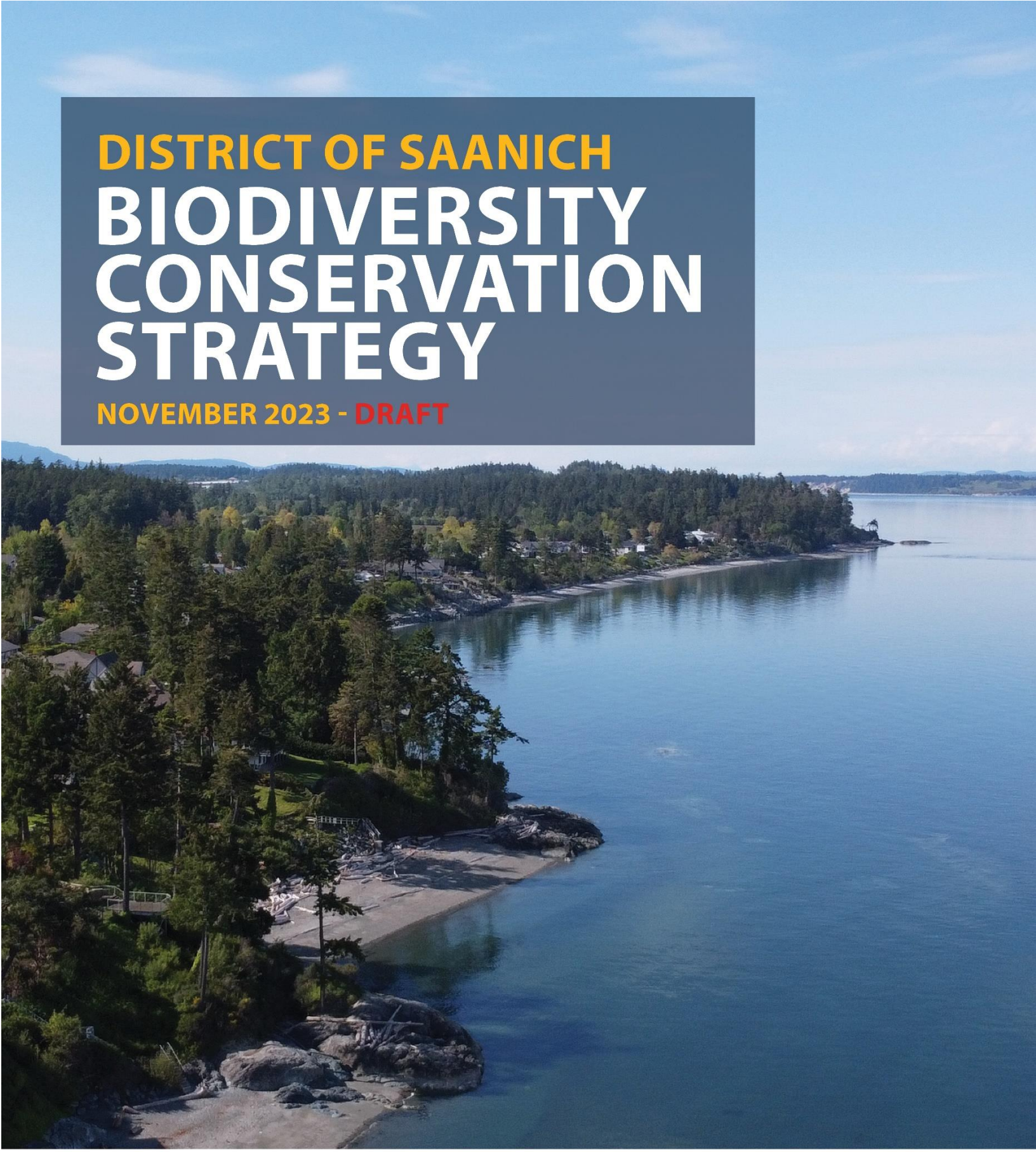
DISTRICT OF SAANICH

BIODIVERSITY CONSERVATION STRATEGY

NOVEMBER 2023 - DRAFT



DIAMOND HEAD

Saanich

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Land Acknowledgement

The District of Saanich is situated within the ancestral territories of the Lekwungen peoples, recognized as the Songhees and Esquimalt Nations, as well as the W̱SÁNEĆ peoples, encompassing W̱JOŁEŁP (Tsartlip), BOḰEĆEN (Pauquachin), STÁUTW̱ (Tsawout), W̱SIḴEM (Tseycum), and MÁLEXEŁ (Malahat) Nations. These First Peoples have inhabited this region since ancient times, contributing to a profound and diverse history in the area.

The District of Saanich thanks all First Nation community members who volunteered their time to inform and support this Biodiversity Conservation Strategy.

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Acronyms

BCCDC – British Columbia Conservation Data Centre
BEC – Biogeoclimatic Ecosystem Classification
CDF – Coastal Douglas-Fir
CRD – Capital Regional District
CRISP – Capital Region Invasive Species Partnership
DEM – Digital Elevation Model
DHC – Diamond Head Consulting
EDRR – Early Detection Rapid Response
ESA – Environmentally Significant Areas
GIS – Geographic Information System
GOERT – Garry Oak Ecosystem Restoration Team
ISMS – Invasive Species Management Plan
LiDAR – Light Detection and Ranging
MOF – Ministry of Forests
QEP – Qualified Environmental Professional
RSTC – Resilient Saanich Technical Committee
SAR – Species at Risk
SEI – Sensitive Ecosystem Inventory
TEI – Terrestrial Ecosystem Information
TEIS – Terrestrial Ecosystem Information System
TEM – Terrestrial Ecosystem Mapping
UCB – Urban Containment Boundary

Glossary

Biodiversity	Biodiversity is a term used to describe the variety and variability of life on Earth. Biodiversity encompasses all living species and their relationships to each other. This includes the differences in genes, species, and ecosystems.
Biodiversity Target Categories	The eight types of habitat elements that the Resilient Saanich Technical Committee has identified which will be targeted in biodiversity planning in Saanich.
Biogeoclimatic Ecosystem Classification (BEC)	An ecosystem classification system developed specifically for BC's ecosystems. BEC classifies specific ecosystem types in the Province based on climate, soils, and ecology.
Early Detection Rapid Response (EDRR)	A management approach used to find, identify, and systematically eradicate new invasive species before they can widely reproduce beyond their initial entry.
Ecosystem Services	The many and varied benefits to humans provided by the natural environment and healthy ecosystems. Carbon sequestration, recreation potential, shade, water filtration, and pollination are all examples of ecosystem services associated with the urban forest.
Environmentally Significant Area	An area identified as having features of ecological or environmental significance which are vulnerable to disturbance or degradation by human activities or developments.
Invasive Species	A species that is not native or is outside of its natural range and which is negatively impacting the environment, people, and/or the economy.
LiDAR	Acronym for 'light detection and ranging'. An active remote sensing technology that can measure vegetation height and elevation using laser scanning.
Mixed Forests	Forests where neither coniferous nor deciduous trees account for over 66% of the stand canopy.
Native Species	A species which is present without direct or indirect human intervention, and which is present within its natural range and limited by its natural dispersal abilities.
Natural Area	Any physical area that contains sufficient native species, ecological communities, or habitat features to support native biodiversity.
Protected Areas	Lands which have legal protections or with limitations on use, specifically to safeguard the natural environment such as natural state covenants,

	conservation areas and parkland. For this assessment, all parkland was considered protected area, regardless of park use.
Resilient Saanich	Saanich's process to develop an environmental policy framework to address current policy gaps in natural environmental objectives by developing plans, policies, bylaws, and strategies to support the vision of an environmentally conscious future.
Resilient Saanich Technical Committee	A volunteer committee consisting of local environmental industry professionals supporting District staff, council, and consultants in developing the framework.
Sensitive Ecosystem Inventory (SEI)	A standardized mapping approach and an associated dataset specifically designed for mapping sensitive ecosystems.
Species and Ecosystems at Risk	A specific species or group of species which have been identified as extirpated, endangered, threatened, or of special concern.
Terrestrial Ecosystem Mapping (TEM)	A standardized mapping approach and an associated dataset providing site-specific classifications and descriptions of ecosystem units in BC.
Threatened	Likely to become endangered if limiting factors are not reversed.
Tree	For the purposes of this report, a tree is any woody plant with a height of at least 2 m, including all native and non-native species.

Executive Summary

The District of Saanich includes expansive natural areas with abundant local biodiversity. Marine backshores, productive lakes and wetlands, meandering creek systems, and a diverse array of plant communities provide habitats for wildlife populations. Many natural areas support ecological communities considered at risk in BC and Canada and provide habitat used by numerous species at risk.

The Resilient Saanich program was initiated by Council in 2017 to develop a policy framework for environmental protection in Saanich. This process will also include a Climate Plan, Biodiversity Conservation Strategy, and an Enhanced Stewardship Program. A State of Biodiversity Report (March 2023) was developed to provide an understanding of the current state of the District's natural areas and the elements that threaten their integrity. While the natural features described above are defining characteristics of Saanich, ongoing pressures from recreational activities, climate change, and urban development jeopardize these ecosystems and their abundant biodiversity.

Furthermore, the Ministerial Order under the Housing Supply Act mandates the delivery of 4,610 new dwellings in the District over a 5-year period. Saanich will be focusing this development and densification within the Primary Growth Area, however, it is important for this development to be balanced with natural area and biodiversity protection. Conserving and rehabilitating these natural areas and the value they provide will ensure biodiversity conservation for the long term. This Biodiversity Conservation Strategy provides a roadmap to protect and enhance natural assets through policy, operations, and public stewardship.

The Strategy identifies eight overarching objectives that serve as the framework for the recommendations:

1. Improve knowledge and mapping of natural features and functions
2. Acquire and protect a network of habitat areas
3. Enhance biodiversity during land use planning and development
4. Enhance biodiversity on public lands
5. Encourage biodiversity initiatives on private lands outside the development process
6. Improve public understanding of biodiversity
7. Enhance biodiversity on agricultural lands
8. Monitor the state of biodiversity

The core purpose of this strategy is to support the District in safeguarding biodiversity and ensuring it is resilient to climate change by preserving the invaluable ecological assets and services provided by these ecosystems. The District is conscious of the need to balance these goals with the social and economic needs of the community as it continues to grow.

Introduction

The District of Saanich, with the largest population within the Capital Regional District, located at the southern end of Vancouver Island along the Pacific Ocean, is framed by a dynamic coastline and an array of freshwater rivers, lakes, and forests. Within its boundaries, one can find some of the most exceptional ecosystems in Canada. The residents of Saanich deeply appreciate these natural treasures and are committed to safeguarding them for future generations while also addressing the housing and infrastructure needs of a growing population.

