

# Dragonflies of Sri Lanka



## An Introduction to Diversity, Ecology and Conservation

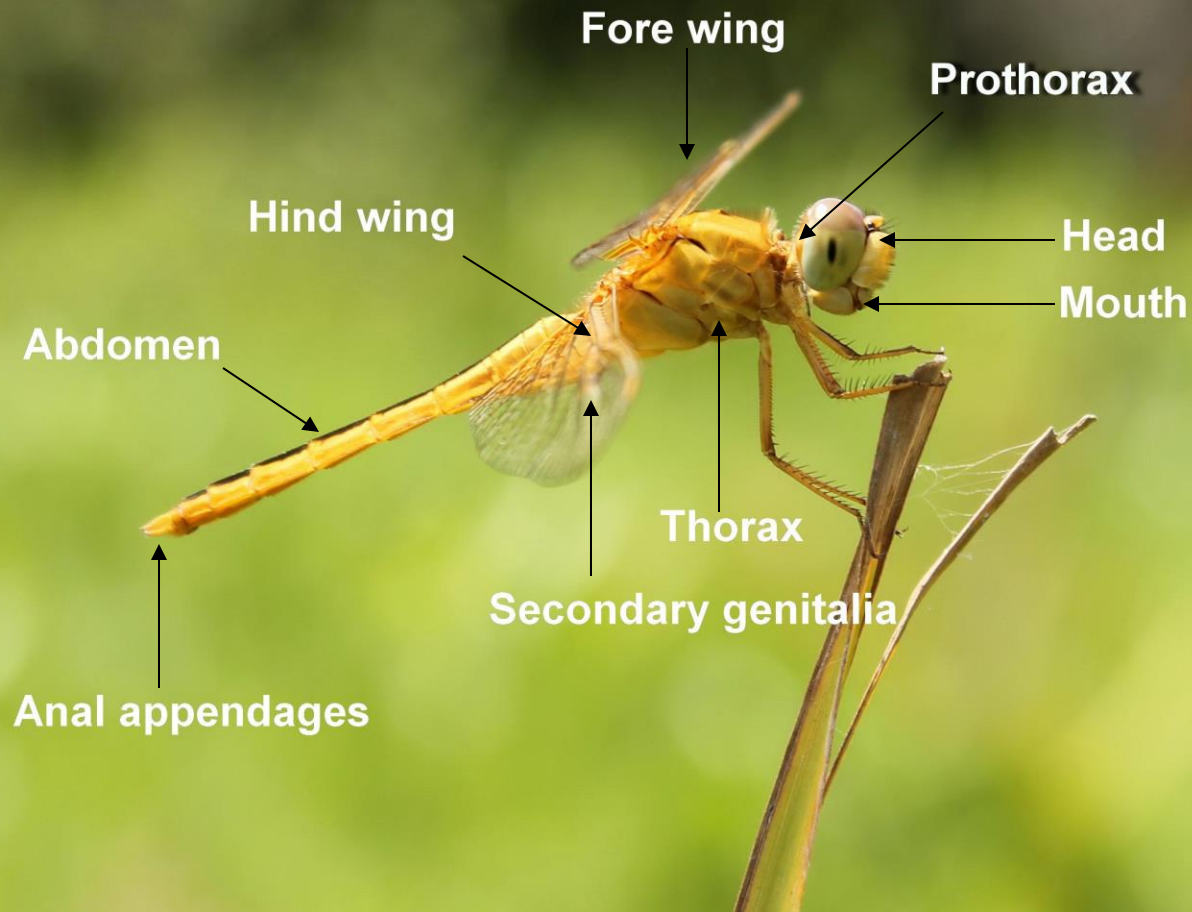
Amila Prasanna Sumanapala

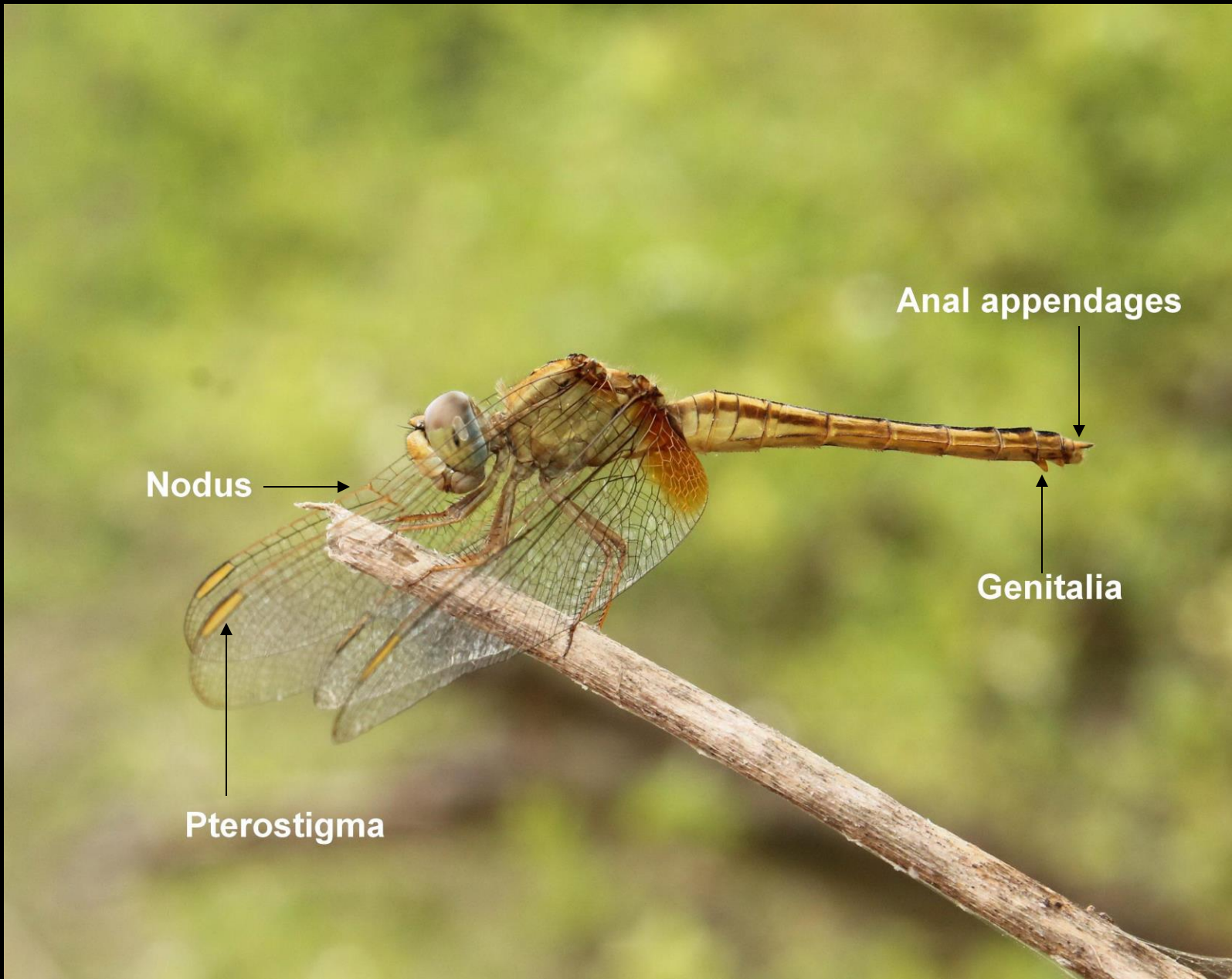
# Classification

- Kingdom – Animalia
- Phylum – Arthropoda
- Class – Insecta (Hexapoda)
- Order – Odonata
- Sub Orders
  - Zygoptera
  - Epiprocta
    - Infra Orders
      - Anisoptera
      - Epiophlebioptera



# Basic Morphology





Nodus

Pterostigma

