

### The Rufford Foundation Final Report

Congratulations on the completion of your project that was supported by The Rufford Foundation.

We ask all grant recipients to complete a Final Report Form that helps us to gauge the success of our grant giving. The Final Report must be sent in **word format** and not PDF format or any other format. We understand that projects often do not follow the predicted course but knowledge of your experiences is valuable to us and others who may be undertaking similar work. Please be as honest as you can in answering the questions – remember that negative experiences are just as valuable as positive ones if they help others to learn from them.

Please complete the form in English and be as clear and concise as you can. Please note that the information may be edited for clarity. We will ask for further information if required. If you have any other materials produced by the project, particularly a few relevant photographs, please send these to us separately.

Please submit your final report to jane@rufford.org.

Thank you for your help.

#### Josh Cole, Grants Director

Grant Recipient Details						
Your name	Kannathasan Narasimmarajan					
Project title	Conservation of otters through local stakeholders participation in river Moyar western					
RSG reference	17667-1					
Reporting period	December 2016					
Amount of grant	£4950					
Your email address	wildlife9protect@gmail.com					
Date of this report	May 2017					



#### 1. Please indicate the level of achievement of the project's original objectives and include any relevant comments on factors affecting this.

Objective	Not achieved	Partially achieved	Fully achieved	Comments
Occupancy of otter in River Moyar				We determined the otter occupancy in River Moyar. The distribution map were prepared season-wise to monitor them further.
Identifying the damaging threats to otters and their habitats in River Moyar				The project listed the damaging threats to the otters in River Moyar. We don't generated any poaching activity
Dissemination of outreach materials to various stakeholders				Various outreach materials were disseminated to different stakeholders
Meeting with forest officials				Periodical meeting with forest officials was held during the survey time and continuously the otter research team working with forests department officials for the betterment of the species.
Preparation of regional otter conservation plan				The forest department preparing the park conservation action plan that includes the otter conservation action plan within the Moyar river areas and the information was provided by the research team.

# 2. Please explain any unforeseen difficulties that arose during the project and how these were tackled (if relevant).

In some part of Moyar was very hard to access but, our team handled the situation in a win-win manner. Getting research permission in Tamil Nadu is too difficult but, our team handled the situation and got the research permission timely.

#### 3. Briefly describe the three most important outcomes of your project.

1. Otter distribution was mapped using occupancy sampling technique. Asian small- clawed otter presence was conformed.



- 2. Threats to the otters in River Moyar was enumerated.
- 3. Otter conservation action plan was prepared associated with forests department.

# 4. Briefly describe the involvement of local communities and how they have benefitted from the project (if relevant).

Since many years the local people exploiting the River Moyar in various ways like, fishing, agriculture, sand mining and grazing. But after the project implementation the local people realise that the river resources not only for them at the same time countless animals will also depend the river resources and reduced the fishing activities considerably. After the project implementation the local forest staffs included monitoring the otters during their weekly patrolling.

#### 5. Are there any plans to continue this work?

Yes the team planning to continue the ecology of otters and monitoring the threats of poaching activity. Most importantly the street play a vital role to bring people attention towards the otter conservation so, we are planning to organize otter Conservation Street paly to create more awareness among the local stakeholders. Local volleyball tournaments will be supported by research team to gain information on otter poaching activities through encouraging younger generation and make them as an informer.

#### 6. How do you plan to share the results of your work with others?

First we prepared the report and disseminated to the forest department and other stakeholders. And local news articles was published

# 7. Timescale: Over what period was The Rufford Foundation grant used? How does this compare to the anticipated or actual length of the project?

One year the RSG fund was used and the actual project length was around two year from 2015 and 2016.

8. Budget: Please provide a breakdown of budgeted versus actual expenditure and the reasons for any differences. All figures should be in  $\pounds$  sterling, indicating the local exchange rate used.



