

The Multiple Roles of the Morrell Nature Sanctuary: Conservation, Education, Recreation

Introduction

The Morrell Nature Sanctuary is owned by the Nature Trust of British Columbia and managed under lease by the Morrell Sanctuary Society for Environmental Education. The 1985 lease agreement between the Nature Trust and the Morrell Sanctuary Society states that the society "will, at all times during the term of this Lease maintain and preserve in good order and condition the grounds of the said premises, and carefully protect and preserve the trees, bushes, shrubs, plants and flowers now growing and which may, at any time during the said term, grow therein, from waste, injury or destruction." The agreement further requires that "the said premises shall be preserved and/or developed by the Lessee as a site of ecological interest for the use, enjoyment and benefit of the people of British Columbia." These statements define three specific roles for the Morrell Nature Sanctuary relating to conservation, environmental education, and recreation.

As a protected area, the need to conserve the sanctuary's biological diversity and ecological integrity is of great importance. Formerly under private ownership by Bill Morrell, the property was not originally designed as a nature reserve and modern conservation planning was not applied with respect to the size, shape, and management of the area when acquired by the Nature Trust. The legacy of past disturbances on the site limits to some extent the conservation options available. Consequently, the sanctuary is generally not involved with species-level conservation, with a few exceptions such as the western toad, but instead focuses more on ecosystem-level conservation objectives that aim to preserve the overall biodiversity contained within this representative fragment of the coastal Douglas-fir rain shadow forest.

The maintenance of ecological integrity may also be maintained through public outreach and education. Thus, environmental education is another primary role of the sanctuary, which in effect serves as a teaching forest. As students and visitors learn more about the natural environment through interpretive programs, they more fully understand the reason for restrictions on recreation and other activities. In addition, such programs increase environmental awareness and bolster public appreciation for nature.

Finally, the proximity of the sanctuary to a large urban community invites and supports recreational use, such as hiking, dog walking, trail running, and family picnics. However, to remain compatible with the sanctuary's conservation goals, the type, intensity, and extent of use must be managed to minimize negative impacts. Therefore, certain restrictions are imposed, such as leashing dogs, staying on established trails, and resisting the urge to pick wild flowers or mushrooms. At the present time, visitors are also expected to practice social distancing and adhere to all relevant COVID-19 safety precautions mandated by the provincial health authority.

Conservation

Currently, about 10.6% of Canada's terrestrial land base is under some kind of protection in the form of parks, sanctuaries, wildlife areas, conservation areas, and ecological reserves. Fifty-seven percent of parks are less than 2 square kilometres (Schneider, 2019), including the Morrell Nature Sanctuary at 111 hectares or 1.11 square kilometres. There are two main approaches to applied conservation: (1) species-level conservation which is tailored to the needs of individual species and (2) ecosystem-level conservation which seeks to support biological diversity or biodiversity in general. One example of species-level conservation at the Morrell Nature Sanctuary involves the western toad (*Anaxyrus boreas*), which was designated as a species of Special Concern in 2002 by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC), and is on Schedule 1 of the federal Species at Risk Act (SARA). In Canada, the general status of the western toad is "Sensitive" in all jurisdictions except Northwest Territories, where it is "May Be at Risk." This species has suffered population declines and extirpations in the southern part of its range in British Columbia. The toads are particularly susceptible to skin disease caused by the chytrid fungus (*Batrachochytrium dendrobatidis*), which has been linked to global amphibian declines. Life history characteristics, including infrequent breeding by females, aggregation at communal, traditionally used breeding sites, and migrations to and from breeding sites, make populations vulnerable to habitat degradation and fragmentation. Western toads breed in Morrell Lake, one of the few breeding sites in our area, but

numbers have been declining. Conservation measures taken in the sanctuary include eradication of eggs of the introduced American bullfrog (*Lithobates catesbeianus*) since this predatory and competitive species is a threat to western toads. In addition, the American bullfrog is a reservoir for diseases such as the chytrid fungus. While fish may eat western toad tadpoles, the absence of fish in Morrell Lake eliminates this particular risk.

Another protected species in the sanctuary is the Ozette coralroot (*Corallorhiza maculata* var. *ozettensis*). First discovered on the Olympic Peninsula, this unique orchid is named for the Ozette Indians who once lived in the area. It has since been found in several more locations on Whidbey Island, Vancouver Island, and mainland BC. As of March 2018, this relatively rare coralroot (actually a variety of spotted coralroot) is currently known only from four locations on Vancouver Island, but is likely found over a greater range in BC. The British Columbia Conservation Data Centre has assigned Ozette coralroot to the "Blue List", which includes any native species or subspecies considered to be of Special Concern in the province. Taxa of Special Concern have characteristics that make them particularly sensitive or vulnerable to human activities or natural events.

While such individual species are important to the overall conservation goals of the sanctuary, there is also a strong emphasis on ecosystem-level conservation and the protection of all native species found in the area. This is achieved by protecting natural habitats within the sanctuary and restricting human activities. Consequently, development is limited to the parking lot and office, the gazebo at Morrell Lake, and a network of trails. The majority of the reserve is dominated by normal ecological processes like tree fall and canopy gap dynamics, plant succession, and the unobstructed migration of animals such as the black bear (*Ursus americanus*), Columbian black-tailed deer (*Odocoileus hemionus columbianus*), pine marten (*Martes americana*), and other transient species that may travel through the sanctuary from time to time. Conservation measures generally involve the removal of invasive species, including Scotch Broom (*Cytisus scoparius*), English Holly (*Ilex aquifolium*), and Daphne laurel (*Daphne laureola*). While visitors are welcome, they are expected to confine their movements to established trails, leash their dogs, and avoid picking or damaging plant life, mushrooms, and other species in the sanctuary to preserve the ecological integrity of the site.

