

Project Updates of Rufford foundation

Entitled

***Trade and By-Catch Assessment of Indian Horseshoe Crab Along with its Conservation by Integrating Education and Awareness Among Community Along Balasore Coast***



**BY**

**Siddhartha Pati**

**Association for Biodiversity Conservation & Research (ABC)**

**[www.bioconservation.org](http://www.bioconservation.org)**

**Balasore (Odisha), INDIA**

The project is making great progress within six month.

## **Implemented Activities**

### **Trade and Ecological knowledge sasement**

We started field surveys in February 2018. The first step was to build key contacts with the fisherman community from coastal villages in Balasore district. We visited the trawlers association, fishermen society from the villages and sensitised them about the proposed project. Between February and august 2018, we conducted questionnaire surveys with one member of each household from different coastal villages in coastal block of Balasore district. This allowed us to collect information on the social norms, cultural values and attitudes of fishermen, traders and consumers around the trade and use of Horseshoe crab.

### **By-catch release**

The project has released trapped horseshoe crab back to the sea. Hundreds of live Horseshoe crabs those were trapped in fishing nets and jetty stone were removed and release into sea water to avoid heavy mortality. Research scholars, student volunteers from Fakir Mohan University, were seen to be quiet active on the spot and they play the major role in releasing the injured Horseshoe crab into sea. Additionally the fishermen, surrounding population and boat person in particular were made aware of the urgency of situation for protection of horseshoe crab and its breeding ground by team ABC.



**Removing of trapped Horseshoe crab and releasing back into wild environment**

## **Beach patrolling**

Beach patrols have been conducted during new moon and full moon day in Mahisali, Khandia, Khapra, Bahabalpur, Balaramgadi, Kantiachira estuary. During patrolling Beach surveys are being done to record any stranded Horseshoe crab carcasses

## **Education and awareness**

In order to propagate awareness about the need of conserving horseshoe crab, a living fossil, a group of people from different walks of life having concern for environment, observed Raksha Bandhan in a unique manner. The Awareness was organized by project team from Association for Biodiversity Conservation & Research (ABC). They celebrated the whole day by doing several awareness activities on the theme of Horseshoe crab to create awareness among students, youth and local community. The initiative is aimed at inspiring “a growing generation, knowledgeable and motivated to take positive actions to conserve Horseshoe crab. In order to bring more awareness among the People especially among the young group (School students) about the unique crab and its conservation, a Young Voices Arts competition was conducted and a wall art competition was carried out and to encourage the participants, the certificates and memento was given to the best three winners of this competition. More ever, the conch playing competition was held among the coastal women to add the cultural value about these unique crabs in their mind. Education programmes have so far been conducted in two schools and seven coastal communities.



**2<sup>nd</sup> Horseshoe crab conservation ceremony**





**Wall painting competition for Community Awareness along coastal villages**



**Art Competitions on the theme of Horseshoe crab under the banner “Know me , Save me”**

### **Beach cleaning event**

In an effort to facilitate nesting and to conserve the living fossil, “Horseshoe crab” in the different estuary in Balasore district, the team executed an awareness cum cleaning event about five km stretch along the sea beach on 1st April 2018. Members of the Association for Biodiversity Conservation & Research (ABC), in association with National Service Scheme (NSS) volunteers of Fakir Mohan University, conducted a beach-cleaning programme on April 1 in a bid to safeguard marine flora and fauna along the Balasore coast.

Seventy volunteers from the ABC and the F. M. University, along with wildlife activists and other stakeholders, took part in the drive and cleaned a huge quantity of garbage from the beach in order to make the place suitable for the horseshoe crab. This was the second annual beach cleaning carried out by the team.

Apart from members, some local fishermen also took part in the drive carried out at Horseshoe crab breeding ground. The students got a beautiful exposure to the Biodiversity of the Coastal Balasore along with practical lessons in Conservation from team ABC and the faculties of the Fakir Mohan University.





Habitat cleaning event for Horseshoe crab breeding


### **Distribution of leaflets**

We have distributed leaflet in local language among the people in coastal area during village festivals and local festivities such as Baroni- Snana where thousands of Devotees across the Odisha took holy dip, to create awareness to conserve the valuable species. These program were conducted under the active planning and direct supervision of Rufford grant team leader Mr. Siddhartha Pati



Leaflet distribution in fishing market and landing areas





## ନାଳରକ୍ତ କଙ୍କଡ଼ା ସମ୍ବନ୍ଧୀୟ ସାଧାରଣ ଜ୍ଞାନ

ଆଗାମୀ ଦିନରେ ଛାତ୍ରଛାତ୍ରୀମାନଙ୍କ ମଧ୍ୟରେ ମଣ୍ଡଳ ଓ କିଲ୍ଲାସରୀୟ ନାଳରକ୍ତ କଙ୍କଡ଼ା  
ସମ୍ବନ୍ଧୀୟ ପ୍ରତିଯୋଗିତା ଆୟୋଜନ କରାଯିବ ।

୧. ଅଶ୍ୱଖୁରାକୃତି ବା ନାଳରକ୍ତ କଙ୍କଡ଼ା କେଉଁ ଶ୍ରେଣୀର ପ୍ରାଣୀ ?

