U.S. FISH AND WILDLIFE SERVICE
SPECIES ASSESSMENT AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: *Euphydryas editha taylori*

COMMON NAME(S): Taylor's, provincial name =Whulge (A Salish word meaning greater Puget Sound region) or Edith's Checkerspot.

LEAD REGION: Region 1

INFORMATION CURRENT AS OF: April 2007

STATUS/ACTION (Check all that apply):

___ Species assessment
___ New candidate  
X Continuing candidate  
___ Non-petitioned  
__ Petitioned - Date petition received: 12/11/02  
   ___ 90-day positive - FR date: ____  
   ___ 12-month warranted but precluded - FR date: ____  
   ___ Did the petition request a reclassification of a listed species?

FOR PETITIONED CANDIDATE SPECIES:

a. Is listing warranted?  YES
b. To date, has publication of a proposal to list been precluded by other higher priority listing actions? YES

c. If the answer to a. and b. is “yes”, provide an explanation of why the action is precluded. *We find that the immediate issuance of a proposed rule and timely promulgation of a final rule for this species has been, for the preceding 12 months, and continues to be, precluded by higher priority listing actions (including candidate species with lower LPNs). During the past 12 months, almost our entire national listing budget has been consumed by work on various listing actions to comply with court orders and court-approved settlement agreements, meeting statutory deadlines for petition findings or listing determinations, emergency listing evaluations and determinations, and essential litigation-related, administrative, and program management tasks. We will continue to monitor the status of this species as new information becomes available. This review will determine if a change in status is warranted, including the need to make prompt use of emergency listing procedures. For information on listing actions taken over the past 12 months, see the discussion of “Progress on Revising the Lists,” in the current CNOR which can be viewed on our Internet website ([http://endangered.fws.gov/](http://endangered.fws.gov/)).*

___ Listing priority change  
   Former LP: ____  
   New LP: ____
Date when the species first became a Candidate: 10/30/01

___ Candidate removal: Former LPN: ___

___ A - Taxon more abundant or widespread than previously believed or not subject to a
degree of threats sufficient to warrant issuance of a proposed listing or
continuance of candidate status.
___ F - Range is no longer a U.S. territory.
___ M - Taxon mistakenly included in past notice of review.
___ N - Taxon may not meet the Act's definition of "species."
___ X - Taxon believed to be extinct.

ANIMAL/PLANT GROUP AND FAMILY: Insect; Nymphalidae

HISTORICAL STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Oregon, Washington, British Columbia

CURRENT STATES/TERRITORIES/COUNTRIES OF OCCURRENCE: Oregon, Washington, British Columbia

LAND OWNERSHIP:
The estimated proportion of habitat for Taylor’s checkerspot butterfly found in Washington State
is 55 percent in found on Federal land on Department of Defense’s Fort Lewis, 25 percent is
known to occur on WDNR lands in south Puget Sound and north Olympic Peninsula.
Approximately 5 percent is known from private lands on the Olympic Peninsula. In Oregon,
Taylor’s checkerspot occupied ca. 5 percent on Benton County, Oregon property and the
remaining 10 percent occurs on a Bonniville Power Administration right-of-way in Benton
County. OR.

Twelve Taylor’s checkerspot butterflies were detected for the first time on Denman Island,
British Columbia in mid-May, 2006. This constitutes the sole population known from Canada.
The butterflies were detected in an area of less than 1 ha (2.5 ac) (J. Heron, BC Ministry of
Water, Land and Air, pers comm., 2006).

