

### Natural History / Behaviour

- Freshwater turtles are ectothermic: their body temperature is influenced by their surroundings
- All turtles are independent from hatching – there is no such thing as an ‘orphaned turtle’ – although they are cute!
- They must always be returned to where they came – always obtain accurate details of their rescue location
- Individuals go to the same breeding grounds each year so should not be relocated

### Common Species of South-east Queensland

Carapace size average only for sub-adult to adult animals

Eastern Long-necked Turtle	<i>Chelodina longicollis</i>	25 cm
Broad-shelled River Turtle	<i>Chelodina expansa</i>	50 cm
Saw-shelled Turtle	<i>Elseya latisternum</i>	20 cm
Brisbane Short-necked Turtle	<i>Emydura signata</i>	20 cm
Krefftt's turtle	<i>Emydura macquarii krefftii</i>	25 cm

**Note:** List is incomplete. For a complete list of all lizard species found in South-East Queensland, refer to a reptile field guide such as *A Field Guide to Reptiles of Queensland* by Steve Wilson.

### Basic Rescue Equipment and Emergency Housing

- Cotton pillowcase with tie
- Plastic tub with smooth sides and ventilated lid with towels on bottom for support (do not fill with water)
- Towel or gloves for handling (if not confident)
- Heat source: Snugglesafe heat disk under a towel at one end of the enclosure. Ensure sufficient room so the turtle can move onto or away from it freely. If not sufficient room to move away from a heat source, do not include in emergency housing.
- **Note: When using any heat source, the animal MUST be able to move away from the heat source to avoid thermal injury. Please refer to Reptile Species Coordinator before providing a heat source.**

**Note:** Plastic tub/container should be suitable for size of individual. Small plastic terrariums can be used for small individuals – larger individuals must be housed in a larger container. The container should be at least 2-3 times as long and as wide as the animal. Individuals with severe shell fracture should be housed in a smaller tub/box which will help prevent further shell trauma/loss.

### OHS Considerations / Zoonoses

#### Beware of

- Teeth / Mouth
- Claws
- Will often urinate or evacuate anal glands when handled

#### Known Zoonotic Diseases

- Reptiles known to carry salmonella – ensure excellent hygiene when handling
- No other specific zoonoses

# Handling

## Small Turtles

Grip the rear of the shell with your thumb on top and fingers underneath.



## Large Turtles

Grip both your hands on either edge of the carapace between the front legs and in front of the hind legs