Itom			[	Commonts
Item	Budgeted Amount	Actual Amount	Difference	Comments
Communications (tele- phone/internet/postage)	250	285	-35	Permission to enter the forests was actually 250 but according to the new law permission amount was doubled by forest department
Field guide books, maps, journal articles and other printed materials	300	300	0	We had purchased the necessary field guides and maps journal articles for the survey
First aid kid + accident insurance for team members and field guide	100	100	0	First aid kids and basic medicine were purchased during the field survey.
Two Capacity building programme to the forest department personnel's and local stakeholders	320	320	0	Two capacity/knowledge sharing programme was conducted in Mudumalai tiger reserve and Sathyamangalam tiger reserve.
Canon SLR Camera + Tripod Mount and SD card	280	325	-45	Purchased but, the expected amount exceeded due to additional lens purchase
1 x Garmin GPS, 1 x field compass, 1 x Binocular, 6 -trap cameras + batteries	300	300	0	Purchased within the budgeted amount
2-Tents, 5-sleeping bags, 1- torches, 2-headlights, 5-pairs shoes, 5-camouflage/ field clothes, 3- bags, 2-rain covers	200	200	0	All the required field equipment's were purchased within the budgeted amount
1-Car/bike hire= 100 trips x £32 /trip	400	410	-10	Local transportation was high in some remote places in and around Moyar region
Accommodation for team members and local guides (160 days x 5 person x £3.5/day)	550	560	-10	This was spent little high due to few night stays were charged more than we budgeted due to unavailability of rooms they were charged high.
Food for team members and local guides (5-person x 295 days x £2/day	450	450	0	The food expenses were not exceed from the budgeted amount.
Workshops awareness programme to stakeholders (5 - workshops x £150/ workshop)	550	550	0	Workshops, and panting competitions were organised in schools along the river Moyar. Village panchayats and society peoples were involved the awareness programmes
Outreach/education activities and materials (500- Brochures, posters, 100-t-shits, caps, stickers will be disseminated to the local village)	1000	1000	0	T-shirts (200), caps posters and brochures were disseminated to forests staffs, villagers, society and schools
Report production and results dissemination	300	300	0	Report was prepared and shared with forest department and other line department
Total	4950	5100	-100	
	1	1	1	

#### 9. Looking ahead, what do you feel are the important next steps?

Distribution, threats to the otters were achieved so further monitoring and



ecological study is required. Furthermore other parts in Tamil Nadu Rivers need to be thoroughly surveyed to ensure the otter conservation and better protection.

# **10.** Did you use The Rufford Foundation logo in any materials produced in relation to this project? Did the RSGF receive any publicity during the course of your work?

- a) The project team was released t-shirts with RSG logo by Mudumalai Field Director and Deputy Director. All the RSG logo t-shirts was distributed to forest dept. frontline staffs, and public lives around Moyar river region.
- b) Local magazines were covered the otter conservation issues in River Moyar that mentioned the RSG name periodically.
- c) During the research permission time forest department precisely asked about that funding agency so, we mentioned RSG is one of our prestigious funding agency.
- d) We wrote 3 scientific papers results gained from the project will be acknowledged the RSG. Soon will be submitted the appropriate journals.

#### **11.** Any other comments?

Thank you to the RSG team for the speed with which they processed the initial application and their subsequent support as and when required, especially for extending the project period. I am extremely grateful as, without this support, I would not have been able to carry out this project. I received significant learning experience through this project and that it has enabled me to grow as a conservation scientist. However, all the RSG team excused me for the late submission of my report due to my work load (PhD synopsis, and thesis writing has to be completed within the time bound given by my university). Again I, on behalf of my entire team sincerely thanked the RSG support.

Team training conducted to the team members and awareness programme conducted in Thengumaragada high school (Teachers & Children's, Forest officials and villagers were participated)







