

Beatrice Crona

Executive Director

The Academy Program on Global Economic Dynamics and the Biosphere, Royal Swedish Academy of Science

Associate Professor Systems Ecology

Stockholm Resilience Center,
Stockholm University

Date of birth: March 24, 1974

Nationality: Swedish

Languages: Swedish, English, French, Spanish, Swahili

beatrice.crona@su.se; beatrice.crona@kva.se

+46737078587

ORCID: orcid.org/0000-0003-1617-4067

Short resumé

Beatrice has a background in marine ecology and marine ecotoxicology but since her PhD has worked to integrate different social science theories and methods with ecology to improve understanding of complex social-ecological dynamics.

Always working to further sustainability of natural resource use, her work spans small-scale fisheries governance in developing contexts, to international seafood markets and industry, as well as global financial investment patterns and the role of industry in transforming resource use through supply chain mechanisms and other means, to name a few.

Governance and stewardship of natural resources runs like a red thread throughout her work, from social networks and learning, to corporate leadership. This has enabled her to study and work in various hybrid spaces between academia and policy, practice, and more recently industry. She has been involved in multiple industry dialogues to support ongoing initiatives to transform towards sustainability, including the financial sector and marine seafood production. Most recently she has also been involved in the EAT-Lancet commission on Healthy Diets from Sustainable Food Systems.

Her career has been characterized by systems thinking, and the successful joining of various previously poorly connected fields of inquiry, such as natural resource management and network analysis; small-scale fisheries, trade dynamics and value chains; and most recently financial markets and global environmental change.

Current appointments

- 2018- Deputy Science Director, Stockholm Resilience Center, Stockholm University
- 2017- Lead Scientific Coordinator of the Taskforce II on Transparency and Traceability of the Seafood Business for Ocean Stewardship (SeaBOS) Initiative
- 2013- Executive Director of the first Academy research programme entitled Global Economic Dynamics and the Biosphere, at the Royal Swedish Academy of Science
- 2012 – Associate Professor, Stockholm Resilience Center, Stockholm University

Previous positions

- 2017- 2019 Theme Leader of the ‘Patterns for the Anthropocene’, Stockholm Resilience Center
- 2012-2013 (now leave of absence) Researcher, Stockholm Resilience Center, Stockholm University
- 2011-2016 Theme leader of the theme ‘Marine social-ecological dynamics’, Stockholm Resilience Center, Stockholm University.
- 2008-2012 Assistant Professor/Research Fellow (FoAss), Stockholm Resilience Center, Stockholm University. Funded by the Swedish Research Council Formas (2+2 years)
- 2007-2008 Post Doctoral Fellow at The Center for the Study of Institutional Diversity, Arizona State University. Funded by Swedish Research Council (VR).

Academic titles and education

- 2012 Docent (Associate prof.) in Natural Resource Management, Stockholm University
- 2006 Ph.D. Systems Ecology, (Marine Ecotoxicology and Natural Resource Management)
- M.Sc., Dept. Systems Ecology, Marine Ecotoxicology, Stockholm University.

Fellowships and other nominations

- 2012 - 2017 Elected member of the Swedish Young Academy (Sveriges Unga Akademi)
- 2017 - 2019 Nominated SIGHT Fellow (Swedish Institute for Global Health Transformation), at Royal Swedish Academy of Science
- Nominated to AcademiaNet: Profiles of Leading Women Scientists (<http://www.academia-net.org/>)

Publications

More than 80 publications, including more than 70 scientific articles, and 6 book chapters. For a selection of publications see below.

