



Supplementary Material

Prioritizing Conservation: Vulnerability Assessment of Pakistan's Threatened Species Using SAVS

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Supplementary Table SI. SAVS proforma.

SAVS Climate Change Tool

Species:

Location:

All questions below require a response.

Habitat	Vulnerability	Uncertainty
H1. Area and distribution breeding: Is the area or location of the associated vegetation type used for breeding activities by this species expected to change?	Area used for breeding habitat expected to... ☐ decline or shift from current location ☐ stay the same and in approximately the same location ☐ increase and include the current location	Information is... ☐ Adequate ☐ Not adequate or conflicting
H2. Area and distribution non-breeding: Is the area or location of the associated vegetation type used for non-breeding activities by this species expected to change?	Area used for non-breeding habitat expected to... ☐ decline or shift from current location ☐ stay the same and in approximately the same location ☐ increase and include the current location	Information is... ☐ Adequate ☐ Not adequate or conflicting
H3. Habitat components - breeding: Are specific habitat components required for breeding expected to change within the associated vegetation type?	Required breeding habitat components... ☐ expected to decrease ☐ unlikely to change OR habitat components required for breeding unknown ☐ expected to increase	Information is... ☐ Adequate ☐ Not adequate or conflicting
H4. Habitat components non-breeding: Are specific habitat components required for breeding during non-breeding periods expected to change within the associated vegetation type?	Required non-breeding habitat components... ☐ expected to decrease ☐ unlikely to change OR habitat components required for breeding unknown ☐ expected to increase	Information is... ☐ Adequate ☐ Not adequate or conflicting
H5. Habitat quality: Within habitats occupied, are features of the habitat associated with better reproductive success or survival expected to change?	Projected changes... ☐ likely to negatively affect habitat features associated with improved reproductive success or survival ☐ unlikely to affect habitat features associated with improved reproductive success or survival ☐ likely to positively affect habitat features associated with improved reproductive success or survival	Information is... ☐ Adequate ☐ Not adequate or conflicting
H6. Ability to colonize new areas: What is the potential for this species to disperse?	☐ Low ability to disperse ☐ Mobile, but dispersal is sex-biased (only one sex disperses) ☐ Very mobile, both sexes disperse	Information is... ☐ Adequate ☐ Not adequate or conflicting
H7. Migratory or transitional habitats: Does this species require additional habitats during migration that are separated from breeding and non-breeding habitats?	☐ Additional habitats required that are separated from breeding and non-breeding habitats (e.g. most migratory species) ☐ No additional habitats required that are separated from breeding and non-breeding habitats (e.g. most resident species and short-distance migrants)	Information is... ☐ Adequate ☐ Not adequate or conflicting

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Physiology	Vulnerability	Uncertainty
P51. Physiological thresholds: Are limiting physiological conditions expected to change?	Projected changes in temperature or moisture ... ☐ are likely to exceed upper physiological thresholds (e.g. activities occur in very hot climates, amphibians in drier climates, species with narrow thermal range) ☐ will primarily remain within physiological thresholds OR species is inactive during limiting conditions (e.g. species with moderate thermal range, aestivators that avoid hot/dry conditions) ☐ will decrease current incidents where lower thresholds are exceeded (e.g. species active in very cold climates, amphibians in wetter climates, species with very broad thermal range)	Information is... ☐ Adequate ☐ Not adequate or conflicting
P52. Sex ratio: Is sex ratio determined by temperature?	☐ Yes ☐ No	Information is... ☐ Adequate ☐ Not adequate or conflicting
P53. Exposure to weather related disturbance: Are disturbance events (e.g. severe storms, fires, floods, etc.) that affect survival or reproduction expected to change?	☐ Projected changes in disturbance events will likely decrease survival or reproduction ☐ Survival and reproduction are not strongly affected by disturbance events OR disturbance events are not expected to change ☐ Projected changes in disturbance events will likely increase survival or reproduction	Information is... ☐ Adequate ☐ Not adequate or conflicting
P54. Limitations to daily activity periods: Are projected temperature or precipitation regimes that influence activity period of species expected to change?	Duration of daily active periods ... ☐ likely to be reduced (e.g. heliotherms in hot climates, terrestrial amphibians in drier climates) ☐ unchanged or not limited by climate (species in habitats buffered from extremes, nocturnal species, primarily aquatic amphibians) ☐ likely to increase (e.g. heliotherms in cool climates, terrestrial amphibians in wetter climates)	Information is... ☐ Adequate ☐ Not adequate or conflicting
P55. Survival during resource fluctuations: Does this species have alternative life history pathways to cope with variable resources or climate conditions?	Species has... ☐ no flexible strategies to cope with variable resources across multiple years ☐ flexible strategies to cope with variable resources across multiple years (e.g. alternative life forms, disruptive, explosive breeding, cooperative breeding)	Information is... ☐ Adequate ☐ Not adequate or conflicting
P56. Energy requirements: What is the species' metabolic rate?	☐ Very high metabolic rates (e.g. shrews, hummingbirds) ☐ Moderate (e.g. most endotherms) ☐ Low (i.e. ectotherms)	Information is... ☐ Adequate ☐ Not adequate or conflicting