LEAD REGION CONTACT: Scott McCarthy (503/231-6131), scott_mccarthy@fws.gov

LEAD FIELD OFFICE CONTACT: Western Washington Fish and Wildlife Office, Lacey,
Washington. Ted Thomas (360/753-4327)

BIOLOGICAL INFORMATION:

Species Description

Taylor’s checkerspots are medium-sized, colorfully checkered butterflies with a set of reduced
brushy forelegs (Pyle 2002). They are orange with black and yellowish spot bands, giving a
checkered appearance. Taylor’s checkerspot butterflies produce one brood per year. They
overwinter (diapause) in the fourth or fifth larval instar phase and have a flight period as adults of
10 – 14 days, usually in May.
Taxonomy

Taylor’s checkerspot is a subspecies of Edith’s checkerspot (*Euphydryas editha*). It is one of a small group of rare Pacific coastal subspecies, including the Bay checkerspot (*E. e. bayensis*) from the San Francisco bay area, the Quino checkerspot (*E. e. quino*) from the San Diego region, both are Federally listed as endangered. Three other subspecies are known to occur in Washington, *beani* in the north Cascades, *edithana* in the foothills of the Columbian Basin, and *colonia* in the southern Cascades and northeast Olympic Peninsula.

Habitat and Life History

Taylor’s checkerspots are known from open habitat dominated by grassland vegetation throughout their range. In British Columbia, Canada, Taylor’s checkerspots were historically known from Vancouver Island and nearby islands. After 5 years of no detections of Taylor’s checkerspots in Canada, the species was detected on Denman Island in May 2006. This became the first record for the species in British Columbia since 2000 (Vaughan and Black 2002). In Washington, this subspecies inhabits glacial outwash prairies in the south Puget Sound region and grasslands and balds on coastal areas of the north Olympic Peninsula (A. Potter, pers. comm. 2004, 2007). The two Oregon sites are found in the vicinity of Corvallis, Benton County, on grasslands hills in the Willamette Valley (Vaughan and Black 2002).

Taylor’s checkerspots are known from open habitat dominated by grassland vegetation throughout their range. In British Columbia, Canada, Taylor’s checkerspots were historically known from Vancouver Island and nearby islands, it has not been observed in British Columbia since 2000 (Vaughan and Black 2002). This subspecies inhabits glacial outwash prairies and grasslands on coastal bluffs. In Washington, Taylor’s checkerspots inhabit glacial outwash prairies and balds within the south Puget Sound region and coastal grasslands of the north Olympic Peninsula (A. Potter, pers. comm. 2004). The two Oregon sites are found in the vicinity of Corvallis in the Willamette Valley (Vaughan and Black 2002).

Larval host plants include members of the figwort or snapdragon family (Scrophulariaceae), such as paintbrushes (*Castilleja*) and owl’s clover (*Orthocarpus*), and native and nonnative plantains (*Plantago*) (Pyle, 2002; Vaughan and Black 2002). Taylor’s checkerspot larvae have been confirmed feeding on *Plantago lanceolata* and *P. maritima* in British Columbia (Guppy and Shepard 2001), *P. lanceolata* and *Castilleja hispida* in Washington (Char and Boersma 1995; Hays et al. 2000), and *Plantago lanceolata* in Oregon (Dornfeld 1980).

Historical Range/Distribution

Historically, the Taylor’s checkerspot was known from more than 70 locations: 23 in British Columbia, 34 in Washington, and 13 in Oregon (The Evergreen Aurelians 1996; Shepard 2000; Vaughan and Black 2002; Ann Potter, Washington Department of Fish and Wildlife, pers. comm. 2003). Pyle (1989) reported there were fewer than 15 populations remaining. By fall 2002, only five populations were known in Washington; four were located in the south Puget Sound region and one from the Willamette Valley of Oregon. Surveys in 2001 and 2002 of the three known British Columbia sites failed to locate any Taylor’s checkerspot butterflies (James Miskelly, B.C. Ministry of the Environment, pers. comm. 2005, 2006).
In Washington, surveys on the south Puget Sound prairies were conducted from 1997 through 2000 by the Washington Department of Fish and Wildlife (WDFW), Washington Department of Natural Resources (WDNR), The Nature Conservancy of Washington, and Fort Lewis Military Reservation. During this time surveys detected the subspecies on 9 of 17 historic locales. Surveys of 15 of these sites in 2001 and 2002 located Taylor’s checkerspots on only 4 in Thurston and Pierce Counties (A. Potter, pers. comm. 2002). One was located on Fort Lewis on the eastern edge to the Artillery Impact Area (AIA) and one was known from the North Bald, at the Bald Hill Natural Area Preserve (NAP). The other two locations were detected at two other discrete balds (Bald Hill and South Balds) in the Bald Hill NAP. Up to 2004 about 40 to 50 adult butterflies were detected at Bald Hills (D. Grossboll, pers. comm. 2004)

