

## MUGGER CROCODILE (*CROCODYLUS PALUSTRIS*) STUDY IN IRAN

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**Mugger crocodile and its distribution:** Mugger or Marsh crocodile (*Crocodylus palustris*) is a medium to large crocodile (max. length ca. 4-5 m) and has the broadest snout of any living member of the genus *Crocodylus*. Mugger crocodiles range includes Bangladesh, India, Nepal, Pakistan, Sri Lanka and Iran. The fresh water habitats of Sistan & Baluchestan province (South-eastern Iran, near the Pakistan border) are the most western range for the Mugger crocodile and this small, scattered population is the only one in Iran.

Muggers occupy both natural and manmade water bodies. The natural habitats include the ponds along the main rivers of the Kaju, Sarbaz and Bahukalat areas. Generally, crocodiles avoid shallow, running rivers and prefer deeper and calm water with suitable plant cover and sandy banks. Manmade, artificial water bodies also provide essential support for the crocodile populations. Village ponds constructed for rain water storage as well as dams constructed along the rivers have become important habitats for crocodiles. In particular, Pishin dam reservoir, covering an area of 3800 sq km, has been designated as a 'Protected area' and named 'Gandou'(local name for the crocodiles) due to its importance as a crocodile habitat. The reservoir is also a Ramsar site and hosts large numbers of migratory birds.

**Reproduction:** Female crocodiles reach sexual maturity at 6 years old, at a length of 1.8-2M, while the males mature at about 10 years (Whitaker 1989). Mugger crocodiles dig burrows for nesting in the dry season. Nesting in Iran takes place in April-May (Mobaraki 2006, 2002). The nests are under thick vegetation and close to water. Average number of eggs per clutch is 25-30 (Whitaker 1989). The mean size of the eggs in 2 nests discovered by the authors was 8cm length by 4 cm width and 95 grams in weight (Mobaraki 1998). Eggs hatch in June-July after an incubation period of 50-60 days. The mean size for 10 hatchlings (fig 1) in five different nests was 29.97 cm length and 85.52 grams of bodyweight (Mobaraki and et al 2006).

**Behaviour:** Similar to other crocodile species, activity patterns include basking (fig 2), swimming and diving, however, a unique and important behaviour of Mugger is burrowing. The burrows are used to thermo-regulate during hot and cold hours of the day. The crocodiles leave the tunnels at night in search of food (Mobaraki 1999). The movement of crocodiles between habitats is another quite usual recorded behaviour in the area. This behaviour seems to be more usual amongst juvenile crocodiles and may be due to animals searching for a new habitat. Unfortunately these movements also result in road casualties and the authors have recorded several dead crocodiles of different ages on the roads (Mobaraki & Abtin 2007). In addition, as most of the crocodile habitats are close to villages, there are reports of crocodile/human conflict as they pass close to the village houses.

**Feeding:** Crocodiles feed in bodies of water and are adaptive feeders within that environment. While



Fig. 1: Hatching Mugger crocodile

studying its feeding habits, faecal samples composed of beetle elytra and legs, fish remains, kingfisher or other birds' feathers as well as a snake were collected. However, the crocodiles rely mainly on fish. In most habitats the crocodiles have close contact with local people and occasionally attack livestock causing some problems amongst villagers. (Mobaraki1999).

**Conservation and population status:** Mugger crocodile is listed as "Vulnerable" on the IUCN Redlist and habitat destruction is the main threat to this species. Natural disasters such as drought and flooding are the main threats for the crocodiles especially during the nesting season as the nests and hatchlings are particularly vulnerable.

Reported numbers of crocodiles vary; 50-100 (Tuck 1975) 118 (Kami 1994), 200-300 (Mobaraki 2000) but in the last census program in Feb 2008 in which about the 80% of the area was covered, 150 crocodiles were directly counted. Crocodiles are listed as an "Endangered Species" in Iran and are legally protected. There is a fine of US\$3,200 for killing a crocodile. Fortunately there is high potential for the conservation of crocodiles in Iran as the local people respect them as culturally important and never hunt or harm them. The Iranian national management plan for the Mugger crocodile population includes research work, the conservation of crocodile habitats, captive breeding, public awareness / education and ecotourism.

**References will be available on the website:**  
[www.wmnews.com](http://www.wmnews.com)



Fig. 2: Basking is a common behaviour for Mugger crocodiles: Credit Asghar Mobaraki