୨. ଏମାନଙ୍କୁ ଇଂରାଜୀରେ କ'ଣ କୁହାଯାଏ ?

୩. ଏହି କଙ୍କଡ଼ା କେତେ ବର୍ଷ ପୂର୍ବରୁ ପୃଥିବୀରେ ସୃଷ୍ଟି ହୋଇଥିଲା ?

୪. ଆମ ରକ୍ତରେ ହିମୋଗ୍ଲୋବିନ ଥିବାବେଳେ ନାଳରକ୍ତ କଙ୍କଡ଼ାର ରକ୍ତରେ କ'ଣ ଥାଏ ?

୫. ପୃଥିବୀରେ କେତେ ପ୍ରକାରିର ଓ କେଉଁଠି କେଉଁଠି ନାଳରକ୍ତ କଙ୍କଡ଼ା ଦେଖାଯାଆନ୍ତି ?

୬. ଭାରତରେ କେତେ ପ୍ରକାରିର ଓ କେଉଁଠି ଏମାନେ ଦେଖାଯାଆନ୍ତି ?

୭. ଏମାନେ କେତେବେଳେ ନଦୀ ମୁହାଣର ବାଲୁକା ଶଯ୍ୟାରେ ଦେଖାଯାନ୍ତି ?

୮. ଏମାନେ କ'ଣ ପାଇଁ ନଦୀ ମୁହାଣକୁ ଆସନ୍ତି ?

୯. ଏମାନେ କ'ଣ ପାଇଁ ବିଶ୍ୱବିଖ୍ୟାତ ?

୧୦. ଏମାନଙ୍କ ସଂଖ୍ୟା ଲୋପ ପାଇବାର କାରଣ କ'ଣ ?

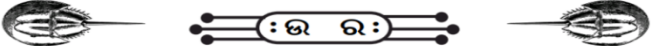
୧୧. ଏହାର ଗବେଷଣାକେନ୍ଦ୍ର ବାଲେଶ୍ୱରରେ କେଉଁଠାରେ ଅଛି ?

୧୨. ଏହାର ସଂରକ୍ଷଣ ଓ ସୁରକ୍ଷା ପାଇଁ ବାଲେଶ୍ୱରରେ କେଉଁ କେଉଁ ଅନୁଷ୍ଠାନ କାର୍ଯ୍ୟରତ ?

୧୩. ଏହାକୁ ସ୍ଥାନୀୟ ଲୋକ କେଉଁ ନାମରେ ଡାକନ୍ତି ?

୧୪. କେଉଁମାନେ ନାଳରକ୍ତ କଙ୍କଡ଼ା ଗବେଷଣାରେ କାର୍ଯ୍ୟରତ ?

୧୫. ଏହାର ସୁରକ୍ଷାର ପ୍ରୟତ୍ନ ପ୍ରସାର ପାଇଁ ବାଲେଶ୍ୱରରେ କିଏ ପ୍ରମୁଖ ଭୂମିକା ଗ୍ରହଣ କରିଛନ୍ତି ?



