

	A	B	C	D	E	F	G	H	I	
1	Recovery Implementation Strategy for Four Subspecies of Mazama Pocket Gopher									
2	The Implementation Strategy that follows outlines actions and estimated costs for the recovery program for the four federally-listed subspecies of Mazama pocket gopher, as set forth in the USFWS Recovery Plan. It is a guide for meeting the recovery goals outlined in the Plan. This strategy indicates action priorities, action numbers, action descriptions, duration of actions, the parties likely to be responsible for actions (either funding or carrying out), and estimated costs. Parties with authority, responsibility, or expressed interest to implement a specific recovery action are identified in the Implementation Strategy. The listing of a party in the Implementation Strategy does not require the identified party to implement the action(s) or to secure funding for implementing the action(s).									
3			Subspecies Costs							
4	Recovery Action/Activity	Priority	Roy Prairie PG	Olympia PG	Tenino PG	Yelm PG	Implementing Party(ies)	Total cost (US\$)	Duration (years)	
5	Recovery Action 1. Protect, conserve and enhance MPG habitat.	1a								
6	Activity 1.1 Identify and prioritize creation and protection of Reserves						USFWS, South Sound Partners			
7	1.1.1 Map and evaluate land management status and threat of habitat loss in each of the proposed Reserves, including:									
8	Roy Prairie PG: minimum of 3 Reserves		\$ 21,330					\$ 21,330	5	
9	Olympia PG: minimum of 3 Reserves			\$ 21,330				\$ 21,330	5	
10	Tenino PG: minimum of 2 Reserves				\$ 10,665			\$ 10,665	5	
11	Yelm PG: minimum of 7 Reserves (2 in YPG-N, 2 in YPG-E, and 3 in YPG-S)					\$ 42,660		\$ 42,660	5	
12	1.1.2 Refine Reserve boundaries and prioritize for protection		\$ 5,915	\$ 5,915	\$ 5,915	\$ 5,915		\$ 23,660	5	
13	Activity 1.2 Purchase occupied and highly suitable lands in Reserves						South Sound Partners		30	
14	1.2.1 Purchase land or easements									
15	Roy Prairie PG: minimum of 3 Reserves		\$ 5,535,714					\$ 5,535,714	40	
16	Olympia PG: minimum of 3 Reserves			\$ 7,456,607				\$ 7,456,607	40	
17	Tenino PG: minimum of 2 Reserves				\$ 7,285,000			\$ 7,285,000	40	
18	Yelm PG: minimum of 7 Reserves					\$ 21,423,214		\$ 21,423,214	40	
19	1.2.2 Establish endowments or equivalent perpetual management									
20	Roy Prairie PG: minimum of 3 Reserves		\$ 6,087,571					\$ 6,087,571	40	
21	Olympia PG: minimum of 3 Reserves			\$ 8,199,959				\$ 8,199,959	40	
22	Tenino PG: minimum of 2 Reserves				\$ 8,011,244			\$ 8,011,244	40	
23	Yelm PG: minimum of 7 Reserves					\$ 23,558,901		\$ 23,558,901	40	
24	Activity 1.3 Implement other short- and long-term strategies to protect Reserves and other important MPG sites from development pressure (e.g., mitigation lands, interim permitting strategy, in lieu fee, programmatic HCPs; municipal HCPs).		\$ 853,200	\$ 853,200	\$ 853,200	\$ 853,200	USFWS, WDFW, WDNR, CNLM, Ecosudies, NRCS, Counties, WSDOT, South Sound Partners	\$ 3,412,800	40	
25	1.3.1 Use programmatic approach to streamline implementation of regulatory processes		\$ 853,200	\$ 853,200	\$ 853,200	\$ 853,200		\$ 3,412,800	40	
26	Activity 1.4 Develop and cooperatively implement programs for the protection and conservation of MPGs, south Puget Sound prairies, oak savanna, and other prairie-dependent species. This can include, but is not limited to, grant funding, habitat acquisition, habitat restoration, regulatory reform programs and policies, management plans, zoning, mitigation, research, and monitoring for each subspecies.									
