

Survivability of Recompressed Barotraumatized Groundfish Bycatch in the Maine Lobster Fishery

Jocelyn Runnebaum

Research Abstract

Non-targeted species account for an estimated one-quarter of the world's fisheries catch, leading to wasted valuable resources, a potential threat to rare or endangered species, and unaccounted fishing pressure on exploited stocks. Bycatch species in the Maine lobster fishery include Atlantic cod (*Gadus morhua*) and cusk (*Brosme brosme*). Both species are reported to be low in abundance in the Gulf of Maine, Atlantic cod is designated as overfished and cusk is listed as a species of concern. Atlantic cod and cusk are subject to barotrauma when quickly brought to the surface by lobster traps; rapid surfacing of these bottom dwelling, physoclistic species causes them to become positively buoyant and induces physical trauma. Currently, cod and cusk are discarded at the surface but face the challenge of returning to pressure on their own. Past research has demonstrated that recompression through re-submersion of barotraumatized fish increases their chance of survival. Lobster traps are being tested as a mechanism for recompression of incidentally caught cusk and cod. Discarded cusk and cod will float at the surface making them vulnerable to predators. To increase survivability and aid in recompression cod and cusk are placed in the front part of the trap or the "kitchen" to be redeployed with the trap. Participating lobstermen have seen success in cusk surviving recompression via traps. Barotrauma manifests internally and externally; physical symptoms include everted stomach, exophthalmia or "bug eyes", bubbles on the eyes, and skin blistering. Occurrences of physical symptoms are not an indication of survival, but time at surface and temperature are thought to be the biggest indicators of survival. Nine lobstermen from South Bristol, Booth Bay Harbor, and Jonesport have currently volunteered to record catch data on cusk incidentally caught in lobster traps while fishing offshore. This information will be used to target future cusk barotrauma research in the area pending available funds. A detailed report will be posted when it becomes available.