To achieve this goal, the Resilient Saanich program was initiated to coordinate the development of an environmental policy framework. This comprehensive effort involves assessing current and potential future strategies to bridge gaps in environmental protection, and establish a cohesive set of plans, policies, bylaws, and strategies that promote a more resilient Saanich (Figure 1).

A State of Biodiversity report (March 2023) was developed as a foundational document for this strategy. This report provides an in-depth analysis of the present condition of the District's natural areas and the challenges they face. Using existing datasets and advanced technologies, an inventory and map of these areas have been created to support effective management. While the report focuses primarily on native biodiversity, it also highlights the importance of backyard biodiversity.

The Official Community Plan (OCP, 2008) vision[1] for Saanich highlights the importance of a healthy natural environment for its residents:

> "*Saanich is a sustainable community where a healthy natural environment is recognized as paramount for ensuring social well-being and economic vibrancy, for current and future generations.*

This vision and emphasis on the natural environment are further supported through the strategic update of the OCP (in progress). In particular, "strengthening natural areas and biodiversity" has been identified as one of Saanich's critical challenges and opportunities. Strategies for protecting and enhancing Saanich's natural areas, biodiversity and ecosystem function are essential for the continued growth and well-being of the District.

In September 2023, the provincial Minister of Housing issued a Ministerial Order under the *Housing Supply Act* mandating the delivery of 4,610 new dwellings in the District over a 5-year period. This represents 75% of Saanich's housing needs and equates to three times the current average number of new units. To meet this Order, Saanich will require an accelerated, collaborative, and sustained approach to provide housing opportunities in the vibrant, amenity-rich Primary Growth Areas (along transportation corridors and in centres) and through well-integrated infill within Saanich Neighbourhoods. While most urban growth will be contained within the Urban Containment Boundary, there will inevitably be impacts on biodiversity as the *Housing Supply Act* and its policies and procedures unfold.

The Biodiversity Conservation Strategy and associated plans and policies must work together with development policies and processes to ensure Saanich meets its Order and continues to be a community with strong environmental qualities, and values. The Biodiversity Conservation Strategy outlines a

roadmap for protecting and enhancing the District's natural assets through policy implementation, operational adjustments, and active public stewardship.

Figure 1. Overview of the Resilient Saanich Program (from State of Biodiversity to Biodiversity Conservation Strategy)

Saanich's Environmental Protection Policies

The District of Saanich recognizes the importance and value of protecting biodiversity and integrating natural features and functions for the economic and social well-being of the citizens. The District achieves this through their OCP and supporting policies, development permit areas (DPAs), guidelines, and management plans. The policies described below have been adopted and enforced to protect the natural environment.

Saanich Official Community Plan 2008 (Bylaw 8940)

TThe Saanich Official Community Plan emphasizes preserving and enhancing natural areas, promoting sustainable land use and development patterns to protect green spaces, biodiversity, and sensitive ecosystems. The plan incorporates strategies for managing urban growth, minimizing environmental impacts, and fostering active transportation options to reduce carbon emissions. The Environmental Integrity Chapter of the OCP highlights Saanich's commitment to protecting and enhancing natural areas and biodiversity while the District grows. The OCP recognizes the importance of healthy ecosystems for the natural world and the well-being of the community and economy.

The OCP's Vision for Environmental Integrity is that Saanich be:

> *"a model steward working diligently to improve and balance the natural and built environments. Saanich restores and protects air, land, and water quality, the biodiversity of existing natural areas and ecosystems, the network of natural areas and open spaces, and urban forests. The challenges posed by climate change are responded to. 'Centres' and 'Villages' accommodate the majority of future growth, using green building practices."*

Policies are specified for environmentally sensitive areas, urban forests, air quality, aquatic habitat and water quality, and environmental stewardship. These policies require the protection and restoration of habitats, emphasizing rare and endangered species and ecosystems. These environmentally sensitive areas are to be linked together using greenways to maintain biodiversity.

The OCP recognizes the Regional Growth Strategy and its framework of ten objectives, including "Objective 3 – Protect, conserve and manage ecosystem health". This is supported by the Urban Containment Boundary (UCB), a tool used by the District to protect rural properties, agricultural land and natural areas while condensing urban development within the designated areas. As the District increases its development to provide more housing to the community, it will also further protect its biodiversity and ecosystems by focusing development in the Primary Growth Areas that are located within the UCB.

The OCP is being updated concurrently with the development of this Strategy. It is recommended that the recommendations adopted in this Strategy be reviewed to ensure they are consistent with those adopted in the OCP.

Environmental Policy Framework

The development of the Environmental Policy Framework (EPF) and Guiding Principles further supports Saanich's commitment to the environment by providing principles and goals to support the development of a Resilient Saanich. The EPF will be an overarching policy framework for existing and new environmental policies and programs. The EPF will be consistent with the District's OCP and ensure that new and revised environmental policies align with environmental protection and enhancement goals and objectives.

2017 EDPA Independent Review

The Environmental Development Permit Areas (EDPAs) were implemented for over two decades, with initial guidelines introduced in 1994 to protect environmental features. Concerns regarding development impacts on the environment, such as tree removal and the loss of valuable plant communities, prompted the development of a Strategic Plan in 2010. Invasive plant species were also identified as a growing problem. Saanich adopted a Strategic Plan directing staff to establish an Environmentally Significant Areas Development Permit Area to address these issues. The 2012 EDPA guidelines were consolidated, and the existing DPAs were expanded to protect and restore rare ecosystems and vital habitats. The objectives of the EDPA were to protect areas of high biodiversity, mitigate damage during development, and restore degraded ecosystems. The EDPA included various Environmentally Significant Areas such as sensitive ecosystems, red and blue listed animals, plants, and ecological communities, wildlife trees, isolated wetlands and watercourses, and the marine backshore.

In 2017, Diamond Head Consulting conducted a third-party, independent review of the Environmental Development Permit Area (EDPA) Bylaw following public criticism and misunderstandings about the bylaw and its implementations. In this review, recommendations were provided to improve the EDPA Bylaw. These recommendations also included the development of a biodiversity conservation strategy, adopting an environmental tax to fund programs or tax relief for establishing covenants and developing a development approval checklist. The review also provided detailed recommendations for amendments to sections of the EDPA. Priority items included the removal of the atlas map and references to buffers. Other recommendations included removing the District as exempt, improving clarity for definitions, allowing some flexibility for encroachment with compensation and providing guidelines for QEPs.

The review also followed an extensive engagement process conducted by the District of Saanich with its citizens. Despite public support for environmental protection during land development, the EDPA Bylaw was rescinded by Council in 2018.

Streamside Development Permit Area

The District has established Development Permit Areas for the protection of streams. The DP approval process protects streams and their riparian areas from impacts related to development. The Streamside DPA (SDPA) applies to all streams identified in an atlas of maps within the OCP (2008). These maps are used to identify and classify watercourses and specify required riparian setbacks. In addition to watercourses, seasonally flooded agricultural fields and wetlands have predetermined setbacks.

Setbacks are determined by either the specifications included in the stream atlas or by following the standards of the provincial Riparian Areas Protection Regulation.

Floodplain Development Permit Area

The Floodplain DPA recognizes that many areas in the District are subject to seasonal and periodic flooding and also contain environmentally sensitive landscapes that should be protected from development. This DP regulates building locations and the extent of impervious cover and protects biological diversity within these areas. Stormwater planning in these areas must replicate existing conditions in order to maintain natural hydrological runoff regimes. Major or significantly wooded areas and native vegetation are retained wherever possible.

Watercourse and Drainage Regulation Bylaw No. 7501 (1996)

The Watercourse and Drainage Regulation Bylaw was established to prevent the obstruction, impediment, or enclosure of streams, ditches, and sewers. This bylaw intends to protect the District's stormwater management system and ensure there is adequate capacity to support the connection of new drainage systems.

Zoning Bylaw No. 8200 (2003)

Saanich's Zoning Bylaw governs land use and development within the District. The zoning bylaw establishes various zoning districts and outlines the permitted uses, building heights, setbacks, and other requirements. It addresses a wide range of considerations, including residential, commercial, and industrial activities, as well as parking, landscaping, and signage. The bylaw incorporates provisions for environmental protection, heritage preservation, and community design, aiming to promote sustainable development and maintain the character of Saanich's neighbourhoods. For environmental protection, the zoning bylaw regulates development adjacent to the ocean, including a minimum setback of 7.5 m from the natural boundary of the ocean. It also specifies a minimum setback of 7.5 m from all watercourses.

Tree Protection Bylaw No. 9272 (2014)

The Tree Protection Bylaw protects trees within the municipality. The bylaw establishes regulations and guidelines for the protection, preservation, and removal of trees in Saanich. It defines tree-related terms, outlines the permitting process for tree removal, and specifies tree replacement requirements and penalties for unauthorized tree cutting or damage. This bylaw aims to protect significant trees, preserve tree canopies, enhance biodiversity, and contribute to the overall environmental health and aesthetics of Saanich's landscape.

Protection requirements vary depending on tree size (determined by the diameter at breast height [DBH]), location and species. Any tree identified as a Significant Tree (Part 5, Schedule B), all trees on municipal property or trees that are located within the SDPA are protected.

This bylaw also protects all trees have "evidence of a nest used by raptors as defined in the *Wildlife Act*, R.S.B.C. 1996, c. 488, ospreys, or herons for nesting" (ref).

Urban Forest Strategy (2010) – Undergoing Update

The District's Urban Forest Strategy (UFS) was established in 2010. The purpose of the UFS is to provide a long-term plan for achieving a sustainable urban forest in Saanich. The strategy guides the District's urban forest management over time and provides strategies and actions protection and enhancement. Specifically, the UFS identified a District-wide canopy cover target of 36% and a policy of no net loss of trees. Seven strategies are outlined to achieve this goal and include tree planting, protection, inventory, public outreach, and investing in the District's urban forest program. The Urban Forest Strategy is undergoing an update which will identify the current state of Saanich's urban forest since the 2010 implementation of the Urban Forest Strategy and provide recommendations for improving the urban forest management program.

Integrated Pest Management Policy

The Integrated Pest Management (IPM) Policy emphasizes the prevention and management of pests through non-chemical methods whenever possible. It promotes the use of alternative pest control strategies such as biological controls, cultural practices, physical barriers, and mechanical methods. When chemical pesticides are necessary, the policy encourages the use of low-toxicity and least-hazardous options while minimizing their overall usage. The IPM policy emphasizes education, outreach, and collaboration with the community to raise awareness about the importance of responsible pest management practices.

