

Taylor's Checkerspot Butterfly Recovery Plan: Recovery Implementation Strategy

(DRAFT) 2024 Action Plan

This action plan was developed by the Taylor's Checkerspot Butterfly (TCB) Working Group and is updated each year at the group's annual meeting. The purpose of this action plan is to identify the most important conservation actions that can be conducted over the next 3-5 years to support TCB recovery. Since this list of actions focuses on the near-term, it is not a complete list of all the specific tasks that are necessary to achieve TCB recovery. Additional tasks will be identified as new information becomes available, and completed tasks will be dropped from this list. Text highlighted in purple indicates language from the Recovery Implementation Strategy (RIS) for Taylor's Checkerspot Butterfly (*Euphydryas editha taylori*). Tasks beneath the highlighted rows are specific conservation actions that the working group has identified to support those recovery actions and are updated annually.

*Note on task ranking: Some of the tasks on this action plan have been assigned a number in the "Rank" column. Only the 15 highest priority tasks are ranked, and in some cases, several tasks are assigned the same rank. Beyond the 15 top priority tasks, some other tasks have an * in the rank column, which signifies increased emphasis, but not at the level of a numerical rank. These task rankings indicate the near-term priorities for implementation of a specific project, as opposed to the recovery action priority rankings in the recovery plan which indicate a general recovery action's longer-term level of importance for preventing extinction or significant negative impacts.*

TASK	RANK	STATUS & IMPLEMENTING PARTY
Recovery Action 1. Maintain and Increase Suitable Habitat and Connectivity		
<i>(RIS Priority 1: An activity that must be taken to prevent extinction or to prevent the species from declining irreversibly.)</i>		
Recovery Activity 1.1 Identify and prioritize sites with ecological resources to support suitable habitat and improve connectivity within and between population complexes.		
1.1.1 Create working definition of suitable habitat (by region), connectivity, and population complex based on existing information.		Underway - USFWS and WDFW, ESI
Recovery Activity 1.2 Establish and implement standardized habitat assessments (by region) to evaluate habitat suitability and determine habitat management needs.		
1.2.1 Implement standardized habitat assessments (by region) to evaluate habitat suitability and determine habitat management needs.	8	Ongoing
a. Refine as definitions of suitable habitat are determined and adapt regional protocol as appropriate.		
b. Implement focused RHA on Olympic Peninsula to evaluate appropriateness of protocol in region.		WDFW
Recovery Activity 1.3 Control undesirable native and non-native species in currently occupied habitats and suitable habitat including, but not limited to, encroachment by woody species.		
1.3.1 Enhance habitat by controlling/removing invasive species and structural modifiers, and enhancing larval food and nectar plants as appropriate.	1	Ongoing
1.3.2 Improve connectivity between occupied areas and/or suitable habitat. (Move to 1.3 as 1.3.2)	14	In progress rangewide
Recovery Activity 1.4 Augment or enhance larval food and adult nectar plants in currently occupied habitat and suitable habitat.		
1.4.1 Improve production of larval and nectar plant materials rangewide, esp. in Clallam Co., BC, and Benton Co.	6 - UP	In progress
a. Identify seed source for appropriate plantago. (edit)		
Recovery Activity 1.5 Support recruitment and abundance of host plants and early seral habitat through managed disturbance regimes such as prescribed fire, mowing, or other interventions.		
1.5.1. Increase fire capacity in the Willamette Valley.		
Recovery Activity 1.6 Develop Best Management Practices (BMPs) to address cumulative impacts from overlapping management actions by setting targets for the maximum amount of annual disturbance depending on the type of action (e.g. prescribed fire, herbicide, vehicular).		
1.6.1 Develop BMPs for fire intervals and herbicide accumulation. {THINK ON THIS}		
1.6.2 Minimize negative impacts, both direct and cumulative, to occupied sites.	5	
a. Minimize incompatible recreation especially at Scatter Creek, TA 15, Dan Kelly Ridge and Eden Valley (inc. ATV use), Denman Island Provincial Park; Minimize training impacts, especially at R74/76, R51; Reduce vehicular impacts (including travel management planning at ONF); Coordinate with BTK spray implementing parties to reduce impacts to TCB.		In progress (WDFW, DNR); Ongoing (JBLM); Ongoing (ONF, JBLM, FWS, WDFW); In progress (BC), Ongoing (WA, OR)

