

You and jaws

As apex predators in tropical rivers and estuaries, crocodilians are both feared and venerated around the world. Start a thematic collection, and make it snappy!

■ Report by Steven Allain

No group of animals alive today is more prehistoric-looking than the crocodilians. And that is no coincidence.

These archaic semi-aquatic reptiles evolved about 95 million years ago, when dinosaurs ruled the world, and their closest living relatives are the descendants of dinosaurs, the birds.

There are 27 species, including crocodiles, alligators, caimans and gharials. Cold-blooded, thick-skinned and carnivorous, they are known for their powerful jaws and sharp teeth.

Mostly they are found in the tropics, in and around rivers, lakes, swamps and estuaries. Olive-green to dark brown in colour, with their eyes, ears and nostrils at the top of their head so they can glide surreptitiously through the water with the bulk of their body under the surface, they are ambush predators.

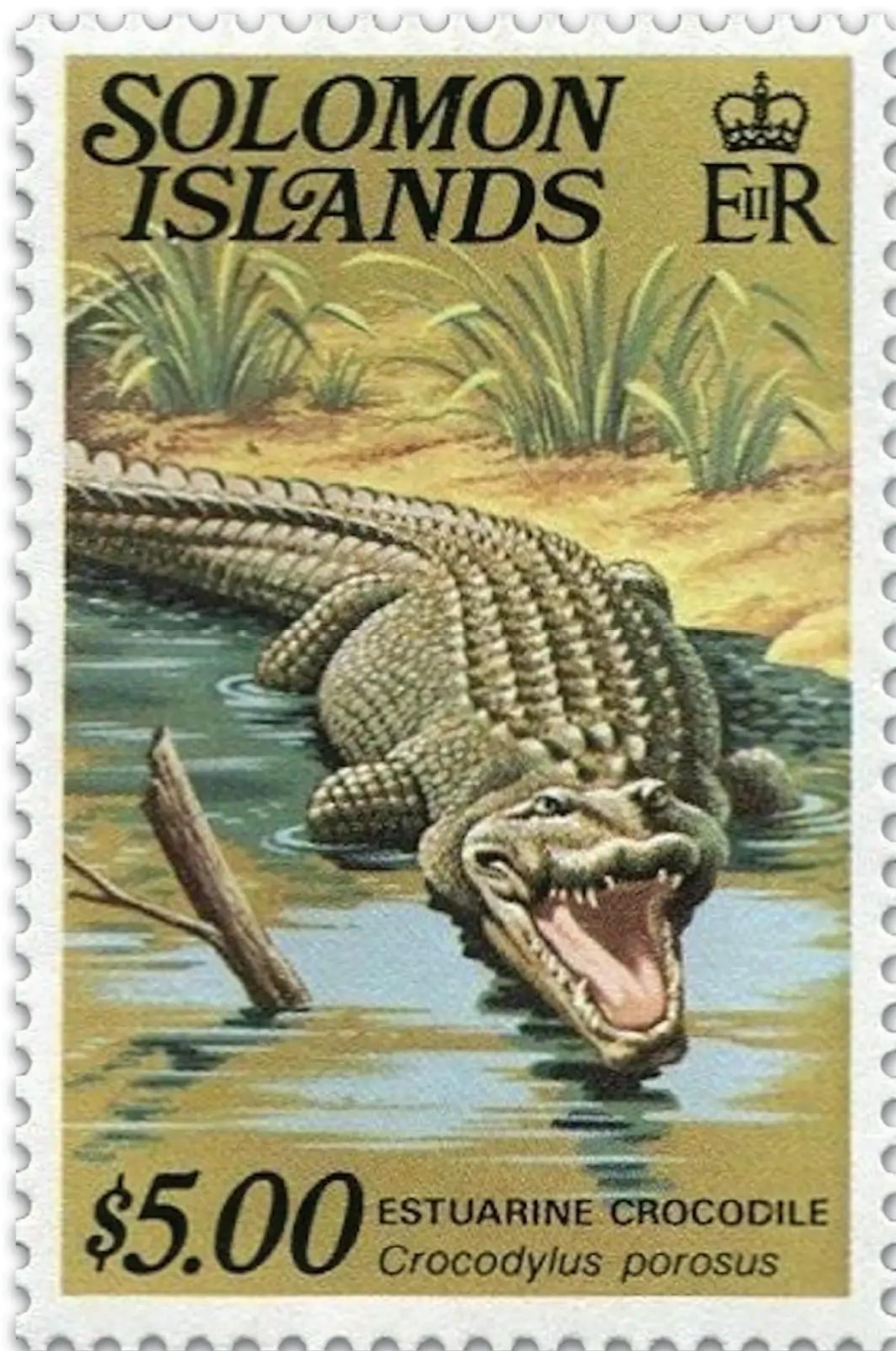
Many a television nature documentary has focused on crocodiles lunging at zebra or wildebeest as they try to migrate across a river or drink from a lake!