Noxious Weed Bylaw No. 8080 (2000)

The Noxious Weed Bylaw is a regulatory framework aimed at controlling and managing the spread of invasive and harmful plant species within the municipality. The bylaw outlines specific guidelines and requirements for property owners and residents to identify, report, and control the presence of designated noxious weeds on their properties. It establishes a list of prohibited noxious weeds and defines the responsibilities of property owners in preventing their growth and spread. The bylaw also sets forth enforcement measures and penalties for non-compliance.

Pesticide Bylaw

The Pesticide Bylaw is a regulatory framework governing the use and application of pesticides within the municipality. It prohibits the use of certain pesticides, including cosmetic pesticides, on residential properties. This bylaw includes a permitting process for cases where a non-exempt pesticide needs to be used to control invasive species or noxious weeds, or when the management of a pest infestation using an exempted pesticide is cost-prohibitive and excessive.

Green Building Policy

The Green Building Policy is a framework for green building practices to demonstrate Saanich's commitment to environmental, economic, and social stewardship. This policy sets out guidance for constructing facilities that conserve energy, water, and natural resources, and minimize ecological impacts.

Park Management and Control Bylaw No. 7753 (1997)

The Park Management and Control Bylaw governs the management, use, and control of parks within the municipality. The bylaw establishes rules and regulations to ensure the proper maintenance, preservation, and enjoyment of public parks. It defines the responsibilities of park users, including restrictions on activities such as littering, damaging park property, and unauthorized removal of plants or wildlife. The bylaw outlines regulations related to park permits, including rules for special events or commercial activities taking place in parks. It establishes penalties for non-compliance and provides a framework for enforcement to maintain the integrity and safety of Saanich's parks for the community's benefit.

Boulevard Regulation Bylaw

The Boulevard Regulation Bylaw outlines the landowners or land occupiers' responsibility to maintain the boulevard abutting the parcel. Maintenance requirements include, but are not limited to, keeping grasses or weeds mowed or trimmed, and keeping the boulevard free of brush, noxious weeds or invasive plants, litter, and loose materials such as leaves and debris. This bylaw also regulates the activities allowed in a boulevard and requires a permit for installing landscaping and plants, placing any surfacing such as rocks, gravel, pavers, and installing any temporary or permanent structures.

Saanich's Environmental Stewardship

The District of Saanich is within the territory of the Lək̓ʷəŋən peoples, known today as Songhees and Esquimalt Nations, and the W̱SÁNEĆ peoples represented by the Tsartlip, Pauquachin, Tsawout, Tseycum and Malahat Nations. Collectively, these First Peoples have been caring for the land since time immemorial. Their role as protectors of the land is vital. In addition to First Nations caring for land, the District of Saanich has a highly engaged population that is committed to the stewardship of its natural spaces. Today, over 60 organizations and District programs and initiatives operate to:

> "*… protect, maintain, restore, and enhance biodiversity and associated ecosystem functions for current and future generations of human and other life."*

These initiatives are centred around a variety of stewardship topics, including aquatic and marine ecosystems, terrestrial ecosystems, birds, pollinators, food security and agriculture, urban forests, environmental protection, and education and awareness. Stewardship groups also vary in geographical scope. Approximately half of the groups focus on specific issues or District parks (e.g., Friends of Cedar Hill Park, Rithet's Bog Conservation Society, PKOLS (Mount Douglas Park) Conservancy, etc.), whereas others have broader scopes and function at a District-wide scale (e.g., Park Ambassadors Program, Pulling Together Program, Habitat Acquisition Trust, etc.). These stewardship groups generally target the improvement of public lands and waters rather than environmental features on private land. The exceptions to this include Naturescape BC, which is a provincial program that encourages the creation of wildlife habitat on private land, and Saanich's Partnership Tree Planting Program, which is a partner program between the District and landowners to support the urban forest. Landowners can apply and select a tree for planting along the property's frontage on municipal owned land. The District then purchases and plants the tree while the landowner helps maintain it.

Saanich has several outlets for communicating stewardship-related information to the community, including its international award-winning Natural Intelligence program and its quarterly publication, Our Backyard, along with social media and webpages.

The breadth and depth of the work of Saanich programs and community organizations demonstrates that Saanich's residents are highly engaged, passionate about nature, and care deeply about the well-being of their environment.

The Current State of Biodiversity in Saanich

The District of Saanich features a long and marine backshore, productive lakes and wetlands, dynamic creek systems, and a diversity of plant communities that support wildlife populations. The State of Biodiversity Report provides an understanding of the current state of natural areas within the District and the pressures that threaten their integrity. This State of Biodiversity report was completed during Phase 1 of the Resilient Saanich process. Field assessments were conducted in 2022, and the report was completed in March 2023. The report provides a baseline understanding of the current state of the District's natural areas. This report forms the foundation for this Biodiversity Conservation Strategy (BCS) and lays the groundwork for a proposed connectivity network

The State of Biodiversity Report identifies the natural areas and features within Saanich, including a diversity of natural terrestrial ecosystems, freshwater ecosystems, the marine shoreline, and species and ecosystems at risk. The natural areas in Saanich were mapped with LiDAR and analyzed against existing datasets and geospatial models. Ground-truthing on public lands helped to develop a natural areas inventory with a baseline understanding of the state of natural areas in Saanich. This information was then compiled to develop a relative biodiversity ranking. The biodiversity ranking is used to develop a Habitat Network, which identifies a network of natural areas that support a variety of species across the District (see page **Error! Bookmark not defined.**). Identified threats to biodiversity include land development, climate change, invasive species, pests and diseases, human impacts, and loss of Indigenous knowledge and practices.

While a mosaic of natural areas and ecosystem types encompass 38.5% of the total land cover in Saanich, most forest ecosystems in the District are relatively young (<150 years), with only 2% of old-growth (>250 years) forests remaining. The District also has a long marine shoreline with a variety of ecosystems ranging from coastal sand beaches, spits, and dunes, to sparsely vegetated rocky bluffs[2]. The coastal sand ecosystems cover 39 ha and represent 0.3% of District's land cover. The remaining marine shorelines that are not coastal sand ecosystems cover 28 ha or 0.2% of the District's land cover.

While many valuable areas are protected, a majority of lands with natural features remain unprotected and are at risk from increasing and cumulative threats. Coastal sand ecosystems are highlighted as the least protected target category in Saanich, with only 1.8% occurring in protected areas. However, these areas only comprise 0.3% of the District's land cover. Larger urban parks are valuable places as they provide an important refuge for wildlife within the District. However, many of the detailed characteristics of Saanich's natural areas, both public and private, are not fully understood or ground-truthed. Additional data collection and analysis are needed to facilitate a better understanding of natural areas and to identify which ones face the greatest risk in an increasingly human-centric world.

For more information regarding the State of Biodiversity in Saanich, refer to the State of Biodiversity Report (March 2023).

Background to Biodiversity Conservation

Biodiversity refers to the variety and types of living species and often indicates the well-being and wholeness of natural ecosystems. Assessing species health in urbanized parts of the District allows for an understanding of how historical and ongoing development influences the function of these ecosystems. The future diversity of wildlife and plants in the District relies on the variety, integrity and interconnectedness of habitats. Protecting the remaining large and intact natural areas and the connections between them is the best way to protect biodiversity in Saanich.

Before European settlement, animals, insects, and plants were able to disperse relatively easily across the landscape to access the various habitat features they needed to live and reproduce. As cities develop and grow, valuable habitats are lost, and the previously connected network of habitat becomes fragmented. The amount of available habitat is reduced, and the ability of organisms to access these areas is impeded. Urbanization tends to be focused in lowland areas near the ocean or water bodies which are the areas that support the highest levels of biodiversity. Some habitat features found in areas that are most valuable for settlement or agriculture disappear from the landscape, while others become isolated as islands.

Connectivity across landscapes is important for wildlife to access habitat as well as for populations to interbreed with each other. Isolated populations can become unhealthy at a genetic level, making them more susceptible to disease and growth defects.

The isolation of certain habitats alters interspecies population dynamics. The interrelationships between predators, prey and forage then become unbalanced. If predators become eradicated from an area, prey populations may increase. For example, there is a large population of deer on the Saanich Peninsula and many of the Gulf Islands. This overpopulation of herbivores affects the plant communities they feed on, thereby reducing biodiversity and threatening the overall health of ecosystems.

Generally, smaller habitat patches provide less diversity of habitat features and have lower levels of biodiversity. Species inhabiting small and isolated areas are more vulnerable to extirpation. Conversely, larger parcels of natural areas provide more habitat features and, depending on their shape, contain interior area sufficient to act as refuge areas for species that are less tolerant of urban influences.

The risk of population fragmentation also depends on a species' ability to move around the landscape and their tolerance of urban environments. Birds and flying insects move across urban landscapes more easily than terrestrial-based species. Large mammals move faster across a landscape than smaller species and are typically less impacted by barriers created by urban development. Some species are not able to move across urban landscapes and require natural corridors to move between habitat areas. Other species do not need to move at all but may need to remain in or be close to water features.

Habitat pathways are linear habitat areas that facilitate the movement of species between fragmented habitat patches. The most effective habitat pathways are wide, linear natural areas that provide safe cover for wildlife. Habitat pathways that follow aquatic systems (e.g. streams and creeks) are also highly effective as they provide a continuous water source, which is required by most species.

Habitat pathways which are narrow, do not provide water access, or are partially impacted by urban features such as roads and trails are less effective. The lack of these attributes limits the number of species that can use them and the likelihood of safe movement. Habitat pathways can also have the unintended consequence of influencing predatory behaviour. Predators can learn where prey are constrained within corridors, making them easier to catch.

The dynamics of wildlife populations in natural settings are complex and are further complicated when habitat is fragmented across a landscape. The identification of a priority network of habitats helps to ensure that the most valuable habitat is protected and remains connected. It focuses resources to protect and maximize the quality of these areas.

It is important to recognize that it is not possible to restore the level of biodiversity that existed before European settlement due to the extent of habitat that has now been replaced by urban and rural infrastructure. **The goal of biodiversity planning is to maximize the value of the natural areas that remain in Saanich by maximizing their ability to support as many species as possible, along with consideration for species that are at risk.**

Effective management of biodiversity requires a balance between the urban and natural environment. It is not realistic to manage all land uses and areas of human influence in Saanich. Similarly, it is not possible to manage all species and specific habitat requirements over the long-term. Delineating and mapping a habitat network will help Saanich to prioritize its resources toward protection, enhancement, and restoration of natural areas, while also balancing growth and development to support its residents. Mapping undertaken for the BCS identifies areas across the landscape that will provide the greatest benefit for the greatest number of species. Protecting and enhancing these areas helps ensure biodiversity is maintained in a balanced approach with urban and rural development which in turn fosters climate resiliency and social well-being.