27	1.4.1 Develop opportunities to explicitly implement MPG protection through incentive programs and regulatory assistance (e.g., NRCS Farm Bill programs, county conservation districts, Thurston County Voluntary Stewardship Program (VSP)).		\$ 5,333	\$ 5,333	\$ 5,333	\$ 5,333	NRCS, Thurston Co. VSP, Pierce Co., South Sound Partners	\$ 21,330	40	
28	1.4.2 Explicitly include MPGs/prairie habitat in incentive programs that support MPG habitat protection, (e.g., ACEP, RCPP, WLFW).		\$ 5,333	\$ 5,333	\$ 5,333	\$ 5,333	NRCS	\$ 21,330	40	
29	1.4.3 Explicitly include MPGs in incentive programs that support habitat management (e.g., FWS Partners Program, NRCS Stewardship Programs/EQIP).		\$ 5,333	\$ 5,333	\$ 5,333	\$ 5,333	USFWS, NRCS	\$ 21,330	40	
30	1.4.4 Develop mechanism and resources to ensure MPG agricultural easement protections are implemented (e.g., pilot projects through Sentinel Landscapes).		\$ 5,333	\$ 5,333	\$ 5,333	\$ 5,333	USFWS, NRCS	\$ 21,330	40	
31	1.4.5 Develop management agreements and plans for habitat, restoration, and enhancement at Reserves and other occupied sites.		\$ 435,888	\$ 435,888	\$ 290,592	\$ 1,017,072	JBLM, WDFW, CNLM, Ecosudies, USFWS, Counties, Cities, Ports, South Sound Partners	\$ 2,179,440	7	
32	1.4.5.1 Assess site-specific habitat conditions to determine status and threats (e.g., vegetation composition and structure, soil, dispersal barriers, predation pressure).							\$ -		
33	1.4.5.2 Develop site-specific strategies to improve habitat conditions and abate site-specific threats at each Reserve. Strategies may include vegetation management, prescribed fire, restrictions on use, and others.									
34	1.4.5.3 Develop step-down implementation plans and monitoring plans, where needed.									
35	1.4.6 Implement habitat restoration, maintenance, and enhancement at Reserves and other occupied sites using management plans developed with partners						South Sound Partners			
36	1.4.6.1 Control pest plants (e.g., trees, shrubs, pasture grasses) and increase habitat quality at occupied sites.		\$ 7,200,000	\$ 7,200,000	\$ 4,800,000	\$ 16,800,000		\$ 36,000,000	40	
37	1.4.6.2 Expand occupied habitat through management (e.g., woody cover removal, increase forb cover).		\$ 3,840,000	\$ 3,840,000	\$ 2,560,000	\$ 8,960,000		\$ 19,200,000	40	
38	1.4.6.3 Maintain infrastructure at conservation areas and control access and uses, if necessary		\$ 1,440,000	\$ 1,440,000	\$ 960,000	\$ 3,360,000		\$ 7,200,000	40	
39	1.4.6.4 Implement other management strategies identified in management planning process								40	
40	1.4.6.5 Monitor effectiveness of habitat management strategies and report; coordinate with actions under Recovery Action 2.		\$ 3,000,000	\$ 3,000,000	\$ 2,000,000	\$ 7,000,000		\$ 15,000,000	40	
41	1.4.6.6 Revise management as necessary based on results of monitoring		\$ 480,000	\$ 480,000	\$ 320,000	\$ 1,120,000		\$ 2,400,000	40	
42	Activity 1.5 For RPPG and YPG, develop and implement conservation programs to avoid, minimize, or offset effects of MPG habitat impacts resulting from military training.									
43	1.5.1 Develop debit/credit strategy with JBLM					\$ 312,400	USFWS, DoD	\$ 312,400	2	
44	1.5.2 Implement debit/credit strategy with JBLM; develop subtasks						USFWS, DoD			
45	1.5.3 Implement a jointly developed Compensatory Mitigation Program (CMP) or programmatic framework to: (1) perform or support conservation activities that contribute to the conservation and recovery of RPPG and YPG off of the JBLM military installation, including identification, acquisition, and enhancement of habitat and/or reintroduction of RPPG/YPG populations; and, (2) utilize the earned and accrued conservation credits to offset the effects of current and/or future military training (and training relief).		TBD			\$ 600,000	DoD	\$ 600,000	30	
46	1.5.4 Implement activities described in the JBLM INRMP and ESMCs for MPGs						DoD			
47	1.5.5 Implement the activities, reasonable and prudent measures, and terms and conditions included in the biological opinion(s) addressing training and related activities at JBLM						DoD			
48	1.5.6 Implement the conservation actions described under the current MOU (USFWS and DoD 2015, or updated versions of this document, as appropriate) regarding enhancement of the ACUB and south Puget Sound Sentinel Landscape programs in Washington State						USFWS, DoD			
49	Activity 1.6 Monitor implementation of habitat protection activities for MPG conservation (e.g., set-asides, mitigation banks, EQIP)						WDFW			
50	1.6.1 Develop conservation performance criteria and compliance monitoring measures for habitat protection established through HCPs and other similar programs (e.g., acres of suitable habitat purchased or protected, number of individuals present (if surveys are conducted))		\$ 146,541	\$ 146,541	\$ 146,541	\$ 146,541	USFWS, WDFW, Reserve managers, South Sound Partners	\$ 586,164	1	
51	1.6.2 Monitor performance and compliance of habitat protection activities.						USFWS, HCP partners, Reserve managers		30	
52	subtotal - recovery action 1		\$ 29,920,689	\$ 33,953,970	\$ 28,117,687	\$ 86,074,434				
53	Recovery Action 2. Identify MPG Limiting Factors and Sources of Mortality or Harm, and Implement Best Management Practices to Minimize Impacts	1b								
