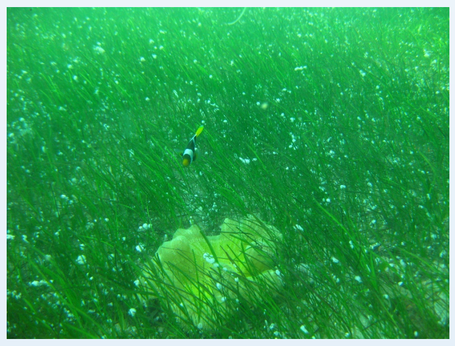
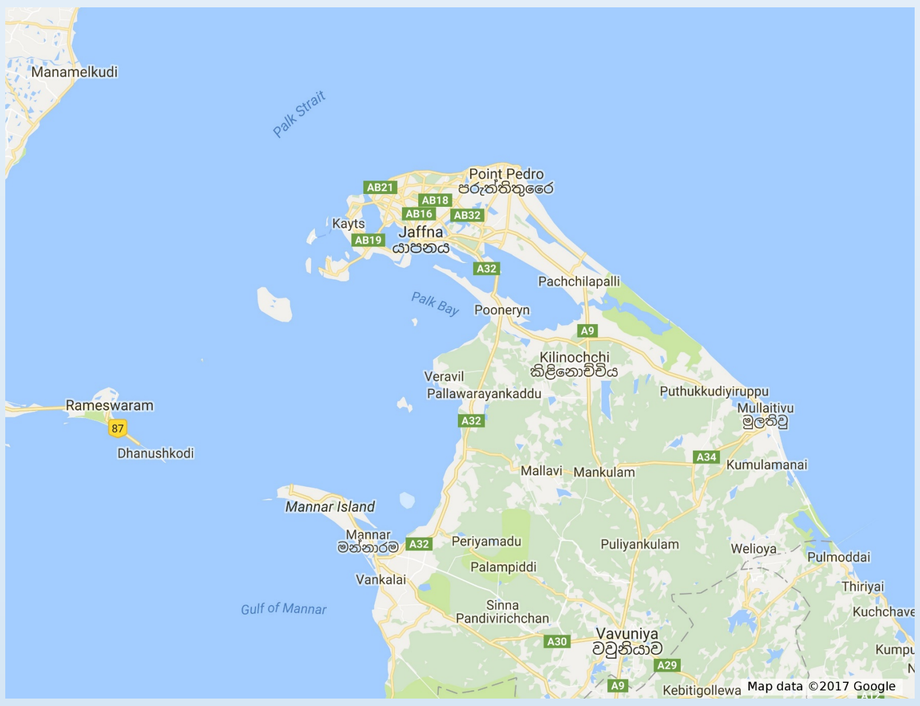
Ensuring seagrass ecosystem values are incorporated with coastal area planning in Sri Lanka

Project Summary

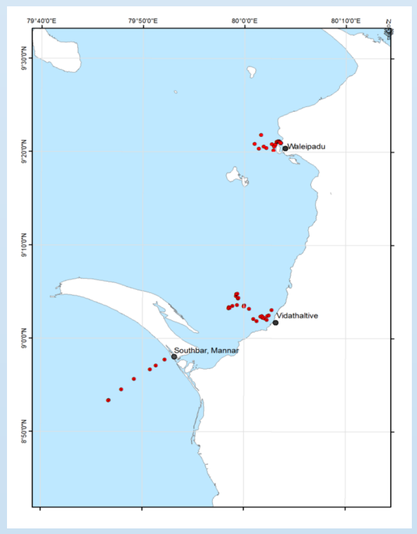
The dugong is one of the largest marine vertebrates and it depends on seagrass habitats that are under pressure from human activities. The Dugong is classified as vulnerable to extinction in the wild in the medium–term future. The main objective of the project is to influence decision making and coastal planning in Sri Lanka with the increased knowledge on the seagrass habitats in Palk Bay, Gulf of Mannar and Kalpitiya with special reference to Dugong conservation. Upgrading and preparation of seagrass distribution maps is in a continuous process. Ecological studies were conducted in two phases such as shallow and deeper areas of Palk Bay and Gulf of Mannar bordering to Sri Lankan coast. Water quality studies were carried out in parallel to the ecological studies. Information collated on impact of fishing gears on seagrass and seagrass associated fisheries





