

A DISTRIBUTIONAL STUDY OF THE MARINE ALGAE OF ACADIA NATIONAL PARK

Denise Van Hemert

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After a two year study of marine algae of tide pools at Mt. Desert Island for a Master's thesis, the opportunity to make a complete survey of the macroscopic marine algae of Acadia National Park, through a grant from the Student Conservation Program, was a great pleasure to me and was much appreciated.

The cold, fertile waters and the exposed rocky shores of Maine are very favorable for support of a rich and varied flora. My objectives were to make a distributional survey of the macroscopic marine algae occurring along the intertidal zones of selected portions of the coastal shorelines of Acadia National Park. This included the collection, identification and preservation as herbarium mounts of each species found. The areas studied were Anemone Cave, Ocean Drive shoreline from Sand Beach to an including Otter Point, Seawall shoreline from Seawall Pone to Seawall Picnic Area, Bennet Cove and adjoining peninsula extending toward Long Ledge, Valley Cove, Thompson Island, Schoodic Point, Little Moose Island and Baker Island. Collections began June 20, 1966 and continued through August 29, 1966. An annotated crosslist was made of all the algae found in each area and of all the areas in which each species was found. Eighty-six species and varieties were identified and 205 herbarium mounts were made.

Most of the areas studied consisted of similar environmental factors such as rocky substratum, exposure to surf and numerous tide pools and, therefore, the flora of these areas were very similar. These exposed situations produce the most abundant flora both in quantity and in numbers of species. The species most universally found in all areas of exposure studied were Alaria esculenta, Ascophyllum nodosum, Fucus vesiculosus, Chondrus crispus, Gigartina stellata, Rhodomenia palmata, Spongomorpha spinescens, Elachistea fucicola, Halosaccion ramentaceum, Porphyra umbilicalis, Polysiphonia lanosa and Hildenbrandia prototypus. Likewise, in the low level tide pools, the species most commonly found were Laminaria saccharina, Laminaria stenophylla,

Lithothamnium sp., Monostroma fuscum, Spongomorpha spinescens, Chondrus crispus, Scytosiphon lomentaria, Chordaria flagelliformis, Rhizoclonium tortuosum, Corallina officinalis, Ceramium rubrum. In the high tide pools common species were Enteromorpha intestinalis, Cladophora gracilis, Cladophora flexuosa and Rhizoclonium tortuosum.

In contrast, the quiet waters and mud flats of Thompson Island produced an almost entirely different flora very sparse in variety of species. Many of the species found there were exclusive of that area. Most common were Fucus vesiculosus V. spiralis, Ascophyllum nodosum, and Cladophora crystallina. Two species found only there and in abundance were Monostroma oxyspermum and Ceramium fastigiatum. In these quiet waters Ascophyllum reached its greatest size. Valley Cove, also a sheltered habitat, was somewhat similar to Thompson Island in the low number and type of species found.

One particular species, Nemalion multifidum, was found only at Sand Beach on the exposed rocks along the beach area. This species was quite abundant. It was collected the latter part of July when it was only two to three inches long and again three weeks later when it had reached a length of ten to twelve inches.

Three species, Plumaria elegans, Rhodochorton purpureum and Sphacelaria britannica, were growing in Anemone Cave, but were found nowhere else in the studied areas. Rhodochorton and Sphacelaria formed a mat covering the cave floor. Characteristics of Anemone Cave are low light intensity and relatively low desiccation. Lithothamnium and Corallina were darker in color than is usually the case elsewhere.

All scientific names are from W. R. Taylor, Marine Algae of the Northeastern Coast of North America. University of Michigan Press, Ann Arbor, Mich. 1957.

