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Translocation of Fauna and Flora affected by the Proposed Per Aru Reservoir Project: Potentials for Institutionalization in Sri Lanka

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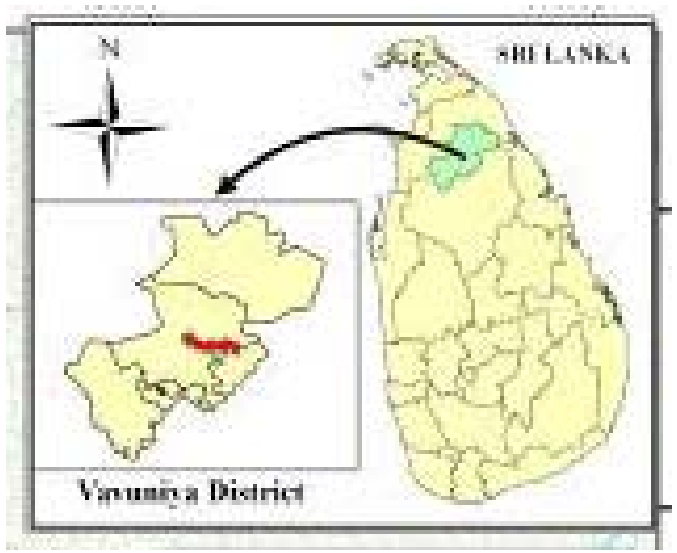
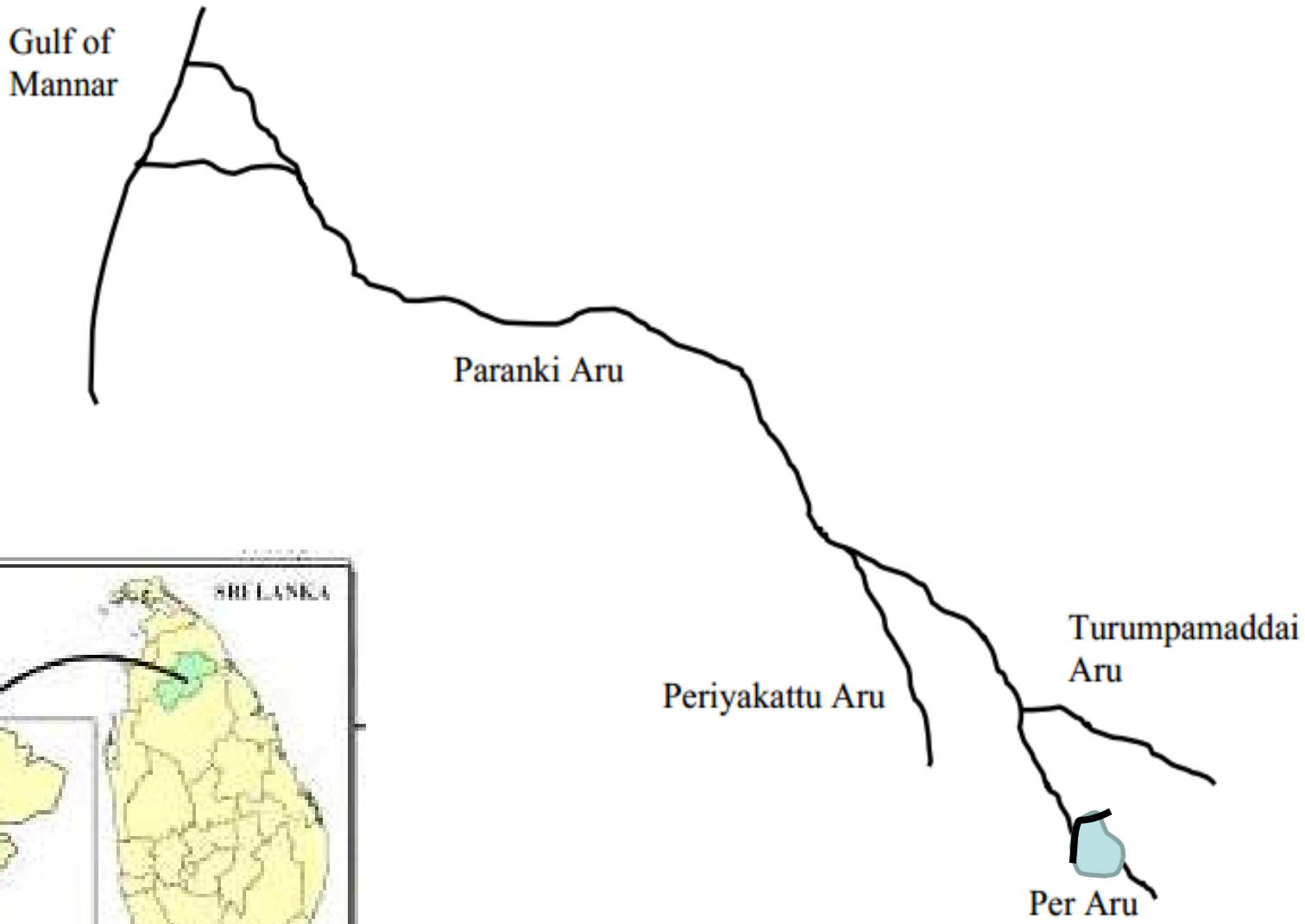
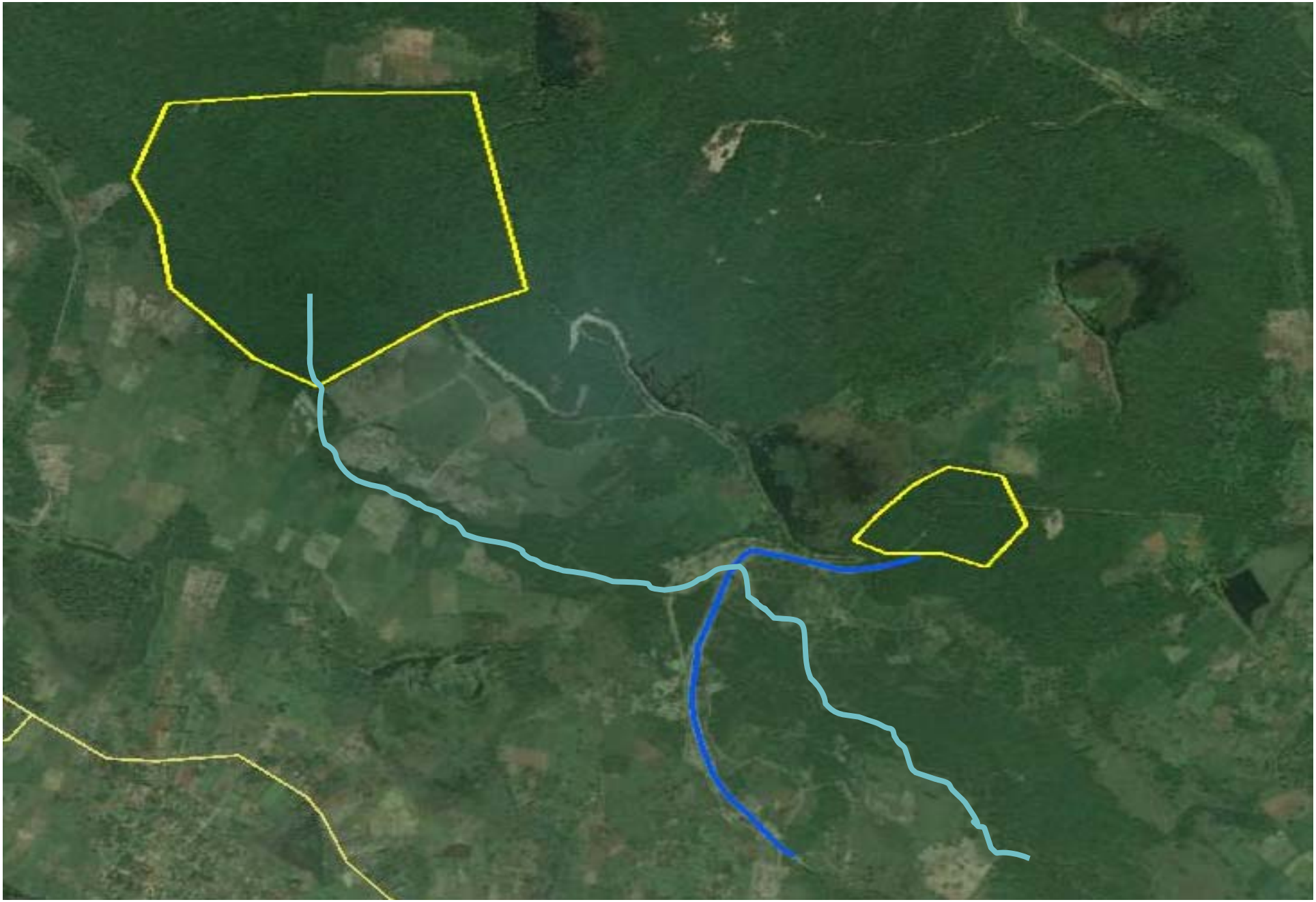
Per Aru


