

IUCN SSC Chytrid, Zygomycete, Downy Mildew, Slime Mould Specialist Group

2018 Report



Mayra Camino



Kryvomaz Tetiana

Co-Chairs

Mayra Camino ⁽¹⁾
Kryvomaz Tetiana ⁽²⁾

Red List Authority Coordinator

Mayra Camino ⁽¹⁾

Location/Affiliation

⁽¹⁾ National Botanic Garden, University of Havana, Havana, Cuba
⁽²⁾ Kyiv National Construction and Architecture University, Ecology Department, Kyiv, Ukraine

Number of members

25

Social networks

Facebook:
Slime Mold Identification & Appreciation
Website:
www.cybertruffle.org.uk/moulds/index.htm



Mission statement

The mission of our IUCN Specialist Group is to promote the conservation of chytrids, downy mildews, myxomycetes and zygomycetes.

Projected impact for the 2017-2020 quadrennium

By the end of 2020, we envision a substantial advance in understanding extinction risks for certain ecological groups of myxomycetes (slime moulds), chytrid, zygomycete, downy mildew and particular species. One of the most important aspects of evaluating possible impacts of climate change and anthropogenic influence is to demonstrate that changes are occurring in the distribution of particular species. In future research, at least two possible effects of climate change and other negative impacts should be clearly distinguished. First, the negative impacts on composition of species assemblages, which does not necessarily threaten particular species, must be assessed. Second, the negative impacts on a single species, which may well be threatened and thus would warrant inclusion on Red Lists, needs to be evaluated. In addition, promotion of conservation activities for neglected groups of living organisms will provide the general vision of nature processes functioning; in particular, attention needs to be focused on discovering the role of chytrids, zygomycetes, downy mildews, and myxomycetes in people's lives and their relationships with other species. Furthermore, the conservation action network of experts and amateurs will expand.

Targets for the 2017-2020 quadrennium

Assess

Red List: complete assessment of 100 species of myxomycetes (slime moulds).

Research activities: (1) study climate change impacts on myxomycetes, chytrid, zygomycete,

downy mildew; (2) analyse population trends, threats, and assess species using the IUCN Red List criteria and determine conservation actions for chytrids, zygomycetes, downy mildews, and slime moulds.

Plan

Policy: promote the conservation of different groups of living organisms that were not considered to be in danger before, but are in need of protection today.

Network

Capacity building: train professionals on how to carry out Red List assessments.

Synergy: organise a network of specialists and stakeholders for discussing conservation problems for "lower fungi" and for exchange of successful protection measures.

Communicate

Communication: advance conservation activity for chytrids, zygomycetes, downy mildews and slime moulds.

Activities and results 2018

Assess

Red List

i. We carried out preliminary Red List assessment of 10 tropical myxomycete species from genus *Physarum* based on field expedition material from Seychelles and Martinique. Ten species were assessed and four species were re-assessed (previous assessment in 2007), as follows: 11 Critically Endangered, 2 Endangered and 1 Near Threatened species. The new version of the Red List of Cuba was prepared, including 21 species of myxomycetes from Cuba; the list includes 11 Critically Endangered, 4 Endangered, 2 Near Threatened and 4 Data Deficient species. We have already completed workshops in Cuba, France and Ukraine. (KSR #1)



Hemitrichia calyculata
Photo: Alain Michaud

Lamproderma acanthosporum
Photo: Alain Michaud



Research activities

i. Five publications were produced, including scientific publications which analysed conservation problems, climate change, environmental safety, species identification, human impact, heavy metals accumulation, mountain and tropical ecosystems in the context of “lower fungi”; a guidebook for field work; and an identification book. For the characterisation of the ecological niche, 19 bioclimatic variables were used and obtained from the Wordclim database (www.worldclim.org/). For each model, the extreme values of radiative forcing (FR) were used (as proposed by the IPCC: 2.6 W/m² for a mitigation scenario, and 8.5 W/m² for a pessimistic scenario). Predictive models of the potential distribution of 11 species of myxomycetes were obtained in different climatic scenarios and the contribution of the bioclimatic variables to the potential distribution of the species was determined. (KSR #43)

ii. We made three field studies and scientific analyses of myxomycete assemblages in tropics, mountain and mangrove ecosystems. The project “Inventories of fungal and functional taxonomic groups” was carried out in three Cuban wetlands: (1) Managed Resources Protected Area Ciénaga de Zapata (Matanzas province), declared a Biosphere Reserve “Zapata Peninsula” in 2000, as well as a Ramsar Site in 2001 and an Area of Importance for Birds in 2009 (it is distinguished as the largest wetland in the insular Caribbean). Two field collections took place during the project. Twenty species of myxomycetes in nine genera were identified; 18 of these species are registered as new for this study area. (2) Wildlife Refuge “Las Picúas-Cayo Cristo” (Villa Clara province, northwest keys cayeria). Four field collections took place during the project; 18 species of myxomycetes in 10 genera were identified. (3) Wildlife Refuge “Golfo de Batabanó” (Mayabeque province, western

coastal area of Batabanó municipality). One field collection took place during the project; eight species of myxomycetes in eight genera were identified. (KSR #12)

Plan

Policy

i. Promotion of the conservation of different groups of living organisms that were not considered to be in danger before, but are in need of protection today. This concept was promoted to different audiences, including students in different levels of education (primary, secondary and special education) through the creation of various teaching materials: (1) students of Community of Las Terrazas School (Pinar del Rio province): 5th, 6th and 7th grade; (2) Coastal Marine Festival in the community of Carahatas, protected area RF Las Picúas-Cayo Cristo: exhibition of crochet allegorical to fungi and myxomycetes, trunks with different species to appreciate the diversity in types, shapes and colours of these organisms, as well as children’s drawing competitions with coloured chalk; (3) design of allegorical stickers of fungi and myxomycetes with educational messaging; (4) design of sheet of paper on myxomycetes for the plastic field guide (four sheets of paper); (5) programme design for circle of interest for 5th and 6th grade children in primary education, in coordination between mycologists and Environmental Educators of the National Botanical Garden Training: to specialists of the RF Golfo de Batabanó Protected Area; (6) Project Workshop: Diversity and conservation of fungi in Cuban wetlands. Criteria of the IUCN Red List: Treatment for fungi and myxomycetes. College extension: linking students of the Faculty of Biology of the University of Havana (3rd and 4th year) to the project that was executed (2016-2018) and to the research topics. The students participated in all results and are co-authors of the presented papers. (KSR #2)

Network

Capacity building

i. We have secured Red List assessment training for around 50 people from European and Latin American countries. (KSR #5)

Synergy

i. Two working groups were established to discuss conservation problems for “lower fungi” and for exchange of successful protection measures, one in Europe and one in Latin America. IV Encuentro Científico sobre Diversidad Biológica. BiodiversSOS 2018. (Sancti Spíritus, Cuba, 2018).

Communicate

Communication

i. Five public outreach efforts were achieved, including: scientific-popular articles; courses for students and schoolchildren, press notes about our events; TV report on local French television; Facebook network (Slime Mold Identification & Appreciation <https://www.facebook.com/groups/SlimeMold/permalink/1968371953422653/>). (KSR #28)

Acknowledgements

We thank the Cuban National Program “Sustainable use of the components of biological diversity in Cuba”.

Summary of activities 2018

Species Conservation Cycle ratio: 4/5

Assess	3	■■■
Plan	1	■
Network	2	■■
Communicate	1	■

Main KSRs addressed: 1, 2, 5, 12, 28, 43

KSR: Key Species Result