

## Genus *Ctenosaura* by Mark Malfatti / West Coast Iguana

Spiny-tailed Iguanas, of the genus *Ctenosaura* which are of the group *Iguanidae* are an assemblage of poorly understood lizards from Mexico and Central America. Years ago, the shroud of mystery blanketing nearly every detail of their natural history captured my interest. The name *Ctenosaura* comes from the Latin word *Cteno* which means “comb” and *Saura* which means “lizard”.

The genus ranges from central Baja and central mainland Mexico south to Panama. As with many little known groups of animals, their taxonomy has experienced much review.

There are 14 recognized species of *Ctenosaura* with 5 alleged subspecies within the *C. hemolopha* group. Most species inhabit dry sub tropical environments with one species being an inhabitant of mangrove swamps. Sizes range from 6 inches (defensor) to a little under 5 ft. (*similis*). *Ctenosaura* are primarily diurnal herbivores, but some are also opportunistic carnivores.

I have observed *Ctenosaura* behavior in the wild and captivity. What I have generally seen is, spiny-tails beginning their day by warily coming out of its retreat when morning temps reach comfortable levels. When not fully heated, spiny-tails are skittish and retreat upon slightest provocation. They then find a sunny area close to their retreat and bask until optimum body temperature is reached. The males then patrol their territory or enclosure standing high on their legs flattening their body and bobbing their heads with mouth open, displaying at other males. Females to a lesser extent engage in head bobbing. Then throughout the day, spiny-tails bask, rest, display, eat, and return to their retreats when the sun starts going down. On hot days, the iguanas generally bask in the morning, then retreat until late noon, and bask for an hour or two before sunset.

In the wild, spiny-tails will sometimes have to temporarily travel outside of their territory to find food. Spiny-tails escape predators by quickly fleeing to their burrows, or another safe spot like a rock crevasses or tree hole. Spiny-tails are fast, the Guinness Book of world records has a *C. similis* being clocked at 21.7 miles per hour making it the world's fastest lizard. While in their burrow or other type of refuge, the spiny-tail will violently lash his tail back and forth if the tail is touched by a predator.

During breeding season, males will chase females until caught. Holding them down with their front legs and holding the back of the females neck with his mouth the male will copulate from either side. Eight to ten weeks later, the female will start digging a nest in the ground and lay her eggs. Females, depending on the species will lay anywhere from 4 to 30 eggs. The eggs will generally take 90 days to hatch depending on temperature. Once hatched. the baby iguanas will dig their way out of the ground and begin their lives. Most baby spiny-tails will fall prey to a multitude of predators like birds, snakes, other lizards, and adult spiny-tails, ect.

### Species accounts

#### Mexican Spiny-tailed Iguana

*Ctenosaura acanthura* (Shaw 1802)

*Ctenosaura acanthura* is typically a black iguana. Some individuals have white or cream colored marking. Males of this species can attain 140 cm (4 ft. 7") snout / tail length and females 100 cm (3 ft. 3.25"). Males have a 2 cm (7/8" in.) crest. Normally, this species inhabits hot rocky areas and can commonly be found around areas of human habitation. These large lizards range from central Tamaulipas to the Isthmus of Tehuantepec, Veracruz Mexico. This species is similar to *C. pectinata*.

### Campeche Spiny-tailed Iguana

*Ctenosaura alfredschmidti* (Kohler 1995)

Probably the rarest of the ctenosaurs, *C. alfredschmidti* has only been found in a locality in southern Campeche, Mexico, and El Mirador Río Azul National Park in north eastern Guatemala. The maximum snout/vent length, so far, has been recorded as 173mm (6 7/8 inches). Since so few specimens have been collected, the maximum length could be more. *C. alfredschmidti* inhabits the typical Yucatan type hot humid forests. They are known to take refuge in rocky areas and in tree holes. Their diet probably consists mostly of plant matter and occasional insects.

### Utila Island Iguana

*Ctenosaura bakeri* (Stejneger, 1901)

Endemic to Utila, an island off the northern Honduras coast, *Ctenosaura bakeri* is an inhabitant of the mangrove swamps. Unlike most ctenosaurs which normally inhabit drier rocky areas, it is believed that *C. bakeri* was pushed into the mangrove swamps due to competition from the larger, more aggressive *C. similis* that typically inhabit these dry, rocky areas. Total lengths of males are around 76 cm. ( 30 inches) with females around 56 cm. ( 22 inches). This species can be aqua blue, light blue or light gray in color, depending on heat conditions or excitability. Males have a small dewlap and large dorsal scales. This is a very arboreal species that feeds on plant matter and small invertebrates that inhabit the mangroves. This species is endangered due to hunting pressures and loss of habitat. Extreme conservation efforts are in place to try to prevent this species from going extinct.

