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**CHRISTOPHER COSTELLO**  
**University of California, Santa Barbara**

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## DEGREES

- Ph.D. Agricultural & Resource Economics, University of California, Berkeley. 2000.
- M.S. Agricultural & Resource Economics, Oregon State University. 1996.
- B.S. Environmental Economics and Policy, University of California, Berkeley. 1994.

## AREAS OF SPECIAL INTEREST

Environmental and resource economics, dynamic optimization, decision-making under uncertainty.

## TOPICAL AREAS OF INTEREST

Incomplete property rights, fisheries, biodiversity, land-use, marine policy, climate change adaptation.

## JOURNAL PUBLICATIONS

- C. Costello, M. Neubert, S. Polasky, and A. Solow. Bounded uncertainty and climate change economics. *Proceedings of the National Academy of Sciences*, Forthcoming, 2010.
- C. Costello, J. Lynham, S. Gaines, and S. Lester. Economic incentives and global fisheries sustainability. *Annual Reviews of Resource Economics*, Forthcoming, 2010.
- C. Costello and D. Kaffine. Marine protected areas in spatial property rights fisheries. *Australian Journal of Agricultural and Resource Economics*, Forthcoming, 2010.
- C. White and C. Costello. Matching spatial property rights fisheries with the scale of fish dispersal. *Ecological Applications*, Forthcoming, 2010.
- C. Costello, A. Rassweiler, D. Siegel, G. De Leo, F. Micheli, and A. Rosenberg. The value of spatial information in MPA network design. *Proceedings of the National Academy of Sciences*, Forthcoming, 2010.
- S. Lester, C. McLeod, H. Tallis, M. Ruckelshaus, B. Halpern, P. Levin, F. Chavez, C. Pomeroy, B. McCay, C. Costello, S. Gaines, A. Mace, J. Barth, D. Fluharty, and J. Parrish. Science in support of ecosystem-based management for the US West Coast and beyond. *Biological Conservation*, 143:576–587, 2010.
- B. McGough, A.J. Plantinga, and C. Costello. Harvesting a stochastic renewable resource under general economic conditions. *BE Journal of Economic Analysis and Policy (Contributions)*, 9:56, 2009.
- B. Worm, R. Hilborn, J.K. Baum, T.A. Branch, J.S. Collie, C. Costello, M.J. Fogarty, E.A. Fulton, J.A. Hutchings, S. Jennings, et al. Rebuilding global fisheries. *Science*, 325(5940):578–585, 2009.
- J. Lynham, C. Costello, S. Gaines, R. Grafton, and J. Prince. Diverse fisheries require diverse solutions: response. *Science*, 323:338–339, 2009.
- J. Blackwood, A. Hastings, and C. Costello. Cost-effective management of invasive species using linear-quadratic control. *Ecological Economics*, 2009.
- C. Costello and S. Gaines. Can catch shares save fisheries? *Resources for the Future, Weekly Policy Commentary Series*, 80:1–3, May 2009.

