

PRESS RELEASE ARTIS Amsterdam Royal Zoo

## False fertilisation of false gharial at ARTIS Amsterdam Royal Zoo

The world's first artificial insemination of a false gharial

An artificial insemination of a false gharial (*Tomistoma schlegelii*) was performed at ARTIS earlier this week. No other attempts at artificial insemination are known to have been performed in false gharials ever before. This vulnerable crocodile species has been present at ARTIS for a very long time, since 1887. The number of false gharials that survive in the wild is probably around 2,500. False gharials live in Peninsular Malaysia, eastern Sumatra, Kalimantan and western Java.

Much is unknown about the reproduction of false gharials. The male at ARTIS was showing mating behaviour – blowing bubbles in the direction of the female – which prompted the zoo to examine whether he had produced healthy sperm. Male gharials have a penis that they insert into the female's cloaca during mating. Reptiles, like birds, have a cloaca, which is an orifice in the body that serves as the opening for the digestive, urinary and reproductive tracts.



The sperm was collected through manual stimulation. Under the microscope the sperm cells showed lively movement – the first time on record that this has ever been seen. After the sperm was found to be healthy, an ultrasound scan was performed on the female. The scan showed follicles, which meant that this was a perfect moment for the female to conceive. The sperm was then introduced into her body through a catheter.

For the first time moving seed of a false gharial is visible under a microscope

The artificial insemination was performed in collaboration with animal fertility experts from Gent University in Belgium and Queensland University in Australia.

A successful insemination does not necessarily mean that fertilisation will actually take place. Whether the female has been fertilised will probably become evident this summer. Little is known about the gestation period of false gharials. Once the eggs have been laid, the incubation period is approximately 90 days, depending on the temperature.

### Pools and monsoon rains

ARTIS has two false gharials: a 51-year-old female and a male whose age is unknown. Gharials can live to be a hundred. The false gharials at ARTIS Amsterdam Royal Zoo are part of the European breeding programme (EEP) for this species. ARTIS is investing in research.

The zoo has been trying to produce young crocodiles for years and decided to keep only one species of crocodile to create more space for the animals. That species is the threatened false gharial.



In 2013 the gharials' enclosure was refurbished so as to encourage them to mate and lay eggs. The pools were deepened and a waterfall was created. In addition, banks were created where the female could lay her eggs. A monsoon simulation system was installed to achieve the humidity levels typical of their natural habitat.

A false gharial in Reptile House in ARTIS Amsterdam Royal Zoo. Photo: ARTIS, Edwin Butter

When it became clear that natural fertilisation was not going to happen, ARTIS decided to examine the fertility of the two animals and to opt for artificial insemination.

### Breeding grounds in Indonesia

ARTIS is committed to promoting the conservation of false gharials, not just within the zoo but also elsewhere. To that end, it is supporting a project in the Danau Sentarum National Park in Indonesia that was set up to preserve these wonderful creatures. The most serious threats to the false gharials' survival are loss of habitat due to deforestation and agriculture, hunting and the removal of eggs from their nests. The peat bogs in the Danau Sentarum National Park are an important breeding ground and are essential to the survival of this species.

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*ARTIS inspires and encourages a broad public to deal with nature responsibly. In addition to 26 nationally listed buildings, ARTIS also has a historic city park, the international award-winning museum ARTIS-Micropia and the Artisplein, with the adjacent ARTIS-Groote Museum, ARTIS-café restaurant de Plantage and the ARTIS-studio. ARTIS, founded in 1838, is both a foundation and an authorised charity with a CBF quality mark and PBO status.*

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