

MARTA CERONI, PhD

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Other affiliations: Manager of Green Compass, LLC, Burlington Vermont
Fellow of the Institute for Environmental Diplomacy and Security,
University of Vermont
Senior analyst for Earth Economics (www.eartheconomics.org), Tacoma,
WA

Education

- 1997 Ph.D. Forest Ecology
University of Parma, Italy (Advisor Prof. Paolo Menozzi)
- 1992 University Degree (B.S.) in Biology
University of Parma, Italy

Academic Employment

- 2010 - present Lecturer, University of Vermont and private consultant
- 2002 - 2010 Research Assistant Professor, Gund Institute, University of Vermont
- 2000 - 2002 Assistant Research Scientist, University of Maryland
- 1998 - 1999 Post-doc Forest/Wetland ecology, University of Maryland
- 1992 - 1994 Research Assistant, University of Parma, Italy

Current Research Interests

Economic benefits of protected areas, ecosystem service quantification for conservation planning, management and financing; linkages between conservation and development, ecological economics of biodiversity, policy mechanisms for sustainable forest management, environmental and social sustainability of supply chains (focus on plant resources), capacity building in markets for ecosystem services.

Professional and Academic Experience

Economic valuation of ecosystem services and rural development options in the transboundary Prespa Lake region, UNDP Macedonia - 2011 - 2012. International expert on economic valuation for the Ezerani nature reserve (Ramsar site).

Integrated assessment of ecosystem services in multifunctional agriculture, University of Molise, Italy - 2011 - 2012. Coordinator and senior analyst in the quantification and mapping of ecosystem services and their economic values in alternative scenarios of multifunctional agriculture in the Molise region.

Economic impacts of outdoor recreation, Trust for Public Land, Vermont - 2011. Senior analyst of the economic benefits and economic multipliers of mountain biking in the Barre Town Forest, Vermont.

Conservation and ecosystem services in the rural transboundary regions of Ukraine and Romania. 2009 – 2011. Project leader. Main goal is to use markets for ecosystem services to strengthen transboundary conservation and promote rural development (funded by Trust for Mutual Understanding).

Project ARIES (Artificial Intelligence for Ecosystem Services), University of Vermont -

2007 – 2010

Co-investigator and coordinator in an NSF funded project to develop a decision support system based on the quantification and mapping of ecosystem services. Project partners included Conservation International, United Nations Environmental Program-World Conservation Monitoring Center. Applications in Puget Sound, WA, Madagascar, and Mexico.

Ecological Economics of Biodiversity. 2010. Development of an online educational module for the Network of Conservation Educators and Practitioners, American Museum of Natural History (New York City).

Sustainable integrated management of La Antigua watershed in Mexico; University of Anahuac, MX – 2007-2009. Scientific supervisor in organizing and running a USAID-funded series of workshops and drafting policy and governance guidelines for watershed management.

Economic valuation and markets of ecosystem services, UNDP; Romania - 2007-2008. Ecological Economist Team Leader in two subsequent projects for United Nations Development Program to develop guidelines for assessing economic values of ecosystem services and potential markets for carbon sequestration and other services in Maramures Mountains National Park and Macin Mountains National Park.

Genuine Progress Indicator, University of Vermont 2005 – 2007

Lead investigator of a project measuring genuine socioeconomic well-being in the rural counties of Northeastern Vermont. The GPI takes into account environmental costs and social capital to better reflect welfare (Funded by Northeastern States Research Cooperative).

Forest productivity and ecosystem services, University of Vermont 2003 – 2006

Co-investigator in a policy-oriented study to identify an alternative definition of productive use for private forestlands that included the provision of ecosystem services besides timber production (Funded by Northeastern States Research Cooperative).

Reforestation as a tool for watershed management in the Atlantic Forest of Brazil, Pro Natura, Conceição de Macabu, Brazil 2002. Instructor and research supervisor in a hands-on research (atelier) interviewing farmers on willingness to accept compensation for planting forest on their property.