Google Scholar Citations = 7923 (of which 5898 since 2014), h-index 38 (as of Sept 2019)

Recent examples of science for change and impact

- 2018- 2019 Ongoing dialogues with major banks and institutional investors in Sweden and Europe and Asia around reduction and reallocation of capital from Earth System Tipping elements (elements of significant harm)
- 2017-2018 Organizer of the a series of ‘Earth System Finance Dialogues’ with members from the financial industry, including global banks, asset managers, pension funds and credit rating agencies. This is a series of dialogues arranged between science and the investment community to explore a roadap for roadmap to enhance the resilience of Earth’s key biomes (Stockholm 2017, London co-hosted with PRI 2018, Tokyo and Singapore 2019)
- 2017- present Lead Scientific Coordinator of Taskforce II on Transparency and Traceability, of the Seafood Business for Ocean Stewardship (SeaBOS) Initiative (<http://keystonedialogues.earth/>)
- 2017 Contributor and co-organizer of the Keystone Actors dialogue (May 2017) for ocean stewardship with leading multinational seafood businesses, within the SeaBOS initiative
- 2017 Contributed to the development of new guidelines for Fishery Improvement Projects, a worldwide used tool for moving fishereis towards sustainability using the supply chain.

Selected grants (since 2012)

- 2018 Received five years continued funding for the GEDB program, at Royal Swedish Academy of Science from the Erling-Persson Family Foundation (30,000kSEK)
- 2018 Financial Dimensions of a key climate system “Wild C ard”: The Atmospheric Brown Cloud over South Asia (7,400kSEK) Formas
- 2017 Supply chain strategies for transforming to sustainable fisheries (3,900kSEK), Formas
- 2016 Earth System Finance - New Approaches to Finance and Sustainability (1700 kSEK)(Vinnova)
- 2013 Sustainable poverty alleviation from coastal ecosystem services (SPACES) Investigating elasticities, feedbacks and tradeoffs (GBP 2 million) (co-investigator, lead T Daw), ESPA
- 2013 Middlemen in the seafood trading chain: a critical link for achieving sustainable small-scale fisheries and poverty alleviation (3600 kSEK), VR/Uforsk
- 2013 Strengthening the capability of Kenyan communities to conserve coral reefs (lead Nyawira Muthiga, WCS Kenya)
- 2012 Diagnosing processes and outcomes in social-ecological systems: A systematic, cross-case comparison of adaptive co-management initiatives (co-investigator, PI: Ryan Plummer) VR (5,400,000sek)
- 2012 Production and consumption of seafood – opportunities and limitations of sustainability indicators and eco-labelling schemes. (co-investigator, PI: Patrik Rönnbäck) (3300 kSEK), VR/Uforsk

Publications

Selected peer reviewed articles (in order of publication date)

- Berkes , F., T.P. Hughes , R.S. Steneck , J. Wilson , D.R. Bellwood , **B. Crona** , C. Folke, L.H. Gunderson , H. Leslie , J. Norberg , M. Nystrom , P. Olsson , H. Österblom , M. Scheffer , B. Worm. (2006) Globalization, Roving bandits, and marine resources. *Science* 311:1557-1558.
- Crona, B.I.** and Bodin, Ö. (2006) WHAT you know is WHO you know? Communication patterns among resource extractors as a prerequisite for co-management. *Ecology and Society* 11(2): 7. [online] URL: <http://www.ecologyandsociety.org/vol11/iss2/art7/>
- Bodin, Ö., **B. Crona** and H. Ernstson 2006. Social Networks in Natural Resource Management: What Is There to Learn from a Structural Perspective?. *Ecology and Society* 11 (2): r2. [online] URL: <http://www.ecologyandsociety.org/vol11/iss2/resp2/>
- Hughes, T.P, Gunderson, L.H., Folke, C., Baird, A.H., Bellwood, D., Berkes, F., **Crona, B.**, Helfgott, A., Leslie, H., Norberg, J. Nyström, M., Olsson, P., österblom, H., Scheffer, M., Schuttenberg, H., Steneck, R.S., Tengö, M., Troell, M., Walker, B., Wilson, J., Worm, B. (2007) Adaptive management of the Great Barrier Reef and the Grand Canyon World Heritage Areas. *Ambio* 36(7):586-592