*Photos: CWS*

# Assessment Checklist – Freshwater Turtles

Clinical Signs	Healthy / Normal	Sick / Injured
<b>Demeanour</b>	<ul style="list-style-type: none"> <li>Bright and alert</li> <li>Will tuck head and neck back/under shell</li> <li>Will struggle when being handled</li> <li>May try to escape handling</li> <li>Responsive to stimuli (e.g. noises)</li> </ul>	<ul style="list-style-type: none"> <li>Quiet / depressed</li> <li>Distressed</li> <li>Non-responsive when handled</li> <li>Not responding to stimuli</li> <li>Does not tuck its head in/under shell</li> <li>Unconscious</li> </ul> <i>(Indicative of shock, dehydration, injury)</i>
<b>Mobility / Limbs</b>	<ul style="list-style-type: none"> <li>Able to move body and all limbs</li> <li>No bruising or swelling on extremities</li> <li>No obvious abnormalities or lack of symmetry</li> <li>Healed amputations of toes/webbing normal</li> </ul>	<ul style="list-style-type: none"> <li>Abnormalities in movement (e.g. only using front legs, dragging a limb, falling over, swaying)</li> <li>Head tilted to one side</li> <li>Paralysis (<i>trauma</i>)</li> </ul> <i>(Indicative of trauma related injury)</i>
<b>Body Condition and shell</b>	<ul style="list-style-type: none"> <li>Good body condition</li> <li>Good muscle tone</li> <li>Shell is shiny and undamaged (healed shell deficits are normal)</li> <li>Non-odorous smell</li> </ul>	<ul style="list-style-type: none"> <li>Open wounds</li> <li>Puncture wounds, shell fractures</li> <li>Poor body condition (<i>malnourished</i>)</li> <li>Lack of muscle tone</li> <li>Offensive odour (<i>chronic disease or old wounds</i>)</li> <li>Dull, flaking shell (<i>chronic disease</i>)</li> </ul> <i>(Indicative of trauma or chronic illness/disease)</i>
<b>Breathing</b>	<ul style="list-style-type: none"> <li>Normal – Slight movement of chest with each breath – no noticeable effort. (Note: handling may result in increased respiration rate)</li> </ul>	<ul style="list-style-type: none"> <li>Open-mouthed breathing</li> <li>Laboured (noticeable effort to breath)</li> <li>Audible breathing sounds (clicking, ticking, gurgling sounds)</li> <li>Sneezing or coughing</li> <li>Bloody discharge</li> <li>Shaking head (<i>possible obstruction</i>)</li> </ul> <i>(Indicative of trauma related injury, poisoning)</i>
<b>Head</b>	<ul style="list-style-type: none"> <li>Symmetrical</li> </ul>	<ul style="list-style-type: none"> <li>Abnormal symmetry</li> <li>Indentations</li> <li>Swelling</li> <li>Crepitation</li> <li>Lacerations/abrasions</li> </ul> <i>(Indicative of trauma related injury)</i>
<b>Eyes</b>	<ul style="list-style-type: none"> <li>Bright and clear</li> <li>Shiny</li> <li>Blinks eyelids</li> </ul>	<ul style="list-style-type: none"> <li>Dull (pain/dehydration)</li> <li>Sunken (<i>dehydrated</i>)</li> <li>Closed (<i>pain/dehydration/injury</i>)</li> <li>Protrusion (<i>trauma</i>)</li> <li>Swelling (<i>trauma</i>)</li> <li>Nystagmus (<i>head trauma</i>)</li> <li>Unequal pupil(s) (<i>trauma</i>)</li> <li>Unreactive pupil(s) (<i>trauma</i>)</li> <li>Purulent discharge (<i>infection</i>)</li> </ul>
<b>Nose</b>	<ul style="list-style-type: none"> <li>Straight</li> <li>No discharge or bleeding</li> </ul>	<ul style="list-style-type: none"> <li>Distorted (<i>trauma - fracture</i>)</li> <li>Blood or other discharge (purulent infection) from nostrils (<i>trauma</i>)</li> <li>Abrasions (<i>trauma</i>)</li> <li>Swelling (<i>trauma</i>)</li> </ul>

## Assessment Checklist – Freshwater Turtles (continued)

Clinical Signs	Healthy / Normal	Sick / Injured
<b>Mouth</b>	<ul style="list-style-type: none"> <li>No discharge</li> <li>Symmetrical</li> <li>Jaw and tongue undamaged</li> </ul>	<ul style="list-style-type: none"> <li>Mal-aligned jaw (<i>trauma</i>)</li> <li>Blood (<i>trauma</i>)</li> <li>Swelling (<i>trauma</i>)</li> <li>Crepitation (<i>trauma</i>)</li> <li>Slow capillary refill time (<i>shock/dehydration</i>)</li> </ul>
<b>Ears (Tympanic membrane)</b>	<ul style="list-style-type: none"> <li>No discharge</li> <li>Clear membrane</li> </ul>	<ul style="list-style-type: none"> <li>Blood</li> <li>Clear fluid</li> <li>Torn membrane</li> </ul> <i>(Indicative of trauma related injury)</i>
<b>Cloaca (vent)</b>	<ul style="list-style-type: none"> <li>Clean</li> <li>Free from discharge</li> <li>Hemipenes not exposed</li> </ul>	<ul style="list-style-type: none"> <li>Blood</li> <li>Lacerations</li> <li>Swelling</li> <li>Hemipenes prolapsed (<i>trauma</i>)</li> </ul> <i>(Indicative of trauma related injury)</i>
<b>Tail</b>	<ul style="list-style-type: none"> <li>Straight</li> <li>Missing tail (old injury)</li> </ul>	<ul style="list-style-type: none"> <li>Swelling</li> <li>Lacerations</li> <li>Lack of movement</li> <li>Missing tail (<i>fresh injury</i>)</li> </ul> <i>(Indicative of trauma related injury)</i>

## Assessment Parameters

### Vital Signs

Heart Rate

Variable between species

Respiration Rate

Variable between species

Core Body Temperature

Variable between species

### Preferred Ambient Temperature

20°C - 26°C

### Signs of Stress

- Trying to escape constantly
- Urination, anal gland evacuation, defecation when picked up

