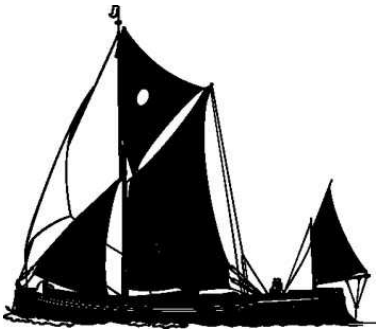
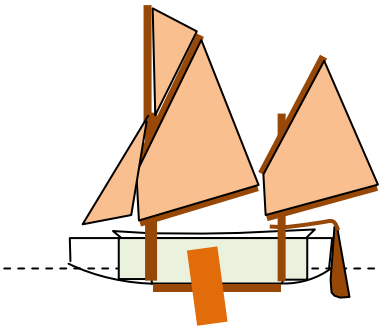
The last of the working Great Lakes Sailing Barges

Thursday 15 January, from 3:15 to 4:15 in 224 Dwyer

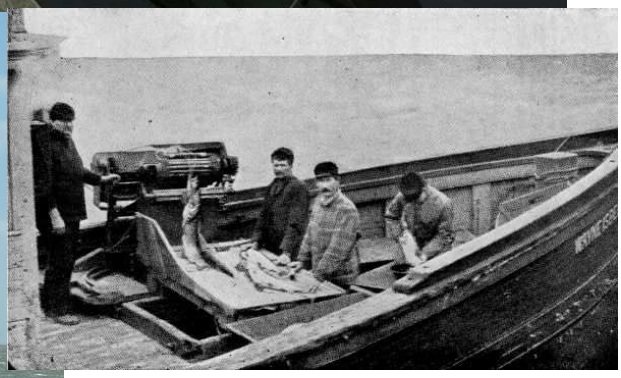
Students, Staff and Faculty welcome



Commercial sailing barges once plied the Great Lakes and European coastal waters. Today, BYBB (Back-Yard-Boat-Builders) are experimenting with low cost ways to build simple wooden boats.



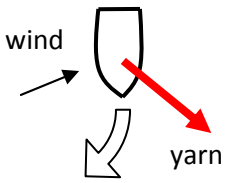
I propose that we construct a dual purpose sailing barge for paleontological expeditions, and also recreational cruising. The design contains a number of innovations that might significantly influence today's BYBB movement by making it easier for novices to build that first boat. Even if nobody copies this design, we can at least hope to build the last Great Lake sailing barge to ever serve as an actual *working* vessel.

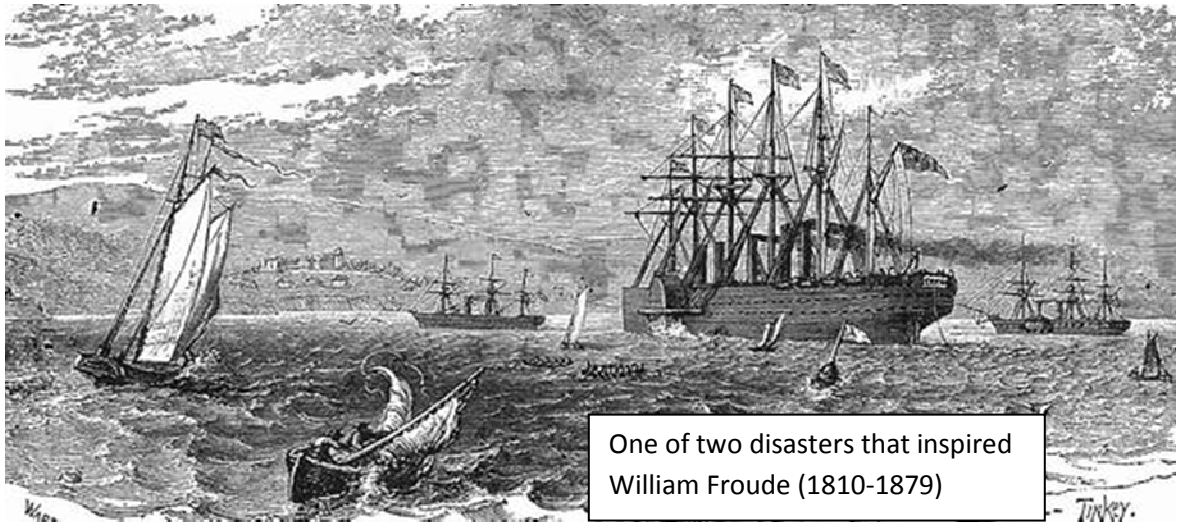


A. Poetic license in flyer
   1. Thames River Barges, not Great Lakes barges are featured.
   2. A Great Lake Barge would never make it to Grand Lake, which is only loosely affiliated with the Great Lakes.
   3. Sail plan depicted on proposed barge is a bit silly
   4. This is more like at novice boatbuilder's *second* boat

B. Factual elements of flyer
   1. Contemporary Thames River barges race annually in England, recreationally I presume
   2. The Great Lakes Sailing Barge in photo is fishing for lake trout
   3. A vibrant BYBB movement exists
      a) See Dave Zeiger's Trilobyte (SIC), the white rectangular barge with birdwatcher cabin.
      b) Nobody has really solved the problem of making an overbuilt boat simply and cheaply. My plan:
         - "Boxy" overbuilt sections simplify construction and snug fitting of Stryofoam blocks (positive flotation).
         - Curved bow and stern sections use lightweight "stitch and glue" construction.
   4. We MIGHT make the last **working** sailing barge ever affiliated with the Great Lakes
   5. We MIGHT make innovations to BYBB that others could copy.
   6. Chuck Ciampaglio wants a barge, and we should build it if we underbid a production boat's cost

C. Is what I do research? Is it appropriate? (My peers are not professors but amateur boatbuilders)
   1. My job interview: Will make boats with kids, publish only if pestered.
   2. My research has **purpose** and **unknown outcome**.
      a) To BYBB (Back Yard Boat Builders) who use only the most primitive methods
         - Mundane: Wood bending rules, polyurethane glue, Styrofoam buoyancy, PVC tubes as low-cost clamps.
         - Design the Folkboat of BYBB: heavy, under-canvased, and cramped … but built like a tank. (Read *Folkboat Story: From Cult to Classic – The Renaissance of a Legend* by Dieter Loibner)
      b) Education purpose is 100% guaranteed!
         - Interdisciplinary effort requires cooperative and communication skills. (sailors, paleontologists, woodworkers, engineers, mathematicians, and even artists!)
         - A great deal of mathematics and physics
   3. Demonstrations of scaling and physical modeling:
      a) Positive buoyancy of a fully loaded barge
      b) Extreme stability of such barge configured for ocean cruising.
      c) Froude scaling ($Fr = v/\sqrt{gL}$) tells us that a big boat acts like a small model in slow motion. (See movie clip of what a 30 ft box would do)
      d) The weather helm: A gust of wind turns the boat to a safer direction





One of two disasters that inspired William Froude (1810-1879)