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To,
Shri Jairam Ramesh
Hon'ble Member of Parliament and Chairman
Standing Committee on Environment and Forests

17th January 2022

Dear Sir,

Sub: Inputs to the Parliamentary Committee on Environment and Forests on the proposed amendments to the Wildlife Protection Act, 1972

On behalf of Conservation Initiatives, a not-for-profit Trust dedicated to science-based conservation of wildlife and their habitats in Northeast India, I share with you our thoughts on the proposed amendments to the Wildlife Protection Act, 1972. Below we list major concerns and suggestions for improvement in the Amendment, accompanied by specific suggestions in the enclosed Annexures. Our suggestions are aligned with current global standards of conservation science, policy, and action.

1. **Treatment of connectivity:** Connectivity and corridors are now well-recognised as an essential need for wildlife conservation, securing ecosystem services and climate change mitigation^{1,2}. This is especially important in the tropics and countries like India, where Protected Areas (PAs) are comparatively small and too insular to maintain viable populations of most endangered wildlife species. Researchers are accumulating information on corridor identification that allows for effective connectivity conservation in India³⁻⁵.

Yet the treatment of corridors and connectivity is superficial in the Wildlife Protection Act and insufficiently strengthened in the draft Amendment. Corridors are not even defined in the Act or Amendment, offering scant legal protection for these critical linkages in conservation landscapes.

We propose specific changes in the Wildlife Protection Act and Amendment in **Annexure 1** that address this issue by clearly defining corridors and providing for the multi-pronged approach required for connectivity conservation.

- 2. Rationalisation of Schedules.** We appreciate the need to rationalise the Schedules under the Act. However, as things currently stand, there is no clear definition of the Schedules, or scope for objective or scientific categorisation of animals under the Schedules. For instance, the IUCN Red List categorises species based on very specific criteria including species distribution, population size, trends in populations, habitat status, and threats.

Due to the lack of such criteria, there are multiple threatened species that are currently listed under Schedule II with lower protection accorded to them than required. We list these species in **Annexure 2** as species that need to be recategorized from Schedule II to Schedule I⁶⁻¹⁰. We also include imperilled species that have not been included in the Schedules and need inclusion in Schedule I in **Annexure 2**.

We posit that the above confusion arises due to the lack of scientific approach in either defining or populating the Schedules. We thus suggest formulating clear objectives for the wildlife Schedules, following globally accepted standards of the IUCN Red List of species⁶. We make specific suggestions pertaining to this in **Annexure 3**⁶⁻¹¹.

- 3. Transport of live captive elephants.** The Asian elephant is India's National Heritage Animal and a species of global conservation concern. In recognition of the threat posed by wild capture of elephants for commercial and other purposes, the Elephant Task Force recommends a phase out of live elephant trade¹². We thus urge you to **delete point 27** of the Amendment, relating to **Section 43**, proposed as **sub-section (4)**, stating the following:

"This section shall not apply to the transfer or transport of any live elephant by a person having a certificate of ownership, where such person has obtained prior permission from the State Government on fulfilment of such conditions as may be prescribed by the Central Government."

We also urge you to **delete** the associated proposed **clause (gviii)** in **point 40** of the Amendment, with reference to **Section 63, sub-section (1)** stating the following:

"(gviii) the conditions for transfer or transport of live elephant under sub-section (4) of section 43;"

As pointed out by other conservationists, this clause is prone to abuse and can severely impact elephant populations by legitimising live trade of elephants, reviving a now-dying illegal trade in wild-caught elephants, and thus negating years of successful conservation efforts on this important and charismatic species.

- 4. Treatment of vermin.** As written, any animal in Schedule II of the Act can be declared as vermin, without justification, for an unrestricted period of time, and with no specification of how vermin are treated, and no requirement for monitoring of the species. This is disastrous and can lead to drastic declines in wildlife populations, with trickle-down impacts on ecosystems. It is worthwhile to note here that even species that we consider as common or on the rise, can, on scientific assessment, be in decline¹³. It is also to be considered that India, at this time, does not have a successful population management programme that includes controlled and monitored animal removal or culling, as there are in some other parts of the world¹⁴. We thus recommend

the changes in the Amendment to protect wild animals against precipitous and indelible declines that can occur while being declared as vermin (**Annexure 4**).

We further note here that removal of animals has not been shown to be a successful human–wildlife conflict mitigation tool, as is evidenced by the removal of both rhesus and bonnet macaques for many years from urban centres, with no reduction of overall conflict intensities, thus calling into question the relevance of **Section 62** in today’s context.

- 5. Explicit inclusion of research.** Conservation science, and research on wildlife and their habitats, are pivotal to the success of conservation programmes. This is evident and clearly recognised by multiple amendments to the Act. Our points above and in enclosed Annexures also point to the benefit of scientific information for conservation. Lastly, we believe that knowledge about our ecosystems and biodiversity, in itself, has value; appreciation of this value is what has led to the widespread and unambiguous support for wildlife conservation in our country.

We thus recommend that the Act explicitly encourages research and the organic incorporation of scientific information in conservation planning, beginning with the Preamble of the Act. We provide specific suggestions for the same in **Annexure 5**.

We make additional suggestions in **Annexure 6**. All our recommendations are supported by references cited in **Annexure 7**.

We provide these inputs on the basis of our experience with wildlife conservation in multiple states across India; our scientific expertise as demonstrated by publications and editorial positions in respected international peer-reviewed journals; and our engagement with on-ground conservation action and policy as demonstrated by our work and positions in national and international policy groups. We briefly list our qualifications in **Annexure 8**.