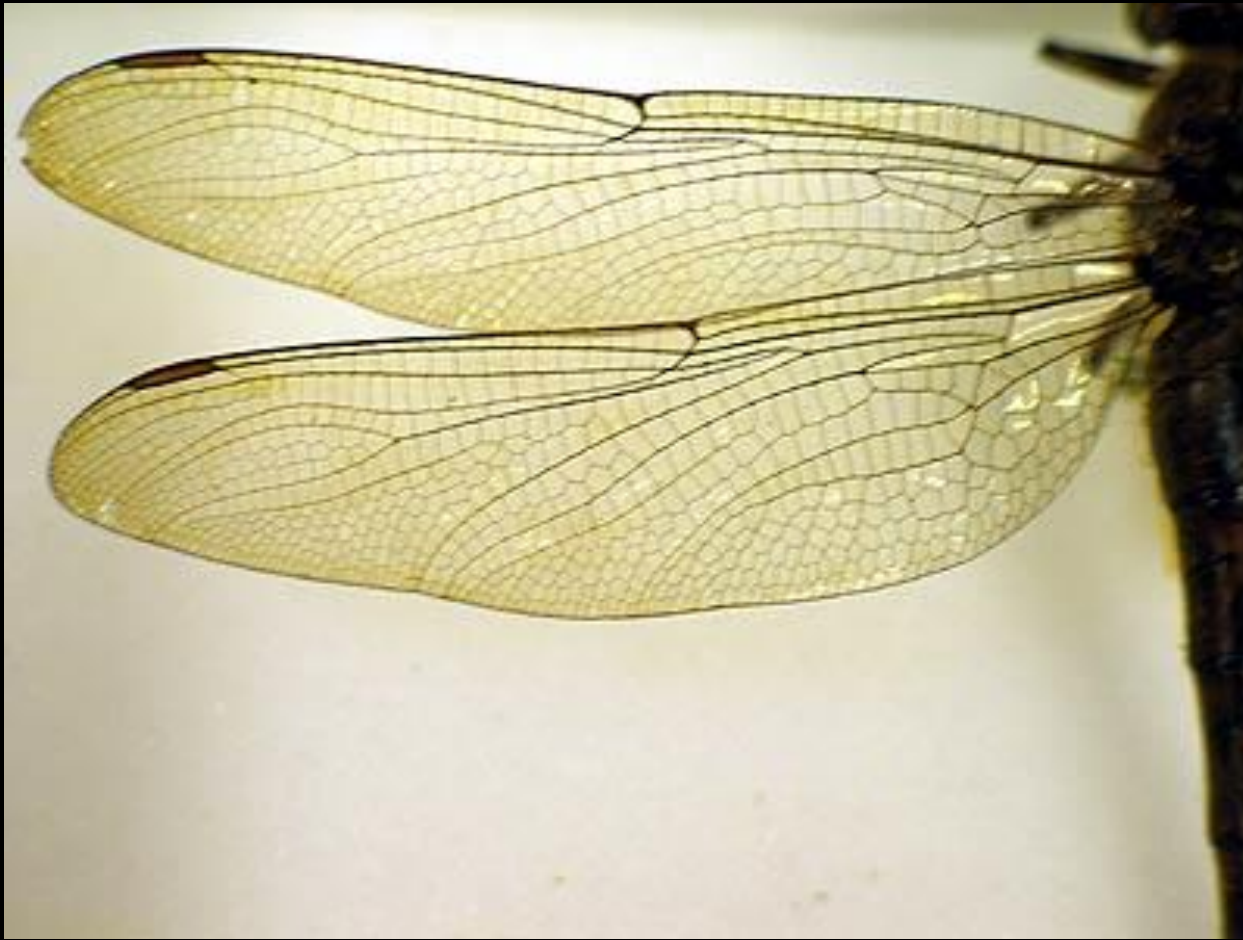
Anal appendages

Genitalia

# Male or female?



# Basic Morphology



# Dragon or Damselfly?



Dragonfly



Damselfly

# Epiophlebioptera

- Previously classified under Suborder Anisozygoptera
- Only 4 living species
- One Genus: *Epiophlebia*
- More close to dragonflies than to damselflies
- Found only in Eastern Himalayas and China





# Where do they live?

- Wetlands
- Forests
- Grasslands
- Agricultural lands
- Deserts
- Coastal habitats



