Results of the LIFE project "Algae - Economy Based Ecological Service of Aquatic Ecosystems/ Glony - Gospodarka ekologiczna" LIFE17 ENV /LT/000407

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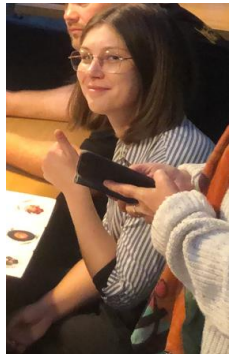


AlgaeService for LIFE No. LIFE17 ENV/LT/000407

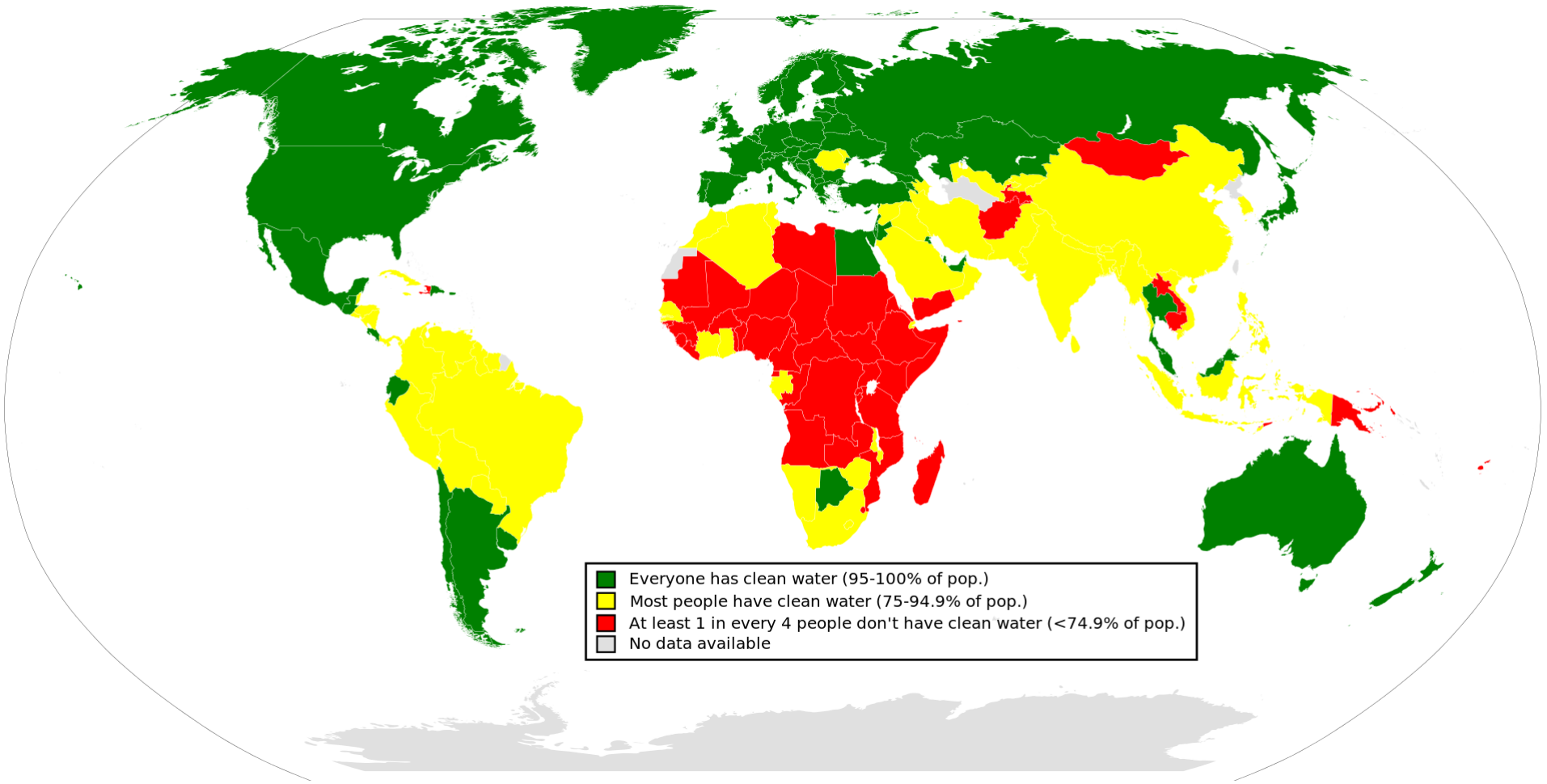
ENERGY

FOOD

HEALTH

Hydroelectric power plant

WATER



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According to World Health Organization (WHO):

- Globally, at least 2 billion people use a drinking-water source contaminated with faeces;
- 90% of the global population (6.8 billion people) used at least a basic service. A basic service is an improved drinking-water source that can be accessed within 30 minutes (roundtrip);
- Approximately 785 million people lack even a basic drinking-water service, including 144 million people who are dependent on surface water;
- Nearly 3/4 of the population in least-developed countries lacked handwashing facilities with soap and water
- By 2025, half of the world's population will be living in water-stressed areas.

The most important factors responsible for the frequency and duration of cyanobacterial blooms

ANTHROPOPRESSURE

- Urban pollution
- Influx of nitrogen and phosphorus compounds from agriculture
- Artificial transformation of reservoirs, etc.

+

CLIMATE CHANGE

- Increase in temperature
- Changes in stratification
- Changes in light penetration
- Changes in biogeochemical cycles

INCREASE OF FREQUENCY AND DURATION OF CYANOBACTERIAL BLOOMS

FUTURE

?

