Woods Hole Oceanographic Institution

Biology Department Seminar

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Redfield Auditorium – 12:00 Noon

Multi-sensory guidance of homing in a coral reef fish leads to population structure

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In 1998 the prevalent view of reef fish dispersal was that their staple-sized larvae were carried wherever the current flowed, incapable of influencing their settlement success. A careful look at their brains and senses would have suggested otherwise and 15 years later that suggestion has become common belief. I will review the example of "dodo", the cardinal fish Ostorhynchus doederleini at One Tree Island. Its larvae have navigation capabilities using an imprinted olfactory map and a time-compensated sun compass that can assist them in homing. Despite mostly non-overlapping annual populations in this short-lived fish, homing and possible selection against "foreigners" we found genetic population structure at a 3-10km scale. Aggression against unfamiliar conspecifics based on visual and olfactory social recognition may enforce further fine-scale "tribal" structure during and after settlement.