Sense of danger

Their size and ferocity, and the danger they can present to people, have given the crocodilians a poor public image. But they also have huge charisma.

Their dominance of the ecosystems they inhabit has given rise to many myths and legends. Some species are so culturally significant that they have been

RIGHT: A saltwater crocodile, the largest of the crocodilian species, illustrated on a 1979 stamp of the Solomon Islands



'Many a nature documentary has featured crocodiles lunging at zebra or wildebeest as they try to migrate across a river or drink from a lake'

revered as gods, not least by the ancient Egyptians and the Aztecs.

Although they are apex predators, a number of species are threatened with extinction, largely due to the actions of mankind.

Not only have we hunted them for their meat or for their skin, to produce exotic fashion accessories such as belts and bags, but we have also been responsible for degrading their habitat and restricting their home range.

One of the places they continue to thrive is in the world of philately. They have long been the focus of thematic stamps from around the world, especially from countries where they occur naturally.

Saltwater crocodile

The largest species of crocodilian, and indeed the world's largest reptile, is the saltwater crocodile, *Crocodylus porosus*.

Found throughout south-east



ABOVE & BELOW: The earliest stamps on the theme of crocodilians were North Borneo's 1894 12c, depicting a saltwater crocodile, and Basutoland's 1933 series, depicting a Nile crocodile



Asia and northern Australia, typically in river deltas and mangrove swamps, it can grow up to around 6m (20ft) in length and weigh up to 1,300kg, with males being significantly larger than females.

This is an apex predator in its

food chain, with the strongest bite force of any living animal. But it's not a fussy eater, preying on whatever animals it finds in its environment, no matter how big or small.

Its diet might include mammals, fish, reptiles, amphibians and



ABOVE: The saltwater crocodile of Asia, portrayed by Indonesia in 1966, Palau in 1994, Malaysia in 2005 and Australia in 2006

birds, and it is regarded as dangerous to humans.

Typically, it will ambush its prey from the water, and either swallow it whole or drown it and then tear it apart.

The saltwater crocodile's range is boosted by the fact that it can swim long distances at sea, but despite its name it can also be found in freshwater rivers and creeks. ▷

CROCODILES & ALLIGATORS

Nile crocodile

Only slightly smaller, and the largest predator in Africa, is the Nile crocodile, *Crocodylus niloticus*.

Despite its name, it is found not only in the River Nile but throughout most of eastern and central Africa, in as many as 26 countries, and as far south as the Okavango Delta in Botswana.

Occasionally it will inhabit brackish lakes and deltas, but it is usually found in freshwater rivers, lakes and marshes.

Typically, it will spend much of the day basking motionless on land, with its jaws open to regulate its body temperature, but it is an agile predator when hunting at the water's edge and has been known to hunt away from the water, usually at night.

The ancient Egyptians revered this animal. The god Sobek, associated with strength and fertility, was depicted in human form but with a crocodile's head.

American crocodile

Slightly smaller again is the American crocodile, *Crocodylus acutus*, which lives throughout the Caribbean and central America.