ECONOMIC COSTS of blooms

1. Increased costs of drinking water (water treatment costs)
2. Reduced value of aquatic water bodies used for commercial uses
3. Reduced value of aquatic water bodies used for recreation (e.g.angling, swimming)
4. Net economic losses for tourist industry
5. Net economic losses for aquaculture (e.g. fish farms)
7. Health costs to humans
8. Health costs to livestock and pests
9. Negative effects on aquatic ecosystems (changes in biodiversity)

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Environmental Costs of Freshwater Eutrophication in England and Wales

Jules N. Pretty, Christopher F. Mason, David B. Nedwell, Rachel E. Hine, Simon Leaf, and Rachael Dils

View Author Information

Cite this: *Environ. Sci. Technol.* 2003, 37, 2, 201–208
Publication Date: November 28, 2002
https://doi.org/10.1021/es020793k
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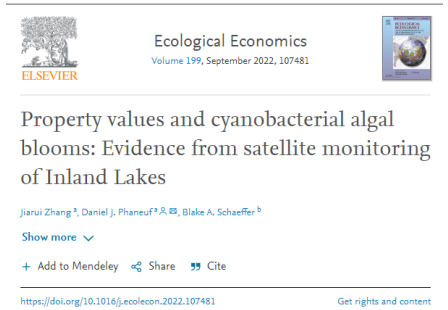
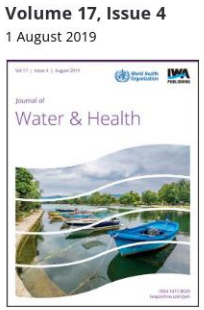




RESEARCH ARTICLE | MAY 17 2019

Economic impact of harmful algal blooms on human health: a systematic review

Christian R. C. Kouakou; Thomas G. Poder

Check for updates

J Water Health (2019) 17 (4): 499–516.
https://doi.org/10.2166/wh.2019.064 **Article history**

Example: human illness

for digestive illness:
-$86 (mild), $1,015 (moderate) and $12,605 (severe) cases,
for respiratory illness:
$86 (mild), $1,235 (moderate) and $14,600 (severe) cases.