N
SRI LANKA
Vavuniya District

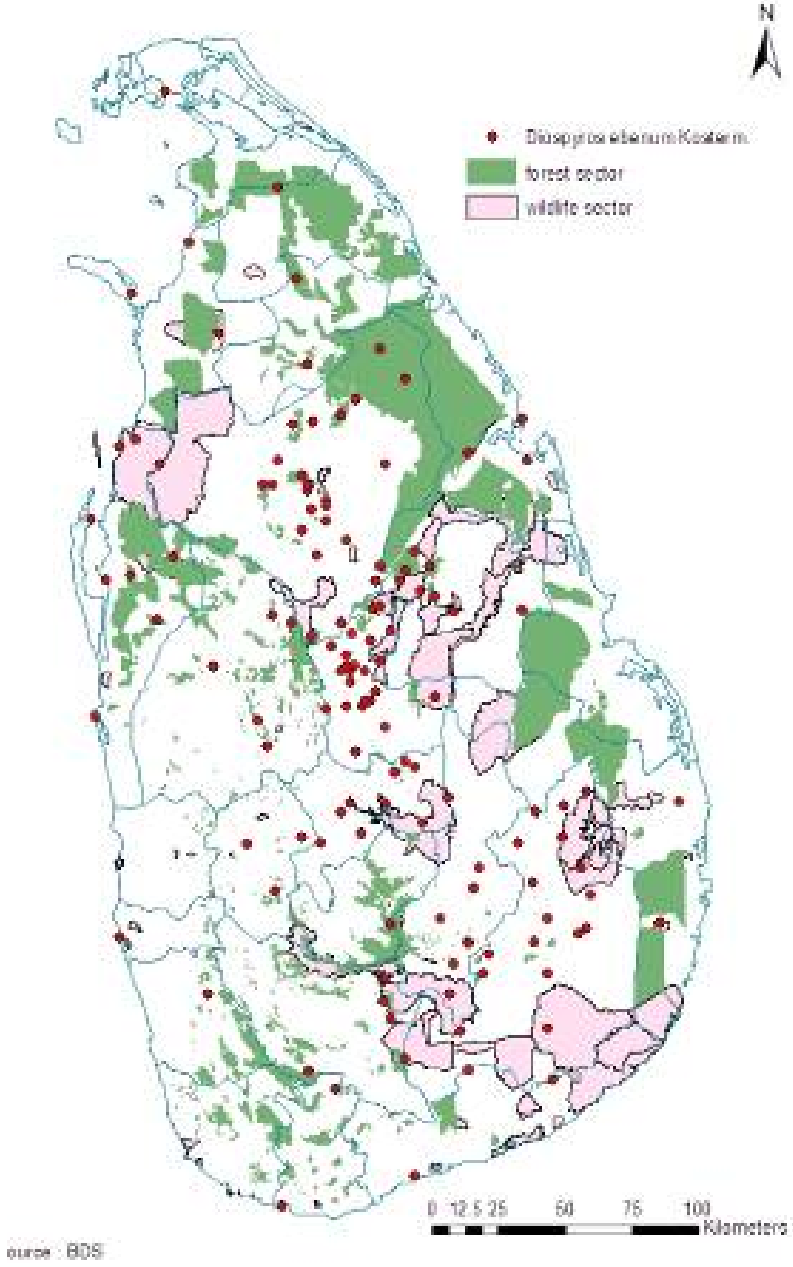

Gulf of
Mannar
Paranki Aru
Periyakattu Aru
Turumpamaddai
Aru
Per Aru



Background

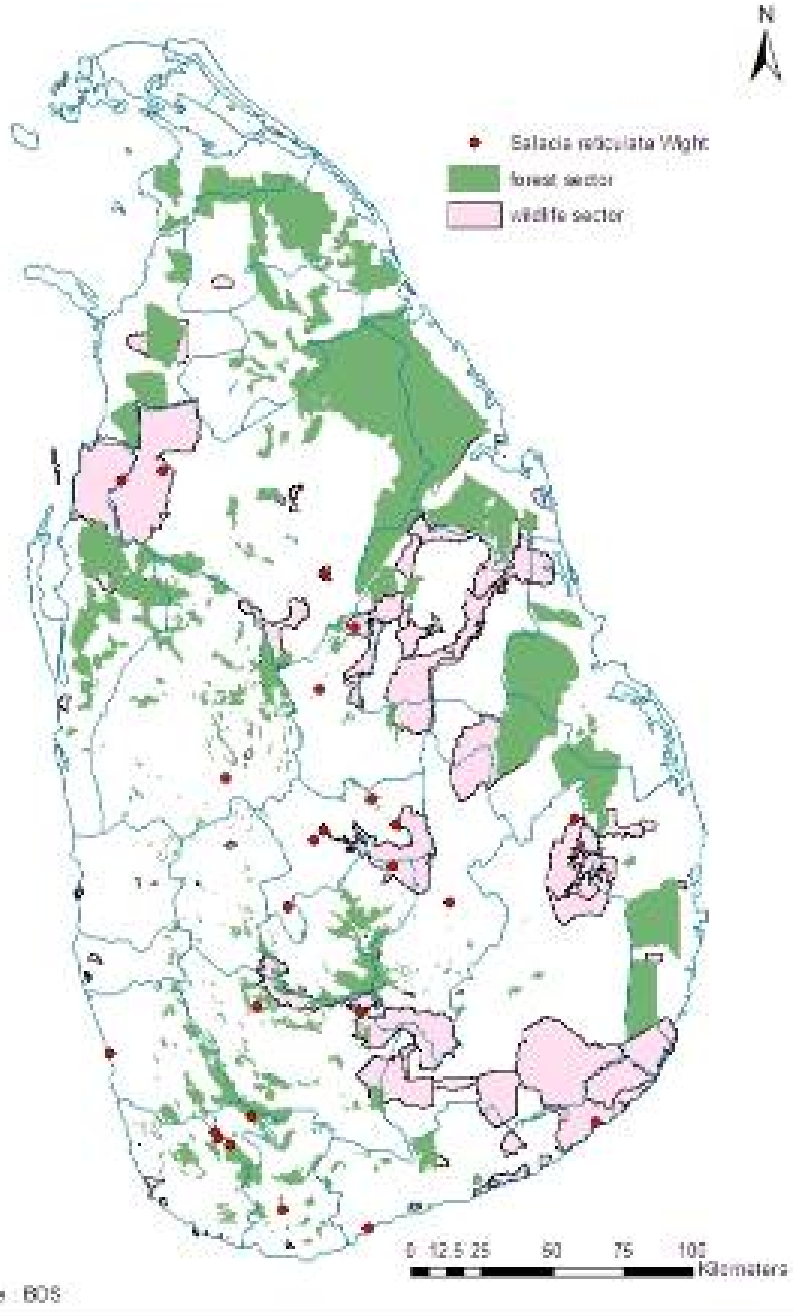
- 2011 – The first biotic survey was carried out to inform the environment assessment
  - Flora: EN (2), VU (4), NT (3)
  - Fauna: CR (3), EN (1), VU (11), NT (19)
- 2013 – Supplementary biodiversity survey
  - Flora: EN (3), VU (17), NT (15)
  - Fauna: CR (1), EN (11), VU (7), NT (9)
- 2013 translocation was undertaken
  - Phase I – Dam axis and access roads
  - Phase II - From tail canal and reservoir bed
  - Phase III – Reservoir bed
  - Phase IV - Reservoir bed before filling

