Course Redefines

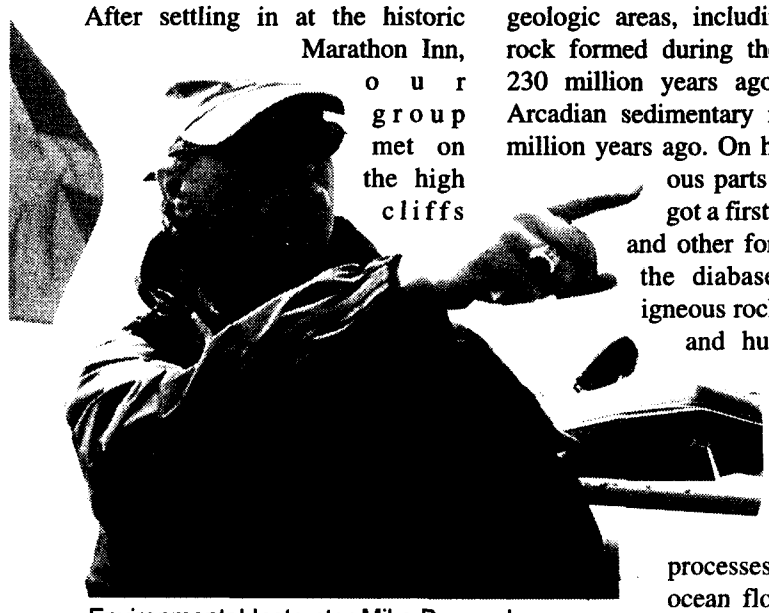
Story and Photos By Dyan Yingst
For The Capital Times

I love an adventure. My latest journey took me to a magical island called Grand Manan, located about 18 miles off the coast of New Brunswick, Canada. It was truly a unique educational experience. Not only did I spend an awesome week watching whales, hiking and sea kayaking around this picturesque island, I earned four college credits doing it!

Students enrolled this summer in EDU460 met for several hours in Middletown for a pre-session with Mike Bernarsky, a well-known environmental instructor. He has developed and taught a variety of summer ecology studies for Penn State Harrisburg. We all met again in Bangor, Maine on Aug. 5 and continued our land journey to Black's Harbor, New Brunswick. From there, we had a 90-minute ferryboat crossing to Grand Manan, which means "great island." And a great island is what Grand Manan is — all 120 square miles of it. The first permanent settlers arrived here around 1784 and this maritime oasis is now home to *approximately 2,700 residents. The* island's beauty and charm are enhanced *by its breathtaking scenery, its rich variety* of indigenous vegetation, and the numerous species of bird and marine life that can be seen on the island and in the pristine water surrounding it.

Grand Manan is situated near the mouth of the Bay of Fundy. The bay is shaped like a funnel, and the tides near the narrow end are some of the highest in the world, with 50-foot extremes possible between high and low tides. Depending on the moon, the tides around Grand Manan range from 19 feet to over 25 feet, providing a unique setting to study tidal pool flora and fauna.

After settling in at the historic Marathon Inn, our group met on the high cliffs by the Swallowtail Point Lighthouse for an afternoon orientation meeting. This site offers an exhilarating view of the sea, and with the surf pounding on the jagged rocks below, I began to realize what an adventure this class would be.

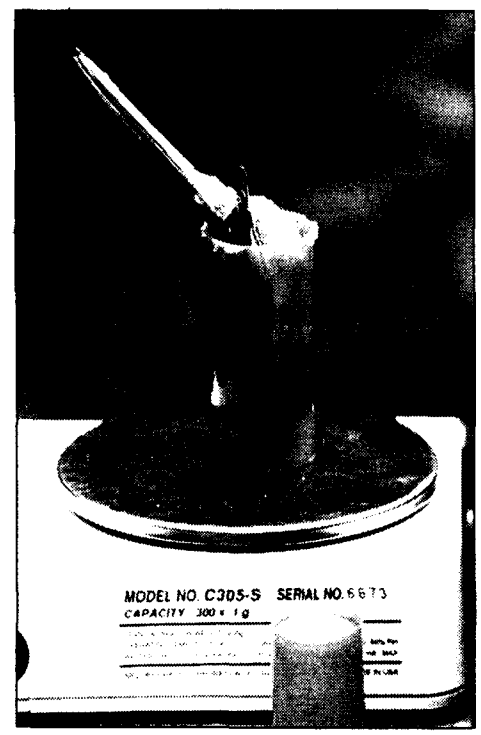


Environmental Instructor Mike Bernarsky

I found myself working on a five-member team made up of biology, chemistry and physics teachers. The Boreal Coast Study focuses on the geological forces that created the island over millions of years, and how the environment and nature adapted. Grand Manan has several geologic areas, including volcanic lava rock formed during the Triassic period 230 million years ago and older pre-Arcadian sedimentary rock formed 430 million years ago. On hikes around various parts of the island, we got a firsthand look at these and other formations, such as the diabase sills, intrusive igneous rocks, sunken forests and huge granite boulders left by retreating glaciers during the Pleistocene Epoch.

The geologic processes that formed the ocean floor in the Bay of Fundy created shear zones, where various sea currents are brought together and pushed upward. Baleen whales are attracted to this area because of these extreme ocean currents, which are magnified as high tides push the water further up the bay. Plankton accumulate between these upwellings, and gyres force them to the surface where whales can feed while expending little energy. Whales consume approximately 10 percent of their body weight each day — and that's a lot of food for a mammal that can weigh 50 tons!

Our group was fortunate to meet Dr. Lori Muirson, a marine biologist with the Grand Manan Whale and Seabird Research Station. Dr. Muirson delivered a fascinating lecture on the evolutionary development and adaptation of marine mammals to their present environment. She also discussed her research into the feeding habits of whales. To help protect endangered species of whales, she said ID tags are occasionally placed on whales and their movements are recorded through a satellite data tracking system. From tracking records, biologists estimate that the world's population of North Atlantic right whales has dwindled to about 350 and that two-thirds of them make their home in the Bay of Fundy.



Weighing a live bird.

After a lesson on identifying whales and their movements, we accompanied Dr. Muirson and Captain James aboard the schooner *D'Sonoqua* in search of whales and other sea mammals. We checked the global positioning system (GPS) to chart our location on earth every 15 minutes, and recorded the marine life we spotted to document later on individual maps. Despite our eagerness to see

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