Oregon Silverspot Butterfly Plan

Shamrock Pines Development
Gearhart, Oregon

I - Background

Clatsop County is an important area for the Oregon silverspot butterfly ("silverspot" or "Oregon silverspot"), speyeria zerene hippolyta, which is protected under the federal Endangered Species Act ("ESA"). The Shamrock Pines Development in Clatsop County, Gearhart, Oregon does not directly impact any silverspot habitat. However, a small area at the north end of the property east of Neacoxie Creek was identified as silverspot breeding habitat, excluded from the development and dedicated to the enhancement of the silverspot. As discussed in detail later, this plan will be funded through the homeowners association for Shamrock Pines Development and the work will be completed by or under the supervision of a qualified expert.

The Oregon silverspot is a medium-sized butterfly (wingspread about two inches) with orange wings marked with a distinctive pattern of black spots and bars on the dorsal wing surface. On the ventral side of the hindwing, it has bright metallic silver spots that are the basis for the common name. Adult silverspot's flight season is about three months of the year, beginning in early July and continuing until the first of October. The Oregon silverspot once enjoyed a wide distribution along the Washington and Oregon coasts; however, today only five major population centers for the silverspot still exist, including a sand dune population on the Clatsop Plains of Clatsop County, Oregon. The grassland habitat that occupies old, stabilized sand dunes west of U.S. Highway 101 between Seaside and Warrenton in Clatsop County constitutes breeding habitat for the silverspot on the Clatsop Plains. This

native prairie community contains the common blue violet, sand-dune goldenrod and Douglas aster, which are important food and nectar plants for the silverspot. The major threat to this ecosystem on the Clatsop Plains, aside from human developments, is ecological succession to brushland and forest. Two woody species of plants are particularly involved with this succession, including Scotch broom and lodgepole pine. In the shelter of these woody plants, rank-growing nonnative grasses become established and crowd out the native meadow plants, including the common blue violet. In fact, without active management efforts to eradicate Scotch broom, in many cases over a relatively short period of time (three to five years)the silverspot habitat would be degraded or eliminated.

As part of the planning for the Shamrock Pines Development, a butterfly expert was retained to inventory and potential silverspot habitat and to assess any potential direct or indirect impacts to the silverspot from the proposed development project. Only one small area covering two and one- half acres at the north end of the property was identified as silverspot breeding habitat. This area was excluded from the development and dedicated to the enhancement of the silverspot. A plan was developed in coordination with the U.S. Fish and Wildlife Service (the "Service") regarding the enhancement and protection of the silverspot. In a letter dated May 23, 1994, the Service reviewed and approved the plan, concluding that the plan should avoid the take of the Oregon silverspot and conserve the specie's habitat.

II - Management Plan

At present, the existing silverspot habitat has become heavily overgrown with dense stands of old Scotch broom. In addition, exotic undesirable grasses such as orchard grass and velvet grass have become established in the shelter of the Scotch broom. Blue violets are still frequent in scattered patches throughout this area, but are crowded and shaded by the brush and tall grass.

Therefore, the first management priority for the developer is to remove the Scotch broom from the habitat area. The method used will be a roller device or brusher. Various types of mechanical brushing equipment mounted on a tractor can be used for this work. A large, heavy roller device with attached blades could be used to slice the shrubs into pieces and to press the pieces into the ground. Alternately, the cut brush could be pushed into piles and burned. The work will be done outside the growing season--between November 1 and May 1 when silverspot larvae are dormant. Once the brush is removed, a regular mowing schedule during the growing season will control the tall grasses and regenerating Scotch broom. Mowing will be conducted about three inches off the ground to kill any germinating Scotch broom seedlings. This treatment will favor the blue violet and other native, low-growing meadow plants normally found in Oregon silverspot habitat. Mowing will be done during the spring from April 1 to the first week in June, depending upon the weather conditions. In addition, a second mowing will be done in the fall after the middle of October. It is anticipated that intensive mowing will be required for about three years before the tall, exotic grasses and Scotch broom seedlings are adequately controlled.

The developer of Shamrock Pines is responsible for this initial silverspot restoration effort in 1996 and 1997.

A second management objective is to reintroduce nectar plants into the habitat area for use by adult Oregon silverspot. Currently, there are very few nectar flowers present in this two and one- half acre habitat area, due to the brush and exotic grasses. As previously noted, the primary wildflowers used for nectar on the Clatsop Plains are the sand-dune goldenrod and Douglas aster. Because there will be areas of disturbed, bare ground where large bushes of Scotch broom are removed, seeds of these flowers could be planted in the bare areas. Seeds should be collected from the Del Ray Beach area when mature in September and October and planted in the renovated silverspot habitat are the same time of year. If a source were available, established plants could also be dug up, perhaps from a construction site in the Del Ray Beach area, and transplanted in the silverspot habitat.

As stated earlier, the developer will pay for the costs of the initial restoration project and any monitoring in 1996 and 1997. Beginning in 1998, this management plan will be funded through the homeowners association for the Shamrock Pines Development. The work will be completed in accordance with this plan by or under the supervision of a qualified expert such as Dr. PaulHammond.