We sincerely hope that you and members of the Committee will find these recommendations to be useful. We thank you for the opportunity to contribute to formulating an Amendment to the Wildlife Protection Act, 1972, that can effectively and scientifically advance our nation towards a green, sustainable, and ecologically healthy future where wildlife and natural habitats thrive.

Sincerely,



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Annexure 1: Specific suggestions for the inclusion of connectivity conservation in the Wildlife Protection Act (Act) and Amendment

Throughout, for clarity, we indicate existing text in the Amendment or Act as blue text, and suggested insertions as red text.

1. Inclusion in **Section 2** of the Act of a definition of 'corridor' following Hilty et al. (2020)¹ as sub-section (10A):
“‘corridor’ means an area that maintains or restores ecological connectivity over the long term.”
2. Inclusion in **Section 2** of the Act of a definition of ecological connectivity following Hilty et al. (2020)¹ as **sub-section (12C)**:
“‘ecological connectivity’ means the movement of species and the flow of natural processes that sustain wildlife populations, communities, ecosystems, or ecosystem services.”
3. Amendment to **Section 5C, sub-section (2)** of the Act to include the maintenance of connectivity within the purview of the National Board of Wildlife as **clause (ba)**:
“making recommendations for the declaration of corridors and formulating guidelines for ensuring ecological connectivity along corridors, including through the securing of forestland, incentivisation of wildlife-friendly practices, and regulation and restriction of barriers or impediments to connectivity.”
4. Amendment to **Section 8** of the Act to include the maintenance of connectivity within the purview of the State Board of Wildlife, as **clause (ba)**:
“formulation of policy for the maintenance of ecological connectivity via corridors, through the securing of forestland, incentivisation of wildlife-friendly practices, and regulation and restriction of barriers or impediments to connectivity.”
5. Amendment of **Section 18, sub-section (1)** of the Act to include the following words after “for the purpose of protecting, propagating or developing wild life or its environment”, in order to enable the securing of areas that serve as corridors for wildlife connectivity, linkages for ecosystem health or services, or mitigating climate change impacts:
“or the maintenance of ecological connectivity”
6. Amendment of **Section 35, sub-section (1)** of the Act to include the following words after “for the purpose of protecting, propagating or developing wild life or its environment”, in order to enable the securing of areas that serve as corridors for wildlife connectivity, linkages for ecosystem health or services, or mitigating climate change impacts:
“or the maintenance of ecological connectivity”
7. Amendment of **Section 36A, sub-section (1)** of the Act to include the following words after “those areas which link one protected area with another”, for the purpose of

securing areas that serve as corridors for wildlife connectivity, linkages for ecosystem health or services, or mitigating climate change impacts:

“and areas that maintain ecological connectivity”

8. Inclusion in **Section 380, sub-section (1), clause (g)** of the Act to specifically include reference to corridors, by inserting the following words after “areas linking one protected area or tiger reserve with another protected area or tiger reserve”:
“and corridors”

9. Inclusion in **Section 38V** of a sub-section (3A) to specify the requirement for tiger connectivity conservation in Tiger Conservation Plans:
“(3A) The Tiger Conservation Plan will also include plans for conservation of tiger connectivity, including staff development and deployment, and coordination across divisions, departments and states, so as to ensure –
 - (a) Securement of corridors and maintain habitat integrity where such habitat exists or can be restored.
 - (b) Activities that are incompatible with tiger and wildlife connectivity, such as linear infrastructure, mining, or destructive land uses, are either disallowed or allowed with adequate mitigation in tiger corridors.
 - (c) Incentivisation of practices on multiple-use or non-forest lands that facilitate connectivity of tigers and other wildlife.
 - (d) Mitigation of human–tiger conflict.”

Annexure 2: Modifications to the Schedules

Below, we list species that are under threat, and which, as per current scientific assessment by subject experts⁶⁻¹⁰, deem inclusion in Schedule I. We use species assessments of the IUCN Red List as our justification and indicate the Red List Status of each species in parenthesis (NT: Near Threatened, VU: Vulnerable, EN: Endangered or CR: Critically Endangered). We note that this list includes some critically endangered species as well, in need of urgent conservation attention.

Species that need to be recategorized from Schedule II to Schedule I

MAMMALS

1. Sambar *Rusa unicolor* (VU)
2. Striped hyena *Hyaena hyaena* (NT)
3. Nilgiri marten *Martes gwatkinsii* (VU)
4. Mountain weasel *Mustela altaica* (NT)
5. Assamese macaque *Macaca assamensis* (NT)
6. Bonnet macaque *Macaca radiata* (VU)