Diospyros ebenum



ource : BDS

Salacia reticulata



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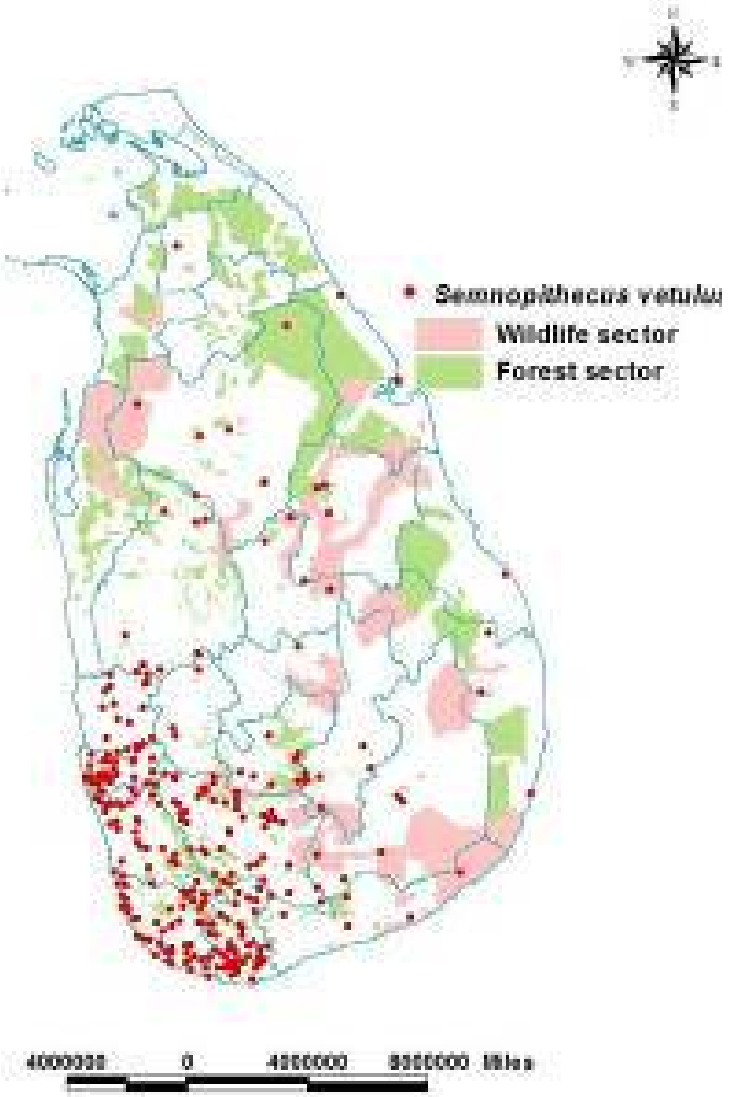
Semnopithecus vetulus *Elephas maximus*



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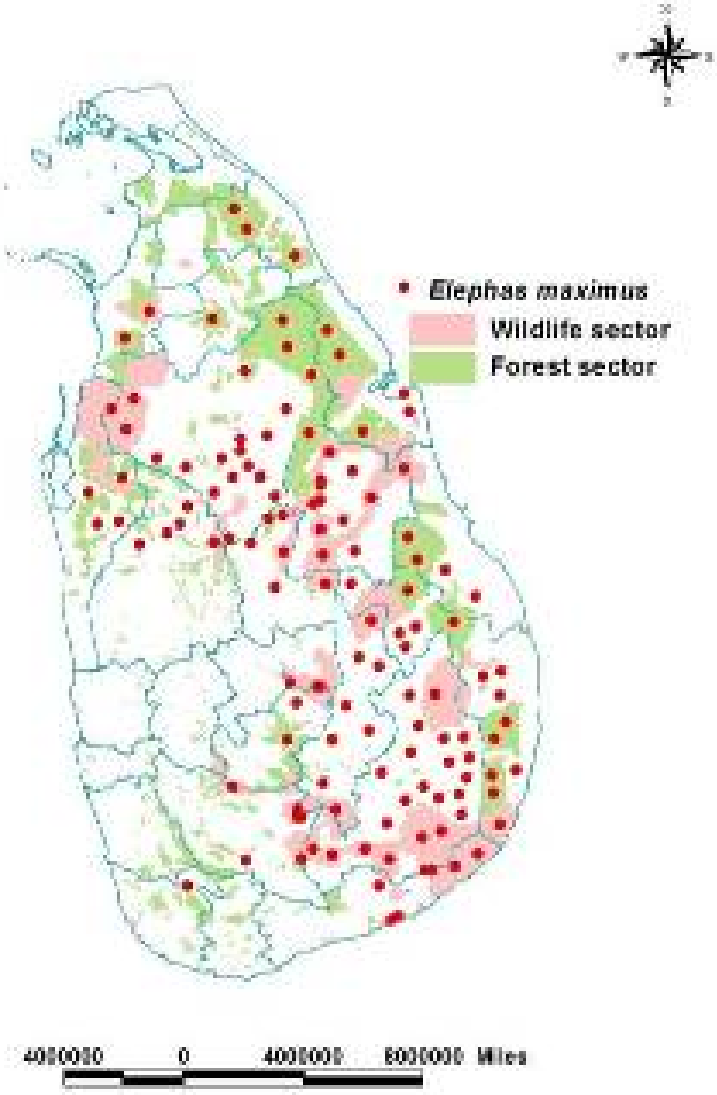
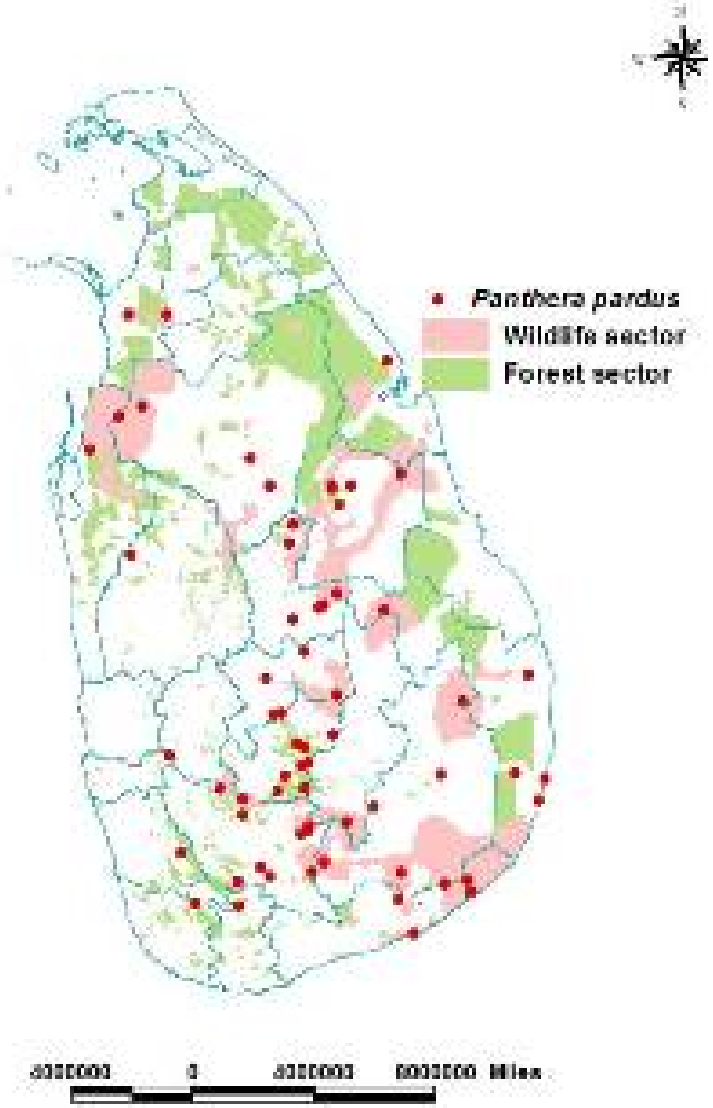