୧. ସାମୁଦ୍ରିକ ସନ୍ଧିପଦ, ୨. ଔର୍ସସ୍ କ୍ରାବ୍, ୩. ୩୫୦ ମିଲିୟନ ବର୍ଷ, ୪. ହିମୋସିୟାନିନ୍, ୫. ୪ ପ୍ରକାରି, ଆମେରିକାରେ ଗୋଟିଏ ଓ ଏସିଆରେ ୩ ପ୍ରକାରି, ୬. ୨ ପ୍ରକାରି ଓ ବଙ୍ଗୋପସାଗରର ଉପକୂଳରେ ଥିବା ନଦୀମୁହାଣରେ (ବିଶେଷ କରି ବାଲେଶ୍ୱରରେ), ୭. ପୂର୍ବୀମା ଓ ଅମାବସ୍ୟାର ଗୁରୁକୁଆର ସମୟରେ, ୮. ଅଷ୍ଟା ଦେବା ପାଇଁ, ୯. ଏଡ଼୍‌ସ୍ ଓ କ୍ୟାନସର ରୋଗ ପାଇଁ ଔଷଧ ପ୍ରସ୍ତୁତ କରାଯାଏ, ୧୦. ନଦୀ ମୁହାଣମାନଙ୍କରେ ଅଧିକ ମାଛଧରା ପାଇଁ ଗହଳି ଓ ଜନ ସଚେତନତା ଅଭାବ ପାଇଁ, ୧୧. 'କାରମୋହନ ବିଶ୍ୱବିଦ୍ୟାଳୟର ଜୀବବିଜ୍ଞାନ ବିଭାଗ, ୧୨. ଏସୋସିଏସନ୍ ଫର ବାୟୋଡାଇଭରସିଟି କଞ୍ଜର୍ଭେସନ୍, ରାମକୃଷ୍ଣ କଳାକେନ୍ଦ୍ର, ଜଉକଣ୍ଡେଇ ବାହାଘର ଉତ୍ସବ କମିଟି, ଦି ନିୟୁ ହୋପ୍, ୧୩. ରାମଲକ୍ଷ୍ମଣ କଙ୍କଡ଼ା, ରାମଲିଖନ କଙ୍କଡ଼ା, କଙ୍କଡ଼, କଙ୍କୁ, ଟେଲି ଇତ୍ୟାଦି, ୧୪. ଡ଼. ଅନିଲ ଋଟାର୍ଜି, ପ୍ରଫେସର ଡ଼. ବିଷ୍ଣୁପ୍ରସାଦ ଦାସ, ଡ଼. ଜୟନ୍ତ କୁମାର ମିଶ୍ର, ପ୍ରାଧ୍ୟାପକ ଗୋବିନ୍ଦ ଚନ୍ଦ୍ର ବିଶ୍ୱାଳ, ସିଦ୍ଧାର୍ଥ ପତି, ସନାତନ ଚୁଡ଼ୁ ପ୍ରମୁଖ, ୧୫. ଶିଳ୍ପୀ କେଶୁଦାସ ।

### Leaflet for awareness about the living fossil

These output of the project will be presented in a talk at the Rufford India conference (Sept 18-21, Goa, India).

**အ** ဂျပန်နိုင်ငံ ဝေဖန်ရေး  
 နည်းလမ်းကို အသုံးပြု၍  
 : ဝေဖန်ရေး ဝေဖန်  
 ဝေဖန်ရေး ဝေဖန်

ဝေဖန်ရေး ဝေဖန် ဝေဖန်  
 ဝေဖန်ရေး ဝေဖန် ဝေဖန်

ဝေဖန်ရေး ဝေဖန် ဝေဖန်  
 ဝေဖန်ရေး ဝေဖန် ဝေဖန်

[illegible]

ଆମିରୋସର ଆକାଶର ପରିବର୍ତ୍ତନ ହେଉନାହିଁ ।

**ମିତ୍ର କୃଷ୍ଣ ଶିଖମାଳା** ଦେଉ ଘୋଷା ପ୍ରତିବାଦ : ପଞ୍ଚାଙ୍ଗପାଠି କେବଳର ନିତି ଏକ ସ୍ତରରୁପି ପୌରୀ ଆଦିଆଇ ଦେଉପାଇଛି । ଯାହା ନିଶିଃ କରାର ଦିନାକର ଦିଏ ଏବଂ ପରାକ୍ରମୀ ଅନୁରୋଧ କରିପରେ । କେବଳର ବିନୋଦିନର ଦିନ ଦେଖର ଏହା ଦେଖ ଆକାଶର ଦେଖା । କହାଉ ଯି, ପୂର୍ବଦିନ ଦେଖାପରୁ ବିଦିହର ଦିନୁରୁପୁ ନିତି ଶିଖା ପିଆଇ ବିଦିହା

[illegible]

A photograph of a horseshoe crab resting on a sandy beach. The crab's large, oval, metallic-looking carapace is prominent, showing some wear and a dark spot near the front. Its long, segmented tail fan extends to the right. The surrounding sand is light-colored with small pebbles and debris scattered around.

[illegible]

ପୁରା ପୁରୀ ଜେଲରେ ଅବରୁଦ୍ଧ । ଏହା  
ଅଞ୍ଚଳ ଓ ରାଜ୍ୟର ଅନେକ ଉଚ୍ଚତମ ଉଚ୍ଚିଷ୍ଠ  
ସମ୍ପଦ ଉପସ୍ଥାପନା କିମ୍ବଦନ୍ତୀ  
ମହାଶୟର ପୁରୀ ଜେଲରେ ରହିଥିବା  
ଏହାଙ୍କର ମୃତ୍ୟୁ ସମ୍ପର୍କୀତ କିଛି କିଛି  
ବାର୍ତ୍ତା ।

