



# Introduction to Freshwater Turtle Care

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Freshwater turtles can be rewarding pets, but they require large enclosures, excellent filtration, proper heat, and ultraviolet lighting to remain healthy. Older turtle setups commonly sold decades ago were far



too small and contributed to many preventable diseases. A well-designed habitat is essential for long-term health and welfare.

This handout provides general care guidelines for commonly kept freshwater turtles. Individual species may have additional or different requirements.

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## Habitat

Freshwater turtles can grow up to 15 inches in shell length and require substantial space.

Minimum enclosure size:

- One turtle: at least a 75-gallon tank
- Two turtles: 100 gallons or larger
- Larger species or multiple turtles require proportionally larger enclosures

The enclosure should be filled to approximately one-third with water and include:

- Logs, rocks, or commercial turtle docks
- At least one fully dry basking area

A turtle that cannot dry completely is at risk for shell rot.

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## Filtration and Water Quality

Turtles produce a large amount of waste and require powerful filtration.

- Use a canister-style filter (e.g., Eheim, Fluval, Rena Filstar)
- Choose a filter rated for at least twice the tank size
- Under-gravel filters are not appropriate

Biological filtration is critical. Beneficial bacteria within the filter break down waste into less harmful compounds.

Even with excellent filtration:

- Perform weekly partial water changes
  - Clean and replace filter media as recommended by the manufacturer
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## Heat and Lighting

Turtles are ectothermic and rely on environmental heat to regulate body temperature.

### Temperature

- Basking area (air temperature): ~90°F
- Water temperature: 70–85°F, do not drop below 70°F

Use:

- A heat lamp over one basking area
- Submersible water heaters with protective guards
- Multiple thermometers (water and basking zones)

### Lighting

- Provide 10–12 hours of light daily
- Never leave white lights on 24 hours a day
- Timers are strongly recommended

All freshwater turtles require UVA and UVB lighting to synthesize vitamin D and maintain bone health.

- Adults: UVB 5.0 bulb
  - Hatchlings and juveniles: UVB 10.0 bulb
  - Replace UVB bulbs every 6 months, even if visible light remains
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## Diet

In the wild, freshwater turtles forage daily. In captivity, feeding frequency and composition depend on age and activity level.

### Feeding Schedule

- **Hatchlings:** feed twice daily, as much as eaten in 10–15 minutes
- **Juveniles:** feed daily
- **Adults:** feed once daily or every 2–3 days

### Protein

Young turtles are more carnivorous than adults.

- Commercial reptile sticks (rotate brands)
- Feeder fish
- Earthworms (from pet stores only)

### Vegetables and Greens

Offer daily and rotate varieties:

- Romaine, red/green leaf lettuce, butter lettuce
- Mustard greens, dandelion greens, watercress
- Escarole, collards, kale, Swiss chard

Additional vegetables may include:

- Carrots, squash, sweet potato
- Green beans, bell peppers, cucumber
- Cauliflower or broccoli (in moderation)

### **Supplements**

- **Hatchlings**
  - Calcium without phosphorus or D3: daily
  - Multivitamin: once weekly
- **Adults**
  - Calcium without phosphorus or D3: each feeding
  - Multivitamin: once weekly

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## **Quarantine**

All new turtles should be quarantined for 60–90 days away from other chelonians.

### **During quarantine:**

- Monitor appetite, behavior, and stool
- Schedule a veterinary wellness exam
- Perform a fecal evaluation for parasites

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## **Salmonella Risk**

All reptiles may carry salmonella, even when healthy.

- Always wash hands after handling turtles or cleaning enclosures
- Supervise children closely
- Immunocompromised individuals are at higher risk

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## **Common Medical Problems**

Learn what is normal for your turtle's behavior and appearance.

### **Metabolic Bone Disease (MBD)**

Caused by inadequate UVB exposure or dietary calcium.

- Signs include shell deformities, soft shell areas, limb deformities
- Diagnosed with radiographs and bloodwork

### **Shell Rot**

A serious shell infection.

- Signs include pitting, soft spots, sores, or damaged scutes
- Requires prompt veterinary care

### **Hypovitaminosis A**

Often due to dietary imbalance.

- Swollen or closed eyes may be seen
- Prevented with proper supplementation

### **Respiratory Infections**

Common and potentially serious.

- Signs include open-mouth breathing, nasal bubbles, floating unevenly
- Early treatment improves outcomes

### **Injuries**

Common in overcrowded enclosures.

- Often affect legs, head, or tail
- May require permanent separation of turtles

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## **Preventive Care**

Annual veterinary examinations are strongly recommended.

At each visit, your veterinarian will assess:

- Eyes, ears, nose, mouth, shell, limbs, cloaca
- Body condition, weight, and shell integrity
- Husbandry and nutrition
- We recommend yearly bloodwork and twice yearly fecal exams.

Advances in reptile medicine continue to improve care and outcomes for freshwater turtles.

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*This handout is intended as a general care guide. Individual turtle species may have additional or different requirements. Always consult your veterinarian with questions or concerns.*





# Ferguson Zones: Matching UVB to Your Reptile

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## Zone 1: Crepuscular or Shade Dwellers

### Very low UVB exposure

These species spend most of their time in shade, dense cover, or are active at dawn and dusk. They receive little direct sunlight in the wild.

### Examples:

- Crested geckos
- Gargoyle geckos
- African fat-tailed geckos
- Corn snakes
- Ball pythons



### Key point for owners:

These species still benefit from **low-level UVB**, but excessive UVB can be harmful.