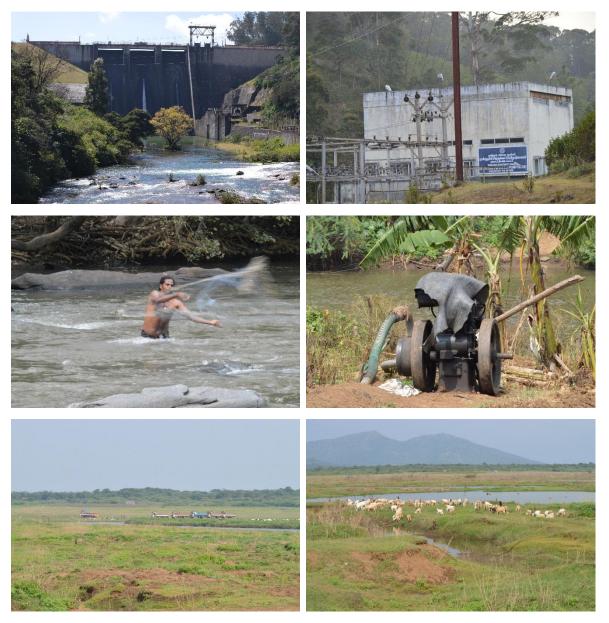




Below picutures shows Field survey, awareness and outreach programme, T-Shirt relase (300 nos. was distributed to Frontline staffs and other stakeholders), poster release and prize winning students



Below photos showing the threats to the otters in river Moyar Western Ghats, Hydroelectric protects, over fishing, oil motor plumbing, grazing, sand mining and agricultural run-off mixing in the river water:



Weed (Prosopis juliflora) invasion in river moyar

Mesquite (*Prosopis juliflora*) is one such an invasive species that was introduced in the early 19<sup>th</sup> century in drier parts of the state of Tamil Nadu, to support poor people through firewood and charcoal industry. Now is spreading everywhere and began impacting our native biodiversity severely. The Moyar is a wellknown perennial river that flows through many protected areas and supports a diversity of unique riparian flora and fauna considered threatened such as Asian elephant (Elephas maximus), Tiger (Panthera tigiris), Leopard (Panthera pardus), Gaur (Bos gaurus), Otters (Lutra perspicillata), and Crocodile (Crocodylus palustris) in the Western Ghats. However, many parts of the river have been invaded by Prosopis juliflora and its effects is seen effectively. Such an invasion not only impacts animal movements but is also seen to replace our unique riparian forests. Findings revealed that mesquite invasion was negatively correlated with water flow but, positively correlated with canopy cover. River gorges within Sathyamangalam Tiger Reserve and Nilgiri North Division are completely invaded by mesquite. Which indicates significant threat to the indigenous riparian ecosystem. Concerned authorities could safeguard the riparian forests through urged management action and removal of already invaded mesquite is urgently needed. Prevention of further invasion of mesquite in other parts of the river could protect our unique riparian forests sustainably.



Impact of Prosopis juliflora in river Moyar (1A); partially invaded area (1B, 1C), completely invaded area (1D) Prosopis Juliflora invaded site with absence of understory growth.

#### Acknowledgements:

We acknowledge the support of Conservation Leadership Programme, Rufford Foundation and Idea Wild both financially and for their help in assisting us in many ways for the successful completion of field work of this project. Permissions to the study were provided by the Tamil Nadu Forest Department vide permit number WL5/20861/2015 and Ref. No. 6612/2015M to Narasimmarajan. K. Tamil Nadu Electricity, Arulagam and Atree provided rental accommodation in various places in the study site. Dr. Daniels RJR (Care Earth Trust) and Mr. Boominathan (WWF-India) welcomed this idea and gave an excellent appreciation. Mr, Sarrainathan and his colleagues from Sattainathan & associates helped with auditing the expenditure. We are thanking the external referees for accepting this project. We are particularly grateful to Mr. Atul Borker and Ian Dickson for their critical review about the project before it get funded. Drs. Jack Tordoff., S.A. Hussain., Suthirta Dutta., J. A. Johnson and K. Ramesh provided valuable inputs for the completion of the project. Mr. Gopal .A and Palanivel G. helped during the entire field work. Vignesh, Mohan, Rahul Kumar, Soeripy Mungkumg and Ramesh volunteered during the work. Mr. Pramod Yadav helped for preparation of otter distribution maps. All the respective Forests Range Officers, DFOs, Field Directors helped us in various ways to finish the project successfully. Anti-poaching watchers and Forests Guards, and Watchers were helped us during the field work without them it would not be possible to do the field work. Last but not least CLP provided a wonderful and knowledgeable training which helped me and my team to improve our leadership quality and developing new conservation ideas.