- C. Costello, S.D. Gaines, and J. Lynham. Can Catch Shares Prevent Fisheries Collapse? *Science*, 321(5896):1678, 2008.
- C. Costello and S. Polasky. Optimal harvesting of stochastic, spatial resources. *Journal of Environmental Economics and Management*, 56:1–18, 2008.
- D.A. Siegel, S. Mitarai, C. Costello, S. Gaines, B. Kendall, R.R. Warner, and K.B. Winters. Connectivity among nearshore marine ecosystems: the stochastic nature of larval transport. *Proceedings of the National Academy of Sciences*, 105:8974–8979, 2008.
- R. Deacon, C. Costello, and D. Parker. Improving efficiency by assigning harvest rights to fishery cooperatives: evidence from the chignik salmon co-op. *Arizona Law Review*, 50(2):479–509, 2008.
- C. Costello and D. Kaffine. Natural resource use with limited-tenure property rights. *Journal of Environmental Economics and Management*, 55(1):20–36, 2008.
- C. Costello and R. Deacon. The Efficiency Gains from Fully Delineating Rights in an ITQ Fishery. *Marine Resource Economics*, 22:347–361, 2007.
- C. White, B.E. Kendall, S. Gaines, D.A. Siegel, and C. Costello. Marine reserve effects on fishery profit. *Ecology Letters*, (0), 2008.
- C. Costello, M. Springborn, C. McAusland, and A. Solow. Unintended biological invasions: does risk vary by trading partner? *Journal of Environmental Economics and Management*, 54(3):262–276, 2007.
- C. Costello, J. Drake, and D. Lodge. Evaluating an invasive species policy: ballast water exchange in the great lakes. *Ecological Applications*, 17(3):655–662, 2007.
- C. Costello and M. Ward. Search, bioprospecting and biodiversity conservation. *Journal of Environmental Economics and Management*, 52(3):615–626, 2006.
- F. Davis, D. Stoms, and C. Costello. Efficient conservation in a utility maximization framework. *Ecology and Society*, 11(1):Article 33, 2006.
- J. Drake, C. Costello, and D. Lodge. When did the discovery rate for invasive species in the North American Great Lakes accelerate? *Bioscience*, 55:4, 2005.
- C. Costello. Review of: “The Wealth of Nature: How Mainstream Economics has Failed the Environment”. *Journal of Economic Literature*, 43(1):194, 2005.
- G. Sethi (co lead), C. Costello (co lead), A. Fisher, L. Karp, and M. Hanemann. Fishery management with multiple uncertainty. *Journal of Environmental Economics and Management*, 50(2):300–318, 2005.
- J. Stranlund, C. Costello, and C. Chavez. Enforcing emissions trading when emissions permits are bankable. *Journal of Regulatory Economics*, 28(2):181–204, 2005.
- C. McAusland and C. Costello. Avoiding invasives: trade related policies for controlling unintentional exotic species introductions. *Journal of Environmental Economics and Management*, 48:954–977, 2004.
- S. Polasky, C. Costello, and C. McAusland. On trade, land use, and biodiversity. *Journal of Environmental Economics and Management*, 48:911–925, 2004.
- A. Solow and C. Costello. Estimating the rate of species introductions from the discovery record. *Ecology*, 85:1822–1825, 2004.
- C. Costello and L. Karp. Dynamic taxes and quotas with learning. *Journal of Economic Dynamics and Control*, 28:1661–1680, 2004.

- C. Costello and S. Polasky. Dynamic reserve site selection. *Resource and Energy Economics*, 26:157–174, 2004.
- C. Costello and C. McAusland. Protectionism, trade, and measures of damage from exotic species introductions. *American Journal of Agricultural Economics*, 85(4):964–975, 2003.
- A. Solow, C. Costello, and M. Ward. Testing the power law model for discrete size data. *American Naturalist*, 162(5):685–689, 2003.
- A. Moledina, J. Coggins, S. Polasky, and C. Costello. Dynamic environmental policy with strategic firms: prices versus quantities. *Journal of Environmental Economics and Management*, 45(2S):356–376, 2003.
- P. Berck, C. Costello, S. Hoffmann, and L. Fortman. Poverty and employment in forest dependent counties. *Forest Science*, 49(5):763–777, 2003.
- C. Costello and A. Solow. On the pattern of discovery of introduced species. *Proceedings of the National Academy of Sciences*, 100(6):3321–3323, 2003.
- A. Solow and C. Costello. A test for declining diversity. *Ecology*, 82(8):2370–2372, 2001.
- C. Costello, S. Polasky, and A. Solow. Renewable resource management with environmental predictions. *Canadian Journal of Economics*, 34(1):196–211, 2001.
- A. Solow, C. Costello, and A. Beet. On an early result on stability and complexity. *American Naturalist*, 154(5):587–588, 1999.
- C. Costello, R. Adams, and S. Polasky. The value of El Niño forecasts in the management of salmon: a stochastic dynamic assessment. *American Journal of Agricultural Economics*, 80:765–777, 1998.

## BOOK CHAPTERS

- Michael Springborn, Christopher Costello, and Peyton Ferrier. *Optimal random exploration for trade-related nonindigenous species risk*. Bioinvasions & Globalization, Ecology, Economics, Management, and Policy; editors: C. Perrings, H. Mooney, and M. Williamson. Oxford University Press, 2010.
- Christopher Costello, Chad Lawley, and Carol McAusland. *Pre-empting NIS introductions: targeting policy*, volume 1 of *Handbook on Trade and the Environment*, editor: Kevin Gallagher. Edward Elgar Publishing, 2008.
- Steve Polasky, Christopher Costello, and Andrew Solow. *The Economics of Biodiversity*, volume 3 of *The Handbook of Environmental Economics*, editors: K. G. Maler and J. Vincent, series editors: K. Arrow and M. Intriligator. North Holland, Amsterdam, 2004.
- Christopher Costello, Nicholas Burger, Kathy Galvin, Ray Hilborn, and Steve Polasky. *Dynamic Consequences of Human Behavior in the Serengeti Ecosystem*. Serengeti III: Human Impacts on Ecosystem Dynamics, editors: A.R.E. Sinclair, C. Packer, S. Mduma, and J. Fryxell. Chicago Press, 2007.
- Robert Deacon and Christopher Costello. *Strategies for enhancing rent capture in an ITQ fishery*, volume Forthcoming of *Advances in Property Rights Based Fisheries Management*. 2008.