- Crona, B.I.** and Rönnbäck, P. (2007) Community structure and temporal variability of juvenile fish assemblages in natural and replanted mangroves, *Sonneratia alba* Sm., of Gazi Bay, Kenya. *Estuarine Coastal and Shelf Science* **74**:44-52.
- Bodin, Ö. and **B.I. Crona** (2008) Management of natural resources at the community level– the role of social capital and leadership in a rural fishing community. *World Development* **36**(12): 2763–2779
- Crona, B.I.**, Rönnbäck, P., Narriman, J., Ochiewo, J., Maghimbi, S. Bandeira, S. (2009) Murky water: Analyzing risk perception and stakeholder vulnerability related to sewage impacts in mangroves of East Africa. *Global Environ. Change* **19**(2): 227-239. doi:10.1016/j.gloenvcha.2009.01.001
- Bodin, Ö. and **B.I. Crona** (2009) The role of social networks in natural resource governance: What relational patterns make a difference? *Global Environmental Change* **19**(3): 366–374.
- Galaz, V. **B. Crona**, T. Daw, Ö. Bodin, M. Nyström, and P. Olsson (2010) Detecting approaching catastrophic shifts is possible – early warning and response to abrupt losses of ecosystem services. *Frontiers in Ecology and the Environment* **8**(2):99-104doi:10.1890/070204
- Crona, B.I.**, Nyström, M., Folke, C. and Jiddawi, N. (2010) Middlemen, a critical social-ecological link in coastal communities of Kenya and Zanzibar. *Marine Policy* **34**(4): 761-771.
- Crona, B.I.** and Bodin, Ö. (2010) Power asymmetries in small-scale fisheries– a barrier to governance transformability? *Ecology and Society* (Special Issue on SNA in NRM), **15**(4): 32. [online] URL: <http://www.ecologyandsociety.org/vol15/iss4/art32/>
- Crona, B.I.** and Hubacek, K. (2010) The right connections: How do social networks lubricate the machinery of natural resource governance? Editorial for special issue on Social Networks in Natural Resource Management. *Ecology and Society* **15**(4): 18 [online] URL: <http://www.ecologyandsociety.org/vol15/iss4/art18/>
- Crona, B.I.**, and Rosendo, S. (2011) Outside the law? Analyzing policy gaps in addressing fishers' migration in East Africa. *Marine Policy* **35**:379-388.
- Thyresson, M., Nyström, M., **Crona, B.** (2011) Trading with Resilience: Parrotfish Trade and the Exploitation of Key-Ecosystem Processes in Coral Reefs. *Coastal Management* **39**:396-411 DOI:10.1080/08920753.2011.589226
- Crona, B.I.** and Parker, J.N. (2011) Network Determinants of Knowledge Utilization: Preliminary Lessons from a Boundary Organization. *Science Communication* **33**(4):448–471. DOI: 10.1177/1075547011408116
- Galaz, V., **Crona, B.**, Österblom, H., Olsson, P. Folke, C (2012) Polycentric systems and interacting planetary boundaries - Emerging governance of climate change–ocean acidification–marine biodiversity. *Ecological Economics* **81**:21-32 [dx.doi.org/10.1016/j.ecolecon.2011.11.012](https://doi.org/10.1016/j.ecolecon.2011.11.012)
- Parker, J. and **Crona, B.I** (2012) On Being All Things to All People: Boundary Organizations & the Contemporary Research University. *Social Studies of Science* **42**(2):1-28. Doi: 10.1177/0306312711435833
- Plummer, R., **Crona, B.I.**, Armitage, D., Olsson, P., Tengö, M., Yudina, O. (2012) Adaptive Co-management: A Systematic Review and Analysis. *Ecology and Society* **17**(3): 11. <http://dx.doi.org/10.5751/ES-04952-170311>
- Galaz, V., Biermann, F., **Crona, B.**, Loorbach, D., Folke, C., Olsson, P., Nilsson, M., Allouche, J., Persson, Å, Reisch, G. (2012) Planetary boundaries — exploring the challenges for global environmental governance *Current Opinion in Environmental Sustainability* **4**:1-8.
- Crona, B.I.** and Parker, J. (2012) Learning in support of Governance: Theories, methods and a framework to assess how bridging organizations contribute to adaptive resource governance. *Ecology and Society* **17**(1):32 <https://www.ecologyandsociety.org/vol17/iss1/art32/> doi.org/10.5751/ES-04534-170132
- Crona, B.I.**, Wutich, A., Brewis, A., Gartin, M. (2013) Perceptions of climate change: Linking local and global perceptions through a cultural knowledge approach. *Climatic Change* **119**(2):519-531. DOI 10.1007/s10584-013-0708-5
- Thyresson, M., **B. Crona**, M. Nyström, M. de la Torre-Castro, and N. Jiddawi (2013). Tracing value chains to understand effects of trade on coral reef fish in Zanzibar, Tanzania. *Marine Policy* **38**:246-256. DOI [10.1016/j.marpol.2012.05.041](https://doi.org/10.1016/j.marpol.2012.05.041)
- Westley, F. R., O. Tjornbo, L. Schultz, P. Olsson, C. Folke, **B. Crona** and Ö. Bodin. (2013) A theory of transformative agency in linked social-ecological systems. *Ecology and Society* **18**(3): 27. <http://dx.doi.org/10.5751/ES-05072-180327>
- Sandström, A., **Crona, B.**, Bodin, Ö. (2014) Legitimacy in co-management: the impact of preexisting structures, social networks and governance strategies. *Environmental Policy and Governance* **24**(1):60-76 doi: 10.1002/eet.1633
- Bodin, Ö., **C. B.I. Crona**, M. Thyresson, A-L. Golz, and M. Tengö (2014) Conservation success as a function of good alignment (fit) of social- and ecological structures and processes, *Conservation Biology* **28**(5):1371-1379.

