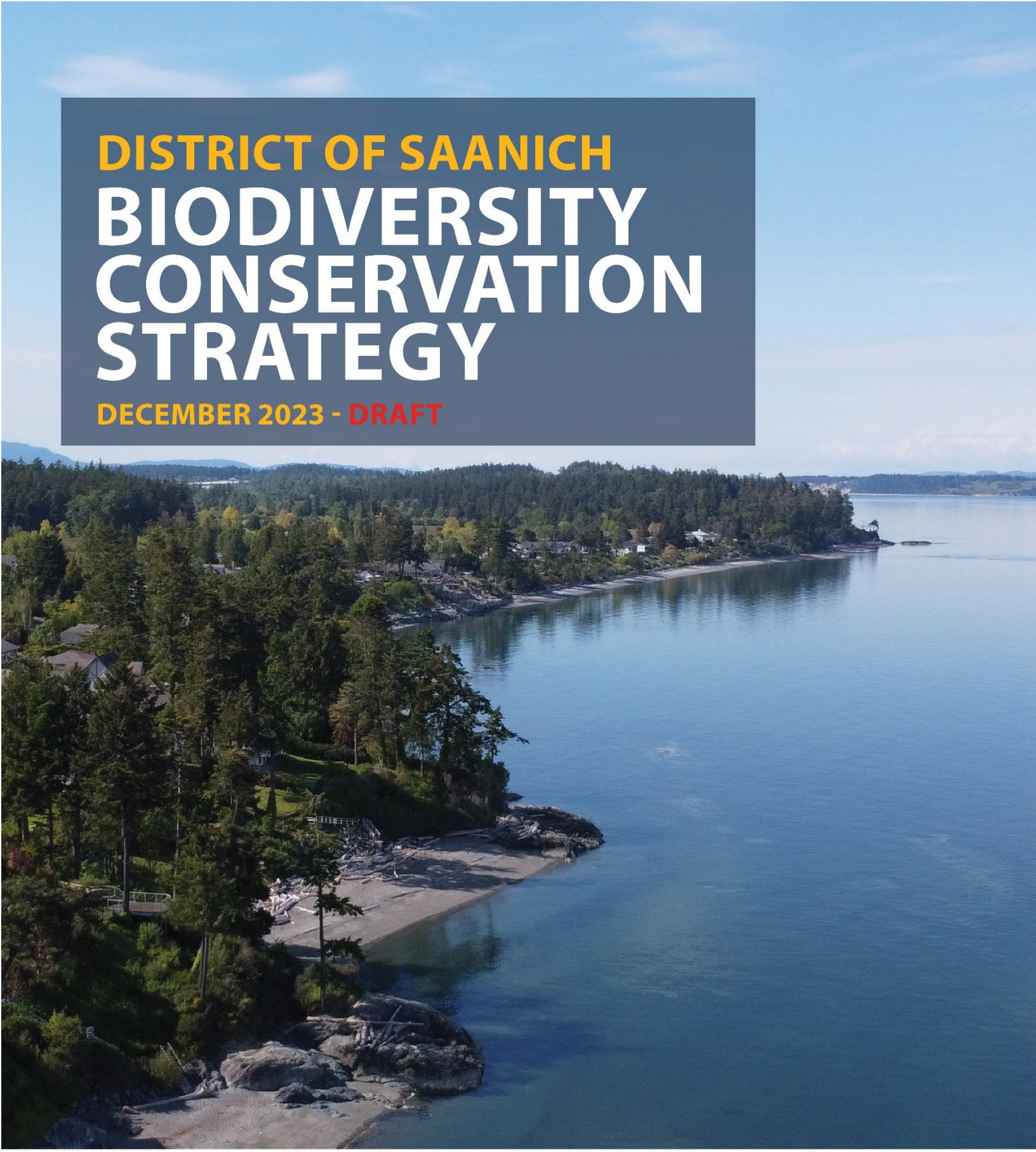
# DISTRICT OF SAANICH

# BIODIVERSITY CONSERVATION STRATEGY

## DECEMBER 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.

## Acknowledgements

The District of Saanich thanks everyone involved in the process of developing the Biodiversity Conservation Strategy. This includes community members who volunteered their time to participate in the online surveys, in-person and virtual open houses, technical experts who reviewed preliminary mapping layers and provided policy input, and members of the Resilient Saanich Technical Committee (RSTC), who provided valuable advice throughout the process.

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District staff & Council played an invaluable role in working with committee members and the project consultants. Council Liaisons included Rebecca Mersereau (2020-2022) and Zac De Vries (2023-ongoing).