## Marine Dragonflies



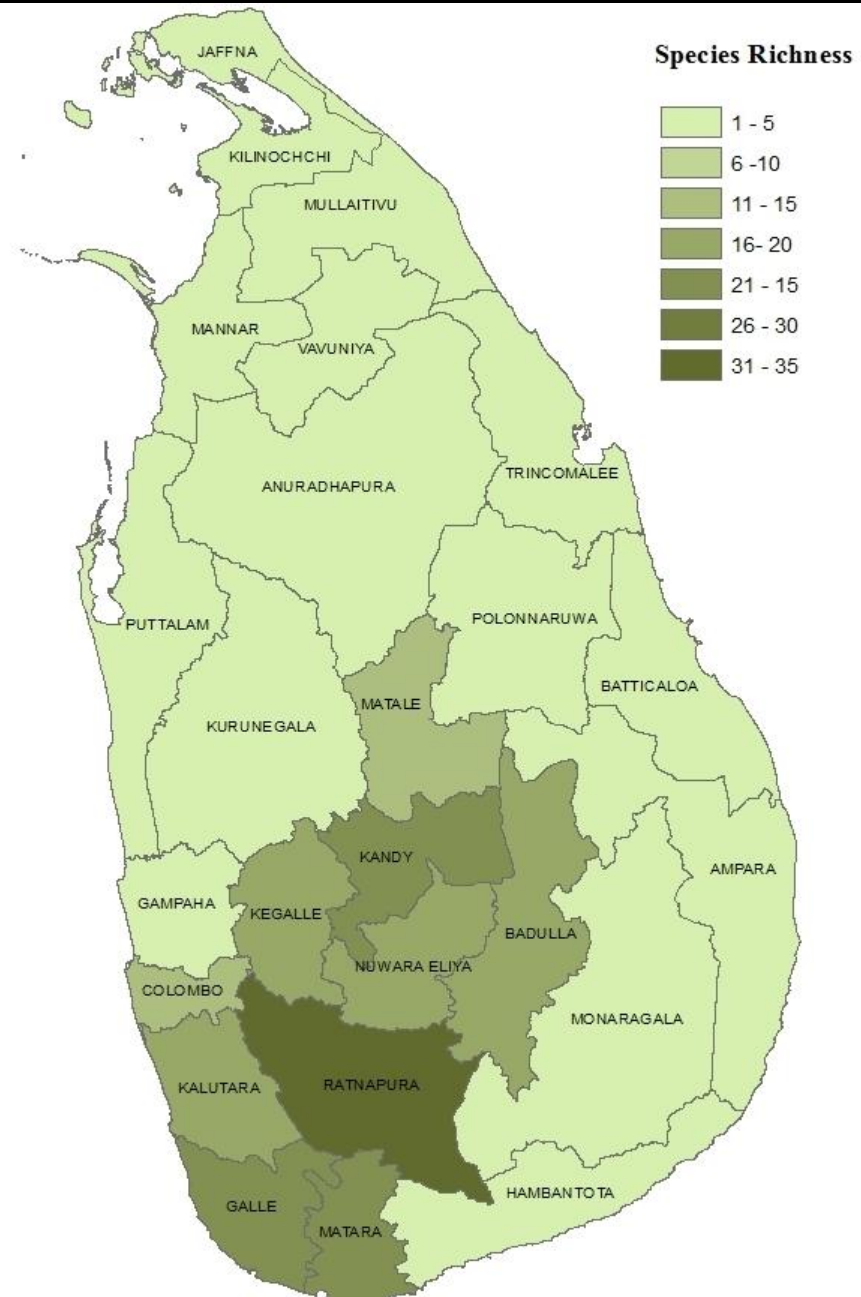
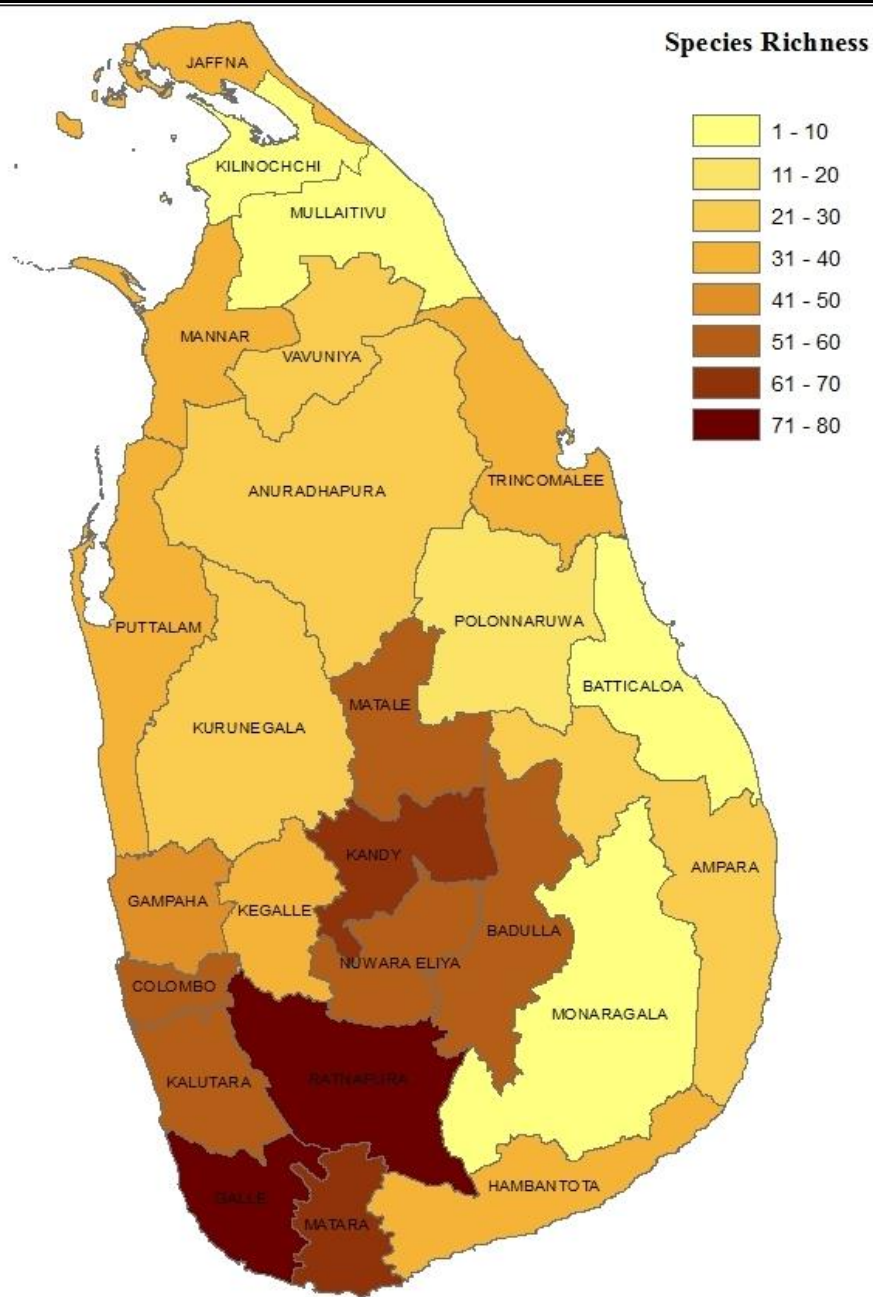
*Orthetrum poecilops*



*Erythrodiplax berenice*



A desert living dragonfly  
*Stylurus intricatus*



# Size of Odonates

- Body length : 15-135 mm
- Wingspan : 17-191 mm

Smallest living dragonfly  
*Nannophya pygmaea*

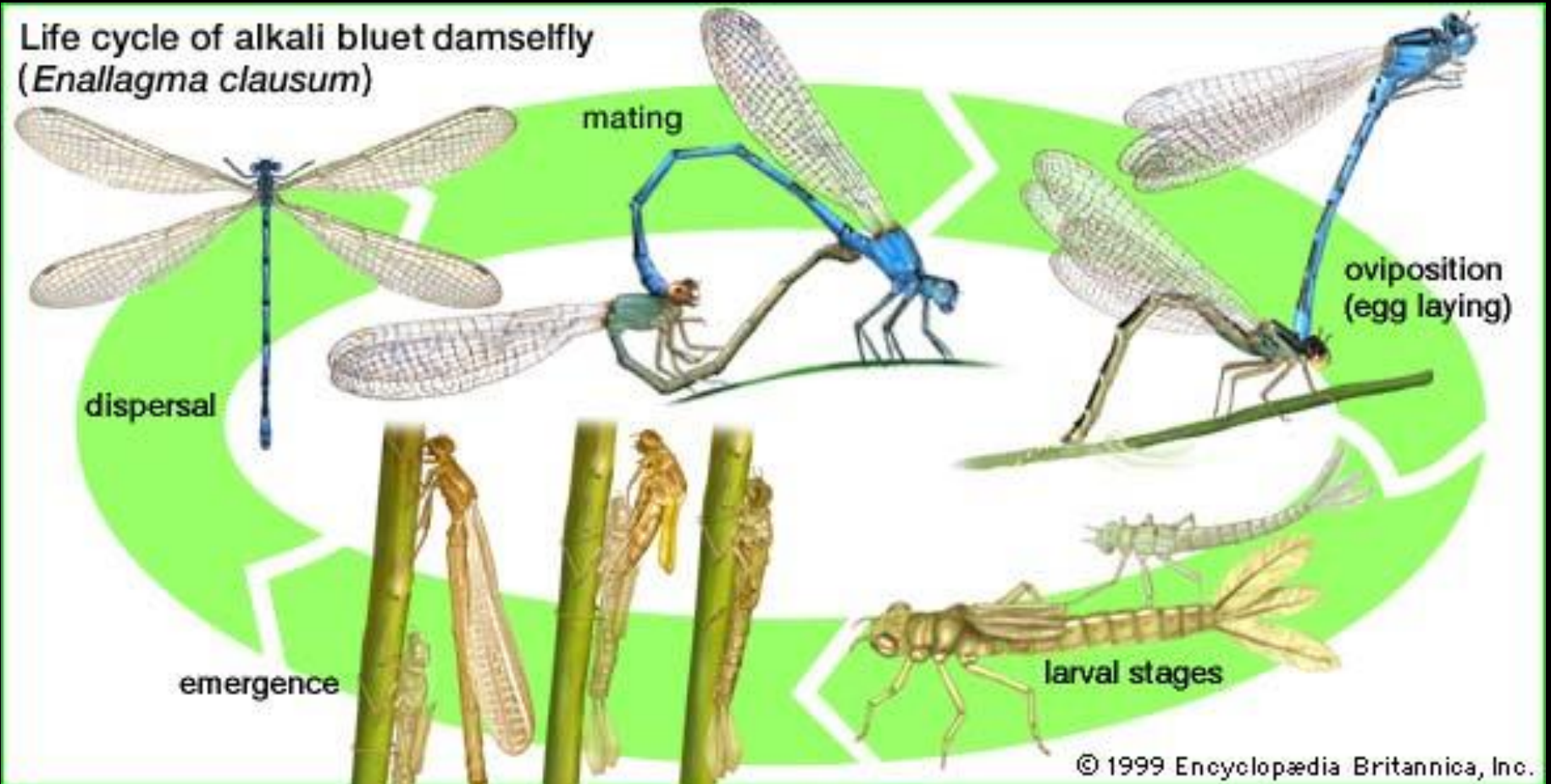


Longest wingspan  
*Megaloprepus caerulatus*



Longest body  
*Mecistogaster linearis*

# Life Cycle



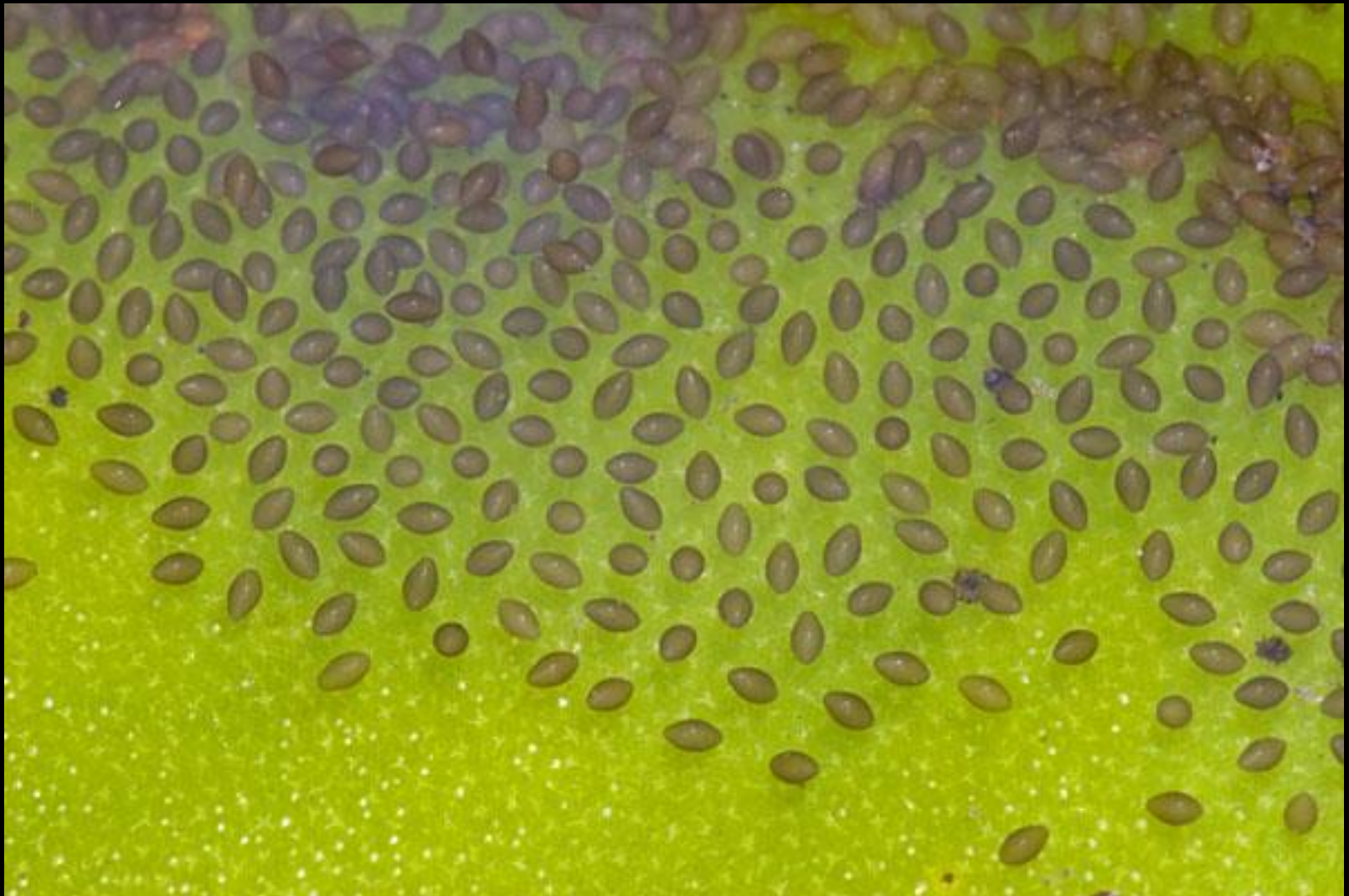
# Mating and Ovipositing



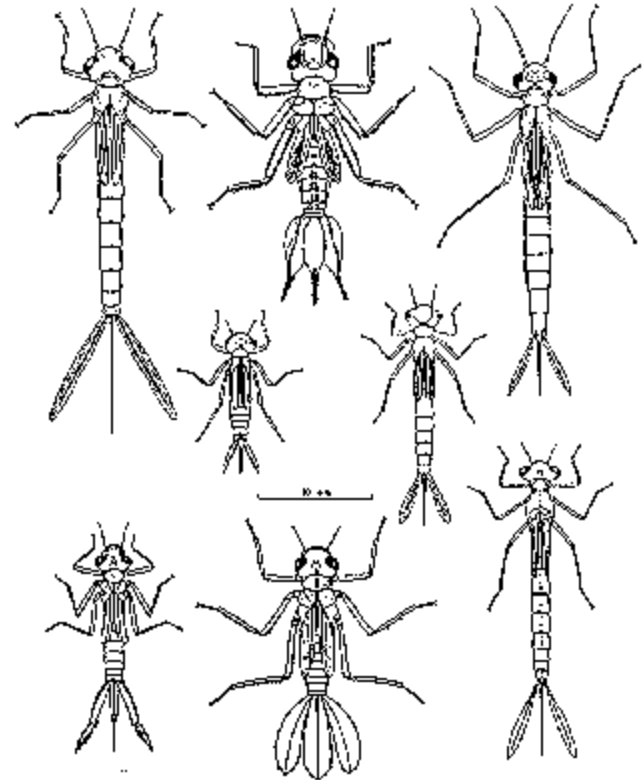
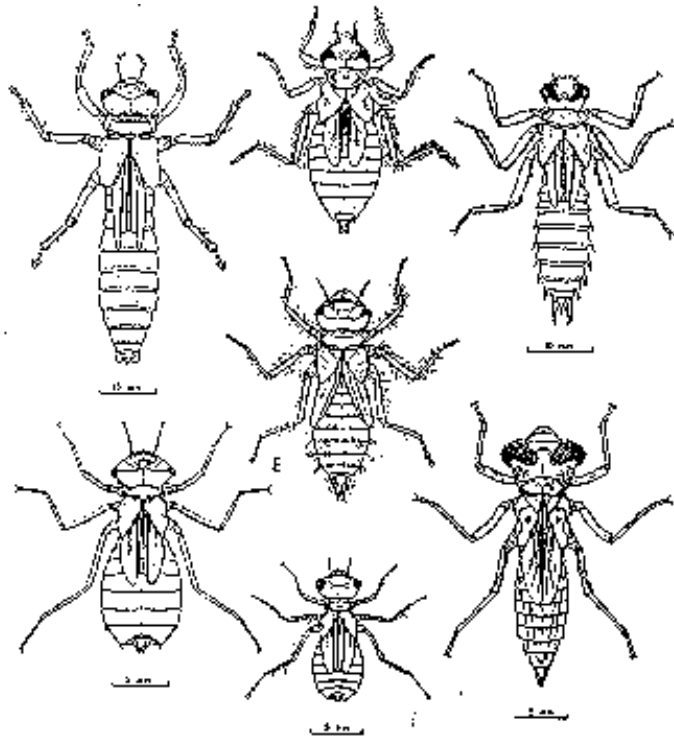




# Eggs



# Larval Stages



# Exuvia



Anisoptera



Zygoptera

# Emergence of an adult

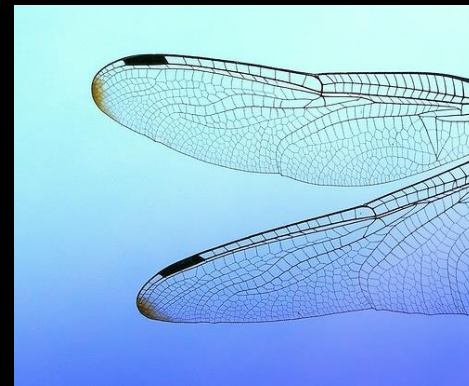


# Feeding

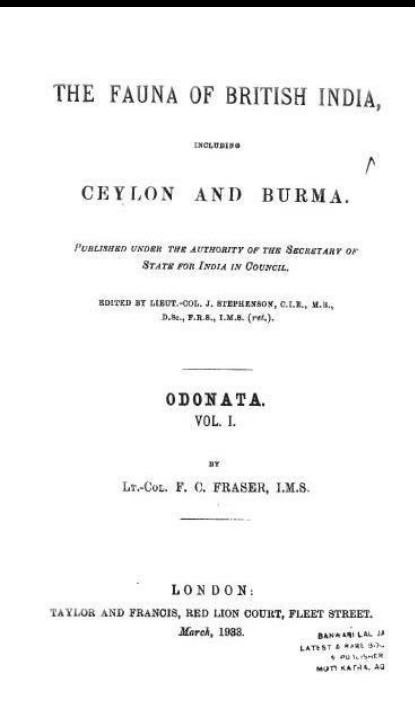


# Identification features

- Size and shape
- General colour pattern
  - Segments
  - Wings
  - Eyes
  - Prothorax
- Venation of wings
- Structure of anal appendages



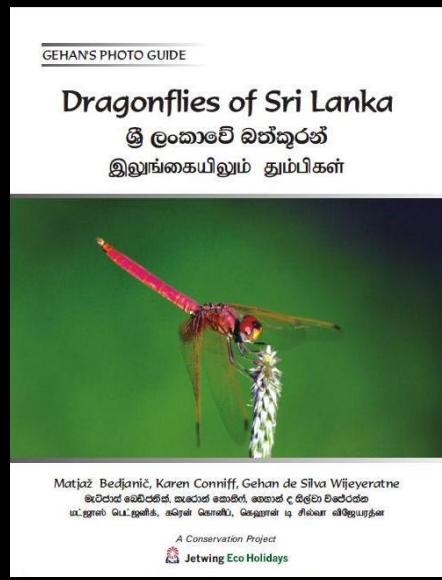
# History of Odonatology in SL



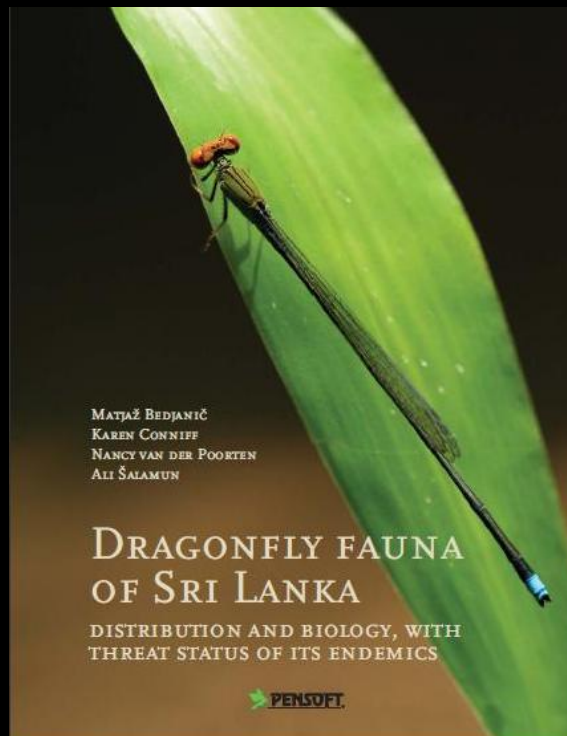
1933, 34, 36



2000



2006



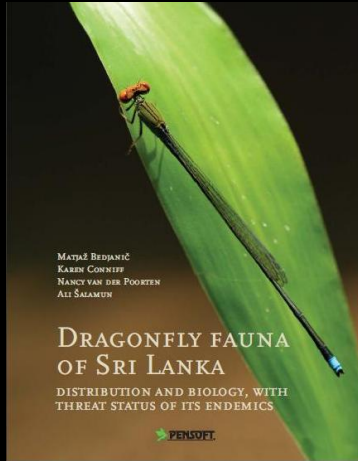
2014

# Diversity of Odonates

- Around 5900 species in the world
- Number of species in Sri Lanka ?
- Number of Endemics in Sri Lanka ?



# Number of Species



Described

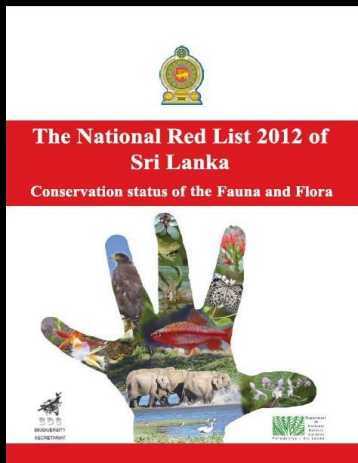
Undescribed

Total

120

4

124

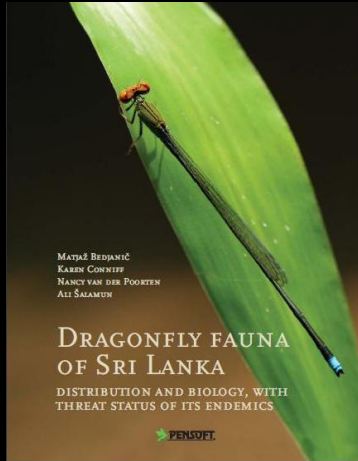


118 (-1 / +4)

0

121

# Number of Endemics



Described

48

Undescribed

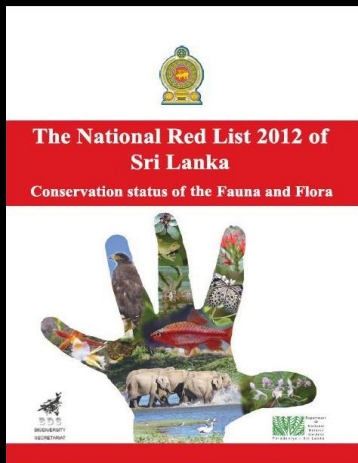
4

Total

52

Subspecies

9



47 (-1 / +2)

0

48

8 (+2)

# Family Calopterygidae - Jewelwings



Black-tipped Flashwing  
*Vestalis apicalis*

Oriental Greenwing  
*Neurobasis chinensis*



# Family Chlorocyphidae



Green's Gem  
*Libellago greeni*

Ebony Gem  
*Libellago corbeti*





Ultima Gem  
*Libellago finalis*

Adam's Gem  
*Libellago adami*





Pic: Sarath Sanjeewa

# Family Euphaeidae



Shinning Gossamerwing  
*Euphaea splendens*

# Family Lestidae - Spreadwings



*Lestes elatus*  
White-tipped Spreadwing

*Lestes malabaricus*  
Malabar Spreadwing



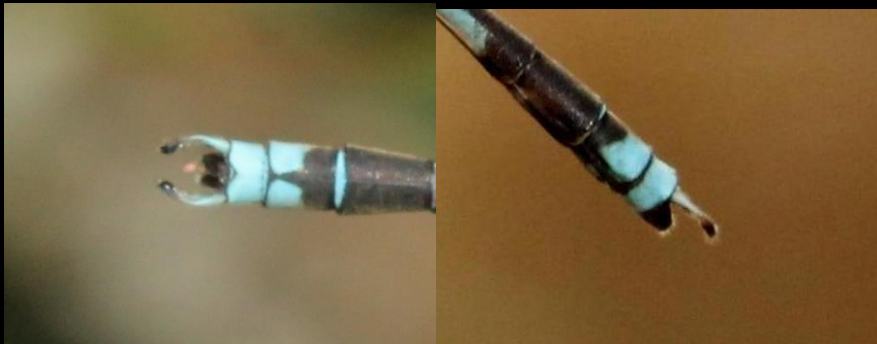


# Lestidae cont.



*Indolestes gracilis*  
Mountain Reedling

*Indolestes divisus*  
Metallic-backed Reedling



## Lestidae cont.



*Sinhalestes orientalis*  
Sri Lanka Emerald Spreadwing

# Family Coenagrionidae - Bluets



Yellow Waxtail  
*Ceriagrion coromandelianum*

## Coenagrionidae cont.



Painted Waxtail  
*Ceriagrion cerinorubellum*

## Coenagrionidae cont.



Malabar Sprite  
*Pseudagrion malabaricum*

Blue Sprite  
*Pseudagrion microcephalum*



# Family Platycnemididae - Featherlegs



Yellow Featherleg  
*Coperia marginiceps*

# Family Platystictidae - Shadowdamsels



Dark Forestdamselfly  
*Platysticta apicalis*



Blurry Forestdamselfly  
*Platysticta maculata*



# Platystictidae cont.



Neitner's Shadowdamsel  
*Drepanosticta neitneri*

Brinck's Shadowdamsel  
*Drepanosticta brincki*





# Family Protoneuridae - Threadtails



Jungle Threadtail  
*Elatoneura caesia*

# Protoneuridae cont.



Stripe-headed Threadtail  
*Prodasineura sita*



# Family Gomphidae - Clubtails



Rapacious Flangetail  
*Ictinogomphus rapax*



Lyrate Grappletail  
*Heliogomphus lyratus*

Wall's Grappletail  
*Heliogomphus walli*



# Family Aeshnidae - Hawkers



Elephant Emperor  
*Anax indicus*

Pale-spotted Emperor  
*Anax guttatus*



# Family Cordulidae - Emeralds



Forest Shadow-emerald  
*Macromidia donaldi pethiyagodai*

# Family Libellulidae - Chasers



Spine-tufted Skimmer  
*Orthetrum chrysis*

Pink Skimmer  
*Orthetrum pruinatum*



# Libellulidae cont.



Blue Percher  
*Diplacodes trivialis*



# Libellulidae cont.



Pied Parasol  
*Neurothemis tullia*

# Libellulidae cont.



Fruhstofer's Junglewatcher  
*Hylaoethemis fruhstoferi*



Yerbury's Elf  
*Tetrathemis yerburii*

# Libellulidae cont.



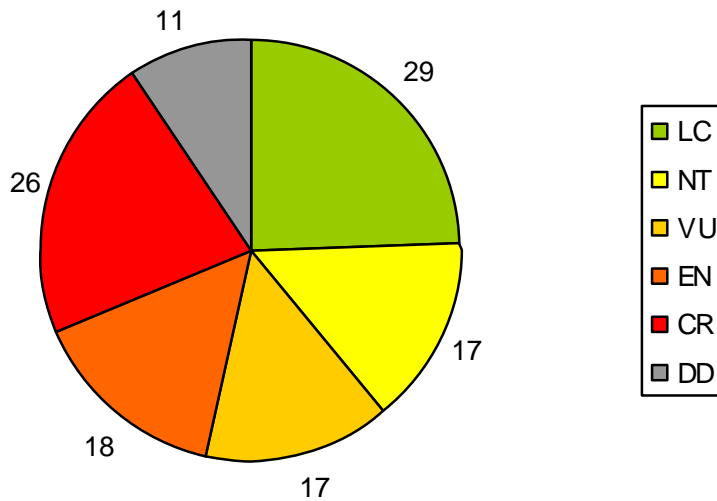
*Lyriothemis defonsekai*  
Sri Lanka Vermilion Forester

# Libellulidae cont.

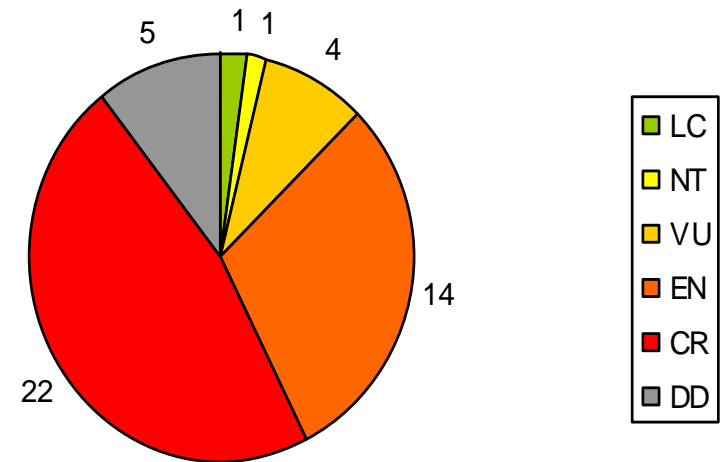


# Conservation Status

## National Redlist 2012 of Sri Lanka

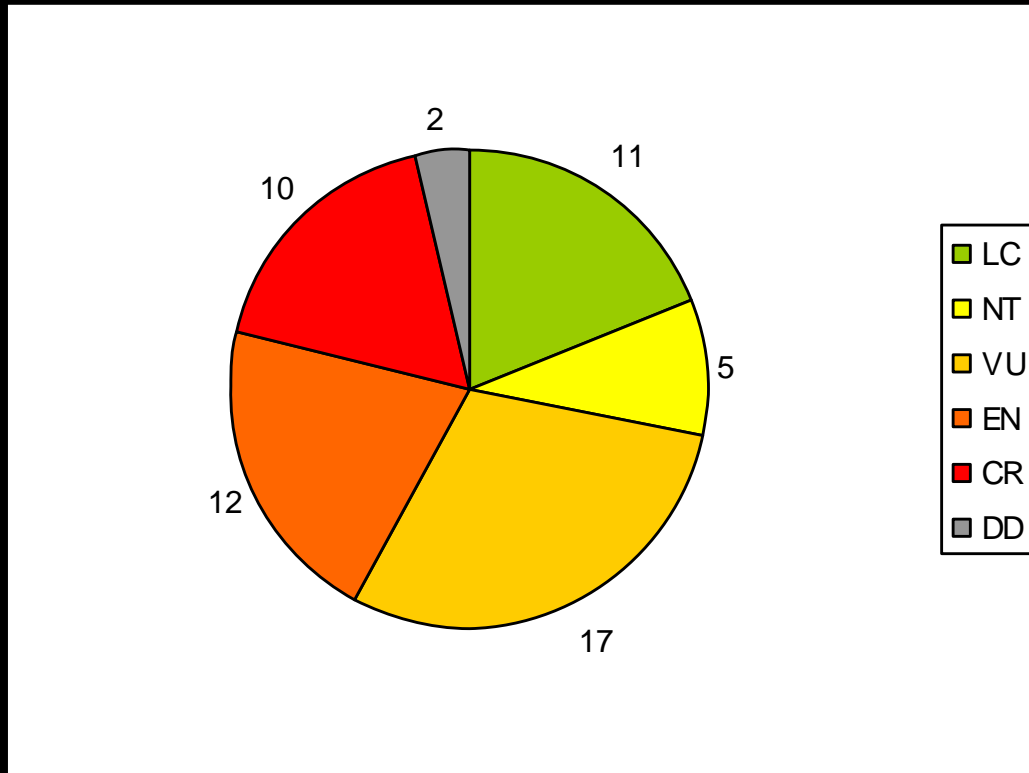


Species



Endemics

# Conservation Status cont.



Endemics (Bedjanic et al., 2014)



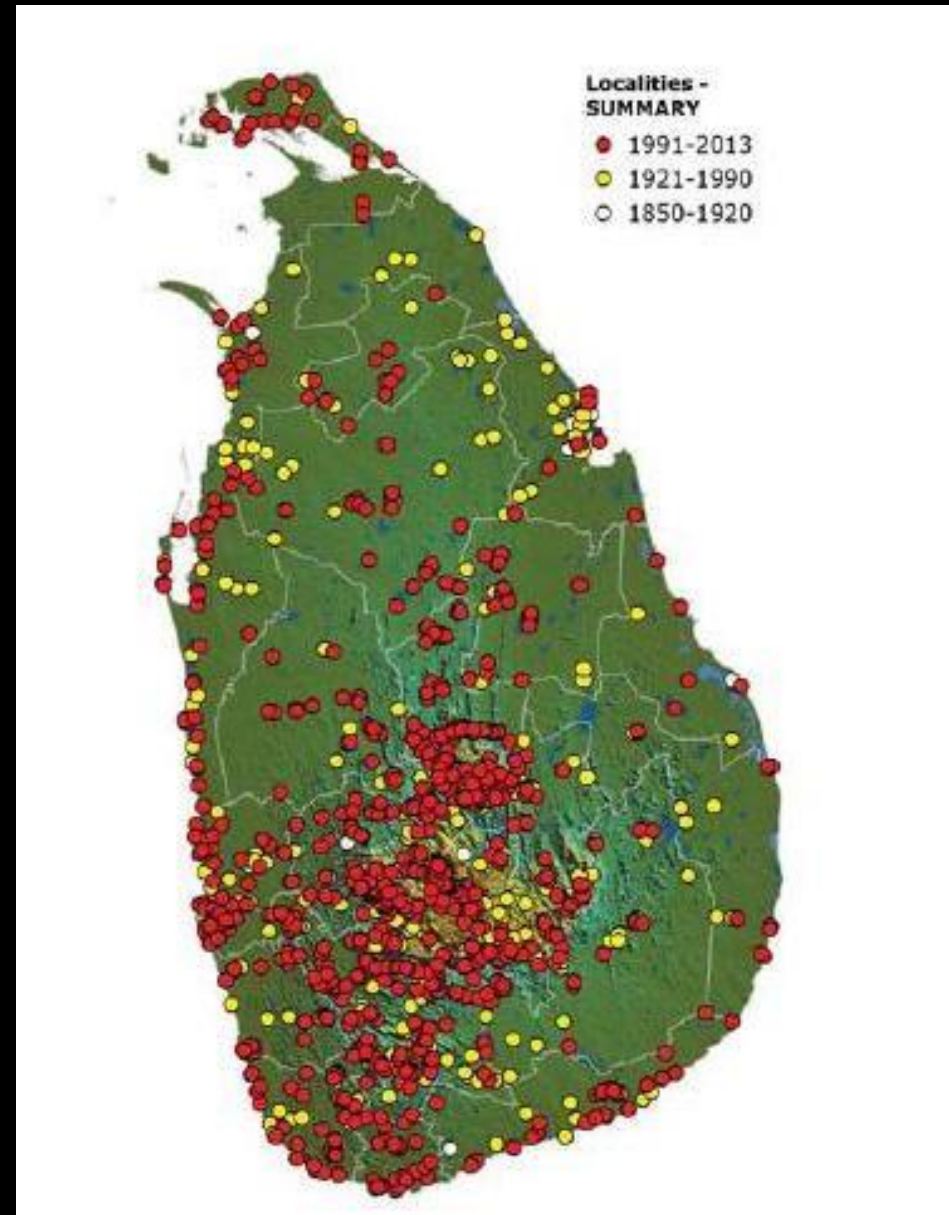
Source: Bedjanic et al., 2014

*Macrogomphus annulatus*

# Knowledge Gaps

- 26 species: 10 > locality records
- 14 species: 5 > locality records
- 5 species: only one known locality record
  - *Lestes malabaricus*
  - *Pseudagrion decorum*
  - *Archibasis oscillans hanwellanensis*
  - *Anax tristis*
  - *Macromia flinti*

- Inadequate surveys in North and East
- Inadequate surveys in small forest fragments in the wet zone





- 5 species: no records for the last 50 years
- 8 species: no photographic records in Sri Lanka
- 3 species: no photographs of living animals
- 8 species: only a single sex is described
- Larval stages are unknown for about 80 species
- Adult and larval habitat preference are unknown for almost all the species
- Taxonomic uncertainties

# Conservation

- Conservation Action Plan
- Systematic island wide surveys
- Research beyond conservation assessment
- Protected Areas
- Stream and wetland conservation
- Habitat restoration
- Responsible development
- Capacity building for research and conservation

***Thank You***