Several historic locations on the north Olympic Peninsula were surveyed during Spring 2003 and Taylor’s checkerspot butterflies were found to occupy three locations. One location near the mouth of the Dungeness River had approximately 20 individuals, this population no longer exists (A. Mcmillan, pers. comm., 2007) The other three locations were on grassland balds, west of the Elwha River, and each of these locations had between 50 – 100 adult butterflies at that time (A. Potter, WDFW, pers. comm. 2004).

One location in Thurston County (Glacial Heritage Preserve) had 131 adults in 1997 and no Taylor’s checkerspots were counted in 1999 or 2000. Annual surveys at Glacial Heritage Preserve have not detected Taylor’s checkerspot since late 1990’s (D. Grossball, pers. comm., 2004, Mary Linders, pers. comm., 2006, 2007). At a location in Pierce County (Thirteenth Division Prairie - Fort Lewis) over 7,000 adult butterflies were observed in 1997, only 10 individuals were counted in 2000, and none have been counted at this location during the period from 2001 – 2006 (A. Potter, pers. comm., 2003; P. Dunn, TNC, pers. comm., 2006; M. Linders 2006.).

Six historic locales for Taylor’s checkerspots were destroyed in the South Puget Sound region when three areas were developed (DuPont, Training Area 7S - Fort Lewis, Spanaway, Spanaway High School, Lakewood) or converted to agriculture (Rock Prairie). Several historic Washington locales are quite old and have general locality names that were not precisely documented and are no longer known (e.g., Olympia 1893, Shelton 1971, Tenino 1929). Some of these site names may refer to other locales but they are not precisely documented.

The 13 historic Oregon locales have been surveyed regularly by local lepidopterists in Oregon (Paul Hammond, Oregon State University, pers. comm. 2002; Dave McCorkle, Western Oregon State University (ret.) pers. comm., 2002; A. Potter, pers. comm. 2002; Harold Rice, lepidopterist, pers. comm. 2002). Until recently (2003), just one site, located in Benton County, Oregon, was known to be occupied by Taylor’s checkerspot butterflies. Searches have been conducted annually since 2004 and by 2006, two populations were known from Oregon, both in Benton County.

**Current Range/Distribution**

It should be noted that not all locations are monitored on an annual basis, due to constraints in funding, personnel and work priorities. As of March 2007 Taylor’s checkerspot butterflies are known from a total of 11 locations. Locations are distributed in Washington (8 locations), Oregon (2) and a new location was discovered and confirmed in 2005 in British Columbia, on
In the course of conducting surveys during spring 2005 and 2006 for another rare butterfly found in Washington, the Island Large Marble (*Euchloe ausonides insulanus*), many historic locations and recently known to be unoccupied by Taylor’s checkerspot butterflies were surveyed. All surveys were negative for the Taylor’s checkerspot. The flight periods of both butterflies overlap during May and both butterflies are found on grassland habitat with abundant forbs and grasses.

As of 2007 surveys, the populations known from Fort Lewis in the south Puget Sound region have improved. This improvement most likely stems from the repeated and frequent fires that flare up on the Artillery Impact Area near Range 74/76, where the largest populations have been observed. Several small patches of habitat were occupied by Taylor’s checkerspot, although the close proximity of these patches would indicate that one relatively robust (> 1,000 butterflies on one day) metapopulation is likely present at Fort Lewis.

A. Potter (2007) reported that the Bald Hills in south Puget Sound are being encroached by forests and the amount and quality of the nectar plants has lessened. Surveys in 2005 and 2006 detected fewer than 30 adult butterflies during surveys (K. Mccallister, WDFW Wildlife Biologist, pers. comm. 2006; A. Potter, pers. comm. 2007).