BIRDS

1. Red-footed falcon *Falco vespertinus* (VU)
2. Alexandrine parakeet *Psittacula eupatria* (NT)
3. Grey-headed parakeet *Psittacula finschii* (NT)
4. Blossom-headed parakeet *Psittacula roseata* (NT)
5. Lord Derby's parakeet *Psittacula derbiana* (NT)
6. Nicobar parakeet *Psittacula caniceps* (NT)
7. Long-tailed parakeet *Psittacula longicauda* (VU)
8. Mangrove pitta *Pitta megarhyncha* (NT)
9. Andaman cuckooshrike *Coracina dobsoni* (NT)
10. Andaman treepie *Dendrocitta bayleii* (VU)
11. White-naped tit *Machlolophus nuchalis* (VU)
12. Grey-headed bulbul *Brachypodius priocephalus* (NT)
13. Yellow-throated bulbul *Pycnonotus xantholaemus* (VU)
14. Nicobar bulbul *Hypsipetes nicobariensis* (NT)
15. Rufous-throated wren babbler *Spelaornis caudatus* (NT)
16. Mishmi wren babbler *Spelaornis badeigularis* (VU)
17. Naga wren babbler *Spelaornis chocolatinus* (VU)
18. Tawny-breasted wren babbler *Spelaornis longicaudatus* (VU)
19. Sikkim wedge-billed babbler *Stachyris humei* (NT)
20. Cachar wedge-billed babbler *Stachyris roberti* (NT)
21. Snowy-throated babbler *Stachyris oglei* (VU)
22. Lesser white-fronted goose *Anser erythropus* (VU)

23. Red-breasted goose *Branta ruficollis* (VU)
24. Falcated duck *Mareca falcata* (NT)
25. White-headed duck *Oxyura leucocephala* (EN)
26. Long-tailed duck *Clangula hyemalis* (VU)
27. Ferruginous duck *Aythya nyroca* (NT)
28. Andaman teal *Anas albogularis* (VU)
29. Marbled teal *Marmonetta angustirostris* (VU)
30. Common Pochard *Aythya ferina* (VU)
31. Baer's pochard *Aythya baeri* (CR)
32. Chestnut-breasted hill partridge *Arborophila mandellii* (VU)
33. White-cheeked hill partridge *Arborophila atrogularis* (NT)
34. Swamp francolin *Ortygornis gularis* (VU)
35. Manipur bush quail *Perdica manipurensis* (EN)
36. Horned grebe *Podiceps auritus* (VU)
37. Yellow-eyed pigeon *Columba evermanni* (VU)
38. Nilgiri Wood pigeon *Columba elphinstonii* (VU)
39. Pale-capped pigeon *Columba punicea* (VU)
40. Andaman wood pigeon *Columba palumboides* (NT)
41. European turtle dove *Streptopelia turtur* (VU)
42. Andaman green pigeon *Treron chloropterus* (NT)
43. Ashy-headed green pigeon *Treron phayrei* (NT)
44. Nicobar imperial pigeon *Dracula nicobarica* (NT)
45. Grey-sided thrush *Turdus feae* (VU)
46. Nilgiri sholakili *Sholicola major* (EN)
47. White-bellied sholakili *Sholicola albiventris* (VU)
48. Nicobar jungle flycatcher *Cyornis nicobaricus* (NT)
49. Rusty-bellied shortwing *Brachypteryx hyperythra* (NT)
50. Firethroat *Calliope pectardens* (NT)
51. Kashmir flycatcher *Ficedula subrubra* (VU)
52. Stoliczka's bushchat *Saxicola macrorhynchus* (VU)
53. Hodgson's bushchat *Saxicola insignis* (VU)
54. Finn's weaver *Ploceus megarhynchus* (EN)
55. Green munia *Amandava formosa* (VU)
56. Nilgiri pipit *Anthus nilghiriensis* (VU)
57. Yellow-breasted bunting *Emberiza aureola* (CR)
58. Macqueen's bustard *Chlamydotismacqueenii* (VU)
59. Little bustard *Tetrax tetrax* (NT)
60. Great thick-knee *Esascus recurvirostris* (NT)
61. Beach thick-knee *Esascus magnirostris* (NT)
62. Eurasian oystercatcher *Haematopus ostralegus* (NT)
63. Northern lapwing *Vanellus vanellus* (NT)

64. River lapwing *Vanellus duvaucelii* (NT)
65. Sociable lapwing *Vanellus gregarius* (CR)
66. Eurasian curlew *Numenius arquata* (NT)
67. Bar-tailed godwit *Limosa lapponica* (NT)
68. Black-tailed godwit *Limosa limosa* (NT)
69. Great knot *Calidris tenuirostris* (ER)
70. Red knot *Calidris canutus* (NT)
71. Curlew sandpiper *Calidris ferruginea* (NT)
72. Spoon-billed sandpiper *Calidris pygmaea* (CR)
73. Red-necked stint *Calidris ruficollis* (NT)
74. Buff-breasted sandpiper *Calidris subruficollis* (NT)
75. Asian dowitcher *Limnodromus semipalmatus* (NT)
76. Wood snipe *Gallinago nemoricola* (VU)
77. Great snipe *Gallinago media* (NT)
78. Grey-tailed tattler *Tringa brevipes* (NT)
79. Black-legged kittiwake *Rissa tridactyla* (VU)
80. Black-bellied tern *Sterna acuticauda* (EN)
81. River tern *Sterna aurantia* (VU)
82. Indian skimmer *Rynchops albicollis* (EN)
83. Black-necked stork *Ephippiorhynchus asiaticus* (NT)
84. Painted stork *Mycteria leucocephala* (NT)
85. Greater adjutant *Leptoptilos dubius* (EN)
86. Lesser adjutant *Leptoptilos javanicus* (VU)
87. Oriental darter *Ahinda melanogaster* (NT)
88. Spot-billed pelican *Pelecanus philippensis* (NT)
89. Dalmatian pelican *Pelecanus crispus* (NT)
90. Chinese egret *Egretta eulophotes* (VU)
91. Black-headed ibis *Threskiornis melanocephalus* (NT)
92. Nicobar scops owl *Otus alius* (NT)

AMPHIBIANS

1. Malabar tree toad *Pedostibes tuberculosus* (EN)
2. Kemp's tree toad *Pedostibes kempii* (DD)*

* Note: We include a Data Deficient species here following a precautionary principle. With additional information regarding the conservation status of the species, it can be reclassified as appropriate.