It can be found as far south as northern Peru and as far north as southern Florida (the only place in the world where crocodiles and alligators co-exist).

It prefers salty water, and lives largely on the coast or in brackish lakes, mangrove swamps and cays.

The American crocodile is considered less aggressive towards humans than other species of its size, but its numbers have been affected by poaching. It is listed as vulnerable on the IUCN Red List, which ranks species based on their risk of extinction.

Cuban crocodile

Critically endangered due to its restricted range and historic



ABOVE: The Nile crocodile of Africa, illustrated by Angola in 1953, Upper Volta in 1965, Ethiopia in 1976, Kenya in 1977 and Guinea-Bissau in 2002

persecution is the Cuban crocodile, *Crocodylus rhombifer*, now found only in two small regions of central Cuba.

One of the smaller species, typically measuring 2.3m (8ft) and weighing 80kg, it prefers freshwater rivers and swamps.

The Cuban crocodile has distinct physical characteristics, including a triangular-shaped snout, long legs and less webbing between its toes. Is the most terrestrial of all crocodiles.

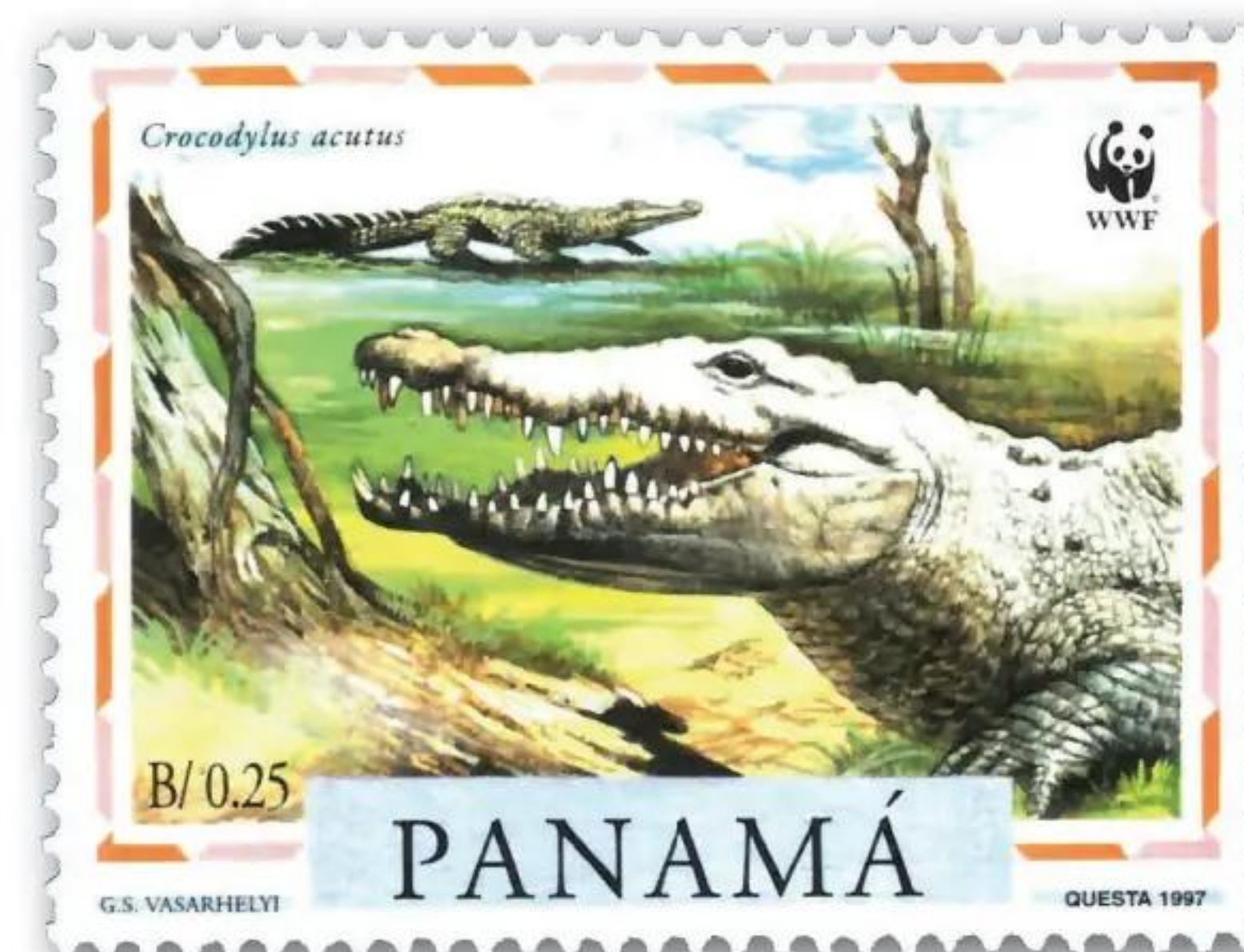
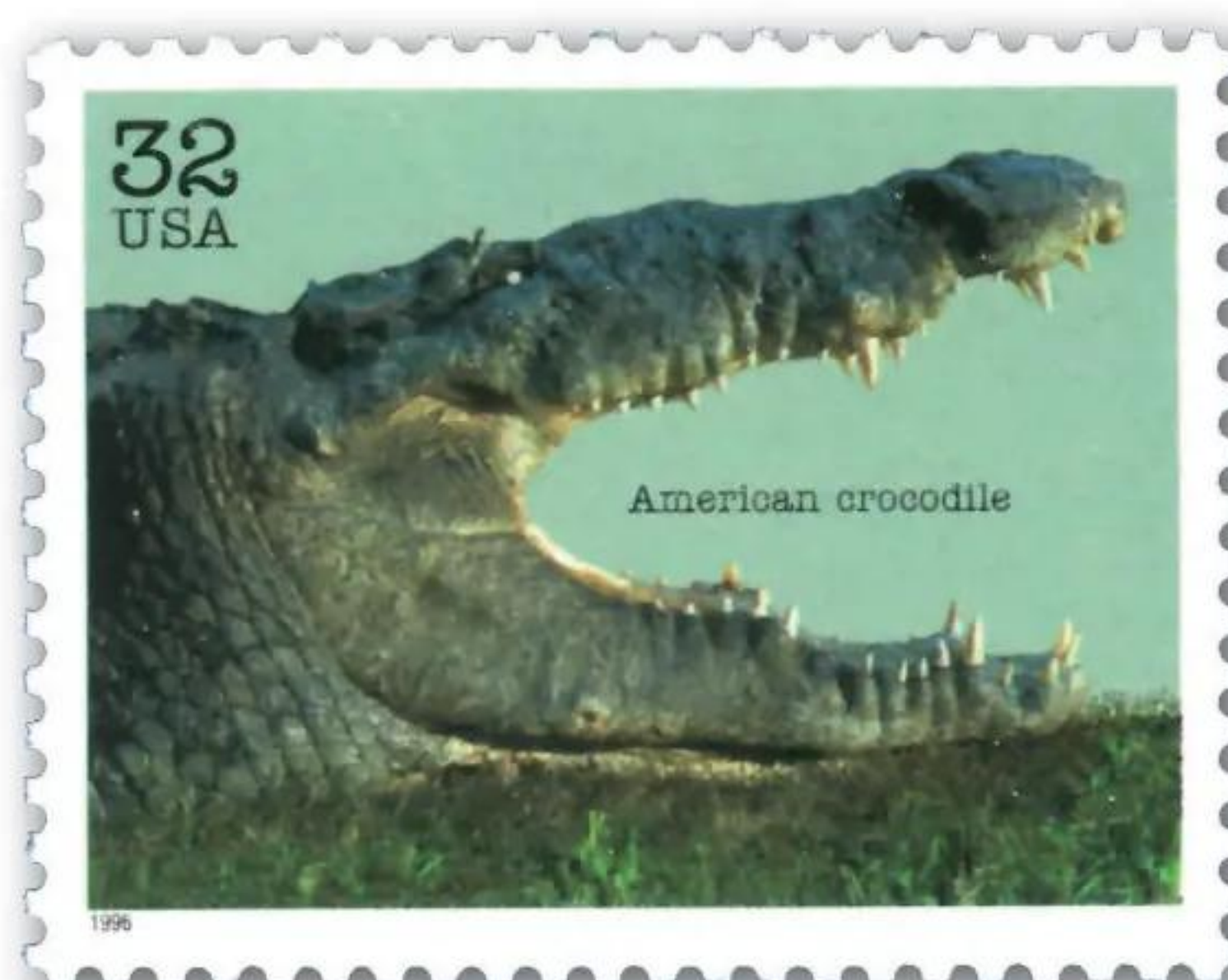
It is also considered the most

