



# OVERCOMING THE KNOWLEDGE GAPS AND INVOLVEMENT OF LOCAL COMMUNITY TO ESTABLISH A MARINE PROTECTED AREA (MPA) FOR THE CONSERVATION OF DUGONG AND SEAGRASS IN BAY OF BRUNEI, LAWAS, SARAWAK, EAST MALAYSIA (MY5)



## Project Summary

The main aim of the project is to establish a Marine Protected Area (MPA) for the conservation of dugong and seagrass in the Bay of Brunei, Lawas, Sarawak East Malaysia. Thus, the project objectives are:

- To contribute knowledge on dugong population ecology and seagrass to State and Federal Cabinet Meeting agendas.
- To contribute knowledge to the National Plan of Action (NPOA) for the conservation and management of dugong and seagrass in Malaysia.
- To develop capacity building on dugong and seagrass
- To involve local community in conserving dugong and seagrass



## Main Activities

- Attending unmanned aerial surveillance (UAS) systems or drone flight, maintenance and mission training.
- Conducting dugong surveys to determine their distribution, abundance, density and 'hot spots' using drones
- Conducting seagrass surveys and mapping using drones
- Conducting community awareness activities to school children through *Nature 'n U* programme
- Conducting community based awareness activities for local communities through Honorary Wildlife Program.

## Results

- Two dugong sightings (three individuals) were recorded during drone flight trials in June 2016.
- Dugong surveys using drones in the August 2016 (Southeast Monsoon season) recorded six sightings (10 individuals)
- "Nature 'n U Pogram" conducted in March 2016 attended by 96 secondary school students from four schools around Lawas.
- Seagrass survey and mapping using drone during Northeast Monsoon season was completed in January 2017
- Eighty local communities to be trained and appointed as Honorary Wildlife Ranger in February and March 2017.



Dugong aerial photo taken via Skywalker drone



Pre-mission preparation for the drone



Aerial view of dugong grazing trail on seagrass meadow (mapping)



"Nature N U" program



Ground truthing of dugong grazing trail and seagrass survey

## Next Steps & Lessons Learned

Applying Unmanned Aerial System (UAS) or drones for dugong survey and seagrass mapping is very challenging because there is no standard operating procedure or methodology that has been developed. Methodology for surveys needs to be developed before the actual survey begins. Appropriate assimilation of environmental, equipment and skill ensures a successful and safe mission in the field. Various invaluable lessons were learned throughout the dugong surveys and seagrass mapping using UAS. For example, improvement of the complementary accessories and equipment for the UAS camera systems (such as polarizing lens attachment, extended battery, mapping laptop specification, etc.) is as crucial as the UAS itself.

## About Our Organization

SARAWAK FORESTRY Corporation (SFC) was established by the Sarawak State Government under the Sarawak Forestry Corporation Ordinance, 1995 to act as the Government and provide services in administering, assessing, collecting and enforcing payment of royalty, premia, fees and other dues or levies chargeable under, and to perform other functions under the Forest Ordinance 1957, the National Parks and Nature Reserves Ordinance, 1998 and the Wild Life Protection Ordinance, 1998.

