

FIELD WORK AND TRAINING ON BIOLOGICAL SAMPLING TECHNIQUES FOR MALDIVES NATIONAL UNIVERSITY STUDENTS

23rd April 2016



REPORT

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About this report:

On 23rd April, 2016 a fieldtrip was organized for the students of Maldives National University.

The report describes the sessions and outcomes of this field activity.

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May 2016

Introduction

Maldives is blessed with several ecologically significant ecosystems. They provide important ecosystem services to the communities living across the Maldives. Being a low-lying, small islands state, the Maldives is one of the most vulnerable countries to climate change, sea level rise, changes in temperature and rainfall patterns. Climate change can have a catastrophic impact on the islands resulting in erosion, destruction of infrastructure and coral reef damage, affecting human health, food security and water resources. Hence strategies need to be formulated and implemented to reduce impacts of climate change on the communities. This training exposed the Maldives National University students to ecologically significant ecosystems – coral reefs, mangroves, seagrass beds and shoreline vegetation. The content covered created awareness among the students of the vulnerability of the island communities and ways to build resilience of the communities through proper management of ecosystems. The fieldwork sessions were designed to expose the students to the ecosystems and helped them learn ways to monitor changes to these ecosystems through biological sampling methods and beach profiling.

Objectives

By the end of the field work participants will be able to:

1. Identify the ecologically significant ecosystems
2. Explain the services provided by the ecosystems for the wellbeing of communities
3. Conduct a beach profile to study erosion
4. Use transects and quadrats for data collection from coral reefs, seagrass and mangroves.

Field work site

The field work was conducted on Huraa, an inhabited island about 11 miles from the capital Male'. This island was particularly selected as it is the closest island to Male' where all the four ecosystems could be studied with ease.



Ariel view of Kaafu Atoll Huraa where the field activity was conducted

Being an inhabited island it was easy to obtain the necessary facilities for student accommodation and also for arranging the meals for them. There was a health centre on the island too – it was very useful as any injuries to students could be quickly treated.

Access to the different ecosystems were easy and students did not have to take many risks even when observing corals in the marine environment. Several students did not know to swim and hence shallow waters were selected for the activities. A lifeguard was on standby should any incidents occurred and lifebuoys was made available at the site.

Although it was not a sunny day and there was lot of thunder clouds and occasional shower the field work continued as this was the last opportunity for the students before their study break followed by examinations.

Participants

32 students following Bachelor of Primary Teaching course at Faculty of Education of Maldives National University, 4 lecturers and two laboratory technicians from the same faculty took part in the field trip.



Participants of the field trip

Program and activities

Time	Activity
0700	Departure from Male'
0830	Arrival in Huraa
0830 to 0930	Breakfast
0930 to 1000	Talk on use of snorkeling gear and safety precautions
1000 to 1200	Snorkeling in the lagoon and observing the reef ecosystems and seagrass beds. Identifying live corals, dead corals and bleached coral.
1200 to 1215	Break for refreshment
1215 to 1315	Sampling techniques: transect and quadrat sampling on seagrass and coral reefs
1315 to 1415	Lunch
1415 to 1530	Beach profiling to study beach erosion
1630	Departure to Male' from Huraa.

Activity 1: Snorkeling

This activity began with an introduction to the snorkeling equipment. Students were briefed on the proper use and care for snorkeling equipment and how to select the equipment when purchasing and burrowing it. Students were also briefed about the threats they could face

while swimming on the reef and exploring it. In the water students observed the seagrass and the corals.



Students learning about snorkeling equipment

Activity 2: Sampling techniques

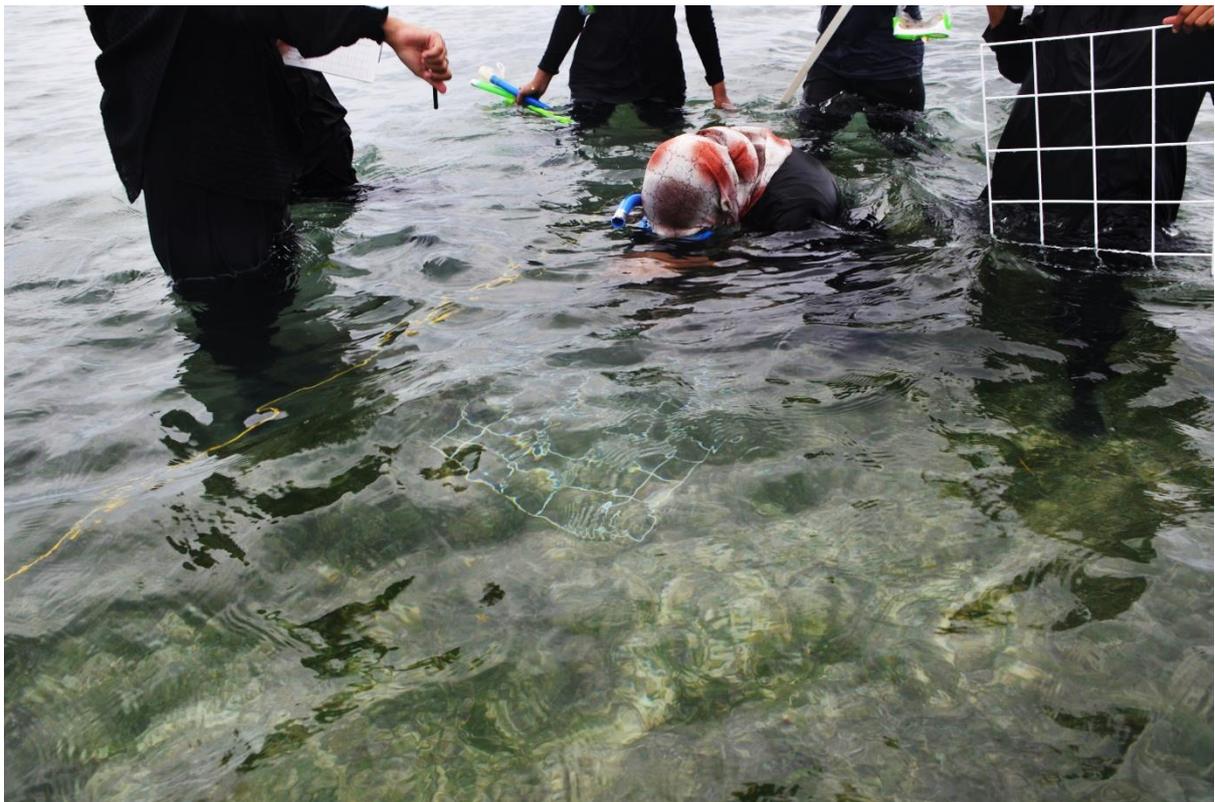
For this activity transect lines and quadrats were prepared and the sampling was carried out on the seagrass bed and the coral reef.