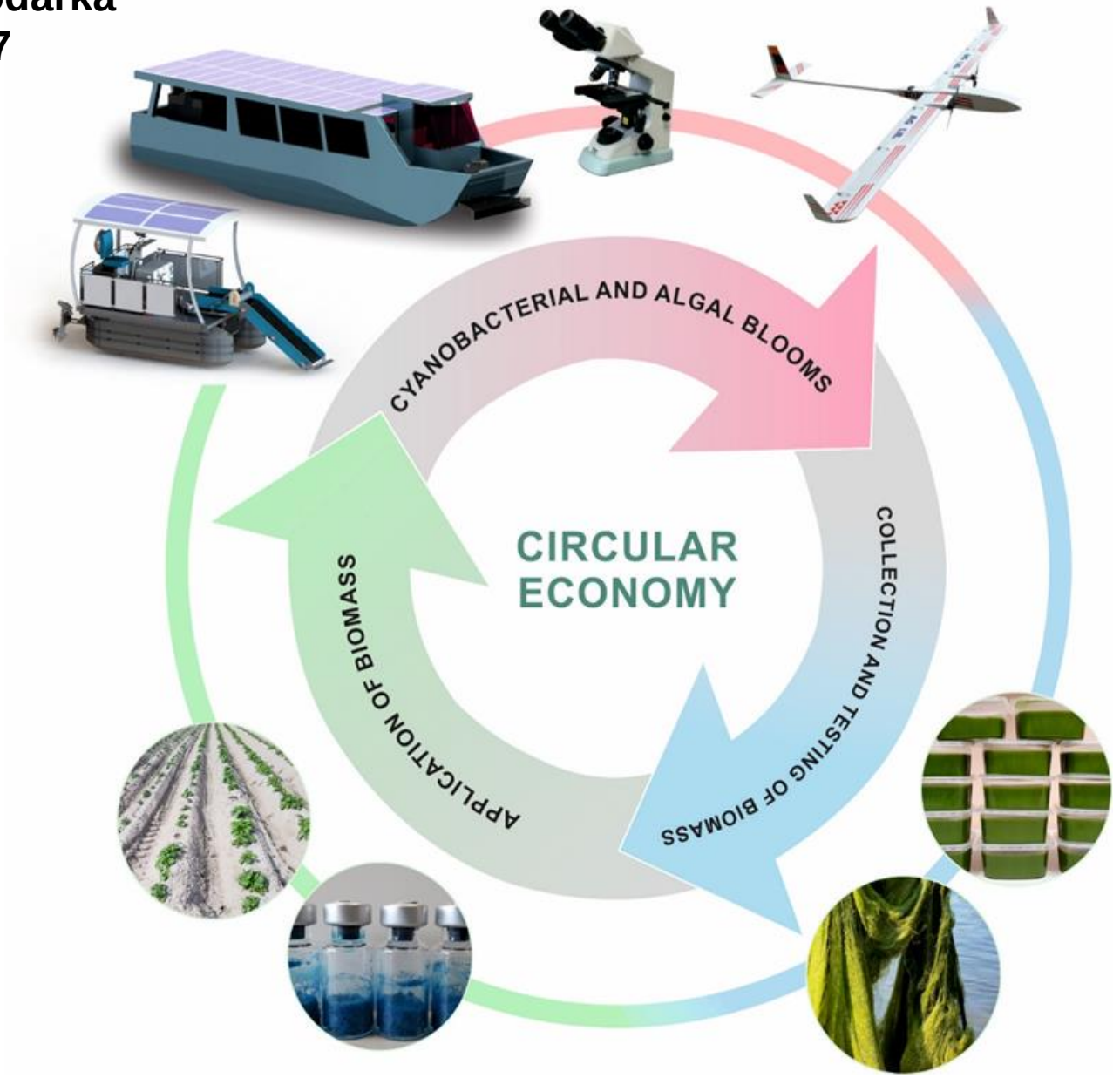
Example: Canadian lake Erie

Uncontrolled, algal blooms on Lake Erie might cost Canada $5.3 mld over 30 years

project "Algae - Economy Based Ecological Service of Aquatic Ecosystems/ Glony - Gospodarka ekologiczna" LIFE17 ENV /LT/000407

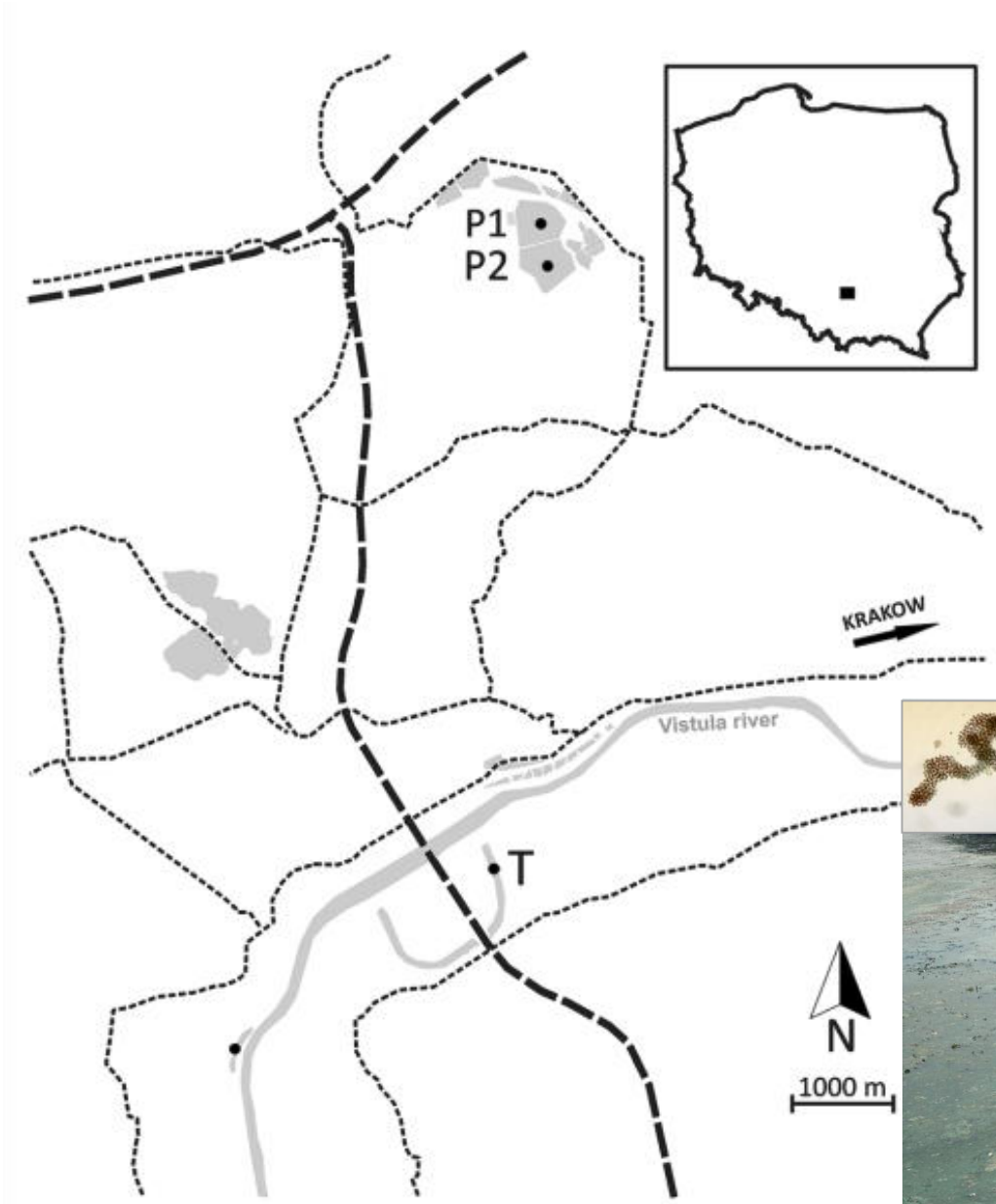
Circular economy

‘a production and consumption model that involves sharing, leasing, reusing, repairing, refurbishing and recycling existing materials and products for as long as possible’