REPTILES

1. Indian flap-shell turtle *Lissemys punctata* (VU)
2. Red sand boa *Eryx johnii* (NT)

3. Indian rock python *Python molurus* (NT)
4. Burmese python *Python bivittatus* (VU)

Species that need to be included in Schedule I

MAMMALS

1. Hume's rat *Hadromys humei* (EN)
2. Mandelli's mouse-eared Myotis *Myotis sicarius* (VU)
3. Leschenault's rousette *Rousettus leschenaultii* (NT)
4. Andaman spiny shrew *Crocidura hispida* (VU)
5. Burrowing vole *Hyperacrius fertilis* (NT)
6. Malabar spiny tree mouse *Platacanthomys lasiurus* (VU)
7. Royle's mountain vole *Alticola roylei* (NT)
8. Dusky-striped squirrel *Funambulus sublineatus* (VU)
9. Tail-less leaf-nosed bat *Coelops frithii* (NT)
10. Durga Das's leaf-nosed bat *Hipposideros durgadasi* (VU)
11. Mishmi giant flying squirrel *Petaurista mishmiensis* (NT)
12. Red goral *Naemorhedus baileyi* (VU)
13. Asian highland shrew *Suncus montanus* (VU)
14. Great evening bat *Ia io* (NT)
15. Painted woolly bat *Kerivoula picta* (NT)
16. Nilgiri long-tailed tree mouse *Vandeleuria nilagirica* (EN)
17. Himalayan musk deer *Moschus leucogaster* (EN)
18. *Hipposideros nicobarulae* (EN)
19. Andaman white-toothed shrew *Crocidura andamanensis* (CR)
20. Jenkin's shrew *Crocidura jenkinsi* (CR)
21. Nicobar shrew *Crocidura nicobarica* (CR)
22. Namdapha flying squirrel *Biswamoyopterus biswasi* (CR)
23. Large rock-rat *Cremnomys elvira* (CR)
24. Kolar leaf-nosed bat *Hipposideros hypophyllus* (CR)
25. Arunachal macaque *Macaca munzala* (EN)
26. Kashmir musk deer *Moschus cupreus* (EN)
27. Black musk deer *Moschus fuscus* (EN)
28. Kashmir gray langur *Semnopithecus ajax* (EN)
29. Nicobar treeshrew *Tupaia nicobarica* (EN)
30. Kelaart's long-clawed shrew *Feroculus feroculus* (EN)
31. Day's shrew *Suncus dayi* (EN)
32. Kondana rat *Millardia kondana* (EN)
33. Bonhote's mouse *Mus famulus* (EN)
34. Ranjini's field rat *Rattus ranjinae* (EN)

35. Miller's Nicobar rat *Rattus burrus* (EN)
36. Nicobar flying fox *Pteropus faunulus* (EN)
37. Andaman horseshoe Bat *Rhinolophus cognatus* (EN)
38. Andaman rat *Rattus stoicus* (VU)
39. Zelebor's Nicobar rat *Rattus palmarum* (VU)
40. Central Kashmir vole *Alticola montosa* (VU)
41. Tarai gray langur *Semnopithecus hector* (NT)
42. Red serow *Capricornis rubidus* (VU)

BIRDS

1. Brown hornbill *Anorrhinus austeni* (NT)*
2. Malabar grey hornbill *Ocyrceros griseus* (VU)
3. Malabar pied hornbill *Anthracoceros coronatus* (NT)
4. Blyth's kingfisher *Alcedo Hercules* (NT)
5. Brown-winged kingfisher *Pelargopsis amauroptera* (NT)
6. Yellow-rumped honeyguide *Indicator xanthonotus* (NT)
7. Great slaty woodpecker *Mulleripicus pulverulentus* (VU)
8. Andaman woodpecker *Dryocopus hodgei* (VU)
9. Grey-crowned prinia *Prinia cinereocapilla* (VU)
10. Long-billed bush warbler *Locustella major* (NT)
11. Broad-tailed grassbird *Schoenicola platyurus* (VU)
12. Bristled grassbird *Schoenicola striatus* (VU)
13. Tytler's leaf warbler *Phylloscopus tytleri* (NT)
14. Jerdon's babbler *Chrysomma altirostre* (VU)
15. Black-breasted parrotbill *Paradoxornis flavirostris* (VU)
16. Indian grassbird *Graminicola bengalensis* (NT)
17. Marsh babbler *Pellorneum palustre* (VU)
18. Rufous-vented grass babbler *Laticilla burnesii* (NT)
19. Swamp grass babbler *Laticilla cinerascens* (EN)
20. Banasura laughingthrush *Montecincla jerdoni* (EN)
21. Nilgiri laughingthrush *Montecincla cachinnans* (EN)
22. Palani laughingthrush *Montecincla fairbanki* (NT)
23. Ashambu laughingthrush *Montecincla meridionalis* (VU)
24. Slender-billed babbler *Argya longirostris* (VU)
25. Chestnut-backed laughingthrush *Pterorhinus nuchalis* (NT)
26. Yunnan nuthatch *Sitta yunnanensis* (NT)
27. Beautiful nuthatch *Sitta formosa* (VU)
28. Lesser flamingo *Phoeniconaias minor* (NT)
29. Dark-rumped swift *Apus acuticauda* (VU)
30. Rustic bunting *Emberiza rustica* (VU)

* Note: the species of brown hornbill found in India is *Anorrhinus austeni* and not *Anorrhinus tickelli* (Tickell's brown hornbill).

