

Issue Summary: Sargassum Accumulation on County Beaches

Prepared for: Palm Beach County Board of County Commissioners

By:

Environmental Resources Management (ERM) and Park and Recreation (Parks)

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Commissioners are often contacted by their constituents in the summer months regarding concerns over accumulations of floating sargassum (seaweed) and associated beach management practices. The summary below presents a brief introduction to the issue, ERM's management principles and various resources available for general information and education.

Introduction to Sargassum

Sargassum is a type of brown algae that drifts on the ocean surface, often accumulating in large, dense mats formed by wind and currents. Sargassum, commonly referred to as seaweed, blooms in the Atlantic Ocean and is spread throughout the Caribbean, the Gulf of Mexico, Florida and beyond primarily by the Gulf Stream. As sargassum blooms and is spread by currents, very large and dense mats may be brought ashore by prevailing winds and currents. When significant amounts of sargassum are present, persisting conditions can form large accumulations along beaches and coastlines throughout the Caribbean, Mexico, Texas and Florida, including Palm Beach County. Sargassum itself is not harmful to human health, but tiny organisms that live in it can irritate skin with direct contact.

Ongoing Issues

Sargassum represents a critical part of the beach, dune, and oceanic ecosystems. Seasonal and annual sargassum abundance is affected by numerous physical and climatological factors, but remains a cyclical component of our local coastal and offshore ecosystems. Technological advances have improved the knowledge base and have provided additional data that has increased the general awareness of sargassum. Satellite tracking advances have also improved the ability to track both sargassum abundance and movement, serving as a general forecast. This information has been shared widely in the media since 2018, with recent reports suggesting high levels sargassum abundance and potential for significant accumulation in the coming summer months.

Large accumulations of sargassum, while temporary in nature, can be considered a nuisance or potentially harmful to public safety in that they can cover large stretches of beaches, blocking access to the water. Significant accumulations can also impact tourism in destination areas where beaches are a primary attraction to visitors. These accumulations may result in unpleasant odors caused by decaying material or may trap harmful waste and human generated debris. These factors have driven many different management strategies throughout the regions and destinations most often impacted by significant accumulations.

Sargassum in Palm Beach County

In Palm Beach County, accumulations are most common in the summer months when seasonal onshore winds blow concentrations of sargassum from the Gulf Stream towards shore. Given the shape of the County's coastline and proximity to the Gulf Stream, south county beaches are typically more impacted. North of Lake Worth Inlet, the distance between the Gulf Stream and the coastline progressively increases, reducing the frequency of large accumulations on north county beaches.

Palm Beach County maintains a very long and successful program of coastal management directed at maintaining healthy beach and dune systems for sea turtle nesting habitat, storm protection, recreational use, and to support the positive economic benefits from tourism. The County's efforts include direct management and nourishment of various beaches, dunes and inlets and as a project partner to cost-share with various municipalities who manage their own coastal programs.

Sargassum Management

Palm Beach County maintains a "hands-off" management approach to sargassum accumulations on County-owned beaches for various reasons:

- Sargassum is a naturally occurring algae that represents a critical component to the County's beach and dune ecosystem, providing food and shelter for native wildlife and nutrients and stability to dune plants.
- Moderate accumulations capture wind-blown sand which help naturally built the beaches and make them more resilient to erosion from storms or high wave events.
- Significant accumulations typically coincide with peak sea turtle nesting season during summer months. Three species of endangered sea turtles nest on Palm Beach County's beaches, which are federally-designated as critical sea turtle nesting habitat. The numbers of sea turtle nests in the County can exceed 40,000 in a single nesting season, often representing the highest nesting density in the state and country. Any active physical management of the sargassum can introduce unintended impacts and is strictly avoided during the nesting season.
- Removal of accumulations can be costly and offer limited benefits as seasonal winds continue to drive floating sargassum onto the coastlines.
- Parks and Recreation staff and volunteers daily remove human generated debris and litter from sargassum on County beaches.

While the County does not actively remove sargassum from our beaches, there are multiple existing and emerging alternatives being implemented to manage significant accumulations of sargassum. These alternatives are based on site-specific conditions in various geographic locations, but come with significant operating or capital cost, logistical difficulties and regulatory challenges. The alternatives list below are not considered suitable for use locally or are not consistent with the County's ecosystem based management objective.

- Beach raking is the most commonly used mechanical management practice and consists primarily of the physical removal of accumulated sargassum along the beach using tractors and other vehicles on the beach to remove the sargassum and other debris. Beach raking is regulated by the Florida Department of Environmental Protection (FDEP), with permits issued to public and private applicants that include various conditions designed to minimize potential impacts to the beach and natural resources such as sea turtles and shore birds. When a beach is raked it does not remove sargassum in the water. Therefore, sargassum will often deposit on the beach with the next tidal cycle. **Palm Beach County does not contract for routine mechanical removal of sargassum. It is left in-place and allowed to remain a part of the ecosystem benefiting both the environment and lowering operational costs. Multiple municipalities and private entities do contract for routine mechanical beach raking. When significant accumulations block recreational access to the water or impede ocean rescue operations within County Parks, the Parks and Recreation Department may conduct hand raking of sargassum on the beach to clear paths and facilitate access to and from the water. In the very rare instance that accumulations grow to an amount that no longer dissipates with multiple tidal cycles and can no longer reasonably be hand raked to create paths, Parks and Recreation may seek a permit for a one-time mechanical removal with wildlife monitoring in place.**
- Floating barriers are becoming a more common management practice in areas impacted by accumulated sargassum. These systems include various sizes and lengths of floating materials that serve as deflection booms to prevent floating sargassum from reaching a beach or designated swim area. These systems may include various anchoring systems to hold the barriers in place and can be effective along beaches with low wave energy. **Currently, Palm Beach County does not support the installation of floating barriers due to the local high-energy wave climate and potential risks to nearshore coral resources and sea turtle populations.**
- Composting and re-purposing of accumulated sargassum is a newer practice where material is collected and transported for various uses. The accumulated material can be used to support and build existing dune systems, or be utilized specifically as a compost, where the material is spread out, tilled and left to become a soil alternative. **Palm Beach County does not utilize mechanical management measures for the removal and repurposing of accumulated material.**

ERM recognizes there are various perspectives and opinions on the potential impacts to public health and safety, recreation and tourism from the accumulation of sargassum along County beaches. ERM and Parks work cooperatively to ensure coastal management practices represent a balance of safe recreational use, coastal resiliency and the protection of natural resources. Both Departments maintain that sargassum is a natural and critical component of our coastal ecosystem and is best left in-place unless extreme accumulations impede ocean rescue operations. ERM's coastal program will continue to coordinate with Parks to monitor accumulation on area beaches and evaluate emerging management alternatives as they are developed.

Available Resources:

Share the Beach: Guidelines for Beach Cleaning during Sea Turtle Nesting season.

<https://myfwc.com/media/3157/seaturtle-sharebeach-cleaning.pdf>

Palm Beach County Guidelines for Beach and Dune Management

https://discover.pbcgov.org/coextension/horticulture/PDF/commercial/urbanforestry/beachdunemanagement09_updated.pdf

Florida Department of Environmental Protection-Removing Dead Fish and Seaweed from Florida Beaches

<https://floridadep.gov/file/26755/download?token=d47iHe7K>

Florida Department of Health Sargassum Fact Sheet

<https://www.floridahealth.gov/environmental-health/beach-water-quality/documents/sargassum-factsheet-appr-final.pdf>

University of South Florida Satellite-based Sargassum Watch System (SaWS)

<https://optics.marine.usf.edu/projects/saws.html>

For More Information

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