Coral Reef Ecology - Primary Literature

Biology 252 – 2005

Course Objectives -

The main objective of this course is to allow you an in-depth look at the questions coral reef ecologists ask. This perspective and working vocabulary will allow you to gain more from your Bio 254 experience off campus in June.

If you have never been required to deal with primary literature, this introduction will help develop your reading and thinking skills. You will be reading and thinking about articles written by marine biologists for marine biologists ... by doing so you are thus becoming more of a scientist yourself.

Class Format

This class will meet once for one-two hours per week throughout the term. We will all read the assigned papers. Each week a pair of you will present/critique the assigned paper. When it is not your week to present a paper, you are expected to provide written responses, i.e., a question and a comment/critique, about each of these papers, which reflect a thorough wrestling with the material. Written responses not complete at the beginning of class will receive zero credit; there will be no exceptions to this.

There will be a final, written exam at the completion of the course. You will be asked to submit questions for this exam.

Evaluation -

The nature of this course is such that much of the evaluation of you will be subjective. It will be apparent if you have not carefully read the assigned papers. Similarly, your contribution to the class through comments and questions will also be assessed.

In terms of assigning grades, the following point scheme will be used:

Weekly question, comment (10 pts each)	110
Subjective evaluation [1]	50
Final Exam	100
	260

Grades will be assigned on a 90%, 80%, 70%, etc. scale. If you earn 90% of the possible points you will receive at least an "A-", etc.

The papers we will read are listed below. You should have ample time to prepare your critique of each. We will determine presentation dates by random draw before our "first meeting".

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[1] This evaluation will be based on presentation of your article, your class participation and the value of your comments.

Schedule

Date	Paper
Jan. 24	Barber, R.T., A.K. Hilting, and M.L. Hayes. 2001. The changing health of coral reefs. Human and Ecological Risk Assessment 7:1255-1270. (on reserve)
Jan. 31	Hughes, T.P. 1994. Catastrophes, phase shifts, and large-scale degradation of a Caribbean coral reef. Science 265:1547-1551. (WebCT)
	Williams, I.D., and N.V.C. Polunin. 2001. Large-scale associations between macroalgal cover and grazer biomass on mid-depth reefs in the Caribbean. Coral Reefs 19:358-366. (WebCT)
Feb. 7	Hoegh-Guldberg, O. 1999. Climate change, coral bleaching and the future of the world's coral reefs. Mar. Freshwat Res. 50:839-866. (WebCT)
	Fitt, W.K., B.E. Brown, M.E. Warner, and R.P. Dunne. 2001. Coral bleaching: Interpretation of thermal tolerance limits and thermal thresholds in tropical corals. Coral Reefs 20:51-65.(WebCT)
Feb. 14	Lirman, D. 1994. Ontogenetic shifts in habitat preferences in the three-spot damselfish, *Stegastes planifrons* (Cuvier), in Roatan Island, Honduras. J. Exp. Mar. Bio. and Ecol. 180:71-81. (on reserve)
	Cheney, K.L. and I.M. Cote. 2001. Are Caribbean cleaning symbioses mutualistic? Costs and benefits of visiting cleaning stations to longfin damselfish. Animal Behaviour 62:927-933.
Feb. 28	Hallock, P., H.K. Talge, E.M. Cockey, and R.G. Muller. 1995. A new disease in reef-dwelling foraminifera: implications for coastal sedimentation. J. of Foramin. Research 25:280-286. (on reserve)
	Collen, J.D. and D.W. Garton. 2004. Larger foraminifera and sedimentation around Fongafale Island, Funafuti Atoll, Tuvalu. Coral Reefs 23:445-454. (WebCT)
Mar. 14	Andrefouet, S. and B. Riegl. 2004. Remote sensing: A key tool for interdisciplinary assessment of coral reef processes. Coral Reefs 23:1-4.(WebCT) Naseer, A., and B.G. Hatcher. 2004. Inventory of the Maldives' coral reefs using morphometrics generated from Landsat ETM+ imagery. Coral Reefs 23: 161-168. (WebCT)
	Long, B.G., G. Andrews, You-Gan Wang, and Suharsono. 2004. Sampling accuracy of reef resource inventory technique. Coral Reefs 23:378-385. (WebCT)
Mar. 21	Harvell, C.D. et al. 1999. Emerging marine diseases- climate links and anthropogenic factors. Science 285:1505-1510. (WebCT)
	Borger, J.L. 2004. Dark spot syndrome: A scleractinian coral disease or a general stress response? Coral Reefs (Published online: 1 October 2004) (WebCT)
Mar. 28	Leclerq, N, J. Gattuso, J. Jaubert. CO_2 partial pressure controls the calcification rate of a coral community. Global Change Biol. 6:329-334.
	Kawahata, H., A. Suzuki, and K. Goto. 1997. Coral reef ecosystems as a source of atmospheric CO_2: Evidence from PCO_2 measurements of surface waters. Coral Reefs 16:261-266. (WebCT)

Apr. 4 Miller, R.J., A.J. Adams, N.B. Ogden, J.C. Ogden, and J.P. Ebersole. 2003. *Diadema antillarum* 17 years after mass mortality: Is recovery beginning on St. Croix? Coral Reefs 22: 181-187 (WebCT)

Acosta, C.A., and D.N. Robertson. 2003. Comparative spatial ecology of fished spiny lobsters *Panulirus argus* and an unfished congener *P. guttatus* in an isolated marine reserve at Glover's Reef atoll, Belize. Coral Reefs 22:1-9. (WebCT)

Apr. 11 Littler, M.M., D.S. Littler, and P.R. Taylor. 1995. Selective herbivore increases biomass of its prey: a chiton-coralline reef-building association. Ecology. 76:1666-1681. (WebCT)

Apr. 18 Ellison, A., E. J. Farnsworth, and R.R. Twiley. 1996. Facultative mutualism between red mangroves and root-fouling sponges in Belizean mangal. Ecology 77:2431-2444. (WebCT)

Apr. 25 Forest, N.B. 1998. Assessment of coastal regulations and implementation: Case study of Roatan, Bay Islands, Honduras. Coastal Management 26:125-155 (on reserve)

Final Exam