III - Habitat Monitoring

The two and one-half acres of silverspot habitat that will be managed is a relatively small, accessible area that will not require an extensive monitoring program. Three things should be monitored over the long term: (1) growth and abundance of violets, (2) growth and abundance of nectar flowers and (3) use of the habitat by adult silverspot. Monitoring of blue violets may be conducted by a transect method, but with two and one-half acres it may be desirable to count total numbers of blue violets during the initial renovation phase. At present, blue violets do not appear to be very abundant but can be expected to increase in numbers with the clearing of brush and mowing. Blue violets should be counted as individual blooming plants during the spring flowering season in late April and May. Small nonflowering plants would not be counted, as the number of large blooming plants is the measure of management success.

The growth and blooming of nectar flowers such as sand-dune goldenrod should be monitored in late August and September during the adult silverspot flight season. It is expected that monitoring will be particularly important after initial renovation work when flowers are transplanted or seeded in the habitat area.

The use of the habitat by adult silverspot should also be monitored, particularly during the oviposition season in September. Because of the size of the habitat are, such monitoring should be easily accomplished.

It is important to monitor the growth of grasses and other meadow vegetation, at least during the initial renovation work, to determine the time and frequency of mowing. Habitat areas that have been covered

with Scotch broom tent to accumulate tall, rank-growing exotic grasses such as orchard grass and velvet grass that compete with blue violets, sand-dune goldenrod and other native meadow plants. Both grasses are currently abundant in the management area and will require frequent mowings during the first years of renovation, probably in the spring, early summer and late summer. Once the tall vegetation is controlled, mowing should only be required once a year during May, but monitoring will need to confirm this.

Total monitoring work for this two and one-half acre habitat should only require about two weeks during the year once the renovation management is completed, although more extensive monitoring will probably be required during the renovation phase to check the progress of grass control and Scotch broom regeneration. Beyond this renovation phase, monitoring may be expected to require about two days during May to count blue violets and about 15 days in August and September to count nectar flowers and adult silverspot.

The developer will fund any monitoring in 1997. Beginning in 1998, the monitoring plan will be funded through the homeowners association for the Shamrock Pines Development. The work will be completed by or under the supervision of a qualified expert such as Dr. Paul Hammond.

IV - Impact

The management plan for the two and one-half acre section of silverspot habitat should greatly improve the overall quality of the habitat and increase the numbers of silverspots breeding in the habitat. Virtually no silverspot habitat will be used for the development project described, thus avoiding the problem of incidental taking of the butterfly. In addition, the developer of Shamrock Pines has agreed to implement and pay for a number of safeguards to avoid any accidental killings of silverspot adults or larvae:

1. The access road adjacent to the habitat area will be limited to a 22 foot width, with at least a five foot buffer between the roadway and the nearest blue violet habitat.

2. A permanent low fence about three to four feet high will be placed around the habitat area within and near the edge of the five foot buffer for protection against off-road vehicle disturbance. The fence will have a lockable gate of sufficient width to allow equipment for management. Signs will also be posted identifying the silverspot habitat for the public. A higher fence is not considered desirable, because it may inhibit the flight activities of adult silverspot, which usually fly only a few feet above the ground.

3. The speed of vehicular traffic on the road will be controlled with the use of both speed bumps and a posted 20 miles per-hour speed limit to avoid injury to adult silverspot.

4. Septic drain fields from the houses will be located away from the silverspot habitat area.

5. Agricultural chemicals such as insecticides, herbicides and fertilizers are poisonous to silverspot, particularly to the larvae. Consequently, the use of such chemicals near silverspot habitat will not be allowed. Of particular concern is the use of aerial pesticides that may drift a considerable distance in the wind. Thus, large-scale aerial spraying of pesticides on trees, shrubs and lawns for mosquito control using helicopters, airplanes or trucks with booms will not be allowed in the subdivision. In addition, no pesticides will be allowed in homesites 15- 28 within a 100-foot buffer zone surrounding the silverspot habitat, including the 30-foot roadway and 70 feet of each lot adjacent to the roadway. Beyond this 100-foot buffer zone, site-specific applications of pesticides using handheld equipment to garden flowers or potted plants around the houses would be allowed.

6. Tall-growing exotic grasses such as European beachgrass, orchard grass, rye grass and tall fescue grass will not be planted as ground cover near silverspot habitat, as these grasses crowd out blue violets, sand-dune goldenrod and other low-growing native meadow vegetation.

7. Educational materials regarding the presence, biology and needed conservation measures for the silverspot will be provided to the individual homesite owners in the subdivision. Lot owners should be discouraged from planting blue violets and nectar plants on their property that could attract silverspot butterflies into areas of potential disturbance activities.

Summary

The implementation of the above measures will ensure that no mortality of either silverspot adults or larvae will take place as a consequence of the proposed development project. In addition, the proposed management program for these two and one-half acres of silverspot habitat is expected to significantly increase the number of butterflies breeding in the habitat. Ultimately, this will be of benefit for the total population of Oregon silverspot on the Clatsop Plains in general and for the portion of the population in the Del Ray Beach area in particular.