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Priority actions for dugong and seagrass conservation in Solomon Islands

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Key findings

- In August 2018, dugongs became protected under the Fisheries Management (Prohibited Activities) Regulations 2018. It is now prohibited to fish for, retain, be in possession of, buy or sell dugongs. It is punishable through a 40,000 penalty unit fine, 4 months imprisonment, or both.
- Dugongs hold high cultural significance in parts of Solomon Islands. Most people know what a dugong is and where it can be found, but there is little understanding of its biology and ecological importance.
- People are more aware of the importance of coral reefs and mangrove habitats compared to seagrass habitats.
- More awareness raising efforts are needed for the Fisheries Management (Prohibited Activities) Regulations 2018.
- Raising the profile of dugongs by focusing on traditional and cultural values could increase compliance with the regulations.



Photo credit: Rommie Posaba/WorldFish

Survey team debriefing before actually going out to the sea.

Dugongs and seagrass in Solomon Islands

Dugongs are the only strictly herbivorous marine mammal in the world. They are a globally significant species and are the only living representative of the once diverse family of Dugongidae. For thousands of years, dugongs have been hunted for their meat and oil. Today traditional hunting still occurs in areas around northern Australia and the Pacific Islands. Since dugongs feed exclusively on seagrass, conservation methods should combine both dugongs and seagrass.

Seagrass is a vital ecosystem service provider that supports high biodiversity. Sixty seagrass species have been recorded worldwide. They are known to be highly productive and widespread. However, with 29% of the world's seagrass habitats already lost and the remaining areas reportedly disappearing at a rate of 110 km² per year, these productive meadows are being degraded. Locally, there needs to be protection and better appreciation for the value of seagrass habitats to support fisheries livelihoods, which many people depend on. In parts of Solomon Islands,

dugongs are culturally significant as a ceremonial food, with dugong meat served as a delicacy for feasts, cultural events and festivals.

In other parts of the country, dugongs serve as a tribal or "totem" animal. In these communities, the mammal is neither consumed nor captured. It is sacred, and serves as an emblem for certain groups of families or tribes.

What are dugongs?

Dugongs (*Dugon dugon*) are seagrass community specialists that inhabit warm coastal and island areas from tropical to subtropical Indo-West Pacific waters. They can grow as large as 3 m long and weigh up to 500 kg. Dugongs can live to about 70 years. Females reach reproductive age between 7 and 17 years of age and give birth to a single calf every 3 to 7 years. The calf stays with its mother until it is 1 or 2 years old. While dugongs can be seen in large herds, they usually travel as individuals or a mother-calf pair. Dugongs feed primarily on seagrass.



What is seagrass?

Seagrass is a group of flowering plants adapted to exist submerged in shallow marine environments with low turbidity. Globally, there are 60 known species of seagrass, most of which are distributed along temperate and tropical coastlines. The tropical Indo-Pacific region is the most diverse seagrass bioregion, hosting 24 known species. In many semi-tropical and tropical regions, seagrass habitats are also often closely linked to mangrove and reef ecosystems, which together are essential for the life-cycles of a number of species that depend on reefs and mangroves. Seagrass occupies only 0.2% of the world's oceans. It is the main food source for dugongs, which can consume up to 40 kg of seagrass per day. Dugongs prefer seagrass species that are low in fiber, high in nitrogen and easily digestible, especially those of the genera *Halodule* and *Halophila*.



Local threats to dugong and seagrass protection

Dugongs' shallow habitat near the shore coupled with their slow reproduction rates make them vulnerable to human activities. In Solomon Islands, the traditional practice of hunting dugongs and the disturbances to seagrass habitats caused by poorly controlled land-based activities, such as logging, have both contributed to a diminished dugong population. Other contributing factors include bycatch incidences and the use of destructive fishing practices, which indirectly affect dugongs.

Similarly, increased sedimentation associated with runoff from land-based activities (logging, coastal developments and agricultural activities) and population growth are threats to seagrass meadows. A marine assessment carried out in 2004 by The Nature Conservancy (TNC) showed that seagrass was disturbed by factors that vary between regions and between seasons. In discussions with communities, it is apparent that local knowledge values ecosystem services that seagrass meadows provide; however, they are generally less known compared to coral reefs and mangrove habitats.



Photo credit: Ronnie Posala/Woodfish

Dugong and seagrass awareness at Kmaga village hall.

National legislation and other international policies for the protection of dugongs

The Fisheries Management (Prohibited Activities) Regulations 2018 explicitly set the protection and penalty measures for the conservation of dugongs. The management measure as set out in the regulations is full protection of the mammal, with all forms of harvest now prohibited. Prior to the regulations, the Wildlife Management and Protection Act 1998 and Environment Act 1998 had provisions that allowed for its protection.