ଅସ୍ପଷ୍ଟତାପୂର୍ଣ୍ଣ ବନ୍ଦୀର ବ୍ୟବସ୍ଥା  
ବ୍ୟବସ୍ଥା : କିଛି ଜେଲରେ କିଛି  
ଉପଦେଶ ଓ ଉପଦେଶ ନିର୍ଦ୍ଦେଶ  
ଉପଦେଶର ଅବସ୍ଥା ରହିଛି ଏହା  
ଅସ୍ପଷ୍ଟତାପୂର୍ଣ୍ଣ ବନ୍ଦୀର । ଏହାର ପୁରୀ  
ଜେଲର ଅନ୍ତରାଳରେ ଅବସ୍ଥାପନ  
ପୁରୀର ପରିବେଶରେ ବାସ ସମ୍ପର୍କୀତ

[illegible]

youth post

# WILDLIFE WARRIOR



Three researchers, including Siddharth, are shown on a beach. They are wearing yellow t-shirts and blue gloves, and are holding equipment, likely for water sampling or environmental monitoring.

in bio-medical sciences. The crab is in high demand worldwide for its therapeutic value. Its blood is used to make drugs for illnesses such as malaria, like mental ex-  
haustion and gastroenteritis. Its blood cells can be extracted and crushed to provide a lysate, a chemical uniquely sensitive to bacteria-  
rial toxins. It can be used to check for microbial contamination.  
However, most people here are unaware of these facts," says the researcher. That apart, it is suspected that each crab is being smuggled from the Bay of Bengal through Thailand and Malaysia.

Siddharth's motto, "Fish is India and not the other way around" is an important of the species and they generally throw Horseshoe crabs back into the water after catching them in the net while fishing. Additionally, the degradation of the crabs' breeding grounds by human and anthropogenic activities has also resulted in mass depletion of the crab population. He has been called to call for effective measures to protect these valuable breeding beaches along the coast of India.

For my conservation mentoring impacts on horseshoe crab, I have been focusing on raising conservation awareness among local school children.

Siddharth has written articles on Horseshoe crabs have been published in *Scientific American*, *Scientific Horizons*, and *Zoo Prime Magazine*, is also the recipient of the *World Wildlife Fund* award for the "World Wide Fund for Nature-India, Mohamed Bin Zayed Species Conservation Award" from the Abu Dhabi Foundation, USA. That year, he has also received the *Biju Patnaik Award* for the best conservationist from the state government.

A photograph showing two men in a rocky, coastal environment. One man, wearing a white cap and a light blue shirt, is crouching and holding a horseshoe crab. The other man, wearing a grey shirt and a black cap, is standing and reaching out to release the crab. Several other horseshoe crabs are visible on the ground around them. The background shows a rocky shore with some vegetation.



# Drive to clean beaches

**SIBDAS KUNDU**

**Balasore:** Members of the Association for Biodiversity Conservation & Research (ABC), in association with National Service Scheme (NSS) volunteers of Fakir Mohan University, conducted a beach-cleaning programme on April 1 in a bid to safeguard marine flora and fauna along the Balasore coast.

Seventy volunteers from the ABC and the university, along with wildlife activists and other stakeholders, took part in the drive and cleaned a huge quantity of garbage from the beach in order to make the place suitable for the horseshoe crab. This was the second annual beach cleaning carried out by the team.

Apart from members, some local fishermen also took part in the drive carried out at Chandipur and Balramgadi



**SWACHH MISSION:** Volunteers clean the beach on the Balasore coast. Telegraph picture

beaches.

"It is an effort to facilitate the nesting of marine organisms such as horseshoe crab and turtles. The drive will boost eco-tourism in the region," said Sidharth Pati, a marine biologist and conservationist at Association for

Biodiversity Conservation and Research.

Pati is also co-ordinating the programme on the conservation of the horseshoe crab supported by the Rufford Foundation, UK.

"We live in the vicinity of a living fossil," he said talking

about the horseshoe crab.

The head of environmental science department at Fakir Mohan University, Suryendu Kumar Dey, briefed the importance of the valuable marine creature and their role in maintaining the marine ecosystem.

Reader in zoology at Siddheswar College Gobinda Chandra Biswal pointed out that the breeding of the horseshoe crab and sea turtle was being hindered by the piles of garbage, plastics, nets and mechanised boats.

"Everyone should rise to the occasion and a collective effort is required to create awareness about the marine environment," said Biswal.

Another key member of the team, artist Kesu Das, said: "Since childhood, the sea beach has been very close to us. Through my art and activities, I always try to protect it."

ଭୁବନେଶ୍ୱର, ୨୭।୮ (ବି.ଏନ.ଏ.)

[illegible]

- <https://www.telegraphindia.com/states/odisha/drive-to-clean-beaches-220662>
- <https://www.dailypioneer.com/state-editions/bhubaneswar/bswar-beach-cleaned-to-save-marine-species.html>
- <http://bioconservation.org/news/it-was-utkala-dibasa/>
- <https://www.dailypioneer.com/state-editions/bhubaneswar/raksha-bandhan-celebrated-in-bwar.html>
- <http://www.orissapost.com/wildlife-warrior/>