

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	STRESSOR	Cooperator	Scope	Immediacy	Intensity	Exposure	Response	Overall Threat Level	CONSERVATION MEASURES	ACTIONS NEEDED	MEASURES OF SUCCESS	ANNUAL REPORTING METRIC	ONGOING AND PLANNED ACTIONS
2	A. Present or threatened destruction, modification, or curtailment of the species habitat or range - Expected stressors that may reduce the absolute quantity of habitat, arrangement of habitat, the connectivity of habitat units, and the quality of habitat, etc.												
3	A.1 Fire Suppression												
4		KNF BLM	VS-L	F	M	Si	BNI	L	Resource Advisors (RA) trained in <i>P. paradinei</i> identification will work with Fire Operations during the fire and provide GIS files of plant locations to the appropriate staff	Provide guidance in the annual resource advisor guide.	RA able to report back to District personnel regarding <i>P. paradinei</i> protection	Report to PEPAWG	
5		KNF	VS-L	F	M	Si	BNI	L	Prior to making a decision to move forward with a fire, fuel and climatic conditions should indicate that there is a high probability of low to moderate fire severity.	Communication between Resource Duty officers, resource staff, and line officer.	Post-fire effects are low to moderate fire severity within the Conservation Area.	Report to PEPAWG	
6		KNF	VS-L	F	M	Si	C	L	Containment lines will be discouraged in <i>P. paradinei</i> conservation area, unless absolutely necessary to protect human life and safety or valuable property. Existing roads will be utilized for containment lines, whenever possible. Containment lines will not be constructed through existing <i>P. paradinei</i> monitoring plots	Communication between the FMO and/or IC, resource staff, and line officer.	No fire lines constructed in conservation area	Report to PEPAWG	Note if fire lines were established in conservation area, document the reasons why and the extent of disturbance and effect to <i>P. paradinei</i> .
7		KNF	Sm-L	F	L	Sm	BNI	L	If a containment line is necessary, an individual with a fire red card and trained to identify and survey <i>P. paradinei</i> will walk in front of any bulldozer or hand line in order to ensure that plants are avoided.	Provide guidance in the annual resource advisor guide.	RA able to report back to District personnel regarding <i>P. paradinei</i> protection	Report to PEPAWG	

	A	B	C	D	E	F	G	H	I	J	K	L	M
8		KNF	M-S	F	M	M	BNI	L	To mitigate soil erosion on steep slopes post-fire, KNF will use weed-free wattles to protect plants and habitat where there is a significant potential for erosion.	Work with BAER Team to determine where wattles may be needed.	Post-fire monitoring indicates reduced erosion in <i>P. paradinei</i> locations and habitat.	BAER Report	
9		KNF BLM	M-S	F	M	M	BNI	L	Post-fire seeding should be conducted only with native species from the same vegetation type and only at times that will actually be effective for establishment of those species	Work with BAER Team to determine need and seed source for seeding.	Post-fire monitoring indicates soils are stabilized and native species persist. If a non-native seed mix was used for initial stabilization, there is no persistence of those species.	BAER Report.	Ongoing monitoring fate of non-natives beyond BAER activities.
10	A.2 Invasive Species												
11		KNF	Si-L	F	L	Sm	BNI		Avoid direct application of herbicide to <i>P. paradinei</i> during any treatments in conservation area.	Conduct a survey of plants during April. Identify and mark <i>P. paradinei</i> for avoidance prior to treatment.	No detections of blue dye on <i>P. paradinei</i> plants due to herbicide application.	Annual monitoring report.	
12		KNF	Si-L	I	L	Sm	B		Conduct invasive species surveys annually within the conservation area during <i>P. paradinei</i> monitoring as well as road surveys to identify new invasion of non-native species, expansions of existing populations, and priorities for removal.	Mechanical or chemical removal of non-natives in priority areas for treatment.	Monitoring indicates establishment and expansion of invasive species has been limited within the conservation area.	Document in Forest Service TESP-IS database and report to PEPAWG	
13	A.3 Lack of Pollination Services												
14		KNF	Sm	F	H	Si	BNI	L	Determine by fruitset if pollination of <i>P. paradinei</i> is impaired	Monitor plants to compare flowering to fruiting. Record and identify floral visitors.	Fruitset is detected; data detects success of pollination.	Report to PEPAWG	It would be ideal to have 3 years of observation.
15	B. Over utilization for commercial, recreational, scientific, or educational purposes - Expected stressors that result in direct and incidental take for commercial, recreational, scientific, and educational purposes.												
16	B.1 Illegal Collection												