Components of a Biodiversity Habitat Network

The Biodiversity Habitat Network focuses on **terrestrial** species and their movement across the landscape (Figure 2). The network of aquatic habitat is managed separately through the Streamside Development Permit Area (SDPA) guidelines, stormwater management policy and regulated through the provincial *Water Sustainability Act*, the Riparian Areas Protection Regulation and the federal *Fisheries Act.*

Land use is considered when delineating the Habitat Network. Land that is under the control of the District or will be protected through covenants or rights-of-way are considered more secure as long-term protected components of this network.

The Habitat Network consists of four components:

- Core habitat hubs
- Habitat sites
- Regional habitat linkages
- Local habitat linkages

These components are meant to help identify and prioritize the most important aspects of natural features for wildlife while also recognizing that there are some habitat values associated with urban natural features (e.g. landscaped gardens and passive parks). Two other land types supplement the Habitat Network: agricultural lands and the urban matrix. The characteristics of the four Habitat Network components and the two supplemental land types are described below.

Core Habitat Hubs

These are large areas that provide protected interior habitat isolated from the influence of urban development and activity. These refuge areas benefit wildlife less tolerant of urbanization. They are typically greater than 100 m away from urbanization. Core Habitat Hubs include some rural areas where residences are intermixed with forested landscapes. These areas are the most likely to maintain their biodiversity because of their size and lower levels of disturbance.

Habitat Sites

These areas are smaller in size and generally do not provide protected refuge areas for wildlife. They do, however, act as important stepping-stones across an urban landscape. They can provide habitat features that are unique or important for certain species such as a wetland or Garry Oak plant community. These areas may or may not be connected by linkages. If they are isolated as islands, they may be used by species that can travel by flight and terrestrial species that are more tolerant of disturbed habitats.

Regional Habitat Linkages

These include linear natural habitat areas that provide a connection between major habitat hubs. Effective linkages must be wide and continuous enough to support the movement of species that are intolerant of urban influences. Species' behaviour, speed of travel and their ability to remain undetected by predators must be considered. In general, these linkages should aim to be greater than 30 m wide. The recommended width for effective wildlife linkages is 50-100 m. As these regional linkages extend through the urbanized landscape, they are often not continuous and may be fragmented by barriers such as roads and development. Regional habitat linkages often follow streams and include riparian setbacks that are protected by Provincial regulations. Legal rights-of-way and linear infrastructure also provide opportunities to protect habitat linkages, though these often exist in a disturbed state.

Local Habitat Linkages

In urbanized landscapes, it is often not possible to protect wide and continuous natural linkages. However, narrow and fragmented linear natural linkages still support the movement of certain species. These minor linkages provide natural cover for mammals tolerant of urban activity as well as birds and flying insects. They are typically 10-30 m wide and are often fragmented by urban barriers.

Agricultural Land Reserve

Agricultural land plays a unique role across the landscape. These areas tend to be dominated by monocultures of plants that are regularly harvested. These areas are, however, continuous with few barriers and can facilitate the travel of species between adjacent natural habitat areas such as hedgerows. They can also provide food sources for certain species, although there are risks associated with foraging in agricultural areas; toxins may be present in these environments, including pesticides and herbicides.

The Urban Matrix

The urban matrix includes the natural areas and features intermixed within an urbanized landscape, mainly inside the Urban Containment Boundary. These include small patches of habitat, single or small groups of trees as well as non-native habitat features such as gardens. Collectively these features provide habitat for species that are tolerant of human disturbances including birds, flying insects, and small mammals.

Some species require undisturbed natural habitats and movement routes detached from human presence, while others can adapt to urban areas. These adaptable species can make use of modified environments like planned landscapes, gardens, urban trees, stormwater structures, and rooftop plantings. These features improve habitat quality and complexity in urban areas that are otherwise void of habitat.

Figure 2. Proposed Biodiversity Habitat Network.

Balancing Biodiversity and Development

In September 2023, the Province of BC announced housing mandates for multiple municipalities, including Saanich. With this housing mandate, the District will be required to triple their development and construct 4,610 units over five years. Development is often seen as an ongoing threat to biodiversity, however, there are measures and incentives that can implemented provide a balance between biodiversity conservation and urban development.

Over the next five years, Saanich will be focusing urban development and densification within the Primary Growth Areas[3]. **These Primary Growth Areas have minimal overlap with the proposed Biodiversity Habitat Network and will accommodate a larger proportion of the population and support future population growth (Figure 3)**. With densification, the District will need to ensure that its residents have access to open and green spaces. Biodiversity protection will not only provide ecosystem services to these densified areas but ensure that Saanich's ecology and biodiversity remains resilient and continues to thrive.

Figure 3. Proposed Biodiversity Habitat Network overlaid with Priority Growth Areas.

The proposed Habitat Network was developed through the biodiversity ranking, an analysis that was completed for the entire District of Saanich as part of the State of Biodiversity Report. The biodiversity ranking was then used to delineate and map the Biodiversity Habitat Network for all land in the District. With the implementation of the Urban Containment Boundary, many of the Core Habitat Hubs (i.e. areas with greatest biodiversity) are primarily located in Rural Saanich. While the District of Saanich will strive to use a variety of measures to protect key biodiversity areas when and where possible (see page 26), it is not feasible to rely on land acquisition to protect all Core Habitat Hubs and Habitat Sites. The District will need to prioritize acquisition and protection in a way that best utilizes the resources available while leveraging a host of municipal tools to protect these values on private land.

Community and First Nations Engagement

The Biodiversity Conservation Strategy was developed following comprehensive public and community engagement. During the State of Biodiversity Phase, an online interactive map (StoryMap) was created to allow Saanich community members to identify and share places in Saanich they value or, in their opinion, are in need of improvement. Engagement also occurred through a statistically valid survey and a combination of online and in-person meetings. Attendees at various meetings included:

- W̱SÁNEĆ First Nation groups
- Community members
- Resilient Saanich Technical Committee
- Community stakeholders
- Key staff from various District departments

Engagement with community members and stakeholders played an important role in the development of the key strategies and recommended actions of the Strategy. Participants highlighted the valued natural areas across the District and their main concerns on both private and public lands. They helped to identify areas that are both biodiverse and support a number of vital ecosystem services for residents.

The following is a summary of what we heard through engagement. A more detailed account of the engagement process has been summarized within Appendix X - Biodiversity Strategy Engagement Summary.

First Nations Engagement

The District of Saanich engaged with the WSÁNEĆ community through connections with the WSÁNEĆ Leadership Council, acknowledging the rich history and territorial presence of the W̱SÁNEĆ peoples. The District of Saanich also acknowledges that it is situated within the ancestral territories of the lək̓ʷəŋən peoples. Two workshops were held with the WSÁNEĆ community to foster understanding and collaboration in the development of the Biodiversity Conservation Strategy.

In the first workshop, the WSÁNEĆ community members emphasized the importance of respect for the environment and the need to consider the impact of human actions on future generations. Traditional

knowledge transfer, including oral histories and cultural site identification, was underscored. Discussions centred around reclaiming traditional place names and prioritizing strengthening of natural ecosystems through initiatives such as preserving food and medicinal plants, controlling invasive species, and monitoring environmental practices. In 2021, the signing of an ÁTOL,NEUEL ("Respecting One Another") Memorandum of Understanding (MOU) also highlights the commitment to mutual respect and collaboration between the WSÁNEĆ Leadership Council and the District of Saanich.

In the second workshop, WSÁNEĆ community members emphasized the importance of ongoing engagement outside of the current consultation processes, and a genuine commitment to action and change. They stressed the need for increased consideration of nature during the development process, particularly the preservation of large mature trees, and the value of ecosystems for their significant contributions. They expressed a desire for private landowners to perceive themselves as custodians of the land entrusted by the Creator for responsible use.

Both engagements emphasized the need for ongoing communication and collaboration between the District of Saanich and the WSÁNEĆ Leadership Council, reflecting a shared commitment to respectful and sustainable management of the environment.

Public Engagement

Public Survey

The surveys conducted in Saanich revealed that the residents and visitors highly value the natural areas within the District, with over half of the respondents spending time in these areas frequently. The diverse natural features are seen as crucial for biodiversity, ecosystem services, and providing habitat for native species. The respondents expressed a desire for the Strategy to prioritize the protection of biodiversity through the establishment of protected areas and landscape resilience. While satisfaction with existing natural area parks was generally high, the need for ecosystem restoration, invasive species control, and sensitive ecosystem protection was emphasized. A majority of respondents “fully support” or “can live” with increased regulations such as a Development Permit Area system, particularly for sensitive ecosystems (65% of the random sample and 71% of online survey participants). Still, there was some opposition to a property tax for environmental protection (44% of random sample, 32% of online survey participants). They also expressed willingness to pay up to $100 per year to help achieve the goals of the Strategy. The surveys highlighted the importance of public involvement and policy changes to create resilient, biodiverse, and connected ecosystems, emphasizing the need for increased public awareness and participation in protecting natural areas.

Story Map (Online Mapping Tool)

A mapping tool (Story Map) was utilized to gather community input on valued locations for biodiversity conservation and areas needing improvement. A total of 302 locations were submitted, with 256 focused on biodiversity conservation, of which 48% were valued and 52% required enhancement. The valued locations were predominantly situated in rural or natural areas, small natural areas, and urban spaces, often near parks or natural environments like Beaver Lake Regional Park and Swan Lake Nature Sanctuary. The features most valued by respondents included the presence of large mature trees, scenic

beauty, diverse native flora, protection from traffic, unique ecosystems, and the presence of water. Preferences for these features varied depending on the location type, with rural or natural areas prioritizing immersion in nature and small natural and urban areas emphasizing the variety and maturity of trees.

Locations identified as needing improvement or facing threats in Saanich were mostly small natural areas (42%), rural natural areas (37%), and urban areas (21%), with specific areas like Swan Lake Nature Sanctuary, Beaver Lake Regional Park, and PKOLS (Mount Douglas Park) cited as examples. The primary concerns included invasive plants or animals, threats to biodiversity, loss of natural areas due to land use changes, garbage and dumping issues, and inadequate vegetation. Invasive species were particularly problematic in small natural and rural areas, while the lack of trees and vegetation due to urban development was a major concern in urban areas.