AMPHBIANS

1. Konkan tiger toad *Xanthophryne tigerina* (CR)
2. Ghats wart frog *Minervarya murthii* (CR)
3. Kottigehar dancing frog *Micrixalus kottigeharensis* (CR)
4. Dattatreya night frog *Nyctibatrachus dattatreyaensis* (CR)
5. Gundia frog *Indirana gundia* (CR)
6. Kerala Indian frog *Walkerana phrynoderma* (CR)
7. Sacred grove bushfrog *Philautus sanctisilvaticus* (CR)
8. Amboli bush frog *Pseudophilautus amboli* (CR)
9. Chalazode bush frog *Raorchestes chalazodes* (CR)
10. Green eyed bushfrog *Raorchestes chlorosomma* (CR)
11. Griet bush frog *Raorchestes griet* (CR)
12. Kaikatti bush frog *Raorchestes kaikatti* (CR)
13. Mark's bush frog *Raorchestes marki* (CR)
14. Munnar bush frog *Raorchestes munnarensis* (CR)
15. Large Ponmudi bush frog *Raorchestes ponmudi* (CR)
16. Resplendent bush frog *Raorchestes resplendens* (CR)
17. Shillong bush frog *Raorchestes shillongensis* (CR)
18. Sushil's bushfrog *Raorchestes sushili* (CR)
19. Anaimalai flying frog *Rhacophorus pseudomalabaricus* (CR)
20. Khasi Hill rock toad *Bufoides meghalayanus* (EN)
21. Beddome's toad *Duttaphrynus beddomii* (EN)
22. Malabar torrent toad *Ghatophryne ornata* (EN)
23. Koyna toad *Xanthophryne koynayensis* (EN)
24. Nicobar frog *Minervarya nicobariensis* (EN)
25. Nilgiri frog *Minervarya nilagirica* (EN)
26. Rakhine litter frog *Leptobrachium rakhinensis* (EN)
27. Gadgil's torrent frog *Micrixalus gadgili* (EN)
28. Black microhylid frog *Melanobatrachus indicus* (EN)
29. Sholiga narrow-mouthed frog *Microhyla sholigari* (EN)
30. Indian dot frog *Uperodon mormoratus* (EN)
31. Purple frog *Nasikabatrachus sahyadrensis* (EN)
32. Alicia's night frog *Nyctibatrachus aliciae* (EN)
33. Beddome's night frog *Nyctibatrachus beddomii* (EN)
34. Giant wrinkled frog *Nyctibatrachus karnatakaensis* (EN)
35. Small wrinkled frog *Nyctibatrachus minor* (EN)

36. Coorg night frog *Nyctibatrachus sanctipalustris* (EN)
37. Kalakad wrinkled frog *Nyctibatrachus vasanthi* (EN)
38. Günther's leaping frog *Indirana brachytarsus* (EN)
39. Spotted leaping frog *Sallywalkerana diplosticta* (EN)
40. Boulenger's Indian frog *Sallywalkerana leptodactyla* (EN)
41. Green tree frog *Ghatixalus variabilis* (EN)
42. Nicobarese tree frog *Polypedates insularis* (EN)
43. Dark-eared bush frog *Pseudophilautus wynaadensis* (EN)
44. Seshachar's bush frog *Raorchestes charius* (EN)
45. Kalpatta yellow bush frog *Raorchestes nerostagona* (EN)
46. Cross-backed bush frog *Raorchestes signatus* (EN)
47. Spotted bush frog *Raorchestes tinniens* (EN)
48. Travancore bush frog *Raorchestes travancoricus* (EN)
49. Kalakkad tree frog *Rhacophorus calcadensis* (EN)
50. Small tree frog *Rhacophorus lateralis* (EN)
51. Southern hill toad *Duttaphrynus microtympanum* (VU)
52. Kerala stream toad *Ghatophryne rubigina* (VU)
53. Small paa frog *Nanorana minica* (VU)
54. Rotung oriental frog *Ingerana borealis* (VU)
55. Naked dancing frog *Micrixalus nudis* (VU)
56. Nilgiri dancing frog *Micrixalus phyllophilus* (VU)
57. Malabar tropical frog *Micrixalus saxicola* (VU)
58. Malabar ramanella *Uperodon triangularis* (VU)
59. Deccan night frog *Nyctibatrachus deccanensis* (VU)
60. Bombay night frog *Nyctibatrachus humayuni* (VU)
61. Malabar night frog *Nyctibatrachus major* (VU)
62. Boulenger's golden-backed frog *Indosylvirana aurantiaca* (VU)
63. Indian flying frog *Pterorana khare* (VU)
64. Matherana leaping frog *Indirana leithii* (VU)
65. Garo Hills bubble-nest frog *Philautus garo* (VU)
66. Bob Inger's bush frog *Raorchestes bobingeri* (VU)
67. Bombay bush frog *Raorchestes bombayensis* (VU)
68. Confusing green bush frog *Raorchestes chromasynchysi* (VU)
69. Kodaikanal bush frog *Raorchestes dubois* (VU)
70. Southern bubble-nest frog *Raorchestes glandulosus* (VU)
71. Ponmudi bush frog *Raorchestes graminirupes* (VU)
72. Assam Indonesian treefrog *Theloderma moloch* (VU)
73. Indian toad *Duttaphrynus parietalis* (NT)
74. Annandale's paa frog *Nanorana annandalii* (NT)
75. Dusky dancing frog *Micrixalus fuscus* (NT)
76. Jerdon's balloon frog *Uperodon montanus* (NT)