By 2006, on the North Olympic Peninsula, three new populations plus one historic population were known to exist, however the original three populations had been lost. All populations were surveyed in 2006. One of the new populations is located near Gray’s Marsh in the Dungeness River Valley, and the other three are located on WDNR and private forest lands west of the Elwha River, in areas known as Striped Peak, and Dan and Eden Valley(s).

In 2006, at the Dungeness River population, as many as 100 butterflies were detected in a single day however most days fewer were observed (A. McMillan WDFW, pers. comm. 2007). Both larvae and adults were detected at this site (A. Potter and A. McMillan WDFW pers. comm., 2007). On the WDNR lands west of the Elwha River, no butterflies were observed at Highway 112 or the Striped Peak locations. In Eden Valley, up to 60 butterflies were detected in a single day, with usually fewer than 30 detected on most days during the 2006 surveys. In the Dan Valley as many as 50 butterflies were detected on a single day.

The two current Oregon populations are located at (1) a Bonneville Power Administration (BPA) right-of-way and (2) at Beazell Park, a Benton County Park. In 2006, up to 300 Taylor’s checkerspot were detected on a single day (S. Black, pers. comm., 2007). Mr. Black (Executive Director, Xerces Society, *In litt.*, 2007) estimated that as many as 2,000 individuals may be detected at the Oregon sites in any year.

As of March 2007 there are 11 populations of Taylor Checkerspot butterflies throughout the species range. Eight populations of Taylor’s checkerspot butterflies are known from Washington, two from the Willamette Valley, in Benton County, Oregon. The eleventh population is located on Denman Island, British Columbia in 2005. This site is a new location for Taylor’s checkerspot, after many years of negative surveys (2001 through 2004) at historic populations in British Columbia (B.C.). The B.C. location was examined by the British Columbia Ministry of Water, Land and Air Protection to confirm the presence of Taylor’s
Checkerspot. Twelve individuals were observed at the site.

Population Estimates

Information on population sizes for locations in Washington are based on the most recent survey completed for the site. In 2003, the five sites on the north Olympic Peninsula were surveyed. At three of the five locations the numbers ranged from one to ten individuals. At the other two locations on the Olympic Peninsula, one had 10’s of adults and the location at Eden Valley had more than 100 butterflies. During May 2006, four populations were known from the north Olympic Peninsula. Taylor’s disappeared from one location in the Dungeness River Valley and the species was found approximately 3 miles east of the river at an area known as Gray’s Marsh. Adults and larvae were observed and as many as 160 adults were counted. At the three locations west of the Elwha River, from 30 to 50 butterflies were seen at two locations, while at the third location, fewer than 5 individuals were detected.

All locations in the south Puget Sound region were surveyed in 2006. Surveys on Bald Hill, on both the private land and the WDNR parcel detected fewer than 5 individuals on any given day at each of the primary balds. Reports indicate that the density and composition of the nectar plants have declined at Bald Hills and Douglas-fir are invading the balds, shading the butterfly habitat by reducing the cover of native grasses, larval food plants and nectar plants of Taylor’s checkerspot. (A. Potter, pers. comm., 2007).

Surveys on Fort Lewis in the past two years (2005 and 2006) have painted a brighter picture. The largest colony within the range of the Taylor’s checkerspot butterfly has been detected on Fort Lewis during 2005 and 2006 (Mary Linders, WDFW/DOD, DOD 2005, 2006). In May 2005, more than 1,000 individuals were detected on one day and 100’s observed on earlier and subsequent days. In May 2006, more than 1,200 individuals were detected on May 1 and May 4, on other days as many as 100 butterflies were observed (DOD 2005, 2006). Butterflies on Fort Lewis were found on an area that is frequently burned and vegetation at these sites remains in an early successional stage that is dominated by native grasses and forbs. The area where the butterflies were documented was estimated to be 100 hectares (247 acres).

