

Perfect Cape Cod Summer For Lion's Mane Jellyfish

By JOSEPH CAPUTO

Looking like an army of plastic bags, hundreds of lion's mane jellyfish (*Cyanea capillata*) periodically descended upon the Cape Cod shoreline throughout the summer, causing some beachgoers to think twice before taking an afternoon dip.

As swim classes were cancelled and tourists were stung, experts wondered what could be the cause of the population explosion. Based on conversations with scientists and staff at the Marine Biological Laboratory, this year's anomaly was due to a combination of factors. An abundance of food, lack of predators, ideal temperatures, and the will of the currents all helped make this summer a good one for the jellyfish.

"It's just Mother Nature and the conditions being right," says Edward Enos Jr., superintendent of the Aquatic Resources Division at the MBL.

The good conditions began in spring when many young jellyfish made it past their larval forms without being consumed by predators. The lion's mane, like most stinging jellyfish, doesn't have many enemies. However, the ones it does have are important for keeping its numbers in balance. Some suspect overfishing of local tuna and swordfish stocks could have contributed to the lack of jellyfish predation.

As temperatures warmed and the young larva developed into full-fledged jellyfish, one species that the lion's mane preys upon, a gelatinous marine creature known as the comb jelly, matured a bit earlier than usual. A lot of comb jellies meant fine dining and the means to sustain a large lion's mane population.

"Jellyfish can grow fast if there is a lot of food," says Sean Colin, associate professor of biology at Roger Williams University. He and John Costello, professor of biology at Providence College, study the relationship between jellyfish and their prey at the MBL.

All jellyfish begin life in a larval form, emerging live from their mothers. They next plant themselves on a rocky coast and develop into polyps. After feeding for a few weeks, each polyp releases, or buds off, multiple new jellyfish into the water. Jellyfish live a few months and generally stick to the area they are born since they rely on the currents to get around.

Many things can go wrong from conception to maturation, but the biggest problem is usually starvation. This summer, there was also an abun-

dance of food courtesy of the warm weather, another factor to the lion's mane success. Whether climate change is behind the abundance of jellyfish is unknown.

"I can't say whether or not this year it's due to global warming," Dr. Colin adds. "But their seasonality is affected by changes in water temperatures and when conditions are good, meaning warm temperatures and a lot of food, they grow."

The question then is whether these perfect

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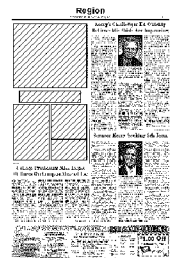
conditions will be able to repeat themselves. If comb jelly populations continue to mature earlier and there aren't enough predators around to knock off developing lion's mane larvae, jellyfish booms could become as common a summer occurrence as the annual migration of tourists. But, according to beach staff, it's at least a situation they can handle.

"They are more of an annoyance than a problem," says Hanna Haidar, a staff lifeguard for Falmouth Beaches. "People get stung, but it's more of a discomfort than really painful."

For swimmers unfamiliar with jellyfish stings, guards normally keep spray bottles of white vinegar that relieves the stinging, which Mr. Haidar compares to a very mild burning or itching. He also advises people to rub wet sand over affected areas.

Jellyfish invasions are also bearable because they come and go with the currents. It's not uncommon to start your morning at a jellyfish-free beach and two hours later, if the conditions are right, suddenly notice a swarm of the animals bobbing around in the waters.

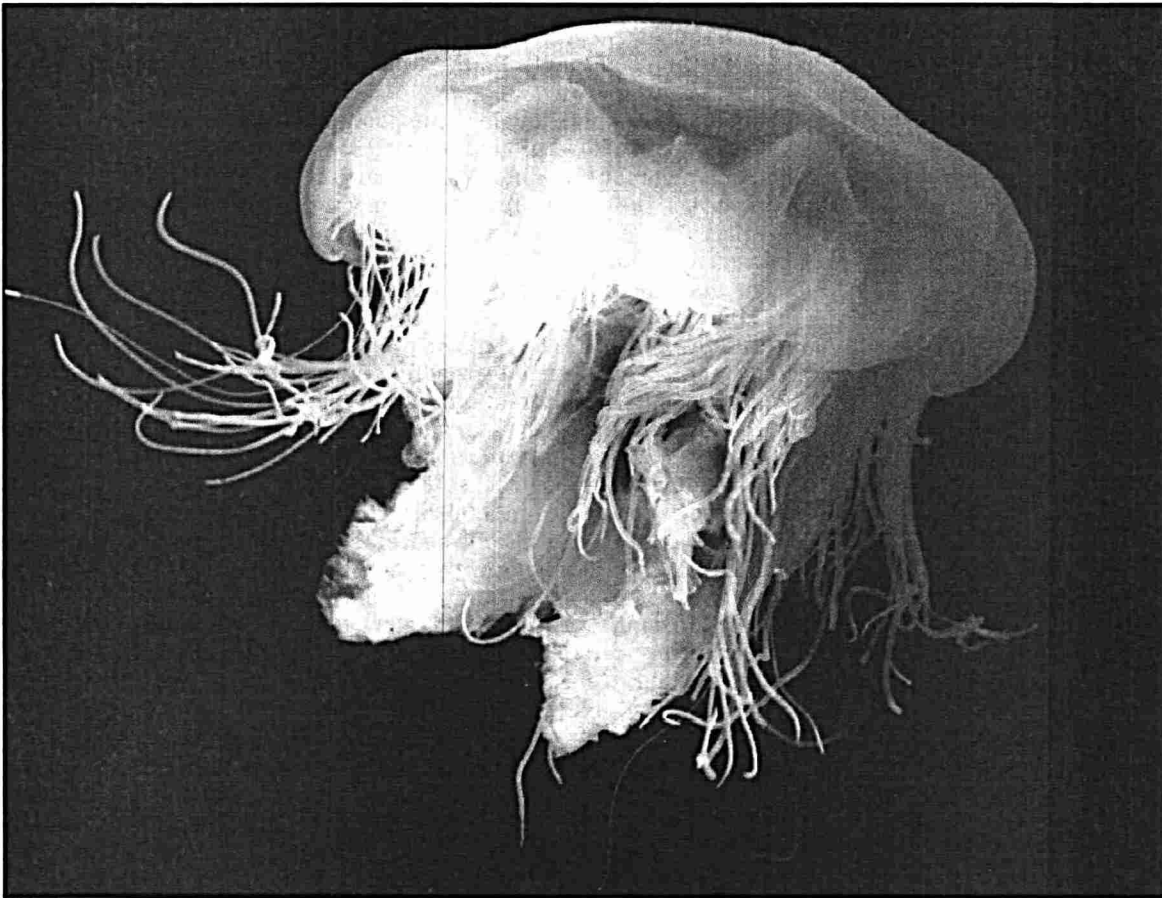
"They're certainly quite visible," Mr. Enos says. "The most important thing is not to be terrified about them. They are creatures that are out there looking for food, not interested in hurting



us. Be aware of them and be proactive if you've got children."

The lion's mane jellyfish is a species local to the Cape. While they are most visible in July and August, they are known for surviving through colder weather and can be found in the water from April through November.

(Mr. Caputo is a summer science writing intern at the MBL.)



SEAN COLIN AND JOHN COSTELLO

Unusually high numbers of lion's mane jellyfish, *Cyanea capillata*, were a common sight at Cape Cod beaches this summer. Some people think that overfishing of their main predators, both tuna and swordfish, could have contributed to the boom in numbers.