77. Dahaoping sucker frog *Amolops viridimaculatus* (NT)
78. Bicoloured frog *Clinotarsus curtipes* (NT)
79. Beddome's bush frog *Raorchestes beddomii* (NT)

REPTILES

1. Anaikatti gecko *Cnemaspis anaikattiensis* (CR)
2. Jeypore ground gecko *Cyrtodactylus jeyporensis* (EN)
3. Madras spotted skink *Barkudia insularis* (CR)
4. Assam roofed turtle *Pangshura sylhetensis* (CR)
5. Indian narrow-headed softshell turtle *Chitra indica* (EN)
6. Goan day gecko *Cnemaspis goaensis* (EN)
7. Wynad day gecko *Cnemaspis wynadensis* (EN)
8. Poona skink *Eurylepis poonaensis* (EN)
9. Boulenger's dasia *Dasia subcaerulea* (EN)
10. Inger's mabuya *Eutropis clivicola* (EN)
11. Perrotet's vine snake *Ahaetulla perroteti* (EN)
12. Travancore earth snake *Rhinophis travancoricus* (EN)
13. Asian leaf turtle *Cyclemys dentata* (NT)
14. Brown roofed turtle *Pangshura smithii* (NT)
15. Gund day gecko *Cnemaspis heteropholis* (NT)
16. Ponmudi day gecko *Cnemaspis nairi* (NT)
17. Ornate day gecko *Cnemaspis ornata* (NT)
18. Sispara day gecko *Cnemaspis sisparensis* (NT)
19. Sikkimese bent-toed gecko *Cyrtodactylus gubernatoris* (DD)
20. Anamalai hill gecko *Hemidactylus anamallensis* (NT)
21. Sharma's mabuya *Eutropis nagarjunensis* (NT)
22. Günther's vine snake *Ahaetulla dispar* (NT)
23. Bicatenate uropeltis *Uropeltis bicatenata* (NT)
24. Smith's earth snake *Uropeltis grandis* (NT)
25. Large-scaled pit viper *Trimeresurus macrolepis* (NT)
26. Loggerhead turtle *Caretta caretta* (VU)
27. Southeast Asian box turtle *Cuora amboinensis* (EN)
28. Indian eyed turtle *Morenia petersi* (EN)
29. Nilgiri dwarf gecko *Cnemaspis indica* (VU)
30. Das's day gecko *Cnemaspis indraneildasii* (VU)
31. Jerdon's day gecko *Cnemaspis jerdonii* (VU)
32. Vellore day gecko *Cnemaspis otai* (VU)
33. White-striped viper gecko *Hemidactylus albofasciatus* (VU)
34. Gujarat gecko *Hemidactylus gujaratensis* (VU)
35. Satara gecko *Hemidactylus sataraensis* (CR)

36. Side-spotted ground skink *Kaestlea laterimaculata* (VU)
37. Ashwamedh writhing skink *Eutropis ashwamedhi* (EN)
38. Short-tailed kukri snake *Oligodon brevicauda* (VU)
39. Walnut kukri snake *Oligodon juglandifer* (VU)
40. Andaman krait *Bungarus andamanensis* (NT)
41. Two-lined black earth snake *Melanophidium bilineatum* (VU)
42. Phipson's earth snake *Uropeltis phipsonii* (VU)

Annexure 3: Suggestions for rationalisation of the Schedules

We recommend the following for rationalisation and scientific treatment of the Schedules.

1. Provide a clear definition of the Schedules in **Section 2** of the Wildlife Protection Act. For instance, Schedule I includes species that are severely threatened and in need of conservation protection and attention. Schedule III include plants that are in need of conservation protection and attention.
2. Provide for clear criteria and objectives to be outlined for each Schedule, along the lines of the IUCN Red List of Species, which may be subject to review under a regular basis.
3. We recommend including a list of endangered species of particular conservation concern, for which a species conservation plan—such as those developed for the tiger, elephant and great Indian bustard—is a necessity and concerted conservation efforts are mandated. This is along the lines of the Endangered Species Act of the USA and has been immensely successful for a selection of species.
4. In **Section 61**, include the following proviso to ensure scientific rationalisation and categorisation of wildlife:
“Provided that such a change is based on a scientific assessment report prepared in collaboration with experts or professionals having qualifications and experience in the field of wildlife ecology and conservation.”
5. We also bring to your attention the IUCN Red List of Ecosystems¹¹, which identifies and protects ecosystems that are of particular concern and under threat. We recommend identifying threatened ecosystems in India, to keep our conservation law and policy aligned with current global standards. The floodplain ecosystem of Kaziranga National Park, or mangrove ecosystems, for instance, may be identified as threatened ecosystems in India.

To do so, we suggest including a definition of ‘**threatened ecosystems**’ in **Section 2**, which include “a habitat that is has unique biodiversity, hydrology or geology, or sustains a unique ecological process, function or service, and which is imperilled due to its restricted or shrinking distribution, or threats to its ecological integrity.”