aggressive, and has been observed to hunt co-operatively. Its diet consists largely of smaller mammals, fish and turtles.

Captive breeding projects have been established in an attempt to help its numbers recover.

Philippine crocodile

Another smaller freshwater species with an extremely restricted range is the Philippine crocodile, *Crocodylus mindorensis*, now found on just a handful of islands in the central and northern Philippines.



ABOVE: The American crocodile, native to central America and the Caribbean, depicted on stamps from Nicaragua in 1982, the United States in 1996 and Panama in 1997

RIGHT: Critically endangered species whose range is now severely limited include the Cuban crocodile, featured by Cuba in 2003, and the Philippine crocodile, illustrated by the Philippines in 2011



DID YOU KNOW?

Although crocodiles have a more powerful bite than most other animals, the muscle that opens the jaw is much weaker than the muscle that closes it. That's why they can be 'disarmed' by some rope or duct tape around the mouth.



ABOVE: The West African slender-snouted crocodile, which was only recently recognised and renamed as a separate species, shown on a 1986 design from Nigeria



ABOVE: The African dwarf crocodile, the smallest extant species, featured on stamps from the Spanish colony of Rio Muni in 1964 and the Democratic Republic of Congo in 1987

It can grow to 2.7m (9ft) in length and weigh up to 90kg, making this one of the smaller crocodile species, feeding largely on fish. Yet some negative local superstitions surround it, and until recently it was persecuted.

Its limited distribution and humans' unsustainable fishing methods have left the Philippine crocodile critically endangered, with only about 100 adults left.

Increased conservation efforts are needed to ensure that this animal does not become extinct, and ZSL London Zoo is among the organisations working to breed them in captivity.

Young adults have a golden-brown colour, which gets darker as they get older, giving a rough indication of the animal's age.

Slender-snouted crocodile

Only recently recognised as a separate species is the West African slender-snouted crocodile, *Mecistops cataphractus*, which was distinguished from the Central African species based on genetic research conducted in 2014-18.

Living in densely vegetated bodies of water and growing up to 4m (13ft) in length, it can be found in sub-Saharan rivers from The Gambia to Cameroon, feeding on fish, aquatic invertebrates and small animals.

This is the only crocodilian which can climb, as high as several meters into the limbs of fallen trees. But relatively little is known about it, and it is listed as critically endangered after suffering from illegal hunting.

Captive breeding may be the key to its conservation, and Colchester Zoo is among those with a breeding project.

African dwarf crocodile

The smallest extant species of crocodile is the African dwarf crocodile, *Osteolaemus tetraspis*.

Growing up to 1.9m (6ft) in length, and weighing 40kg, it is found in tropical regions in the central and western parts of the continent, around smaller rivers, streams and swamps.

It has a short, blunt snout, and feeds on a wide range of smaller

CROCODILES & ALLIGATORS



ABOVE: The American alligator, featured on a United States stamp of 2006, and the Chinese alligator with hatchlings, illustrated on a China stamp of 1983

prey, from fish and crabs to amphibians and bats.

The dwarf crocodile is mainly nocturnal, rarely basking in the sun and spending much of the day

hidden in burrows, caves or pools.