### Signs of Pain

- Non-responsive or constant movement
- Closed eyes
- Not moving from or to heat source

### Signs of Dehydration

- Dull eyes
- Lethargy
- Sunken eyes
- Excessive sloughing of carapace
- Lack of skin elasticity

### Assessment of Body Condition

Look for muscle tone on front and rear limbs.  
Turtles in poor condition have a hollow appearance in front of the front and rear limbs under the shell and a thin neck.  
Carapace – should be in good condition with no fractures or sloughing

## Emergency Diet

Do not offer any food or water to an animal suffering from injury (e.g. vehicle hit, dog/cat encounter etc). Injured wildlife must be presented to a veterinarian for treatment before offering food or water. Alternatively, please consult with your relevant Species Coordinator.

- **Invertebrates** (yabbies, shrimp, fish, worms, crickets)
- **Green vegetables** (e.g. chopped bok choy, silverbeet, dark lettuce)

**Note:** Do not offer food until instructed by the Reptile Coordinator.

Turtles can go for several days without food if in good body condition and well hydrated.

## Common Injuries, Diseases and Conditions

- **Road trauma injuries** (fractured carapace and/or plastron, fractured limbs, internal injuries)
- **Entanglement or Gastrointestinal Obstruction** – from discarded fishing line/tackle

Photos: AZWH



**Above:**

Severe shell fracture with significant instability in segments.  
Often warrants euthanasia.



**Above:**

Isolated fracture of carapace with muscle exposure.  
Requires veterinary assessment and treatment.  
Prognosis good.

## Drug Administration (preferred routes)

Oral	Not suitable
Intramuscular	Muscle of forearm or hind legs
Subcutaneous	Loose skin just cranial to back legs (inguinal) – preferred. Or between front leg and neck
Intravenous	Jugular

## Euthanasia (preferred methods)

Euthanasia methods stated to assist veterinary staff.

Wildlife volunteers must not euthanise unless trained to do so or they hold appropriate approvals.

- Injection of sodium pentobarbitone (Lethabarb) after induction with Isoflurane or Alfaxan CD RTU preferred:
  - Intravenous
  - Intracardiac (must be anaesthetised first)
  - Intraperitoneal (dilute with water 50:50)
- Euthanasia by placing in freezer is NOT ACCEPTABLE and is INHUMANE.

## Suggested Drugs and Dose Rates

This information is provided for **VETERINARY USE ONLY** to assist veterinary staff with the **initial assessment** and **emergency treatment** of sick, injured and orphaned wildlife. Suggested drugs and doses are those commonly used by the wildlife hospitals in South-east Queensland and are for routine treatment only. Recommendations may vary between individual veterinarians. Culture and sensitivity results would indicate the most appropriate antibiotic regime. Most drugs are used off-label.

### Anaesthetic

Drug	Composition	Dose Rates
Isoflurane ®	Isoflurane 100%	5% for induction and 2-3% for maintenance with oxygen flow rate of 1-2 litres per minute.
Alfaxan CD RTU ®	Alphaxalone	5 - 9 mg/kg (IV) 10-15 mg/kg IM
Ketamine	Ketamine	30 - 50mg/kg (IM) as pre-euthanasia

