

Conservation protection for Cashes Ledge

Witman Lab at Brown University

Background

Cashes Ledge is one of the most diverse and least impacted hard substrate ecosystems in the Gulf of Maine.

Cashes Ledge is a submarine ridge located in the central Gulf, approximately 80 miles offshore. The 15 kilometer long ridge runs mostly parallel to the coast and is comprised of widely spaced pinnacles and knolls, with average depths of 28 to 40 m. It is typified by diverse terrain and substrates, ranging from banks, rocky peaks, and channels to a complex substrate of mud, gravel, sand, and bedrock. Among its defining features is one of the largest and deepest kelp forests in the Gulf of Maine.

The offshore location and steepness of the site create a unique environment, where strong currents mix deep cold water with shallow warmer water that contacts the rocky bottom within the photic zone. The result is a highly productive location for prey organisms like algae and plankton, and a habitat dominated by predatory fish such as cod, pollock, cusk and wolfish. Cashes Ledge supports vibrant bottom dwelling communities of bright orange, red and yellow sponges, sub-arctic species of sea stars, brittle and feather stars, sea squirts, sea pens, sea anemones, worms, northern shrimp, horse mussels and myriad encrusting bryozoans.

Our early work (1980's) found that the Cashes Ledge ecosystem was like a time capsule harkening back to the 1600's when cod were extremely plentiful, as we found that over 200 cod visited a 2 m² area of the bottom in an hour there while virtually no cod were observed at the same depth in the coastal zone.

The value of Cashes Ledge habitat has been recognized by the New England Fishery Management Council, as it has designated a large portion of Cashes Ledge as Essential Fish Habitat for species such as Atlantic cod, haddock, pollock, monkfish, American plaice, white hake, witch flounder, and halibut, but it has yet to receive permanent and lasting protection.

How we're doing it

We are working in collaboration with acclaimed National Geographic underwater photographer, [Brian Skerry](#) and the [Conservation Law Foundation](#) to establish permanent and lasting protection for Cashes Ledge. This effort is led by CLF, as the foundation has received critical funding from the Waitt Foundation to support the protection of Cashes Ledge.

With the help of University of New Hampshire dive supervisor Liz Kintzing, we made several dive trips to Cashes in 2012 on UNH's RV Gulf Challenger (photo) to photograph the [unique marine life](#) and to initiate a preliminary study of changes in the kelp forest, fish predation pressure and benthic communities there.

Future research on the kelp forest will be synchronized with the [Kelp Ecosystem Ecology Network](#).