- Wamukota, A., T.D. Brewer, **B. Crona** (2014) Market integration and its relation to income distribution and inequality among fishers and traders: The case of two small-scale Kenyan reef fisheries. *Marine Policy* 48:93-101 doi.org/10.1016/j.marpol.2014.03.013
- Von Heland, F., **Crona, B.I.**, Fidelman, P.(2014) Mediating science and action across multiple boundaries in the Coral Triangle. *Global Environmental Change* 29: 53-64
- Sandström, A., Bodin, Ö, **Crona, B.** (2015) Network Governance from the top – The case of ecosystem-based coastal and marine management. *Marine Policy*, 55, pp.57–63
- Wamukota, A., **Crona, B.**, Osuka, K., Daw, T. (2015) The Importance of Selected Individual Characteristics in Determining Market Prices for Fishers and Traders in Kenyan Small-Scale Fisheries. *Society and Natural Resources*. 1-16- <http://dx.doi.org/10.1080/08941920.2015.1014600>
- Österblom, Henrik, Jean-Baptiste Jouffray, Carl Folke, **Crona, B.** Max Troell, Andrew Merrie, and Johan Rockström. 2015. “Transnational Corporations as ‘Keystone Actors’ in Marine Ecosystems.” *PLOS ONE* 10 (5): e0127533. doi:10.1371/journal.pone.0127533.
- Crona, B.I.**, van Holt, T., Petersson, M., Daw, T.M., Buchary, E. (2015) Using social-ecological syndromes to understand impacts of international seafood trade on small-scale fisheries. *Global Environmental Change* 35:162–175. doi:10.1016/j.gloenvcha.2015.07.006
- Eriksson, H., Österblom, H., **Crona, B.**, Troell, M., Andrew, N., Wilen, J., & Folke, C. (2015). Contagious exploitation of marine resources. *Frontiers in Ecology and the Environment*, 13(8), 435-440.
- Galaz, V., Österblom, H., Bodin, Ö., **Crona, B.** (2016) Global networks and global change-induced tipping points. *International Environmental Agreements: Politics, Law and Economics* 16: 189–221. 10.1007/s10784-014-9253-6
- Crona, B.I.** et al., (2016). Masked, diluted and drowned out: how global seafood trade weakens signals from marine ecosystems. *Fish and Fisheries*, p.n/a–n/a. DOI: 10.1111/faf.12109
- Crona, B.**, Basurto, X., Squires, D., Gelcich, S., Daw, T., Khan, A., Havice, E., Chomo, V., Troell, M., Buchary, E., Allison, E. (2016) Towards a typology of interactions between small-scale fisheries and global seafood trade. *Marine Policy* 65: 1-10 [doi:10.1016/j.marpol.2015.11.016](https://doi.org/10.1016/j.marpol.2015.11.016)
- Bodin, Ö., Sandström, A., **Crona, B.** (2016) Collaborative Networks for Effective Ecosystem-Based
- Jonell, M., **Crona, B.I.**, Brown, K., Rönnbäck, P., Troell, M. (2016) Eco-Labeled Seafood: Determinants for (Blue) Green Consumption. *Sustainability* 8 (9): 884 doi:10.3390/su8090884
- Österblom, H., **Crona, B.I.**, Folke, C., Nyström, M., Troell, M. (2017) Marine ecosystem science on an intertwined planet. *Ecosystems* 20: 54–61, DOI: 10.1007/s10021-016-9998-6
- Kinimonth, S., **B. Crona, Ö. Bodin, I. Vaccaro, L. J. Chapman, and C. A. Chapman.** 2017. Microeconomic relationships between and among fishers and traders influence the ability to respond to social-ecological changes in a small-scale fishery. *Ecology and Society* 22(2):26. <https://doi.org/10.5751/ES-08833-220226>
- Crona, B.**, Gelcich, S., Bodin, Ö. (2017) The Importance of Interplay Between Leadership and Social Capital in Shaping Outcomes of Rights-Based Fisheries Governance. *World Development* Volume 91: 70–83 <http://dx.doi.org/10.1016/j.worlddev.2016.10.006>
- Van Holt, T, **Crona, B.**, Johnson, J.C, Gelcich, S. (2017) The consequences of landscape change on fishing strategies. *Science of the Total Environment* 579, 930-939 <http://dx.doi.org/10.1016/j.scitotenv.2016.10.052>
- Ekstrom, J., **Crona, B.I.** (2017) Institutional misfit and environmental change: A systems approach to address ocean acidification. *Science of the Total Environment* 576, 599-608 <http://dx.doi.org/10.1016/j.scitotenv.2016.10.114>
- O'Neill, E., **Crona, B.** Assistance networks in seafood trade—A means to assess benefit distribution in small-scale fisheries. *Marine Policy* 78 (2017): 196-205. <http://dx.doi.org/10.1016/j.marpol.2017.01.025>
- Stoll JS, Fuller E, **Crona BI** (2017) Uneven adaptive capacity among fishers in a sea of change. *PLoS ONE* 12(6): e0178266. <https://doi.org/10.1371/journal.pone.0178266>
- Galaz, V., **Crona, B.**, Dauriach, A., Scholtens, B., & Steffen, W. (2018). Finance and the Earth system – Exploring the links between financial actors and non-linear changes in the climate system. *Global Environmental Change*, 53. <http://doi.org/10.1016/j.gloenvcha.2018.09.008>
- Galaz, Victor, **Beatrice Crona**, Alice Dauriach, Jean-Baptiste Jouffray, Henrik Österblom, and Jan Fichtner. "Tax havens and global environmental degradation." *Nature ecology & evolution* (2018): 1.
- Drury O'Neill, E., **Crona, B.**, Ferrer, A. J., Pomeroy, R., & Jiddawi, N. (2018). Who benefits from seafood trade? A comparison of social and market structures in small-scale fisheries. *Ecology and Society*, 23(3).
- Stoll, J. S., **Crona, B. I.**, Fabinyi, M., & Farr, E. R. (2018). Seafood trade routes for lobster obscure teleconnected vulnerabilities. *Frontiers in Marine Science*, 5, 239.
- González-Mon, B., Bodin, Ö., **Crona, B.**, Nenadovic, M., & Basurto, X. (2019). Small-scale fish buyers' trade networks reveal diverse actor types and differential adaptive capacities. *Ecological Economics*, 164, 106338.

