

Spawning Literature Summary Table

	Identified Spawning Locations	Habitat Area Location/Characteristics	Spawning Notes	Habitat Notes
Cod	<p>Gulf of Maine: Ames Study Areas (Ames 2004). Ipswich Bay (specific spawning aggregation at Whaleback feature)(Siceloff and Howell 2012). Cape Cod Bay, western Maine coast, Jeffries Ledge and Northern Mass. Bay (Deese 2005 and Dean et al. 2012).</p> <p>Georges Bank: concentrated in the Northeast area (mostly gravel and complex relief levels)(Berlinsky 2009).</p>	<p>Juveniles (age 0-1) prefer gravel substrates with lower bathymetric relief (Gregory et al. 1997)</p> <p>Older and larger cod would move to coarse substrates with higher bathymetric relief, such as humps and ridges (Gregory et al. 1997).</p> <p>Ipswich Bay, Mass. Bay and Cape Cod Bay (Howe et al 2002).</p> <p>Spread across Georges Bank in early summer, constant concentration in NE Georges Bank (Lough 2010).</p>	<p>Spring spawning in northern GOM (Berlinsky 2009).</p> <p>Fall spawning in inshore areas from Cape Cod to Nantucket Shoal (Deese 2005).</p> <p>Winter spawning in southern GOM and Coxes Ledge (Deese 2005).</p> <p>Spring and winter spawning in western GOM (Berlinsky 2009).</p> <p>Peak Georges Bank spawning activity occurs in February-March (Lough 2010)</p>	<p>Age 0 cod prefer shallower depths (<90') and move to deeper waters both in autumn and as they grow older (Howe et al. 2002)</p> <p>Young juveniles would hide in cobble to avoid predators, and would partially remain after the threat was removed (Gotceitas and Brown, 1993).</p>
Haddock	<p>Georges Bank: Concentrated in Eastern and Northeastern areas (Overholtz 1987).</p>	<p>Spread throughout Georges Bank</p>	<p>Peak spawning in Georges Bank from late March-early April (Overholtz 1987)</p> <p>Ideal temperatures from 4-7°C at depths from 28-110' (Overholtz 1987)</p>	<p>As pelagic juveniles grow, they move deeper in the water column (Lough and Potter 1994).</p>
Yellowtail Flounder		<p>Eastern Georges Bank, specifically within Closed Area II. (Pereira et al 2012)</p>		<p>Occupied area in Georges Bank doubled from ~4000 to ~8000 km² when abundance increased (Pereira et al 2012)</p>
Winter Flounder	<p>Plymouth Bay (minor activity in Plymouth Estuary) (DeCelles and Cadrin 2010)</p>		<p>Peak spawning in March-May in the Plymouth Bay (DeCelles and Cadrin 2010)</p>	

