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Natal Homing in a Marine Fish Metapopulation

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Abstract

Identifying natal origins of marine fishes is challenging because of difficulties in conducting mark-recapture studies in marine systems. We used natural geochemical signatures in otoliths (ear bones) to determine natal sources in weakfish (*Cynoscion regalis*), an estuarine-spawning marine fish, in eastern North America. Spawning site fidelity ranged from 60 to 81%, comparable to estimates of natal homing in birds and anadromous fishes. These data were in contrast to genetic analyses of population structure in weakfish. Our findings highlight the need for consideration of spatial processes in fisheries models and have implications for the design of marine reserves in coastal regions.