
Survey response

Candidate statements and CV/resume

Please enter your name and email address below. [First Name]
Mark
Please enter your name and email address below. [Last Name (Surname)]
Chandler
Please enter your name and email address below. [Email address]
mchandler@earthwatch.org
What do you feel are the major concerns facing the citizen science community?
<p>I see a citizen science community today that is robust, diverse and found within much of society. Many recognize the potential of citizen science to address many societal needs, be it empowered citizens and communities, improved knowledge or altered power dynamics. Against this backdrop, there are two areas I would like to work on as a Board member: 1) increasing access to and impact of citizen science programs; and, 2) expanding the international CSA community and membership.</p> <p>I believe one of the major opportunities for citizen science lies in easing the discovery, access and usability of tools and practices for the full diversity of programs and empowering all communities in citizen science including those who monitor local pollution, count the homeless, or, observe biodiversity. Increasing program impact can be time and resource intensive, especially when considering the multitude of outcomes that can be achieved. By making the spectrum of tools and practices more directly and clearly available the CSA can facilitate the standardization of data collection, analysis and presentation, when appropriate. Particular focus would be on ensuring that tools and practices are available that facilitate greater inclusion of more marginalized constituents such as disadvantaged communities. This would include deliberate attention to enabling fruitful communication across groups that are often isolated such as academic scientists and disadvantaged communities. This effort would extend the reach and strengthen citizen science outcomes. This means ensuring supporting those new or excluded to the field, with few resources, as well as those who want to increase the impact of existing programs. Building capacity to deliver effective programs may also include promoting and potentially delivering training, mentoring and coaching programs.</p> <p>I am particularly keen on expanding the reach of citizen science – including in novel fields, and in those regions and countries which may not have local associations to support them. There is great interest in citizen science globally by organizations with little access to local resources. The resources and contacts accessible through the CSA can be essential for organizations worldwide wanting to observe, research, learn and act. In addition to online support, promotion and support via networking of more localized in-person gatherings by the CSA and its membership would also be an important contribution – both in the US and internationally.</p> <p>While interest in citizen science has expanded broadly to many organizations, support within institutions and by partners (e.g. academic scientists) is often not deep. The CSA can support practitioners where institutional backing for citizen science is light, through our active and dynamic network of practitioners, case studies or other forms of evidence and resources. I believe that by strengthening our own citizen science network, we can create a broader and more sustained impact.</p>

What skills and what types of experience would you bring to the CSA board?

I have spent over twenty-five years engaging the public in science and citizen science programs and now work at Earthwatch. I oversee the design and management of citizen science field projects, working collaboratively with other scientists and managers to develop over 100 peer-reviewed citizen science projects in 35 countries in many of the world's ecosystems. Through these programs, I have become attuned to bridging the needs and language of scientists, communities around common goals. One of my focus areas is developing citizen science programs that address issues identified by key stakeholders including community members, including topics such how can coffee farmers maintain productive coffee fields which support their families and communities and reduce their negative environmental impact. These projects are developed through deep discussions with project scientists and local partners, participants, and sometimes corporations (e.g. Starbucks, HSBC bank). Most recently I have developed citizen science programs around urban resiliency in the United States (earthwatch.resiliency.org) – including the creation of green space that enhances local conditions. I have witnessed and documented how citizen science can lead to high scientific and management impact and well as transformed participants including the scientists who gain new insights into the knowledge and expertise found within the general public.

I have designed and managed a program assessment tools to evaluate the impact of citizen science projects for contributions to scientific publications, management plans and policies, and the awareness, behavior and attitudes of participants. These tools have been used to assess the impact of Earthwatch programs, contributing to improved management of programs supported, as well as reporting of outcomes. I have shared these experiences with the broader citizen science community, including global efforts (e.g. citizen science lead for the Group on Earth Observations Biodiversity Observation Network) and as co-chair of the Professional Development Working Group of the CSA. This has been hugely rewarding, as I have learned from those who are shaping citizen science – in fact many of these colleagues become co-authors on publications!

Two areas are of particular interest to me. The first is to extend the reach and impact of citizen science globally, in areas that are currently underrepresented geographically and topically. Which approaches of citizen science, support mechanisms and capacity building will allow citizen science to fulfill its potential in helping to address some of the world's most pressing challenges – at scale. The second area is expanding our understanding of place-based programs which are centered within the needs and concerns of local communities. How can we seek to make these sorts of programs more impactful, for all – and how can the lessons learned be successfully transferred to others.

MARK CHANDLER

226 Red Acre Rd, Stow, MA, 01775
markchandlerw@gmail.com
+1 (978) 844-0884

Professional Positions

Earthwatch Institute, 114 Western Ave, Boston, MA

- International Director of Research Initiatives, 2015-current
- Director of Research and Conservation, 2001-2015

New England Aquarium, Boston, MA 1993-2001

- Research Scientist

Education

Ph.D. Biology - McGill University, Montreal, Canada; 1988-1993

B.Sc. Wildlife Biology - University of Guelph, Guelph, Canada; 1982-1986

Academic Awards

TWM Cameron Award for outstanding Ph.D. thesis, Canadian Society of Zoologists, 1993

Publications (partial list)