	A	B	C	D	E	F	G	H	I	J	K	L	M
17		KNF	I	F	L	Sm	C	M	Education of law enforcement (LE) and Forest Protection Officers (FPO) about <i>P. paradinei</i> and locations for protection	Work with LE and FPOs.	LEs and FPOs are tracking suspicious behavior in the conservation area.	Number of LE contacts made within the conservation area	District Biologist and LE/FPOs communicate regarding <i>P. paradinei</i> .
18	B.2 Collection Under Permit												
19		KNF	I	F	L	Sm	C	L	Permits for casual collection should not be issued.	Do not issue permits for casual collection.	Permittee reports and vouchers indicate that permits issued were for legitimate purposes.	List of permittees provided to PEPAWG.	Track violations vs. compliance.
20		KNF BLM	I	I	L	Sm	C	L	NKRD and BLM will determine whether the request for plant collection of Sensitive Species is appropriate. Collection permits for the species should be issued only for legitimate purposes such as those that will result in necessary research and/or lead to recovery of the species.	Have PEPAWG review proposals. NKRD will share permit requests with PEPAWG to validate request. Include protection measures for PEPA in permit amendment.	Permittee reports and vouchers indicate that permits issued were for legitimate purposes.	Reports from permit holder shared with PEPAWG.	Encourage compliance with reporting requirements in issued permits.
21	C. Disease and predation - Diseases and predators that are suspected of decreasing population viability.												
22	C.1. Herbivory												
23		KNF	Sm	H/F	L	Sm	BNI/C	L	Record observations of herbivory to determine the extent of effects on individual plants.	Collect data on herbivory during <i>P. paradinei</i> monitoring.	Include data on herbivory in annual report.	Number of plants/estimated percentage of population damaged by herbivory.	
24	E. Other natural or manmade factors affecting the species' continued existence - Stressors that cannot be listed under one of the above categories.												
25	E.1. Climate Change												
26		KNF	M_L	F	L/M	M	B/BNI	L	Manage vegetation encroachment within the conservation area.	Identify need for vegetation management projects within the conservation area. Design project in conjunction with PEPAWG.	Acres treated to reduce encroachment.	Report to PEPAWG.	

	A	B	C	D	E	F	G	H	I	J	K	L	M
27		KNF FWS	M	F	M	M	B/BNI	L	Review the condition of the conservation area periodically and make any necessary adjustments to ensure that it will continue to provide climate refugia, corridors or networks of reserves particularly along appropriate gradients, and suitable habitat as the ecosystem is altered by climate change.	Annual review of conservation area boundary based on monitoring.	Conservation area boundary reflects species distribution.	Discussion in PEPAWG.	Forest Plan Amendment would be needed to adjust the conservation area boundary. Polygons in TESP-IS would also need to be adjusted.
28		KNF	M	F	M	M	B/BNI	L	Continue to reduce non-climate stresses on the species to the greatest extent possible in order to reduce the synergistic multiplier effects of climate and non-climate stresses. Implementation of action items addressing non-climate stresses are critical to ameliorating climate stresses that may not otherwise be addressed.	Identify any additional actions needed to reduce non-climate stresses to <i>P. paradinei</i> and its habitat.	Removal of stressors and/or progress towards removal of effects to <i>P. paradinei</i> .	Planned agenda and discussion item at PEPAWG meeting.	
29		KNF	Si	F	L	M	B/BNI	L	Integrate consideration of climate change as a factor in the design and implementation of monitoring for the species. Track the monitoring and research conducted for species in similar systems regarding climate change in order to obtain relevant information that can be used for adaptive management of this species.	Gather together relevant information to incorporate into ongoing activities.	Climate change factors incorporated into monitoring.	Examples of documents incorporating climate change factors (action designs, monitoring, etc.)	Possible changes to timing of monitoring and pollinator information.

