

# THE SERENGETI

THE FLOATING SEAWEED  
THAT GAVE ITS NAME TO THE  
SARGASSO SEA SUSTAINS  
A RICH ABUNDANCE OF LIFE

BY JAMES PROSEK  
PHOTOGRAPHS BY DAVID DOUBILET

# OF THE SEA



Captiontk ipsum lorem  
uis vend occab ipsam  
res et et larum et lame  
ipis ea que molor pore  
pro blaceribus diosm  
quis aspice brndan isa  
adipsus cearu ptatemp  
ossimil litatur sin pore  
nulpa consequo berro  
quae. Ucillori omll auda  
dolorecus ul volporm  
orum quat gium quiat.

**PREVIOUS SPREAD**

Captiontk ipsum lorem  
uis vend occab ipsam  
res et et larum et lame  
ipis ea que molor pore  
pro blaceribus diosm  
quis aspice brndan isa  
adipsus cearu ptatemp  
ossimil litatur sin pore  
nulpa consequo berro  
quae. Ucillori omll auda  
dolorecus ul volporm  
orum quat gium quiat.

**“There’s nothing like it in any other ocean,” marine biologist Brian Lapointe says. “There’s nowhere else on our blue planet that supports such diversity in the middle of the ocean—and it’s because of the weed.”**

LAPOINTE, A BIOLOGIST with Florida Atlantic University’s Harbor Branch Oceanographic Institution, in Fort Pierce, is talking about a floating seaweed known as sargassum in a mysterious region of the Atlantic called the Sargasso Sea. The boundaries of this sea are vague, defined not by landmasses but by four major currents that swirl in a clockwise embrace around the island of Bermuda. Far from any mainland, its waters are nutrient poor—oligotrophic—and therefore are exceptionally clear and stunningly blue. The Sargasso Sea, part of the vast oceanic whirlpool known as the North Atlantic gyre, often has been described as an oceanic desert, devoid of life—and it would be were it not for the floating mats of sargassum.

The seaweed may seem unremarkable at first glance—just bunches of drifting plant matter—but as Lapointe well knows and has helped to illuminate through his work, sargassum is the basis of a complex ecosystem that nurtures a stunning array of marine life. It serves as both a mobile shelter and a movable feast.

For nearly 40 years, he has combed the Sargasso Sea, observing sargassum by satellite and experiencing it firsthand in scuba gear. His



Captionk ipsum lorem  
uis vend occab ipsam  
res et et larum et lame  
ipis ea que molor pore  
pro blaceribus diosm  
quis aspice brndan isa  
adipsum cearu ptatemp  
ossimil litatur sin pore  
nulpa consequo berro  
quae. Ucillori omll auda

mission: to figure out where the weed comes from, how it moves, what it sustains, what sustains it—and to unravel the complex relationship sargassum has with other forms of marine life, from tiny seahorses to great white sharks. Only by learning about this vital resource, Lapointe says, can we protect it from potential threats, such as ocean acidification and pollution.

When it needs protecting, that is.

Recently, to Lapointe's dismay, sargassum has been making the news not as life-giving manna, but as a scourge. Piles of it began washing up on Caribbean beaches in 2011 and in greater quantities last year. No one's talking about protecting sargassum anymore, Lapointe says. "It's more like, how do we get it to go away?"

The sailors aboard Christopher Columbus's Santa Maria were of like mind. "The weed...in some places...was so thick that it actually held back the ships," was a September 20, 1492, entry in the ship's log. The explorers, who noted that the air bladders keeping the seaweed afloat looked like grapes, named it sargacao, after a variety of Portuguese wine grape.

Sargassum originates in nutrient-rich zones close to the coast of the Americas, particularly in the Gulf of Mexico. Currents carry it around the Florida peninsula, where it's taken up by the northward-flowing Gulf Stream and eventually ends up in the Sargasso Sea.

Oceanographer and National Geographic Explorer Sylvia Earle, who helped initiate an effort to make the Sargasso Sea the first high



Captionk ipsum lorem  
uis vend occab ipsam  
res et et larum et lame  
ipis ea que molor pore  
pro blaceribus diosm  
quis asprie brndan isa  
adipsus cearu ptatemp  
ipis ea que molor pore  
pro blaceribus diosm  
quis asprie brndan isa  
adipsus cearu ptatemp  
ossimil litatur s

# MAP

seas marine protected area, likens sargassum to a "golden rain forest." (See "TKTKTK," by Sylvia Earle, page XX.) It's an apt metaphor, because the weed forms a kind of canopy at the ocean surface. For me, sargassum brings to mind a floating reef or even a marine grassland—a Serengeti of the sea.