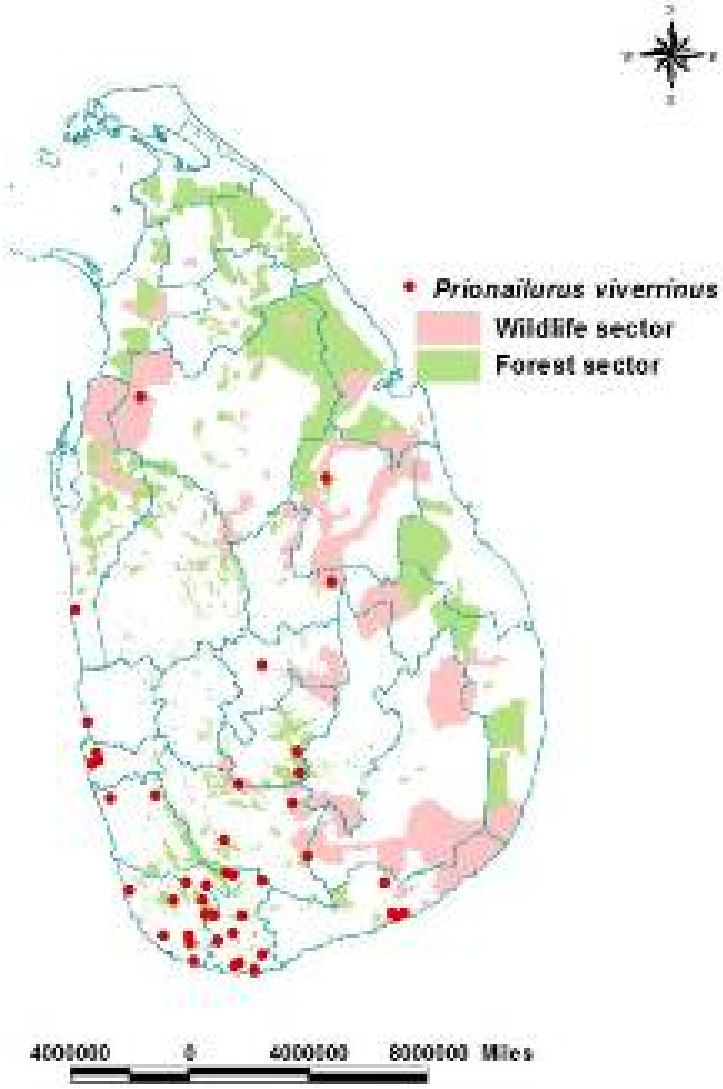
Source : BDS

Panthera pardus



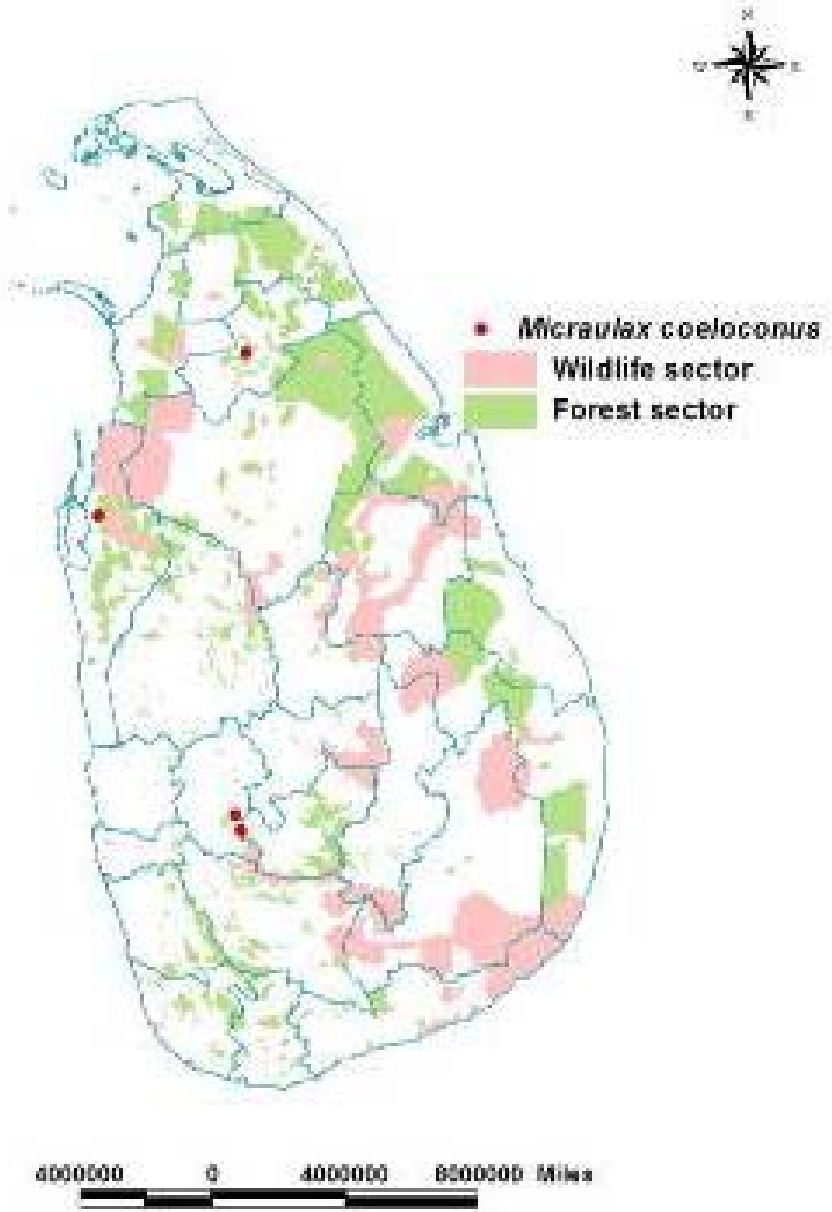
Source : BDS

Prionailurus viverrinus

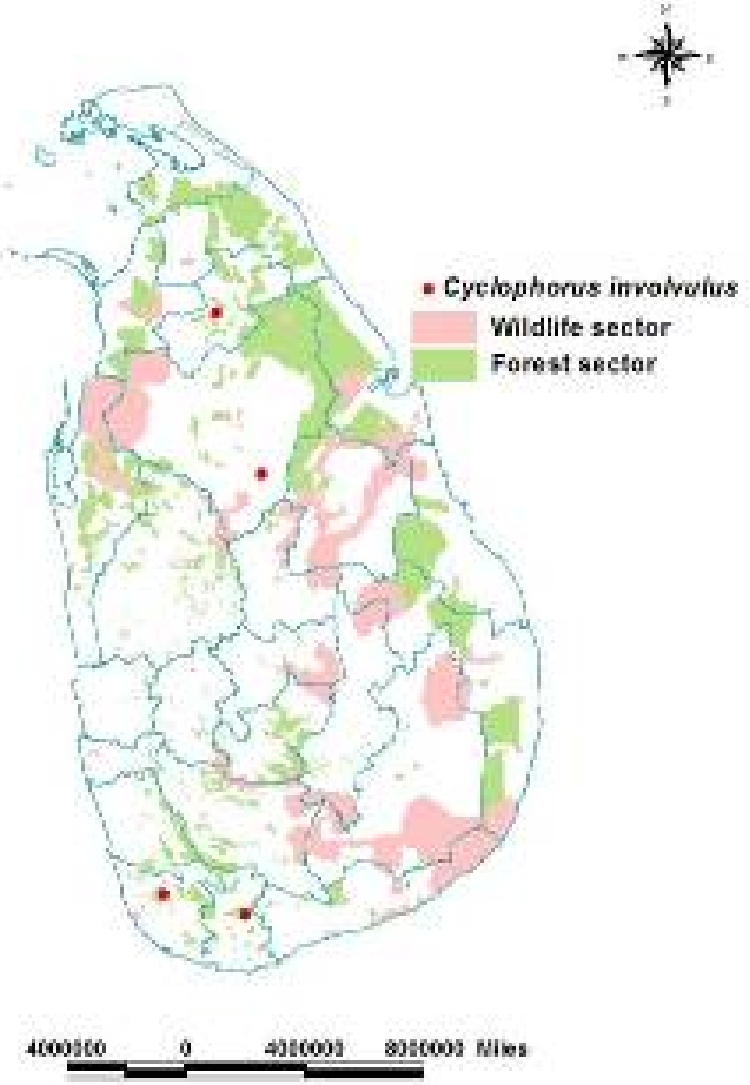


Source : BDS

Micraulax coeloconus



Cyclophorus involvulus



Source : BDS

Prioritization of Species for Translocation

1. Conservation Status of the species
   - Critically Endangered Species – 5 marks
   - Endangered species – 3 marks
   - Data Deficient Species – 3 marks
2. Global Distribution of the species
   - Endemic to Sri Lanka – 5 marks
   - Found only in India and Sri Lanka – 4 marks
   - Distributed in South Asia – 3 marks
   - Distributed in Asia – 2 marks
   - Shows a wider distribution in Asia as well as in other continents – 1 mark

Prioritization of Species for Translocation

3. Distribution pattern in Sri Lanka
   - Restricted to the project area only – 5 marks
   - Restricted to a single climatic zone – 4 marks
   - Found in 2 climatic zones – 3 marks
   - Found in 3 climatic zones – 2 marks
   - Found in all climatic zones – 1 marks
4. Distribution within the project area
   - Found only in the project affected area – 5 marks
   - Found both inside and outside the project affected area – 3 marks