## AWARDS, HONORS, AND POSITIONS

- Member of Board of Directors *Association of Environmental and Resource Economists (AERE)*.  
2010-Present.

Senior Scientist *Communication Partnership for Science and the Sea (COMPASS)*. 2009-Present.  
Advisory Committee *UC Natural Reserve System*. 2009-Present.  
Faculty Research Fellow *National Bureau of Economic Research*. 2008-Present.  
Co-Editor *Journal of Environmental Economics & Management*. July 2007-October 2009.  
Member of *Marine Life Protection Act Science Advisory Team*. 2007-Present.  
Member of *Ocean Protection Council Science Advisory Team*. 2008-Present.  
Member of *California Current Ecosystem Based Management Initiative Science Advisory Team*.  
2007-2009.  
Member of Editorial Council - *Journal of Environmental Economics & Management*. January 2004-June  
2007.  
Member of *Marine Life Protection Act Baseline Science-Management Panel*. 2006-2007.  
Member of University of California Energy Institute Advisory Committee. 2006-2008.  
Distinguished Faculty Teaching Award - Bren School, UCSB '02-'03.

## TEACHING EXPERIENCE

Ph.D. Students Matriculated as Primary Advisor, (first job in parenthesis)

- John Lynham, Economics Department (co-advised with Bob Deacon), 2008 (Tenure Track, U. Hawaii Manoa)
- Mike Springborn, Bren School, 2008 (Tenure Track, UC Davis)
- Marc Conte, Bren School, 2008 (Post Doctoral Researcher, Stanford University)
- Antonio Lloret, Bren School, 2007 (Tenure Track, ITAM Business School, Mexico City)
- Daniel Kaffine, Bren School, 2007 (Tenure Track, Colorado School of Mines)

Advisor for Masters Group Theses:

- *Economic Viability and Sustainable Management of a California Red Abalone Fishing Cooperative*, '09-'10
- *Pathway to Self-Funding: A Case Study on the California Commercial Spiny Lobster Fishery*, '08-'09
- *Integrating Commercial and Recreational Sectors in Fishery Management*, '07-'08,
- *Waste Today, Wall Tomorrow: Assessment of an Innovative Straw Block for Residential Construction*, '05-'06,
- *Socio-economic Basis for Implementation of Fishery Management Strategies in American Samoa*, '05-'06,
- *The Economics of Green Power: Demand for Solar Electricity in Davis, CA*, '04-'05,
- *Measuring and Monitoring the Socioeconomic Values of the Channel Islands Marine Reserve*, '03-'04,
- *Designing an Ecological Linkage Portfolio for the South Coast Ecoregion*, '02-'03,
- *Marine Hydrocarbon Seep Capture: Feasibility and Potential Impacts, Santa Barbara, California*, '01-'02.

Courses Developed and Taught

- *Environmental Modeling*. Masters level. Winter 2004, 2006. UC Santa Barbara.
- *Economics of Environmental Management*. Masters level. Winter, 2001, 2003, 2005, 2007, 2010. UC Santa Barbara.
- *Policy Analysis for Environmental Management*. Masters level. Fall, 2008.
- *Environmental Statistics and Data Analysis*. Masters level. Winter, 2002. UC Santa Barbara
- *Natural Resource Economics and Policy*. Masters level. Spring 2001-2010. UC Santa Barbara.
- *Economy, Politics and Management of Natural Resources and the Environment*. Masters level. Fall, 2005. Universidad Autonoma de Baja California Sur, La Paz, Mexico.
- *Cross-Disciplinary Seminar in Marine Resources: Economics, Science, and Policy*. Ph.D. level. Spring, '04. UC Santa Barbara.

