

Project Update: June 2013

– A preliminary report

Executive Summary

Otters are ambassadors of wetland ecosystems. They often occur in human-modified landscapes in India, especially those adjoining protected areas. The smooth-coated otter is the largest otter in Asia and is frequently found inhabiting rivers and water bodies in human-dominated landscapes. Being top predators, they have been severely affected by loss of riparian habitats to agriculture and other anthropogenic activities like sand mining, hydroelectric projects and the usage of dynamite in fishing. Cauvery is one of the major rivers of peninsular India and is important not just for otters but also for millions of people dependent on it for their livelihood. Being one of the last remaining strongholds of the smooth-coated otters it is important to monitor surviving otter populations *outside protected areas* and to identify threats to their existence. Our study uses questionnaire surveys, direct (visual) and indirect sign surveys, and camera traps to identify, enumerate and monitor smooth-coated otter populations outside protected areas and across a gradient of protection regimes in the Cauvery.



Study area - The above image shows the entire length (white line) of the Cauvery river in Karnataka. The areas in white are Protected Areas (PAs).

Some of the main objectives we set out to address are:

1. To identify otter populations (occupancy) along the entire stretch of the Cauvery River, using a combination of questionnaires and visual sign-based surveys.
2. To identify and map potential threats to otters along the entire stretch.
3. To verify the effectiveness of protected areas in conserving a riverine specialist like the smooth-coated otter.

(All the results/findings mentioned in this report are only a broad understanding of the data collected so far. We still need to statistically analyse all field data to conclude on anything)

This section will elaborate on the work carried out to address each objective of the RSG funded project

1. To identify otter populations (occupancy) along the entire stretch of the Cauvery river, using a combination of questionnaires and visual sign based surveys

Our team have completed “distribution, perception and conflict assessment” along nearly 250 km of the river outside protected areas. The main respondents to these semi-structured interviews, questionnaires and meetings were mostly local fishermen, farmers and planters. We have covered more than 85 villages, along the river and have interviewed more than 150 stakeholders. The social survey threw up some very interesting insights pertaining to the river, both historical and current, as well as the occurrence of otters, conflict with fishers and instances of poaching and retaliatory killing. In addition, we have some preliminary information of how locals perceive damaging activities like dynamite fishing, sand mining, and construction of mini-hydels which directly affect their livelihoods.



River stretch (white line) covered during interviews

We started our raft-based sign surveys in April 2013 after some logistical delays. Severe deficit in rainfall over the last 2 years has led to a drastic fall in water levels all along the river. We could cover nearly 125 km along the river, from Bhagamandala near the source in Kodagu district till Chunchanakatte in Mysore district. In the course of 125 km we sighted otters on five different occasions. We managed to sight a solitary small-clawed otter once and packs of smooth-coated otters on the other four occasions. The places we sighted the smooth-coated otters were mostly the last remaining deep pools (in summer) along the river, and these pools also witnessed dynamite fishing on a regular basis apart from intensive gill netting. Also, we have recorded enough indirect signs of otters (both footprints and spraints) in the stretch surveyed outside PAs to conclude that populations of otters (both species) exist outside PAs, in human-use areas and they are not animals straying out from nearby PAs. Hence, it is important to initiate steps to safeguard these extremely vulnerable populations of otters as well.

We had to finally call off the survey owing to a lack of water in the river, rocky stretches and the futility of a river-based survey during these times. The monsoon has now set in, and the rains over the next few months will ensure most otter signs (footprints, spraint) are washed away with the next shower.



River stretch covered during the river survey (125 km)

2. To identify and map potential threats to otters along the entire stretch

Our social surveys and interviews collected village level data on potential threats. This is in the process of being updated (finer scale) with our river-based field surveys. We were alerted to incidents of otter poaching in the past during our interviews, and now have a fairly decent idea of the vulnerability of different stretches.



Interview locations along the 250 km stretch of river, outside protected areas

We have collaborated with a research team at the Indian Institute of Science (IISc) and have developed an android application for the Cauvery Otter Project that works on most smart phones. Using this, data collected is geo-tagged, time stamped and transferred in real time to a secure server. All data collected using this application is mapped on Google Maps and can be viewed by anybody with a password. This application is not just important for our work but can be used to educate officials of various departments on threats like sand mining and other illegal activities like dynamite fishing and poaching. Apart from this, field data collection is simplified, and all data entered is backed up immediately in readily workable formats. The application is still being tested by our team on field and is continuously undergoing development and bug fixes. We hope to release a

more general, fine-tuned version for anybody working along river basins, mostly to collect ecological and threat data. This will feed into a common database that interested biologists will have access to.