Phenology	Vulnerability	Uncertainty
P61. Mismatch potential - cues: Does this species use temperature or moisture cues to initiate activities related to fecundity or survival (e.g. hibernation, migration, breeding)?	☐ Species primarily uses temperature or moisture cues to initiate activities (e.g. some hibernators, aestivators, rainfall breeders) ☐ Species does not primarily use temperature or moisture cues OR no cues to predict or initiate activities (e.g. photoperiod or circadian rhythms, resource levels)	Information is... ☐ Adequate ☐ Not adequate or conflicting
P62. Mismatch potential - event timing: Are activities related to species' fecundity or survival tied to discrete resource peaks (e.g. food, breeding sites) that are expected to change?	☐ Species' fitness is tied to discrete resource peaks that are expected to change ☐ Species' fitness is tied to discrete resource peaks that are NOT expected to change ☐ No temporal variation in resources or breeds year round	Information is... ☐ Adequate ☐ Not adequate or conflicting
P63. Mismatch potential - proximity: What is the separation in time or space between cues that initiate activities related to survival or fecundity and discrete events that provide critical resources?	☐ Critical resource occurs far in advance or in distant locations from cues or initiation of activity ☐ Critical resource does NOT occur far in advance or in distant locations from cues or initiation of activity ☐ Species initiates activities directly from critical resource availability (e.g. opportunistic breeders)	Information is... ☐ Adequate ☐ Not adequate or conflicting
P64. Resilience to timing mismatch: Does this species have more than one opportunity to time reproduction to important events?	Species reproduces... ☐ once per year or less ☐ more than once per year	Information is... ☐ Adequate ☐ Not adequate or conflicting

Biotic Interactions	Vulnerability	Uncertainty
B1. Food resources: Are important food resources for this species expected to change?	☐ Primary food source(s) are expected to be negatively impacted by projected changes ☐ Species consumes variety of prey/forage species OR primary food resource(s) not expected to be impacted by projected changes ☐ Primary food resource(s) expected to be positively impacted by projected changes	Information is... ☐ Adequate ☐ Not adequate or conflicting
B2. Predators: Are important predator populations for this species expected to change?	☐ Primary predator(s) are expected to be positively impacted by projected changes ☐ Preyed upon by a suite of predators OR the primary predator is not expected to be impacted by projected changes ☐ Species has no predators ☐ Primary predator(s) expected to be negatively impacted by projected changes	Information is... ☐ Adequate ☐ Not adequate or conflicting
B3. Symbiotes: Are populations of symbiotic species expected to change?	☐ Symbiotic species populations expected to be negatively impacted by projected changes ☐ Symbiotic species populations not expected to be impacted by projected changes ☐ No symbiotes ☐ Symbiotic species populations expected to be positively impacted by projected changes	Information is... ☐ Adequate ☐ Not adequate or conflicting
B4. Diseases: Is prevalence of diseases known to cause widespread mortality or reproductive failure in this species expected to change?	☐ Disease prevalence is expected increase with projected changes ☐ No known effects of expected changes on disease prevalence ☐ Disease prevalence is expected to decrease with projected changes	Information is... ☐ Adequate ☐ Not adequate or conflicting
B5. Competitors: Are populations of important competing species expected to change?	☐ Major competitor species are expected to be positively impacted by projected changes ☐ Species has a variety of competitive relationships OR no expected impacts of projected changes in major competitor species ☐ Competing species are expected to be negatively impacted by projected changes	Information is... ☐ Adequate ☐ Not adequate or conflicting

Supplementary Table SII. Overall vulnerability assessments of threatened species in Pakistan.