Boukili, V., Bebber, D., Mortimer, T., Venicx, G. Lefcourt, D., Chandler, M., Eisenberg, C. 2017. Assessing the performance of urban forest carbon sequestration models using direct measurements of tree growth. *Urban Forestry & Urban Greening* (accepted for publication)

Chandler, M., Rullman, S., Cousins, S., Esmail, N., Begin, E., Venicx, G. Eisenberg, C., Studer, M. 2016. Contributions to publications and management plans from 7 years of citizen science: use of a novel evaluation tool on Earthwatch-supported projects. *Biol. Cons.* doi: 10.1016/j.biocon.2016.09.024

Chandler, M., See, L., Copas, K., Bonde, A.M.Z., Claramunt López, B., Danielsen, F., Legind, J.K., Masinde, S., Miller-Rushing, A.J., Newman, G., Rosemartin, A., Turak, E., 2016. Contribution of Citizen Science towards International Biodiversity Monitoring. *Biol. Cons.* doi: 10.1016/j.biocon.2016.09.004

Newman, G., M. Chandler, M. Clyde, B. McGreavy, M. Haklay, H. Ballard, S. Gray, D. Mellor, J. Gallo. 2016. Leveraging the power of place in citizen science for effective conservation decision making. *Biol. Cons.* doi: [10.1016/j.biocon.2016.07.019](https://doi.org/10.1016/j.biocon.2016.07.019)

Chandler, M., See, L., Buesching, C., Cousins, J. Gillies, C., Kays, R., Newman, C., Pereira, H. Tiago, P. 2016. Involving Citizen Scientists in Biodiversity Observation (Systems). 2016. In: *Handbook for developing Global Earth Observation Biological Observation Networks*. Editors: Walters, M., Scholes, R.J. Elsevier Press. Pp 211-237.

Chandler, M., See, L., Andrianandrasana, H., and 20 others. 2017. The Value and Opportunities of Community- and Citizen-based Approaches to Tropical Forest Biodiversity Monitoring. Accepted for the *Sourcebook for biodiversity monitoring in tropical forests*.

Castro-Tanzi, S., M. Flores, N. Wanner, T.V. Dietsch, J. Banks, N. Urena, M.

- Chandler. 2014. Evaluation of a non-destructive sampling method and a statistical model for predicting fruit load on individual coffee (*Coffea arabica*) trees. *Scientia Horticulturae* 167, 117-126.
- Banks, J.E., L.M. Hannon, T.V. Dietsch, M. Chandler. 2014. Effects of seasonality and farm proximity to forest on Hymenoptera in Tarrazú coffee farms. *International Journal of Biodiversity Science, Ecosystem Services* 10:128-132.
- Chandler, M., Bebbler, D. P., Castro, S., Lowman, M. D., Muoria, P., Oguge, N., Rubenstein, D. I. 2012. International citizen science: making the local global. *Frontiers in Ecology and the Environment* 10(6): 328-331.
- Castro, S., T.V. Dietsch, N. Ureña, L. Vindas, and M. Chandler, 2012. Analysis of management and site factors to improve the sustainability of smallholder coffee production in Tarrazú, Costa Rica. *Agric. Ecosyst. Environ.* 155, 172-181.
- Bell, R., R. Buchsbaum, C. Roman, and M. Chandler. 2005. Inventory of Intertidal Habitats: Boston Harbor Area. *Northeastern Naturalist*, Vol. 12 Special Issue 3:201-220.
- Chandler, M. 2005. Saving species by saving watersheds: Poster Development and Community Participation. In: *Facilitating Watershed Management: Fostering Awareness and Stewardship*. Ed. R. L. France. Rowman & Littlefield..
- Chandler, M., L.S. Kaufman and S. Mulsow. 1996. Human impact, biodiversity and ecosystem processes in the open ocean. In: *Functional Roles of Biodiversity: A Global Perspective*. (Eds.) Mooney, H., J.H. Cushman, E. Medina, O.E. Sala, E.-D. Schulze. Wiley Press, New York. pp. 431-474.
- Chandler, M. 1999. Saving small fish in a big pond: partnering with local institutions to conserve the haplochromine cichlids of Lake Victoria. *Proceedings of the American Aquarium and Zoo Association/CAZPA National Conference*. 23-28 September 1999. Minneapolis, MN.
- Chandler, M. and L.S. Kaufman. 1997. The role of live-organism institutions: what's the signal, where's the heart beat? *Conservation and research in aquatic ecosystems: the Aquatic Biodiversity Program of the New England Aquarium*. In: *Committing to Conservation*, (Ed.) Armstrong, B. Columbus Zoo Publications.

Education and Exhibits (in part)

1996 – 2000. Project Director for an NSF funded, major traveling 5,500 ft² exhibit on the relationship between science, people and the environment of Lake Victoria; opened in April 2000 at the New England Aquarium. Total project budget \$ 1.8 M.

Professional services

Co-Chair, Professional Development Working group, Citizen Science Association
 Advisor, Group Earth Observations Biodiversity Observation Network
 Coordinator: Lake Victoria Species Survival Program (VSSP) for the American Association of Zoos and Aquaria (AZA) 1997-2001
 Technical Advisory Committee for the Massachusetts Bays Program
 Eel River Watershed Technical Advisory Group
 Reviewer: numerous journals

Languages

Fluent in English, French, and Spanish