Environmental databases; 1998 – 2004

- Designed a relational database for sediment elevation data in US coastal wetlands in a USDA funded project.
- Contributed to develop an “intelligent” biodiversity database by semantically characterizing ecological knowledge of diversity in species, populations, communities and ecosystems in a project funded by NSF.

Wetland ecology and climate change; University of Maryland – 1999 – 2002

Post-doctoral experience monitoring changes in sediment elevation in relation to local sea levels in a freshwater tidal marsh on the banks of the Patuxent River, MD

Water use strategies in desert perennials (Utah); University of Maryland, 1998

Post-doctoral experience assessing the heritability of water use efficiency in the American desert herbaceous *Cryptantha flava*.

Genetic variation of forest trees; University of Parma, Italy 1993 - 1997

Doctoral experience assessing seedling growth and competition, tree pollination, genetic diversity, and heritability of quantitative traits in European beech.

Multi-criteria GIS planning of recreational parks; University of Parma, Italy 1987 - 1992. Bachelor and master experience planning recreational parks for multiple uses using spatial multi-criteria analysis.

Teaching at UVM

- Teacher of **Ecological Economics of Biodiversity** (PBIO195), a 1 credit undergraduate online course, Spring 2005, Spring 2007, Summer 2008, Spring 2009, Summer 2010, Spring 2011, Spring 2012
- Teacher of **Ethnobotany and Ethnomedicine in the Globalized World** (HCOL185), a 3-credits course for the Honors College at UVM, Fall 2011.
- Teacher of **Ethnobotany: an Ecological Economic Perspective** (HCOL195), a 3-credits course for the Honors College at UVM in Fall 2005, 2006, 2007, Spring 2009, Spring 2010.
- Teacher of **Ethnobotany: Linking Ecology, Economics, and Culture** (PBIO195) ONLINE, a 3-credits undergraduate online course, Fall 2010, Summer 2011, Fall 2011.
- Co-teacher of **Ecosystem Service Modeling** (PBIO295A), 1-credit graduate course, Spring 2010.
- Co-teacher of **Modeling for Environmental Planning** (PBIO295B), 3-credit graduate course, Spring 2010.
- Teacher of **Sustainable Ecological Tourism in the Northern Forest Region: an Atelier Course** (NR 378), 3 credit graduate course, Fall 2004.
- Co-teacher of **Biodiversity Knowledge Modeling** (NR378), a 1-credit graduate course, Spring 2004.
- Co-teacher of **Ecosystem Services and Biodiversity** (NR 285), a 3 credit graduate course, Fall 2002.
- Co-teacher of **Relational database design for environmental data**, a two-week graduate level course for students and professionals in the Ecological Economics Master Program of Chulalongkorn University, Bangkok, Thailand, Spring 2001, 2002, 2003, 2004.

Computer Skills

Operating systems: Mac, Windows, Linux

Computer languages: HTML, XML and Perl CGI scripting

Database design and management: Postgres and SQL.6

Statistical Packages: R, SAS, SPSS

Project Evaluation Skills

Training in environmental project and program evaluation through the Environmental Evaluators Network (USA). Solid basis in quantitative and qualitative statistical methods for evaluation. Member of the American Evaluation Association.

Geographic focus and languages spoken

I have worked on projects in the US (Maryland, Utah, Vermont, Washington state) and internationally (Brazil, Italy, Madagascar, Macedonia, Mexico, Romania, Thailand, Ukraine).

Italian: native speaker; **English:** excellent writing, speaking, and reading; **Spanish:** excellent

speaking, reading and understanding, working knowledge of writing; **Portuguese and French:** good understanding and reading, proficient speaking.