Open Houses (In person and Online)

An in-person open house was conducted on April 18th, 2023, providing an opportunity for attendees to express their views on the future of Saanich's natural spaces and the challenges and opportunities related to the Biodiversity Conservation Strategy and Urban Forest Strategy. Participants emphasized the need to protect and enhance natural features, increase species diversity, manage invasive species, and promote diverse ecosystem types. Education also emerged as a significant theme, with suggestions for nature-based learning and increased public awareness of environmental issues. On the challenges and opportunities engagement board, protecting old trees, preserving natural areas from development, reinstating the Environmental Development Permit Area (EDPA), and enhancing habitat connectivity were common themes. There was a strong call for increased community involvement in biodiversity conservation, with proposals to encourage landowners to preserve biodiversity on their property and to increase public participation in invasive species removal. A virtual open house held the following day over Zoom saw 49 participants engaging in a presentation and asking questions primarily related to invasive species, climate change, tree health, mapping accuracy, and the management of private lands.

Stewardship Programs

There are over 60 stewardship groups in the District that actively support the management of natural areas, and educational outreach. These stewardship groups mostly operate independently, which can allow for flexibility and creativity in executing projects but can also add to the challenge of measuring and analyzing the groups' collective impact. With all the momentum and enthusiasm for stewardship in Saanich, there are several opportunities the District can capitalize on to encourage a cohesive vision and long-term strategy for these efforts.

Despite the enthusiasm for stewardship in Saanich, little information has been compiled about the total impact of these initiatives. Due to the variability of scale, engagement, and levels of effort across the 60+ stewardship groups, it is not possible to accurately quantify active membership or the total amount of time or financial resources contributed to these programs. The effectiveness of these stewardship programs has also yet to be evaluated on a District-wide scale. Part of the reason for this is because Saanich has not yet developed the baseline District-wide biodiversity and ecological data needed to set

targets and evaluate progress, nor have Park and Natural Area management plans to guide this stewardship work been developed. The Biodiversity Conservation Strategy will play a key role in establishing both human resource and ecological data so the effectiveness of Saanich's many stewardship initiatives can be measured over time.

Recommendations to Protect Biodiversity in Saanich

The District of Saanich has consistently acknowledged the significance of the natural environment in creating a complete community. However, as development has taken place, particularly within the UCB (Urban Containment Boundary), there has been a decline in some of the most productive and biodiverse areas. Saanich recognizes the pressures remaining natural spaces face within the UCB due to the growing demand for housing and amenities and the limited space available to meet these pressing societal needs. To fulfill the Provincial Housing Order and ensure the creation of complete communities, Saanich should balance biodiversity conservation and urban development.

The impact of climate change is further jeopardizing the remaining natural areas in the District and is making it easier for invasive species to migrate into and throughout Saanich. Additionally, these natural assets provide important climate adaptation opportunities for the community. The municipality has policies and procedures in place to address the need for urban development and recreation while also protecting these natural assets. There are, however, opportunities to improve these initiatives.

Eight strategic goals have been adopted as a framework for this strategy.

1. Improve knowledge and mapping of natural features and functions
2. Acquire and protect a network of habitat areas
3. Enhance biodiversity during land use planning and development
4. Enhance biodiversity on public lands
5. Encourage biodiversity initiatives on private lands outside of the development process
6. Improve public understanding of biodiversity
7. Enhance biodiversity on agricultural lands
8. Monitor the state of biodiversity

These goals not only seek to protect the remaining priority habitats as possible, but also strive to reconnect and rehabilitate areas within the Habitat Network that have been fragmented or degraded. Recommendations are organized within each of these goals. These recommendations are intended to provide sufficient detail to direct implementation. Some additional details are provided as sub-recommendations. It is within the Saanich Municipality's discretion to implement these recommendations based on resource availability.

The recommendations that are considered to have the most immediate and strongest impact on protecting biodiversity in Saanich are highlighted in green. These are critical improvements and considerations that demand immediate attention and action. Implementing these recommendations will result in substantial positive effects on biodiversity in Saanich. Delaying high-priority recommendations could lead to significant and potentially irreversible consequences.

Implementation costs and target timelines has been estimated broadly for each main recommendation.

Financial Commitment		Implementation Timeline	
$	<$25,000	Short	1-3 year
$$	$25,000-$100,000	Mid	3-5 years
$$$	>$100,000	Long	5-10 years

Ongoing Cost	Ongoing Timeline

How are things different inside and outside of the urban containment boundary?

The Urban Containment Boundary (UCB) defines areas within Saanich where land development for residences and commercial activity are concentrated. This designation does not exclude the need for protecting natural areas but can make conservation and restoration more challenging as most development occurs within the UCB. Within the UCB, there are Primary Growth Areas designated as priority areas for housing densification in order to meet the Province's housing targets (September 2023)[4]. Additionally, single family residential properties will have the ability to redevelop to three or four units, potentially expanding the impervious surfaces in these areas.

Planning for biodiversity in these densely urbanized areas requires a focus on protecting existing habitats where possible and installing new habitat features designed to support species that are able to adapt to urbanized landscapes. It is also expected that recommendations within the UCB will be more incentive-based as opposed to regulated.

Figure 4. Urban containment boundary boundaries in the District of Saanich

How does the Urban Forest Strategy relate to the BCS?

The Urban Forest Strategy is currently under review. Trees provide the framework for most of the ecosystems that exist in Saanich. Protecting existing trees as is possible, and enhancing the canopy with tree species which are best adapted to the changing climate is crucial for protecting biodiversity. The recommendations within the UFS to manage the urban forest have not been repeated in the recommendations of the Biodiversity Conservation Strategy. For reference, UFS recommendations more related to the BCS are summarised below:

Urban Forest Strategy Recommendation
Review and update the Significant Tree Program
Add the largest and most significant trees to the BC Big Tree Registry
Revise the Tree Protection Bylaw
Update the species and size of trees that are protected
Coordinate and balance permitted tree removals with the principles of wildfire management.
Consider including wildlife trees as a protected element under the tree bylaw.
Mandate bird nesting surveys for tree removal permits during nesting season and ensure this is updated to reflect current Federal and Provincial best management practices.
Revise the tree protection bylaw to include exemptions for invasive tree species removal.
Increase penalties for unauthorized removal or damage to trees on District-owned lands.
Develop boulevard tree planting guidelines, specifying soil quantities and volume requirements.
Protect wildlife trees. Remove only high-risk hazard trees identified by a certified tree risk assessor approval.

Goal 1 - Improve knowledge and mapping of natural features and functions

The State of Biodiversity Report amalgamates data from various governmental sources, including the District of Saanich, the Capital Regional District, and the Province. Similar ecosystems were mapped into polygons, and digital models of Saanich's terrain were used to predict and map the landscape's water flow. Biologists verified the database's accuracy through fieldwork, evaluating approximately 8% of the polygons. District Staff, the RSTC, and technical experts then reviewed the spatial layers using an ArcGIS Online web application.

The report used a biodiversity ranking methodology to identify areas supporting the highest and lowest biodiversity while considering factors like habitat type, patch size, connectivity, and freshwater accessibility. Public data from citizen science programs, such as iNaturalist and the Christmas Bird Counts, were also used to describe wildlife presence in Saanich but were not included in the biodiversity analysis.

The information on the state of terrestrial and aquatic ecosystems was summarized in the State of Biodiversity Report. LiDAR was used along with the Provincial SEI and TEM to produce a more refined inventory of terrestrial ecosystems. These datasets, however, have their limitations. Some aspects of the landscape of Saanich have already changed since this mapping was completed. Verifying these datasets in the field was limited to a small percentage of Saanich's total area.

Continually enhancing the understanding of terrestrial and aquatic ecosystems, species at risk, and their geographical distribution is important. This information should be made accessible to the public through Saanich's online GIS web map, SaanichMap. The maps should remain dynamic and be subject to regular updates. Regularly updating this information through field assessments will allow the District to monitor changes to its natural areas and to evaluate whether this Strategy's targets are being met. It will also build public awareness and confidence in the mapping products.

Mapping standards and guidelines should be developed which provide a structured procedure for evaluating and submitting spatial data. These submissions should require qualified and registered professionals to complete ground assessments.

Table 1. Goal 1 Recommendations: to improve knowledge and mapping of natural features and functions.

Terrestrial Ecosystems			Cost/ Timeline
1.1	Provide public access to the most recent terrestrial ecosystem mapping via the GIS portal, SaanichMap.		$ Short
1.2	Regularly update terrestrial ecosystem data as new information becomes available. Continue to refine the precision of terrestrial ecosystem polygon boundaries through ground-truthing and air photo analysis.		$$ Ongoing
	1.2.1	Establish a program to conduct District-wide terrestrial ecosystem assessments to update ecosystem data on a regular basis.	$$

	1.2.2	Review and update existing guidelines and develop a structured procedure for evaluating and submitting data to be included as part of terrestrial ecosystem mapping.	$
1.3	Develop criteria and qualifications for the delineation and classification of Environmentally Sensitive Areas (ESAs).		$$ Short
	1.3.1	Review and update existing ESA polygons based on updated criteria and ground-truthing.	$$
1.4	Review and update the biodiversity ranking once disturbance levels have been determined for all natural areas in Saanich.		$ Mid
1.5	Develop a long-term monitoring program using the field plot locations completed during the State of Biodiversity Report. Regularly assess these field plots to identify changes in biodiversity.		Ongoing $
1.6	Support First Nations in establishing and/or maintaining a spatially organized database of their environmental values and knowledge.		Ongoing $$
Freshwater Ecosystems and Watercourses			
1.7	Update stream presence and classification. Update the mapping used to identify the Streamside Development Permit Areas (SDPA). Make this information available via the GIS portal, SaanichMap.		$ Short
	1.7.1	Identify barriers to fish migration, confirm stream presence, and stream classification.	
1.8	Revise and update stream mapping to include both connected and disconnected water features.		$$ Short
	1.8.1	Evaluate and confirm the presence and classification of watercourses identified by the LiDAR flow accumulation model.	
1.9	Accurately map the locations of connected and disconnected wetland systems and make this information available via the GIS portal, SaanichMap.		$$ Mid
Marine Ecosystems			
1.10	Update the mapping of marine-influenced ecosystems and make this available via the GIS portal, SaanichMap.		$$ Short
	1.9.1	Show the current and modelled 50-year highest high tide lines from the CRD on the GIS portal, SaanichMap	
Species and Ecological Communities at Risk			
1.11	Update and map the known locations of species and ecological communities at risk and provide this information to the BC CDC.		$$ Long
1.12	Review and update the provincial Sensitive Ecosystems Inventory (SEI).		$$ Mid
Invasive Species			
1.13	Develop a spatial inventory of invasive plant species growing on public lands. Establish a priority list of species and locations to be mapped as part of this inventory.		$$ Mid

Goal 2 - Acquiring and protecting a network of habitat areas

As urban growth and development expand, there is an increasing need to prioritize protecting high-value natural areas. This is particularly important within the Urban Containment Boundary, where the

Province has mandated increased housing. A network of high-value habitat areas has been identified called the Biodiversity Habitat Network. The Biodiversity Habitat Network consists of large natural areas that are critical for sustaining biodiversity in Saanich, as well as movement pathways that connect them. Areas identified in the Habitat Network should be prioritized for protection and enhancement over areas that are not identified in the Habitat Network. The areas at most risk include portions of the network that are within the UCB but are not currently protected. These areas should be high priority for acquisition or other forms of protection. There are a variety of methods to protect the integrity of this network, including private land acquisition, park designations through development, zoning, private land regulation, and natural state covenants.

