

GHARIAL ECOLOGY PROJECT UPDATE 2025-2026

We categorize Gharial Ecology Project (GEP) initiatives as pertaining to ecological research, community-led conservation, and capacity building of conservation partners. Through these, we advocate and build capacity for the evidence-based conservation of gharials. We include, as below, some of the actions implemented in 2025-26.

Ecological research

Population monitoring

In February 2026, we estimated a total of 1769 gharials in the Chambal River. Of these, 173 are males, 641 are females, 472 are subadults, 314 are juveniles, and 169 are yearlings. We detected 293 gharials (M=33, F=193, SA=34, J=13, Y=20) within the upstream, 415 gharials (M=33, F=176, SA=114, J=64, Y=28) in the midstream, and 1061 gharials (M=107, F=272, SA=324, J=237, Y=121) in the downstream sections of the Chambal River.

Survey data over multiple years indicates a much lower number of yearling and juvenile gharials in the upstream and midstream sections relative to the downstream Chambal. Human-induced pressures (e.g., illegal fishing) and the loss of suitable habitat within the upstream and midstream sections likely drives the observed low levels of population recruitment.

During the June 2026 post-hatch survey, we documented 508 gharial nests across approximately 425 km of the National Chambal Sanctuary. Of these, 455 nests hatched successfully, while 35 nests were lost to natural predation and temperature fluctuations. The remaining 18 nests were collected by the Uttar Pradesh Forest Department (11 nests) and Madhya Pradesh Forest Department (7 nests) as part of their respective rearing and release programs.

Telemetry

Our radio-tagged female gharials continued their seasonal monsoon movements between upstream and downstream regions. The female tagged as 24-30 in Nadigaon traveled approximately 40 kilometers upstream into the Mej River before returning post-monsoon and eventually settling in the Kuno River. Notably, within Kuno, females were observed gathering earlier than usual during the breeding season, suggesting that mating occurred within this river. During the nesting period, we documented around 30–35 trial nests approximately 2 kilometers upstream from the Chambal-Kuno confluence and 14 nest hatched during post-hatch survey, further supporting evidence of breeding activity in Kuno likely due to disturbance from sand mining in Nadigaon. We maintained close monitoring of all tagged individuals through our field trackers and satellite telemetry. Like last year, the female tagged with 26-55 radios from Dang Basai exhibited the most extensive movement, covering nearly 380–400 kilometers. She traveled downstream from Dang Basai near Dholpur, Rajasthan, to the Yamuna-Chambal confluence, moved further into the Yamuna, and later was visually sighted in Dang Basai, during the breeding season of this year (2026). This female

was tagged in 2022, and the attached transmitters have now reached the end of their 4-year battery life.

Community-led conservation and outreach

River Watch Program

The Gharial Ecology Project and Madhya Pradesh Forest Department began a pilot implementation of the River Watch program to increase local participation in protecting critical gharial habitat from illegal sand mining. Four people from local communities have been recruited to interact with sand miners and prevent mining, particularly of sand that is 200-500 m from the shoreline. In addition to such habitat protection, the river watchers also seek to restore degraded habitat by planting *Tamarix* sp. (Jahu) to promote sand deposition on appropriate islands and along shorelines (Auerbach et al., 2015). These participatory efforts to protect and restore habitat benefit not just gharials but other endangered species such as Indian skimmers and riverine turtles.

Global Wildlife Fair 2025

We, at the Gharial Ecology Project, were glad to participate at the Global Wildlife Fair in New Delhi from the 10-12 October 2025. This event brought together a diverse set of stakeholders, all united in their passion for wildlife conservation. We were proud to showcase our progress in securing a future for gharials in the Chambal River. As invitees of the Astral Foundation, we were inspired by the work and achievements of other organizations in the Astral family.

Capacity building of conservation partners

Post-release monitoring of fast-track head-started gharial hatchlings

The Gharial Ecology Project along with Rajasthan Forest Department began a fast-track head-starting project for gharial hatchlings in the upper Chambal River. We used ecological data from the wild to optimize husbandry practices. These include the capture of 30 hatchlings from creches. Hatchlings were collected at two-weeks of age, since at this time their yolk sacs are absorbed and feeding begins. Hatchlings were fed live fish, provided heat lamps and basking areas, and were minimally handled during their four month long rearing period. Hatchlings were retained in optimal captive conditions, free from predation over the duration of the pre-monsoon and the monsoon months (July-September), when wild hatchling mortality rates are very high (~90%).