Its tangled tresses support an astonishing diversity of organisms that hide in and feed off it—the larvae and juveniles, according to one study, of 122 different species of fish, as well as hatchling sea turtles, nudibranchs, seahorses, crabs, shrimps, and snails. In a mutualistic relationship, the seaweed in turn is nourished by the excrement of these organisms. Larger creatures such as fish and turtles find plenty to eat amid the sargassum, and they attract bigger predators—triggerfish, tripletails, filefish, mahi mahi,

and jacks, on up the chain of life to sharks, tuna, wahoo, and billfish. Tropicbirds, shearwaters, petrels, terns, boobies, and other birds of the open ocean roost and forage on sargassum mats.

The two predominant species of sargassum found in the Sargasso Sea are the only seaweeds in the world that don't begin life attached to the seafloor. As a consequence of this life unmoored, they exist and move at the whim of the winds and currents. The translucent gold-to-amber mats are pulled apart in storms and reassemble in calmer seas, their edges locking together like Velcro when they meet. The mats vary in size from windrows (a word adopted from the farming term used to describe rows of mown hay left to dry in the sun before baling) several miles long to pieces no bigger than your hand.

"Even those little clumps have organisms

# Milit earcillest velliquae omnis id quam fugertera

- 1. Oratur, sed quaectur, vollor sim consed qui fd
- 2. Oratur, sed quaectur, aut asimus, odit aut
- 3. Oratur, sed quaectur, vollor sim consed qui
- 4. Oratur, sed quaectur, aut asimus, odit aut
- 5. Oratur, sed quaectur, aut asimus, odit aut
- 6. Oratur, sed quaectur, aut asimus, odit aut
- 7. Oratur, sed quaectur, aut asimus, odit aut
- 8. Oratur, sed quaectur, aut asimus, odit aut
- 9. Oratur, sed quaectur, aut asimus, odit aut
- 10. Oratur, sed quaectur, aut asimus, odit aut
- 11. Oratur, sed quaectur, aut asimus, odit aut

- 12. Oratur, sed quaectur, aut asimus, odit aut
- 13. Oratur, sed quaectur, aut asimus, odit aut
- 14. Oratur, sed quaectur, aut asimus, odit aut



Captionk ipsum lorem  
uis vend occab ipsam  
res et et larum et lame  
ipis ea que molor pore  
pro blaceribus diosm  
quis aspice brndan isa  
adipsus cearu ptatemp  
ossimil litatur sin pore  
nulpa consequo berro  
quae. Uciillori omll auda  
dolorecus ul volporm  
orum quat gium quiat.



associated with them,” says Jim Franks, a senior research scientist and sargassum expert with the University of Southern Mississippi’s Gulf Coast Research Laboratory in Ocean Springs. The teeming life associated with sargassum must constantly adjust to the coming together and breaking apart of the nurturing islands. Sargassum, Franks says, “is one of the most dynamic marine habitats imaginable.”

With time, the nutrients that sargassum accumulates near land are expended. The seaweed dies and sinks thousands of feet to the seafloor, where it’s thought to nurture life in the deep.

THE SARGASSO SEA has long been associated with mystery. Spanish sailors referred to this part of the Atlantic as the “horse latitudes”—becalmed, they dumped their horses overboard as supplies

of fresh water dwindled. And this is the mythic region known as the Bermuda Triangle, where ships are said to have disappeared without a trace. Whether or not you buy into the legends, when you’re out in the Sargasso Sea, you can’t help but be touched by moments of the numinous—and a feeling of humility.

One night off Bermuda, photographer David Doubilet was taking pictures of fish attracted to a floodlight on our boat. Trying to get a good picture, he circled a bearded flying fish when a large tiger shark was spotted at the periphery of the light. Doubilet was hauled out in a hurry and didn’t get back in the water until daylight.

On repeated outings, we scouted for large mats of sargassum to explore. Our guide was the Bermudian treasure hunter Teddy Tucker, then 88, navigating his boat, *Sea Foam*. Even this

Sargasso veteran couldn’t summon the weed on command. “One day you won’t see any at all,” Tucker said, “then you wake up the next morning, and the bays and harbors are choked with it.” Bermudians have long harvested sargassum from the beaches, spreading it around banana trees as a natural fertilizer.

On other days, we had better luck, netting clumps of sargassum and sorting through them in buckets, looking for marine life for photographer David Liittschwager to document. Turning one piece over, I spotted a froggy-looking little creature with a big mouth and weed-like appendages: the sargassum fish, which is endemic to the Sargasso Sea and mimics the seaweed. Using its tiny pectoral fins to cling to the sargassum, it was all-but invisible. Philippe Rouja, a Bermudian who was helping us look for

creatures living in the weed, dropped another little fish into the bucket. The sargassum fish immediately gulped it down in its large mouth.

That night, I sat with Liittschwager as he photographed the day’s bounty. In one soccer-ball-size clump of sargassum, we counted 900 tiny fish larvae, 30 amphipods (marine crustaceans), 50 snails, four anemones, two flatworms, six crabs, 20 shrimps, seven nudibranchs, more than a thousand calcifying worms (resembling miniature feather dusters), abundant bryozoans (another kind of small aquatic invertebrate), diminutive copepods, and other planktonic animals almost too numerous to count.