Students laying transect lines for sampling



Students observing and recording data along the transect line



Quadrats were used along the transect line

Activity 3: Beach profile

This activity was designed to provide experience in collecting data on beach erosion. Beach erosion is very common throughout the Maldives and this experience would help them teach their students to collect data on beach erosion in their own islands once they have completed their course.



Students setting the lines for beach profile activity



Students getting instructions on the beach profile activity



Students' carryout beach profile activity

Activity 4: Observing mangrove

Students were briefed about the mangrove ecosystems and the services provided by the mangroves before they entered the mangrove. Students walked through the mangrove observing different mangrove species and the organisms that live in the mangrove.



Students' briefed on the mangrove ecosystems



Students' wading through the mangrove

Activity 5: Importance of Habitats and Marine Reserves

This was an activity designed to provide students information on the coral reef habitats and marine reserves. Students were asked to stand together in circles which represented small reef. Those inside the circles were asked to move between the reefs (circles) as predators tried to catch them. At the same time some circles (reefs) were erased to show human impacts on the reef.



Field trip expenses

Since the activity was conducted on a separate island arrangements had to be made for the students to travel to the site by boat and stay on the island. The expenses for the field trip were fully covered by Rufford Foundation Small Grants.

Description	Rate (AUS \$)	Total (AUS \$)
Transport by boat from Male' to Huraa and back to Male'. (Big seaworthy boat was hired since the weather was not very good on the day. The boat stayed till the activities were over and brought the students back to Male').	650.00	650.00
10 Rooms (Room hired for the 32 students, 4 lecturers, 2 technicians and 2 facilitators for them to take shower and change cloths after the field work).	35.00	350.00
Meals for the students, lecturers, technicians and facilitators (total 40 persons)	15.00	600.00
2 Facilitators (charges for conducting the sessions)	200.00	400.00
TOTAL		2000.00

List of Participants

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Letter of acknowledgement from Maldives National University



بِسْمِ اللّٰهِ الرَّحْمٰنِ الرَّحِیْمِ

5th May 2016

Dear Sir/Madam,

It was a great opportunity for our 32 student teachers to take part in the field outing to experience:

1. Different ecosystems in the Maldives – coral reef, mangrove, seagrass and shoreline.
2. Sampling methods to gather data on shoreline erosion, transect and quadrat sampling.

I am sure this experience has enhanced their knowledge and made them appreciate and value what the surrounding environment has offered to them. Once graduated, the knowledge obtained from this field outing would be transferred to the students studying environment and science related subjects across the Maldives. The lecturers who took part in the field work also got a very useful exposure to the ecosystems and sampling techniques.

I take this opportunity to thank the Rufford Foundation Small Grants for providing the necessary funds for the field activity and the instructors for conducting a very successful field work. The field work also helped our students to understand the role of ecosystems in mitigating climate change impacts on small island communities such those in the Maldives.

Yours sincerely

Muhsina Mohamed



Head of Department
Department of Science Education
Faculty of Education
Maldives National University

Field Work and Training Sessions on Sampling Techniques

23rd April 2016

Background

Being a low-lying, small islands state, the Maldives is one of the most vulnerable countries to climate change, sea level rise, changes in temperature and rainfall patterns. Climate change can have a catastrophic impact on the islands resulting in erosion, destruction of infrastructure and coral reef damage, affecting human health, food security and water resources. Hence strategies need to be formulated and implemented to reduce impacts of climate change on the communities. This training will expose the participants to ecologically significant ecosystems – coral reefs, mangroves, seagrass beds and shoreline vegetation. The content covered during the training will make the participants aware of the vulnerability of the island communities and ways to build resilience of the communities through proper management of ecosystems.

Objectives

By the end of the field work participants will be able to:

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Participants

- 33 students from Maldives National University (MNU) – Faculty of Education
- 5 staff members from Faculty of Education of MNU

Field work site

The field work and training on sampling techniques is conducted at Male' Atoll Huraa. Huraa is the closest island to Male' (10 miles from Male') where all four ecosystems could be easily accessed.

Program of activities

Time	Activity
0700	Departure from Male'
0830	Arrival in Huraa
0830 to 0930	Breakfast
0930 to 1000	Talk on use of snorkeling gear and safety precautions
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1315 to 1415	Lunch
1415 to 1530	Studying the shoreline vegetation and mangroves
1630	Departure to Male' from Huraa.