Recovery Activity 1.7 Develop site-specific long-term management plans and/or management agreements for all population complexes.		
1.7.1 Develop management plans for CBA sites.		
1.7.2 Identify which currently occupied sites have management plans.		
1.7.3 Establish the infrastructure necessary to implement habitat enhancement and expansion of the dry-forest bald and harvest unit habitats where 6 of the 7 Clallam County sites occur.		
a. Fund a habitat/vegetation management specialist to collaboratively develop plans and funding proposals.		
Recovery Action 2. Reintroduce and Reinforce Populations		
<i>(RIS Priority 1: An activity that must be taken to prevent extinction or to prevent the species from declining irreversibly.)</i>		
Recovery Activity 2.1 Continue or expand captive rearing and reintroduction by developing new facilities or additional capacity as necessary.	2	
2.1.1 Maintain existing facilities at Mission Creek, Coffee Creek, and OSU.	2	Ongoing (WDFW, SPP, IAE, OSU)
Recovery Activity 2.2 Develop a range-wide reintroduction and reinforcement plan.		
2.2.1 Develop a range-wide reintroduction plan with habitat specific approaches, utilizing existing plans as appropriate.		
a. Review reintroduction plan for SPS, including criteria for defining a source population, to be incorporated into a rangewide plan.		Final Draft (WDFW)
b. Develop implementation plan for reintroduction onto a CALE site in SPS in 2026.	rank	USFWS, WDFW, ESI
Recovery Activity 2.3 Select and prioritize reintroduction and reinforcement sites across the species' range to increase the number and distribution of population complexes.		
2.3.1 Identify and prioritize potential future release sites in coordination with recovery planning efforts and entities (esp. in OR).		Ongoing (OR)
Recovery Activity 2.4 Evaluate potential for direct translocation (i.e. moving individuals directly from a donor site to a recipient site) during peak-abundance years.		
Recovery Activity 2.5 Reinforce existing or establish new population complexes using approved reintroduction and reinforcement translocation methods.	12 (remove)	
2.5.1 Determine and implement best approach for increasing numbers of populations within each region (e.g. habitat enhancement, habitat manipulations, translocation, captive rearing and reintroduction).		
a. Develop a CBA for non-federal potential translocation sites and neighboring properties.	rank	
Recovery Action 3. Pursue Acquisitions, Easements, and Agreements		
<i>(RIS Priority 1: An activity that must be taken to prevent extinction or to prevent the species from declining irreversibly.)</i>		
Recovery Activity 3.1. Identify and prioritize available parcels within suitable and potentially suitable habitat to increase connectivity and distribution of population complexes across the species' range.		
3.1.1 Design and implement methods and criteria to identify and prioritize acquisition and CE opportunities (regionally). Review existing tools available.		Initiated (OR), Planned (N. Salish)
Recovery Activity 3.2 Identify potential funding strategies for procurement and protection of acquisitions and/or conservation easements.	9 (down?)	
Recovery Activity 3.3 Pursue acquisition of conservation easements with willing sellers.		
3.3.1 Pursue acquisition of conservation easements with willing sellers according to regional priorities. [e.g. South Puget Sound, Bald Hill area (WA), Denman Island Private Land, Wren area (OR)].		Ongoing (South Sound, BC); Opportunistic in OR (GLT); Planned (SJI/Whidbey)
a. Finalize voluntary management plans on private land (e.g. Denman Island). (check w/Jenny about status and where in plan this belongs)		Ongoing
Recovery Activity 3.4 Develop management plans and conservation agreements for newly acquired sites and/or sites with conservation easements.		
3.4.1 Identify existing management and restoration plans for each site and identify overlaps, conflicts, and gaps.		Ongoing (all regions)
Recovery Action 4. Determine Population Metrics and Assess Threats		