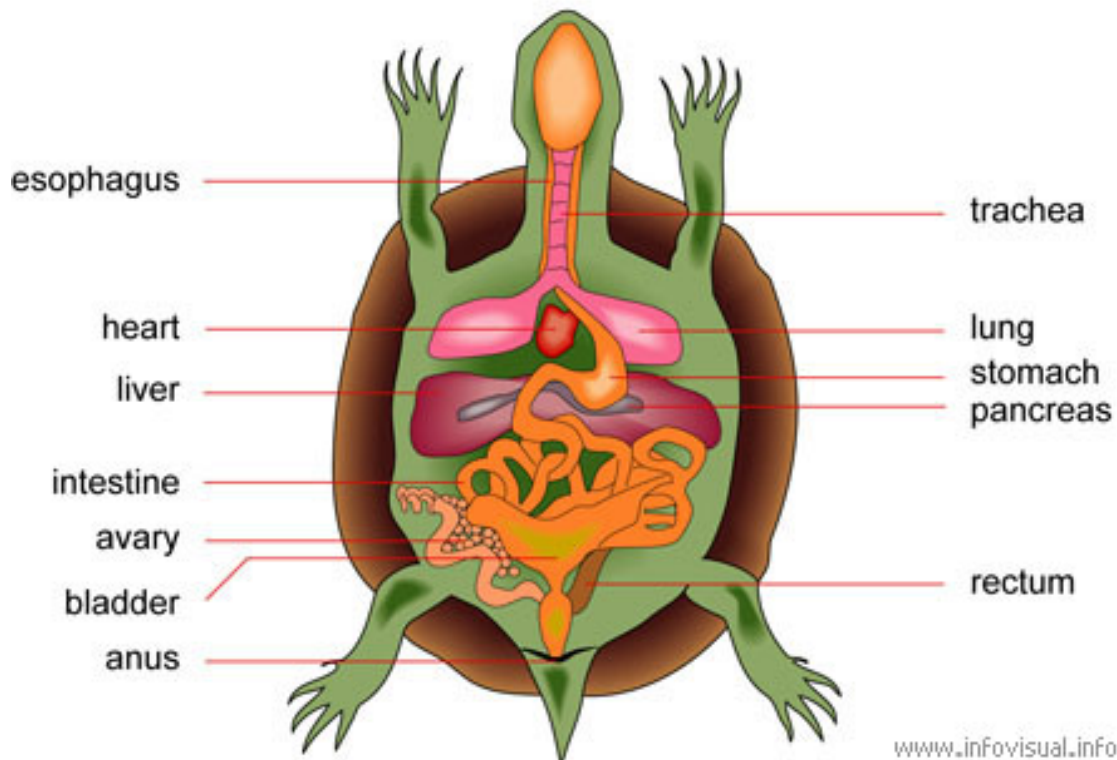
### Analgesic

Drug	Composition	Dose Rates
Torbugesic ®	Butorphanol Tartrate	1 to 2mg/kg (SC) or (IM) BID
Metacam ®	Meloxicam	0.4 mg/kg (SC) or (IM) EOD