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# Executive Summary

The District of Saanich includes expansive natural areas including marine backshores, productive lakes and wetlands, meandering creek systems, and a diverse array of plant communities providing habitat for a diversity of wildlife. Saanich is situated within the highly threatened Coastal Douglas Fir zone and is home to remnant patches of one of Canada's most endangered plant communities, the Garry Oak ecosystem. The Garry Oak ecosystem, along with other ecosystems and species, are at risk and requires attention for its protection and preservation..

The Resilient Saanich program was initiated by Council in 2017 to develop a policy framework for environmental protection in Saanich. This process includes Environmental Policy Framework, Biodiversity Conservation Strategy, Climate Plan and 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 urban development, climate change, and over use jeopardize these ecosystems and their abundant biodiversity.

In late 2023, a 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 Areas (as defined in the 2023 Draft OCP), however, regulations related to increased housing density on single family properties will also have impacts on urban biodiversity. To ensure livable communities and community wellbeing, development needs to be balanced with natural area and biodiversity protection. Protecting, connecting and restoring natural areas and the values they provide will ensure biodiversity conservation for the long term.

This Biodiversity Conservation Strategy provides a roadmap to protect and enhance ecosystems, natural areas and their values through policy, operations, and public stewardship. The guiding vision of this Strategy is:

> *"Saanich is a community that values, protects, connects, and restores sensitive ecosystems, natural habitats, and biodiversity."*

The Strategy identifies eight overarching themes that serve as the framework for the recommendations. Each theme contains a number of recommendations, with anticipated costs and timelines:

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 maintaining and enhancing biodiversity and ensuring it is resilient to climate change by preserving, connecting and restoring natural areas and their values. A healthy biodiverse environment is fundamental to the social and economic resilience of Saanich, especially in the face of the potential environmental crises predicted by climate change.

The District does not have the resources to pursue all of the recommendations concurrently. The following are considered the top priority recommendations that will have the greatest impact in the short term to protect and enhance biodiversity in the District:

1. Recommendation
2. Recommendation
3. Recommendation
4. Recommendation
5. Recommendation

The recommendations within this Strategy will be used to support a healthy and resilient Saanich and to achieve the following targets:

- Increase the tree cover across the District. Refer to the Urban Forest Strategy for details.
- Increase the cover of pervious surfaces within the urban containment boundary
- Increase the area within District that is designated as protected
- Reduce the area of invasive plant infestations within protected parks
- Protect and enhance the Habitat Network within the urban containment boundary
- Improve the quality of freshwater streams in the urban containment boundary
- Restore ecosystems that have been degraded in District owned parks
- Improve the ecological health in natural area parks

# 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 contains an array of freshwater rivers, lakes, wetlands, and forests. Within its boundaries, one can find some of the most exceptional ecosystems in Canada. However, many of these ecosystems and the species that live within them are at risk and are listed under the federal Species at Risk Act (SARA) and the provincial BC Conservation Data Centre (BCCDC). The residents of Saanich deeply appreciate these natural treasures and are committed to safeguarding them for future generations.

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 inventory of the present condition of the District's natural areas and the challenges they face. Using existing datasets and advanced technologies, a targeted inventory and map of these areas were 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, 2023 draft) 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). 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 annually. To meet this Order, Saanich will require an accelerated, collaborative, and sustained approach to provide housing opportunities in the designated Primary Growth Areas (along transportation corridors and in centres) and through well-integrated infill within Saanich Neighbourhoods.

The core purpose of this Strategy is to support the District in protecting, connecting and restoring biodiversity and ensuring it is resilient to climate change by preserving natural areas and their value.. A healthy biodiverse environment is fundamental to the social and economic resilience of Saanich, especially in the face of the potential environmental crises predicted by climate change. Recognizing the need for more housing, the Biodiversity Conservation Strategy provides a roadmap to protect connect

and enhance natural areas and their values through policy, operations, and public stewardship. The guiding vision of this Strategy is:

> *"Saanich is a community that values, protects, connects, and restores sensitive ecosystems, natural habitats, and biodiversity."*

The Strategy identifies eight overarching themes that serve as the framework for the recommendations. Each theme contains a number of recommendations, with anticipated costs and timelines:

1. Research - improve knowledge and mapping of natural features and functions
2. Protection - acquire and protect a network of habitat areas
3. Sustainable development - enhance biodiversity during land use planning and development
4. Restoration - enhance biodiversity on public lands
5. Public stewardship - encourage biodiversity initiatives on private lands outside the development process
6. Community engagement - improve public understanding of biodiversity
7. Sustainable farming - enhance biodiversity on agricultural lands
8. Assess - monitor the state of biodiversity

**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 are a general overview of some of the protection measures that have been adopted to protect the natural environment. Policies that are focused on environmental protection are listed, however, there are many other bylaws, policies, strategies, and action plans that do not focus on environmental protection but do address them.