Main Activities

Study was planned and data on seagrass ecology are being conducted during calm seasons. The study area lies from Puttalam South to Jaffna Islands. Spatial dynamics of seagrass beds are being analysed with an integrated approach using remote sensing and in-situ sampling. Identification of important habitats for detailed study were carried out according to the records of dugong and seagrass availability in the location. Ecological studies on seagrasses are carryed out in order to determine the species composition and abundance. Random sampling is carryed out in isolated patches – two sizes of quadrates for determination of percent cover biomass. Line transect method was followed for the continuous shoreward patches. Stomach contents of two stranded dugongs were analyzed to determine food preference around Sri Lankan waters.



Three main sampling locations in Gulf of Mannar and Palk Bay

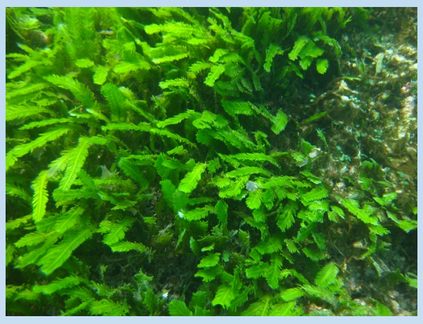
Results

The important sites to be studied in detail were so far identified as Waleadu (Palk Bay), South Bar and Pallimunei to Pesale at Mannar (Gulf of Mannar). Common species encountered in shallow areas were *Enhalus acoroidas, Cymodacea rotundata, Cymodacea serrulata* and *Halodule pinifolia.* Rarely found species were *Halophila spp, Thalassia hemprichii , Syringodium isoetifolium.* Low dense and patchy distributed *Halophila ovalis* and *Cymodocea rotundata* were observed around the deeper areas of Vedithathivu in Palk Bay. Overgrowth of *Caulerpa taxifolia,* which is recorded as an invasive species in some reports was observed. South Bar at Mannar was the other deeper area surveyed in which some dugong deaths were recorded in recent past. Blast fishing with dynamite was also recorded . *Cymodacea serrulata* densely grown patches were observed there with 100% coverage and less distributed *Halophila ovalis* and *Syringodium isoetifolium* was recorded while slimy filamentous green algae were dominant in the are close to the shore.

***Enhalus acoroidas* distribution at South Bar, Mannar**

Low dense *Cymodacea rotundata* patches observed in Vedithathivu

Densely distributed *C.serrulata* around South Bar,Mannar



***Caulerpa taxifolia* within the seagrass beds at Vedithalthivu**

Next Steps & Lessons Learned

The surveys should be continued in Arippu and Pallimunei to Pasale locations. Dense seagrass patches in deeper areas where dugongs have been recorded should be studied in detail for abundance of seagrasses. Areas recorded in South Bar where dugong records prevailed should be marked as sensitive areas to be protected. According to disparities in stomach contents of strangled Dugongs it cannot be concluded what is the preferred species for Dugongs. Outputs derived for fulfilling critical knowledge gaps (dugong habitat; seagrass ecosystems), Conservation-relevant information and guidance on seagrass ecosystems, seagrasses will be immensely useful for the management of seagrass areas in Gulf of Mannar, Palk Bay and Palk straight.

About Our Organization

The National Aquatic Resources Research and Development Agency(NARA) is the apex body vested with the responsibility of carrying out and coordinating research, development and management activities on the subject of aquatic resources in Sri Lanka. The NARA is a statutory body duly established by Parliament Act of No.54 of 1981. During the past 35 years NARA conducted numerous scientific studies in the field of fisheries and aquatic resources. NARA also provides services for development and sustainable utilization of living and non-living aquatic resources.

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