We suggest treating these ecosystems in a manner similar to endangered species of particular conservation concern (point 3 above), requiring specific plans and action for preservation.

Annexure 4: Suggestions for the treatment of vermin in the Act

1. As it stands, multiple species of conservation concern are included in Schedule II. Thus, without modification of Schedule II, we strongly recommend deletion of **point 38(a)** in the Amendment whereby Schedule II is removed from **Section 62**. We recommend retaining the following as **Section 62**:
“The Central Government may, by notification, declare any wild animal other than those specified in Schedule I and Schedule II to be vermin for any area and for such period as may be specified therein.”
2. We also recommend placing a restriction on the time period for which animals can be declared vermin, to ensure review of the conservation status of the wildlife population. We thus recommend the following inclusion in **Section 62 of the principal Act** after “to be vermin for any area and for such period as may be specified therein”:
“so long as that period does not exceed a period of six months.”
3. For scientific management of wildlife and objective assessment of species as vermin, we recommend including the following **proviso** after **Section 62**:
“Provided that such a declaration is based on a scientific assessment report drafted by officials and experts or professionals having qualifications and experience in the field of wildlife ecology and conservation.”
4. We recommend monitoring of the vermin population to ensure that uncontrolled hunting of the species does not lead to precipitous declines in their numbers, via the following inclusions as **Section 62, sub-sections (1) and (2)**:
“(1) The Chief Wildlife Warden, or Chief Wildlife Wardens, of the state or states where the animal is declared as vermin, shall monitor the population of wild animals for the period that they are declared as vermin in collaboration with experts or professionals having scientific qualifications and experience in the field of wildlife ecology and conservation.
(2) Such a declaration may be reversed at any point in time, if authorities observe damage to the habitat or drastic declines in the wild animals population during such time as it is deemed to be vermin.”
5. Finally, we recommend that declaration of a wild animal as vermin is accompanied by a population management plan, which is put into action and closely monitored by the Forest Department. We thus recommend the following inclusion as **section 62, subsection (3)**:
“(3) The Chief Wildlife Warden of the state, or Chief Wildlife Wardens of the states, where the animal is declared as vermin, shall formulate and act as per a Vermin Population Management and Monitoring Program which includes a plan for controlled population management and stringent monitoring of the vermin species in collaboration with experts or professionals having scientific qualifications and experience in the field of wildlife ecology and conservation.”

Annexure 5: Suggestions for the inclusion of research in the Act

Research is integral to conservation, and accrual of knowledge on our natural health has value in and of itself. Thus, we suggest the following changes in the Act.

1. Amendment of **point 2** of the Amendment, and the **Preamble** of the Act, to include: “**research, conservation, protection and management of wild life**” in place of “**protection of wild animals, birds and plants**”.
2. Inclusion of the following words in **section 5B, sub-section (2)** of the Act to ensure representation of external experts in the Standing Committee of the National Board of Wildlife:
“**including at least two members referred to in clauses (e) and (f) of section 5, sub-section (1).**”
3. Inclusion of the following **proviso** to **Section 5B** of the Act, to provide for members of the National Board of Wildlife to comment on acts and actions of the Standing Committee:
“**Provided that members of the National Board of Wildlife referred to in Section 5, sub-section (1), will have access to the workings, meetings, recommendations and actions of the Standing Committee, and can officially provide their comments, recommendations and dissent notes on the same.**”
4. Amendment of **point 6** of the Amendment and proposed **Section 6A, sub-section (2)** of the act to include the following phrase which will ensure representation of external experts on the Standing Committee of the State Board of Wildlife:
“**including at least two members referred to in clauses (d) and (e) of section 6, sub-section (1).**”
5. Inclusion of a clause in **Section 12** for clarity on the collection of non-invasive samples for scientific research, which can contribute substantially to our understanding of the viability of wildlife populations:
“**(e) collection of non-invasive samples, such as faeces, for the purpose of scientific research.**”
6. Inclusion of clear protocols in **Section 12, sub-section (1)**, to streamline and bring transparency to the issuance of permits for scientific research on Schedule I species using certain methods such as telemetry or genetic sample collection. Currently, methods like radio-telemetry—widely used for valuable conservation-relevant data worldwide^{15,16}—are staggeringly under-utilised, simply due to the difficulty in getting permits¹⁷. These data will be especially valuable for species of conservation concern, likely to be included under Schedule I. Thus, we suggest the inclusion of the following:
“**(1) The Central Government shall appoint, and announce appointment of, an officer not below the rank of Inspector General of Forests, to review and process proposals for permission to conduct scientific research including methods such as trapping, snaring, or handling animals under Schedule I, for example, for the purpose of radio-telemetry or obtaining genetic or tissue samples.**”

(2) The officer may grant a permit in writing to qualified persons which shall entitle the holder of such a permit to undertake activities specified in section 12, sub-section (1).

(3) The Central Government shall process and respond to permit requests within a period not exceeding one hundred and twenty days. Issuance of permits will be accompanied by a set of terms and conditions under which the scientific research shall be undertaken. Rejection of the permit shall be accompanied with specific reasons in writing.

(4) The Chief Wild Life Warden may issue permits in writing for the collection of non-invasive samples, such as faeces, of species listed in Schedule I for the purpose of scientific research. The Chief Wild Life Warden shall process such permit requests within a period not exceeding sixty days.”