## Saanich Official Community Plan Bylaw 8940 (Dec 2023 Draft)

The 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 Natural Environment 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 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. Primary Growth Areas accommodate the majority of future growth in sustainable and resilient communities where housing and amenities are integrated with sustainable transportation systems and green infrastructure."*

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 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 , it will 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 OCP and this Strategy are reviewed together to ensure recommendations for ecosystem and biodiversity protection in this Strategy are embedded in the OCP.

### Climate Plan: 100% Renewable & Resilient Saanich (2020)

The District of Saanich developed a Climate Plan in 2020 which outlines a roadmap for reducing emissions and increasing climate change resilience in Saanich. The plan addresses greenhouse gas targets and strategies for both climate change mitigation and adaptation. There are three primary goals for the climate plan:

1. Cut emissions in half by 2030 and to net zero by 2050;
2. Transition to 100% renewable energy by 2050; and
3. Prepare for a changing climate.

The plan identifies over 130 actions to meet these climate goals. The actions are focused on the first 10 years of the plan's implementation and, if necessary, will be reviewed and adjusted periodically to ensure that the most impactful actions are pursued.

### Environmental Policy Framework (in development)

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 (2008)

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 (2008)

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 provides guidelines for 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) wasadopted 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 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 (2010)

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 No. 9054 (2010)

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.

### 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, soil 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 No. 9487 (2018)

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 operate to help support protecting, maintaining, restoring, and enhancing biodiversity in Saanich.

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 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 a proportion 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 State of Biodiversity Report (2023) 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. The report provides a baseline understanding of the current state of the District's natural areas. Due to scope constraints for the State of Biodiversity Report, a highly detailed inventory was not possible. This report forms the foundation for the BCS and lays the groundwork for a proposed connectivity network. This BCS outlines additional steps to better understand and protect biodiversity in Saanich in the recommendations section.

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 targeted 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.**).

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].

Larger urban parks are valuable places as they provide an important refuge for wildlife within the District. Many of the detailed characteristics of Saanich's natural areas, both public and private, are not fully understood and only ground-truthed to a small degree. 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.

While there are numerous threats that affect the integrity of natural areas, the State of Biodiversity Report identifies eight threats that are expected to have major impacts on biodiversity in Saanich.

1. Land development
2. Climate change & severe weather
3. Sea level rise
4. Invasive species
5. Pest and diseases
6. Human impacts
7. Impervious surfaces
8. Loss of indigenous knowledge and practices

For more information regarding the State of Biodiversity in Saanich, refer to the State of Biodiversity Report.

## 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. The future diversity of wildlife and plants in the District relies on the variety, integrity, and interconnectedness of habitats. Based on long standing ecological principles, 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. 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 overarching goal of biodiversity conservation 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.**

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

Habitat pathways that 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.

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 and supporting backyard biodiversity will help Saanich to prioritize its resources toward protection, enhancement, and restoration of natural areas and biodiversity, while also ensuring growth and development occurs 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). However, this network does use major aquatic systems and riparian areas as a foundation. 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. private 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 (approximately >10 ha) that provide protected interior habitat somewhat 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 native biodiversity because of their size and lower levels of disturbance.

### Habitat Sites

These areas are smaller in size (approximately <10 ha) and generally do not provide protected refuge areas for wildlife which are intolerant of urban conditions. 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 smaller, mobile animals tolerant of urban activity as well as flying species such as birds and insects. They are typically 10-30 m wide and are often fragmented by urban barriers.

### Agricultural Land

Agricultural land plays a unique role across the landscape. These areas tend to be dominated by monocultures of plants that are regularly harvested. However, these areas may facilitate the travel of species between adjacent natural habitat areas through features such as hedgerows and irrigation ponds and ditches. They can also provide food sources for certain species, although the pesticides and herbicides used in conventional agriculture can pose toxicity risks to many species. Agricultural land can also benefit from increased use by wildlife through increased pollination of crops and natural pest control through predation.

### The Urban Matrix

The urban matrix includes the natural areas within an urbanized landscape, and occurs mainly inside the Urban Containment Boundary. These include small patches of native habitat, single or small groups of trees, shrubs and shrub thickets, drainage ditches, gardens and ornamental ponds and water features. Collectively these features provide habitat for species that are tolerant of human disturbances including birds, flying insects, amphibians and reptiles, and small mammals including bats.