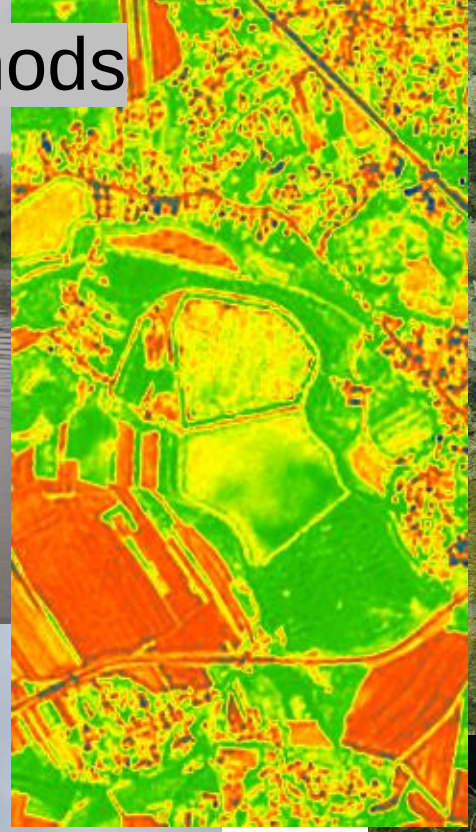
- Circular Economy: Definition, Importance and Benefits | News | European Parliament." www.europarl.europa.eu. 2015-02-12. Retrieved 2021-10-07


