Blue-crowned Motmot

Momotus momota
FAMILY: Momotidae
ORDER: Coraciiformes
AZA MANAGEMENT: Provisional

GEOGRAPHIC RANGE

- [ ] EUROPE
- [ ] ASIA
- [X] NORTH AMERICA
- [X] NEOTROPICAL
- [ ] AFRICA
- [ ] AUSTRALIA
- [ ] OTHER

HABITAT

- [X] FOREST
- [ ] DESERT
- [ ] GRASSLAND
- [X] COASTAL
- [X] RIVERINE
- [X] MONTANE
- [ ] OTHER

TEMPERATURE TOLERANCE

From 30° F to 90° F

Need supplemental heat source for temperature this low.

DIET

- [X] FRUGIVORE
- [ ] NECTIVORE
- [X] CARNIVORE
- [ ] OMNIVORE
- [ ] PISCIVORE
- [ ] FOLIVORE
- [X] INSECTIVORE
- [ ] OTHER

Blue crowned motmots generally sit quietly hidden in shady trees searching for prey items, fly catching insects and pouncing on small land dwelling animals. They also use their heavy set, deeply serrated bill to brush away leaf litter and probe into the earth searching for prey items. If the prey item eludes the first capture attempt they may hop in pursuit. The prey species may include: small lizards, frogs, birds, small rodents, arthropods, centipedes, spiders, butterflies, cicadas, beetles, and mantis. Trace quantities of fruit will be consumed as a portion of the diet. Research by Orejuela in the Yucatan Peninsula found that 84.2% by volume of their diet was comprised of insects. The remainder was found to be gastropod mollusks, arachnids and chilopods, with a small portion of fruit and plant reproductive parts. This consumption would be regionally influenced and would depend heavily on food items available within the home territory of the motmots (Orejuela, 1975.) A study of the stomach contents of 52 Blue-crowned Motmots found that 61.5% contained arthropods only, 21.2% contained arthropods and fruit, 15.4% contained fruit only, and 1.9% contained unidentifiable mush.

Large food items are caught and taken to a perch where the item will be repeatedly bashed against the tree branch or rock to kill and tenderize the prey item. After the pulverizing is complete, the food item is swallowed whole.

The observation of wild motmot nests has shown that the chicks are not fed fruit until the young were at an average of ~13 days old, and even from that point on it was offered as a very small proportion of the overall diet.

A wide variety of diets have been successful by institutions, all of which are similar in basic components. The diets are based on a combination of proprietary pellets, bird of prey meat, insects, pinky mice, and a small portion of minced fruits/vegetables. Location of the diet does not appear to influence the consumption levels as motmots routinely feed on both arboreal and ground dwelling food items.

CIRCADIAN CYCLE

- [ ] DIURNAL
- [ ] CREPUSCULAR
- [ ] NOCTURNAL
- [ ] OTHER

LIFE EXPECTANCY

		Median Life Expectancy	Maximum Longevity
♂	Within AZA	X	X
	In the Wild	X	X
♀	Within AZA	X	X
	In the Wild	X	X

There has not been significant research done on wild life expectancy; however banded individuals have been reported captured more than 15 years after their initial banding.
Both males and females have been recorded to frequently live into their early twenties in captivity. Males have been recorded to be reproductively viable until 24 years of age, females until 18 years of age.

BREEDING INFORMATION

AGE AT SEXUAL MATURITY

Males: 2 years

Females: 2 years

Both males and females have been observed to successfully reproduce in captivity at 11 months old. However, reproduction is generally not reliable until the birds reach at least 2 years of age.

Incubation period: Approximately 21 days

Fledgling Period: Approximately 28 days

COURTSHIP DISPLAYS

Although the nest chamber in unlined, courtship rituals between the pair still include the male offering leaves, twigs, grass, and flowers to the female. This courtship offering behavior has been observed regularly in both the wild population and in captive settings and appears to reinforce the pair-bonding. Penduluing of the tail increases in speed, frequency and duration when the birds are excited, whether that is due to pair bonding and courtship behavior, feeding behavior, or territory defense.

CLUTCH SIZE, & EGG DESCRIPTION

The female will typically lay 3-4 white eggs, each measuring approximately 26mm in length and 33mm in width. Incubation lasts approximately 21 days, during which time one bird will incubate from early afternoon until the following dawn, before being relieved by its mate for incubation during daylight hours. By only relieving each other from incubation duties twice daily, movement around the nest tunnel entrance is kept to a minimum.