54	Activity 2.1 Evaluate the effects of actions that affect vegetation on MPGs and their habitat.									
55	2.1.1 Identify the level and type of disturbance (e.g., fire) that is beneficial to MPGs and/or their habitat (e.g., source, frequency, intensity, duration, and spatial extent). May vary from site to site.		\$ 112,500	\$ 112,500	\$ 112,500	\$ 112,500	WDFW, DoD, CNLM, Ecosudies	\$ 450,000	6	
56	2.1.2 Identify type and intensity of land uses (e.g., recreation, military training, grazing) that are compatible with MPG occupancy.		\$ 112,500	\$ 112,500	\$ 112,500	\$ 112,500	USFWS, DoD, WDFW, CNLM, Ecosudies	\$ 450,000	6	
57	2.1.3 Evaluate feasibility and value of tree removal for creating MPG habitat, including forest stand attributes and forestry techniques associated with successful prairie reclamation; develop BMPs for this action.		\$ 112,500	\$ 112,500	\$ 112,500	\$ 112,500	USFWS, DoD, CNLM, Ecosudies, WDFW	\$ 450,000	6	
58	2.1.4 Evaluate effectiveness of prairie restoration in maintaining or enhancing MPG habitat.		\$ 112,500	\$ 112,500	\$ 112,500	\$ 112,500	USFWS, NRCS, WDFW, DoD, CNLM, Ecosudies	\$ 450,000	6	
59	2.1.5 Evaluate the effects that application of herbicides, rodenticides, pesticides, manure, etc., has on MPGs. Consider timing, location, intensity, frequency. Develop BMPs as appropriate.		\$ 112,500	\$ 112,500	\$ 112,500	\$ 112,500	USFWS, NRCS, DoD	\$ 450,000	3	
60	Activity 2.2 Determine if and how translocated populations within the range of TPG are affecting demographic and genetic characteristics of this subspecies; develop solutions if needed			\$ 150,000	\$ 150,000	\$ 150,000	USFWS, WDFW	\$ 450,000	6	
61	Activity 2.3 Identify landscape features that influence MPG dispersal and distribution		\$ 37,500	\$ 37,500	\$ 37,500	\$ 37,500	USFWS, WDFW	\$ 150,000	3	
62	Activity 2.4 Evaluate impacts of other anthropogenic stressors affecting MPGs (e.g., cats, dogs, recreational uses, etc.)		\$ 112,500	\$ 112,500	\$ 112,500	\$ 112,500	USFWS, Ecosudies, DoD	\$ 450,000	12	
63	Activity 2.5 Evaluate natural factors affecting population health and distribution within and between sites						USFWS, WDFW			
64	2.5.1 Determine relationship between MPG occurrence and soil type and structure.		\$ 112,500	\$ 112,500	\$ 112,500	\$ 112,500	USFWS, WDFW	\$ 450,000	4	
65	2.5.1.1 Explore feasibility of utilizing soil analysis to determine and map suitability (NRCS lead Habitat Potential Soil Interpretive Factors).		\$ 120,000	\$ 120,000	\$ 120,000	\$ 120,000	NRCS with South Sound Partners	\$ 480,000	4	
66	Activity 2.6 Conduct demographic and genetic studies									
67	2.6.1 Collect and analyze genetic information to inform delineation of management units appropriate for the range of each subspecies.		\$ 17,500	\$ 17,500	\$ 17,500	\$ 17,500	WDFW		3	
68	2.6.2 Determine population vital rates (e.g., survival, reproduction, etc.) and factors affecting those rates to inform determination of sustainable population size relative to habitat patch size and quality.						WDFW		8	
69	2.6.3 Determine if populations on opposite sites of I-5 are robust enough to allow genetic exchanges to occur (i.e., in YPG-S - between individuals West of I-5 and East of I-5, and in OPG - between individuals West of I-5 and East of I-5). Whether genetic differentiation is needed is yet to be determined and is dependent on selective pressures.									
70	Activity 2.7 Revise PVA every 10 years, or when new genetic or demographic information becomes available		\$ 52,500	\$ 52,500	\$ 52,500	\$ 52,500	USFWS, WDFW	\$ 210,000	7	
71	Activity 2.8 Implement measures to avoid, minimize, or mitigate impacts to individual RPPGs or YPGs as a result of military training.						DoD		40	