Algae
Service
for
Life

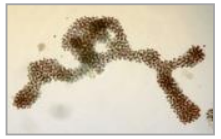


Locations of the studied waterbodies

Traditional and distant methods

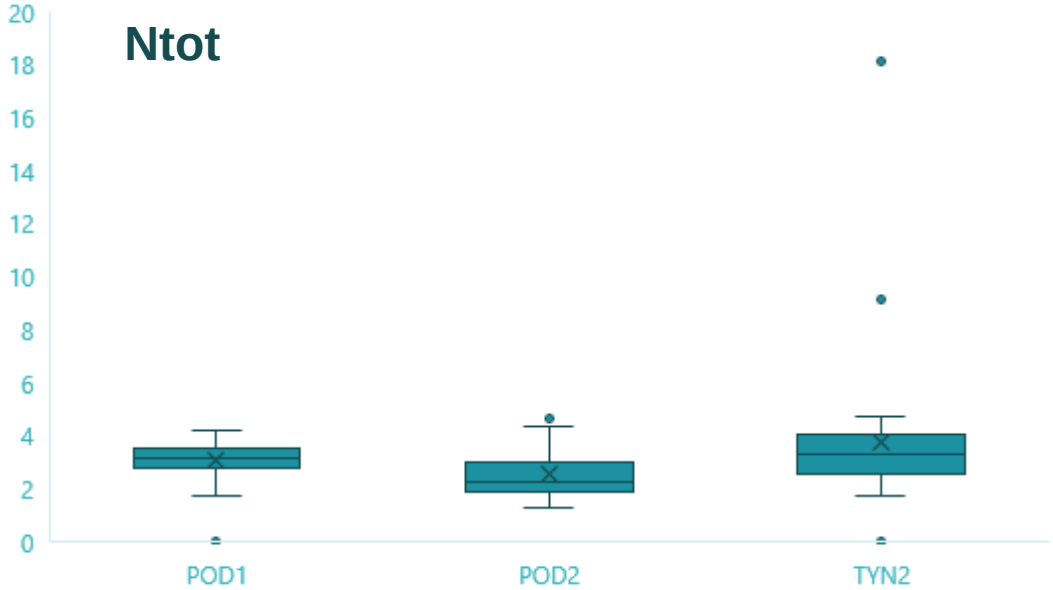


Chlorophyll a

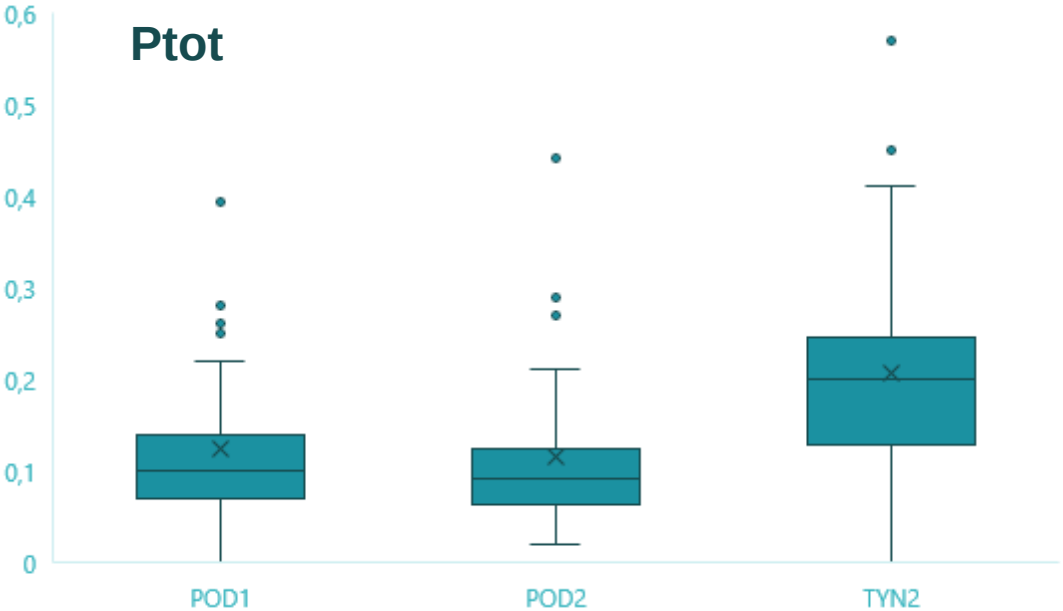


PC

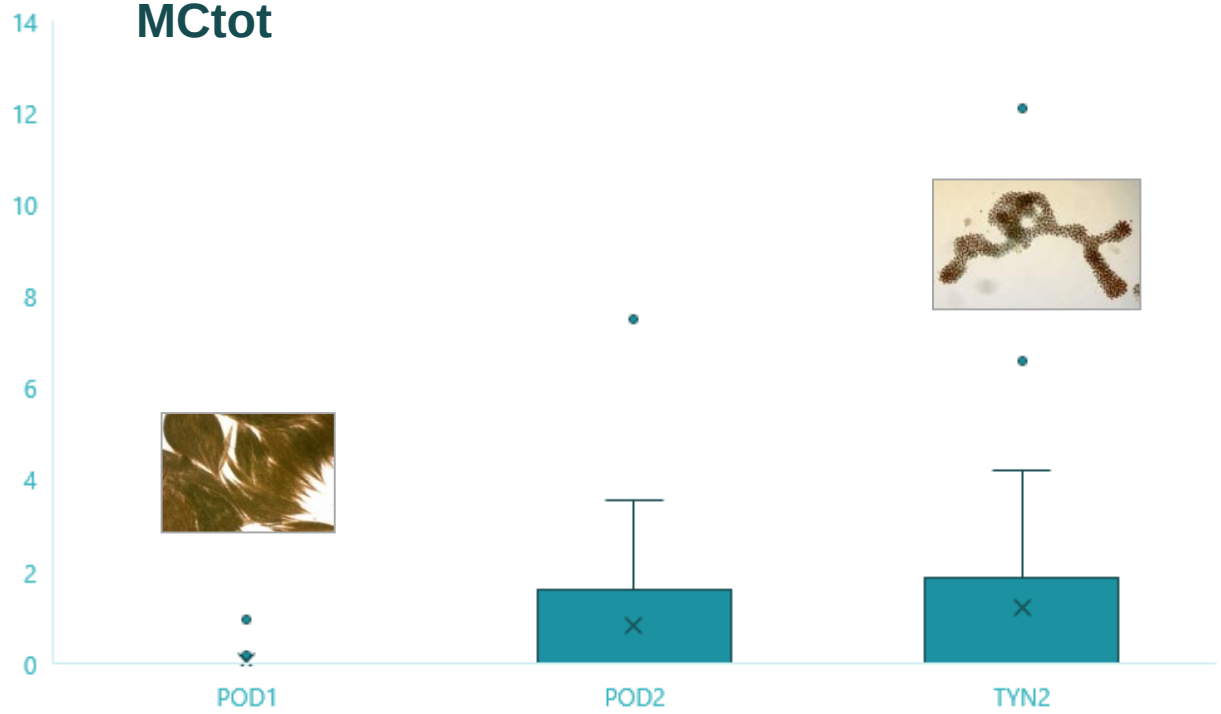
Ntot



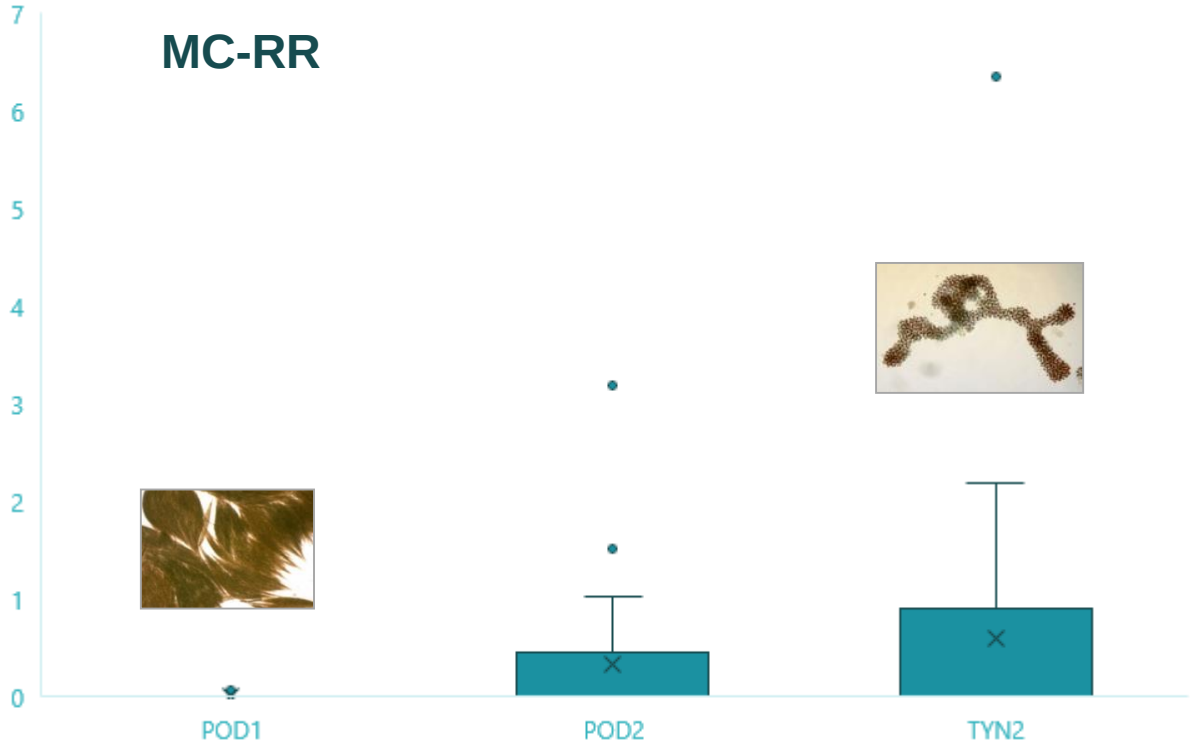
