CANDIDATE AND LISTING PRIORITY ASSIGNMENT FORM

SCIENTIFIC NAME: Euphydryas editha taylori

COMMON NAME(S): Whulge, Taylor=s, or Edith=s Checkerspot. A recently adopted and commonly used name for this subspecies is the Whulge checkerspot.

LEAD REGION: Region 1

INFORMATION CURRENT AS OF: April 2004

STATUS/ACTION (Check all that apply):

___ New candidate

_X_ Continuing candidate

__ Non-petitioned

_X_ Petitioned - Date petition received: 12/11/02

__ 90-day positive - FR date: ___

__ 12-month warranted but precluded - FR date: ___

__ Is the petition requesting a reclassification of a listed species?

___ Listing priority change

Former LP: ___

New LP: ___

Latest Date species became a Candidate: 10/30/01

___ Candidate removal: Former LP: ___ (Check only one reason)

___ 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

LEAD REGION CONTACT (Name, phone number): Scott McCarthy (503/231-6131)

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

BIOLOGICAL INFORMATION (Describe habitat, historic vs. current range, historic vs. current population estimates (# populations, #individuals/population), etc.):

Whulge checkerspots are known from open habitat dominated by grassland vegetation throughout their range. In British Columbia, Canada, Whulge 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, Whulge 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 single Oregon locale is found north 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) (Vaughan and Black 2002). Whulge 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).

Whulge checkerspots are small, colorfully checkered butterflies. They are orange with black and yellowish spot bands, giving a checkered appearance. Whulge checkerspots produce one brood per year. They overwinter (diapause) in the fourth or fifth larval instar phase.

Historically, the Whulge 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. In Fall 2002, only five populations were known; four are 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 Whulge checkerspots (James Miskelly, University of British Columbia, pers. comm. 2002).

From 1997 through 2000, surveys conducted by the Washington Department of Fish and Wildlife, Washington Department of Natural Resources, The Nature Conservancy of Washington, and Fort Lewis Military Reservation located this subspecies on 9 of 17 historic locales. Surveys of 15 sites in 2001 and 2002 located Whulge checkerspots on only 4 sites in Thurston and Pierce Counties (A. Potter, pers. comm. 2002). Thirty to 40 individuals were estimated at two sites (Artillery Impact Area - Fort Lewis and North Bald, Bald Hill Natural Area Preserve (NAP)), and fewer than 10 individuals were counted on the other two (Bald Hill and South Balds of Bald Hill NAP). Approximately 40 adults were observed on the two primary balds (North and South) during surveys at Bald Hills in 2003, and early surveys in 2004 have observed more than 50 individuals (D. Grossboll, pers. comm. 2004).

Several historic locations on the north Olympic Peninsula were surveyed during Spring, 2003 and Whulge checkerspots were observed at three. One location near the mouth of the Dungeness River had about 20 individuals. The other two locations were on balds, west of the Elwha River, and each of these locations had between 50 – 100 adult butterflies (A. Potter, pers. comm. 2004). As of Spring, 2004 there are now seven known locales for Whulge checkerspots in Washington, and one in the Willamette Valley, Oregon.

One location in Thurston County (Glacial Heritage Preserve), which had 131 adults in 1997, had no Whulge checkerspots counted in 1999 or 2000. At a location in Pierce County (Thirteenth Division Prairie - Fort Lewis) that had over 7,000 adults in 1997, only 10 individuals were counted in 2000, and none were counted in 2001 (A. Potter, pers. comm. 2003). Six historic locales for Whulge checkerspots were destroyed when the sites were developed (DuPont, Training Area 7S - Fort Lewis, Spanaway, Spanaway High School, Lakewood) and agricultural practices (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 that are precisely documented.

The 13 historic Oregon locales have been surveyed regularly by local lepidopterists (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). Only one site, north of Corvallis, remains occupied by Whulge checkerspots.

THREATS (Describe the threats in terms of the five factors in section 4 of the ESA providing specific, substantive information. If this is a removal of a species from candidate status or a change in listing priority, explain reasons for change):

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

Whulge 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 Whulge checkerspot. Habitat has been degraded and encroached upon by nonnative woody shrubs, including Scot=s 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 (*Psuedotsuga 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.

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

Populations of Whulge 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 Whulge 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 Whulge 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).

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 Whulge checkerspot was designated a candidate species by Washington State in 1991 (A. Potter, pers. comm. 2000; Vaughan and Black 2002). However, candidate status within Washington State has no protective measures associated with it. No protection or restrictions on direct take is provided to these butterflies on any lands administered by any city, county, State or Federal agencies.

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 Whulge 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).

FOR RECYCLED PETITIONS:

a. Is listing still warranted? Yes

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

c. Is a proposal to list the species as threatened or endangered in preparation? No

d. If the answer to c. above is no, provide an explanation of why the action is still precluded. In December 2002, the Service received a petition to list this species under the Endangered Species Act. We considered the petition in this assessment and incorporated information from the petition where appropriate. Since publication of the 2002 CNOR, the publication of a proposed rule to list this subspecies has been precluded by other higher priority listing actions, and based on work scheduled, we expect that will remain the case for the remainder of fiscal Year 2004. Almost the entire national listing budget has been consumed by work on various listing actions taken to comply with court orders and court-approved settlement agreements, emergency listing, and essential litigation-related, administrative, and program management functions. We will continue to monitor the status of the whulge checkerspot 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.