The link for the online portal is - <http://otter-app.appspot.com/>

(The password to access the site will be sent in a separate mail, since most of the data is of a sensitive nature.)

Most of the otter sightings during our river survey were in sections with relatively deep pools. These are also the same pools which witness intensive fishing using gill nets and illegal dynamite fishing. Conflict with otters is relatively high in these river stretches, and otter dens are often set fire to drive the animals away.

3. To verify the effectiveness of protected areas in conserving a riverine specialist like the smooth-coated otter

We have not made any headway under this objective. Our progress being hampered by the low water level in the river and the requirement of official permits to enter any protected area (PA). We plan to survey the PA once the monsoon withdraws and by which time our forest permits would have come through.

Our prime focus still remains river stretches outside PAs where all the threats still exist, and otters too. We plan to complete the entire stretch (including the PA) once the rains subside and we have received a supporting grant to make this happen.

Outcomes

1. Otter sign survey completed in 125 km out of the 200 km unprotected stretch. All threats in the 125 km stretch identified and mapped. Have also identified a number of otter holts (dens) and otter “hotspots” where conservation measures need to be urgently implemented.
2. Social perception and conflict surveys completed throughout the unprotected stretch (250 km). Data on past otter poaching incidents also recorded.
3. Have recorded on camera traps for the first time, the presence of highly elusive small-clawed otters (*Aonyx cinerea*) much lower down along the river than previously established. This could play a critical role in helping secure the river stretch from ecologically damaging activities.
4. Pilot version of an android application for collecting otter-related data (ecology, conflict and threats) being tested in field, and this is accompanied with an internet interface (developed in collaboration with Indian Institute of Science - <http://otter-app.appspot.com/>).
5. Have identified a good network of potential stakeholders (mostly fishermen, but also anglers and angling clubs) who interact with otters on a regular basis and are willing to work on a conservation programme.
6. A team from Dusty Foot Films spent time with us during the field survey and are in the process of making a short film on rivers, otters and threats. This will be released shortly.
7. Have secured a small grant from Critical Ecosystem Partnership Fund (CEPF) to extend work with riverside communities, schools and fishermen to highlight the role otters play in rivers and also use otters as a flagship species to increase awareness on other freshwater biodiversity.
8. In talks with the Fisheries Department officials to jointly initiate some monitoring methods for conflict, fish catch as well as steps to curb dynamite fishing.
9. In collaboration with National Centre for Biological Sciences, we are hosting the IUCN Otter Specialist Group workshop on “Otter Field Techniques & Conservation Planning”. Our work along the Cauvery River will form an important component of this workshop.

Setbacks during the survey

1. Only 125 km completed so far – low rainfall in the last 2 years have led to drought-like conditions and no water in the river.
2. The river is a much more complicated issue than we initially realised. The otters are metaphors of all that is going wrong with rivers in India.
3. Threats to otters are very complex and multi-layered. Cannot be answered by one single conservation program but needs engagement at different levels and with different stakeholders, from the grass-roots to government departments.
4. Yet to survey the river stretch in the wildlife sanctuary (WLS). Permits to enter WLS yet to come through but the prime focus of our study is outside PAs.

Camera trap images - (see Dropbox link for other project-related images)



A small-clawed otter (*Aonyx cinera*) camera trapped in riparian-deciduous habitat, outside protected area. Protected under Indian Wildlife Protection Act, 1972 – Schedule 1



**Smooth-coated otter (*Lutrogale perspicillata*) camera trapped in an agricultural landscape
Protected under WLPA, 1972 – Schedule 2 Part 2**

The otters seen during this study have not only given us immense joy watching them frolic, oblivious to the dangers lurking around, but also hope that they will continue to co-exist if we can make small amends in the way we use the river. As not a resource that needs to be over-harvested but as a living, flowing and thriving ecosystem that should be allowed to run its course like it always has. They've served as metaphors of everything that is going wrong with Indian rivers but also at the same time showing their resilient nature to hang on despite the odds.