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Sources

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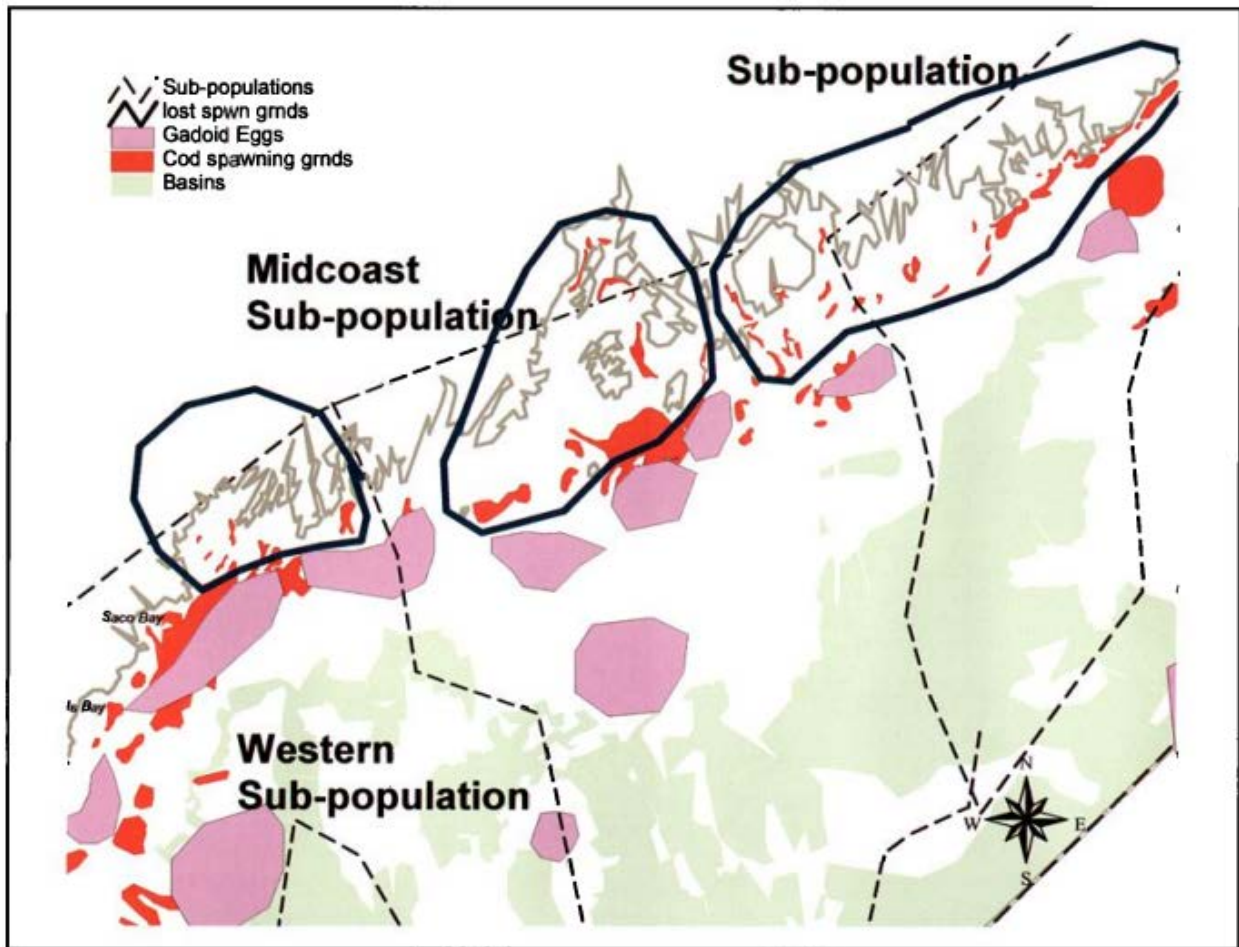


Figure 1. Map of indicated cod spawning areas. Circled areas indicate former spawning grounds that are no longer active. Ames, 2004.

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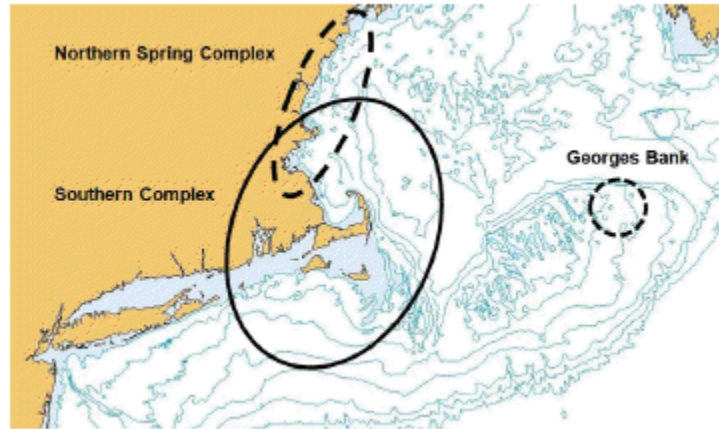


Figure 2. Proposed cod spawning complexes. Berlinsky, 2005.