<i>(RIS Priority 2: An activity that must be taken to prevent a significant decline in the species population/habitat quality or some other significant negative impact short of extinction.)</i>		
Recovery Activity 4.1 Develop and implement scalable, standardized survey and monitoring protocols to evaluate progress toward recovery which may include occupancy, trends, distribution, and abundance.	³ (Remove ?)	
4.1.1 Monitor all known populations annually.	4	Ongoing
a. Document monitoring protocols currently being used and develop protocol for Olympic Peninsula sites.		USFWS, WDFW, ESI
4.1.2 Prioritize and survey suitable habitat to identify additional populations (e.g. North Olympic Peninsula).	10	
4.1.3 Develop methodologies for calculating an estimate of population size. (Move to section 4)		Ongoing (WDFW)
Recovery Activity 4.2 Assess the levels of currently known threats and identify potential new threats to the species and its habitat.		
4.2.1. Incorporate threat assessment in site-specific management plans.		
Recovery Activity 4.3 Develop and maintain a database to manage and provide access to data associated with but not limited to demographics, habitat quality, threats, management needs, and other site-specific information.		In progress (WV, SPS)
Recovery Action 5. Conduct Scientific Research		
<i>(RIS Priority 2: An activity that must be taken to prevent a significant decline in the species population/habitat quality or some other significant negative impact short of extinction.)</i>		
Recovery Activity 5.1 Identify knowledge gaps and whether they can be addressed through analysis of existing data and/or new research.		
Recovery Activity 5.2 Rank analysis and research needs for addressing individual knowledge gaps in order of importance toward advancing the species' recovery.		
Recovery Activity 5.3 Develop and implement research studies in accordance with prioritization toward advancing the species' recovery.		
5.3.1 Movement		
5.3.2 Larval survival/recruitment		
5.3.3 Host plant phenology (microsite study)		
<i>Re-sort all the below items to their appropriate Recovery Actions and delete duplicative or irrelevant.</i>		
5.1.1 Define habitat restoration targets through research.	13	
5.3.1 Evaluate quality of various host species in relation to butterfly performance in all life stages (e.g. phenology, chemical content, abundance, environmental, etc.).		Pre-diapause completed.
a. Carry out an experimental introduction of Eet on CALE in S. Sound.		Done with unclear results
5.3.2 Evaluate long and short distance dispersal in the context of landscape and local factors, including understanding criteria for effective corridors.		
5.3.3 Define butterfly habitat selection through research (e.g. oviposition & adult habitat, nectar and larval food plant density, phenology, soil type/structure, and spatial arrangement).		In progress. Ovipos. Complete in Clallam Co., AIA, OR.
5.3.4 Determine the characteristics of occupied habitat, with respect to nectar plants, host plants, and vegetation structure. Build upon previous work.		Coarse review done (IAE), data available from EI/JBLM
5.3.5 Identify pre and post diapause food plants, particularly in the Olympic Peninsula.		Ongoing (ONF)
5.3.6 Research and develop BMPs for using and managing fire in relation to butterfly recovery.		Ongoing (EI, JBLM)
5.3.7 Identify historic occurrence and range of suitable soil edaphic conditions beyond current restoration areas. Explore new restoration techniques and expand restoration on deep soil sites.		
5.3.8 Create and implement opportunities to evaluate effects of habitat management on Eet populations.		Ongoing (opportunistic)
5.3.9 Increase understanding on the relative importance of sources of mortality.	7	
a. Evaluate the impact of fungicide, herbicide and other pesticides (especially Reward).		
b. Improve our understanding of the influence of weather, climate, and microclimate on population dynamics and reintroductions, including the use of weather stations.	Keep?	

Recovery Activity 5.4 Identify and develop recommendations for application of research results to recovery actions and activities (e.g., genetics/genomics guidelines for reintroductions).		
5.4.1 Utilize existing knowledge to create white paper that documents both known habitat characteristics and known habitat management practices and identifies information gaps.	11	Partially done by CNLM. Needs funding to complete.
5.4.2 Complete a Species Status Assessment and develop a Recovery Plan in the US.		In progress (FWS)
a. Develop a spatially explicit population model to evaluate the interactive effects of population size, dispersal, habitat quality, and landscape permeability on short and long-term population persistence.		
5.4.3 Collect, analyze, and review new and existing data from genetic and meta-population studies to direct population management.		
a. Determine the degree of genetic structuring within and between populations of <i>E. e. taylori</i> .		
b. Evaluate genetic diversity and transfer between source and reintroduction sites following establishment.		
Recovery Action 6. Promote Partnerships and Outreach		
<i>(RIS Priority 3: All other activities necessary to provide for full recovery of the species.)</i>		
Recovery Activity 6.1 Share information between entities, establish partnerships, and maintain working groups.		
6.1.1. Maintain a rangewide working group that meets at least every other year.	15	Ongoing
Recovery Activity 6.2 Establish a transnational North Salish Sea Recovery working group.		Done
6.2.1 Maintain a transnational N. Salish Sea Recovery working group.		Ongoing
Recovery Activity 6.3 Identify opportunities to conduct public outreach and education, including opportunities to share information about listing and conservation to landowners that may have occupied or potential suitable habitat.		Ongoing
6.3.1 Utilize existing relationships and outreach efforts to increase communication about TC and regulatory protections. (NEW)		
6.3.2 Prioritize targeted outreach to private landowners in priority areas. (NEW)		
6.3.3 Inform relevant fire departments of appropriate response to wildfires in occupied sites. (NEW)		
Recovery Activity 6.4 Utilize synergistic restoration efforts with complementary species-at-risk to support a larger distribution of healthy functioning ecosystem.		