Vulnerability sequence	Common name/ (Scientific name)	Habitat		Physiology		Phenology		Biotic interactions		Overall	
		Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty
1	Gharial (<i>Gavialis gangeticus</i>)	4.29	0	4.17	0	3.75	0	-1	.	11.67	0
2	Indian skimmer (<i>Rynchops albicollis</i>)	5	0	1.67	0	5	25	0	0	11.53	5
3	Egyptian vulture (<i>Neophron percnopterus</i>)	5	0	1.67	0	5	25	-1	0	11.53	5
4	Woolly-necked stork (<i>Ciconia episcopus</i>)	5	0	1.67	0	5	0	0	0	10.77	5
5	Tawny eagle (<i>Aquila rapax</i>)	4.29	0	1.67	0	5	0	0	0	10.77	0
6	Kashmir flycatcher (<i>Ficedula subrubra</i>)	5	0	1.67	0	3.75	25	0	0	10.77	5
7	Peacock soft-shell (<i>Aspideretes hurum</i>)	4.29	14	2.33	0	5	25	-1	0	10.62	9
8	Western tragopan (<i>Tragopan melanocephalus</i>)	5	0	1.67	0	5	0	-1	0	10.62	0
9	Marbled duck (<i>Marmaronetta angustirostris</i>)	5	0	1.67	0	5	25	-1	0	10.62	5
10	Macqueen's bustard (<i>Chlamydotis macqueenii</i>)	5	14	1.67	17	5	25	-1	0	10.62	14
11	Sarus crane (<i>Grus antigone</i>)	5	14	1.67	0	5	25	-1	0	10.62	9
12	Sociable lapwing (<i>Vanellus gregarius</i>)	5	0	1.67	0	5	25	-1	0	10.62	5
13	Black-bellied tern (<i>Sterna acuticauda</i>)	4.29	0	1.67	0	5	25	0	0	10.62	5
14	Baer's pochard (<i>Aythya baeri</i>)	5	0	1.67	0	5	0	-1	0	10.62	0
15	Long-tailed duck (<i>Clangula hyemalis</i>)	5	0	1.67	0	5	0	-1	0	10.62	0
16	Great bustard (<i>Otis tarda</i>)	5	0	1.67	0	5	0	-1	0	10.62	0
17	Yellow-breasted bunting (<i>Emberiza aureola</i>)	5	0	1.67	0	5	0	-1	0	10.62	0
18	Indian vulture (<i>Gyps indicus</i>)	4.29	0	1.67	0	5	25	-1	0	9.86	5
19	Stoliczka's bushchat (<i>Saxicola macrorhyncha</i>)	4.29	0	1.67	0	3.75	25	0	0	9.86	5
20	Jerdon's babbler (<i>Chrysomma altirostre</i>)	4.29	0	1.67	0	3.75	25	0	0	9.86	5
21	The mugger (<i>Crocodylus palustris</i>)	4.29	0	4.17	17	0.83	0	-1	0	9.71	5
22	Common river turtle (<i>Hardella thurjii</i>)	4.29	0	1.5	0	3.75	25	0	0	9.71	5
23	Indian soft-shell (<i>Aspideretes gangeticus</i>)	4.29	0	2.33	17	3.75	25	-1	0	9.71	9
24	Cheer pheasant (<i>Catreus wallichii</i>)	4.29	0	1.67	0	5	0	-1	0	9.71	0
25	White-headed duck (<i>Oxyura leucocephala</i>)	4.29	0	1.67	0	5	0	-1	0	9.71	0
26	Lesser florican (<i>Sypheotides indica</i>)	5	0	1.67	0	5	25	-2	0	9.71	5
27	Pallas's fish eagle (<i>Haliaeetus leucorhynchus</i>)	4.29	0	1.67	0	5	25	-1	0	9.71	5
28	White-rumped vulture (<i>Gyps bengalensis</i>)	5	0	1.67	0	5	25	-2	0	9.71	5
29	Imperial eagle (<i>Aquila heliaca</i>)	5	0	-0.17	0	5	0	0	0	9.71	0
30	Sooty falcon (<i>Falco concolor</i>)	5	0	-0.17	0	5	0	0	0	9.71	0
31	Saker falcon (<i>Falco cherrug</i>)	5	0	-0.17	0	5	0	0	0	9.71	0
32	Lesser white-fronted goose (<i>Anser erythropus</i>)	5	0	1.67	0	3.75	0	-1	0	9.71	0
33	Siberian crane (<i>Leucogeranus leucogeranus</i>)	5	0	1.67	0	5	0	-2	0	9.71	0
34	Star tortoise (<i>Geochelone elegans</i>)	4.29	0	0.5	0	5	0	0	0	9.57	0
35	Yellow-spotted mud turtle (<i>Geoclemys hamiltonii</i>)	4.29	0	2.33	0	2.08	0	0	0	9.57	0

