Husbandry and Enclosure Design

Factors to Consider in Enclosure Design

- What is the purpose of the enclosure?
- What is the climatic conditions of the species to be housed?
- What are the behavioural needs of the species to be housed?
- Do you want to breed the species in this enclosure?
- How easy will the enclosure be to maintain and clean?

General Amphibian Needs

- Appropriate environment
- Water in the appropriate form
- Appropriate food
- Appropriate intra-specific interaction
- Energy
  - Light
  - Heat
  - UVB

Research Your Species

Different species have different requirements

- **Review Literature**
- **Visit the habitat of the species**
- **Ask others**
- **Observe and learn from your animals**
- **Share**

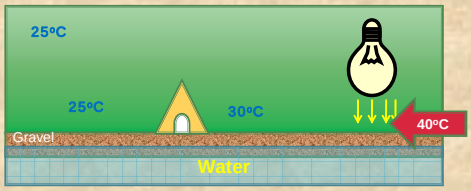
Purpose of the Enclosure

- Maintenance
- Breeding
- Larval Rearing
- For Metamorphosis
- Growth of juveniles

Environmental Parameters

- Temperature
- Humidity
- Water
- Substrate
- Cage furnishings (for function, and physical and psychological needs)
- Light
  - Photo Period
  - Quality
  - UVB

Temperature Gradients



Cage Temperature

- Heat can be provided via basking lights, ceramic heat emitters, heat tape/cord or aquarium heaters.
- Care should be taken to ensure that the frog will not burn itself.

Seasonal Cooling

The period of low temperature dormancy

Lighting and UV

Light and UVB is an important component of the amphibian environment.

Care should be taken to provide as natural a cycle of photoperiod as possible.

UV Lighting

Selecting the right light can produce light, excellent UVB, and a heat spot.

Halogen bulbs are one of many products available

UV Lighting

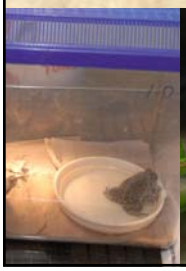
Many brands of UV emitting fluorescent tubes are available commercially as reptile products. Those that emit lower levels of UV-B are suspected to be more suitable for frogs.

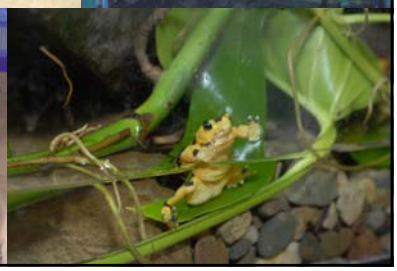
Water – An essential need

- Accessible
- Appropriate quality
- Appropriate form
  - Standing water
  - Running water
  - Surface moisture
  - Mist and Rain

Water Quality will be presented later in the workshop.

Standing Water

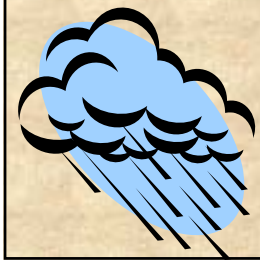




Flowing Water

Surface Moisture

Mist and Rain Systems



RH - Relative Humidity

- **A term used to describe the amount of water vapour that exists in a gaseous mixture of air and water.**
- **Increase in temperature increases the amount of water the air can hold**

Substrate

Considerations –

Natural habitat of the species

Quarantine

Ease of maintenance

Its more than just the stuff on the bottom of the cage

Artificial Substrates

- Paper towels
- Astroturf
- Rubber mats
- Screening
- Cage bottom (none)

Natural Substrates

- Gravel
- Rocks
- Soil
- Moss
  - Living
  - Dead
- Sand
- Mulch

Maintaining the Environment

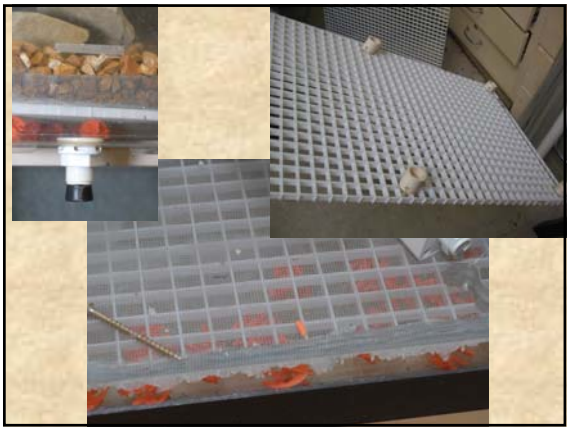
To flush or filter?

Water In – Water Out

- Drainage
  - Water flow
  - Cleaning

Drainage Fittings

The False Bottom



A drainage system

Cage Furnishings

- **Environmental Complexity**
- **Refugia**
- **Visual barriers**
- **Breeding sites**

Refugia

Perching Sites

Air Exchange

Air flow is particularly import for some species.

Containment

Things to Avoid

- Any metal components that could contaminate the water.
- Any substrate containing fertilisers, toxins or potential pathogens.
- Any loose furnishings that could crush the inhabitants.