### Michoacan Club-tail iguana

*Ctenosaura clarki*

*C. clarki* is a small brown and tan iguana found in the Mexican state of Michoacan in the Tepalcatepec Valley, and a locality at the Michoacan-Guerrero border around Tacopa. The total length of males is usually 18 to 28 centimeters (7 to 11 inches), and females average around 16 to 20 centimeters (6 1/4 to 7 7/8 inches). The habitat of this species is dry, hot, cactus covered rocky hillsides.

### Yucatan Spiny-tailed Iguana

*Ctenosaura defensor* (Cope, 1866)

The Yucatan Spiny-tailed Iguana *Ctenosaura defensor* is a small colorful iguana of the Yucatan peninsula. Being the smallest of the genus *Ctenosaura*, males of this species have a snout/vent length of 145 mm (5 3/4 inches) with females being a little smaller. Like most of the other club-tail iguanas, this is a stout little iguana with a heavily armored tail. The head color of this iguana is generally bluish. The shoulders, forelimbs, and chest are black with white spotting. The lower back is red, and the tail is gray. From fecal examinations, *C.defensor* is believed to be primarily a leaf eater. Native people call this lizard “Chupito”, and believe it to be poisonous. Native people report that this species lays 2-3 eggs. Being a shy species, *C.defensor* probably spends a good amount of time hiding in hollow tree trunks, holes in the ground or holes in rocky areas.

## Honduran Club-tail Iguana

*Ctenosaura flavidorsalis* (Kohler and Klemmer, 1994)

Once considered the species *C.quinquecarinata*, these *Ctenosaurus* from eastern Guatemala, eastern San Salvador, to south west and central Honduras were re-classified in 1994 as *C.flavidorsalis*. These small iguanas are generally brownish tan in color with males having a high degree of yellow suffused with black dorsally. Recorded snout / vent lengths are around 160 cm (6 3/8 inches). Females are probably a little shorter. An inhabitant of tropical dry forests and subtropical dry forests, its diet is made up of small leaves and insects.

## Baja / Sonoran Spiny-tailed Iguanas

*Ctenosaura hemilopha* subspecies

### ***Ctenosaura hemilopha* subspecies**

*Ctenosaura hemilopha hemilopha* (Cope, 1863)

*Ctenosaura hemilopha conspicuosa* (Dickerson 1919)

*Ctenosaura hemilopha insulana* (Dickerson 1919)

*Ctenosaura hemilopha macrolopha* (Smith 1972)

*Ctenosaura hemilopha nolascenes* (Smith 1972)

The *C.hemilopha* consist of five subspecies that are all very similar in appearance and occur in similar habitat. These are large stocky lizards that can attain 100 cm ( 40 inches). All subspecies occur in the Gulf of Baja California, Mexico. The coloration is normally white with black chevrons, or light gray with black chevrons. The habitat is generally Subtropical open rocky terrain. These lizards primarily feed on leaves and a variety of vegetation.

- *C. hemilopha hemilopha* occurs on the southern half of the Baja peninsula, Mexico.
- *C. hemilopha conspicuosa* is found on San Esteban Island (Isla San Esteban) and Cholludo Island (Isla Cholludo) in the Gulf of California.
- *C. hemilopha insulana* is found on Cerralvo Island (Isla Cerralvo) about 5 miles off the southern part of Baja near La Paz.
- *C. hemilopha macrolopha* is found on the Mexican mainland from Hermosillo, Sonora, south to mid Sinaloa, and deep inland in some areas.

- *C. hemilopha nolascensis* is found on San Pedro Nolasco Island (Isla San Pedro Nolasco), which is 9 miles off the eastern shore of the Gulf of California.

There is some debate over the validity of these subspecies due to evidence from DNA testing. It is believed that these iguanas, may have ended up on the Baja peninsula and the islands from early Seri Indian inhabitants transporting them there from the mainland as food sources thousands of years ago.