- Folke, C., Österblom, H., Jouffray, J.B., Lambin, E.F., Adger, W.N., Scheffer, M., **Crona, B.I.**, Nyström, M., Levin, S.A., Carpenter, S.R. and Anderies, J.M., 2019. Transnational corporations and the challenge of biosphere stewardship. *Nature ecology & evolution*, pp.1-8.
- Blasiak, R., Wabnitz, C.C., Daw, T., Berger, M., Blandon, A., Carneiro, G., **Crona, B.**, Davidson, M.F., Guggisberg, S., Hills, J. and Mallin, F., 2019. Towards greater transparency and coherence in funding for sustainable marine fisheries and healthy oceans. *Marine Policy*, p.103508.
- Fortnam, M., Brown, K., Chaigneau, T., **Crona, B.**, Daw, T.M., Gonçalves, D., Hicks, C., Revmatas, M., Sandbrook, C. and Schulte-Herbruggen, B., 2019. The gendered nature of ecosystem services. *Ecological Economics*, 159, pp.312-325.
- O'Neill, E.D., **Crona, B.**, Ferrer, A.J.G. and Pomeroy, R., 2019. From typhoons to traders: the role of patron-client relations in mediating fishery responses to natural disasters. *Environmental Research Letters*, 14(4), p.045015.
- Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., Garnett, T., Tilman, D., DeClerck, F., Wood, A. Jonell, M., ... **Crona, B.**, et al. 2019. Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet*, 393(10170), pp.447-492.
- Nyström M, Jouffray J-B, Norström AV, **Crona B**, Sjøgaard Jørgensen P, Carpenter SR, Bodin Ö, Galaz V, Folke C. Anatomy and resilience of the global production ecosystem. *Nature* (Accepted as a selected paper for Nature’s 150 years anniversary Insight Album “Science & Society”. The paper will be published on November 6th 2019.)
- Jouffray, J-B., **Crona, B.**, Wassénus, E., Bebbington, J., Scholtens, B. (in press, 2 October 2019) Leverage points in the financial sector for seafood sustainability, *Science Advances*
- Folke, C., Österblom, H., Jouffray, J.B., Lambin, E.F., Adger, W.N., Scheffer, M., **Crona, B.I.**, Nyström, M., Levin, S.A., Carpenter, S.R. and Anderies, J.M., 2019. Transnational corporations and the challenge of biosphere stewardship. *Nature ecology & evolution*, pp.1-8.