Ptot



MCtot

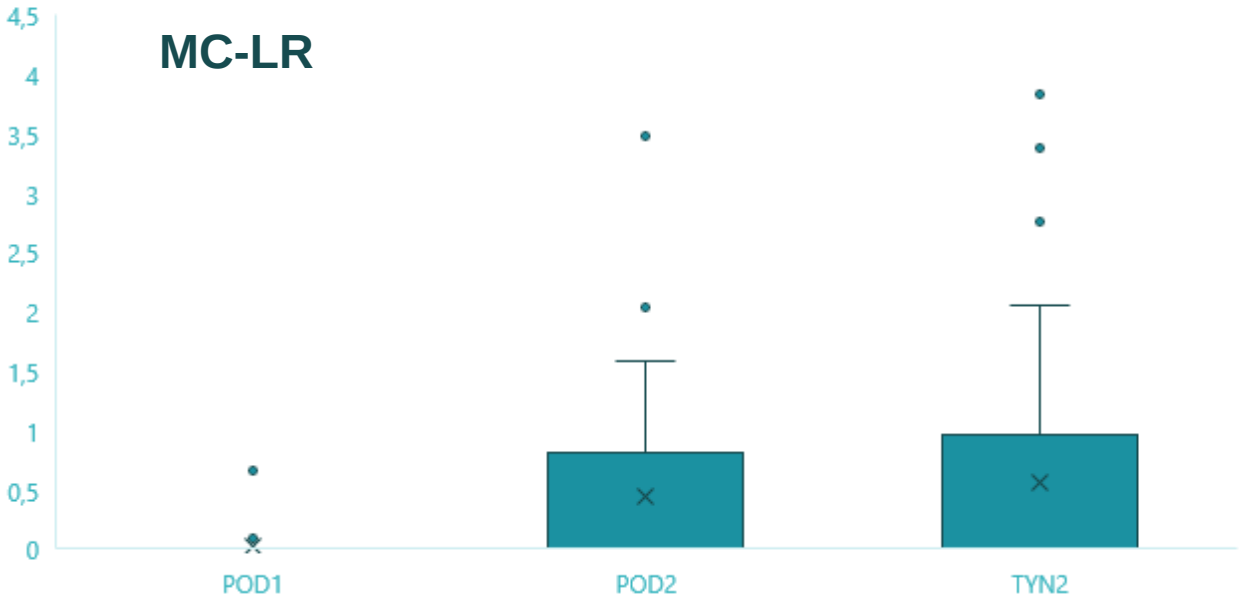


MC-RR

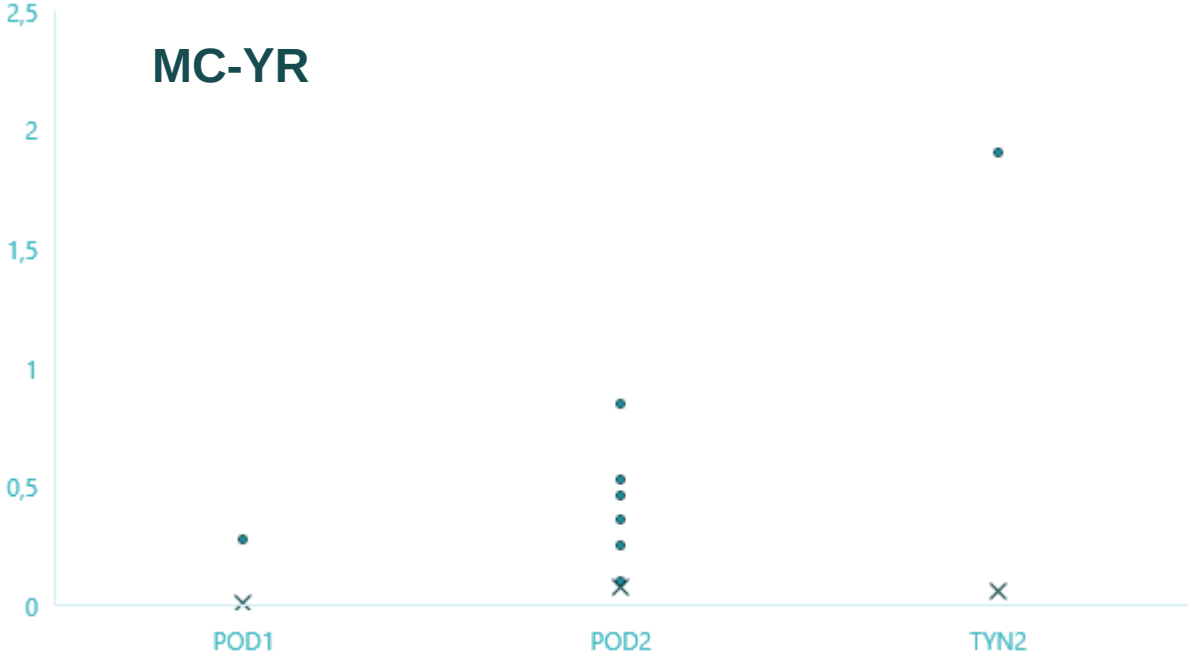


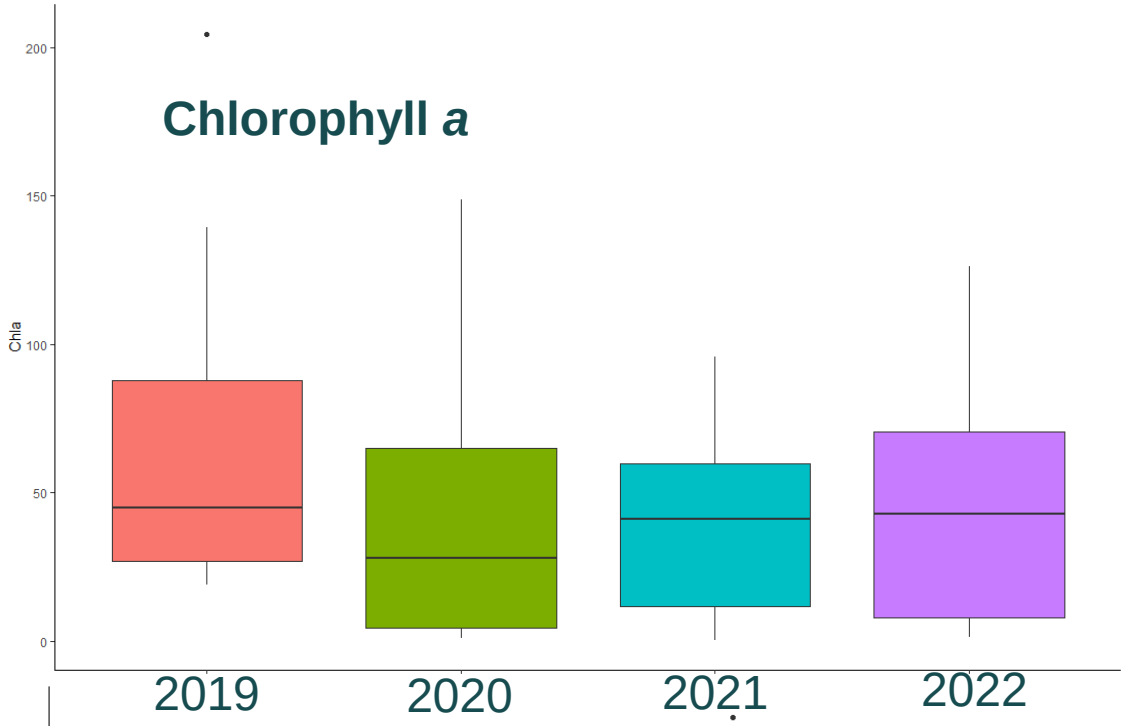