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 Land 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 that can mitigate some of the impacts of 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 natural 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 for the entire District of Saanich as part of the State of Biodiversity Report. Many of the Core Habitat Hubs (i.e. areas with greatest biodiversity) are primarily located outside of the Urban Containment Boundary. While the District of Saanich will strive to use a variety of measures to protect key biodiversity areas when and where possible (see page 23), it is not feasible to only rely on land acquisition to protect all Core Habitat Hubs and Habitat Sites. The District will prioritize acquisition and protection in a way that best utilizes the resources available while leveraging 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, need 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. The District of Saanich also acknowledges that it is situated within the ancestral territories of the lək̓ʷəŋən peoples, however, consultation was focused with the WSÁNEĆ community. 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, restoring natural water flows 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 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

A community survey was conducted by the Mustel Group in April and May 2023 (ref). 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.

### 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 Elk/Beaver Lake Regional Park and Swan Lake Christmas Hill 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 Christmas Hill Nature Sanctuary, Elk/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

The RSTC developed a briefing note addressing considerations and recommendations for Enhanced Stewardship in Saanich (ref). The following summarizes some of the key takeaways from this briefing note. For more details, refer to the Considerations and Recommendations for Enhanced Stewardship in Saanich (July 2023).

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.

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 Enhance and 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 productive and biodiverse areas have been lost. Saanich recognizes the pressures remaining natural areas face within the UCB due to the growing demand for housing (recently legislated) 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 leverage urban development to improve biodiversity conservation.

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 themes have been adopted as a framework for this strategy.**

1. Research - improve knowledge and mapping of natural features and functions
2. Protection - acquire and protect a network of habitat areas
3. Sustainable development - enhance biodiversity during land use planning and development
4. Restoration - enhance biodiversity on public lands
5. Public stewardship - encourage biodiversity initiatives on private lands outside of the development process
6. Community engagement - improve public understanding of biodiversity
7. Sustainable farming - enhance biodiversity on agricultural lands
8. Assess - monitor the state of biodiversity

The following recommendations, if implemented, will aid in the protection of biodiversity in Saanich. These themes not only seek to protect the remaining priority habitats 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 themes. These recommendations are intended to provide sufficient detail to direct implementation. Some additional details are provided as sub-recommendations. However, it is important to highlight that some of the recommendations will require substantial resources and will take place over longer timelines. It is expected that recommendations will be implemented based on resource availability. Specific metrics and targets will be developed for some recommendations to gauge the success of their implementation.

The recommendations that are considered to have the most immediate and strongest impact on protecting biodiversity in Saanich are highlighted in green. The prioritized recommendations 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 loss of biodiversity and potentially irreversible consequences.

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

| Financial Commitment (total cost) | 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 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 can 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 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 and biodiversity cannot be protected without addressing their importance. Protecting as many existing trees as possible, and enhancing the canopy with tree species that are best adapted to the changing climate and host to the most insects, 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 most 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. |

### Theme 1 – Research – Improve knowledge and mapping of natural features and functions

The information on the state of terrestrial and aquatic ecosystems was summarized in the State of Biodiversity Report (2023). Continually enhancing the understanding of terrestrial and aquatic ecosystems, species at risk, and their geographical distribution is important to set targets for biodiversity conservation, and to track progress in conservation and assessing the effectiveness of restoration efforts. Information outlined by the State of Biodiversity report should be updated periodically, and identified information gaps should continue to be filled. This information should be made accessible to the public through Saanich's online GIS web map, SaanichMap. The maps should remain dynamic and will allow the District to monitor changes to its natural areas and 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. Theme 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. | | $$ Ongoing |
| | **1.2.1** | Establish a program to conduct District-wide terrestrial ecosystem assessments to update ecosystem data on a regular basis. The program would include prioritization. | $$ |
| | **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 standards and guidelines 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 |

## Theme 2 – Protection - Acquiring and protecting a network of habitat areas

As urban growth and development expand, there is an increasing need to protect high-value natural areas. This is particularly important within the Urban Containment Boundary, where development pressure and intensity of development (densification) is highest, and many natural areas remain unprotected. 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. 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 identifies areas that currently have high value for biodiversity conservation, however it is considered a baseline framework. There are opportunities 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 the densification of development to create housing. However, existing habitat hubs, sites, and features can be protected or enhanced to provide greater biodiversity. There are opportunities to create and enhance small sites and improve backyard biodiversity within these areas.

**Table 2. Theme 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, working with private landowners, naturalizing rights of way and boulevards, removing invasive species on public land. | $$$ Long |
| **2.3** | Create different tools for inside and outside the UCB to protect and enhance biodiversity in the Biodiversity Habitat Network | $$ 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** | Assess unused right-of-way within the Urban Containment Boundary for restoration potential. | $ 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 |

### Theme 3 – Sustainable development - 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 Biodiversity Habitat Network .

