

2021 Taylor's Checkerspot Butterfly Action Plan

The purpose of this action plan is to identify the next-best conservation actions that can be conducted over the next 3-5 years to support TCB recovery.

Cat.	Ref.	Task [An asterisk (*) indicates a newly added task]	Rank	Status & Implementing Party
1. Protect Occupied and Other Key Sites	1.1	1. Pursue conservation easements, acquisitions, and management agreements.	9	
	1.1.a	a. Design and implement methods to identify and criteria to prioritize acquisition and CE opportunities (regionally). Review existing tools available.		Initiated (OR)
	1.1.b	b. Pursue acquisition or conservation easement with willing sellers according to regional priorities. [e.g. South Puget Sound, Bald Hill (WA), Denman Island Private Land, Cardwell Hill properties (OR)].		Ongoing (South Sound, BC); Opportunistic in OR (Bald Hill)
	1.1.c	c. Finalize voluntary management plans on private land (e.g. Denman Island).		Ongoing
	1.2	2. Minimize negative impacts, both direct and cumulative, to occupied sites.	5	
	1.2.a	a. Develop BMPs to address cumulative impacts from overlapping factors, including setting targets for the maximum amount of annual disturbance by type (e.g. fire, spraying, vehicular, etc). <i>*New 2021</i>		
	1.2.b	b. Minimize incompatible recreation especially at Scatter Creek, 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 TC.		In progress (WDFW, DNR); Ongoing (JBLM); Ongoing (ONF, JBLM, FWS, WDFW); In progress (BC), Ongoing (WA, OR)
	1.3	3. Develop & update management/restoration plans to reduce conflicts and guide actions.		
	1.3.a	a. Identify existing management and restoration plans for each site and identify overlaps, conflicts, and gaps.		Ongoing (all regions)
	1.3.b	b. Conduct threat assessment at site level to prioritize threats (using tools such as IUCN).		
1.3.c	c. Develop site specific plans to assess and manage the risk of wildfire.			
2. Enhance and Increase Effective Habitat	2.1	1. Enhance habitat by controlling/removing invasive species and structural modifiers, and enhancing larval food and nectar plants as appropriate.	1	Ongoing
	2.1.a	a. Improve production of larval and nectar plant materials rangewide, esp. in Clallam Co., BC, and Benton Co.	6	In Progress
	2.2	2. Improve connectivity between occupied areas and/or suitable habitat.	14	In progress rangewide
	2.3	3. Establish and implement standardized habitat assessments (by region) to evaluate habitat suitability.	8	
	2.3.a	a. Assess status of occupied and key sites.		
	2.4	4. Define habitat restoration targets through research.	13	
	2.4.a	a. 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.
	2.4.a.i	<i>i. Carry out an experimental introduction of Eet on CALE in S. Sound.</i>		Done with unclear results.
	2.4.b	b. Evaluate long and short distance dispersal in the context of landscape and local factors, including understanding criteria for effective corridors.		
	2.4.c	c. 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.
2.4.d	d. 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	
2.4.e	e. Identify pre and post diapause food plants, particularly in the Olympic Peninsula.		Ongoing (ONF)	
2.4.f	f. Research and develop BMPs for using and managing fire in relation to butterfly recovery.		Ongoing (EI, JBLM)	
2.4.g	g. 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.			

2. Enhance and Increase Effective Habitat (cont'd)	2.5	5. 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.
	2.6	6. Create and implement opportunities to evaluate effects of habitat management on Eet populations.		Ongoing (opportunistic)
	2.7	7. Increase understanding on the relative importance of sources of mortality.	7	
	2.7.a	a. Evaluate the impact of fungicide, herbicide and other pesticides (especially Reward).		
	2.7.b	b. Improve our understanding of the influence of weather, climate, and microclimate on population dynamics and reintroductions, including the use of weather stations.		
	2.8	8. 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. *New 2021		
	2.8.a	a. Fund a habitat/vegetation management specialist to collaboratively develop plans and funding proposals.		
3. Captive Rearing & Reintroduction	3.1	1. Continue to implement captive rearing and reintroduction programs throughout the range, including monitoring source and release sites.	2	Ongoing (WDFW, OZ, SSP)
	3.1.a	a. Evaluate genetic diversity and transfer between source and reintroduction sites following establishment.		
	3.1.b	b. Develop a reintroduction plan for South Puget Sound, including criteria for defining a source population.		In progress (WDFW)
	3.2	2. Collect, analyze, and review new and existing data from genetic and meta-population studies to direct population management.		
	3.2.a	a. Determine the degree of genetic structuring within and between populations of E. e. taylori.		
	3.3	3. Initiate or expand efforts to increase the number and size of populations through captive rearing, translocation, and reintroduction, where appropriate.	12	
	3.3.a	a. Identify and prioritize potential future release sites in coordination with recovery planning efforts and entities (esp. in OR).		Ongoing (OR)
3.3.b	b. Develop new facilities or additional capacity for captive rearing, as needed.		Ongoing	
3.4	4. Document decision making and state of knowledge for population increase efforts.			
4. Survey / Monitor	4.1	1. Develop suitable survey and monitoring protocols to evaluate progress toward recovery including occupancy, trends, distribution, and abundance.	3	
	4.1.a	a. Develop methodologies for calculating an estimate of population size.		Ongoing (WDFW)
	4.2	2. Monitor all known populations annually.	4	Ongoing
	4.3	3. Prioritize and survey suitable habitat to identify additional populations and/or expansion (e.g. North Olympic Peninsula, AIA).	10	
5. Coordination & Education	5.1	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).		
	5.2	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, & landscape permeability on short and long-term population persistence. *New 2021		
	5.3	3. Share information between entities, establish partnerships, and maintain a working group.	15	Ongoing
	5.3.a	a. Convene biannually to discuss and prioritize information needs.		
	5.3.b	b. Utilize synergistic restoration efforts (e.g. funding, communications, messaging, political/public support) with complementary species-at-risk to support a larger distribution of healthy functioning ecosystem (e.g. SWG project, Sentinel Landscape).		
5.4	4. 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 habitat.		Ongoing (SPS Partners)	