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## Zone 2: Partial Sun or Occasional Baskers

### Low to moderate UVB exposure

These reptiles move between shade and sunlight and bask intermittently rather than continuously.

### Examples:

- (juveniles and non-dominant adults often fall here)
- Blue-tongue skinks
- Uromastyx (when not actively basking)
- Green anoles
- Some box turtles



### Key point for owners:

UVB should be available, but animals must always have shaded areas to self-regulate exposure.

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## Zone 3: Open or Partial Sun Baskers

### Moderate to high UVB exposure

These reptiles bask regularly and are adapted to brighter environments, but still retreat to shade.

#### Examples:

- Adult bearded dragons
- Veiled chameleons
- Panther chameleons
- Red-eared sliders and other basking aquatic turtles
- Spiny-tailed lizards

#### Key point for owners:

These species **require reliable UVB** to remain healthy and are at high risk for metabolic bone disease without it.



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## Zone 4: Full Sun Baskers

### High UVB exposure

These reptiles live in very bright, open environments and bask for prolonged periods under intense sunlight.

#### Examples:

- Uromastyx species
- Desert tortoises
- Sulcata tortoises
- Rock agamas

#### Key point for owners:

Strong UVB is essential, but enclosure setup must still allow distance and shade to prevent overexposure.



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## Important Reminder for Clients

These zones are **general guidelines**, not rigid rules.

Factors that influence UVB needs include:

- Species
- Age
- Behavior
- Enclosure design
- Distance from the bulb
- Screen tops and materials

**Always research species-specific needs before acquiring a reptile**, and consult a veterinarian experienced in reptile medicine to confirm proper lighting for your individual pet.



# Reptile Lighting: Why It Matters

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Proper lighting is one of the most important parts of reptile care, yet it is also one of the most misunderstood. Inadequate lighting is a leading cause of metabolic bone disease and other serious health problems in reptiles.

This handout explains what ultraviolet (UV) lighting is, why reptiles need it, and how to choose and maintain the correct lighting for your pet.

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## Understanding UV Light

Ultraviolet (UV) light is radiation that exists beyond the visible light spectrum. It comes in three forms:

- UVA
- UVB
- UVC

Only UVA and UVB are relevant and safe for reptiles.

### UVA

- Helps regulate daily biological rhythms and behavior
- Important for normal activity, appetite, and reproduction

### UVB (Most Critical)

- Essential for calcium metabolism
- Allows reptiles to properly absorb calcium from their diet
- Prevents metabolic bone disease, a painful and often fatal condition

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## How UVB Works in the Body

UVB light activates vitamin D precursors in the skin, allowing reptiles to produce vitamin D3 naturally. Vitamin D3 is required for calcium to move from the gut into the bloodstream and into bones.

Research shows that:

- **Naturally produced vitamin D3** (via UVB exposure) is safer and more effective than oral supplementation in diurnal (day-active) reptiles
- **Some nocturnal species**, such as leopard geckos and corn snakes, can also benefit from low-level UVB exposure

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## Sunlight vs Indoor Lighting

Reptiles living outdoors receive UVB directly from the sun.

However:

- UVB does NOT pass through glass
- Placing a reptile near a window does not provide UVB

Indoor reptiles must be provided with artificial UVB lighting using bulbs specifically designed for reptiles.

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## Choosing the Right UVB Bulb

High-quality reptile UVB bulbs are essential. Brands commonly recommended include:

- Zoo Med
- Arcadia
- Reptisun

The type and strength of bulb needed depends on the species and natural habitat of your reptile.

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## Ferguson Zones: Matching UVB to Your Reptile

Reptiles are grouped into **Ferguson Zones** based on how much sunlight they naturally receive in the wild:

- **Zone 1:** Crepuscular or shade dwellers
- **Zone 2:** Partial sun or occasional baskers
- **Zone 3:** Open or partial sun baskers
- **Zone 4:** Full sun baskers

Knowing your reptile's Ferguson Zone helps determine:

- UVB intensity
- Bulb type
- Distance from the basking area

Ask your veterinarian if you are unsure which zone your reptile falls into.

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## Proper Placement of UVB Lighting

Correct placement is just as important as the bulb itself.

### Fluorescent UVB Bulbs

- Reptile should be able to get within 12–18 inches of the bulb
  - Use branches or logs to allow climbing closer if needed
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### **Mercury Vapor Bulbs**

- Must be placed at least 12 inches from the basking area
- These bulbs produce both heat and UVB and can overheat reptiles if too close

### **Screen Tops Matter**

- Dense screen lids can block up to 50% of UVB
- Enclosures with heavy screening may require stronger bulbs or multiple fixtures

### **Measuring UVB**

- Solar meters can be used to accurately measure UVB output and ensure proper exposure
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## **Bulb Replacement Schedule**

UVB bulbs must be replaced regularly, even if they still look bright.

- Replace every 6–12 months, depending on the bulb model
  - UVB output declines long before visible light burns out
  - Date bulbs when installed to track replacement timing
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## **Key Takeaways for Reptile Owners**

- UVB lighting is essential for bone health and calcium metabolism
  - Windows do not provide usable UVB
  - Proper bulb type, placement, and replacement are critical
  - UVB needs vary by species and natural habitat
  - When in doubt, ask your veterinarian for guidance
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If you need help selecting the correct lighting for your reptile or want your setup reviewed, please contact your veterinary team. Proper lighting is one of the most powerful tools you have to keep your reptile healthy.