7. Inclusion of clear protocols in **Section 28** as **sub-section (3)**, to streamline and bring transparency to the issuance of permits for scientific research in sanctuaries, based on multiple reports of the difficulties in obtaining such permits, leading to discouragement of high-quality ecological research and conservation science in our country^{18,19}:

“(3) The Central Government may prescribe conditions subject to which permits for scientific research may be permitted, and the time frame in which proposals for scientific research shall be disposed of, which shall in no case exceed sixty days.”

8. Inclusion of the following phrase in **Section 36D, sub-section (2)** of the Act to allow representation of independent experts in the Community Reserve Management Committee. This is critical as independent experts can serve as liaisons and hold substantial credibility with community leaders, thus encouraging communities to declare their forests as Reserves:

“and representatives of non-governmental organisations working in the field of wild life conservation.”

9. Inclusion of the following **proviso** in **Section 61** of the Act to bring scientific justification, objectivity and transparency to the categorisation of species into Schedules:

“Provided that such a change is based on a scientific assessment report prepared in collaboration with experts or professionals having qualifications and experience in conservation of wild life.”

10. As mentioned in **points 3 and 4 of Annexure 4** above, we recommend the following inclusions of a **proviso** and **sub-sections (1) and (2)** in **Section 62** to allow for scientific management of species declared as vermin. We urge the committee to consider this as the current process of declaration of species as vermin is highly unscientific and uncontrolled, has led to indiscriminate hunting, and is likely to have negative impacts on biodiversity and ecosystems, that, since the species in question are not monitored, are yet to be detected:

“Provided that such a declaration is based on a scientific assessment report drafted by officials and experts or professionals having qualifications and experience in the field of wildlife ecology and conservation.

(1) The Chief Wildlife Warden shall monitor the population of wild animals for the period that they are declared as vermin.

(2) Such a declaration may be reversed at any point in time during this specified period, if the authorities observe damage to the habitat or drastic declines in the wild animals population during such time as it is deemed to be vermin.”

Annexure 6: Additional suggestions for modification of the Amendment or Act

1. Deletion of the phrase “and development” in **section 5C, sub-section (1)** of the Act, such that it reads:
“(1) It shall be the duty of the National Board to promote the conservation of wild life and forests by such measures as it thinks fit.”
2. Inclusion of the following phrase in **section 5C, sub-section (2), clause (c)** to ensure that ecologically damaging activities are not undertaken in important conservation areas:
“and making recommendations for the restriction of such activities that may be damaging to wildlife and the environment.”

Annexure 7: References

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- ¹¹ IUCN Red List of Ecosystems. <https://www.iucn.org/resources/conservation-tools/iucn-red-list-ecosystems>
- ¹² Rangarajan, M. et al. 2010. Gajah: Securing the future for elephants in India. *The Report of the Elephant Task Force, Ministry of Environment and Forests*. New Delhi, India.

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Annexure 8: Selected Qualifications of contributors to this note

Profile of the Organisation

Conservation Initiatives ([Email](#) | [Website](#) | [Twitter](#) | [Instagram](#) | [YouTube](#)) is a Northeast India-based NGO dedicated to science-based wildlife conservation, rural livelihoods and human wellbeing, and sustaining positive human-nature relationships in the region. We have two flagship programs. In our first program, we have been working towards elephant conservation in the Kaziranga landscape for 8 years, and our past work in tea estates has benefited >5,000 beneficiaries. Our second flagship program is focussed on gibbons and community-managed forests, where we have engaged with >40 villages to assess forest cover and wildlife presence, engage for greater conservation support and facilitate community-based forest conservation and sustainable nature-friendly livelihoods. We have established local credibility, demonstrated scientific expertise, and representation of local community leaders in our team. Our work aligns with post-2020 Convention on Biological Diversity targets, multiple Sustainable Development Goals (including SDG 13 & 15), India's Nationally Determined Contributions towards mitigating climate change, as well as resilience, forest and biodiversity conservation, and sustainable living.

Selected Scientific Publications of Contributing Researchers

- Rodrigues, R. G., Srivathsa, A., & Vasudev, D. (2021) Dog in the matrix: Envisioning countrywide connectivity conservation for an endangered carnivore. *Journal of Applied Ecology*, Early View. [DOI](#) | [In the news](#)
- Vasudev, D., Goswami, V. R., Srinivas, N., Syiem, B. L. N., & Sarma, A. (2021) Identifying important connectivity areas for the wide-ranging Asian elephant across conservation landscapes of Northeast India. *Diversity and Distributions*, Early View. [DOI](#) | [In the news](#)
- Goswami, V. R., Vasudev, D., Joshi, B., Hait, P., & Sharma, P. (2021) Coupled effects of climatic forcing and the human footprint on wildlife movement and space use in a dynamic floodplain landscape. *Science of the Total Environment*, 758, 144000. [DOI](#) | [In the news](#)
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Selected Professional Affiliations

Teaching and/or Mentoring positions (Guest, Adjunct, Courtesy or Visiting Faculty, or Academic Partner Supervisor) at the following institutions:

University of Florida, Gainesville, USA
Deakin University, Melbourne, Australia
Ashoka University, Sonapat, India
National Centre for Biological Sciences, Bengaluru, India

Editorial positions at *Biological Conservation*, *PLoS ONE*, and *Conservation Biology*

Members of the following policy groups

Govt. of Assam–Elephant Task Force
IUCN–Asian Elephant Specialist Group
IUCN–Connectivity Conservation Specialist Group
IUCN–Section on Small Apes
Association for Tropical Biology and Conservation–Council Member & Chair,
Conservation Committee