Internationally, the Convention on International Trade in Endangered Species (CITES), the United

Nations Convention on Biological Diversity (UNCBD), the International Union for the Conservation of Nature (IUCN) Red List and the Dugong MOU list the standards and priorities for protecting dugongs, and Solomon Islands is a signatory to all four international treaties. Nationally, dugongs are protected under the Fisheries Management (Prohibited Activities) Regulations 2018, which came into effect August 27, 2018. Prior to this regulation, the Fisheries Amendment Bill 2015, Environment Act 1998, Wildlife Management and Protection Act (1998) and Protected Areas Act 2010 existed but did not specifically protect dugongs.

Key Legislation	Content
Fisheries Management Regulations 2018 under the Fisheries Management Bill 2015	Section 5 schedule 4: Prohibits fishing for and retaining, possessing, selling, buying or exporting dugongs. The punishment is a 40,000 penalty unit or 4 months imprisonment, or both.
Wildlife Management and Protection Act (No. 10 of 1998)	Provides protection, conservation and management of wildlife.
Environment Act (No. 8 of 1998)	Makes provision for and establishes integrated systems of development control, environmental impact assessment and pollution control. Also prevents, controls and monitors pollution.
Protected Areas Act 2010	Establishes systems of protected areas and measures to rehabilitate and restore degraded ecosystems, and also promotes the recovery of threatened species, including through the development and implementation of plans and other management strategies.
UNCBD	Promotes the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings.
IUCN Red List	Sets criteria to evaluate the extinction risk of all species.
Dugong MOU	Ensures the long-term survival of dugongs and seagrass habitats in coastal waters.
CITES	Controls and monitors international trade in specimens of species by imposing strict regulations on all species that are threatened with extinction in order not to further endanger their survival. Under the convention, trading such specimens of species may only be authorized in exceptional circumstances.

Table 1. Key international treaties and national legislation for protecting dugongs.

Priority activities and recommendations

1. Raise awareness and share information about the importance of dugongs and their habitats, with an emphasis on raising cultural and ecological values.

Dugongs are important to a number of communities in Solomon Islands. Elevating their traditional and cultural significance can capitalize on the desire to protect dugongs and to promote the respectful appreciation of the mammal. This could be a tool to enforce the Fisheries Management (Prohibited Activities) Regulations 2018. The Ministry of Culture and Tourism could be a partner in this activity.

2. Raise awareness of the protection of dugongs under the Fisheries Management Regulations 2018.

The Fisheries Management (Prohibited Activities) Regulations 2018 came into effect August 27, 2018. Led by the Ministry of Fisheries and Marine Resources (MFMR), it is necessary to prepare a communication or awareness raising strategy, targeting various media platforms, along with activities and awareness materials. These need to be made available to communities and the general populace.



Photo credit: SPS/Alamy/Alamy.com

Young boys rep from community assist in identifying seagrass species.

3. Build a program of research on dugongs and seagrass.

General information on dugong and seagrass ecology is available from global sources. In Solomon Islands, however, most of the information on the status of the dugong population, its distribution, population composition and cases of mortality remains unknown. Some local information on seagrass is available through the Rapid Ecological Assessment conducted by the TNC in 2004, though its status and spatial extent remains unknown.

In 2017 and 2018, locally based partners, including the Solomon Islands Community Conservation Partnership (SICCP), Coastal Marine Management (CM2) and WorldFish, together with the MFMR and the Ministry of Environment, Climate Change, Disaster Management and Meteorology (MECDM) implemented the Dugong and Seagrass Conservation Project (DSCP). This project was executed by the Mohamed bin Zayed Species Conservation Fund (MbZSCF), with financing from the Global Environment Facility (GEF), implementation support by the United Nations Environment Programme (UN Environment) and technical support from the CMS Dugong MoU Secretariat. In this work, the team conducted the CMS standardized dugong catch/bycatch survey in 46 select communities across six provinces. While this was a second attempt at getting insights into the dugong distribution in the country, an extensive research program, including spatial mapping of seagrass, species distribution and ecosystem services evaluation, would enable a clearer

picture of how both are faring and identify dugong and seagrass “hotspots.”

A research program based on key data gaps needs to be developed in partnership and liaison with local, regional and international academic institutions and dugong and seagrass conservation networks.

4. Build local capacity for dugong and seagrass conservation.

Within the DSCP timeframe, two specific resource capacities were enabled: (1) the National Facilitating Committee (NFC) and (2) a pool of personnel from the MFMR, MECDM, SICCP and WorldFish were trained in standardized seagrass mapping techniques in Vanuatu. There is a need to capitalize on this expertise and to continue building local technical capacity, particularly in any planned research undertakings nationally.

5. Strengthen local, regional and international networks for dugong and seagrass conservation.

Continuing the NFC or similar mechanisms and encouraging linking with other networks, such as the National Coordinating Committee (NCC) of the Coral Triangle Initiative on Coral Reefs, Fisheries and Food Security (CTI-CFF), could be a mechanism for its sustainability and, where possible, the pooling of resources. Linking to regional and international networks through the Secretariat of the Pacific Regional Environment Programme (SPREP) and the Dugong MOU is a way to ensure collaboration and learning with the global community.



Survey team (MFMR,MECDM,WF plus community rep).

Further reading

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