The Biodiversity Habitat Network can be used to help support and guide development in the District. Landowners will be able to see whether or not their property is located within the Habitat Network. While development is not discouraged within the network area, there may be additional measures required or incentivized to ensure that biodiversity in the network is protected. The Habitat Network has gaps. Opportunities exist for ecosystem restoration within these gaps to improve connectivity between core habitat hubs. This is most pronounced within the UCB, where the remaining natural areas are mostly fragmented by urban development. There are also habitat features that are missing, which can limit the diversity of species that are able to inhabit an area. The availability of freshwater, in particular, is a limiting factor in some highly developed parts of the District. Within the UCB, missing habitat hubs and sites are difficult to create due to limited available space and densification of development to create housing. However, existing habitat hubs, sites, and features can be protected or enhanced to provide greater biodiversity.

Table 2. Goal 2 Recommendations: to acquire and protect a network of habitat areas.

The Habitat Network		Cost/ Timeline
2.1	Recognize the importance of the Biodiversity Habitat Network as high-value areas and prioritize these for protection and enhancement.	$ Short
2.2	Work to protect land in the Biodiversity Habitat Network using a variety of tools such as land acquisition	$$$ Long
2.3	Create different tools for inside and outside the UCB to protect and enhance biodiversity in the Biodiversity Habitat Network	$$ Mid
2.4	Identify missing components in the Biodiversity Habitat Network that should be restored to improve the network.	$$ Short
2.5	Add the Biodiversity Habitat Network to the Park Acquisition Guide to ensure prioritization.	$ Short
2.6	Investigate financial mechanisms to support acquiring unprotected areas in the Biodiversity Habitat Network.	$ Mid
2.7	Consider removing unused road rights-of way that are in a natural state from the Road Network, especially withing the Biodiversity Habitat Network.	$ Short
2.8	Establish communication with Crown Corporations to ensure the Biodiversity Habitat Network is considered when implementing and planning infrastructure projects.	Ongoing
2.9	Explore opportunities to reduce impacts to the BHN	Ongoing

Goal 3 – Enhancing biodiversity during land use planning and development

The District's OCP and supporting policies should continue to prioritize biodiversity conservation initiatives. The land development planning process should ensure that projects have taken the necessary measures to prioritize avoiding impacts on the natural environment during the planning process.

High-level policy recommendations are focused on changes to the recently updated Official Community Plan and coordinating with the Urban Forest Strategy. Supporting policy recommendations include updates that strengthen existing policy, as well as options to introduce new development permit areas or zones. A new policy could be developed to apply to specific high biodiversity value areas such as the marine foreshore, or broader areas such as the Habitat Network, or all remaining natural areas in Saanich. Policies that require mapping of features should refer to Saanich's GIS portal for updates to the features that are to be protected, including stream locations and sensitive natural areas.

The planning approval process provides an opportunity to require the restoration and enhancement of disturbed ecosystems. For this to be effective, guidelines and standards must be clearly defined, as along with measures to ensure success. The Society of Ecological Restoration International Standards and Practices for Ecological Restoration can serve as good examples. Recommendations include standardized reporting for land use planning submissions. Compliance and enforcement measures are also needed to ensure that environmental policies are adhered to. This measure may include requiring bonding of a sufficient amount to ensure the District can, if necessary, carry out the restoration works and that inflation costs are considered.

Table 3. Goal 3 Recommendations: to enhance biodiversity during land use planning and development.

High Level Planning		Cost/ Timeline
3.1	Remove development permit mapping from the OCP and instead refer to the GIS portal, SaanichMap, for up-to-date linework and DP areas.	$$ Short
3.2	Adopt and implement the draft Urban Forest Strategy.	$$$ Short
Supporting Policy		
3.3	Revise the Streamside Development Permit Area (SDPA) and its associated guidelines including: - Removing Appendix N, Schedule 2 of the OCP and referring to the GIS portal, SaanichMap. - Eliminating the allowance for small accessory structures within 5 m of a stream's high water mark. - Identifying, mapping, and incorporating isolated water features into the DP. - Updating provincial policy references in this DP. - Applying the DP to all watercourses, whether they are mapped or unmapped. - Strengthening riparian setbacks and measures required to stabilize and restore them. - Providing detailed environmental guidelines and an approval checklist for all proposed land development within this DP.	$$ Mid

	- Providing guidelines for wildfire fuel mitigation within the riparian areas of all streams, wetlands, and lakes. - Considering restoration and enhancement as a condition of all DP approvals.	
3.4	Update the Zoning Bylaw to be consistent with the Streamside Development Permit Area (SDPA) to better protect streams and the marine shoreline.	$$ Mid
	3.4.1 Increase the minimum riparian setback enforced in the Zoning Bylaw for watercourses to 10 m for watercourses and 2 m for ditches to better align with minimum RAPR SPEA sizes. This should apply to both fish-bearing and non-fish-bearing streams.	
3.5	Consider a Marine Shoreline Development Permit Area (DPA) or Zone to mitigate waterfront development impacts and restore degraded foreshore zones. This may include: - Considering the establishment of a minimum setback from the high tide line. - Considering restoration and enhancement as a condition of all marine DP approvals. - Considering pervious surface and tree canopy targets for marine shoreline DP-approved developments.	$$$ Mid
3.6	Consider a development permit area or zone for the protection of the natural environment. This may include: - Defining natural areas to be protected by this DP and creating an accurate map of them. - Consider a buffer from all identified "natural areas". Use this as a trigger for the DP for development proposed within and adjacent to them. - Providing comprehensive environmental guidelines for land developers and QEPs to follow. This should include an approval checklist for proposed DP land development. - Developing a variance application process for properties in the Primary Growth Areas and constrained lots. - Creating guidelines for what is expected of restoration and enhancement as part of the DP approval requirements.	$$$ Mid
3.7	Revise the Floodplain Development Permit Area and its associated guidelines. This may include: - Removing Appendix N, Schedule 2 of the OCP and referring to the GIS portal, SaanichMap. - Providing detailed environmental guidelines and an approval checklist for all proposed land development within this DP. - Developing distinct guidelines for agricultural floodplain areas, including measures to protect their value to migrating birds.	$$ Mid
3.8	Amend the Pesticide Bylaw to include rodenticide.	$$ Mid
3.9	Develop an inventory of Saanich's natural assets and develop a Natural Asset Management Plan.	$$ Short
Compliance and Enforcement		
3.10	Allocate resources to identify and deal with encroachments into District owned natural lands, including naturalized right of ways and mandate their restoration.	$$ Mid

3.11	Increase the penalties for encroachment into environmental setback areas, covenant areas, and parks.	$ Short
3.12	Increase bonding securities for restoring natural ecosystems that are a condition of environmental DP permits.	$ Mid
3.13	Require that QEPs assess and confirm the compliance of restoration sites.	Ongoing
3.14	Make site inspections within 5 years of restoration a condition of environmental DP permits. Collect bonding to enforce this inspection period. This may include requiring QEPs to monitor the success of restoration projects.	$ Mid
Planning and Process		
3.15	Develop an incentive program to support protection of natural features through development inside the UCB.	$$ Short
3.16	Create report guidelines for QEP development permit reports and provide a table of contents with required topics. This may include compiling a resource guide of best practices with links and references for developers and QEPs.	$ Mid
3.17	Provide guidelines for restoration and enhancement of natural areas to be protected and/or restored based on SER principles and standards.	$ Mid
	3.17.1 Update native plant lists to include a list of climate-adaptable species to be included in restoration projects.	
3.18	Consider adopting pervious surface site coverage targets.	$ Mid
	3.18.1 Incentivize landowners to create pervious surfaces through a stormwater tax.	
3.19	Explore lighting reduction design requirements that reduce lighting impacts on biodiversity.	$ Mid
3.20	Enhance inter-departmental communication for coordinated land development and restoration.	$$ Short
	3.20.1 Create an inter-departmental review checklist for municipal projects to be used by the Development Review Committee.	
	3.20.2 Implement an Environmental Review process for variances to environmental policies.	
3.21	Continue to support plant salvage programs to relocate native plants from approved development sites.	$ Mid
	3.21.1 Develop a list of restoration sites where plants can be transplanted to.	
3.22	Encourage and provide incentives to land developers for incorporating green infrastructure to capture and clean stormwater (i.e., green roofs, bioswales, green walls and planters).	$ Short
3.23	Adopt delegated minor variance permits to support the retention of natural features during the development process.	$ Short

Goal 4 – Enhancing biodiversity on public lands

Biodiversity occurs on a variety of public lands in Saanich. The majority is owned by the District and is the focus of this Goal, however, other public land owners include: federal lands, school district lands, and lands held by public institutions such as University of Victoria and Camosun College.

Natural Parks

The District's natural parks are essential for supporting the diversity of species occurring in Saanich. These natural area parks offer a range of additional benefits beyond supporting biodiversity. They play a role in climate mitigation by sequestering carbon dioxide while also enhancing the District's resilience to the impacts of climate change by mitigating heatwaves, air pollution, flooding, and stormwater surges. These green spaces provide residents with access to nature, improving their mental and physical well-being. Many people use these parks for recreational activities, which have positive effects on their health and happiness. The integrity of these natural areas is, however, under threat. Climate change is altering growing conditions and creating negative impacts on species' interrelationships (such as predator prey cycles, pollination, etc). Local factors such as recreation, illegal encroachment, the release of pollutants, and the invasion of non-native species are also impacting the integrity of these publicly owned natural spaces.