It is listed as vulnerable, partly because it is hunted for bushmeat, but is widely kept in zoos.

American alligator

Perhaps the most widely recognised crocodilian of all is not a crocodile, but the American alligator, *Alligator mississippiensis*.

Visitors to the United States might see it floating among the vegetation in the Florida Everglades, or inhabiting freshwater wetlands from southern Texas to North Carolina.

Visually, alligators differ from crocodiles in having a broader snout, with only the upper teeth visible when the mouth is closed.

More importantly, though, they do not possess the salt glands beneath their tongue that allow crocodiles to thrive in salt water, and they cope better with colder temperatures, which allows

them to live further north.

This, the larger of the two species of alligator, can grow up to 4.6m (15m) in length and weigh up to 450kg, feeding largely on aquatic mammals such as muskrats as well as fish, turtles and birds.

Remarkably, it has been observed using sticks as tools, luring birds to land on them before snapping them up. So it is a lot smarter than it looks, as well as being important for maintaining biological diversity in wetlands.

Chinese alligator

The only other species of alligator is the Chinese alligator, *Alligator sinensis*, with a very restricted range in the Yangtse river system.

The species is smaller, growing to 2.1m (7ft) and weighing up to 45kg, and unusual in that it is nocturnal during the summer and hibernates in burrows during the winter.

Like all crocodilians it is an

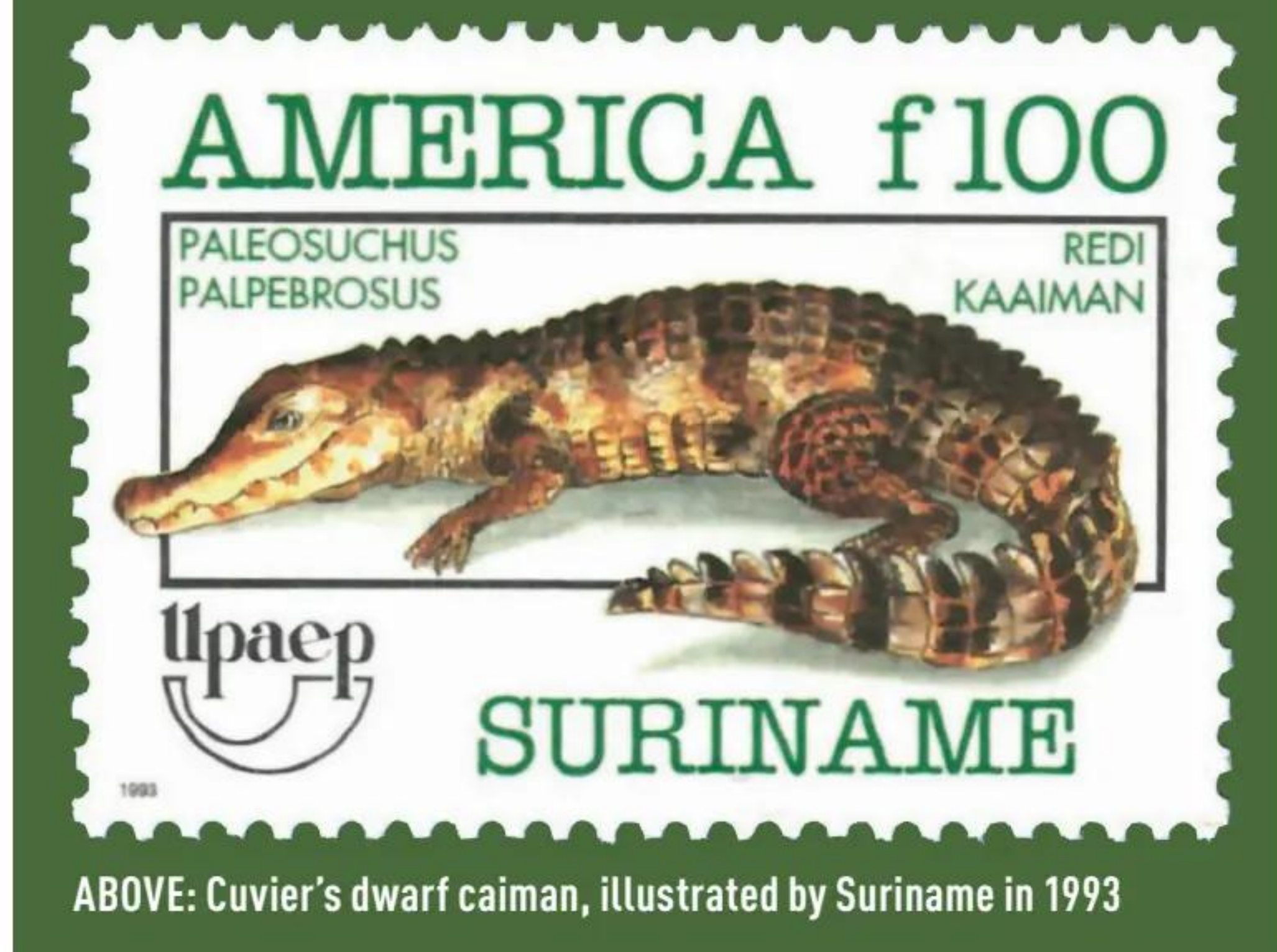
'Some species are so culturally significant that they have been revered as gods, not least by the ancient Egyptians and the Aztecs'