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, and/or broader areas such as the Habitat Network, and/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, 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:<br>- Removing Appendix N, Schedule 2 of the OCP and referring to the GIS portal, SaanichMap.<br>- Eliminating the allowance for small accessory structures within 5 m of a stream's high water mark.<br>- Identifying, mapping, and incorporating isolated water features into the DP.<br>- Updating provincial policy references in this DP.<br>- Applying the DP to all watercourses, whether they are mapped or unmapped.<br>- Strengthening riparian setbacks and measures required to stabilize and restore them.<br>- Providing detailed environmental guidelines and an approval checklist for all proposed land development within this DP.<br>- Providing guidelines for wildfire fuel mitigation within the riparian areas of all streams, wetlands, and lakes.<br>- Considering restoration and enhancement as a condition of all DP approvals. | $$ Mid |
| **3.4** | Update the Zoning Bylaw to be consistent with the Streamside Development Permit Area (SDPA) to better protect streams and the marine shoreline. | $$ 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** | Implement a Marine Shoreline Development Permit Area (DPA) or zone to mitigate waterfront development impacts and restore degraded foreshore zones. This may include:<br>- Considering the establishment of a minimum setback from the high tide line.<br>- Considering restoration and enhancement as a condition of all marine DP approvals.<br>- Considering pervious surface and tree canopy targets for marine shoreline DP-approved developments. | $$$<br>Mid |
| **3.6** | -Implement a development permit area or zone for the protection of the natural environment. This may include:<br>- Defining high value natural areas to be protected by this DP and creating an accurate map of them.<br>- Consider a buffer from all identified "natural areas". Use this as a trigger for the DP for development proposed within and adjacent to them.<br>- Providing comprehensive environmental guidelines for land developers and QEPs to follow. This should include an approval checklist for proposed DP land development.<br>- Developing a variance application process for properties in the Primary Growth Areas and constrained lots.<br>- Creating guidelines for what is expected of restoration and enhancement as part of the DP approval requirements. | $$$<br>Mid |
| **3.7** | Revise the Floodplain Development Permit Area and its associated guidelines. This may include:<br>- Removing Appendix N, Schedule 2 of the OCP and referring to the GIS portal, SaanichMap.<br>- Providing detailed environmental guidelines and an approval checklist for all proposed land development within this DP.<br>- Developing distinct guidelines for agricultural floodplain areas, including measures to protect their value to migrating birds. | $$<br>Mid |
| **3.8** | Amend the Pesticide Bylaw to include rodenticide and ban the use of pesticides on private property. | $$<br>Mid |
| **3.9** | Develop an inventory of Saanich's natural assets and develop a Natural Asset Management Plan. | $$<br>Short |
| **Compliance and Enforcement** | | |
| **3.10** | Allocate resources to identify and deal with encroachments into District owned natural lands, including naturalized right of ways and mandate their restoration. | $$<br>Mid |
| **3.11** | Increase the penalties for encroachment into environmental setback areas, covenant areas, and parks. | $<br>Short |
| **3.12** | Increase bonding securities for restoring natural ecosystems that are a condition of environmental DP permits. | $<br>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. | $<br>Mid |
| **Planning and Process** | | |

| | | |
|---|---|---|
| **3.15** | Develop an incentive program to support protection of natural features through development inside the UCB. | $$ Short |
| **3.16** | Create report guidelines for QEP development permit reports and provide a table of contents with required topics. This may include compiling a resource guide of best practices with links and references for developers and QEPs. | $ Mid |
| **3.17** | Provide guidelines for restoration and enhancement of natural areas to be protected and/or restored based on SER principles and standards. | $ Mid |
| | **3.17.1** Update native plant lists to include a list of climate-adaptable species to be included in restoration projects. | |
| **3.18** | Adopt pervious surface site coverage targets. | $ Mid |
| | **3.18.1** Incentivize landowners to create pervious surfaces through a stormwater tax. | |
| **3.19** | Require lighting reduction design to reduce lighting impacts on biodiversity. | $ Mid |
| **3.20** | Enhance inter-departmental communication for coordinated land development and restoration. | $$ 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. | |
| **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 |

## Theme 4 – Restoration - 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 Theme, however, other public land owners include: the Capital Regional District, the federal and provincial governments, the school district, and public institutions such as University of Victoria and Camosun College.

*Natural Parks*

The District's parks which protect natural ecosystems such as forests, lakes and wetlands are essential for supporting the diversity of species that inhabit Saanich. They provide large intact habitat areas with natural ecosystems functions required to support species that require refuge from urban areas. 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). Increasing demand for recreation in natural is increases the presence of humans and pets which can reduce the number and type of species that live there. Other impacts on parks include illegal encroachment from neighbouring landowners, the release of pollutants such as road runoff or accidental spills, and the invasion of non-native species.

To protect these natural areas, the District should enforce regulations to protect natural park areas from encroachments. This could be done through regulating adjacent lands and installing natural and physical barriers, regular monitoring and a hotline for the public to report on encroachments. 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 comprised of plants, 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.