To protect these natural areas, the District should consider developing policies that help protect these natural park areas by reducing encroachments. This could be done through regulating adjacent lands and installing natural and physical barriers. There are also opportunities to improve the integrity of these natural spaces, making them even more capable of supporting a wide range of species. The introduction of climate-resilient plants and trees, restoration of degraded areas, installation of habitat features, and the creation of pollinator gardens could be considered.

Streams

In addition to land-based natural areas, freshwater streams running through the District are vital sources of water, supporting an aquatic ecosystem comprising of fish, amphibians, and invertebrates. These streams eventually connect to the marine foreshore. Impervious surfaces and the design of stormwater systems affect how freshwater reaches natural areas and how deleterious substances are prevented from reaching the District's streams. Protecting and enhancing these watercourses is critical for maintaining a healthy and diverse natural community in the District.

Passive Parks

Many of the District's parks within the UCB feature lawns of turf grass interspersed with sporadic individual trees and landscaped areas. These parks are typically designed to facilitate recreational activities rather than serve as habitat for wildlife. In their current state, many of these passive parks lack habitat elements that provide protective cover, sources of food, and access to water for wildlife.

There are opportunities to convert some of these urban green spaces into wildlife-friendly environments by restoring sections of turf grass with plant communities consisting of trees, shrubs, and pollinator-friendly plants. Ideally, these habitat pockets would be strategically located close to one another or connected and within the Biodiversity Habitat Network, thereby promoting the movement of birds, small mammals, and insects through these urban landscapes.

There are also opportunities to restore the periphery of passive park areas where they interface with forests. Restoring these edges creates buffer areas and provides a chance to introduce native shrubs and trees Using species that thrive in drier and sunnier conditions are more likely to become established along the open edges of forests, especially those facing south and west. Once these species take root,

they can act as a seed bank and gradually spread into the nearby natural areas over time. A focus should be on species that are native to South Vancouver Island.

Enhancing urban parks for wildlife could involve the installation of various habitat features, such as logs and boulders, wildlife trees and nesting boxes. The inclusion of water features offers a vital resource for both drinking and bathing. By introducing these elements and promoting the coexistence of humans and wildlife in urban parks, we can foster more ecologically vibrant and sustainable urban parks.

Roads and Boulevards

Streets play a crucial role in facilitating the movement of people, whether by vehicle or active transportation. However, they often present a pavement-dominated environment, limiting above- and below-ground space for trees and plants to flourish. Fortunately, there are opportunities to rethink the design of these linear features in a way that not only supports safe human travel but also promotes wildlife movement across urbanized landscapes.

One avenue for improvement involves the strategic planting of street trees accompanied by planting linear hedgerows or small pollinator gardens. Nearby residents should be encouraged to take on the role of stewards, nurturing and caring for these green spaces, fostering a sense of community ownership and ecological responsibility.

Furthermore, there are opportunities along streetscapes to install engineered green infrastructure to manage stormwater and provide access to water for wildlife. Bioswales are designed to capture stormwater runoff and encourage natural infiltration and purification of this water. Slowing down the velocity of water and facilitating filtration processes contribute to the removal of pollutants and sediments originating from our streets. Additionally, it allows for the replenishment of groundwater, which is vital for sustaining healthy ecosystems.

Table 4. Goal 4 Recommendations: to improve biodiversity on public lands.

First Nations Values			Cost/ Timeline
4.1	Collaborate with First Nations to incorporate their values and caring for lands and waters into Saanich's biodiversity management.		$$$ Ongoing
	4.1.1	Compile a catalog of culturally significant plants for potential inclusion in restoration areas.	
	4.1.2	Allocate funding to support First Nations role and partnerships with the DistrictT.	
	4.1.3	As per ÁTOL,NEUEL ("Respecting One Another") Memorandum of Understanding, implement the articles related to park management and cultural resource protection.	
Natural Park Areas			
4.2	Develop park plans to help manage natural area parks in Saanich. Begin by creating a priority list.		$$ Mid
4.3	Install absent habitat elements in young forests.		Ongoing
4.4	Increase the amount of natural habitat in passive parks by restoring infrequently used passive areas dominated by turf grass.		$$ Ongoing

4.5	Adopt a policy to maintain a no net loss of natural areas from public lands with no net loss applying to both ecological value and habitat area.	$ Short
4.6	Protect active bird nests in parks. Enforce the Wildlife Act and Migratory Birds Act with signage and conduct nesting surveys prior to vegetation clearing and removal.	Ongoing
4.7	Create freshwater sources in natural parks such as wetlands and ponds.	$$$ Ongoing
4.8	Review and revise the Invasive Species Management Strategy.	$$ Short
4.9	Continue to implement deer control measures, where appropriate, to minimize their impact to restoration sites and other key impacted ecosystems. Review and consider the CRD Deer Management Plan	Ongoing
Trails and Recreation		
4.10	Reduce the environmental impacts associated with recreational trail use	$$$ Ongoing
4.10.1	Design wetland and stream bridges with clear span, dog-friendly features, and low boards to prevent watercourse encroachment.	
4.10.2	Install fencing or plant thorny native shrubs along trails and stream crossings within 10 m of all wetlands, streams, and lakes.	
4.10.3	Relocate trails that are close to watercourses or install boardwalks with fencing.	
4.10.4	Establish access points such as wildlife viewing platforms, lookout points and towers in strategic locations to provide the public with opportunities to enjoy nature while reducing environmental impacts.	
4.11	Close and rehabilitate unsanctioned trails.	$$$ Ongoing
4.12	Continue to remove illegal encampments and encroachment on District-owned natural areas.	$$ Ongoing
Roads and Boulevards		
4.13	Reestablish natural features within road boulevards, passive parks, and public landscaped areas.	$$$ Ongoing
4.13.1	Install pollinator gardens and meadow habitat in low-pedestrian and low-traffic areas.	
4.13.2	Incorporate green infrastructure features like bioswales and rain gardens along roads and parking for stormwater management.	
4.14	Explore measures to reduce conflicts and impacts with the Biodiversity Habitat Network. This may include implementing traffic calming measures.	Ongoing
Restoration		
4.15	Identify and rehabilitate degraded natural areas on District-owned lands.	$$$ Ongoing
4.15.1	Create demonstration native plant or naturescape gardens in publicly visible locations on District land to showcase native biodiversity.	
4.16	Continue to protect and restore Garry Oak ecosystems on public lands.	$$$ Ongoing
4.16.1	Explore opportunities to increase the local nursery stock of Garry Oaks and other native tree and shrub species. Consider establishing a District-run and operated nursery.	
4.17	Identify and remove barriers to fish migration. Coordinate with non-profit organizations and stewardship groups.	$$$ Ongoing

4.18	Identify opportunities to daylight and restore natural stream reaches that are culverted.	$$$ Ongoing

Goal 5 – Encouraging biodiversity initiatives on private lands outside of the development process

Within the Urban Containment Boundary, there are well-established residential neighbourhoods characterized by a mosaic of fragmented habitat elements, including trees, landscaping, and gardens. While the new provincial housing mandates includes the ability for small scale densification, these small urban areas offer altered habitat features, which are suitable for flying species and those adapted to utilizing smaller habitat spaces. There are opportunities to incorporate more of these natural elements into residential yards. The concept of "naturescaping" encapsulates this approach, emphasizing gardening practices that prioritize the use of native plants and trees. Smaller habitat elements that can be introduced include water sources, nesting sites for birds and bats, and pollinator-friendly plants.

Lawns have become the default landscape for many residential homes. These are typically monocultures of non-native grass that demand substantial amounts of water, energy, and fertilizer for upkeep. An alternative is to re-naturalize lawns by replacing them with native, pollinator-friendly substitutes or even allowing grass to grow tall. This creates habitat and forage opportunities for insects and pollinators. In the fall, leaving unraked leaves serves as a source of organic fertilizer and cover for birds, mammals, and insects.

The successful establishment and maintenance of these wildlife-friendly features rely on the commitment and stewardship by property owners. Their dedication to maintaining native plants, replenishing bird baths, and providing suitable nesting opportunities can make a significant difference in the well-being of urban wildlife. However, there are significant cost savings over time in terms of reduction of water and fertilizer uses that may create an incentive for property owners.

To further promote habitat enhancement on private property, the District can play a role by offering educational materials and incentives to residents. Educational materials along with hands on programs can empower residents with the knowledge and skills needed to create and maintain wildlife-friendly landscapes. Incentives might include financial incentives, such as tax breaks or grants, to encourage property owners to adopt naturescaping practices, providing free native trees, shrubs, and forbs to interested landowners, or education regarding the planting and maintenance of native plants.

Gardens that include a mix of trees, shrubs, ferns, and herbs provide the most diverse habitat for species that are tolerant of urban areas. Reimagining gardens and lawns as dynamic ecosystems that support local wildlife not only benefits the environment but also creates more sustainable and vibrant urban spaces for both residents and local wildlife.

Table 5. Goal 5 Recommendations: to encourage biodiversity initiatives on private lands outside of the development process.

Private lands		Cost/ Timelines
5.1	Consider developing incentives for installing green infrastructure on residential properties.	$$$ Ongoing
5.2	Promote the Naturescaping program and guidelines for residential properties. Develop hands on learning opportunities through Recreation Centres and other partner organizations.	$ Short
5.3	Develop guidelines for the use of covenants to safeguard ecologically valuable areas. Explore other incentives for larger landowners such as ecogifting, and develop a 'Leave a legacy' package for property owners to consider in estate planning.	$ Short
5.4	Complete a review of existing environmental and natural state covenants and their condition. Notify landowners of their obligations.	$$ Short
	5.4.1 Develop a program to support landowners that have natural state covenants on their property.	$$
5.5	Develop a program to support and promote the planting of Garry Oak trees on private property.	$ Ongoing
5.6	Promote the use of products that help prevent bird collisions with windows.	Ongoing
5.7	Encourage light reduction techniques to direct light away from natural areas.	Ongoing
5.8	Encourage the replacement of turf grass with low-maintenance herbs and pollinator-friendly vegetation.	Ongoing

Goal 6 - Improve public understanding of biodiversity and promote stewardship

Saanich should continue to expand and deliver its Natural Intelligence Program, and support and promote annual environmental stewardship events such as Earth Day and Stream and Beach Cleanup Days. The program and events provide an opportunity to increase the stewardship participation of residents and to distribute educational materials. An annual Bioblitz event could be hosted, which would help with understanding the variety of species that are present in Saanich and aid with annual monitoring of the state of biodiversity.