LAND OWNERSHIP (Estimate proportion Federal/state/local government/private, identify non-private owners):

The estimated proportion of habitat found on Federal, State, county, and private ownership is 55 percent, 30 percent, 5 percent, and 10 percent, respectively.

PRELISTING (Describe status of conservation agreements or other conservation activities):

No conservation agreements have been developed for the Whulge checkerspot.

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, Mima Mounds, and Rocky Prairie Natural Area Preserve.

REFERENCES (Identify primary sources of information (e.g., status reports, petitions, journal publications, unpublished data from species experts) using formal citation format):

Char, P. and P.D. Boersma. 1995. The effects of prairie fragmentation on butterfly species in sestern Washington. Final Report Submitted to the Nature Conservancy, Washington Field Office and U.S. Army, Fort Lewis, WA.

Crawford, R. and H. Hall. 1997. Changes in the South Puget prairie landscape. Ecology and Conservation of the South Puget Sound Prairie Landscape. The Nature Conservancy, Seattle, Washington. 289 pp.

Dornfeld, E.J. 1980. The butterflies of Oregon. Timber Press, Forest Grove, Oregon. 276 pp.

Fleckenstein, J. and A. Potter. 1999. 1997, 1998 Project summary, Puget prairie butterfly surveys. Washington Department of Natural Resources and Washington Department of

Fish and Wildlife.

Guppy, C.S. and J.H. Shepard. 2001. Butterflies of British Columbia. University of British Columbia Press, Vancouver. 413 pp.

Haas, L. and J.M Scriber. 1998. Phyllopane sterilization with bleach does not reduce Btk toxicity for Papillo glaucus larvae (Lepidoptera: Papilionidae). Great Lakes Entomologist 31(1):49-57.

Hays, D.W., A.E. Potter, C.W. Thompson, and P.V. Dunn. 2000. Critical habitat components for four rare South Puget Sound butterflies. Final Report.

McGarrahan, E. 1997. Much-studied butterfly winks out on Stanford Preserve. Science. Vol. 275. pp 470-480.

Pyle, R.M. 1989. Washington butterfly conservation status report and plan. Report submitted to the nongame program of the Washington Department of Wildlife.

Pyle, R.M. 1981. National Audubon Society field guide to North American butterflies. Alfred A. Knopf, New York, New York. 924 pp.

Shepard, J.H. 2000. Status of five butterflies and skippers in British Columbia. Wildlife Working Rept. No. WRB101. British Columbia Ministry of Environment, Victoria. 27 pp.

The Evergreen Aurelians. 1996. Butterfly records for Oregon and Washington, support documents for An Atlas of Washington Butterflies and An Atlas of Oregon Butterflies by J. Hinchliff. Notebooks. Unpublished data.

Vaughn, M. and S.H. Black. 2002. Petition to emergency list Taylor's (Whulge) checkerspot butterfly (Euphydryas editha taylori) as an endangered species under the U.S. Endangered Species Act. Report submitted to The Xerces Society, Center for Biological diversity, Oregon Natural Resources Council, Friends of San Juan, and Northwest Ecosystem Alliance. 26 pp.

Wagner, D. and J.C. Miller. 1995. Must butterflies die for the gypsy moth=s sins? American Butterflies 3(3):19-23.

LISTING PRIORITY (place * after number)

THREAT

Magnitude	Immediacy	Taxonomy	Priority
High	Imminent	Monotypic genus	1
		Species	2
		Subspecies/population	3 *
	Non-imminent	Monotypic genus	4
		Species	5
		Subspecies/population	6
Moderate to Low	Imminent	Monotypic genus	7
		Species	8
		Subspecies/population	9
	Non-imminent	Monotypic genus	10
		Species	11
		Subspecies/population	12

Rationale for listing priority number:

Magnitude: The magnitude of the threat is high because of the extremely small size of remaining populations 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 Whulge checkerspot, and could eliminate the entire subspecies. A this time (2004) emergency listing is not warranted because of the new populations discovered on the north Olympic Peninsula, thus broadening the distribution of the species to three general regions from northern Washington to the Willamette Valley, Oregon.

APPROVAL/CONCURRENCE: Lead Regions must obtain written concurrence from all other Regions within the range of the species before recommending changes to the candidate list, including listing priority changes; the Regional Director must approve all such recommendations. The Director must concur on all additions of species to the candidate list, removal of candidates, and listing priority changes.

Approve: Carolyn Bohan April 15, 2004
Acting Regional Director, Fish and Wildlife Service Date

Concur: Steve Williams April 19, 2004
Director, Fish and Wildlife Service Date

Do not concur: _____ _____
Director, Fish and Wildlife Service Date

Director's Remarks:

Date of annual review: April 2004

Conducted by: T. Thomas

Comments: