

# Odonata

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*Libellula (Plathemis) lydia*

**Common Whitetail**

**Image courtesy of Digital Dragonflies.**

# Odonata

## Dragonflies and Damselflies

- Large
- Conspicuous
- Predators as nymphs and adults
- Adults feed while flying
- Can catch and eat 60 mosquitoes in one minute according to one reference
- Nymphs have hinged grasping jaw
- More common in slow water

# Odonata - 2 Suborders

- Anisoptera – Dragonflies
  - ◆ Wings of two sizes
  - ◆ Wings held out at sides and flat
  - ◆ Generally larger and more robust
  - ◆ Large eyes on head
- Zygoptera – Damselflies
  - ◆ Wings of similar shape
  - ◆ Held together over the back
  - ◆ Delicate bodies
  - ◆ Eyes more or less dumbbell shaped

# Odonata

## Species Diversity

Area	Dragonflies	Damselflies
United States	318	129
Texas	147	74

# Odonata – Life cycle

- Adults lay eggs in the water
- Small nymphs develop in the water
- Molt several times as they grow
- Nymphs are also called naiads
- Crawl out of the water when mature
- Sit on rocks, plants, piers, etc. and hatch into adults

# Mating of Odonata

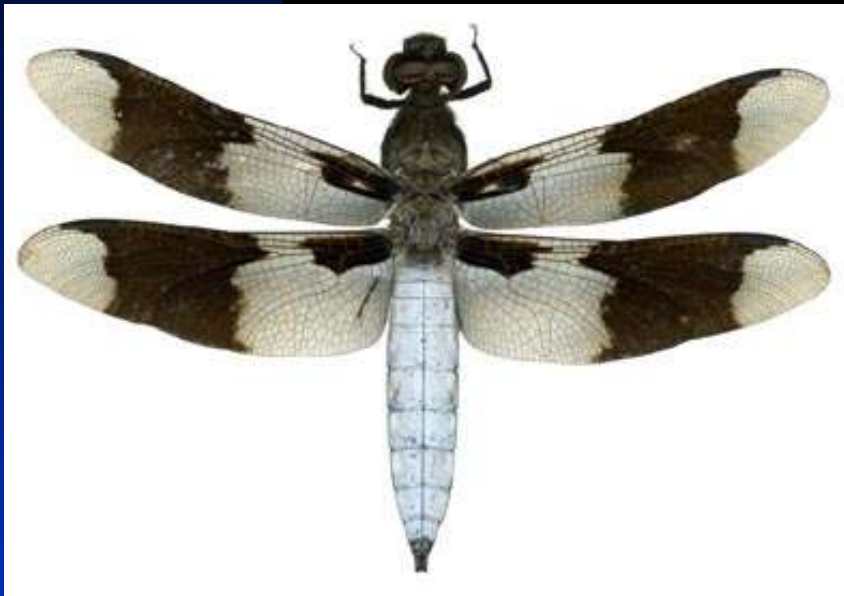
- Males place sperm packet on second abdominal segment
- Males have claspers on the end of the abdomen
- They clasp a female behind the head
- Fly “in tandem” while the female bends the abdomen forward to pick up the sperm
- Males may clasp onto another male to compete for access to female

# Dragonflies - Adults

- Wings clear or patterned
- Claspers on the end of the males
- Some very easy to identify
- Strong fliers
  - ◆ may occur a long way from water
- Eyes large
  - ◆ Small blind spot directly behind the abdomen

# Odonata – Adults

Sexual Dimorphism - males and females have different forms



Male



Female

*Libellula (Plathemis) lydia*

Common Whitetail

Image courtesy of Digital Dragonflies.



# Dragonflies - Nymphs

- Husky
- Elongate to flattened
- No obvious gills
- No tail extensions



# Dragonflies - Biology

- Adults may be territorial
- Adults may eat honey bees
- Nymphs may eat small fish
- Can use “jet propulsion” by pushing water out the anus
- Short spurts to avoid predators
- Common in all fresh water

# Damselflies - Adults

- Common body colors - green, blue, brown
- Eyes dumbbell shaped
- Most have clear wings
- Some with black wings



# Damselflies - Nymphs

- Flexible very thin bodies
- Leaf-like gill filaments for a tail
- Weak jerky swimmers
- Generally crawl in water
- Especially common around plants



# Damselflies - Biology

- Very common around pond and streams
- Frequently taken by fish
- Nymphs may be territorial

# Green Darner

## *Anax junius*

- One of our largest dragonflies
- High fliers
- Found long distances from water



Image courtesy of  
Digital Dragonflies.

# Eastern Amberwing

## *Perithemis tenera*

- Sexual dimorphism
- Male and females differ
- Smallest of our dragonflies
- Common around local ponds

Images courtesy of  
Digital Dragonflies.



Male



Female

# Blackwinged Damselflies

## Calopterygidae



Ebony Jewelwing

*Calopteryx maculata*

- Usually around streams
- Conspicuous when present
- Males darker and brighter
- Larvae are larger and darker than most damselflies

Images courtesy of  
Digital Dragonflies.



# Information Sources

## Books

- A Dazzle of Dragonflies
  - ◆ By Forrest Mitchell & James Lasswell
- Dragonflies and Damselflies of Texas and the South Central States
  - ◆ By John Abbott
- Dragonflies through Binoculars: A Field Guide to Dragonflies of North America
  - ◆ By Sidney Dunkle
  - ◆ Some are still difficult to identify

# Information Sources

## Web Sites

- Digital dragonflies
  - ◆ [www.dragonflies.org](http://www.dragonflies.org)
- Checklists by state
  - ◆ [odonatacentral.bfl.utexas.edu](http://odonatacentral.bfl.utexas.edu)
- Dragonfly Society of the Americas
  - ◆ [www.ups.edu/biology/museum/NA\\_Dragons.html](http://www.ups.edu/biology/museum/NA_Dragons.html)