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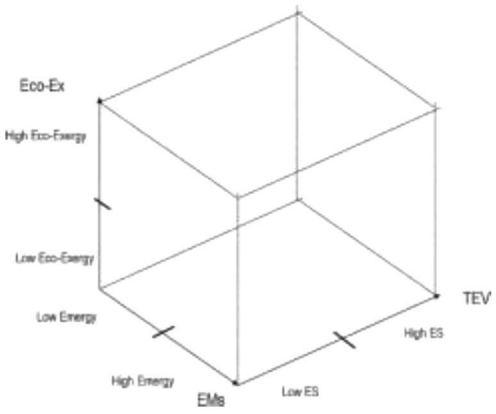
Graphical abstract



Highlights

► We model groups of animals composed of different ratios of blind zones. ► We measure the emergent movement of homogeneous and heterogeneous groups. ► Groups with a 60 degree blind zone had anomalous behaviors. ► In homogeneous groups, increased blind zones led to groups that were: smaller, longer, and denser. ► In heterogeneous groups, increased sum of blind zones predicted groups that were: smaller, longer, and denser.z

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Sensitivity analysis and pattern-oriented validation of TRITON, a model with alternative community states: Insights on temperate rocky reefs dynamics

Original Research Article

Pages 16-32

Martin P. Marzloff, Craig R. Johnson, L. Rich Little, Jean-Christophe Soulié, Scott D. Ling, Stewart D. Frusher

Highlights

► We develop a model of Tasmanian rocky reefs with alternative community states. ► Through a model-independent sensitivity analysis, we identify influential parameters. ► We address model uncertainty to adopt a robust modelling framework prior to its application. ► The model is validated and calibrated against patterns observed across Tasmanian reefs. ► The model helps to discern among management options in response to urchin overgrazing.

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Migration and niche partitioning simultaneously increase species richness and rarity

Original Research Article

Pages 33-39

Dexiecuo Ai, Chengjin Chu, M.D. Farnon Ellwood, Rui Hou, Gang Wang

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An individual-based model for the migration of pike (*Esox lucius*) in the river Yser, Belgium

Original Research Article

Pages 40-52

J.M. Baetens, S. Van Nieuland, I.S. Pauwels, B. De Baets, A.M. Mouton, P.L.M. Goethals

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The mean function provides robustness to linear inverse modelling flow estimation in food webs: A comparison of functions derived from statistics and ecological theories

Original Research Article

Pages 53-64

B. Saint-Béat, A.F. Vézina, R. Asmus, H. Asmus, N. Niquil

Highlights

► MCMC-LIM is a method for estimating possible values for all flows within a food web. ► The question is then how to determine the best solution among possible values. ► Robustness was tested for 3 statistical and 7 ecological goal functions for this choice. ► The mean function was the most robust and we recommend its use in future research.

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Contrasting specialization–stability relationships in plant–animal mutualistic systems

Original Research Article

Pages 65-73

Gita Benadi, Nico Blüthgen, Thomas Hovestadt, Hans-Joachim Poethke

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Interactions at large spatial scale: The case of *Centris* bees and floral oil producing plants in South America

Original Research Article

Pages 74-81

T.C. Giannini, C.E. Pinto, A.L. Acosta, M. Taniguchi, A.M. Saraiva, I. Alves-dos-Santos

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Simulation modelling of dissolved organic matter removal in a free water surface constructed wetland

Original Research Article

Pages 82-90

Thiwari Ophithakorn, Chaisri Suksaroj, Thunwadee Tachapattaworakul Suksaroj

Highlights

► A zooplankton growth submodel was integrated into a management oriented model. ► Calibration against observed data presented for zooplankton growth submodel. ► Increasing model complexity mitigated instability, challenging paradox of enrichment. ► Found post-gut regulation scheme to reduce sedimentation of non-limiting nutrient.