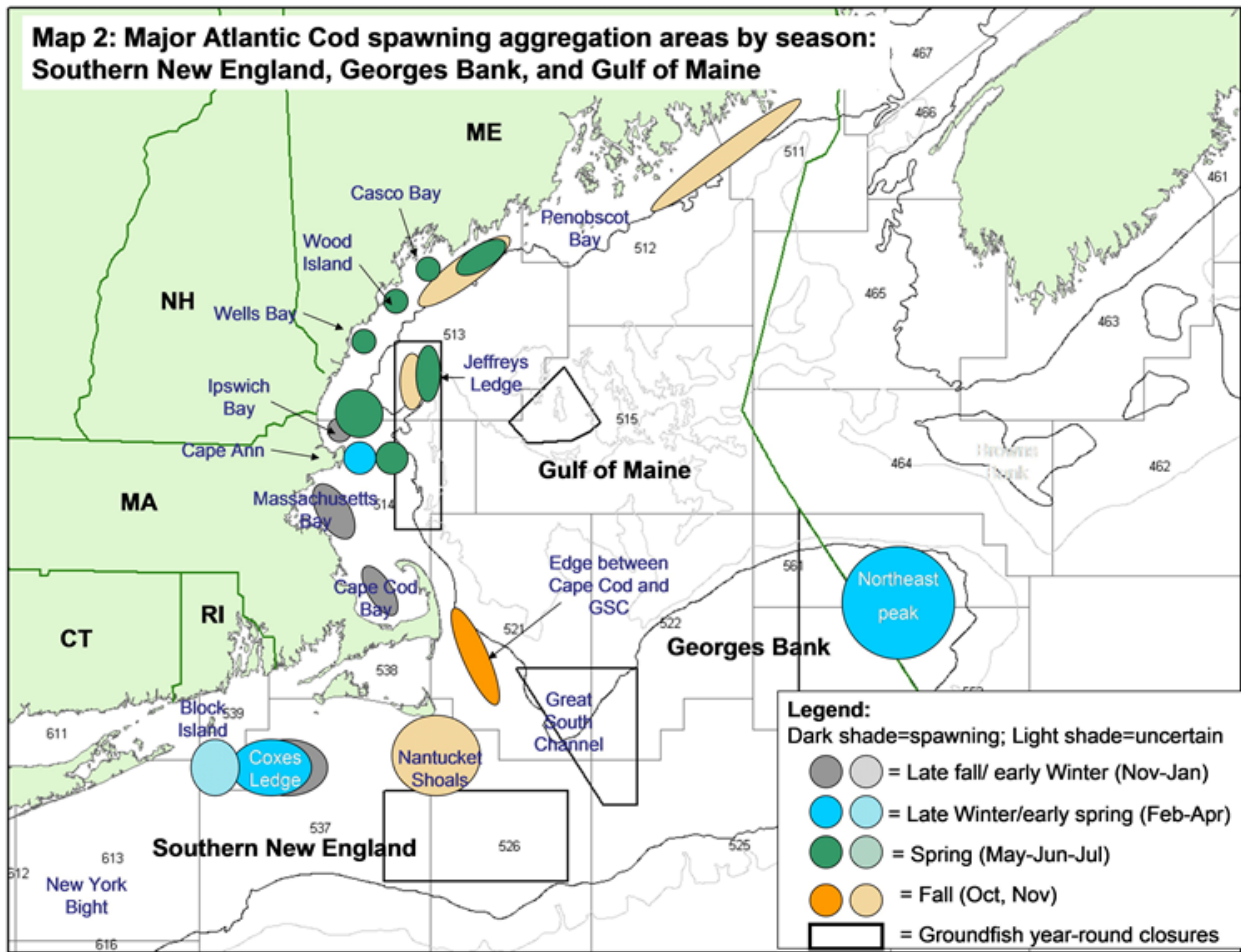


Figure 3. Summary of cod spawning areas. Deese, 2005.

