

# Remarkable predatory skills in Mugger Crocodiles makes them the apex predators of freshwater ecosystems



**Image 1. A Mugger or Marsh Crocodile *Crocodylus palustris* reigning over freshwater ecosystems as the ultimate predator. ©Raju Vyas.**

Among Indian reptiles, the Mugger or Marsh Crocodile *Crocodylus palustris* is known to be one of the most intelligent and skilful predators in the freshwater ecosystems (Image 1). This species preys upon a variety of animals, including small insects and large mammals (Stevenson 2019); even the hatchlings feed on diverse prey species – such as insects, amphibians, fishes, and crustaceans. As they grow, the adults graduate to feed on larger vertebrates like fish, turtles, lizards, larger snakes (pythons), birds, monkeys, leopards, and livestock

(Daniel 2002; Bhatnagar & Mahur 2010; Murugan et al. 2020). However, they are capable of attacking even larger mammals such as buffaloes, Sambar, and Spotted Deer, and occasionally humans too (de Silva 2013; Choudhury & de Silva 2013). It has been observed that the larger adults later shift their predatory habits completely towards larger prey species to fulfil their increased food requirements. There have been numerous incidences where one large adult mugger is involved in a conflict, either with another crocodile, or sometimes other



larger preys, such as livestock, or even humans (Vyas & Stevenson 2017).

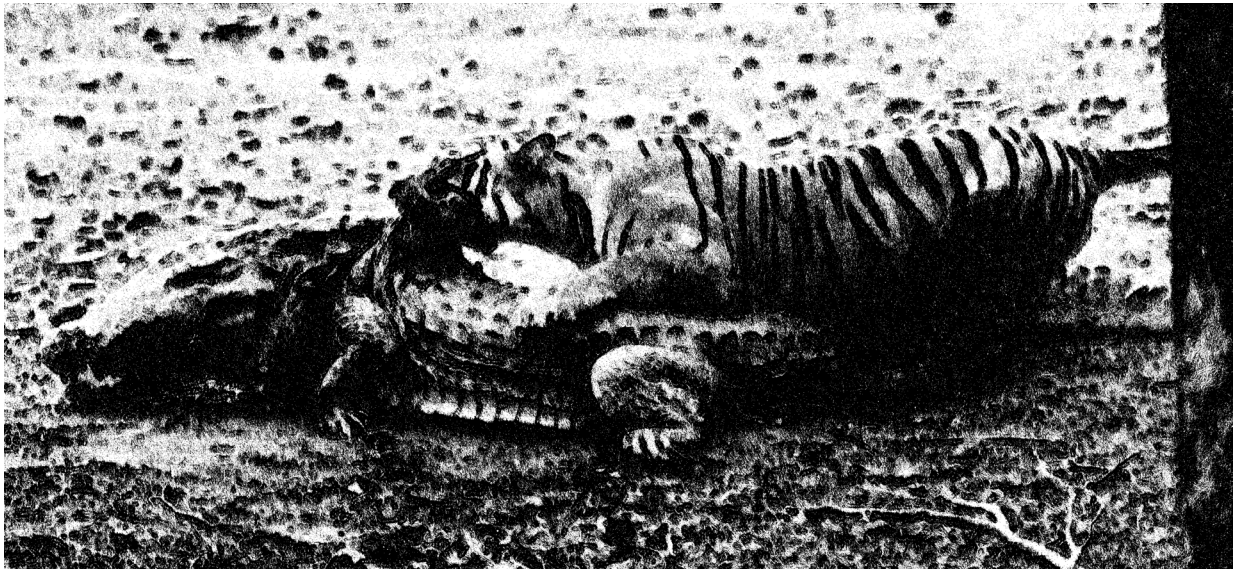
This note presents some remarkable examples of Mugger predation involving large wild cats based on published literature. A recently published note mentions how a Mugger is an efficient predator as it can predate a large adult cat with skilful acumen (Vyas 2020). On two different occasions, Leopards *Panthera pardus fusca* lost their lives while tussling with large Muggers in Gir forest, Gujarat, India (Vyas 2020). Both the Leopard and Mugger are expert apex predators governing their respective habitats and ecosystems. Leopards being prime predators in terrestrial forest habitats and crocodiles in freshwater ecosystems. Previously, there have been cases where predators devoured young muggers or eggs,

thus including hatchlings, juveniles and large adults too (Somaweera et al. 2013; Vyas 2008 2019b). However, large crocodile predating wild cats (Scognamillo et al. 2003; Da Silveira et al. 2010; Somaweera et al. 2013; Pérez-Flores 2018) and vice versa, i.e., large wild cats predating upon crocodilians (Image 2) are comparatively uncommon occurrences (Lydekker 1894; Pandit 2012; Vyas 2020), but Jaguars *Panthera onca* is well known for frequent predation on two Caiman species *Caiman crocodilus* and *Melanosuchus niger* (Da Silveira et al. 2010; Azevedo & Verdade 2012; Somaweera et al. 2013).