The successful implementation of this study can be evaluated form the many quantitative outcomes of the project.



# Researchers to track an elusive predator lurking in state's rivers

.....

The downpour was ac- Miraculous escape, P 10 : FULL REPORT: P 11

Oppili.P@timesgroup.com

**Times Classifieds** | P6

**Chennai:** From the ancient Chinese to kingdoms in ancient Europe, Africa, and Britain, otters have for more than a thousand years helped humans fish and been a source of wonder for their industry and resilience.

They may not have been put to the same use in the country or the state but—hang on there — otters in Tamil Nadu? Few people are aware that the sleek amphibians thrive in some of the state's rivers, particularly in the upper reaches of the Cauvery, Bhavani and its tributary the Moyar in western Tamil Nadu.

A scholar is now leading a team that is researching otters in the state, a subject that a scientist last focused on more



UNDERSTANDING NATURE: The study will begin with otters that inhabit the clear waters of the Moyar in Mudumalai Tiger Reserve

than two decades ago. The study by K Narasimmarajan, 28, of CareEarth, a Chennaibased biodiversity research organisation, and four other researchers will involve a headcount of what is one of nature's most efficient and elusive predators, collection of data that the team plans to use to create a map of their distribution and habitat and how it is faring in stretches of the state's rivers.

The study, which will have

the collaboration of the forest department and financial support from London's Conservation Leadership Programme, will begin with otters that inhabit the clear waters of the Moyar in the Mudumalai Tiger Reserve.

"There are three species of otters in India: the Eurasian otter (Lutra lutra), the smoothcoated otter (Lutra perspicillata) and the Asian small-clawed otter (Aonyx cinereus)," Narasimmarajan said. "All three species are found in the Western Ghats."

"The species has not received any focused attention, particularly in Moyar river," he said. "As a result, no one has calculated their numbers or the threats they face."

▶ Planning campaigns, P4

# 'ஏசியன் ஸ்மால் ஆட்டர்' வகை நீர் நாய் மாயார் ஆற்றில் காணப்பட்டதால் மகிழ்ச்சி

#### கூடலார் 🔵 ஜன. 11-

முதுமலை அருகேயுள்ள மாயார் ஆற்றில், 'ஏசியன் ஸ்மால் ஆட்டர்' என்ற நீர் நாய், வசிப்பது தெரிய வந்துள்ளது.

முதுமலையில் உள்ள மாயார் ஆற்றில், சென்னை கிறிஸ்டியன் கல்லூரி மாணவர் நரசிம்ம ராஜன், விலங்கியல் துறையில் முனைவர் பட்டத்துக்காக, நீர் நாய்களின் வாழ்வியல் குறித்த, ஆய்வை மேற்கொண்டுள்ளார்.

இதில், கூடலுார் தொரப் பள்ளி அருகே, மாயார் ஆற்றில் அரியவகை, 'ஏசியன் ஸ்மால் ஆட்டர்' என்ற நீர் நாய் வசிப் பதை அவர் உறுதி செய்துள்ளார். நரசிம்மராஜன் கூறியதாவது:

நம் நாட்டில், மூன்று வகை நீர் நாய்கள் உள்ளன. இவைகள் அழிவின் பட்டியலில் உள் ளதால், வன உரிமை பாது காப்பு பட்டியல் ஒன்றில் உள் ளன. இதில், உருவத்தில் சிறிய 'ஏசியன் ஸ்மால் ஆட்டர்' என்ற நீர்நாய் தென்மாநிலத்தில், காவிரி ஆற்றிலும், வால்பாறை நீர் நிலையிலும் வசிப்பகை பதிவு செய்யப்பட்டுள்ளது.

தற்போது, முதுமலை தொரப் பள்ளி அருகே, மாயார் ஆற்றில், இந்தவகை நீர் நாய் வசிப்பது தெரிய வந்துள்ளது. இங்கு 'சுமோத் சொட்டட் ஆட்டர்'

என்ற நீர்நாய் அதிகளவில் உள் ளன. ஆனால், இப்பகுதியில் 'யுரேசியன் ஆட்டர்' வகை நீர் நாய் மட்டும் இதுவரை தென்ப டவில்லை. அதனை தேடி வரு கிறோம்.