Book Chapters (selected)

- Crona, B.I.**, Prell, C., Ernstson, H., Reed, M., Hubacek, K. (2011) Network-related approaches and theories in resource management. In: Bodin, Ö. And Prell, C. (Eds), Social networks in natural resource governance. Uncovering the Social Fabric of Environmental Governance. Cambridge University Press.
- Crona, B.I.** and Bodin, Ö. (2011) Knowledge, social networks, and leadership: setting the stage for the development of adaptive institutions. In: Boyd, E. and Folke, C. (Eds), Adapting Institutions. Governance, Complexity, and Social-Ecological Resilience. Cambridge University Press.
- Crona, B.I.** and Bodin, Ö. (2011) Barriers in transforming to sustainable governance: the role of key individuals. In: Bodin, Ö. And Prell, C. (Eds), Social networks in natural resource governance. Uncovering the Social Fabric of Environmental Governance. Cambridge University Press.
- Bodin, Ö. and **Crona, B.I.**, (2017) Social Networks: Uncovering Social–Ecological (Mis) matches in Heterogeneous Marine Landscapes. In Learning Landscape Ecology (pp. 325-340). Springer New York.

Other forms of publications (selected)

- Lankester, K. and **Crona, B.** Investors can help finance sustainable seafood by demanding transparency on fishing companies’ product ranges. Open editorial in the ESG Magazine (issue 5, 2016)
- Crona, B.** Have our oceans reached a tipping point? (2015) World Economic Forum Agenda <https://www.weforum.org/agenda/2015/09/have-our-oceans-reached-a-tipping-point>
- Gaffney, O., **Crona, B.**, Galaz, V., & Dauriach, A. (2018). Sleeping Financial Giants. Opportunities in financial leadership for climate stability. <http://doi.org/10.17045/sthlmuni.7105748.v2>