In Oregon, Taylor’s checkerspots are known from two locations, both in Benton County, in the Willamette Valley. Until 2004, the species had been known from just one location in Oregon when a new population of Taylor’s checkerspots was located in a Benton County Park, known as Beazell Park. Surveys from 2005 observed 480 adults at the County Park and over 1,200 adults at the second location (Ross 2005). Similar results for Taylor’s checkerspot abundance were detected in 2006, with no more than 300 butterflies observed during 2006 surveys (S. Hoffman-Black Executive Director, Xerces Society, In litt., 2007).

The recently discovered population in British Columbia was confirmed by the invertebrate specialist for the BC Ministry of Water, Land and Air Protection and she reported that 12 adults were observed on Denman Island during 2005. We have no reports from B.C. for 2006 surveys.

Of the 11 known locations for Taylor’s checkerspot butterflies, four populations had more than 100 butterflies, these included populations from the north Olympic Peninsula and Fort Lewis in Washington; and two populations known from the Willamette Valley in Oregon. Of these populations, the one from Fort Lewis is known to have greater than 1,000 individuals. These
were detected during 2006 surveys, on two separate days. The remaining populations for Taylor’s checkerspot butterflies have been declining. One additional population from the north Olympic Peninsula had greater than 50 butterflies and less than 100, however fewer than 10 individuals were detected during surveys at all other Taylor’s sites.

DISTINCT POPULATION SEGMENT (DPS). Does not apply to invertebrates.

THREATS:

A. The present or threatened destruction, modification, or curtailment of its habitat or range.

Taylor’s checkerspots are threatened by changes in the vegetation structure and composition of native grassland-dominated plant communities (Vaughan and Black 2002). Native grassland communities have been lost to conversion for agriculture and development for residential and commercial purposes. Threats to grassland vegetation also threaten habitat for the Taylor’s checkerspot. Habitat has been degraded and encroached upon by nonnative woody shrubs, including Scotch broom (Cytisus scoparius) and several Washington state listed noxious weeds, such as leafy spurge (Euphorbia esula) and knapweed (Centaurium) (Vaughan and Black 2002).

Prairies in the southern Puget Sound region of Washington have been lost at a rate of approximately 40 hectares (ha) (100 acres (ac)) per year since the 1850s due to the rapid conversion from grassland to Douglas-fir (Pseudotsuga menziesii) forest (Kruckeberg 1991). Less than 3 percent of the original estimated 60,000 ha (150,000 ac) of presettlement grasslands remains (Crawford and Hall 1997). In presettlement times, prairies were maintained by periodic fires that reduced the rate of conversion to forest by restricting the establishment of Douglas-fir along forested edges with grasslands. Fires also maintained the native grass and forb-dominated plant communities that had formed on the glacial outwash soils of the south Puget Sound region. In the Straits of San Juan, Washington, and the Georgia Straits of British Columbia, the coastal grassland communities are being encroached upon by Douglas-fir, rose (Rosa spp.) and snowberry (Symphoricarpos spp.) (Vaughan and Black 2002).

In addition to the loss of grasslands to conversion and plant succession, these communities are faced with decline and degradation of the grassland habitat that remains. As grasslands have been converted, the availability of host plants for feeding and nectaring by larvae and adults has declined.

In summary, Taylor’s checkerspots are still threatened by changes in the vegetation structure and composition of native grassland-dominated plant communities that the species faced at the time it was determined to be a candidate species. In addition, invasive species and their impacts on native vegetation have become a greater threat.

B. Overutilization for commercial, recreational, scientific, or educational purposes.

Populations of Taylor’s checkerspots have declined dramatically during the past decade. We know of no overutilization for commercial, recreational, or educational purpose; however, scientific studies may have negatively affected Taylor’s checkerspot populations at a site on the 13th Division Prairie on Fort Lewis Military Reservation in Pierce County, Washington (Vaughan and Black 2002). Over 7,000 individuals were observed as recently as 1997, but only 10 adults
were observed during surveys in 2000, and no Taylor’s checkerspots were observed in 2001 or since (A. Potter, pers. comm. 2004). In the early and mid-1990s, mark and recapture studies were conducted at this location (Char and Boersma 1995). It is difficult to conclude that this factor caused the sharp decline in the population; however, mark and recapture studies of the bay Edith’s checkerspot (Euphydryas editha bayensis) was considered a contributing factor in the extirpation of a population from a Stanford Preserve (McGarrahan 1997).