இமயமலை பகுதியில் மட் டுமே மூன்று வகை நீர் நாய் களும் உள்ளன. நீர் நிலைகள் அழிவு, நீர் மாசுபடுத்தல், உணவு பற்றாக்குறை, தோலுக்காக வேட்டையாடுதல் போன்ற கார ணங்களால், இவைகள் அழிந்து வருகின்றன. இவற்றை பாதுகாப்பது அவசியமாகும். இவ்வாறு நரசிம்மராஜன் கூறி னார். .



இடம் பெற்றுள்ள 'ஏசியன் ஸ்மால் ஆட்டர்' வகை நீர் நாய்கள்.

# நெருக்கடியில் தத்தளிக்கும் மாயாறு நீர்நாய்கள்

மு முருகேஷ் .

கைக் குறைக்கு பிரம்பில் குற்றிக்குக்கு பிரம்பாகுக்குக் குற்றிக்குக்கும் உண்ணாடிக்கு இசுப்படிபின் உண்ணாடித் தொட்டிபின் உண்ணாடித் தாக்குக்கு உண்ணாடித் தாக்குக்கு உண்ணாடித் தாக்குக்கு வருவது கைடுருக்கும் ஒர உயிர்கத்தைப் பாத்திருக்கணம். விணையாட்டுத்தனம் நிரம்பிய உயிரினங்களில் ஒன்றான நிற்றாய்தான் அது

#### A Ballan alla Ballinger

இந்த நீர்நாப் வகை மேற்குத் தொடர்ச்சி மலைத் தொடரில் வாழ்பலை, ஆனால், இன்றைக்கு அவற்றின் நிலை சொல்லிக்கொள்ளும்படி இல்லை திற்றாய்களைக் காட்கதற்கான முதல்கட்ட முயற்றியே எங்களுடைய ஆய்வு..." என்றொர் கே. நரவெலராஜன்

நிருவாகுர் மாலட்டம் வீரவாடி தொபத்தைச் சேர்ந்த இவர் சென்னை நடுவதவக் கல்தூரியில் முனைவர் பட்ட ஆப்வை மேற்கொண்டு வருதிறார். தனது நண்பர்கள் எஸ். புரனிவேல், எஸ். விசுனேஷ்வரன், அபிஷேக் கோபால் ஆகியோருடன் இணைந்து மாயாறு ஆற்று நிரதாய்களின் வாழிடம் பற்றிய ஆய்வு மேற்கொண்டு வருதிறார்.

பேராசிர்பர் மனோதாமன் மத்தாய் ஆய்வு முயற்சிக்குப் பெரிப தாண்டுதவாக இருந்திருக்கிறார் ஆய்னைச் சிறப்பாக மேற்கொன் வதற்கு, கடந்த ஆண்டு கடைாவின் கால்கரி நகரில் நடைபெற்ற 'இனம் ஆய்வாளர்களுக்கான தலையைப்



கற்றுச்சூழல் சிரழிவு, கடத்தலுக்காக வேட்டை, வாறிட அறிப்பு, உணவுப் பற்றாக்குறை போன்ற தெருக்கடிகளால் அவை அழிந்து வருகின்றன.

உலகம் முழுவதுமே நீர்நிலைகள் மாகபடுவதால் முதலில் பலிபாகும் உயிரினங்கள் நீர்நாய்களே, சிங்கப்பூர், கம்போடியா, பூட்டான் ஆகிய நாடுகளில் நீர்நாய்கள் குழித்துவிட்டன. மற்ற நாடுகளிலும் அருகிவரும் உயிரினமாக உள்ளை. இந்நிலையில், தமிழகத்தில் முக்கூரத்தி தேரியப் பூங்காவில் தொடக்கி, பவானிசாகர் அறைணபை வந்தடையும் மாயாறு அறைன் கரையில் நீர்நாய்கள் வரிக்கின்றன.