ABOVE: The yacare caiman, illustrated by Argentina in 1959



ABOVE: The spectacled caiman, illustrated by Suriname in 1968

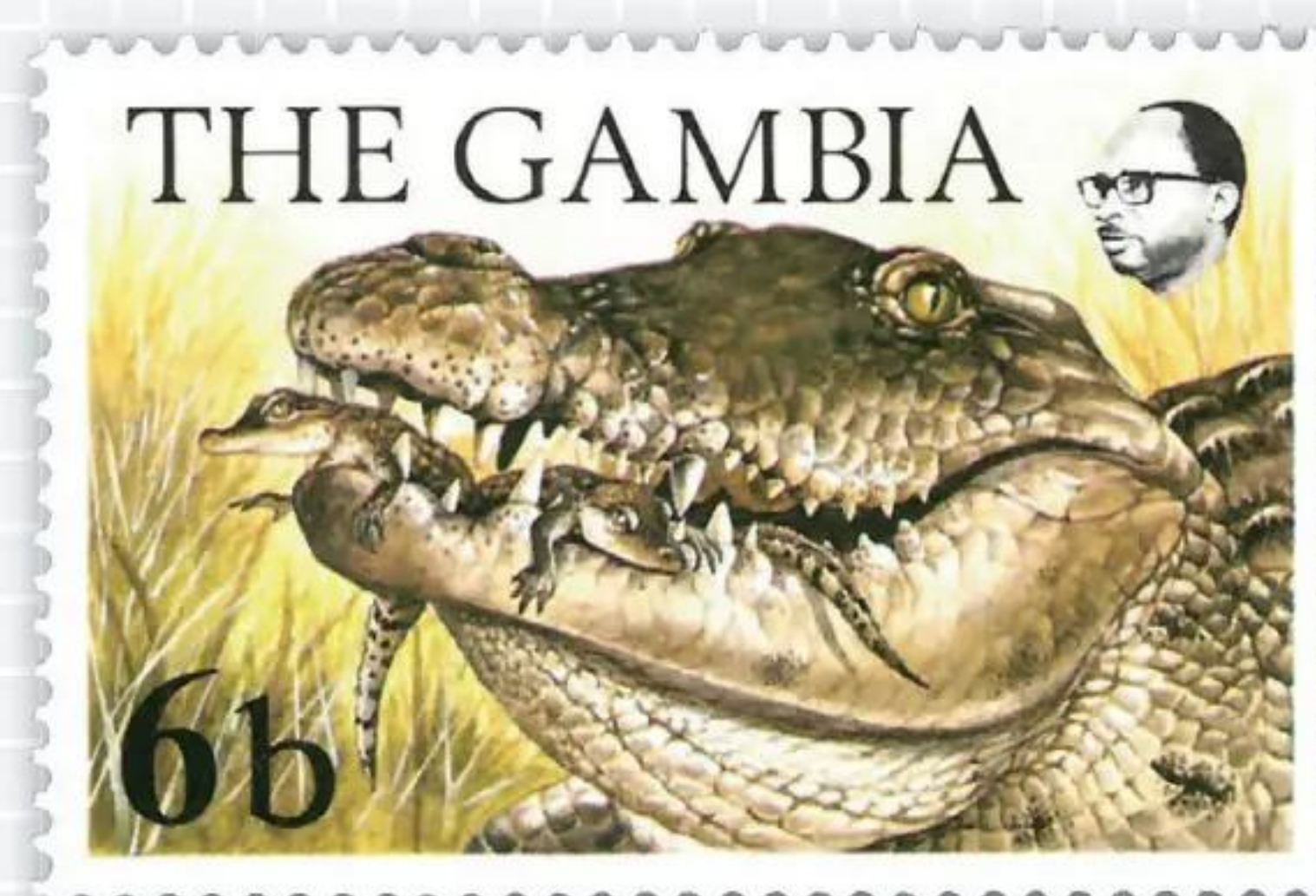


ABOVE: Cuvier's dwarf caiman, illustrated by Suriname in 1993

PARENTAL CARE

Crocodilians are very good parents, guarding their nests diligently and protecting their offspring for around two years.

After her eggs hatch, the mother will scoop up the hatchlings in her mouth and carry them to the water, taking great care with her array of extremely sharp teeth!



ABOVE: Gambia 1984 stamp showing a Nile crocodile with hatchlings



ABOVE: Images of the gharial, a distinctive slender-snouted crocodilian species of the Indian subcontinent, from Nepal in 1984 and Bangladesh in 1990

opportunistic feeder, and its diet includes fish, rodents, snails and invertebrates.

There is a large body of evidence to suggest that this animal was the inspiration for the mythical Chinese dragon.

Today it is critically endangered, due to habitat loss, agricultural practices and the regional taste for alligator meat, and at an extremely high risk of extinction if conservation efforts fail.

Caimans

Closely related to alligators are caimans, which are found in rivers, swamps and lakes throughout central and south America.

Generally smaller than alligators, but more agile and with sharper teeth, they eat fish, amphibians, crabs and small mammals. They also have more diversity in terms of size and distribution.