## Rio Aguan Valley Iguana

*Ctenosaura melanosterna* (Buckley and Axtell, 1997)

Found in the Rio Aguan Valley and on Hog Island (Isla de Cayos Cochinos) Honduras, *C. melanosterna* is a real oddity within the *Ctenosaura* genus. This is a large bodied iguana in which males can attain 90 cm ( 35 ½ inches) and females 68 cm ( 26 ¾ inches). With a typical *ctenosaura* like body, this species has a large green iguana-like dewlap, and a massive appearing cyclura-like head. Both males and females have dewlaps with the males dewlap being much larger. The dorsal scales are very large and long and tend to fall to one side because of their weight. The coloring of the upperparts of *C. melanosterna's* body tends to be black or dark brown with the lower body and tail being aqua, or turquoise. The head and dewlap tend to be yellow or tan. The eyes are orange. The degree of color varies from lizard. An interesting intraspecific display by *C. melanosterna* is a head bob in a twisting motion only seen in *Cyclura* species. The population on the moist tropical Isla Cayos Cochinos may be a recent introduction or recent range expansion. The mainland forest habitat of this species in the Rio Aguan River Valley is very hot and dry. *C. melanosterna* tends to be more arboreal than most *ctenosaura* species and is primarily a herbivore and an opportunistic small prey carnivore.

## Roatan Spiny-tailed Iguana

*Ctenosaura oedirhina* (DeQueiroz, 1987)

Endemic to Roatan, one of the Bay Islands off the North Atlantic side of Honduras, *C. oedirhina* is a dark brown or black iguana with light blotches or bands. Male average 60 cm (23 ½ inches) total length and females are around 40 cm (16 inches). This iguana is rather stout and has a distinctive blunt head and bulbous nose. *C. oedirhina* is becoming rare on Roatan.

## Oaxaca Spiny-tailed Iguana

*Ctenosaura oaxacana* (Kohler and Hasbun 2001)

This is a clubtail iguana that was recognized as *C. quinquecarinata* prior to 2001. Not wanting to get into skeletal differences, *C. oaxacana* differs from *C. quinquecarinata* by being smaller in size (170mm / 6 5/8 in. SVL), having a shorter less spinous tail, and a different body pattern. This species is found on the Pacific side of the Isthmus of Tehuantepec in Oaxaca, Mexico. This is an arboreal lizard that eats young leaves and insects, often retreating to tree holes when threatened.

## Paleate Spiny-tail Iguana

*Ctenosaura palearis* (Stejneger, 1899)

Until 1997, *C. palearis* and *C. melanosterna* were considered the same species. Like *C. melanosterna*, *C. palearis* also exhibits a large dewlap, long dorsal crests, and heavily keeled scales on the rear upper legs. *C. palearis* is however, much smaller and less colorful, and behaviorally doesn't seem to display with the head twisting motion like *C. melanosterna*. Adult males can get to 61 cm. (24 inches), females 51 cm (20 inches) total length. Body color is a light brown with dark brown banding. Some lizards may exhibit areas of whitish pie-balding on head, neck, or body. This species is found within the arid and dry tropical Rio Motagua Valley in Guatemala. *C. palearis* is an arboreal a plant and leaf eater and an opportunistic small prey carnivore. This species has been heavily hunted in the past for food and the pet trade, and population estimates in 1994 were at 10,000 for both *C. palearis* and *C. melanosterna* combined (Reptile Camp Taxon Report). In 2006, current population estimates became so dangerously low, that *C. palearis* was granted protection under Guatemalan law and animals are no longer allowed to be exported from the country.

## Black Iguana or Mexican Spiney-tail Iguana

*Ctenosaura pectinata* (Wiegmann, 1834)

This large iguana ranges from mid-Sinaloa to south Oaxaca and east 100 to 150 miles. Although most individuals are not black, *C. pectinata* can occur in several colors including: black, bluish-grey, grey, and yellow, with banding or blotches that can be either light or dark. Babies are bright green and patternless. Large males can attain a total length of 140 cm ( 4 ft.) and females 100 cm. (39 in.). *C. pectinata* usually inhabits hot rocky areas, and can sometimes be seen near human habitation.

## The Club Tail Iguana *Ctenosaura quinquecarinata* (Gray 1842)

The Club Tail iguana is another small species with populations in west-central Nicaragua, and north-western Costa Rica. Males can reach 35 cm., while females reach 18.5 cm. The tail on this species is heavily armored with spikey rings and rows forming longitudinal ridges of spines. Females tend to be a drab brown, and males, although they have a brown base color, achieve tones of black, blue and yellow on their body and head. Babies are green up to a year old. This species is active, and lives in very hot areas with low humidity. Captive specimens tend to be omnivorous eating both live insects and plant matter.

