

Chinese Water Dragon

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Updated 2021

Natural History

Chinese water dragons (*Physignathus cocincinus*), sometimes called green water dragons or Asian water dragons, are primarily arboreal lizards native to southeast Asia including Thailand, Cambodia, Vietnam, and southern China. They live in forests around bodies of water and are proficient swimmers. There are reports of water dragons holding their breath for over 20 minutes. Water dragons will spend most of their time perched on branches, often above waterways so they can dive into the water when threatened. They are diurnal and well adapted to humid, tropical environments. Water dragons are considered “vulnerable” by the IUCN.

Characteristics and Behavior

Water dragons generally do not bite and rarely show aggression toward their human handlers. It is more common for a threatened dragon to give an open mouthed threat display. Newly acquired dragons may be skittish and wiggly when handled. Despite their amenable temperaments, water dragons are not beginner reptiles. Their care requirements are specific and they grow fairly large. These reptiles do best with at least an intermediate level keeper. Their requirements for high humidity and a large water fixture in their enclosure often leads to health issues when proper ventilation is not achieved.

Although sometimes confused for green iguanas, water dragons are members of the agamid family (the same family as frilled lizards, bearded dragons, and uromastyx). These lizards are a vibrant green color with yellow, orange, or pink throats. Another characteristic of this species is a dark stripe behind their eyes. As a defensive behavior, water dragons may lay on their backs, completely still. This is a stress induced behavior and should not be purposefully elicited.

Lifespan

10-15 years.

Adult Size

Males can reach 3 feet, while females usually max out at 2 feet.

Housing

The general rule of thumb for lizard housing is that the length of the enclosure should be at least 3x the length of the lizard. For water dragons, that are arboreal, it is more appropriate for the height of their enclosure to be the longest measurement. Therefore, a 2' dragon would need a 6' tall enclosure, and a 3' dragon would need a 9' tall enclosure. The enclosure should be 6' in length and 3' in width. A screen enclosure may be better for water dragons, as they tend to rub their noses on glass and damage themselves. It may be difficult to balance good ventilation with humidity retention. A lack of ventilation is a common cause of disease in water dragons and is more likely to occur with glass enclosures than screen enclosures. Placing a barrier on the bottom few inches of a glass terrarium may help reduce the incidence of nose rubbing.

Branches, logs, and rocks should be provided to allow the dragon to climb and express natural behavior. Different branches of varying heights and thickness should be provided for the dragon to climb. The lizard should be able to climb to get closer or farther away from the basking source. Plants (live or fake), corkwood, and ground clutter can all be provided to add enrichment and cover. Cypress mulch, sphagnum moss, or ReptiSoil are all acceptable substrates. Having a few inches of substrate and live plants can help maintain humidity. Food should be fed on a feeding tray to avoid ingestion of substrate.

Lighting

Like all lizards, water dragons require UVB light to synthesize vitamin D3 in their skin. Vitamin D3 is needed for proper metabolism of calcium and prevention of metabolic bone disease. The Arcadia T5 12% Desert or Arcadia T5 6% Forest are both acceptable choices, depending on where you set up your dragon's basking spot. Arcadia provides a guide as to where to place your UVB fixture in relation to your dragon's basking spot. UVB fixtures should be roughly as long as half your reptile's enclosure length. It is important to note that UVB cannot penetrate glass, so natural sunlight through a window will not be sufficient for a lizard to synthesize vitamin D3. Allowing safe outdoor time is also an excellent source of UVB and visible light. Dragons taken outdoors should be kept in an escape-proof and predator-proof, non-glass enclosure. Provide shade and basking spots so your dragon can regulate their temperature.

Sunlight is made of ultraviolet, near infrared (IR), mid IR, far IR, and visible light. It is our job as keepers to provide full spectrum lighting, which means as close to sunlight as possible. Unfortunately there is not one source for all of these components, so we must

provide multiple types of lighting. For visible light, LED or halide bulbs should be provided.

UVB is NOT optional for lizards. Lack of proper UVB can lead to impaired skeletal, muscle, and immune function. Replace UVB bulbs every 6 months, as they can continue to give off light even when not producing UVB. Lights should be turned off at night to maintain normal day/night cycles. For this reason, red or black nightlights should not be used as they can disrupt normal day/night cycles.

Arcadia UVB guide: <https://www.arcadiareptile.com/lighting/guide/>

Heat

Unlike mammals, reptiles cannot internally regulate their temperature and rely on their environment to heat and cool themselves. Therefore, it is important that we provide captive reptiles with a temperature gradient so they can warm up or cool down as needed. Reptiles have three temperatures to measure: basking spot, warm ambient, and cool ambient. The basking spot is the hottest area in the enclosure where they bask, the warm ambient is the air temperature on the warm side of the enclosure, and the cool ambient is the air temperature on the cool side of the enclosure. Ambient temperatures are best measured with digital thermometers (one on the warm end and one on the cool end), as analog thermometers are often inaccurate. Basking temperatures can be measured with a digital infrared thermometer.