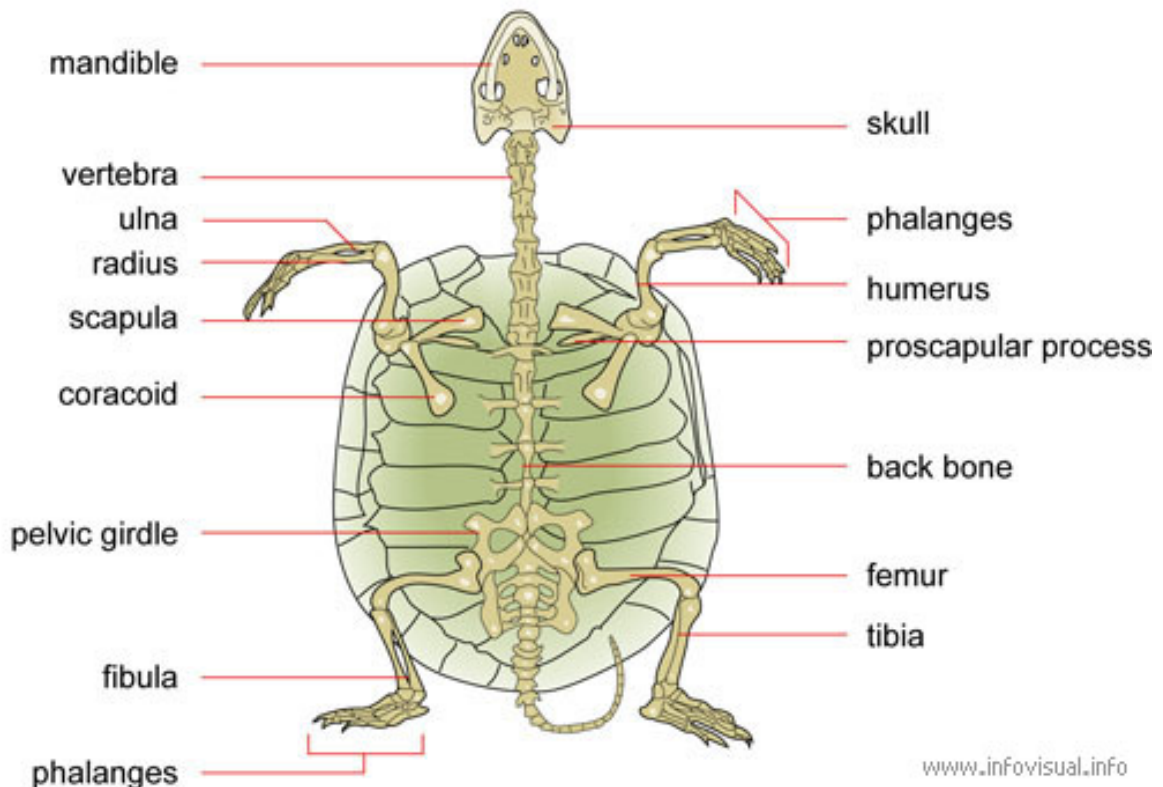
### Antibiotics

Drug	Composition	Dose Rates
Fortum ®	Ceftazidime pentahydrate	20 mg/kg Q3D (IM)
Baytril ®	Enrofloxacin	5-10mg/kg EOD (IM) or (SC) (must be diluted at least 50:50 with sterile water)

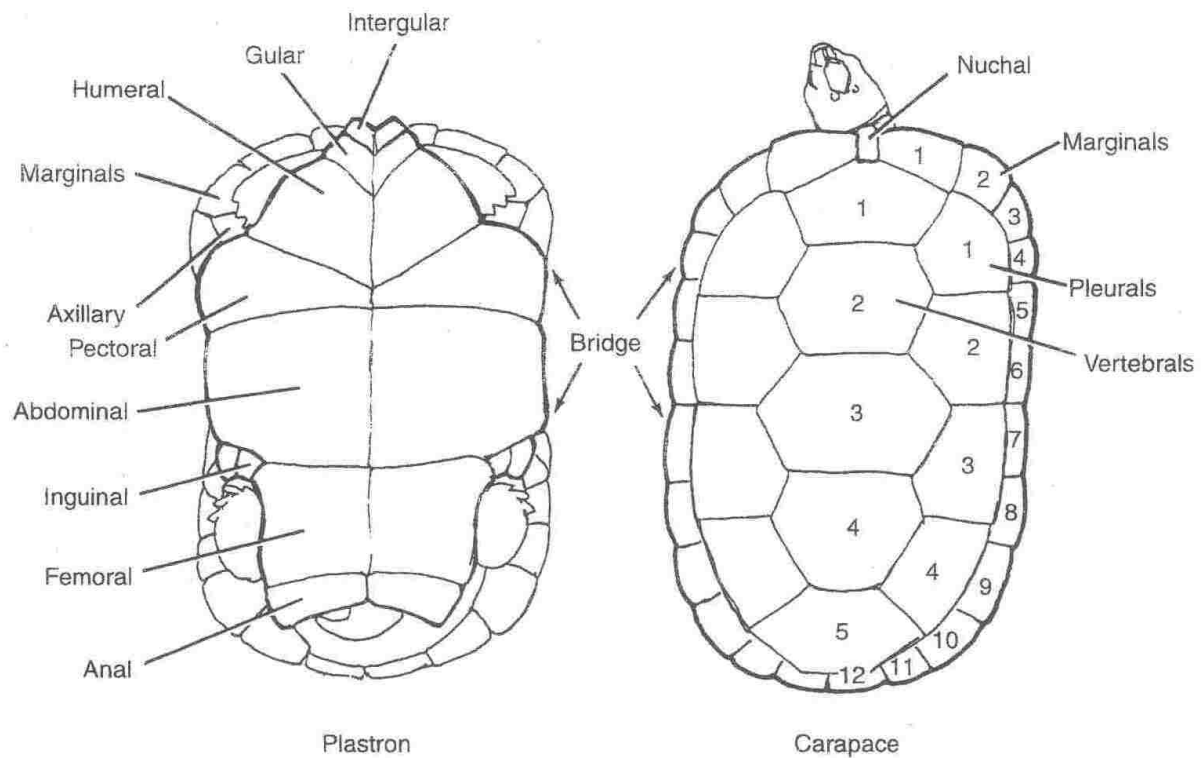
## INTERNAL ANATOMY OF A TURTLE



## SKELETON OF A TURTLE



## Anatomy (continued)



Source: *Reptile Medicine & Surgery (Mader)*