   - Found completely outside the project affected area – 1 mark

Prioritization of Species for Translocation

- The maximum score that can be attributed is 20 while the minimum score is 6.
- Therefore, an impact rating was developed based on the overall score
- From 6 -10; Low impact on the survival of the species
- From 11 - 15: Moderate impact on the survival of the species
- From 16 - 20: Significant impact on the survival of the species
- Altogether 22 target species were identified

Species Translocation

Phase	Number of Species	Type of Sp.	Number of Individuals	Type of Species
1	35	Target (13)	326	Target (162)
		Non Target (22)		Non Target (164)
2	28	Target (18)	530	Target (414)
		Non Target (10)		Non Target (116)
3	30	Target (19)	510	Target (304)
		Non Target (11)		Non Target (206)
4	28	Target (15)	526	Target (211)
		Non Target (13)		Non Target (315)

Euplecta colletti

Glessula ceylanica

Macrochlamys vilipensa

Poecilotheria fasciata

Pseudophilautus regius

Hemidactylus leschenaultia

Otocryptis nigristigma

Species Translocation - Summary

Species	Target & Non Target Species	Endemic & Indigenous Species	CR	EN	VU	DD	NT
59	Target (26)	Endemic (19)		8	4	2	
		Indigenous (7)	1	1	2	3	
	Non Target (33)	Endemic (7)					
		Indigenous (26)					4
		Total	1	9	6	5	4