Academic Publications

Book chapters

1. **Ceroni M.**, Liu S. and Costanza R. 2007. The ecological and economic role of biodiversity in agroecosystems. In Jarvis, D.I., C. Padoch, and D. Cooper (eds). *Managing Biodiversity in Agroecosystems*. Columbia University Press, NY USA

Journal articles

1. Villa F., Ceroni M., Bagstad K, Johnson G., and Krivov S. 2009. ARIES (Artificial Intelligence for Ecosystem Services): a new tool for ecosystem services assessments, planning, and valuation. *Proceedings of the BioEcon conference, Venice, Italy*.
2. Bagstad, K. and **Ceroni M.** 2008. The Genuine Progress Indicator: A new measure of economic development for the Northern Forest. *Adirondack Journal of Environmental Studies*, 15 (1): 18 – 26
3. Silvano, R.A.M., Silva A.L., **Ceroni M.**, and Begossi A. 2008. Contributions of ethnobiology to the conservation of tropical rivers and streams. *Aquatic Conservation: Marine and Freshwater Ecosystems*, 18 (3): 241 - 260
4. Bagstad, K. and **Ceroni M.** 2007. Opportunities and challenges in applying the Genuine Progress Indicator at local scales. *International Journal of Environment, Workplace and Employment*, 3 (2): 132-153
5. Villa F., **Ceroni M.**, and Krivov S. 2007. Intelligent databases assist transparent and sound economic valuation of ecosystem services. *Environmental Management* 39 (6): 887-899
6. Villa F. and **Ceroni M.** Community Ecology: an Introduction. *Encyclopedia of Life Sciences* ([HYPERLINK "http://www.els.net/"www.els.net](http://www.els.net/)), Nature Publishing Group. In press
7. Silvano R.A.M., Udvardy S., **Ceroni M.** , Farley J. 2005. An ecological integrity assessment of a Brazilian Atlantic Forest watershed based on surveys of stream health and local farmers' perceptions: implications for management. *Ecological Economics* 53 (3): 369-385
8. Villa F. and **Ceroni M.** 2002. Towards an operational semantics of biological diversity: integrating structure and function in a web-accessible knowledge base. *Proceedings from the National Conference on Digital Government Research, May 20-22, Los Angeles, CA, pag. 199 – 204*

Journal articles under peer review

1. Farley J. and **Ceroni M.** Ecological economics of biodiversity. Synthesis document, Network of Conservation Educators and Practitioners, American Museum of Natural History, New York.

Journal articles in preparation

1. **Ceroni M.** and Dragoi M. Winners and losers in the Romanian protected areas system: a framework for assessing the benefits of conservation based on the case of Macin Mountains National Park. *Biological Conservation*.
2. **Ceroni M.** and Bucur C. Cultural Landscapes and Ecosystem Services in the Carpathians: the case of multifunctional national parks. *Agriculture, Ecosystems, and the Environment*.

3. Marino D., Nicosia M., and **Ceroni M.** Who should pay for national parks and their environmental benefits? A nation-wide analysis of environmental perceptions in Italy. *Ecological Economics*.

Reports

1. **Ceroni M.** Economic Valuation and Management Scenarios for the Ezerani Nature Reserve in the Prespa Region, Macedonia. February 2012. Final Report to the United Nations Development Programme, Skopje, Macedonia.
2. **Ceroni M.** and Dragoi M. Assessing and capturing ecosystem benefits in Macin Mountains National Park, Romania. November 2008. Final Report to the United Nations Development Programme, Bucharest, Romania.
3. **Ceroni M.** Ecosystem services and the local economy in Maramures Mountains Natural Park, Romania. October 2007. Final Report to the United Nations Development Programme, Bucharest.
4. Bihun, Y.M., W.S. Keeton, O. Stankiewicz, and **M. Ceroni.** 2008. Transboundary protected areas cooperation in the East Carpathian and Carpathian Biosphere Reserves. World Wide Fund for Nature, Vienna, Austria.
5. Villa F. and **Ceroni M.** 2004. Towards an operational semantics of biological diversity: integrating structure and function in a web-accessible knowledge base. Final Report NSF.
6. Boumans R.M., **Ceroni M.**, Burdick D.M., Cahoon D.R., and Swarth C.W. 2003. Sediment Elevation Dynamics in Tidal Marshes: Functional Assessment of Accretionary Biofilters. Final Report NOAA/UNH Cooperative Institute for Coastal and Estuarine Environmental Technology (CICEET), Durham, NH.