	A	B	C	D	E	F	G	H	I	J	K	L	M
30		KNF	M	I	M	M	B	L	Establish and maintain a seed bank to provide a buffer against extinction if events cause the loss of natural populations.	Individually conserve seeds from each natural population. Collect seeds for garden propagation or storage only when fruit production is sufficient to withstand collecting. Maintain seed in an appropriate research facility designed for long-term storage. Identify partners to assist with seed collection.	Genetically representative seed sample is in secure storage and available for future research and restoration needs.	Number of seeds collected and stored.	Re-sample in aberrant years. Monitor seed viability in storage.
31	MONITORING AND EVALUATION OF CONSERVATION STATUS												
32		KNF BLM							Continue monitoring of trend plots with current protocol (i.e., using the GPS and total station) or modify protocol as data informs monitoring.	Follow protocol and conduct surveys at appropriate time.	Number of plots monitored.	Report to WG	Protocol needs to be updated and shared annually with WG.
33		KNF BLM							Determine extent and abundance of <i>P. paradinei</i> populations.	Survey the extent of plants within the conservation area. Identify suitable habitat outside of conservation area.	Conservation area surveyed.	Report to PEPAWG on amount of conservation area surveyed.	
34		KNF BLM FWS							Determine future monitoring objectives based upon extent of population and other factors as determined by the PEPAWG.	Review annual monitoring report to determine future needs. Adjust monitoring protocol as needed.	Areas/plants monitored.	Discussion in PEPAWG	
35													
36	Notes:												
37	1. Stressor - a process or event having a negative impact on the SDT. Stressors are grouped into the five listing/delisting criteria.												
38	2. Scope - the geographic and temporal extent of the stressor. The following are used to describe geographic extent: "I" (Insignificant - stressor's geographic extent negligible); "Sm" (Small - <10% of population's potential range); "M" (Moderate - 11-30% of population's potential range); "Si" (Significant - 31-60% of population's potential range); or "VS" (Very Significant - > 60% of population's potential range). The following are used to describe temporal extent: "L" (Long-term - stressor expected to be persistent without intervention); or "S" (Short-term - stressor expected to dissipate on its own with <5-10 years).												
39	3. Immediacy - the action time frame of the stressor. The following are used to describe immediacy: "F" (Future - effects anticipated in future); "I" (Imminent - effects occurring now); or "H" (Historic - effects already realized, but restorative action necessary).												

	A	B	C	D	E	F	G	H	I	J	K	L	M
40	4. Intensity - the strength of the stressor itself to harm the species. The following are used to describe intensity - "L" (Low - minor reductions in range or vital rates [survival and reproductive capacity]), "M" (Moderate - reductions in range or vital rates), or "H" (High - severe reductions in vital rates).												
41	5. Exposure - the extent to which a target resource or individual SDT and stressor actual overlap in space and time; the level of the total population exposed to stressor. The following are used to describe exposure: "I" (Insignificant - level of exposure negligible); "Sm" (Small - <10% of population exposed); "M" (Moderate - 11-30% of population exposed); "Si" (Significant - 31-60% of population exposed); and "VS" (Very Significant - >60% of population exposed).												
42	6. Response - the change in the species' behavior, reproductive capacity or survival due to a specific stress; level of physiological/behavioral response to exposer to stress. The following are used to describe response: "B" (Behavioral - startle, displace, etc.); "BNI" (Basic Need Inhibited - capacity to meet basic needs of feed/breed/shelter altered, possibly reducing growth or vital rates); "C" (Confirmed mortality or identifiable reduction in individual growth or vital rates); or "S" (Significant mortality or reduction in individual growth or vital rates).												
43	7. Overall Threat Level - the integration of the scope, immediacy, and intensity of the stressor with the exposure and response of the species measured at the population or species level. The following are used to describe the overall threat level; "L" (Low - no action needed at this time); "M" (Moderate - action is needed); "H" (High - immediate action is needed); or "S" (Severe - immediate action is essential for survival of population).												