As flood waters receded, at equivalent sizes to their wild counterparts, these "head-started" young were released into favorable habitats nearby. These Fast Track head-started (FTHS) hatchlings, were each equipped with a tail transmitter and intensively monitored almost daily post-release.

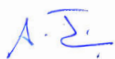
At 10 months post release, 5+ of these FTHS young gharials are surviving, with fishing bycatch implicated as a major driver of observed mortality. Efforts are underway by the Rajasthan Forest Department, to mitigate these threats via management actions.

Our husbandry practices have been successful with a 100% survival rate and ~average length and weight gains of 150% and 300%, respectively. A short time (<6 months rearing) in captivity, with minimal exposure to humans, frequent feeding on LIVE fish, rather than DEAD fish, and access to basking platforms and warm thermal gradients, on land and in the water, at very low densities are alternate approaches that result in healthy individuals for release. Similarly, post-release monitoring data has been the vital piece that has long been missing in conventional rear and release programs for gharial. Data on the movement, survival, and residency patterns in these 30 gharials is being used to boost recruitment within this stretch of the upper Chambal.

In June 2026, we initiated a second round of the Fast-Track Head-Starting (FTHS) program with 80 gharial hatchlings. Building on lessons from the previous trial, we introduced modifications to the feeding regime and increased access to daylight, with the aim of improving growth rates and achieving growth patterns closer to those of their wild counterparts. Four months into the program, all 80 hatchlings have survived, achieving 100% survival. Preliminary observations also indicate improved growth compared with the previous year. Detailed growth rates and comparisons will be reported following completion of the statistical analysis.

Breeding male transfers to Son Gharial Sanctuary in 2025, & 2026

The Son Gharial Sanctuary (SGS) has an established population of adult females but had lacked an adult male since 2015. To restore breeding in the sanctuary, we collaborated with the Madhya Pradesh Forest Department to translocate breeding males from the National Chambal Sanctuary to the Son River. In January 2025, we successfully translocated a large adult male from the upper Chambal to SGS. The male measured 4.3 m in total length, had a well-developed ghara. Following release, he successfully bred with five females, resulting successful hatchlings from 5 nests. During the subsequent monsoon, however, the male moved downstream beyond the protected sanctuary into a river stretch where large-scale fishing and mining are legally permitted. The animal unfortunately died following capture and transit. In January 2026, we translocated another large adult male, measuring 4.8 m and weighing 575 kg, over 700 km to the Son River. Following release, the male bred with six females. By June 2026, four nests had successfully and identified 2 infertile nests. Encouragingly, during the 2026 monsoon, the translocated male explored both upstream and downstream sections of the river before returning to the release area. If the male continues to remain within this habitat through the post-monsoon period, his presence could provide another opportunity for successful breeding in 2027.



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Figure 1: A group of basking gharials seen in the lower Chambal, during population surveys. We detected 1769 gharials during our surveys. Of these, 173 are males, 641 are females, 472 are subadults, 314 are juveniles, and 169 are yearlings.



Figure 2: We began the River Watch program by employing river folk to help protect critical gharial habitat from illegal sand mining. Such efforts to protect and restore habitat benefit not just gharials but other endangered species like Indian skimmers and riverine turtles



Figure 3: Jeff and Jailabdeen holding a 4-month-old Fast-Track Head start in Palighat rearing center, Sawai Madhopur, Rajasthan.



Figure 4: Shri Sanjay Sharma, the Honorable Minister of State with independent charge of the Forest, Environment & Climate Change, and Science & Technology departments, Government of Rajasthan- conducted the inaugural release of our fast-track head-start gharial hatchlings. We used ecological data from the field to optimize husbandry protocol and are continuing post-release monitoring of released individuals



Figure 5: We translocated a ~16 ft long, adult male gharial that weighed ~600 kg over a 700 km distance, from the National Chambal Sanctuary to the Son Gharial Sanctuary in Madhya Pradesh. The advent of this male into the Son Gharial Sanctuary has resulted in nests from all six resident female gharials.



Figure 6: Global Wildlife Fair 2025: Gharial Ecology Project participated with Astral Foundation along with its other conservation partners.



Figure 7: New Fast-Track Head-Start (FTHS) rearing tank, constructed from food-grade stainless steel and equipped with a suspended basking platform, infrared (IR) heating, and a daylight lighting system.