*Active Recreation Parks*

Many of the District's parks within the UCB are not in a natural state and their use is intended for active and passive recreation activities. These include playing fields, and 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 and best suited to future climatic conditions.

Enhancing urban parks for wildlife could involve the installation of 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, however, they often present a pavement-dominated environment, limiting above and below ground space for trees and plants. Fortunately, there are opportunities to rethink the design of these linear features to support safe human travel and to promote wildlife movement across urbanized landscapes. Trees can be planted along boulevard areas with low canopy cover. These can be accompanied by planting linear hedgerows and 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.

There are also 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. Theme 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. | | $$$ Ongoing |
| | **4.1.1** | Compile a catalog of culturally significant plants for potential inclusion in restoration areas. | |
| | **??** | Protect marine intertidal shellfish harvesting areas. Work with DFO to explore methods to improve bivalve toxin monitoring. | |
| | **4.1.2** | Allocate funding to support First Nations role and partnerships with the District. | |
| | **4.1.3** | As per ÁTOL,NEUEL ("Respecting One Another") Memorandum of Understanding[1], implement the articles related to park management and cultural resource protection.[5] | |
| **Natural Park Areas** | | | |
| **4.2** | Develop park plans to help manage natural area parks in Saanich. Prioritize larger natural areas parks that are within or adjacent to the Habitat Network. | | $$ Mid |
| **4.3** | Install habitat elements such as nesting areas, wildlife trees and woody debris into 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 |

[1] ÁTOL,NEUEL ("Respecting One Another") Memorandum of Understanding.

| | | |
|---|---|---|
| **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. | $<br>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 habitats in natural parks such as wetlands and ponds. | $$$<br>Ongoing |
| **4.8** | Review and revise the Invasive Species Management Strategy. | $$<br>Short |
| **4.9** | Implement deer control measures to minimize their impact to restoration sites and sensitive ecosystems. Review and consider the recommendations within the CRD Deer Management Plan | Ongoing |
| **Trails and Recreation** | | |
| **4.10** | Reduce the environmental impacts associated with recreational trail use | $$$<br>Ongoing |
| **4.10.1** | Design wetland and stream bridges with clear span, dog-friendly features, and low boards to prevent watercourse encroachment. | |
| **4.10.2** | Install fencing or plant thorny native shrubs along trails and stream crossings within 10 m of all wetlands, streams, and lakes. | |
| **4.10.3** | Relocate trails that are close to watercourses or install boardwalks with fencing. | |
| **4.10.4** | Establish access points such as wildlife viewing platforms, lookout points and towers in strategic locations to provide the public with opportunities to enjoy nature while reducing environmental impacts. | |
| **4.11** | Close and rehabilitate unsanctioned trails. | $$$<br>Ongoing |
| **4.12** | Continue to remove illegal encampments and restore areas impacted by encroachment on District-owned natural areas. | $$<br>Ongoing |
| **Roads and Boulevards** | | |
| **4.13** | Reestablish natural features within road boulevards, passive parks, and public landscaped areas. | $$$<br>Ongoing |
| **4.13.1** | Install and maintain 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** | Consider implementing traffic calming measures where the Biodiversity Habitat Network crosses roads to reduce vehicle-animal collisions. | Ongoing |

| | | |
|---|---|---|
| **Restoration** | | |
| **4.15** | Identify and rehabilitate degraded natural areas on District-owned lands. Prioritize areas that are within or adjacent to the Biodiversity Habitat Network. | $$$<br>Ongoing |
| **4.15.1** | Create demonstration native plant or naturescape gardens in publicly visible locations on District land to showcase native biodiversity. | |
| **4.16** | Continue to protect and restore Garry Oak ecosystems on public lands. | $$$<br>Ongoing |
| **4.16.1** | Explore opportunities to increase the local nursery stock of Garry Oaks and other native tree, shrub, and herbaceous species. Support organizations such as the | |

| | | |
|---|---|---|
| | Garry Oak Meadow Preservation Society. 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 |

### Theme 5 – Public stewardship - Encourage biodiversity initiatives on private lands outside of the development process

In Saanich there are well-established residential neighbourhoods characterized by a mosaic of fragmented habitat elements, including trees, landscaping, and gardens. 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.

The new provincial housing mandates include the ability for small-scale densification within the Urban Containment Boundary. There are still opportunities in densify urban landscapes to incorporate habitat features suitable for species that can fly and for those adapted to utilizing smaller habitat spaces.

Lawns have become the default landscape for many residential homes. These areas support low levels of biodiversity. They are typically monocultures of non-native grass that demand substantial amounts of water, energy, and fertilizer for upkeep. An alternative is to naturalize yards by replacing all or parts of lawns 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.