NEST SITE DESCRIPTION

Nest tunnels are generally dug during the rainy season when the soil is soft, which over the geographic distribution ranges from August - October. Blue-crowned Motmots generally prefer to excavate their tunnels into the sides of cliffs or into horizontal ground, but will use rock crevices on occasion if suitable nesting sites do not exist within the territory. Both the male and female share relatively equally in the digging tasks. The excavation of the nest tunnel system and the terminal nesting chamber can take as long as 2.5 months to complete. The timing of the work is focused primarily on the late morning until the late afternoon when the soil is typically the driest. It is not unusual for the motmots to begin and abandon several nest tunnels before settling on one particular area.

With the intrusion of man-made structures into the habitat of Blue-crowned Motmots has come the introduction of new nesting opportunities in the way of roadside berms, banks, and cliffs. In some areas the intrusion has allowed the motmots to attain a higher population density than was previously possible in pristine habitat.

The excavation efforts will result in a long winding burrow typically measuring at least 5' in length, but ranging up to 14' in length and 3-4" in diameter, with the unlined terminal nesting chamber measuring approximately 10" high, 10" wide, and 14" in length. The winding nature of the tunnel system aids in the avoidance of nest predation by shielding the nesting chamber from being viewed from the tunnel mouth. This winding tunnel system may also be the result of obstructions such as rocks or root masses being encountered and avoided during the excavation. The entrance to the nesting burrow may be concealed by root masses or overhanging vegetation.

Another method used to attempt to limit nest predation is each parent undertaking extended incubation bouts to limit the amount of activity around the entrance to the nest tunnels. Typically, the incubation shift of each parent will last at least 3 hours, with some shifts lasting more than 8 hours. There have been reports of the motmots relieving each other only twice during the course of the day, once at dawn and once at dusk. This behavior has been observed in both the wild by Alexander Skutch and in captive populations at various participating institutions.

After the tunnel system is completed, including the nest chamber, the birds abandon the area until the following March or April, the onset of the breeding season. At this point, the birds will return to the area for the onset of

PARENTAL CARE

After hatching, the parents alternate brooding, with the female primarily responsible for the brooding and the male providing most food items. When the offspring are ~1 week old, both parents will be out of the nest occasionally hunting for food. Initially, the feeding will occur at 2-5 minute intervals, with the parents focusing almost exclusively on live food such as crickets, mealworms, waxworms, and earthworms. The frequency of feeding will decrease as the hatchlings age, with the trips into the nest dropping to 5-6 per hour within 2 weeks post hatching. The parents begin to offer a variety of live insects, pinky mice, and other protein-based food items almost immediately post hatching, and pelleted food items at approximately day 12-14 post hatching, although live food continues to be the overwhelming preference.

CHICK DEVELOPMENT

Blue-crowned Motmots are altricial, and thus the parents must provide for all needs. Feather shafts will begin to emerge from the body at ~7 -9 days of age, and the eyes will begin to open at ~14-15 days of age. After 29-31 days in the nest, the offspring will begin to make their way up the tunnels towards the entrance, by which time they will look similar to the parents, with the exception of them being somewhat smaller and lacking the racketed tail. After exiting the nest tunnels, the fledglings are extremely weak flyers for the first day or two and exhibit difficulty in perching due to their subterranean development. The young gain independence relatively soon after fledging, some being observed self-feeding within 3-4 days. Approximately 2 weeks after leaving the nest tunnels, the young are consistently self-feeding, and 3-5 weeks post fledge the offspring will have gained complete independence from parents.

the nesting season. Motmots in the higher elevation regions have been observed roosting in the nest burrow during the non-breeding season. This behavior is thought to be climate dependent, since those motmots found in more tropical regions of their distribution do not roost in the nesting cavities during non-breeding season.

No recorded evidence of nest sanitation by motmots has been observed, which would explain the typical behavior of digging a new nest tunnel each breeding season. It has been observed that motmots do not reuse the same nest site in successive breeding seasons. Even withe the absence of nest sanitation, the motmot chicks exit from the nest tunnels in immaculate feather condition.

After the courtship rituals have concluded, copulation between pair, which last 5-10 seconds based on captive bird observations, occurs in late April to early May. The female will then lay 3-4 white eggs, each measuring approximately 26 mm in length and 23 mm in width. Incubation lasts approximately 21 days, during which time one bird will incubate from early afternoon until the following dawn, before being relieved by its mate for incubation during daylight hours. By only relieving each other from incubation duties twice daily, movement around the nest tunnel entrance is kept to a minimum.

CAPTIVE HABITAT INFORMATION

MIXED SPECIES EXHIBITS

Compatible in mixed species exhibits?