Table continued on next page.....

Vulnerability sequence	Common name/ (Scientific name)	Habitat		Physiology		Phenology		Biotic interactions		Overall	
		Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty
36	Fishing cat (<i>Prionailurus viverrinus</i>)	4.29	14	1.67	17	2.5	0	0	20	9.09	14
37	Indus dolphin (<i>Platanista minor</i>)	4.29	14	1.67	17	2.5	25	0	0	8.95	14
38	Himalayan musk deer (<i>Moschus chrysogaster</i>)	4.29	14	2.5	17	2.5	0	-1	0	8.8	9
39	Woolly flying squirrel (<i>Eupetaurus cinereus</i>)	4.29	0	2.5	17	2.5	25	-1	0	8.8	9
40	Shapu (<i>Ovis vignei vignei</i>)	4.29	14	2.5	33	2.5	0	-1	0	8.8	14
41	Common pochard (<i>Aythya ferina</i>)	4.29	0	1.67	0	3.75	50	-1	0	8.8	9
42	Great indian bustard (<i>Ardeotis nigriceps</i>)	4.29	14	1.67	17	3.75	25	-1	0	8.8	14
43	Great knot (<i>Calidris tenuirostris</i>)	3.57	0	1.67	0	5	25	-1	0	8.8	5
44	Greater spotted eagle (<i>Aquila clanga</i>)	3.45	0	1.67	0	5	25	-1	0	8.8	5
45	Southern grey shrike (<i>Lanius meridionalis</i>)	5	0	1.67	0	2.08	0	-1	0	8.8	0
46	Snowy owl (<i>Nyctea scandiaca</i>)	5	0	1.67	0	2.5	0	-1	0	8.8	0
47	Horned grebe (<i>Podiceps auritus</i>)	5	0	1.67	0	3.75	0	-2	0	8.8	0
48	Bristled grassbird (<i>Chaetornis striatus</i>)	4.29	0	1.67	0	3.75	0	-1	0	8.8	0
49	Houbara bustard (<i>Chlamydotis undulata</i>)	4.29	0	1.67	0	3.75	0	-1	0	8.8	0
50	Swamp deer (<i>Cervus duvaucelii</i>)	4.29	14	1.67	17	2.5	50	-1	0	7.89	14
51	Punjab urial (<i>Ovis vignei punjabensis</i>)	4.29	14	1.67	17	2.5	0	-1	0	7.89	9
52	Red-headed vulture (<i>Sarcogyps calvus</i>)	4.29	0	1.67	0	3.75	0	-2	0	7.89	0
53	Greater adjutant (<i>Leptoptilos dubius</i>)	4.29	0	1.67	0	3.75	0	-2	0	7.89	0
54	Snow leopard (<i>Panthera uncia</i>)	4.29	0	1.5	0	2.5	0	-1	0	7.75	0
55	Narrow-head soft-shell (<i>Chitra indica</i>)	4.29	0	2.33	17	2.08	25	-2	0	7.61	9
56	Marbled polecat (<i>Vormela peregusna</i>)	2.74	0	1.67	17	2.5	25	0	0	6.99	9
57	Indian spotted eagle (<i>Aquila hastata</i>)	4.29	0	1.67	0	2.5	25	-2	0	6.99	5
58	Indian otter (<i>Lutrogale perspicillata</i>)	2.02	14	1.67	17	3.75	0	-1	0	6.08	9
59	Afghan urial (<i>Ovis vignei cycloceros</i>)	2.86	14	1.67	17	2.5	0	-1	0	6.08	9
60	Common leopard (<i>Panthera pardus</i>)	2.74	14	1.67	0	2.5	25	-1	0	5.93	9
61	Hog deer (<i>Axis porcinus</i>)	2.74	14	1.67	17	2.5	0	-1	0	5.93	9
62	Yellow-eyed pigeon (<i>Columba eversmanni</i>)	2.02	14	1.67	17	3.75	50	-1	0	5.93	18
63	Steppe eagle (<i>Aquila nipalensis</i>)	2.02	0	-0.17	0	5	0	0	0	5.93	0
64	Indian wild dog (<i>Cuon alpinus</i>)	2.14	0	1.67	0	1.25	25	0	0	5.45	5
65	Asiatic black bear (<i>Ursus thibetanus</i>)	2.02	14	1.67	17	2.5	0	-1	0	5.17	5
66	Wild goat (<i>Capra aegagrus</i>)	2.02	14	1.67	17	2.5	0	-1	0	5.02	9
67	European turtle dove (<i>Streptopelia turtur</i>)	2.02	14	1.67	17	0.83	50	-1	0	3.97	18
68	Indian pangolin (<i>Manis crassicaudata</i>)	1.31	0	0.83	0	1.25	25	0	0	3.49	5
69	Goitered gazelle (<i>Gazella subgutturosa</i>)	2.74	29	-0.17	0	2.5	0	-2	0	3.06	9
70	Cheetah (<i>Acinonyx jubatus</i>)	2.14	14	0.83	17	-0.42	0	-1	0	2.3	9