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. The successful establishment and maintenance of these wildlife-friendly features relies on the commitment and stewardship of the 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. Restoration efforts should be supported by the District by enforcing bylaws intended to prevent feeding of deer.

To further promote habitat enhancement on private property, the District can play a role by supporting non-profit organizations that promote naturescaping and by distributing educational materials and providing 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 advice, native trees, shrubs, and forbs to interested landowners, or education regarding the planting and maintenance of native plants.

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

| Private lands | | | Cost/ Timelines |
|---|---|---|---|
| **5.1** | Develop incentives for installing green infrastructure on residential properties. | | $$$ Ongoing |
| **5.2** | Promote the Naturescaping program and guidelines for residential properties. Develop hands on learning opportunities through Recreation Centres and other partner organizations. | | $ Short |
| | **5.2.1** | Encourage the replacement of turf grass with low-maintenance herbs and pollinator-friendly vegetation through education and incentives. | $$ |
| **5.3** | Partner with an ENGO to provide advice on improving habitat value in private yards. | | |
| **5.4** | Complete a review of existing environmental and natural state covenants and their condition. Notify landowners of their obligations. | | $$ Short |
| | **5.4.1** | Develop a program to support landowners that have natural state covenants on their property. Develop guidelines for the use of covenants to safeguard ecologically valuable areas. Explore other incentives for larger landowners such as ecogifting and develop a 'Leave a legacy' package for property owners to consider in estate planning. | $$ |
| **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 |

## Theme 6 – Community engagement - Improve public understanding of biodiversity and promote stewardship

It is recommended that Saanich continues to expand and deliver its Natural Intelligence Program, and support annual environmental stewardship events such as Earth Day and Stream and Beach Cleanup Days. This program and events provide an opportunity to increase the stewardship participation of residents and to distribute educational materials. Additionally, Saanich should consider hosting an annual Bioblitz event to gain a better understanding of 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. Outside of land development regulations, the 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 the impacts of urban development on wildlife, such as adopting bird-friendly windows and lighting, and minimizing pesticide and herbicide usage.

Investing in the education and engagement of young residents is crucial to instill a lifelong appreciation for the natural areas of Saanich. High school students often require volunteer hours for graduation and as part of their application requirements for post-secondary institutions. By collaborating with high schools, Saanich can involve students in park restoration projects, which can be a great way to engage them and contribute to the betterment of the community. 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. Theme 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. | $$ Ongoing |
| **6.2** | Continue to promote and support environmental stewardship events such as Earth Day, Stream Cleanup Day, and Beach Cleanup Day. | Ongoing |
| **6.3** | Continue to support and expand on existing stewardship programs. Examples include the Pulling Together Program and Park Ambassadors. | $$$ Ongoing |
| **6.4** | Promote and expand programs to encourage biodiversity stewardship and education on private lands. This includes non-profit organizations such as the Swan Lake Christmas Hill Nature Sanctuary. | $$ 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 |

## Theme 7 – Sustainable farming - Enhancing Biodiversity on Agricultural Lands

Agricultural lands (both lands that are zoned for agricultural use and lands designated as Agricultural Land Reserve) play a unique role in supporting biodiversity. These are arable and fertile lands that have been prioritized for farming. 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 an urbanised landscape, agricultural lands provide some benefits to biodiversity. They can allow for wildlife movement between adjacent natural habitats. Which species use these areas depends on the crop cover type, tillage practices, and the presence of hedgerows, shelterbelts, and agricultural ponds. 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, or if there is uncontrolled erosion into adjacent watercourses and ditches. 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 use of vegetated buffers, enhancement of watercourses, naturalization of unused areas, and expanded use of sustainable farming practices.

**Table 7. Theme 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 developing an agriculture biodiversity program in partnership 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 |
| **7.7** | Discourage the use of herbicides, pesticides and rodenticides | Ongoing |

### Theme 8 – Assess - 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 and biodiversity, the District can gauge the impacts of these threats and the effectiveness of the actions taken.

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 will serve as vital metrics to measure the health and resilience of natural ecosystems. Targets should be specific and measurable objectives that the District can realistically achieve. They will serve as benchmarks for evaluating the success of biodiversity planning.

Indicators should be adopted for each target that will be used to track progress. These indicators must be measurable parameters that provide quantitative information about the target's state. Targets generally define the overarching goals, while indicators provide the data needed to measure progress toward those goals. This approach facilitates informed decision-making and an adaptive response as the Strategy is implemented. It will help to track the health of the environment and inform future policy and planning decisions.