#### மாயாற்றில் ஆய்வு

"இராமத்தில் பிறந்து வளர்ந்ததால் இயல்பாகவே இயற்கையினம்து எனக்கு ஈடுபாடு உண்டு நீர்தாய்கள் பற்றி இதிப்படக்காட்டு யூ-வயூப்பில் ஒரு முறை பார்த்தேன் அது எனக்குள் பெரும் தாக்கத்தை ஏற்படுத்தியது நீர்நாய்களை அழிவிலிருந்து மீட்கும் வகையில் ஏதாவது செய்ய வேண்டுமென்கிற வண்ணத்தில்தான். ஆய்வு மேற்கொள்ள முடிவு செய்தேன். \_ காட்டு தீர்தாப்

பண்டை வளர்க்கும் பயிலரங்கு' நரசிம்மராஜனுக்கு சிறந்த முறையில் வழிகாட்டியுள்ளது.

#### கேமரா பதியு

மாயாற்றின் கரையோரப் பகுதிகளில் இரண்டு வகை நிநாய்கள் காணப்படுகின்றன. உருவத்தில்



பெடிதானவை ஆற்று நீர்நாப் (moothcoated other), இற்பலை காட்டு நீர்நாப் (Criental small-claved other) வன்று அழைக்கப்படுகின்றன. நீர்நாப்கள் மிருந்த சுச்ச சபாவம் உடைபலை மனிதர்களைக் கண்டாமே ஒடி ஒளிந்ததொள்ளக் கூடியவை.

நேரடியாக இவற்றைப் பற்றிய ஆய்வு செய்வது கடினமானது வன்பதால், அவை அதிகம் நடமாடும் இடங்களில் கேமராவை வைத்ததர படுவுசெய்ய ஏற்பாடுகளைச் செய்தோல், தோற்றத்தில் ஒரே மாநிரி இருப்பதால், இவற்றைப் பிரித்து அவை, யாளர்க்குத்துவது கடினம்.

#### (المرجغوسان بالانتج

பாலூட்டி இனத்தைச் சேர்ந்த தீர்நாய்கள் ஒரே நேரத்தில் 2 முதல் 6 சூட்டிகள்வரை ஈனும், 16 ஆண்டுகள்வரை உயிர் வாழும், நீரிலும் நீலத்திலும் வாழும் தகவமைட்டை கொண்டவை. இறால், நண்டு, தத்தை போன்றவற்றை உட்கொண்கும்.

"உனவுப் பற்றாக்குறையும் வேட்டையாடுத்துமே நீர்நாய்கள் என்னிக்கை வெகுவாகக் குன்றந்து வகுவதற்கான முக்கியக் காரணம். நீர்நாய்கள், நீர்நிலைகளின் முதன்மை உயிரினங்கள், அவற்றை அழிவதைத் காப்பதற்கு, ரீரழித்துவரும் நீர்நிலைகளை பாதுகாப்பதற்கள் முதல் பவு" என்றொர் நாரிப்பராஜன். தீர்ப்பின்னை போலிருக்கும் இந்த நீர்நாய்களின் எற்ரகாலம் துப்பிப்பின்முக்குமா என்பனதுப பொருத்திருந்தே பார்க்க வேண்டும்.



11/23/2016

The Times of India Title : Researchers to track an elusive predator lurking in state's rivers Author : Oppili P Location : Chennai: Article Date : 09/07/2015

From the ancient Chinese to kingdoms in ancient Europe, Africa, and Britain, otters have for more than a thousand years helped humans fish and been a source of wonder for their industry and resilience.

They may not have been put to the same use in the country or the state -but hang on there -otters in Tamil Nadu? Few people are aware that the sleek amphibians thrive in some of the state's rivers, particularly in the upper reaches of the Cauvery, Bhavani and its tributary the Moyar in western Tamil Nadu.

A scholar is now leading a team that is researching otters in the state, a subject that a scientist last focused on more than two decades ago. The study by K Narasimmarajan, 28, of CareEarth, a Chennaibased biodiversity research organisation, and four other researchers will involve a headcount of what is one of nature's most efficient and elusive predators, collection of data that the team plans to use to create a map of their distribution and habitat and how it is faring in stretches of the state's rivers.