## Central American Spiny Tail Iguana

*Ctenosaura similis* (Gray 1831)

*Ctenosaura similis* has the widest range of all the ctenosaura's. From the Isthmus of Tehuantepec, South Mexico (Yucatan), Nicaragua, Guatemala, El Salvador, Honduras, Belize, Costa Rica, Panama, Old Providence Island (Colombia), San Andres Island. This is the largest of the *ctenosaura's* attaining lengths of 1.5 meters for males and 1 meter for

females. large males can weigh as much as 5.5 lbs. The coloration of adults can be silver-gray, gray, bluish, or peach, with infusions of red or dark orange. Most adults, especially males have black chevrons. Juveniles are green with thin bands of black or gray. Males from certain areas can have very large crests. Although this species is heavily hunted , it still appears to be common within cities and small towns within its range.

## Captive care

### Our Set ups

*Ctenosaura* as a whole are a fairly hardy undemanding species as long as basic requirements are met. Here at West Coast Iguana, we work with with 8 species of *Ctenosaura* and 4 species of *Cyclura*. West Coast Iguana is primarily in the business of conservation and education and consider ourselves an “ark” for some of the imperiled species that could possibly become extinct in the not so distant future.

The one thing we have discovered about the *Ctenosuara* is that all the species we keep do very well with the same type of care.

Our spiny-tails are kept outdoors from April/May to October/November weather permitting. The iguanas are transferred to indoor enclosures for the fall and winter. Because of the number of lizards we keep, we opted to use simple pvc coated wire cages opposed to naturalistic terrariums which are high maintenance and not practical when keeping large collections.

### Outdoor enclosures

Outdoor enclosures are 1x1 black pvc coated wire cages either 48 x 30 x 24 for the larger species or pairs, or 36 x 30 x 24 for smaller species or single lizards. Each cage has basking shelves or logs, plus all walls of the wire cages are utilized by the lizards as climbing areas opposed to lizards only utilizing the floor and branches of a standard terrarium. Decomposed granite is used for the substrate. Thermostatically controlled heated hide boxes are used for the outdoor enclosures. The heat turns on when the temperature of the hide box drops below 77 degrees. Thermostatically controlled misting systems turn on when the ambient air temperatures outdoors in the shade gets over 100 degrees. All the outdoor enclosures are partially covered by shade cloth.

### Indoor enclosures

The indoor enclosures are the same sizes as the outdoor enclosures and are also made of black pvc coated wire as well. Each cage is fitted with a florescent as well as an incandescent fixture. There are two wood shelves per cage, one allowing the lizard to get directly under the UV florescent, and the other shelf placed lower in the cage so the lizard can heat up and safely bask under a flood light. The floor is also wire with a removable tray underneath. All iguana waste falls through the wire and onto the paper covered tray. This prevents lizards from crawling over their own waste before you have a chance to

clean. Each cage has either one or two 20"x 4" black pvc pipe hide tubes. The iguana room is heated to a constant 75 degrees.

### **Our Lighting and Decor**

Although the whole metabolic bone disease issue has been debated to death, we firmly believe that for iguanas, UV is not only important for calcium absorption, but for the mental wellness of these herbivores. We make sure the lizards can get within 3" of the florescent UV bulb to get the full UV effect. Mercury vapor bulbs are also a good choice but not financially practical when keeping large numbers of lizards. An incandescent flood light is used for the basking spot.

Our iguanas are provided hide tubes. It is a safe retreat for the iguana that is stressed as well as for the iguana that is calm and tame. When outdoors, there is a hide tube for each lizard inside the hide box. When indoors, hide tubes are secured to the floor of the cage.

### **Our Diet**

Although we are sometimes criticized for this, our iguanas are on a total dry pellet diet. We use Zoo-Med juvenile formula for both adult and newly hatched lizards. Pellets are sprinkled with a calcium and vitamin supplements. There is nothing wrong with a leafy green diet, but lizards have to eat 20 times the amount of greens to get the same volume of pellet dry food. With the amount of lizards we have, chopping greens all day is impractical. The juvenile formula is a little higher in protein which is better for the *Ctenosaura* considering they do actively eat a small amount of protein matter in the wild. We crush the pellets for babies and use leafy greens as treats for both adults and babies. We have had lizards on this type of diet for over 15 years straight, and they still breed and produce healthy babies year after year.