[X] YES

[X] NO

SOCIAL STRUCTURE

In the wild: A single pair may be housed with offspring for up to one year depending on circumstances. Parents will begin to drive juveniles out of their territory when the next breeding has begun. In the wild this would be a yearly event, in captivity multiple breeding attempts per year are regular so young birds may need to be removed as soon as they are self-sufficient.

Within AZA: Pairs or single-gender groups. Multiple pairs in one exhibit space are typically not recommended regardless of the size of the enclosure.

Minimum Group Size: 1, though at least 2 is recommended

Maximum Group Size: A pair with offspring or a single-sex grouping (size of group is determined by the size of the enclosure)

Comments: Typically can be housed with a wide range of enclosure mates. Birds weighing less than 25 grams may not be compatible with motmots. Blue-crowned motmots should never be housed with Plush-crested Jays. There have been numerous injuries and fatalities in both species when this arrangement has been attempted.

OPTIMAL HABITAT SIZE

Motmots have been successfully housed and bred in enclosures ranging from 3' wide, 8' long, and 8' high to full-sized walk through aviaries. Ideally, a minimum enclose size of approximately 100 square feet with an 8' high ceiling would be preferred.

MANAGEMENT CHALLENGES

Generally fairly easy to maintain, however there are some challenges to watch for. Because they prefer to burrow their nest tunnels, loose soil in the exhibit can cause the tunnel to collapse if the weight of a person crosses the top of the tunnel. Also, there have been infrequent issues with aggression towards extremely small enclosure mates such as dacnis, euphonia, small tanagers, etc. Due to significant and repeated incidents of aggression motmots are not recommended to be housed with plush-crested jays under any circumstances.

ADDITIONAL COMMENTS

IUCN Least Concern, at this time the wild status of blue-crowned motmots is not listed as threatened or endangered, in fact blue-crowned motmots are common throughout much of their native range. Due to a wide geographic range, tolerance of intrusion by man, and numerous protected areas comprising habitat blue-crowned motmots as a species should continue to thrive.
While most of the 21 recognized subspecies of blue-crowned motmots are considered to have a stable and/or increasing population, several of the subspecies are under significant pressure due to habitat destruction within their range. It is not expected that blue-crowned motmots will become endangered or threatened in the near future, however these particular

REFERENCES

Cogger, Harold G., et al. 1993. Encyclopedia of Animals. Fog City Press, San Francisco, CA. 363-365.

Feduccia, Alan. 1996. The Origin and Evolution of Birds. Yale University Press, New Haven, CT. 327-336.

Feldman, Bernie. Successful Propagation of Blue-Crowned Motmots. Animal Keepers' Forum. November 1986. 350-355.

Forshaw, Joseph, et al. 1993. Encyclopedia of Animals: Mammals-Birds-Reptiles-Amphibians. Fog City Press. San Francisco, CA.

Grzimek, Dr. h.c. Bernhard, 1973. Grzimek's Animal Life Encyclopedia. Van Nostrand Reinhold Company,

Cincinnati, OH. 35-36.

del Hoya, J., Elliot, A., & Sargatal, J. eds (2001): Handbook of the Birds of the World. Volume 6. Mousebirds to Hornbills. Lynx Edicions, Barcelona. 589pp.

ISIS (International Species Information System), 12101 Johnny Cake Ridge Rd., Building A, Room 6, Apple Valley, MN 55124. www.isis.org.

Perrins, Christopher M. and Middleton, Dr. Alex LA. 1985. The Encyclopedia of Birds. Equinox (Oxford) Ltd. Oxford OX1 1SQ. 270-271.

Poole, Dorset BH15 1LL. 22-23. De Schauensee, Rodolphe Meyer, 1970. A Guide to the Birds of South America. The Academy of Natural Sciences of Philadelphia. United States of America. 168.

Rutgers, A. and Norris, K.A., 1977. Encyclopaedia of Aviculture. Volume 3. Blandford Press Ltd. Link House, West Street,

Skutch, Alexander F. 1967. Life Histories of Central American Highland Birds. Nuttall Ornithological Club. Cambridge, MA.

Skutch, Alexander F. 1983. Birds of Tropical America. University of Texas Press, Austin, TX. 199-211.

Skutch, Alexander F. 1989. A Guide to the Birds of Costa Rica. Cornell University. 242.

Vince, Martin. 1996. Softbills: Care, Breeding and Conservation. Hancock House Publishers, Blaine, WA.Welty, Joel Carl. 1979. The Life of Birds, 2nd Edition. Saunders College Publishing, Philadelphia, PA. 265.

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