

Findings from the Field

Volume 3

Article 12

2020

Discovery of Invasive Algae at Norton Ledge

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Recommended Citation

W., Declan (2020) "Discovery of Invasive Algae at Norton Ledge," *Findings from the Field*: Vol. 3 , Article 12.

Available at: <https://findings.gmri.org/journal/vol3/iss1/12>

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Nature Note: Findings from the Field: Middle School Journal

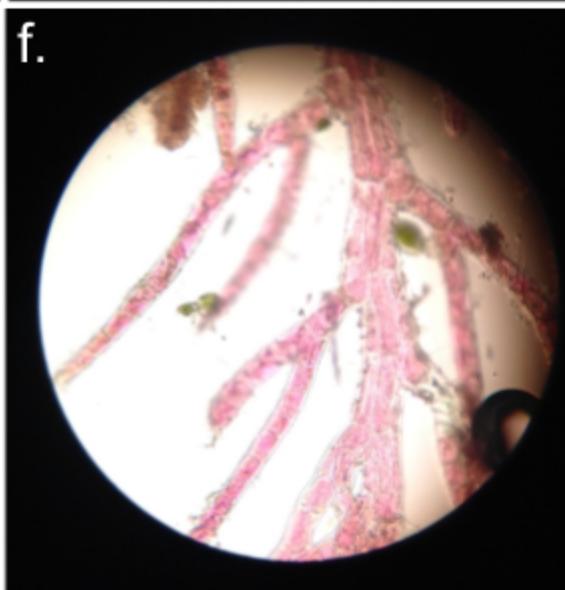
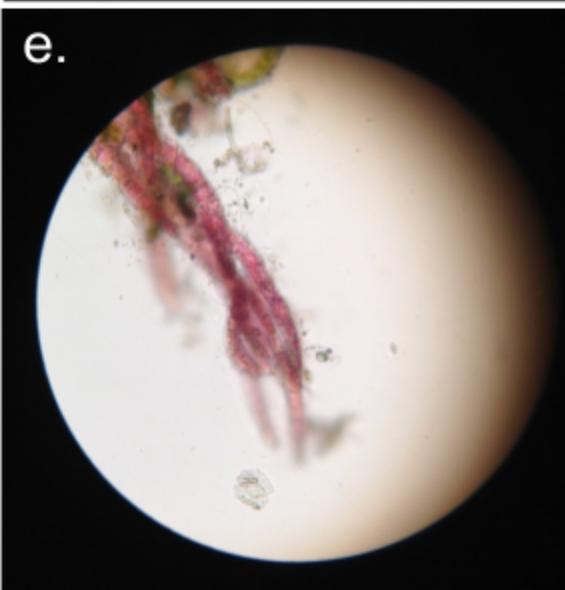
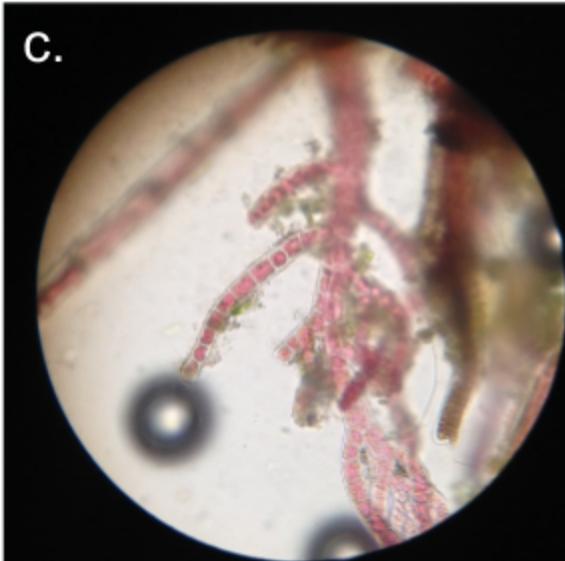
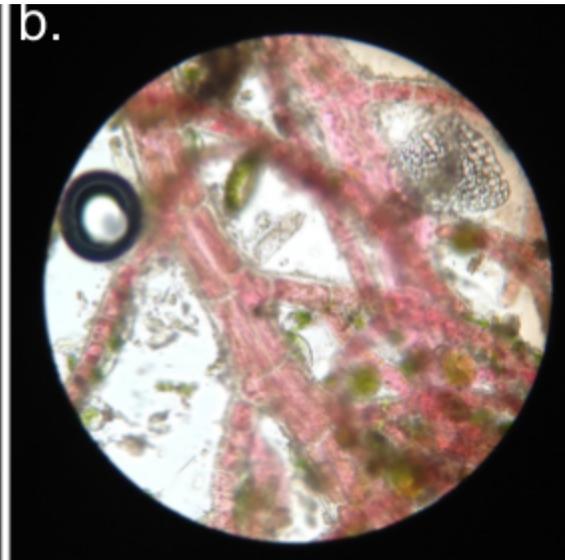
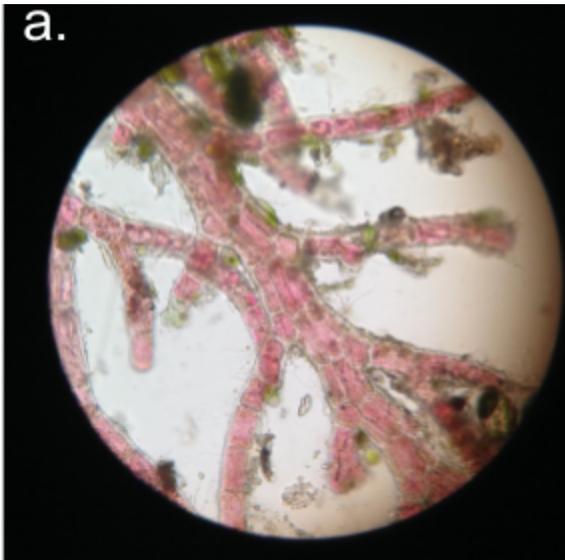
Discovery of Invasive Algae at Norton Ledge

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1/29/20

Most seaweeds or macroalgae, as they're called, are extremely beneficial to all life on Earth. Approximately 75% of oxygen in the atmosphere comes from algae (Dr. Jack Hall, 2011). Not only that, but algae is at the bottom of the food chain in a marine ecosystem. Being the main producer in an ecosystem is a very important job as without it, the ecosystem would collapse. However, not all algae is quite this beneficial. *Dasysiphonia japonica* is an example of this. *Dasysiphonia* originally came to New England in 2009 from Japan on the side of ships (McDermott, 2017). The first time *Dasysiphonia* was spotted in Maine was in 2011 on the shores of Appledore Island (Cornell University, 2012) Since that point the algae's range has expanded, choking out the native kelp forests and resulting in an extreme loss of habitat (Ray, 2017).

Claim

Norton Ledge, which is located at 44.5095 N, 67.6528 W now has the invasive species of macroalgae, *Dasysiphonia*. Samples were collected on December 17, 2017. Due to the identification of *Dasysiphonia* makes Norton Ledge the farthest east location has been found in the state of Maine.



Research Observations

These images, all taken at 200x magnification, are identifiable as *Dasyisiphonia* for multiple reasons. The main stem is multicellular before branching off into single cell branches. This type of branching is most noticeable in images a, b, c, and f. Branching is the best way to tell the difference between *Dasyisiphonia* and the non-harmful species or red algae, *Polysiphonia*. Another branching identifier is the pattern of growth. *Dasyisiphonia* has an axial growth pattern, and the images above do have an axial growth pattern. Finally, in image d, there is a curly cue shepherd crook. This is a very distinctive feature in *Dasyisiphonia*.

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