Popular Articles

1. **Ceroni M.** 2002: A bright green revolution, Cuba's conversion to organic agriculture. *Sapere* 4(1021): 62-67. In Italian.
2. **Ceroni M.** 2000: How much is the air we breath worth? *Effe*, Edizioni Feltrinelli 23: 12-16. In Italian.

Thesis and dissertation

1. **Ceroni, M.** (1992): Trees and shrubs of the Magnani-Rocca Foundation park: a park area GIS evaluation. In Italian. Degree thesis, University of Parma
2. **Ceroni, M.** (1997). Genetic and environmental effects on early growth traits of *Fagus sylvatica*. In Italian. Ph.D. dissertation, University of Parma

Workshops and Conferences Organized

- Emerging ecosystem services tools and applications within corporate decision making. International workshop with extractive industry, governmental and non-governmental sector. Co-organized with Business for Social Responsibility. University of Vermont, Burlington October 13-14 2009
- ARIES economic valuation workshop at UVM. Participants from Conservation International, Earth Economics, University of Venice, Italy, Rensselaer, University of Maryland, SUNY. March 24-27 2009
- ARIES technology to assess ecosystem benefits and beneficiaries in Madagascar. Antananarivo, Co-organized with Conservation International. October 5-6 2008
- Healthy Ecosystems, Healthy People: Linkages between biodiversity, ecosystem health, and human health. Conference organizer with Conservation International, 2002

Synergistic Activities

- Invited contributor in Boelee E (ed) 2011. Ecosystems for water and food. Nairobi: **UNEP**; Colombo: International Water Management Institute
- Featured in Transparent Radiation, a documentary of the Gund Institute for Ecological Economics on the ecological, economic, and philosophical reasons for alternatives to nuclear energy, October 2011
- Collaborator of the Donella Meadows Institute (Norwich, Vermont) in visioning a regional system based on a steady-state economy, ongoing
- Invited contributor in Silvestri, S., Kershaw, F. (eds.) 2010. Framing the flow: Innovative Approaches to Understand, Protect and Value Ecosystem Services Across Linked Habitats, **UNEP** World Conservation Monitoring Centre, Cambridge, UK
- Invited contributor to the 2010 Sustainability Report of ENI, Italian energy company
- Invited contributor to the publication Gestion Integral de la Cuenca de Antigua (Integrated Management of the La Antigua Watershed, Mexico), Anahuac University, Xalapa, Mexico 2009
- Proposal Reviewer for the UK's Natural Environment Research Council (**NERC**)
- Member of **CGIAR**'s Platform for Agrobiodiversity Research
- Member of the Forum on Forest Fragmentation and Parcelization, Vermont Natural Resources Council
- Peer reviewer for the journals Conservation Biology, Environmental Management, Ecological Economics, Journal of Arid Environments, Solutions
- Peer reviewer for the Union of Concerned Scientists
- Peer Reviewer of book proposals for Routledge Publishing
- Regular collaborator of Earth Economics, a small non-governmental organization based in Tacoma, WA that promotes ecosystem service valuation for decision-makers
- Collaborator of Vermont based frankincense import and distillation company Boswellness to help incorporate environmental and social responsibility in the business plan
- Collaborator of Italian based oil company ENI to facilitate the adoption of ecosystem service and biodiversity mapping in the corporate social responsibility plan
- Collaborator of Business for Social Responsibility (**BSR**) a San Francisco based non-governmental organization that promotes corporate social responsibility
- Instrumental in achieving formal MoUs between the Gund Institute and: Conservation International, University of Burao (Somaliland), Institute of Ecology (INECOL, Mexico), and University of Molise (Italy).

