



Ask the lobster doc

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This column provides lobster health and handling information.

If you have questions or concerns, contact Cowan at (207) 832-8224 or e-mail <dcowan@lobsters.org>.

Lobster tracking project update

The Lobster Conservancy and a group of lobstermen in Friendship, ME are involved in a unique research project tracking the movements of egg-bearing female lobsters.

The purpose of the Lobster Sonar Tracking Project is to investigate where and at what temperatures female lobsters spawn (egg out), carry (brood), and hatch their eggs (release larvae) and to test the Inshore Brood Stock Hypothesis.

Lobsters generally spawn during late summer; brood their eggs for 9–12 months; then hatch their eggs the following spring and summer. The Inshore Brood Stock Hypothesis makes predictions about where spawning, brooding, and hatching will occur and relates reproductive behavior to animal size and environmental covariates such as temperature.

Prevailing views are that female lobsters migrate to deeper, warmer water in winter to achieve a temperature advantage for incubating their eggs. Our results suggest that shallow/deep water migrations only explain part of the story and that female lobsters that move to deeper warmer water do not necessarily brood their eggs for a shorter period of time. In addition, the female lobsters that traveled the longest distances did not experience the warmest water temperatures.

The biggest gaps in knowledge lie in where the females hatch their eggs — a critical piece of information for understanding larval dispersal.

Approximately 200 recently spawned female lobsters were tagged with a transmitter, identification tag, and temperature data logger in fall 2002. Lobstermen tracked the lobsters by detecting their locations using a hydrophone and by recapture in traps. Temperature data were recovered when

lobsters were recaptured in summer 2003.

Preliminary results reveal that approximately one-third of the tagged females remained within 1.2 miles of the original capture location (coldest winter temperatures), one-third remained within 18 miles (warmest winter temperatures), and the other one-third traveled distances up to 100 miles and experienced intermediate winter temperatures. The long-distance travelers were recaptured in Massachusetts.

Multiple recaptures of female lobsters reveal that they are traveling while they are hatching their brood. The behavior of walking then hatching, then walking, then hatching results in broadcasting the lobster larvae over a broad geographical range — a great dispersal strategy that avoids putting all of the eggs in one basket.

To further cover all dispersal possibilities the inshore brood stock lobsters appear to be engaging in at least three separate strategies that can be summarized as follows:

- Resident brooders: Spawn, brood, and hatch the eggs in same inshore location;
- Transient brooders: Spawn in shallow water near shore, brood in closest available deep water, and hatch while they are returning; and
- Migrant brooders: Spawn inshore, travel great distances while brooding, then may or may not return.

Many thanks to all of the lobstermen who have participated in this project by tracking lobsters, reporting recapture information, and/or returning temperature and sonar tags from lobsters captured at least 9 months after release. The project is sponsored by the Northeast Consortium.

We have tagged another batch of lobsters this year: this time both males and females. Please report recaptures to The Lobster Conservancy at (207) 832-8224 or <dcowan@lobsters.org>. ■