

AG and Committee Annual Report

AG/Committee Name: Ecotoxicology of Amphibians and Reptiles Global Advisory Group (EARAG)

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Council/Board Liaison: Douglas Fort

Executive Summary

This Advisory group exists to serve as a scientific resource to all stakeholders interested in the ecotoxicology and ecological risk assessment of amphibians and reptiles. It will serve as a focal point within SETAC as a means of involving the membership in research and discussions. At present, there is a global steering committee comprised of twelve people from academia, industry, and government.

Organization

This Advisory group exists to serve as a scientific resource to all stakeholders interested in the ecotoxicology and ecological risk assessment of amphibians and reptiles. It will serve as a focal point within SETAC as a means of involving the membership in research and discussions. The steering committee is comprised of 8 to no more than 15 individuals representing government, academic and industry as well as the different geographic regions. At present, the global steering committee is comprised of twelve people. There is a chair and a vice-chair.

Activities Summary

A workshop titled “Reptiles and Amphibians in Ecotoxicology and Ecological Risk Assessment: Current Challenges and Paths Forward” was organized in affiliation with the SETAC North America 35th Annual Meeting in Vancouver in November 2014. There were [5, including intro] platform presentations followed by discussion. Presentations reflected tripartite perspectives from academia, industry, and regulatory science. The discussion focused on certainties and uncertainties in risk assessment of herpetofauna, with topics including surrogate species, conceptual models of exposure, native species protocols, known gaps in understanding and efforts underway to address them. A breakout group continued its efforts to revise a review manuscript on amphibian risk assessment. The workshop was held in response to EARAG recommendations at the 34th Annual Meeting in Nashville.

A poster and platform session entitled “Ecotoxicology of amphibians and reptiles: resolving uncertainties about the impacts of pollutants on individuals, populations and communities” were held at the SETAC Europe Annual Meeting in Barcelona in May, 2015. Sixteen posters and six platform presentations were given. Topics in the platform session included inheritance of copper tolerance, developmental effects of maternal exposure to selenium, population-level consequences of copper toxicity, and the occurrence of contaminants in amphibians in diverse landscapes. The poster session included a wide range of topics from exposure routes of pesticides to juvenile amphibians, effects of maize herbicides, standard toxicity testing methods in Northern leopard frogs, to several posters on the challenges and needs in amphibian and reptile ecological risk assessment.

In June 2015 a one-day workshop about amphibians and plant protection products (PPP) was organized in Switzerland by Agroscope, KARCH and Ecotox Centre Eawag-EPFL. Around 35 experts from academia,

industry, governmental and non-governmental organizations, as well as agronomists, herpetologists and one environmental lawyer discussed the extent to which amphibians are at risk from PPP, what research should be conducted in order to advance the risk assessment of amphibians and which risk mitigation measures can be applied under the precautionary principle in order to reduce the pressure on amphibian populations. The workshop can be seen as a brainstorming of opinions and ideas from a range of stakeholders and as the basis for further collaborations and projects.

At the SETAC GLB (German Language Branch) a meeting under the auspices of the advisory group was held in which the results of the workshop were presented. The aim of the meeting was to catch up on the important research questions to improve the PPP risk assessment for amphibians. Five areas were identified: 1) Prioritization of substances which are of special concern for assessment of amphibian skin permeability, 2) Identification of sensitive terrestrial life stages including impact on population dynamics, 3) PPP Exposure characterization for terrestrial life stages as well as maternal transfer to aquatic life stages, 4) Spatial and temporal migration behavior through agricultural fields and identification of coincidence of presence in the field during PPP application, 5) Protection goals for amphibians. Furthermore, it was discussed if taking action to improve the situation for amphibians depends on further research or whether ad hoc actions e.g. to reduce the exposure of amphibians in agricultural areas would be appropriate. The latter suggests that amphibian populations are acutely at risk, while the former suggests that more knowledge can lead to more targeted action. Additionally, a session for SETAC Europe's 26th annual meeting has been submitted by members of the AG entitled "Pollutant risks to amphibians and reptiles: how much we know and what we need."

Coordination with Other Advisory Groups and Committees

The EARAG has continued to coordinate efforts with the Ecological Risk Assessment Advisory Group (ERAAG) by having members of each attend both AG meetings during SETAC conferences. Additionally, for SETAC Vancouver (2014) the ERA-AG is co-sponsoring the workshop on advancing ecotoxicity and ecological risk assessment of amphibians and reptiles.

Future Plans

The advisory group continues to support different initiatives throughout the field with regard to advancing ecological risk assessment of reptiles and amphibians. In most cases, the AG serves a way to bring interested parties together to try to ensure that information is adequately disseminated. There are few efforts that are being directed by the AG, per se, mostly because external organizations (like EFSA) are spearheading very large efforts. There has been discussion in recent meetings about writing opinion pieces regarding the use of birds as surrogates for terrestrial amphibians and reptiles and fish as surrogates of larval amphibians. Further, a subset of the steering committee is working on a review of amphibian risk assessment, which may be published at a later date.

Business and Planning Meetings

At the meeting in Vancouver, a business meeting also occurred where membership was discussed as well as future efforts related to advancing ecological risk assessment of amphibians and reptiles. As well, attendees indicated that a session for amphibians and reptiles would be needed in the upcoming meeting at Salt Lake City, UT.

The business meeting in Barcelona was very active, likely because of efforts within EFSA to develop guidance documents for ecological risk assessment of amphibians and reptiles. Important details are highlighted in the business meeting minutes on the AG website.

Membership Communications

The AG utilized several channels of communication but these seem to have been most effective within geographical units. Face to face meetings are held during the presentations and the business meetings as well as more informal gatherings of interested participants. Email has been the dominant form of communication across geographical units and through time. Here, participation has not been historically very strong.

Issues/Problems

One issue of potential concern for the EAR-AG is a waning membership in the Steering Committee. Unfortunately, this year several of our members have been asked to participate in the development of the EFSA guidance on risk assessment of amphibians and reptiles and EFSA has identified that the EAR-AG represents a conflict of interest. As a consequence, those members have resigned their positions (Annette Aldrich and Manuel Santaliestra). Manuel was slated to be the new chair. We will have to make more of an effort to recruit SC members, particularly from other geographic regions ensuring to maintain tripartite balance.

Current Steering Committee

Geographical Unit / name	Sector	Affiliation	Term Ends
North America			
Christopher Salice, Chair	Academia	Towson University, US	2016
Jamie Bacon, Past Chair	NGO/Government	Bermuda Zoological Society, Bermuda	2015
Christine Bishop	Government	Environment Canada, Canada	2016
Kym Rouse Campbell	Industry	ENVIRON International Corp., Canada	2015
Stacey Lance	Academia	University of Georgia Savannah River Ecology Lab	2017
Catherine Aubee	Government	US Environmental Protection Agency	2016
Asia/Pacific			
Noppadon Kitana	Academia	Chulalongkorn University, Bangkok, Thailand	2016
Europe			
Manuel E. Ortiz Santaliestra, Vice Chair	Academia	Universidad de Castilla-La Mancha, Ciudad Real, Spain	LEAVING
Tina Grimm	Industry	RIFCON GmbH, Hirschberg, Germany	2016
Peter Sowig	Industry	Bayer Cropscience, Frankfurt, Germany	2016
Annette Aldrich	Government	Federal Department of Economic Affairs, Education and Research Agroscope	LEAVING
John Brausch	Industry	BASF	2017

No. active members:

Total membership: 104 active

We will be seeking several positions on the SC as well as a new chair.