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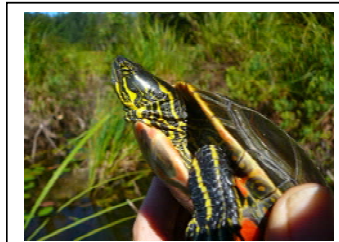
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*Creating
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**Plan for Nesting
Habitat Rehabilitation for the
Western Painted Turtle
at
Swan Lake Nature Sanctuary**



Western Painted Turtle

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Rationale:

The endangered Western Painted Turtle occurs in Swan Lake Nature Sanctuary, where turtles are regularly observed basking and foraging in the lake. In the past, turtles have been found nesting along trails and in the native plant garden near the Nature House at the north side of the lake, but suitable nesting grounds appear to be in short supply. We propose to rehabilitate a small area below the trail that runs parallel and close to the lake below the Nature House to enhance opportunities for nesting turtles.

Proposed Site for Rehabilitation:

Figure 1 shows the location of the proposed nesting area. The site is located near the bottom of a hill and has a southern aspect. Exposed bedrock is present. The soil layer is mostly thin except on the east side. The ground is currently covered with introduced grasses (Figure 2). Scattered native plants (*Clarkia*, *Brodiaea*) are also present.

Nesting grounds of the Western Painted Turtle need to have the following qualities:

- Good exposure to the sun, such as on a south-facing slope
- Exposed ground, free of turf or matting grass roots
- Compact sandy/loamy substrate suitable for nest construction
- Accessible from aquatic foraging areas
- Close to existing nesting area

The proposed site has a suitable exposure and is located close to the lake (within 20 m), but both the substrate and access from the lake need to be improved.

Figure 1. Location of the proposed site for turtle nesting site rehabilitation at Swan Lake Nature Sanctuary.



Figure 2. Habitat at the site proposed for rehabilitation.



Tasks:

A. Site preparation:

- Conduct a plant survey, so that native plants are not inadvertently harmed; move or mark such plants if found.
- Clear the ground from introduced grasses and other plants; turn over the soil.
- Assess the need for additional substrate and for terrain shaping, such as making the slope gentler.

B. Nesting area construction:

- Bring in sand/soil as needed to create soil depth of about 20 cm and distribute as outlined in Figure 3.
- The area is to be set up as an experiment to test preferences of nesting turtles of substrate types of two different coarseness. There are six paired plots of treatments; each pair should be located in areas with similar slope and distance from the lake, and the treatments within each pair should be randomly allocated. In one of the treatments, only the soil present at the site will be used; in the other treatment, a substrate consisting of a mixture of 20% clay, 40% silt, and 40% sand (loam) will be used.
- On the ground, delineate areas to be left bare for turtle nesting; plant clumping (not matting) native grasses or other low, slow-spreading native plants amidst these patches.
- Taller native plants, such as wooly sunflower, may be used at the trail edge to create a visual barrier and to mitigate disturbance to the habitat from visitors using the path.
- Install a pole in an appropriate location for attaching a camera with a view of the nesting area for video surveillance.

C. Access enhancement:

- Clear an access route for turtles from the lake, taking care to camouflage the entrance to the site to discourage visitors from using the route.
- Install a basking log near the entrance from the lake to encourage turtles to investigate the new access route.

Maintenance and monitoring:

The areas that are left bare need to be kept weed-free to ensure that suitable conditions for nesting turtles persist over time. Growth and spread of native plants also need to be monitored to ensure that they do not excessively shade the site.

It is important to monitor the use of the rehabilitated site by turtles, so that methods that are successful can be repeated. It may take some time before turtles start using the site. The peak egg-laying season of the Western Painted Turtle in our area is in June; turtles may not use the site until next year. We recommend that an automated camera be installed to monitor use of the rehabilitated area by turtles.

Figure 3. Schematic of turtle nesting area rehabilitation, showing circular areas to be rehabilitated as turtle nesting sites (green: larger plots of bare ground on the slope below the trail; red: smaller plots of bare ground on the level shoulder of the trail). Clumping native grasses and other low, slow-spreading native plants may be planted between the circular plots to provide cover and to enhance the appearance of the site.