The details of the metrics to adopt, the targets to achieve and the indicators to use to monitor them can be complex. A monitoring plan will be developed that provides an overview of the state of biodiversity in the District and provides details on the monitoring program. The following are recommended environmental targets to be considered as part of the monitoring plan.

| Target | Indicator |
|---|---|
| Increase the tree cover across the District. Refer to the Urban Forest Strategy for details. | Tree canopy cover measured for the entire District, for each land use zone and for all area within the urban containment boundary |
| Increase the cover of pervious surfaces within the urban containment boundary | The area of pervious surfaces using LiDAR and orthophoto analysis |
| Increase the area within District that is designated as protected | The total area of areas designated as protected. |
| Reduce the area of invasive plant infestations within protected parks | Survey and map the extent of invasive plants within natural parks |
| Protect and enhance the Habitat Network within the urban containment boundary | The % area of the Habitat Network inside the urban containment boundary that is protected |
| Improve the quality of freshwater streams in the urban containment boundary | Measure water quality indices at designated locations for water quality, pollutants and benthic invertebrates |
| Restore ecosystems that have been degraded in District owned parks | Area of restoration projects that have been successful |
| Improve the ecological health in natural area parks | Monitor for the presence of keystone wildlife species in District owned parks. |

**Table 8. Theme 8 Recommendations: to monitor the state of biodiversity.**

| Environmental Monitoring | | Cost/ Timeline |
|---|---|---|
| **8.1** | Consider creating a "Saanich Monitoring Report" with regular updates. This report would summarise the natural features in Saanich and highlight resent changes. It would specify environmental targets and indicators used to track progress. | $$ Ongoing |
| **6.10** | Organize and host an annual bioblitz event to inventory species presence across Saanich. | $ Ongoing |
| | **6.10.1** Promote the use of community-based tools such as i-Naturalist to share information about biodiversity | |

## Strategy Implementation

Recognizing the challenges that come with increased urban densification, the District aims to protect and improve the state of natural areas to enhance biodiversity. This includes improving the understanding of environmental conditions and making this information available to the public through GIS mapping. The District will lead by example by restoring degraded habitat on public lands. They will collaborate with citizens and encourage them to participate in 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. The success of these measures will be evaluated through a monitoring program which will 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 9. Recommendations to implement the Biodiversity Conservation Strategy.**

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

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| **9.3** | Explore methods to resource this strategy such as a Community Fund for natural area protection and restoration and/or an annual levy to go into a fund. |

# Acronyms

BCCDC – British Columbia Conservation Data Centre
BEC – Biogeoclimatic Ecosystem Classification
CDF – Coastal Douglas-Fir zone
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 Recovery 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

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|---|---|
| ***Backyard Biodiversity*** | The biodiversity and features which support biodiversity within developed or urban environments. These features generally benefit species which are tolerant of urban conditions. |
| ***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 habitats that the Resilient Saanich Technical Committee has identified to be targeted in biodiversity planning in Saanich. |
| ***Biogeoclimatic Ecosystem Classification (BEC)*** | An ecosystem classification system developed specifically for BC's ecosystems. BEC classifies broad 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 benefits to humans provided by the natural environment and healthy ecosystems. Carbon sequestration, recreation , shade, water filtration, and pollination are all examples of ecosystem services associated with biodiversity. |
| ***Endangered*** | Facing imminent extirpation or extinction. |
| ***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 is negatively impacting the environment. |
| ***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 can be present within its natural dispersal abilities. |
| ***Natural Area*** | Any physical area that contains native species, ecological communities, or habitat features to support native biodiversity. |

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| ***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. |
| ***Primary Growth Areas*** | Refers to the areas of the District where most of its new housing and employment growth will be accommodated in vibrant walkable Centres and Villages linked by Corridors, frequent transit service, and All Ages and Abilities cycling infrastructure. These areas include a range of services, amenities, active transportation connections, and higher density housing and employment opportunities. More details on Primary Growth Areas can be found in the OCP 2023 draft. |
| ***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 scientists and local environmental industry professionals advising District staff, council, and consultants. |
| ***Sensitive Ecosystem Inventory (SEI)*** | A standardized mapping approach and an associated dataset specifically designed for mapping sensitive ecosystems. |
| ***Species and Ecosystems at Risk*** | Species or ecosystems that have been identified as extirpated, endangered, threatened, or of special concern under the Federal Species at Risk (SARA) legislation or assessed as "Red" or "Blue" by the British Columbia Conservation Data Center (BCCDC). |
| ***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. |
| ***Wildlife Tree*** | While all trees can provide wildlife habitat value, wildlife tree is often used to describe dead, standing trees which gradually decay, providing specific habitat for some wildlife such as cavity nesting birds. |

[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.

[5] "ÁTOL,NEUEL MOU.Pdf," accessed December 14, 2023, https://www.saanich.ca/assets/News~and~Events/Documents/%C3%81TOL,NEUEL%20MOU.pdf.