Abstracts and posters

2011

Ceroni M., DeCarlo A., Ali S., Ismael M., Garvey J., Lyon C., and Lanzetta W. Envisioning a fair, sustainable, and women-powered supply chain for frankincense in Somaliland. Fair Trade conference, Center for Tropical Ecology and Conservation, Antioch University of New England, Keene, New Hampshire, USA, November 5

Gaglioppa P., Marino D., Blasi F., **Ceroni M.**, Marcucci A., and Palmieri M. Forest indicators, ecosystem services and Italian protected areas management: new tools and prospects. IUFRO (International Union of Forest Research Organizations). Viterbo, Italy, May 19-21

2010

Ceroni M. and Bucur C. Cultural landscapes, ecosystem services, and the local economy in Maramures Mountains Natural Park, Romania. Forum Carpaticum, Integrating Nature and Society Towards Sustainability. Krakow, Poland, September 15-18

Villa F. and **Ceroni M.** Rapid assessment of carbon for regulatory and voluntary markets. Annual EPSCoR conference, Burlington, Vermont, March 11

Villa F., Bagstad K., Johnson G., and **Ceroni M.** Assessment and valuation of ecosystem services for decision-makers. BioEcon conference, Ecosystem Service Training Day, Venice, Italy September 29

2009

Ceroni M., Villa F., Bagstad K., Johnson G., Krivov S, Farley J., Honzak M. Conservation planning and management using ARIES (Artificial Intelligence for Ecosystem Services). US Ecological Economics Society, Washington DC June 1-2

2008

Ceroni M., Villa F., Johnson G., Bagstad K., Krivov S., Farley J., Honzak M. “Artificial Intelligence for Ecosystem Services”. Video presentation at the IUCN World Congress, Barcelona in the session: Visualizing Ecosystem Services.

2006

Ceroni M., Costanza R., and Timmons D. Positive Impact Tourism: assessing and achieving net positive benefits for communities. National Extension Tourism Conference. Burlington, Vermont, September 10-13

Silvano R. A.M., Silva A.L., **Ceroni M.**, and Begossi A. An ethnobiological approach for the conservation of tropical rivers and streams. Society of Wetland Scientists. Cairns, Australia, July 27-29

2005

Ceroni M., Boumans R., and Chase L. Assessing and modeling genuine well-being in rural communities of the Northern Forest. Third International Conference on Community Indicators. Burlington, Vermont, December 1-3

2003

Ceroni M. and Costanza R. Biodiversity, ecosystem services and values: towards a sustainable intensification of agricultural systems. Managing agricultural biodiversity for sustainable development, international workshop organized by the International Plant Genetic Resources Institute (IPGRI) on behalf of the CGIAR System-wide Genetic Resources Programme (SGRP). Nairobi, Kenya 2003, October 23-25

Fisher, B., R. Costanza, S. Liu, B.S. Barker, S. C. Bird, R.M. J. Boumans, E. J. G. Brown, **M. Ceroni**, C. E. Frank, J.C. Jenkins, M. Johnson, M. Keffer, J. Kenney, B. E. Kirk, S. Krivov, C. E. Noel, F. Villa, T. C. White, and M. Wilson. Ecosystem Services: An Empirical Study of the Contribution of Species Richness to Net Primary Production and Nitrogen Cycling. The U.S. Society for Ecological Economics Biennial Meeting, May 22-24

Villa F. And **Ceroni M.** An operational semantics of biodiversity. Workshop on Biodiversity and Ecosystem Informatics, National Science Foundation, Arlington, Virginia, February 10-11

Boumans R.M., **Ceroni M.**, and Burdick D. Sediment elevation changes as an indicator of the functioning of coastal wetlands. Emerging technologies, Tools, and Techniques to

Manage Our Coasts in the 21st Century (sponsored by EPA). Cocoa Beach, Florida, January 28-31

2001

Ceroni M. and Boumans R.M. A web accessible knowledge base on sediment elevation dynamics in coastal wetlands Estuarine Research Federation, 16th Biennial International Conference, St Pete Beach, Florida, November 4-8

2000

Boumans R.M. and **Ceroni M.** Sediment elevation dynamics in tidal marshes: functional assessment of accretionary biofilters. AERS Fall Meeting. Smithsonian Research Center, Edgewater, Maryland, November 9-11