Supplementary Table SIII. Vulnerability assessments of threatened birds in Pakistan.

Vulnerability-sequence	Common name/ Scientific name	Habitat		Physiology		Phenology		Biotic interactions		Overall	
		Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty
1	Indian skimmer (<i>Rynchops albicollis</i>)	5	0	1.67	0	5	25	0	0	11.5	5
2	Egyptian vulture (<i>Neophron percnopterus</i>)	5	0	1.67	0	5	25	-1	0	11.5	5
3	Woolly-necked stork (<i>Ciconia episcopus</i>)	5	0	1.67	0	5	0	0	0	10.8	5
4	Tawny eagle (<i>Aquila rapax</i>)	4.29	0	1.67	0	5	0	0	0	10.8	0
5	Kashmir flycatcher (<i>Ficedula subrubra</i>)	5	0	1.67	0	3.75	25	0	0	10.8	5
6	Macqueen's bustard (<i>Chlamydotis macqueenii</i>)	5	14	1.67	17	5	25	-1	0	10.6	14
7	Sarus crane (<i>Grus antigone</i>)	5	14	1.67	0	5	25	-1	0	10.6	9
8	Marbled duck (<i>Marmaronetta angustirostris</i>)	5	0	1.67	0	5	25	-1	0	10.6	5
9	Sociable lapwing (<i>Vanellus gregarius</i>)	5	0	1.67	0	5	25	-1	0	10.6	5
10	Black-bellied tern (<i>Sterna acuticauda</i>)	4.29	0	1.67	0	5	25	0	0	10.6	5
11	Western tragopan (<i>Tragopan melanocephalus</i>)	5	0	1.67	0	5	0	-1	0	10.6	0
12	Baer's pochard (<i>Aythya baeri</i>)	5	0	1.67	0	5	0	-1	0	10.6	0
13	Long-tailed duck (<i>Clangula hyemalis</i>)	5	0	1.67	0	5	0	-1	0	10.6	0
14	Great bustard (<i>Otis tarda</i>)	5	0	1.67	0	5	0	-1	0	10.6	0
15	Yellow-breasted bunting (<i>Emberiza aureola</i>)	5	0	1.67	0	5	0	-1	0	10.6	0
16	Indian vulture (<i>Gyps indicus</i>)	4.29	0	1.67	0	5	25	-1	0	9.86	5
17	Stoliczka's bushchat (<i>Saxicola macrorhyncha</i>)	4.29	0	1.67	0	3.75	25	0	0	9.86	5
18	Jerdon's babbler (<i>Chrysomma altirostre</i>)	4.29	0	1.67	0	3.75	25	0	0	9.86	5
19	Lesser florican (<i>Sypheotides indica</i>)	5	0	1.67	0	5	25	-2	0	9.71	5
20	Pallas's fish eagle (<i>Haliaeetus leucorhynchus</i>)	4.29	0	1.67	0	5	25	-1	0	9.71	5
21	White-rumped vulture (<i>Gyps bengalensis</i>)	5	0	1.67	0	5	25	-2	0	9.71	5