Collection of butterflies and perhaps the threat of scientific study of butterflies continue to be threat to the species, although a minor one.

C. Disease or predation.

Currently, there are no known disease or predation factors affecting the subspecies.

D. The inadequacy of existing regulatory mechanisms.

Although there is no Washington State Endangered Species Act, the Washington Fish and Wildlife Commission has the authority to list species and provide protection from direct take. However, a species listing in Washington has no associated habitat protection regulation. State candidate species are under review for listing as Washington State Endangered, Threatened, or Sensitive Species.

The Taylor’s checkerspot was designated a candidate species by Washington State in 1991 (A. Potter, pers. comm. 2000; Vaughan and Black 2002). In 2005, the species was recommended to the Wildlife Commission to be included on the Washington State list of endangered species. The Taylor’s checkerspot butterfly was added to the state endangered species list in 2006. Taylor’s checkerspot has been identified as a species of greatest conservation need in Washington’s Comprehensive Conservation Strategy.

In Oregon, the FWS coordinated with Benton County and Xerces Society to include the Taylor’s checkerspot butterfly in their county HCP. Xerces has also worked with Benton County to develop a Memorandum of Understanding for private landowners with Taylor’s on their property. This action allowed the private landowner to erect a fence to keep motorcycles and horse from entering the property and trample the larvae and larval host plants. Xerces has also coordinated with Bonneville Power Administration to develop a management plan to cover the species on lands within a right-of-way. This management plan specifically targets the removal of invasive plants along the right-of-way.

The Taylor’s checkerspot butterfly is ranked as critically imperiled and threatened by extinction by the Oregon Natural Heritage Information Center (2004). The Oregon Natural Heritage Information Center lists the Taylor’s checkerspot as imperiled in the state (S1). Oregon has a State Endangered Species Act, which was last updated in 1998. At that time the Taylor’s checkerspot was not added to the list and it is currently not listed as an endangered or threatened species in Oregon. Although this species is on the Oregon sensitive species list and is considered critically sensitive, this designation provides little protection (ODFW 1996, OAR 635–100–0040). The “critical” designation indicates a species for which a listing as threatened or endangered is pending or listing as threatened or endangered may be appropriate if immediate conservation actions are not taken. Once an Oregon “native wildlife” species is federally listed
as threatened or endangered, it is included as a State listed species and receives some protection and management, primarily on State-owned or managed lands (OAR 635–100–0100 to OAR 635–100–0180; ORS 496.171 to ORS 496.192). The Oregon Department of Fish and Wildlife (ODFW) prepared a draft Comprehensive Conservation Strategy in 2006 (ODFW 2006). The plan is a non-regulatory statewide approach to conservation in Oregon and fulfills a requirement to access two new Federal grant programs. The draft strategy identifies the Taylor’s checkerspot as a “strategy species.” Strategy species are found in low numbers at few locations and are threatened. They are considered an at-risk species. The plan targets conservation actions for the most at-risk species. The strategy generally identifies special habitat needs, limiting factors and data gaps for the Taylor’s checkerspot butterfly. It also identifies specific conservation actions needed for the species.

In summary, there continue to be ongoing threats to the species due to the inadequacy of existing regulatory mechanisms. Although both Washington and Oregon have completed Comprehensive Conservation Strategies, it remains unclear when and how the strategies will be implemented and result in on-the-ground conservation actions for the Taylor’s checkerspot.