Individuals	Target & Non Target Individuals	Endemic & Indigenous Individuals	CR	EN	VU	DD	NT
1892	Target (1091)	Endemic (936)		502	66	359	
		Indigenous (155)	28	12	24	91	
	Non Target (801)	Endemic (49)					
		Indigenous (752)					326
		Total	28	514	90	450	326

Institutionalization as a Practice In Sri Lanka

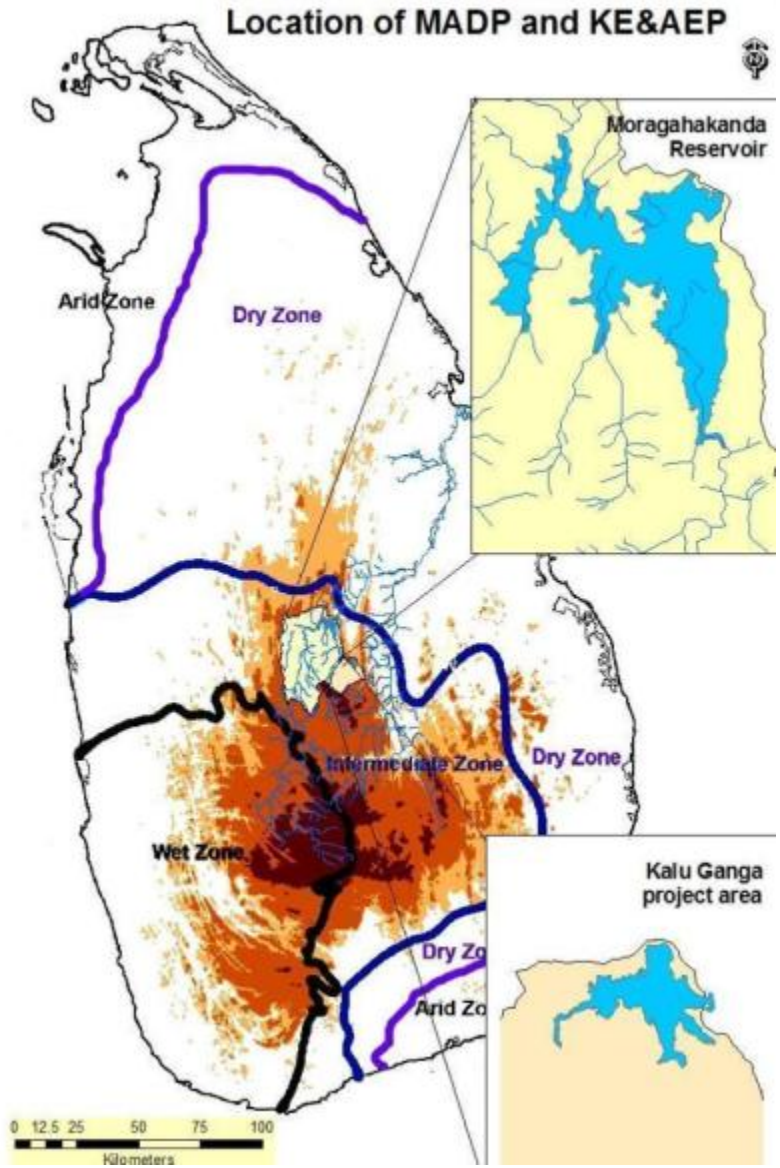
- First official Translocation was carried out in 2005 for a snail species *Ravana politissima* for the Upper Kotmale Hydropower Project

Institutionalization as a Practice In Sri Lanka

- This model has been replicated already in two instances
- 2014 – Moragahakanda-Kaluganga Project

	Number of individuals	Number of species
Fish	**2,368**	**12**
Other species	**46**	**14**

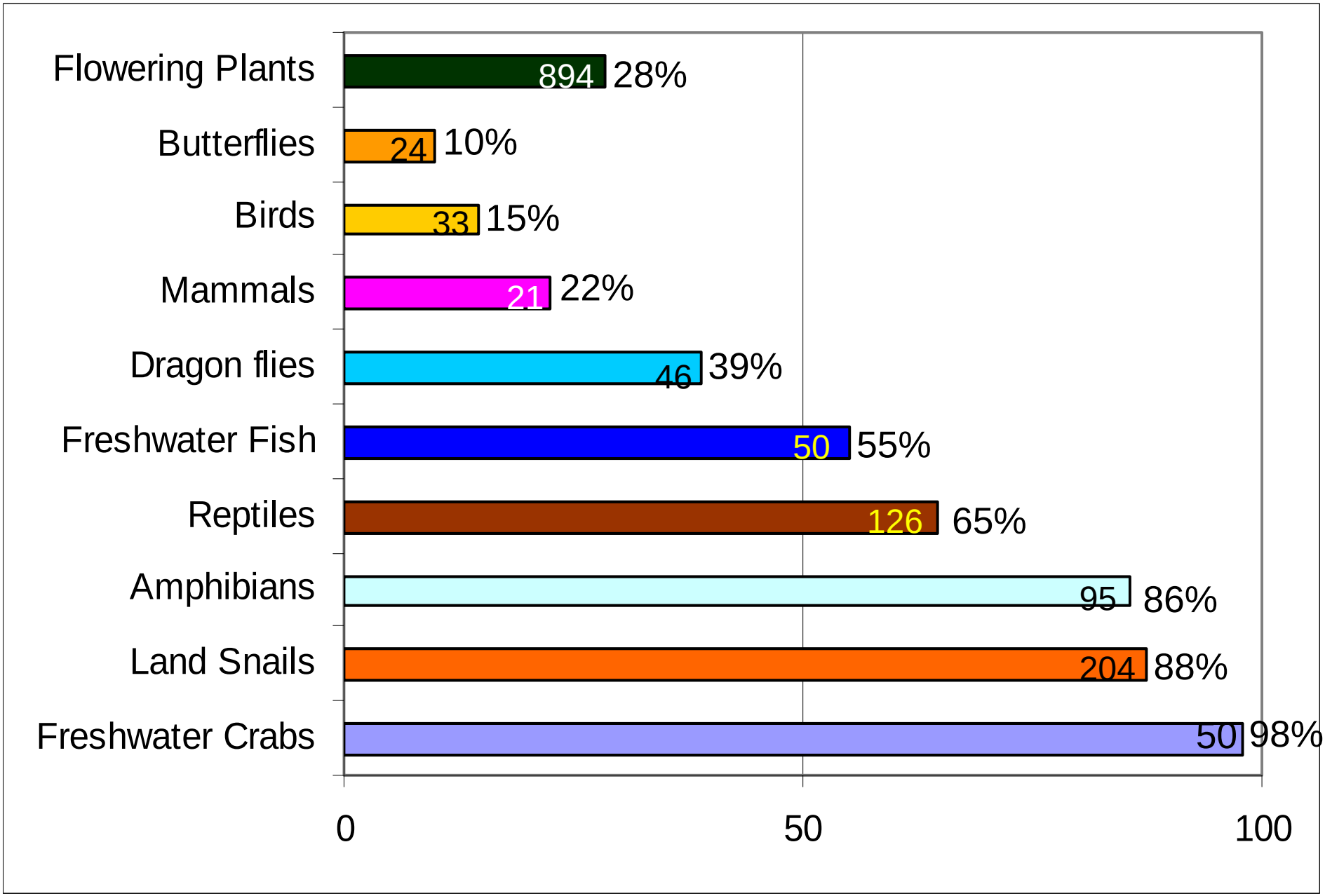
- Yan Oya and North Western Province Canal Project plans a similar approach next year