Education

The Morrell Nature Sanctuary is primarily a protected area, but also serves as a teaching forest for environmental education. The various interpretive programs offered by the Morrell Sanctuary Society are intended to raise environmental awareness and bolster public appreciation for nature. Designed mainly for elementary and high school students, these programs contain a wealth of information about the native plants and animals residing in the sanctuary, as well as the ecological relationships between these organisms and their habitats.

MOTHER NATURE'S RICHES, for grades 3-7, focuses on Traditional Ecological Knowledge and describes certain plants that were once vitally important to the Coast Salish Peoples of British Columbia. NATURE WALK is an exploration of the forest for grades 3-12 and presents a study of the Coastal Douglas-fir Zone, including the relationship between plants, animals and non-living or abiotic factors. POND DIPPERS is a popular program for children in grades 2-4 that enables students to observe plants and animals by dipping nets and collecting specimens from the pond. Life-cycles, adaptations and identification are discussed. SEEDS & SPORES introduces students in grades 2-5 to plant life cycles by discussing the characteristics of seeds and spores found in the forest. Students participate in a seed scavenger hunt, exploring the concepts of how and why seeds travel. WEBBED WANDERERS is an introduction to the Beaver Pond community where students in grades K-1 investigate the lives of beavers, ducks and frogs.

EXPLORING NATURE is a nature walk for children in grades K-2, focusing on local plant and animal life, and encourages students to use their senses to explore this environment. EXPLORING NATURE ON THE YEW LOOP is designed for pre-school children and provides a gentle introduction to forest life and lifestyle traits of a number of forest animals through the use of hand puppets. In the FOREST DETECTIVES program, students in grade 1-3 search for signs of biodiversity in Morrell's forest community utilizing observation, investigation and deduction skills. FOREST ECOLOGY is of interest to a broad spectrum of students ranging from grades 4-12 and examines various relationships within the forest community, focusing on the basic characteristics of a forest ecosystem. INTRODUCTION TO LIFE IN THE POND acquaints children in grades K-1 with the common creatures in pond environments and reveals how they survive. Finally, since the Morrell Sanctuary is a typical

second growth forest, the MEET A TREE program shows students in grades 3-4 how to identify seven of the most common trees found in our Coastal Douglas biome.

Environmental education programs such as those offered by the Morrell Nature Sanctuary engage learners while imparting an understanding of how nature works and how humans impact our world. It gives them the knowledge and tools they need to be environmentally literate and prepared to confront environmental and social challenges with confidence and optimism. In addition, environmental education heightens imagination and enthusiasm, enhances critical and creative thinking skills, encourages healthy lifestyles, and helps students understand how their decisions and actions affect nature and the environment.

Recreation

Situated in the proximity of a large urban community, the Morrell Nature Sanctuary attracts numerous visitors captivated by a love of the outdoors. While welcome, guests need to be aware that the sanctuary is not a public city park but a private nature reserve devoted to conservation and environmental education. Thus, posted rules and directions must be understood and followed.

To accommodate visitors, the sanctuary maintains a network of trails more than 11 kilometres in extent. Shrubs and bushes alongside these trails are periodically trimmed to enable easy passage. While trees downed within the sanctuary by wind, disease, or age are generally left where they fall to facilitate natural decomposition processes, trees that have fallen across trails are removed. As well, unstable trees close to paths are usually felled by volunteers to prevent potential injuries to visitors. Maps and signs are posted throughout the sanctuary to guide guests safely around the trails, and memorial benches have been erected at various locations for rest breaks.

Morrell Lake is a popular recreational spot, so picnic tables, an outhouse, and a sheltered gazebo have been constructed at the site to accommodate sanctuary guests. Swimming is not allowed, but the lake provides a cool, scenic setting for summertime lunches.

The main recreational activities supported by the sanctuary include hiking, trail running, dog walking, family picnics, photography, bird watching, and the contemplation of nature. To safeguard the conservation values in the sanctuary, incompatible activities are prohibited. Therefore, dogs are not allowed to run free, but must be kept on a leash. This not only protects vegetation and wildlife, but other visitors who may be startled or distraught by pets off-leash. Guests are expected to remain on established paths and not wander off the trail into sensitive areas where the vegetation, birds, or other organisms may be impacted.

Bicycles are only permitted on the Hydro Road, Fire Lane, and the Alder trail connecting to Westwood Lake. No motorized vehicles are allowed on roads in the sanctuary other than those used by emergency personnel (e.g., police, ambulance, fire), by volunteers transporting equipment and crews to work sites, and by Nature Trust staff on official business, such as monitoring the dam at Morrell Lake.

Recreational use of protected areas can play a critical part in maintaining human health and well-being. These benefits are just beginning to be understood and applied by the public health sector. For example, exercise is an essential element in an individual's efforts to stay healthy, and walking or hiking in natural environments promotes such physical activity. Leisure activities in nature parks also improve moods, reduce stress, and enhance a sense of wellness. Thus, the Morrell Nature Sanctuary's value in supporting recreational opportunities in natural surroundings is an important ancillary role to conservation and environmental education.

References:

Schneider, R. 2019. *Biodiversity conservation in Canada: from theory to practice*. Edmonton, AB: The Canadian Centre for Translational Ecology, p. 173.

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