

Best management guidelines for turtles at Swan Lake and Christmas Hill Nature Sanctuary

Swan Lake and Christmas Hill Nature Sanctuary provides an important refuge for Western Painted Turtles within an urbanized and fragmented landscape. Since 2008, the Sanctuary has sponsored studies of the Western Painted Turtle, carried out within the framework of HAT's species at risk program. In 2012, we developed recommendations for habitat restoration and best management practices for the Western Turtle population at Swan Lake, based on the above studies, turtle biology, and discussions with the Sanctuary personnel. These guidelines are intended as a living document, to be updated and refined as new information becomes available. The following is a synopsis of the guidelines from a report prepared for Swan Lake and Christmas Hill Nature Sanctuary (Engelstoft and Ovaska 2013), which provides details of the activities and site-specific recommendations.

I. Recommendations for Habitat Restoration (Swan Lake)

1. Restoring turtle nesting habitat:

- Restore nesting habitat by removing invasive grasses and exposing bare soil at selected sites, focusing on sites with previous turtle use on the north and east side of Swan Lake, and an alternative nesting site on the west side of the lake.
- Restore access for turtles to above nesting sites by controlling Reed Canary Grass in the intervening area.
- At the restored sites, plant native plants, such as clumping grasses that will result in minimal shading and stabilize the soil, but leave patches of substrate unvegetated.
- Fence the restored areas with a cedar-log stack fence, as needed, to discourage visitors from inadvertently entering the nesting habitat.
- Display interpretive signage to inform visitors about the enhancement activities.
- Investigate other suitable locations for nesting area enhancement.

2. Blocking turtle access to roads:

- Plan and install turtle barrier along Patricia Bay highway at west end of Swan Lake.
- Concurrently, create a safe nesting area on the Swan Lake side of the highway at the nearest suitable location.

3. Enhancing basking opportunities:

- Find a source for appropriately sized logs or use logs from the site as available. The diameter should not be less than 30 cm, and length should be at least 3 m.
- Experiment with various ways to transport the logs to the lake shore.
- Prepare the logs (cut notches for the stabilizing cross boards; install an anchoring point on the underside) and anchors with ropes.

- Assemble the log and board using heavy gauge nails. This might be easiest to do at the lakeshore just before the log is launched.
- Drag logs to the chosen sites and anchor them next to the shoreline.

4. Maintaining restored sites:

- Control weeds at restored turtle nesting areas to prevent the sites becoming overgrown by vegetation and to maintain bare patches of soil.
- Plant and maintain suitable native plants that help stabilize the soil at restored turtle nesting areas.
- Inspect and maintain any turtle barrier or fences that have been installed.
- Inspect basking logs and structures that have been installed in the lake for shoreline vegetation overgrowth, proper anchoring, and position.

5. Monitoring:

- Monitor turtle use of restored nesting grounds using a time-lapse camera during the nesting season in summer (June-July).
- Monitor emergence of hatchlings on nesting grounds in spring (March – May).
- Protect known nests, e.g., with stucco wire.
- Conduct turtle surveys in April – May using standard methods for long-term monitoring of population trends; note use of installed basking structures.

II. Best Management Practice (BMP) Guidelines (Swan Lake)

1. General guidelines:

- Before undertaking new infrastructure developments, repairs, or maintenance activities, check for known Western Painted Turtle occurrences or nesting grounds on the Sanctuary's GIS system or database.
- Conduct surveys for turtles, including signs of nesting, before any activities near sensitive turtle habitat are undertaken and assess risks to turtle populations.

2. Maintenance of trails, roads and parking lots:

- In the vicinity of known and potential turtle nesting areas, conduct grading and repairing of trails, roads, and parking lots after hatchlings have emerged and adult females are laying eggs, when these activities are likely to cause least harm to turtle nests.
- Avoid piling of materials, such as gravel, sand or cedar chips, in known or potential turtle nesting habitats.
- Survey for signs of turtle nesting activity before starting work.

3. Construction of new trails:

- Avoid placing new trails in or near sensitive turtle habitats, such as nesting areas.

- If trails must be placed close to the lake, ponds and wetlands in known or potential turtle habitat, conduct surveys for turtle nesting grounds so that they can be avoided, and do not encircle the entire water body with roads.
- Follow standard practices when crossing streams and creeks and installing culverts to minimize natural hydrological patterns in turtle habitats.

4. New infrastructure development or replacement:

- Exclude known or potential turtle nesting habitats from the construction area.
- Minimize the footprint of the construction activities to avoid damage to the ground in the surrounding area from trampling or machinery.
- Avoid storing or piling construction materials in known or potential turtle nesting habitat.

5. Public access management:

- Fence off access to the public to active nesting sites. Use wire grates on top of known nests.
- Install seasonal signage, such as “turtle crossing” on roads and trails on sites, where there is a known or suspected turtle migration routes. Signs are more effective if in use only when needed, rather than permanently.
- Conduct outreach to engage sanctuary neighbours to participate in turtle stewardship activities.

6. Beaver management:

- Where possible, maintain beavers in the lake ecosystem, as their activities can create side ponds and quiet waters preferred by turtles and other wetland species.
- If it necessary to take out beaver a dam, do it when turtles are not hibernating.
- Rather than eliminating or reducing beaver numbers, use a specially constructed “beaver baffler” to discourage beavers from fixing leaks in their dams.