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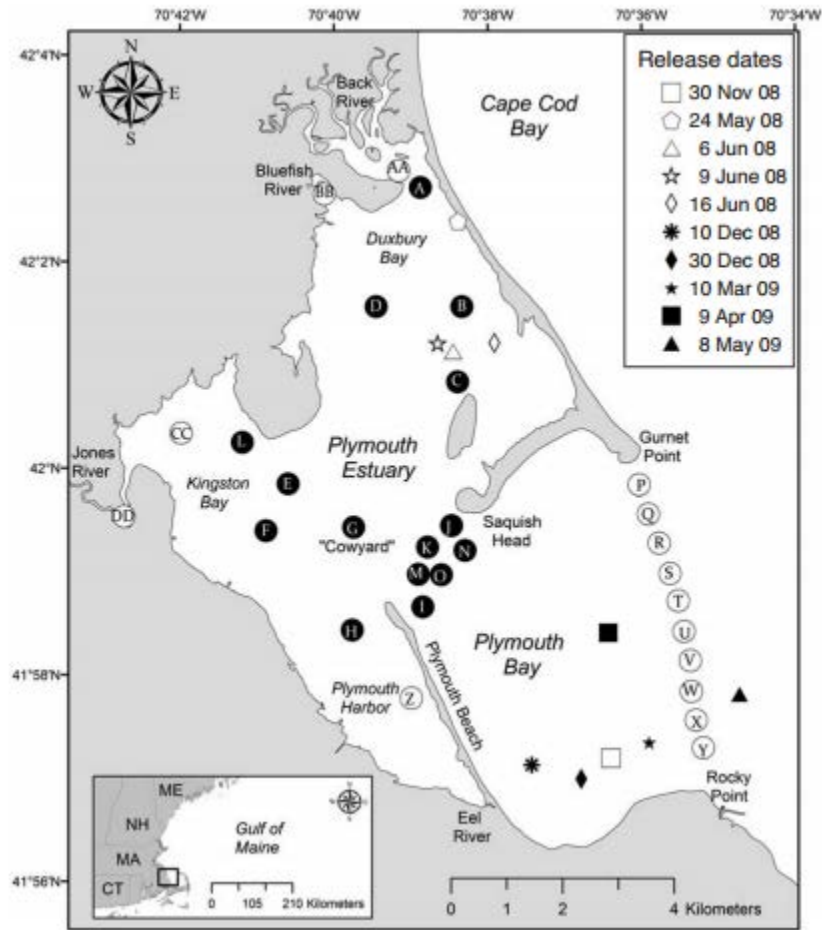


Figure 4. Map of the study site showing the locations of Plymouth Bay and Plymouth Estuary in the Gulf of Maine where winter flounder were tracked with passive acoustic telemetry. DeCelles and Cadrin, 2010.

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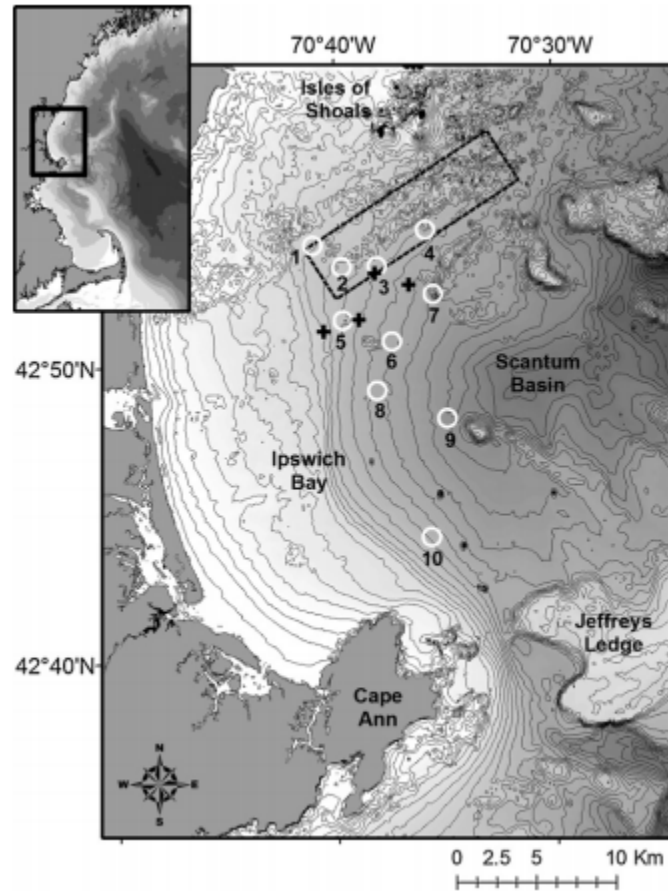


Figure 5. Bathymetric map of Ipswich Bay. Black dotted rectangle highlights the elevated bathymetric feature "Whaleback". Siceloff and Howell, 2012.