Water dragons need a basking spot of 95-100F, a warm ambient of 85F-90F, and a cool ambient of 75-80F. Any light emitting sources should be turned off at night, but a non light emitting source like a ceramic heat emitter, radiant heat panel, or deep heat projector may be needed to keep the temperature in the low-mid 70s. Sunlight is made of UV, near IR, mid IR, far IR, and visible light. Flood tungsten-halogen bulbs are the most efficient at producing near IR, which is the most abundant IR in sunlight, and they also produce significant mid IR and some far IR. Far IR is the least abundant in sunlight, but is most often produced in large amounts by sources like ceramic heat emitters, heat pads, and radiant heat panels. Tungsten-halogen bulbs should be the flood type to ensure a wide enough basking site. These heat producing bulbs can be found as reptile specific bulbs or at hardware stores. Avoid hot rocks as these can easily burn reptiles.

Humidity

Maintaining humidity without sacrificing ventilation is a very common challenge for captive tropical reptiles. Humidity in their natural environments can reach as high as

100%, and it is often recommended to keep captive water dragons at a constant 80+%. The problem with keeping humidity constantly high is that captive environments do not have the same air flow as natural environments. Stagnant air plus high humidity can lead to mold build up and respiratory infections. In a water dragon's natural habitat, humidity remains high but does fluctuate. Humidity tends to drop during the day and spike at night. Humidity may drop to 40-60% during the day, but increase up to 100% at night. Therefore, it may be more appropriate to maintain water dragons at a moderate level during the day and provide spikes at night.

Humidity spikes can be accomplished with heavy misting in the morning and evening. Either hand misters or automatic misters can be used. Additionally, 1-2 hours with an automatic fogger (which is functionally a small humidifier) at night can provide a humidity spike as well as a drinking opportunity. Deep substrate with a drainage layer in the enclosure will help prevent the substrate from staying too damp. Substrate that remains sopping wet can cause scale rot. Humidity levels should be measured with a digital hygrometer. Putting an airstone in the water source to move water around can also help increase humidity.

Feeding

Water dragons are primarily insectivores, although they do become more omnivorous as they age. Young dragons (<8 months) should be fed daily, whereas adults should be fed every 2-3 days. A dragon's diet should be exclusively protein until 3-5 months of age, and then small amounts of vegetables and fruits can be added occasionally. As adults, a dragon's diet should be 65% invertebrates, 20% vertebrates, 10% leafy greens and veggies, and 5% fruit. A multivitamin with vitamin A should be provided 1x/week.

Invertebrates: Insects are naturally deficient in calcium and low in nutritional value. In order to make them nutritious for reptiles, all insects should be gutloaded (fed a highly nutritious meal 24-48 hours before feeding). Repashy BugBurger or Arcadia InsectFuel are good choices for feeding feeder insects. Insects should also be dusted with calcium powder 1-2x/week. Calcium powders should be calcium carbonate based and should not have any phosphorus. If you are providing adequate UVB, calcium powder does not need to contain D3. Arcadia, Repashy, and ZooMed all have good products. Follow your brand's recommendations to avoid overdosing. Acceptable protein sources include: crickets, dubia roaches, hornworms, phoenix worms, silkworms, locusts, earthworms, and occasional mealworms, wax worms, and superworms. Earthworms should make up 10-20% of the invertebrates that the dragon eats.

Vertebrates: Frozen thawed pinkie or hopper mice, feeder fish (minnows, guppies).

Greens and veggies: Dandelion greens, arugula, swiss chard, mustard greens, turnip greens, bok choy, endive, and beet tops. Many keepers choose to buy a spring mix of salad greens. Avoid mixes with a large amount of spinach as spinach contains oxalates that can disrupt calcium absorption. Asparagus, carrots, basil, parsley, cucumber, cilantro, squash, zucchini, bell pepper, and radish are all also acceptable. Avoid onion, garlic, and rhubarb.

Fruits: Strawberries, watermelon, blueberries, apples with seeds removed, pineapple, grapes, raspberries, pears, honeydew. Avoid avocado.

Water

A water dish large enough to allow soaking should always be provided. The dragon should be able to submerge itself completely. Water dragons are often messy in their water, so their water source needs to be kept clean to prevent disease transmission. Larger pools can also be provided as occasional enrichment, giving the dragon the option of swimming in deeper water. Keeping an airstone in the water fixture can help prevent the water from getting stagnant and also aid in humidity retention.

Sexing

Around 14-16 inches, male dragons start to develop higher crests on their heads and necks, along with more prominent spines. A male's head also tends to be wider, and they will also have larger jowls and femoral pores. A hemipenial bulge is also apparent on a male. Water dragons reach sexual maturity around 2 years.

Zoonosis

Like other reptiles, water dragons can carry *Salmonella*. Always wash your hands after handling reptiles or items from their enclosure.

Health

Chinese water dragons are known for rubbing their faces against glass and causing damage to their nose and face. They are also prone to nutritional-secondary hyperparathyroidism, stomatitis (mouth rot), dysecdysis (difficulty shedding), respiratory infections, parasites, and reproductive disorders. Water dragons should be examined by your veterinarian every 6-12 months. Signs of disease include incomplete shedding, bubbling from the nose or mouth, loss of appetite, and scale discoloration.

Sources and Further Reading:

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