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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.

## **APPOINTMENTS**

2012-2013 Invited Professor, Lameta, Montpellier, France  
2008- Full Professor, University of California, Santa Barbara  
2005-2008 Associate Professor, University of California, Santa Barbara  
2000-2005 Assistant Professor, University of California, Santa Barbara

## **AREAS OF SPECIAL INTEREST**

Environmental and resource economics, dynamic optimization, decision-making under uncertainty.  
Incomplete property rights, fisheries, biodiversity, water, marine policy, climate change adaptation.

## **JOURNAL PUBLICATIONS**

Rolf Groeneveld, Michael Springborn, and Christopher Costello. Repeated experimentation to learn about a flow pollutant threshold. *Environmental and Resource Economics*, In Press, 2013.

Sarah Lester, Christopher Costello, Steven Gaines, Andrew Rassweiler, and Robert Deacon. Crediting mpas in seafood certification to incentivize sustainability. *PLoS-Biology*, In Press, 2013.

Christopher Costello, Olivier Deschênes, Ashley Larsen, and Steven Gaines. Removing biases in forecasts of fishery status. *Journal of Bioeconomics*, pages 1–7, 2013.

Leah Gerber, Christopher Costello, and Steven Gaines. Conservation markets for wildlife management with case studies from whaling. *Ecological Applications*, In Press, 2013.

Leah Gerber, Christopher Costello, and Steven Gaines. Facilitate, don't forbid trade between conservationists and resource harvesters. *Ecological Applications*, In Press, 2013.

Enric Sala, Christopher Costello, Dawn Dougherty, Geoffrey Heal, Kieran Kelleher, Jason Murray, Andrew Rosenberg, and Rashid Sumaila. A general business model for marine reserves. *PLOS One*, 8(4):e58799, 2013.

Christopher Guo and Christopher Costello. The value of adaptation: Climate change and timberland management. *Journal of Environmental Economics and Management*, 65:452–468, 2013.

Robert Deacon, Dominic Parker, and Christopher Costello. Reforming fisheries: lessons from a self-selected cooperative. *Journal of Law and Economics*, 56:83–125, 2013.

Sarah Lester, Christopher Costello, Ben Halpern, Steven Gaines, Crow White, and John Barth. Evaluating tradeoffs among ecosystem services to inform marine spatial planning. *Marine Policy*, 38:80–89, 2013.

- D. Ovando, R. Deacon, S. Lester, C. Costello, T. Van Leuvan, K McIlwain, K. Strauss, M. Arbuckle, R. Fujita, S. Gelcich, and H. Uchida. Conservation incentives and collective choices in cooperative fisheries. *Marine Policy*, 37:132–140, 2013.
- J. Wilson et al. White. A comparison of approaches used for economic analysis in marine protected area network planning in california. *Ocean and Coastal Management*, 74:77–89, 2013.
- Christopher Costello. Introduction to the symposium on rights based fisheries management. *Review of Environmental Economics and Policy*, 6(2):212–216, 2012.
- Christopher Costello, Dan Ovando, Ray Hilborn, Steve Gaines, Olivier Deschenes, and Sarah Lester. Status and solutions for the world’s unassessed fisheries. *Science*, 338(6106):517–520, 2012.
- Nico Gutierrez et al. Eco-label conveys reliable information on fish stock health to seafood consumers. *PLoS ONE*, 7(8):e43765, 2012.
- A. Rassweiler, C. Costello, and D. Siegel. Marine protected areas and the value of spatially optimized fishery management. *Proceedings of the National Academy of Sciences*, 109(29):11884–11889, 2012.
- C White, C. Costello, B. Kendall, and C. Brown. The value of coordinated management of interacting ecosystem services. *Ecology Letters*, 15(6):509–519, 2012.
- C. Costello, L Gerber, and S. Gaines. A market approach to save the whales. *Nature*, 481:139–140, 2012.
- L Hanna, C. Costello, C. Guo, L. Ries, C. Kolstad, D. Paniz, and N. Snider. The impact of climate change on california timberlands. *Climatic Change*, 109:429–443, 2011.
- C. White and C. Costello. Matching spatial property rights fisheries with scales of fish dispersal. *Ecological Applications*, 21(2):350–362, 2011.
- B. Halpern, C. White, S. Lester, C. Costello, and S. Gaines. Using portfolio theory to assess tradeoffs between return from natural capital and social equity across space. *Biological Conservation*, 144(5):1499–1507, 2011.
- D. Kaffine and C. Costello. Unitization of spatially connected renewable resources. *BE Journal of Economic Analysis and Policy (Contributions)*, 11(1), 2011.
- C. White and C. Costello. Matching spatial property rights fisheries with the scale of fish dispersal. *Ecological Applications*, 21:350–362, 2011.
- C. Costello, M. Neubert, S. Polasky, and A. Solow. Bounded uncertainty and climate change economics. *Proceedings of the National Academy of Sciences*, 107(18):8108–8110, 2010.
- C. Costello, J. Lynham, S. Gaines, and S. Lester. Economic incentives and global fisheries sustainability. *Annual Reviews of Resource Economics*, 2:299–318, 2010.
- C. Costello and D. Kaffine. Marine protected areas in spatial property rights fisheries. *Australian Journal of Agricultural and Resource Economics*, 54(3):321–341, 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*, 107(43):18294–18299, 2010.
- S. Gaines, S. Lester, K. Grorud-Colvert, C. Costello, and R. Pollnac. Evolving science of marine reserves: new developments and emerging research frontiers. *Proceedings of the National Academy of Sciences*, 107(43):18251–18255, 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*, 69(3):519–527, 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*, 11(4):370–379, 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

