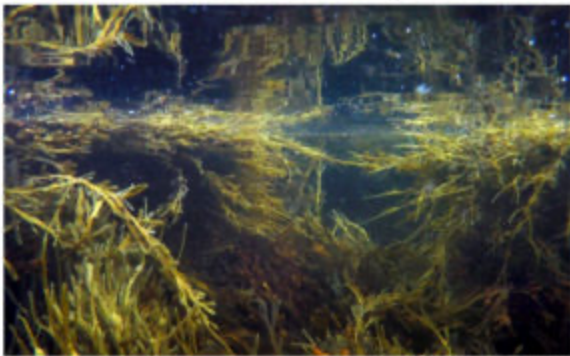


By Jessica F. Muhlin and Susan H. Brawley, Opinion guest contributors •
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Science should be heeded: Rockweed is not a plant



In this Nov. 6, 2015, file photo, rockweed grows on the coast of Cape Elizabeth.

Robert F. Bukaty / AP

A recent Maine Supreme Judicial Court ruling about the ownership of rockweed was based on a falsity. Rockweed is not a plant. You have more relatedness to the mushrooms you ate on your pizza last Friday than rockweed has to plants.

The mistaken designation of rockweeds as plants has significant environmental and economic consequences. Rockweed should not be subject to overcutting by private owners (directly or indirectly) but needs to be harvested under the regulation envisioned by the Maine Department of Marine Resources, to protect it while providing economic benefits of this valuable marine fishery to Maine.

Humans by nature like to name and place things into groups. Crucially, in the biological world, these groups are not arbitrary, but are real, scientifically discoverable facts. Over the last couple of decades, there have been profound advancements in DNA-based technologies, including in medical diagnoses and treatment. DNA can be used to identify a suspect from crime scene evidence, find out what breed(s) of dog your mutt is, provide genealogical insights into your family's history, and, no less profoundly, DNA-based technologies aid our understanding of the relatedness of living things.

Many of us learned in school that all living organisms fit into two or five kingdoms, but taxonomic classification has changed radically in recent decades as scientists applied the better DNA techniques to uncover taxonomic relationships. Not only does rockweed differ structurally and biochemically from plants, but powerful DNA analyses demonstrate that rockweeds and other brown algae are stramenopiles that lie in a completely different part of the Tree of Life from plants.

Labeling rockweed inaccurately as a plant fosters fundamental misunderstandings about its basic biology as a marine organism. Plants take up nutrition from the soil. Rockweed grows on hard rock and acquires nutrients from the seawater. If rockweed had been understood to be a different kind of organism than a plant, it might have been designated a living marine resource that is owned by all Mainers and is in the public trust for sustainable regulation and fishing. We regret that the legal proceedings affecting the court's ruling that rockweed belongs to coastal landowners are grounded in a fallacy.

The people of Maine trust that their judicial system bases decisions on accurate facts, but in the Maine appellate court setting, justices rely on the joint material statement of facts provided by the plaintiff and defendant, which, in this case, stated "rockweed is a plant." The Supreme Court's decision included this text: "Harvesting rockweed — which the parties stipulated is a plant — is not a form of 'fishing.'"

How can this mistake be avoided in the future? First, Maine should establish careful procedures that can permit state courts to appoint scientific advisers when needed, as is the practice in the federal court system. It was clear from the questions during oral argument that one of the justices was uneasy about the outdated "facts" before the supreme court, but the court apparently saw no clear way to the current-day scientific expertise the justice correctly sensed was needed.

Second, if there is no judicial remedy for redefining rockweed accurately, legislative mechanisms should be used to correct the error. Associate Justice Stephen Breyer of the U.S. Supreme Court recently wrote that "the law must seek decisions that fall within the boundaries of scientifically sound knowledge."

The health of Maine's coastal ecosystems and marine fisheries depends on applying science to discussions and decisions in Maine.

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