Shoreward swimming boosts modeled nearshore larval supply and pelagic connectivity in a coastal upwelling region

Patrick T. Drake, Christopher A. Edwards, Steven G. Morgan, Erin V. Satterthwaite

PII: S0924-7963(17)30495-5
DOI: doi:10.1016/j.jmarsys.2018.07.004
Reference: MARSYS 3105

To appear in: *Journal of Marine Systems*

Received date: 8 December 2017
Revised date: 16 May 2018
Accepted date: 5 July 2018

Please cite this article as: Patrick T. Drake, Christopher A. Edwards, Steven G. Morgan, Erin V. Satterthwaite , Shoreward swimming boosts modeled nearshore larval supply and pelagic connectivity in a coastal upwelling region. Marsys (2018), doi:10.1016/j.jmarsys.2018.07.004

Shoreward swimming boosts modeled nearshore larval supply and pelagic connectivity in a coastal upwelling region

by Patrick T. Drake[a,*], Christopher A. Edwards[a], Steven G. Morgan[b,c] and Erin V. Satterthwaite[b,c]

[a]Ocean Sciences Department, University of California Santa Cruz, 1156 High Street, Santa Cruz, CA 95064, USA

[b]Bodega Marine Laboratory, University of California Davis, P. O. Box 247, Bodega Bay, CA 94923, USA

[c]Department of Environmental Science and Policy, University of California Davis, One Shields Avenue, Davis, CA 95616, USA

[*]corresponding author. email: pdrake@ucsc.edu

keywords: larval transport; dispersal; population connectivity; horizontal swimming; California Current; larval supply

Declarations of interest: none.

Highlights:

Shoreward swimming speeds of 1-7 cm s^{-1} increase nearshore larval supply by a factor of 1.4-13

Nearshore larval supply increases linearly with onshore swimming speed

Spatial patterns of pelagic connectivity are similar with and without shoreward swimming

Reverse connectivity reveals Monterey Bay and the Gulf of the Farallones to be important source regions