22	Cheer pheasant (<i>Catreus wallichii</i>)	4.29	0	1.67	0	5	0	-1	0	9.71	0
23	White-headed duck (<i>Oxyura leucocephala</i>)	4.29	0	1.67	0	5	0	-1	0	9.71	0
24	Imperial eagle (<i>Aquila heliaca</i>)	5	0	-0.17	0	5	0	0	0	9.71	0
25	Sooty falcon (<i>Falco concolor</i>)	5	0	-0.17	0	5	0	0	0	9.71	0
26	Saker falcon (<i>Falco cherrug</i>)	5	0	-0.17	0	5	0	0	0	9.71	0
27	Lesser white-fronted goose (<i>Anser erythropus</i>)	5	0	1.67	0	3.75	0	-1	0	9.71	0
28	Siberian crane (<i>Leucogeranus leucogeranus</i>)	5	0	1.67	0	5	0	-2	0	9.71	0
29	Great indian bustard (<i>Ardeotis nigriceps</i>)	4.29	14	1.67	17	3.75	25	-1	0	8.8	14
30	Common pochard (<i>Aythya ferina</i>)	4.29	0	1.67	0	3.75	50	-1	0	8.8	9
31	Great knot (<i>Calidris tenuirostris</i>)	3.57	0	1.67	0	5	25	-1	0	8.8	5
32	Greater spotted eagle (<i>Aquila clanga</i>)	3.45	0	1.67	0	5	25	-1	0	8.8	5
33	Southern grey shrike (<i>Lanius meridionalis</i>)	5	0	1.67	0	2.08	0	-1	0	8.8	0
34	Snowy owl (<i>Nyctea scandiaca</i>)	5	0	1.67	0	2.5	0	-1	0	8.8	0
35	Horned grebe (<i>Podiceps auritus</i>)	5	0	1.67	0	3.75	0	-2	0	8.8	0
36	Bristled grassbird (<i>Chaetornis striatus</i>)	4.29	0	1.67	0	3.75	0	-1	0	8.8	0
37	Houbara bustard (<i>Chlamydotis undulata</i>)	4.29	0	1.67	0	3.75	0	-1	0	8.8	0
38	Red-headed vulture (<i>Sarcogyps calvus</i>)	4.29	0	1.67	0	3.75	0	-2	0	7.89	0
39	Greater adjutant (<i>Leptoptilos dubius</i>)	4.29	0	1.67	0	3.75	0	-2	0	7.89	0
40	Indian spotted eagle (<i>Aquila hastata</i>)	4.29	0	1.67	0	2.5	25	-2	0	6.99	5
41	Yellow-eyed pigeon (<i>Columba eversmanni</i>)	2.02	14	1.67	17	3.75	50	-1	0	5.93	18
42	Steppe eagle (<i>Aquila nipalensis</i>)	2.02	0	-0.17	0	5	0	0	0	5.93	0
43	European turtle dove (<i>Streptopelia turtur</i>)	2.02	14	1.67	17	0.83	50	-1	0	3.97	18

Supplementary Table SIV. Vulnerability assessments of threatened mammals in Pakistan.