### **SO YOU WANT A SPINY-TAIL**

For your average herpticulturist, *Ctenosaura* iguanas can make interesting pets. If captive hatched, most of these lizards adapt well to captivity. Currently, the three species that are common in collections are *C.similis*, *C.pectinata*, and *C.quinquecarinata*.

### **CAGING**

*C.similis*, *C.pectinata*, and *C.quinquecarinata* are three species of *Ctenosaura* available

as wild caught. *C.similis* and *C.pectinata* are generally from feral populations in south Florida. *C.similis* and *C.pectinata* are best acquired as babies because they have a better chance of adjusting to close human contact than adults. Adults of these species take a long time if ever to adjust to captivity and usually remain flighty or continuously hide. Babies can be started in 10 gallon aquariums, and increasing the cage size according to the lizards growth. Minimum cage size should be 48 x 30 x 24. Larger is better. We have had adult iguanas breed and lay eggs successfully in this size enclosure.

*C.quinquecarinata* can be also started in a 10 gallon aquarium, and can be comfortably

moved into a minimum 24x24x24 cage as an adult because of their smaller size. When keeping any *Ctenosaura* it is important to keep only one male per enclosure. Multiple males will fight and injure each other. Multiple females can usually be kept together, but this combination also should be watched for conflicts.

### **LIGHTING AND TEMPS**

UV fluorescents and basking lights are a must if kept indoors. Adjust branches or basking platform so the lizards can get at least 3 inches away from the fluorescent UV bulb. Place another branch or platform at a distance from an incandescent flood bulb so the area is heated to 110 – 115 degrees at the height of the lizards back. Make sure to not accidentally use spot lights. Spot lights put out a very narrow beam, and many reptiles have been burned by these bulbs. Flood lights put out a much broader safer beam. If using a mercury vapor bulb, place it like you would an incandescent flood bulb. Keep the ambient temps away from the basking area at least 75 degrees. Night time temps should stay in the middle 70's. Night time temps for baby spiny-tails should be in the mid 70's. I run lights 8 hours in the winter and 10 hours in the summer when indoors.

### **SUBSTRATES AND DECORATIONS**

The substrates I have successfully used indoors in the past are aspen bedding and decomposed granite, but my favorite has been a thick fluted (ridged) paper. This paper is just easier to clean. For outdoor enclosures, decomposed granite is best because it packs hard and has good draining properties. Branches or shelves can be arranged for basking and aesthetics. Give your iguana a hide box or a hide tube. With spiny-tails, their lives revolve around these retreats. This can be as simple as shoebox with a door cut out, a piece of pvc tubing, or a realistic looking log sold at pet stores. Most will retreat to it at night, and when frightened.

### **DIET**

Feed your adult iguanas a combination of mixed greens (kale, chard, dandelion, collard, ect.) or a different mixed green per feeding 3 to 4 times per week. A calcium and vitamin supplement should be used, alternating them per feedings. The alternative is to train your iguanas to eat a high quality dry food with supplements. Although we do not feed any of our adults or babies live food, occasional crickets or a frozen/thawed mouse won't hurt. Finely chop greens for baby spiny-tails and be careful not to feed baby or young spiny-tails too many crickets, because they can get an impaction from too many cricket heads blocking the intestines (We've experienced this). I know of some keepers that never give their spiny-tails water claiming that they get all their needed moisture from the greens they eat. I don't agree with this and always have clean water available for the lizards. Water is an absolute necessity especially when on a dry food diet. Some new born iguanas need to be coaxed into drinking water from a dish. This is done by using an aquarium air pump, air regulator, and aquarium hose. With the pump running, the aquarium hose is put in the shallow water dish and allowed to bubble slightly, attracting the babies to the dish to drink. This is done for a month, by which time most have learned to drink from the water dish.

### **CAGE MAINTANENCE**

With any animal, cleanliness is very important. *Ctenosaura* are generally not messy lizards. Regular cage cleaning will keep your lizard healthy and the cage fresh smelling. I usually clean cages at night when lizards are in their hide tubes. It's easier and less stressful to the lizard. I just take out the tube with the lizard still in it (they will generally not leave their tube) and clean, change water, and feed.

### **PARTING WORDS**

Personalities vary with *Ctenosaura*. Some grow into dog tame pets, others especially *C.similis* can be vicious finger eaters. Handling your lizard from a young age can turn your spiny-tail into a decent pet. If you want a nice display animal, this may be the reptile pet for you. For more information, photos, and range maps, go to [www.westcoastiguana.com](http://www.westcoastiguana.com)