CHECKLIST OF MARINE ALGAE FOUND AT ACADIA NATIONAL PARK FROM JUNE THROUGH AUGUST, 1966

[illegible]

	Anemone Cave Area	Sand Beach	Ocean Drive	Monument Cove	Thunder Hole	Ledges Parking Area	Otter Point	Seawall	Bennet Cove	Long Ledge	Thompson Island	Valley Cove	Schoodic Point	Little Moose	Baker Island
Ectocarpus siliculosus		x													
Ectocarpus fasciculatus V.abbreviatus				x			x	x	x						
Elachistea lubrica			x	x	x	x	x	x	x			x		x	x
Elachistea fucicola	x	x	x	x	x	x	x	x					x	x	x
Enteromorpha intestinales	x	x	x	x	x	x	x	x	x		x		x	x	x
Enteromorpha intestinales F.clavata			x					x	x						x
Enteromorpha linza	x	x		x	x	x							x		x
Enteromorpha microcca	x	x	x	x	x	x							x		
Enteromorpha prolifera											x			x	
Enteromorpha plumosa	x					x	x			x					
Enteromorpha compressa					x								x	x	
Euthora cristata (drift)								x	x	x					
Fragelaria sp. (diatom)				x		x									
Fucus vesiculosus	x	x	x	x	x	x	x	x	x	x			x	x	x
Fucus vesiculosus V.spiralis											x	x			
Fucus filiformis	x			x	x	x	x	x					x	x	x
Fucus edentatus	x	x	x	x	x	x	x						x	x	x
Fucus evanescens		x				x	x	x							x
Gigartina stellata	x	x	x	x	x	x	x	x					x	x	x
Gloiosiphonia capillaris	x														
Halosaccion ramentaceum	x		x	x	x	x	x				x		x	x	x
Hildenbrandis prototypus	x	x	x	x	x	x	x	x	x	x		x	x	x	x
Laminaria saccharina	x	x	x	x	x	x	x	x	x	x			x	x	x
Laminaria stenophylla	x	x	x	x	x	x	x	x	x	x			x	x	x
Lesthesia difformis	x			x	x		x						x	x	x
Lithothamnium sp.	x	x	x	x	x	x	x	x	x	x			x	x	x
Monostroma fuscum v.blyttii	x	x	x	x	x	x	x	x					x	x	x
Monostroma oxyspermum											x				
Monostroma pulchrum				x											
Nemalionmultifidum		x													
Percursaria percursa													x	x	x
Petalonia fascia	x	x			x	x							x	x	x
Phycodrys rubens (drift)								x	x	x					
Plumaria elegans	x														
Polysiphonia harveyi		x		x		x									
Polysiphonia lanosa	x	x	x	x	x	x	x	x	x	x			x	x	x

	Anemone Cave Area	Sand Beach	Ocean Drive	Monument Cove	Thunder Hole	Ledges Parking Area	Otter Point	Seawall	Bennet Cove	Long Ledge	Thompson Island	Valley Cove	Schoodic Point	Little Moose Island	Baker Island
<i>Polysiphonia nigrescens</i>		X									X				
<i>Porphyra miniata</i>	X	X		X		X	X								
<i>Porphyra umbilicalis</i>	X	X	X	X	X	X	X	X		X			X	X	X
<i>Ptilota serrata</i> (drift)					X			X	X	X					
<i>Pylaiella littoralis</i>	X	X	X	X	X	X	X				X		X	X	X
<i>Ralfsia clavata</i>	X		X	X	X	X	X	X	X	X			X	X	X
<i>Ralfsia verrucosa</i>									X	X					X
<i>Rhisoclonium kernerii</i> (?)													X	X	
<i>Rhisoclonium tortuosum</i>	X	X	X	X	X	X	X	X	X	X			X	X	X
<i>Rhodochorton purpursum</i>	X														
<i>Rhodomela confervoides</i>		X		X		X								X	
<i>Rhodymania palmata</i>	X	X	X	X	X	X	X	X					X	X	X
<i>Saccorhiza dermatodea</i>				X		X	X	X	X	X				X	
<i>Scytosiphon lomentaria</i>	X	X	X	X	X	X	X	X	X	X			X		X
<i>Sphacelaria britannica</i> (?)	X														
<i>Spongomorpha hystrix</i>	X	X		X		X									X
<i>Spongomorpha spinescens</i>	X	X	X	X	X	X	X		X	X			X	X	X
<i>Stilophora rhizodes</i>															X
<i>Ulothrix flacca</i>						X			X						
<i>Ulva lactuca</i>	X	X	X	X		X		X			X		X	X	X
<i>Urospora collabens</i>									X						