- M. Springborn, C. Costello, and P. 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.
- C. Costello, C. Lawley, and C. McAusland. *Pre-empting NIS introductions: targeting policy*, volume 1 of *Handbook on Trade and the Environment*, editor: Kevin Gallagher. Edward Elgar Publishing, 2008.

- S. Polasky, C. Costello, and A. 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.
- C. Costello, N. Burger, K. Galvin, R. Hilborn, and S. 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.
- R. Deacon and C. Costello. *Strategies for enhancing rent capture in an ITQ fishery*, volume Forthcoming of *Advances in Property Rights Based Fisheries Management*. 2008.

## **AWARDS, HONORS, AND BOARDS**

- Research Associate *National Bureau of Economic Research*. 2012-Present.
- Editorial Board *Journal of Environmental Economics & Management*. 2012-Present
- Member Monterey Bay Aquarium *Seafood Watch Science Advisory Board*. 2012-Present.
- Member *US National Committee on Diversitas*, National Academy of Science. 2011-Present.
- Advisory Committee *UC Natural Reserve System*. 2009-Present.
- Member California Environmental Associates *Design for Sustainable Fisheries Advisory Committee*. 2011-2012.
- Member *National Geographic Ocean Restoration Advisory Council*. 2010-2012.
- Member of Board of Directors *Association of Environmental and Resource Economists (AERE)*. 2010-2012.
- Senior Scientist *Communication Partnership for Science and the Sea (COMPASS)*. 2009-2013.
- Co-Editor *Journal of Environmental Economics & Management*. 2007-2009.
- Member of *Marine Life Protection Act Science Advisory Team*. 2007-2012.
- 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*. 2004-2007.
- 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 2002-2003

## **TEACHING EXPERIENCE**

- Ph.D. Students Matriculated as Primary Advisor, (first job in parenthesis)
- Christopher Guo, Economics Department, 2012 (Rand Corporation, Santa Monica, CA)
  - 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 (Tenure Track, Fordham 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:

- *Bioeconomics of Aquaculture in Southern Chile*, '11-'12
- *Reducing Risks of Whale Strikes by Ships in the Santa Barbara Channel*, '10-'11
- *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, UCSB.
- *Economics of Environmental Management*. Masters level, UCSB.
- *Policy Analysis for Environmental Management*. Masters level, UCSB.
- *Environmental Statistics and Data Analysis*. Masters level, UCSB.
- *Natural Resource Economics and Policy*. Masters level, UCSB.
- *Economy, Politics and Management of Natural Resources and the Environment*. Masters level. Universidad Autonoma de Baja California Sur, La Paz, Mexico.
- *Numerical Methods for Dynamic Optimization*. Ph.D. level, UCSB.
- *Economics of Ecosystem Services*. Ph.D. level, UCSB.

