

Golden Tide: Sargassum Influx

FOR THE

#GATORGOOD

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Sargassum Influx, 2011-Present



Sorting

Sargassum

There are two species of floating Sargassum seaweeds. They come in different forms. Here are the three most common.



Sargassum natans I



Sargassum fluitans III



Sargassum natans VIII

BLADDER



Spines on bladder present



Spines on bladder absent



Spines on bladder usually absent

LEAF



Narrow delicate leaves



Denser wider leaves than *S. natans I*



Noticeably larger than other spp.

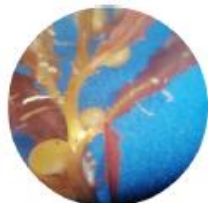
STEM



Thorns on stem absent



Thorns on stem present



Thorns on stem absent

What is Sargassum?

- Brown algae
- Sargasso Sea (traditionally) - free floating, open ocean, Columbus voyage

What are the Issues?

- Fish kills, low DO, smell, smothers seagrass/patch reefs, packs residential canals, closes marinas, clogs motors, smothers sea turtle nests
- Implication for Tourism – HYDROGEN SULFIDE smell, dirty beaches, dirty water
- Essential fish habitat – pelagic species like tuna, mackerel, American eel, mahi, flying fish nursery, **loggerhead turtles**
- Builds soil, prevents beach erosion
BUT seawalls/jetties = sits/sinks/stinks

AMERICA

WHERE IS IT COMING FROM?



AFRICA

SOUTH AMERICA

NEW SOURCE AREA FOR SARGASSUM



- There is a new source area right across the equator, and it looks like it's here to stay.
- Sargassum grows faster with more nutrients (pollution) and warmer water (climate change).
- Sargassum is carried to the Caribbean by ocean currents and wind.
- The influxes, like hurricanes, are hard to predict.

Responding to a sargassum influx

If sargassum appears on your beach, what you do next can be good or bad for the beach and business. Important lessons have been learned so far.

Here's what you need to know

Sargassum is a natural seaweed that floats in the Atlantic Ocean.

It's an important home for marine life, like fish and sea turtles.

It's a problem only when it comes ashore in massive amounts.

A complaint is the smell of rotten egg gas as wet sargassum decomposes. There are potential health risks at high gas concentrations.

What should you do?

Communication is key!

Inform beach users about sargassum - manage their expectations.

Direct beach users to unaffected or clean beaches.

Agree how much sargassum justifies cleaning.

Determine which beaches will be cleaned.

Join with partners and share the job.

Organise wildlife patrolers to inspect for stranded sea creatures like sea turtle hatchlings, collect and release them with some sargassum into offshore currents.

Leave some sargassum for beach nourishment.

Keep in touch with local environmental agencies as forecasting models are in development.

Take care!

These actions cause serious harm to the beach.

- 1 Constant beach grooming
- 2 Removing sand from the beach or dunes
- 3 Heavy machinery used carelessly
- 4 Clearing or trampling beach vegetation
- 5 Driving above the high water mark and through sand dunes
- 6 Driving over sea turtle nests
- 7 Cleaning before patrolers - Let them check for signs of wildlife before you start cleaning!

If my beach looks like this...

No action required on this beach



Leave the sargassum alone - let nature run its course. Be patient - it will wash away or get buried. Rest assured - it will benefit your beach and save you money and effort.

Taking action? Manual raking is the approach to take



It's simple, low cost and environmentally friendly. Get communities involved in these beach clean-ups. Run educational scavenger hunts for sea creatures in sargassum.

Separate plastic pollution from sargassum for disposal. Transport using wheelbarrows, bags or tarpaulins and take to designated disposal areas.

Work with partners and plan a mechanical response



Take a multi-stage approach - remove upper layers of sargassum with machinery, without touching the sand, then rake manually or run mechanical beach raking equipment.

Clean high usage areas first and leave other beaches for nature to clean. Remove the sargassum as soon as possible after arrival to avoid vast accumulation.

how do we DISPOSE of sargassum?

- Designate sites for the disposal of sargassum.
- Use sunny locations for drying and decomposition.
- Re-distribute sargassum to fill eroded beaches.
- For sea turtle nesting beaches, transport sargassum off-site, don't dump on dunes or nests.
- Use as mulch or compost - wash out salt first.
- New uses are being developed - like bio-stimulant and bio-fuel.
- Sargassum is not suitable for human consumption.

Do's & Don'ts

Clean in daylight



REMOVAL from shallow water?

Sargassum is heavy when wet. Removal from close to shore may prevent sargassum from rotting in the water. Consider a horse-drawn trap to collect sargassum in suitable sea conditions as an environmentally friendly removal option.

Different methods have been tried but are labour intensive and costly (eg. booms, barges, vacuum). Results are mixed - stability problems, unloading issues and unwanted by-catch of marine life.

REGULATIONS

SAFMC – FEDERAL WATERS. Essential habitat. Fishery closed 2003.

369.20 FLORIDA AQUATIC WEED CONTROL ACT
 “No person or public entity shall control, eradicate, remove, or otherwise alter any aquatic weeds or plants in the waters of the state unless a permit for such activity has been issued by the FWC”

Land-based regulations??? Homeowner recommendations?

Mulch compost, biofuel, livestock/fish farms, fertilizer, baled and buried for dunes

FUTURE

- PRESS RELEASE, AUGUST 2019
- New Normal?
- Seasonal, wind driven by S-SE Winds
 - Luckily motherlode occurs off-season
- Miami Beaches
 - Miami Herald:
 - All M-D beaches@\$45 million/year
 - Hot Spots@\$500K/month
- Monroe County: \$900,000 beach removal (2020 projected)
- Residential canals
- Disposal options?
- Composting, out to sea?



Miami Beach, August 2019.

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