Vulnerability sequence	Common name/ Scientific name	Habitat		Physiology		Phenology		Biotic interactions		Overall	
		Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty
1	Fishing cat (<i>Prionailurus viverrinus</i>)	4.29	14	1.67	17	2.5	0	0	20	9.09	14
2	Indus dolphin (<i>Platanista minor</i>)	4.29	14	1.67	17	2.5	25	0	0	8.95	14
3	Himalayan musk deer (<i>Moschus chrysogaster</i>)	4.29	14	2.5	17	2.5	0	-1	0	8.8	9
4	Shapu (<i>Ovis vignei vignei</i>)	4.29	14	2.5	33	2.5	0	-1	0	8.8	14
5	Woolly flying squirrel (<i>Eupetaurus cinereus</i>)	4.29	0	2.5	17	2.5	25	-1	0	8.8	9
6	Punjab urial (<i>Ovis vignei punjabensis</i>)	4.29	14	1.67	17	2.5	0	-1	0	7.89	9
7	Swamp deer (<i>Cervus duvaucelii</i>)	4.29	14	1.67	17	2.5	50	-1	0	7.89	14
8	Snow leopard (<i>Panthera uncia</i>)	4.29	0	1.5	0	2.5	0	-1	0	7.75	0
9	Marbled polecat (<i>Vormela peregusna</i>)	2.74	0	1.67	17	2.5	25	0	0	6.99	9
10	Afghan urial (<i>Ovis vignei cycloceros</i>)	2.86	14	1.67	17	2.5	0	-1	0	6.08	9
11	Indian otter (<i>Lutrogale perspicillata</i>)	2.02	14	1.67	17	3.75	0	-1	0	6.08	9
12	Common leopard (<i>Panthera pardus</i>)	2.74	14	1.67	0	2.5	25	-1	0	5.93	9
13	Hog deer (<i>Axis porcinus</i>)	2.74	14	1.67	17	2.5	0	-1	0	5.93	9
14	Indian wild dog (<i>Cuon alpinus</i>)	2.14	0	1.67	0	1.25	25	0	0	5.45	5
15	Asiatic black bear (<i>Ursus thibetanus</i>)	2.02	14	1.67	17	2.5	0	-1	0	5.17	5
16	Wild goat (<i>Capra aegagrus</i>)	2.02	14	1.67	17	2.5	0	-1	0	5.02	9
17	Indian pangolin (<i>Manis crassicaudata</i>)	1.31	0	0.83	0	1.25	25	0	0	3.49	5
18	Goitered gazelle (<i>Gazella subgutturosa</i>)	2.74	29	-0.17	0	2.5	0	-2	0	3.06	9
19	Cheetah (<i>Acinonyx jubatus</i>)	2.14	14	0.83	17	-0.42	0	-1	0	2.3	9

Supplementary Table SV. Vulnerability assessments of threatened reptiles in Pakistan.

Vulnerability sequence	Common name/ Scientific name	Habitat		Physiology		Phenology		Biotic interactions		Overall	
		Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty	Vulnerability	Uncertainty
1	Gharial (<i>Gavialis gangeticus</i>)	4.29	0	4.17	0	3.75	0	-1	.	11.67	0
2	Peacock soft-shell (<i>Aspideretes hurum</i>)	4.29	14	2.33	0	5	25	-1	0	10.62	9
3	Indian soft-shell (<i>Aspideretes gangeticus</i>)	4.29	0	2.33	17	3.75	25	-1	0	9.71	9
4	The mugger (<i>Crocodylus palustris</i>)	4.29	0	4.17	17	0.83	0	-1	0	9.71	5
5	Common river turtle (<i>Hardella thurjii</i>)	4.29	0	1.5	0	3.75	25	0	0	9.71	5
6	Star tortoise (<i>Geochelone elegans</i>)	4.29	0	0.5	0	5	0	0	0	9.57	0
7	Yellow-spotted mud turtle (<i>Geoclemys hamiltonii</i>)	4.29	0	2.33	0	2.08	0	0	0	9.57	0
8	Narrow-head soft-shell (<i>Chitra indica</i>)	4.29	0	2.33	17	2.08	25	-2	0	7.61	9