Species which have appeared on stamps include the Yacare caiman, *Caiman yacare*, which can grow up to 3m (10ft), the spectacled caiman, *Caiman crocodilus*, with a length of up to 2.5m (8ft), and Cuvier's dwarf caiman, *Paleosuchus palpebrosus*, which is no bigger than about 1.4m (4ft 6in).

Gharials

One of the rarest crocodilians, and the most specialised, is the gharial, *Gavialis gangeticus*.

It was once found throughout the freshwater rivers and marshes of the Indian subcontinent, but is now limited to approximately 2% of its historic range, notably in the Ganges River and its tributaries.

This is a large species, with males

growing to 6m (20ft) in length and weighing up to 900kg, but characterised by an extremely long and slender snout, the perfect tool for catching fish. Indeed its diet is almost exclusively fish, and small crustaceans.

Hindus have long associated the gharial with the river deity Ganga, and attributed mystical powers to it.

Now it is critically endangered, and its future may depend on reintroduction programmes

established in protected areas in Indian and Nepal.

Uncertain future

Although they are a constant reminder of a time before humanity, the crocodilians have existed alongside humans for a few hundred thousand years.

Yet their future is uncertain. The next few decades of conservation will be crucial for ensuring they can still be seen and admired by the coming generations. ■

RIGHT: The saltwater crocodile illustrated in Aboriginal art, reproduced on an Australia 2s definitive of 1948