Constraints and Challenges

- Which species to use
- Critical Species
  - **Critically Endangered/ Endangered** species
  - **Restricted range** species
  - Globally significant concentrations of **migratory** species and/ or **Congregatory** Species
- Global redlist does not properly reflect the status of species, especially endemics and invertebrates

Endemicity in Sri Lanka



Constraints and Challenges

- Which species to use
- Critical Species
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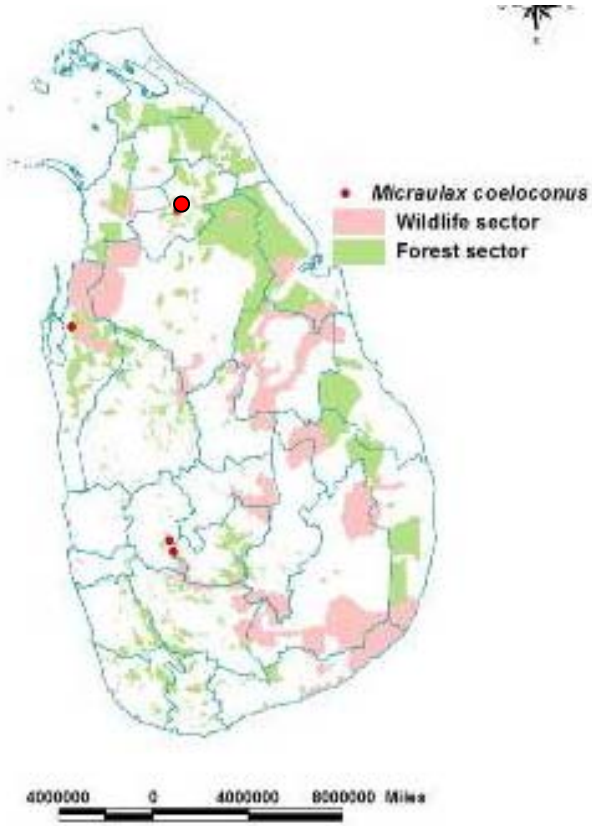
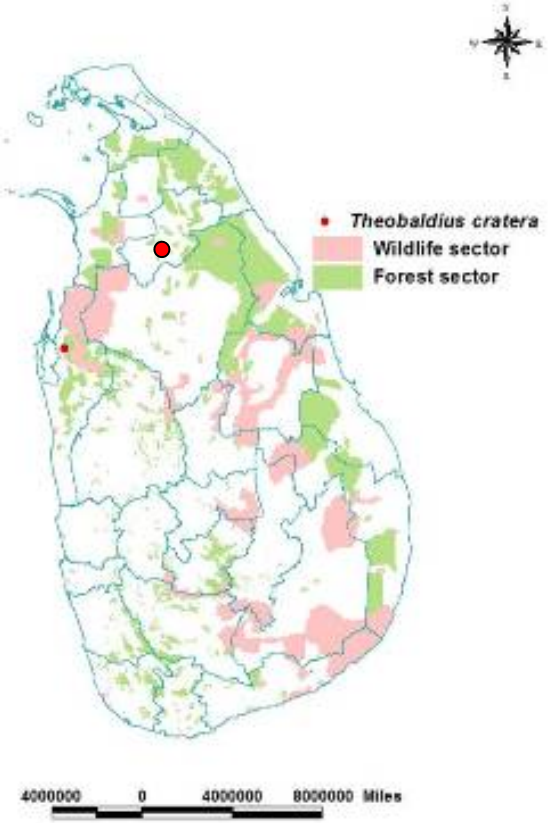
- Global redlist does not properly reflect the status of species, especially endemics and invertebrates
- Use National Assessments – constrained by data limitations

Case in Point – Land Snails

Taxa	CR	EN	VU	NT	DD	LC
2007	16 (15)	12 (12)	5 (5)	11 (9)	184 (151)	16 (12)
2012	80 (70)	76 (72)	23 (20)	12 (10)	36 (32)	5 (1)





Constraints and Challenges

- Difficulty in Monitoring translocated species if the site receiving already has the species
- In such cases it is difficult to measure the overall success of the activity
- However, this is preferable over no action alternative as this would give
  - An opportunity for the species to establish in a new area which would otherwise be extirpated in the project location
  - Loss of gene pool can be avoided assuming translocated individuals would survive and contribute to the breeding population

Thank You…