E. Other natural or manmade factors affecting its continued existence.

The application of Bacillus thuringiensis var kurstaki (Btk) for control of the Asian gypsy moth (Lymantria dispar) likely contributed to the extirpation of three historic locales for the subspecies in Pierce County (Vaughan and Black 2002). Spraying of Btk is known to have adverse affects to nontarget lepidopteran species (butterflies and moths). Species having a single brood/year, such as the Taylor’s checkerspot, are active in the spring and have caterpillars that are active during the spray application period. There is documentation that most lepidopterans are more susceptible to Btk than the target species (Haas and Scriber 1998) (e.g., Asian gypsy moth). Nontarget lepidopterans may remain susceptible for up to 30 days after spraying has ceased (Wagner and Miller 1995).

The application of herbicides is usually restricted to a short period of the year. However, if the target species is active at the same time as larvae and adult Taylor’s checkerspots the effect to the butterflies were negative. Spraying of Btk still occurs in Pierce County for the Gypsy moths and the threat of herbicide drift onto prairies of Pierce County cannot be discounted.

CONSERVATION MEASURES PLANNED OR IMPLEMENTED:

No conservation agreements have been finalized for the Taylor’s checkerspot butterfly. A Candidate Conservation Agreement (CCA/CCAA) is currently being developed for several grassland associated species, including the Taylor’s checkerspot. Several agencies (DOD (Army and McChord Air Force Base), WDFW, Washington Department of Natural Resources, Thurston County, Port of Olympia and TNC) are collaboratively working with the FWS to develop this agreement. A draft agreement is anticipated during FY 2007.

A small private parcel of prairie land was acquired in FY 2005 with funding from section 6 Recovery lands acquisition funds. This 130 acre parcel will contribute to the conservation of prairie associated species in south Puget Sound. Taylor’s checkerspot is a candidate species that will be introduced onto this parcel when the captive rearing methods have been improved and larvae are available to move onto the site. TNC will oversee management of the parcel and
coordinate with FWS on activities that are planned for the parcel.

Restoration of grasslands in the south Puget Sound region of Washington has resulted in temporary control of Scot’s broom and other invasive woody plants through the use of herbicides, mowing, grazing, and fire. The Nature Conservancy, with funding from the U.S. Fish and Wildlife Service, has conducted restoration projects on grassland habitat at Fort Lewis Military Reservation, Glacial Heritage Preserve, Scatter Creek Wildlife Area, and the Mima Mounds and Rocky Prairie Natural Area Preserves.

In early 2005, several coordinating agencies (USFWS (ES and National Wildlife Refuge staff), WDFW, WDNR), Department of Defense (Army and Air Force), B.C. Ministry of Water, Land and Air staff, Xerces Society and the Nature Conservancy gathered in Olympia, Washington for a two day workshop on Taylor’s checkerspot. State of the knowledge information was shared by practitioners and the group developed a matrix that included several management strategies that either could be implemented, or have been implemented for the species. One piece of important experimental work that Fort Lewis has funded in cooperation with WDFW is being planned and has partially been implemented on the ground during early spring 2007, is a captive breeding and translocation program for the Taylor’s checkerspot. Another highlight of this work was a list of information and research gap needs. Key questions include (1) the use and preference of host plants, (2) the spatial arrangement of sites and how to arrange future acquired sites to reduce risk of extirpation, and (3) how Taylor’s may have shifted their larval host plant use in areas where the primary host plant (Scrophulariaceae) is not present.

Experimental introductions of Taylor’s checkerspot butterflies are being attempted in the south Puget Sound region. Captive rearing of Taylor’s checkerspots has been undertaken since 2003 with the support of the Oregon Zoo. No releases were made until 2007. Larvae were placed out at three locations in Thurston and Pierce County in March, 2007; at Glacial Heritage Preserve, a Thurston County park, on Fort Lewis (Pierce County) and at the Scatter Creek Wildlife area in Thurston County. At this time it is too early to report the results of these releases.

SUMMARY OF THREATS

Active threats to Taylor’s checkerspot butterflies include the degradation and destruction of native grasslands by agriculture; residential and commercial development; encroachment by nonnative plants; succession from grasslands to native shrubs and trees; and fire. The application of Bacillus thuringiensis var. kurstake for Asian gypsy moth control likely contributed to extirpations of the subspecies at three locations in Pierce County, Washington.