#### **RECENT PRESENTATIONS (4 YR. WINDOW)**

- Scientific Information and Marine Reserve Network Design*. Legislative Briefing, Sacramento CA. April 2010.
- The Value of Secure Property Rights: Global Evidence from Fisheries*. Columbia University, Economics & Int'l Relations. April 2010.
- The Value of Secure Property Rights: Global Evidence from Fisheries*. Yale University, Economics & Management & Forestry. March 2010.
- Integrating Marine Protected Areas and Spatial Catch Shares*. Global Seafood Summit, Paris France. January 2010.
- Bioeconomic Models for Conservation and Management*. Pre-Ocean Fund Meeting, UC Santa Barbara. December 2009.
- The Economic Value of Strong Property Rights*. University of Washington, Economics Department. November 2009.
- TURFs and MPAs for Fisheries Management*. MARCUBA Marine Science Conference, Havana Cuba. October, 2009.
- Bioeconomic Models for Anchoveta Fisheries Management*. IMARPE, Lima, Peru. August, 2009.
- Can Spatial Property Rights Fix Fisheries?*. UC San Diego, Economics Department. May 2009.
- Value of Information for Spatial Fisheries Management*. International Marine Conservation Congress, Washington, D.C. May 2009.
- Spatial Property Rights in Fisheries*. UC Santa Barbara, Geography Department. May 2009.
- Can Spatial Property Rights Fix Fisheries?*. National Center for Ecological Analysis and Synthesis (NCEAS), EcoLunch. April 2009.
- The Economics of Invasive Species from International Trade*. National Academy of Sciences, Darwin Symposium. February, 2009.
- Spatial Property Rights in Fisheries*. Property and Environment Research Center (PERC). Bozeman, MT. July, 2008.
- Model evaluations of Marine Life Protection Act proposals*. Address to the Blue Ribbon Task Force. San Rafael, CA. April, 2008.
- Can spatial property rights fix fisheries?*. 10th Occasional Workshop. Santa Barbara, CA. March, 2008.

*Optimally harvesting a spatial resources.* University of Maryland. March, 2008.

*Unintentional introductions of exotic species.* Invasive Species Workshop, Arizona State University. October, 2007.

*Optimal management of spatially connected resources.* American Fisheries Society Annual Meeting. September, 2007.

*Trade and invasive species: does risk vary by trading partner?.* Ecological Society of America Annual Meeting. August, 2007.

*Fisheries management under uncertainty.* Fisheries Research Institute, Summer Program on Salmon Management. Aleknagik, AK. July, 2007.

*Dynamic valuation of ecosystem services.* Diversitas International Meeting, Paris, France. May, 2007.

*Natural resource use with limited-tenure property rights.* NCEAS meeting on “Matching Property Rights with Fishery Characteristics”. Santa Barbara CA. January, 2007.

*The ex-ante value of intelligence.* May, 2006. UC Santa Barbara department of Economics.

*Biological reserves and economic incentives.* April, 2006. OECD - Distributional Impacts of Biodiversity Conservation. Oaxaca, Mexico.

#### **RECENT REFEREE ACTIVITY**

American Economic Review, American Journal of Agricultural Economics, Canadian Journal of Economics, Environmental and Resource Economics, International Economic Review, Journal of Economic Dynamics and Control, Journal of Economic Literature, Journal of Environmental Economics and Management, Journal of Regulatory Economics, Mathematical Biosciences, Natural Resource Modeling, Resource and Energy Economics.

#### **GRANTS**

“Model development for the Marine Life Protection Act”, Resources Legacy Fund Foundation, '08-'10 (\$65,000), PI

“Impacts of climate change on California’s forestry sector”, California Energy Commission, '08-'09 (\$80,000), co-PI

“Impacts of climate change on California’s agricultural sector”, California Energy Commission, '08-'09 (\$80,000), co-PI

“Sustainable fisheries project”, Paul Allen Family Foundation, '06-'10 (\$5,000,000), co-PI

“Community-based collaborative fishery research: assessing fishery impacts of California Marine Reserves”, Coastal Environmental Quality Initiative, '06-'07 (\$295,690), co-PI

“Linking human socioeconomic systems with marine ecosystem function along the Pacific coast of Baja, Mexico”, National Science Foundation, '04-'08 (\$1,650,000), co-PI

“Developing sustainable fisheries by coupling natural and human components of biocomplexity”, National Science Foundation, '04-'08 (\$2,000,000), co-PI

“Flow, Fish, and Fishing”, National Science Foundation, '03-'06 (\$2,000,000), co-PI

“Controlling Exotic Species Introductions: Trade Related Policies and Exposure”, USDA-ERS, '04-'05 (\$68,000), PI

“Linking human socioeconomic systems with marine ecosystem function along the Pacific coast of Baja, Mexico”, National Science Foundation, '02-'03 (\$100,000), co-PI

“Economics of the Environment”, National Science Foundation, '02-'05 (\$2,800,000), Senior Investigator

“Exotic species introductions and international trade”, ISBER-UCSB, '02 (\$8,000), co-PI

“On the preservation of transboundary non-harvested species”, Institute on Global Conflict and Cooperation, '01-'02, (\$15,000), PI

“Bioeconomic models of marine capture fisheries”, Academic Senate-UCSB, (\$5,000), PI