The study, which will have the collaboration of the forest department and financial support from London's Conservation Leadership Programme, will begin with otters that inhabit the clear waters of the Moyar in the Mudumalai Tiger Reserve.

"There are three species of otters in India: the Eurasian otter (Lutra lutra), the smoothcoated otter (Lutra perspicillata) and the Asian small-clawed otter (Aonyx cinereus)," Narasimmarajan said. "All three species are found in the Western Ghats."

"The species has not received any focused attention, particularly in Moyar river," he said. "As a result, no one has calculated their numbers or the threats they face." Narasimmarajan said they intend to identify immediate threats to otters and their habitat and hope to start a programme for the conservation of the species through awareness campaign and with the help of local communities who share the rivers' re sources with the friendly and charismatic creatures.

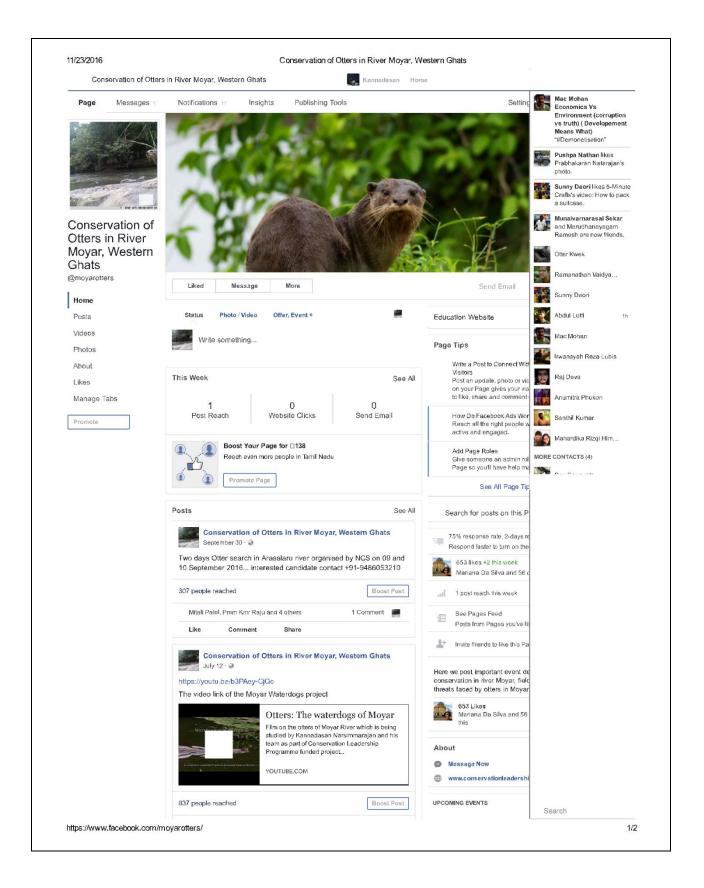
The team of researchers will by foot cover the entire course of the Moyar -more than 90km -for the otter headcount and to study the distribution of the animal.

"We will divide the river into 2km stretches and then survey each stretch on foot twice a week," Narasimmarajan said. "This will help us identify ideal sites for otter preservation areas along the banks of the river."

The team will in phases set up close to 1,000 camera traps to evaluate the otters' habitat and figure out their habits and movement along the river's course, he said. Narasimmarajan and his team have, since they started the study last month, sighted two groups of smooth-coated otters in the Masinagudi Range. One group had seven of members and the other had three.

"We've found smooth-coated otters in the Moyar river so far but we expect to sight the Asian small-clawed otter upstream of the river," Narasimmarajan said.

The researcher said infrastructure development along several stretches of the Cauvery, Bhavani and Moyar has destroyed the mammal's habitat, leaving them extremely vulnerable. "Once populations get smaller, inbreeding is more likely, and that can have disastrous effects on them," he said.



#### Certificate was issued the prize winners of the painting competition conducted in various schools along the river Moyar Villages