The magnitude of threats is high because of the extremely small size of most populations and the reduction in distribution from the historical range. The size and location of the populations can shift from year to year. Threats are imminent because any of the numerous threats could occur at any time and all but a few of populations have very few butterflies to buffer against an adverse event. The ecosystem on which this subspecies depends requires annual management to maintain its early successional, grassland and forb dominated habitat. Because of the high magnitude of threats and the high immediacy of these threats, we have assigned the Taylor’s checkerspot butterfly a listing priority number of 3. We find that this species is warranted for listing throughout all its range, and, therefore, find that it is unnecessary to analyze whether it is threatened or endangered in a significant portion of its range.
RECOMMENDED CONSERVATION MEASURES

All current and high priority historic locations for Taylor’s checkerspot butterflies should be monitored. Sites that have components of native habitat, bunchgrasses and forbs, or the nonnative larvae food plant Plantago lanceolata should be surveyed for the presence of the species. If the species was found to occupy a site, a formal survey or a complete assessment of the site should be made. Management actions that improve the amount and distribution of suitable habitat for Taylor’s checkerspot butterflies are recommended. Management would include mowing (usually early fall or pre-emergence of larvae in the spring), prescribed burning of patches but never more than about a quarter of the site to conserve eggs and larvae, and judicious use of herbicides are all recommended procedures for improving habitat. The acquisition of grassland and bald habitat should be a high priority to conserve Taylor’s checkerspot, using Federal funds (Section 6 Recovery land funding).

LISTING PRIORITY

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<td>Subspecies/population</td>
<td>12</td>
</tr>
</tbody>
</table>

Rationale for listing priority number:

Magnitude: The magnitude of the threat is high because of the extremely small number of remaining populations, the threat of habitat loss and degradation, the changes in habitat structure and function brought on by fire suppression and invasive plants and the reduction in distribution of the species from its former range.

Imminence: Any of the potential threats may occur at any time. One episode of any of several potential threats could occur at any time, including a single period of severe weather at a critical life stage of the Taylor’s checkerspot, and could eliminate the entire subspecies. At this time (2007) emergency listing is not warranted partially because of the new populations discovered on
the north Olympic Peninsula and in Canada, thus broadening the distribution of the species to three general regions from southern British Columbia and northernwestern Washington to the Willamette Valley, Oregon.

YES. Have you promptly reviewed all of the information received regarding the species for the purpose of determining whether emergency listing is needed?

DESCRIPTION OF MONITORING

Although all the sites were not monitored during 2005, a majority were surveyed to confirm presence of the butterfly and to count individuals if the butterfly was present. In Washington, all known populations and some historic locales of Taylor’s checkerspot in south Puget Sound region were surveyed in 2005 and 2006. In Oregon, a total of ten locations were monitored during the peak flight period for Taylor’s checkerspot, and two locations were found to harbor the species in Oregon. In British Columbia, the species was found on Denman Island in May 2005 during routine monitoring surveys for butterflies at their historic locales.

COORDINATION WITH STATES

In Washington, biologists with the WDFW and WDNR and staff from the Xerces Society were consulted during the candidate assessment process and throughout the year on issues associated with Taylor’s checkerspot butterflies. In Oregon, we consulted with the Natural Heritage Information Center (Kagan, Director, ONHIC 2007) and Xerces Society on the population for Oregon’s Taylor’s checkerspots.

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Butterflies 3(3):19-23.
APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes, including elevations or removals from candidate status and listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all resubmitted 12-month petition findings, additions or removal of species from candidate status, and listing priority changes.

Approve: [Signature]
Regional Director, Fish and Wildlife Service

Concur: [Signature]
Acting Director, U.S. Fish and Wildlife Service

Do not concur: [Signature]
Director, Fish and Wildlife Service

Director's Remarks:

Date of annual review: March 2007

Conducted by: T. Thomas

Reviewed by: Jodi Bush
Division Manager, Listing and Recovery, WWFWO

Ken Berg
Manager, WWFWO