1999

Ceroni M. and Boumans R.M. Designing a database for nation-wide monitoring of coastal changes in sediment elevation. Invited speaker. Estuarine Research Federation, 15th Biennial International Conference, New Orleans, Louisiana, September 27-30

1996

Villa F. and **Ceroni M.** The concordance map as a tool for landscape analysis. VII symposium of the Italian Society of Ecology (S.It.E.), Napoli, Italy

Ceroni M., Leonardi S., Rossi B., and Menozzi P. 1996. Effects of seed size on early growth in *Fagus sylvatica*. VII symposium of the Italian Society of Ecology (S.It.E.), Napoli, Italy

Invited Lectures and Presentations

2012

Ceroni M. Tales of an Environmental Entrepreneur. Guest Lecture on environmental consulting in ENVS 195 Environmental Entrepreneurship (UVM). February 24

2011

Ceroni M. Ecosystem service values for conservation: concepts and applications. UNDP Central Office, Skopje, Macedonia. November 22

Ceroni M. Ecosystem Services: from conceptual tool to spatial planning and sustainable development. University of Molise, Italy. May 11

2009

Ceroni M., Villa F., Johnson G., Bagstad K., Krivov S., Farley J., Honzak M. ARIES, an artificial intelligence system for assessing ecosystem services in corporate social responsibility. ENI (Italian oil company) internal conference "Valuation of ecosystem services". October 18

Ceroni M. and Farley J. Ecosystem services: an ecological economic perspective. International Agroecology Course, UVM. July 14

2007

Panelist at the workshop "Frontiers in Sustainability Science: Biofuels as a Critical Test" organized by the Institute for Ecosystem Studies and funded by NSF. Millbrook, November 14-15

2005

Ceroni M. The Ecosystem Services Database and the ecological assessment of ecosystem services. Canadian Model Forest Network – Valuing Ecological and Social Services from Woodlots, Private Woodlot Strategic Initiative Fredericton, N.B., March 16.

2003

Ceroni M. Seedling establishment of European beech: the role of maternal variation and investment. Department of Botany Spring Seminar, Marvin Lecture series, University of Vermont, March 27

Boumans R.M., **Ceroni M.**, Cahoon D., Burdick D., and Swarth C. Sediment elevation changes measure ecosystem health of coastal marshes. Annual meeting of the Department of Natural Resources research coordinators (sponsored by NOAA), Lewes, New Jersey, February 23

2002

Ceroni M. and Boumans R.M. Sediment elevation dynamics in coastal wetlands. Presentation for the Maryland Department of Natural Resources. Annapolis, Maryland, June 19

Referees

UVM

Jon Erickson, Managing Director of the Gund Institute for Ecological Economics, University of Vermont, 617 Main Street, Burlington, VT 05405 Tel: 802-656-332, e-mail: jdericks@uvm.edu

S. Abu Turab Rizvi, Dean of the Honors College and Professor of Economics, University of Vermont, 50 University Heights, Burlington, VT 05405 Tel: 802 656 9102, e-mail: Abu.Rizvi@uvm.edu

Joshua Farley, Assistant Professor, Community Development and Applied Economics 205 H Morrill Hall, University of Vermont Burlington, VT 05401, Tel: 802 656 2989, e-mail: joshua.farley@uvm.edu

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Rudolf de Groot, Associate Professor in Integrated Ecosystem Assessment & Management, Environmental Systems Analysis Group, Wageningen University, The Netherlands. Tel: +31 (0)317 482247, e-mail: dolf.degroot@wur.nl

Dimitar Sekovski, Project Manager, UNDP/GEF Integrated Ecosystem Management in the Prespa Lakes Basin of Albania, Macedonia and Greece. M. Tito Square 20, 7310 Resen, Macedonia. Tel: 00389 47 455 190, e-mail: dimitar.sekovski@undp.org

Jennifer Harrison-Cox, Managing Director of Earth Economics, 1121 Tacoma Ave. S., Tacoma, WA 98402, Tel: 253 539 4801, e-mail: jcox@earthconomics.org, Web: www.earthconomics.org