Very few incidents have been published on this subject. Literature surveys indicate an earlier record whereby a Leopard was predated by an Estuarine Crocodile C.



**Image 2. Illustrative evidence: Mugger *Crocodylus palustris* attacking a Royal Bengal Tiger *Panthera tigris* (Credit: *The Royal Natural History Volume I*, authored by Richard Lydekker).**



**Image 3. Illustrative evidence: Depicting interaction between Bengal Tiger *Panthera tigris* named 'Machhali' and a massive Mugger, about 13ft long *Crocodylus palustris* in the wild, at Ranthambhore Tiger Reserve, Rajasthan, India (after Somaweera et al 2013 based on the image taken by Murli Dhar Parashar).**

*porosus* in Sri Lanka (Tennant 1861). Another similar record from Madhya Pradesh, India mentions how a Leopard was predated by a Mugger (Pitman 1913). A famous female Tiger *Panthera tigris* named 'Machhali' (=Fish) from Ranthambore Tiger Reserve, Rajasthan, India (Image 3) is also popular for preying habits with Muggers ([https://en.wikipedia.org/wiki/Machhali\\_\(tigress\)](https://en.wikipedia.org/wiki/Machhali_(tigress))). Even though smaller wild cat is capable of skilfully hunting a baby crocodilian, it was only recently that with due evidence a video was presented by Conner De Monte (2020: See: <https://www.dailymail.co.uk/news/article-8619029/Florida-bobcat-baby-alligator-battle-death-yard.html>) depicting a small wild bob cat *Lynx rufus* that was hunting an alligator hatchling at Port Charlotte, Florida.

Sir J. Emerson Tennant noted an interesting incidence in the book 'The Natural History of Ceylon' (1861) about a Leopard being preyed

upon by a massive salt water crocodile: "A curious incident occurred some years ago on the Maguruganga, a stream which flows through the Pasdnn Corle, to join the Bentolle (probable River Kalu Ganga or Kalu-Kukule) river. A man was fishing seated on the branch of a tree that overhangs the water; and to shelter himself from the drizzling rain, he covered his head and shoulders with a long folded into a shape common with natives. While in this attitude, a leopard sprung upon him from the jungle, but missing its aim, seized the bag and not the man, and falls into the river. Here a crocodile, which had been eyeing the angler in despair, seized the leopard as it fell, and sunk with it to the bottom". The above-mentioned crocodile species is most probably *Crocodylus porosus*.

Another incident described by C.R. Pitman (1913) quotes: "While camping on the





banks of the River Wainganga (a tributary of Godavari River), in the Central Provinces (now Madhya Pradesh) some villagers, one day, on 27<sup>th</sup> March, brought me a half-grown panther measuring about 5'-6" that they had picked up dead near the river and which from the nature of the wounds on it, undoubtedly had been killed by a crocodile *C. palustris*".

In the first week of September 2014, an interesting incidence was noted at Madhuvanti Dam, Gir West, Junagadh. A group of four to five Muggers were found feasting on a 7–8-year-old adult Asiatic Gir Lion *Panthera leo persica*. The Madhuvani Dam (21.257N, 70.490E) is situated on the edge of Gir National Park and Wildlife Sanctuary, Gujarat, India. It is a small-sized man-made water body constructed for irrigation, located on the edge of a protected area. Therefore it serves as one of the best water sources for wildlife during any water crisis or periods of drought. It is home to about 56 large muggers, as per the latest count (Vyas 2019a). The question remains, as to how such a large predator was victimized by few muggers. The local forest officer (Dy. Conservator of Forest, West Gir Division) stated that the lion's death was not directly caused by any feud between the muggers and the lion, but rather "this adult lion lost his life in a fierce battle with another lion, the previous night. Later, somehow the muggers might have managed to drag the dead lion in the water and were ultimately found devouring it" (Kateshiya 2014). In Africa, Nile Crocodile *Crocodylus niloticus* is well-known for its Leopard-hunting habits, with a good number of accounts supporting

this tendency (Cott 1961; Bailey 1993; Hunter 2013; Swanepoel et al. 2015). Likewise, muggers and estuarine crocodiles can be considered evenly skilful when it comes to specific predation of wild cats. The fact that crocodilians are the ultimate apex predators of freshwater ecosystems is well established (Grigg & Kirshner 2015; Somaweera et al. 2020). All the crocodilians share intense aggressive traits and are proven to be opportunistic predators, devouring whatsoever comes across their way, in and around their habitats. The likelihood of any mugger allowing a predator from another species to have an absolute dominance within its territory is nill. If at all there are power conflicts, they usually result in fatal feuds, with either the large wild cat or another crocodilian member suffering a loss of their lives.

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