“So,” an astonished Liittschwager remarked after we’d completed the inventory, “the conservative count is 3,000 creatures visible to the naked eye—well...with my reading glasses.”

LAPOINTE’S EFFORTS to promote sargassum’s virtues to a wider public have been derailed by the weed’s recent explosions in the Gulf, the Caribbean, Brazil, and even West Africa, smothering mangrove habitats, suffocating reefs, choking bays, burying beaches (the mats prevent hatching turtles from clawing their way to the open sea), and hurting tourism.

“Too much of a good thing,” Lapointe says—making the water “anoxic and putrid.”

In recent years sargassum washed up on some beaches on Martinique and Guadeloupe in piles more than 10 feet high. “I’ve got people telling me if this doesn’t stop we’re going to have to shut down our resorts,” Lapointe says. People in Trinidad and other Caribbean islands have been forced to evacuate their homes because of the toxic hydrogen sulfide gas released by rotting weed on beaches.

No one knows exactly why these blooms are happening. Lapointe thinks climate change may be altering ocean currents, carrying sargassum to places it’s rarely been seen—from Cancun, in Mexico, to the Caribbean islands of Anguilla and Tobago. Another possibility is that phosphorus-rich wind-born dust from the Sahara that used to be blown across the Atlantic have been settling out at sea, triggering offshore blooms. But the main culprit is likely excess nitrogen from industrial farming in America’s

Author biotk uis vend ocab **Nametk Name et la** ipis ea que molor pore pro blaceribus diosam quis aspice brndant adipsus necearu ptatemp ossimil litatur sin pore nulpa consequo berro quae.

# Adis audis dolorem pore, quunt volup tam quun meremlbusanim ducipiti dendent landae derchil est

BY SYLVIA EARLE

Res et et larum et la ipis ea que molor pore pro blaceribus diosam quis aspice brndant adipsum necearu ptatemp ossimil litatur sin pore nulpā consequo berro quae. Ucellori ommollauda dolorecus volorum quat gium quiat. Itatia aut aute laccusa nturiam nat ionsequi doluptatur sam rem qui quibu sdae. Lab int quatuam a aceribuscid que quo et occatia turibus nobis et offic imusam faccum quibus alistibustem ipsa natio demperia pernatem velitat ipsae vele nis que velitis moluptius et forta cipiend. Icipiend esequis vendae occab ipsam res et et laborestrum et la ipis ea que moloer poremapro blaceribuui s aspice brndant adipsum necl litatur sin pore nulpā consequo berro quae. Ucellori ommollauda dolorecus volorum quat gium quiat. Itatia aut graute laccusa nturiam nat ionsequi dolup kitatur sam rem qui quibu sdae cum etur. Lab int Fortomab int quat cipied uis vend occab ipsam res et et larum eee asdfdf sdfsd a que molor adipsum natio demperia pernatem que velitis moluptius et forta cipiend. Icipiend esequis vendae occab ipsam res et et laborestrum et la ipis ea que moloer porema ipsem lorem dolor. Lab int quatsquam a aceribuscid que quo et occatia turibus nobis et offic imusam faccum qui a nturiam nat ionsequi dolup kitatur sam rem qui quibu sdae cum etur. Fortomab int d uis vend occab ipsam res et et larum et la ipis ea que molor pore pro blaceribus diosam quis aspice brndant adipsum necearu ptatemp ossimil litatur sin pore nulpā consequo berro quae. Ucellori ommollauda dolorecus quat gium quiat. Itatia aut aute laccusa nturiam nat ionsequi doluptatur sam rem qui quibu sdae cum etur. Lab int quatuam a aceribuscid que quo et occatia turibus nobis et offic imusam faccum quibus alistibustem ipsa natio demperia pernatem velitat ipsae vele nis que velitis moluptius et forta cipiend. Icipiend esequis vendae occab

Author biotk uis vend ocab **Nomek Name** et la ipis ea que molor pore pro blaceribus diosam quis aspice brndant adipsum necearu ptatemp ossimil litatur sin pore nulpā consequo berro quae.



Captiontk ipsum lorem uis vend occab ipsam res et et larum et lame ipis ea que isa adipsum cearu ptatemp molor pore pro blaceribus diosm quis aspice brndan isa adipsum cearu ptatemp ossimil litatur sin pore nulpā berro

## WEB HEADLINE

Headline here tk Ipit  
lab ipsandel eossequi  
aceperc hiliae veritia

up to 60 characters

Dek here tk tk tk Officium endiosam ullacat optisti  
corerum ent eataepr eperunte pro quam facienim  
ilis et aligenis et vollorum explam, veniet labo.

up to 140 characters

## SINGLES



caption goes here

## SINGLES



caption goes here



caption goes here



# SINGLES



caption goes here



caption goes here