The majority of the land in Saanich is privately owned and falls outside of municipal jurisdiction. Enhancing these areas to support biodiversity requires voluntary stewardship efforts by property owners. Educational resources can be developed that promote the naturalization of private yards, including recommendations for plant communities and habitat elements that are specific to Saanich. This information could also recommend ways to reduce wildlife disturbances, such as adopting bird-friendly windows and lighting, and minimizing pesticide and herbicide usage.

Investing in the education and involvement of young residents can instill a lifelong appreciation for Saanich's natural areas. High school students often need volunteer hours for graduation and as part of application requirements for post-secondary institutions. Collaborating with high schools, Saanich could engage students to participate in park restoration projects. Bird and bat box construction could be promoted as part of high school woodworking programs. Similarly, post-secondary students may be looking for opportunities for their thesis projects or graduate studies. The District can engage these post-secondary students to help study biodiversity in Saanich. The existing tree giveaway event

organized in conjunction with Canada's National Tree Day in September to promote tree planting on District-owned and private lands should be continued and could be expanded to provide other programing related to biodiversity.

Table 6. Goal 6 Recommendations: to improve public understanding of biodiversity and promote stewardship.

Education and Stewardship		Cost/ Timelines
6.1	Continue to expand and implement the Natural Intelligence Program.	$$ Ongoing
6.2	Continue to promote and support environmental stewardship events such as Earth Day, Stream Cleanup Day, and Beach Cleanup Day.	Ongoing
6.3	Continue to support and expand on existing District stewardship programs. Examples include the Pulling Together Program and Park Ambassadors.	$$$ Ongoing
6.4	Promote and expand programs to encourage biodiversity stewardship and education on private lands.	$$ Ongoing
6.5	Create educational signage to raise public awareness about endangered species in parks.	$ Mid
6.6	Partner with institutions and non-governmental organizations to further study biodiversity in Saanich, and to carry out restoration projects.	Ongoing
6.7	Collaborate with non-profits to run biodiversity programs in Saanich.	Ongoing
6.8	Continue to support school programs to educate youth regarding biodiversity and the importance of natural areas.	Ongoing
6.9	Distribute education materials on the presence and treatment options for invasive plants and animals.	$ Ongoing
6.10	Organize and host an annual bioblitz event to inventory species presence across Saanich.	$ Ongoing

Goal 7 - Enhancing Biodiversity on Agricultural Lands

Agricultural lands (both lands that zoned for agricultural use and lands designated as Agricultural Land Reserve) play a unique role in supporting biodiversity across the Saanich landscape. These are arable and fertile land which has been prioritized for farming with restrictions on land use to prevent non-farming uses. Biodiversity on these lands tends to be lower than natural areas due to their farming use and regular disturbance for crop harvesting. The exception would be the biodiversity found in preserved hedgerows and protected riparian areas, which can serve as smaller biodiversity corridors through and along agricultural lands. However, compared to the Urban Matrix and developed areas, agricultural lands can provide some further benefits to biodiversity. They can allow for wildlife movement between adjacent natural habitat areas. The species that use these areas depends on the crop cover type. Some crops provide more cover for wildlife, while others may provide seasonal forage. Some winter crops provide valuable forage for migratory birds. These areas can also pose a threat to biodiversity if they use fertilizers or pesticides, which can leach into adjacent natural areas. Although there are limitations on what can be done on agricultural lands, there are initiatives and programs that can be established to

help encourage the usage of vegetated buffers, enhancement of watercourses, and naturalization of unused areas.

Table 7. Goal 7 Recommendations: to enhance biodiversity on Agricultural lands.

Agricultural Lands		Cost/ Timelines
7.1	Engage in and endorse provincial initiatives for riparian area naturalization on agricultural lands.	Ongoing
7.2	Support raptor enhancement programs on agricultural lands.	Ongoing
7.3	Support the installation of owl and bat boxes in agricultural areas.	Ongoing
7.4	Consider a fund and program or partner with the Province and local environmental non-governmental organizations to enhance biodiversity on farmlands (e.g. hedgerows, agroforestry, no-till practices).	$$ Ongoing
7.5	Advocate for overwintering crops through a tax refund or grant initiative.	$$ Ongoing
7.6	Advocate for and encourage environmentally friendly farm practices including participation in the provincial Environmental Farm Plan Program.	Ongoing

Goal 8 - Monitoring the State of Biodiversity

As the District continues to grow and climate continues to change, the natural areas and the species that inhabit those areas will continue to face threats. The response of these ecosystems to urban development, climate fluctuations, pests, diseases, and invasive species remains uncertain. By monitoring the condition of the natural environment, the District can gauge the effectiveness of the actions taken related to biodiversity and adapt as appropriate.

To effectively monitor the state of the natural environment, the District should adopt a set of environmental targets that can be monitored using indicators. These indicators serve as vital metrics to measure the health and resilience of natural ecosystems.

Pests and diseases are natural to forests growing in this region. They are an integral part of the equilibrium of a forest as they break down wood accumulations, provide a food source for wildlife and increase biodiversity through the creation of small forest openings and wildlife trees. The presence of pests and diseases should be considered natural and healthy, however, excessive presence is considered an outbreak and may indicate imbalance in the ecosystem. A monitoring program should include an assessment of pest and disease outbreaks in natural areas.

Evaluating habitat conditions is part of a comprehensive monitoring program. This includes assessing pervious surfaces, tree canopy cover, water quality parameters, the condition of natural state covenant areas, and the presence of critical habitat features such as wildlife trees. A structured monitoring and evaluation process will help gauge the Strategy's effectiveness and enable the District to adapt its strategies to address emerging challenges.

Table 8. Goal 8 Recommendations: to monitor the state of biodiversity.

Environmental Monitoring		Cost/ Timeline
8.1	Consider creating a "State of the Environment Report" with regular updates. This report may include: - Condition assessment of natural areas in Saanich. - Collation of baseline environmental data in Saanich. - Updates to the Climate Plan. - Updates to the Biodiversity Conservation Strategy.	$$ Ongoing
8.2	Identify and monitor for the presence of indicator species.	$$ Ongoing
8.3	Monitor the changes in canopy cover across the District.	$$ Ongoing
8.4	Monitor impervious surface coverage in areas within the UCB.	$$ Ongoing
8.5	Monitor freshwater aquatic conditions.	$$ Ongoing
8.6	Monitor natural areas for pest and disease outbreaks.	$$ Ongoing

Table 9. Some suggested indicator species and monitoring methods.

Indicator species	Habitat Type	Survey Method
Song sparrow (*Melospiza melodia*)	Shrub communities	Singing birds
Anise Swallowtail (*Papilio zelicaon Lucas*)	Pollinator communities	Visual survey for adults
Ruby-crowned Kinglet (*Regulus calendula*)	Deciduous Forests	Singing birds
Swainson's Thrush (*Catharus ustulatus)*	Deciduous Forests	Singing birds
Red-breasted Nuthatch (Sitta canadensis)	Coniferous Forests	Singing birds
Great Horned Owl (*Bubo virginianus*)	Coniferous Forests	Call back surveys
Pileated Woodpecker (*Dryocopus pileatus*)	Mixed Forests	Evidence of foraging
Common Yellowthroat (Geothlypis trichas*)*	Wetlands	Singing birds
Marsh Wren (*Cistothorus palustris)*	Wetlands	Singing birds
Cutthroat Trout (*Oncorhynchus clarkii*)	Freshwater lake/stream	Minnow Traps/Snorkel survey
Coho salmon (*Oncorhynchus kisutch*)	Freshwater river	Minnow Traps/Snorkel survey
Sea otter (*Enhydra lutris*)	Marine	Visual survey for adults
Blue Heron (*Ardea Herodias*)	Marine Intertidal	Visual survey for adults
Western Sandpiper (*Calidris mauri*)	Marine mudflat	Visual survey for adults
Red-tailed Hawk (*Buteo jamaicensis)*	Agricultural areas	Visual survey for adults

Strategy Implementation

The Province has provided the District of Saanich with mandated housing targets, including tripling the volume of occupancy permits over the next five years. To accommodate this growth, the District plans to expand the capacity of existing land uses and create a more condensed and comprehensive community. This will be focused primarily within the Urban Containment Boundary. Despite this requirement for densification, the District remains committed to finding a balance between the need for urban growth and protection of the natural environment, not only to preserve biodiversity but also to bolster the District's resilience against the impacts of climate change.

Recognizing the challenges that come with increased urban densification, the District aims to protect and improve natural forests and streams where and when possible. It plans to encourage the variety and quantity of trees planted, ground vegetation, and habitat features across the urban landscape. Collaboration with citizens will be encouraged for the protection and management of natural areas on public lands. On private lands, the District will encourage developers and residents to protect and incorporate natural features. Monitoring the state of natural area indicators over time will help evaluate the effectiveness of these measures.

The District is also in the process of adopting an updated Official Community Plan and is developing an Urban Forest Strategy. By adopting the Biodiversity Conservation Strategy and pursuing the recommended actions, the District will take strides to protect, enhance, and connect the remaining natural area parks and improve biodiversity across its urban and rural landscape. The Environmental Policy Framework further supports the implementation of this strategy. Implementing these recommendations will be prioritized based on the District's available resources.

Table 10. Recommendations to implement the Biodiversity Conservation Strategy.

Implementation			Cost/ Timeline
9.1	Provide sufficient staffing resources to implement the recommendations within this Strategy.		$$$ Short
	9.1.1	Continue to support a staff position for a professional with expertise in biology and ecosystem restoration to focus on implementing this Strategy.	Complete
	9.1.2	Create a staff position for a professional with expertise in arboriculture to focus on the protection of trees and working around trees for municipal projects.	
	9.1.3	Create a staff position to implement stewardship and public outreach initiatives outlined in this Strategy.	Complete
	9.1.4	Create a staff position for a geospatial analyst to focus on integrating new information and mapping updates to the GIS portal, SaanichMap.	Complete
9.2	Commit funding to adopt high-priority recommendations within a 5-year span.		$$$ Mid

[1] District of Saanich, "District of Saanich OCP (2008)" (District of Saanich, 2008), https://www.saanich.ca/assets/Local~Government/Documents/Corporate~and~Annual~Reports/2008%20OCP.pdf

[2] Ministry of Forests, "GeoBC - Province of British Columbia" (Province of British Columbia), accessed March 2, 2023, https://www2.gov.bc.ca/gov/content/data/about-data-management/geobc.

[3] District of Saanich, "District of Saanich OCP (2008)."

[4] BC Ministry of Housing, "Targets Released for 10 Municipalities to Deliver More Homes for People | BC Gov News," Targets released for 10 municipalities to deliver more homes for people, September 26, 2023, https://news.gov.bc.ca/releases/2023HOUS0123-001505.