#### **RECENT PRESENTATIONS (3 YR. WINDOW)**

*Property Rights and Regulatory Capture over Natural Resources*. University of Calgary. October, 2013.

*Implementing Property Rights in Global Fisheries*. Keynote, Canadian Resource and Environmental Economists. Brock University. September, 2013.

*Partial Enclosure of the Commons*. Occasional Conference on Environmental Economics. UCSB. September, 2013.

*Partial Enclosure of the Commons*. University of Montpellier I, France. April, 2013.

*High Seas MPAs*. Global Ocean Commission. Somerville College, Oxford, UK. April, 2013.

*Partial Enclosure of the Commons*. Institute Henri Poincare. Paris, France. March, 2013.

*Models, Stakeholders, and Marine Spatial Planning.* Marine Biodiversity Workshop, Montpellier, France. March, 2013.

*Partial Enclosure of the Commons.* Free University. Amsterdam, Netherlands. March, 2013.

*The Value of Information in Search.* Institute Henri Poincare. Paris, France. March, 2013.

*Distributional Effects of the Transition to Property Rights for a Common Pool Resource.* Institute Henri Poincare. Paris, France. February, 2013.

*Distributional Effects of the Transition to Property Rights for a Common Pool Resource.* IRD/INFREMER. Sete, France. January, 2013.

*Overcoming the Tragedy of the Spatial Commons.* Institute Henri Poincare. Paris, France. January, 2013.

*The Value of Adaptation to Environmental Change.* Basque Center for Climate Change (BC3). Bilbao, Spain. December, 2012.

*Capitalizing Property Right Insecurity in Natural Resource Asset Values.* Toulouse School of Economics. Toulouse, France. November, 2012.

*Distributional Effects of the Transition to Property Rights Fisheries Management.* Lameta, Montpellier, France. September, 2012.

*Rent and the Transition to Property Rights Fisheries Management.* Northwest Fisheries Science Center. Seattle, WA. May, 2012.

*The Value of Adaptation to Environmental Change.* UC Davis. Davis, CA. May, 2012.

*The Value of Secure Property Rights: Global Evidence from Fisheries.* UC Berkeley. Berkeley, CA. April, 2012.

*Wild Salmon in the Context of Global Fisheries.* Kenote Address to Wild Salmon Center Board Meeting. Monterey, CA. December, 2011.

*Status, Trends, and Solutions for the World's Unassessed Fisheries.* University of British Columbia. Vancouver, BC. November, 2011.

*Status, Trends, and Solutions for the World's Unassessed Fisheries.* Environmental Defense Fund Board Meeting. New York. October, 2011.

*Enhanced Conservation through Marine Property Rights.* Property and Environment Research Center, Bozeman, Montana. August, 2011.

*Tradeoff Analysis for Spatial Planning in the Galapagos.* Ministry of Environment, Quito Ecuador. August, 2011

*Efficiency Gains from Coordinating Use of a Shared Resource.* National Bureau of Economic Research, Stanford University. April 2011.

*The Value of Secure Property Rights: Evidence from Global Fisheries.* American Economic Association Annual Meeting, Denver CO. January 2011.

## **RECENT REFEREE ACTIVITY**

American Economic Review, American Journal of Agricultural Economics, Canadian Journal of Economics, Ecological Applications, 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 Public Economics, Journal of Regulatory

Economics, Mathematical Biosciences, Natural Resource Modeling, Proceedings of the National Academy of Sciences, Resource and Energy Economics.

**GRANTS (3 YR. WINDOW)**

“Food Webs and Governance of the Tonle Sap Ecosystem, Cambodia”, National Science Foundation, '13-'15 (\$2,000,000), co-PI

“Social and Economics Effects of ITQs on the West Coast Groundfish Fishery” UC Sea Grant, '12-'14 (\$200,000), PI

“Maximizing the Value of Offshore Aquaculture Development in the Context of Multiple Ocean Uses” UC Sea Grant, '12-'14 (\$486,000), co-PI

“Combining Instruments for Fisheries Sustainability”, Ted Waitt Family Foundation, '11-'14 (\$2,600,000), PI