



2017 Eagle Hill Natural History Science Seminars on the coast of eastern Maine

LICHENS, BIOFILMS, AND STONE

July 23 – 29, 2017

Maine's Hancock and Sullivan Counties, with their rocky shorelines and inland hills, are rich with lichen species and biofilms. Buildings and structures made with granite from local quarries host lichens and biofilms. Imported grave markers of granite, marble, slate, and sandstone from other New England states and foreign countries are found in cemeteries, and these markers also host lichens and biofilms. In this seminar, we will study the physical, chemical, ecological, and aesthetic relationships between lichens, biofilms, and stone.

Different lichen species grow on different stone types in different environments. Lichen growth is influenced by a stone's mineralogy and condition, and by the microclimates created by plant cover, open-air exposure, proximity to water, stone orientation, and surface topography. Biofilms also show diversity with their presence on different stone types and in different environments. The interactions between lichens and biofilms and to what extent lichens and biofilms protect or harm stone surfaces from weathering are questions that will be discussed.

We will present lectures on basic lichen morphology and species identification; biofilm morphology; the role of lichens and biofilms in the environment; basic geology; the history of stone quarrying, finishing, and construction; and the history and contemporary practices of preservation "treatments" for stone. Field trips are planned for forest and shore environments, a granite quarry, a gravel pit, and several cemeteries. We will examine and identify lichens, biofilms, and stones in the field and in the laboratory. As a class project, participants will compile a checklist of the lichen species found during the field trips.

We expect participants to represent a wide variety of disciplines and avocations; the pursuit of individual interests will be encouraged. While prior knowledge of lichens, biofilms, or stone will be useful for this seminar, it is not necessary.



about the instructors

Judy Jacob (judyjacob@gmail.com) is a Senior Conservator with the National Park Service, Northeast Region, in the New York City Field Office. She works primarily on stone monuments and masonry buildings: evaluating conditions, preparing preservation plans, and executing stabilization and repair treatments. She is currently working on an NSF study examining biofilms and white marble.

Dr. Michaela Schmull (mschmull@oeb.harvard.edu) is a lichenologist and the Director of Collections of the Harvard University Herbaria. Her research interests include lichen ecology, biodiversity, and systematics. She has taught classes in plant microscopy, plant identification, and lichens and air pollution.