MC-LR

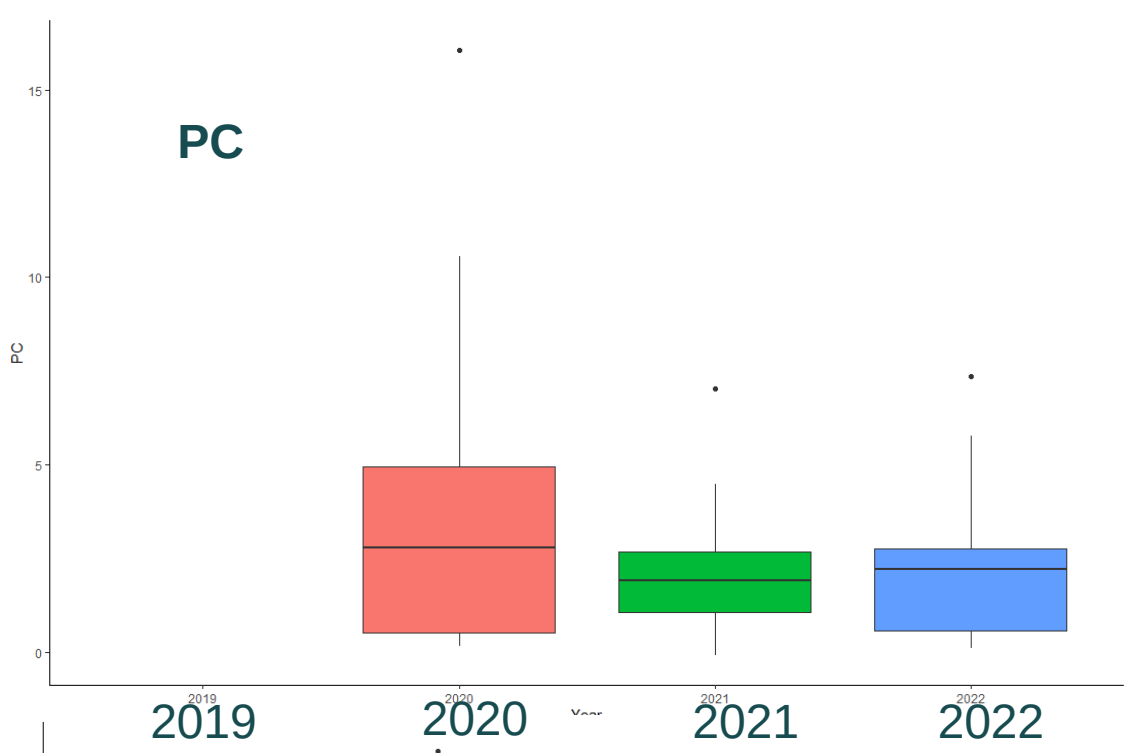
MC-LR

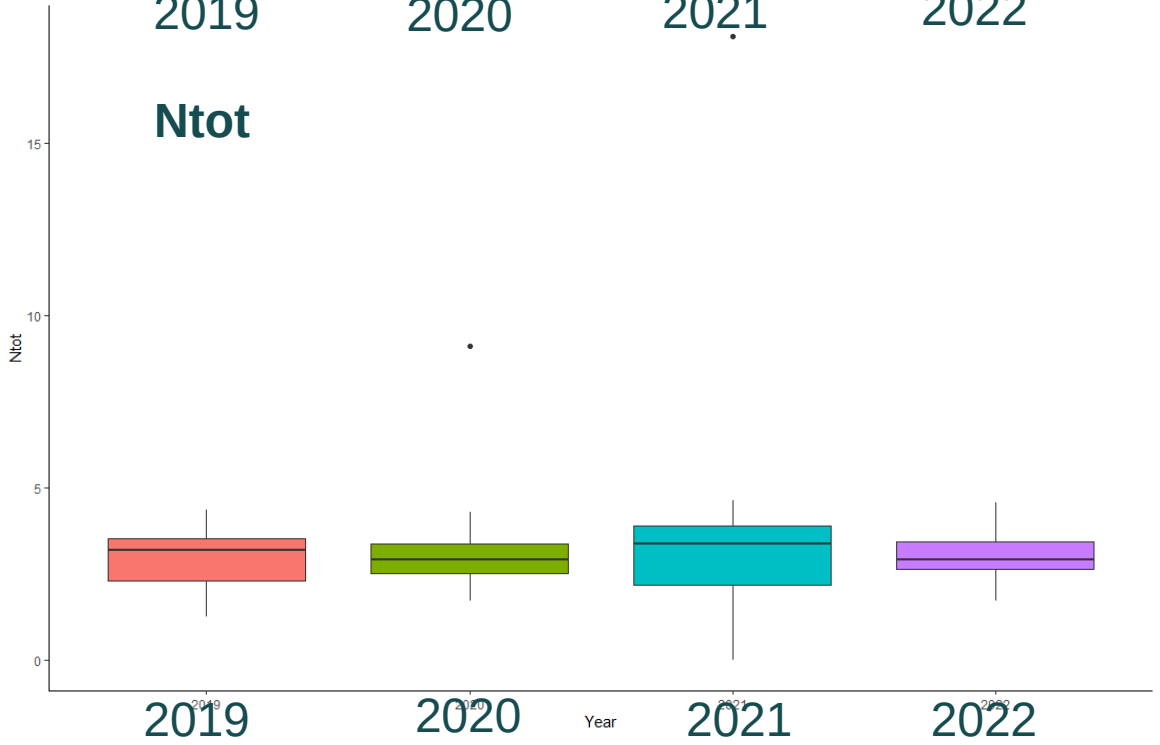


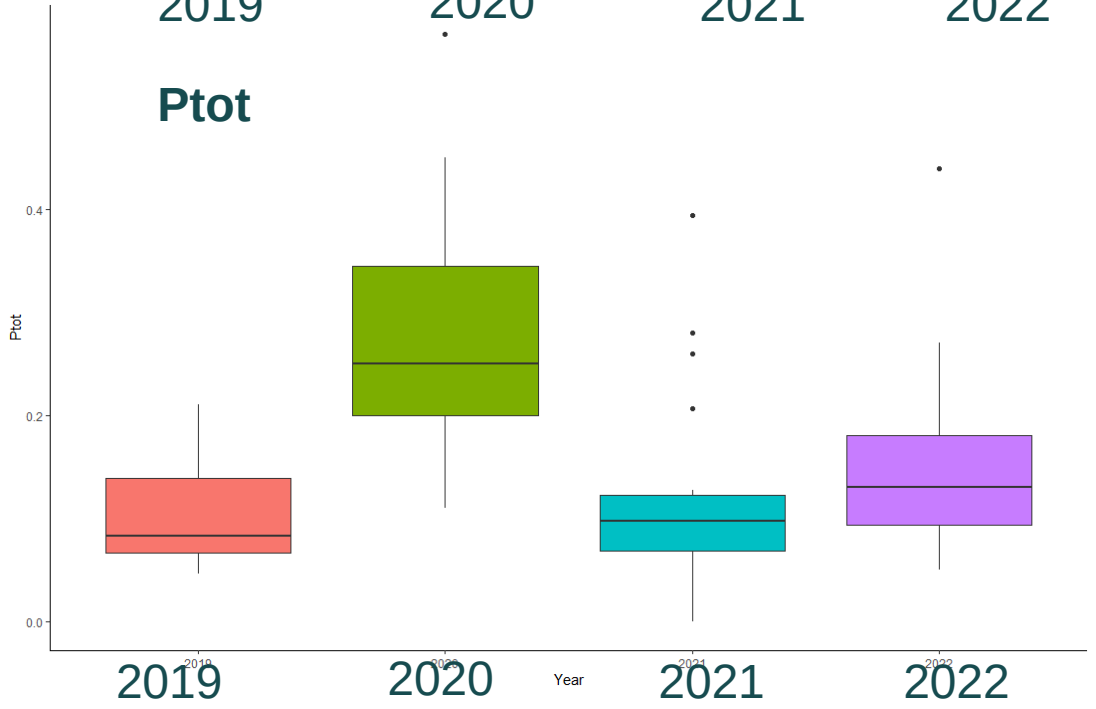
MC-YR

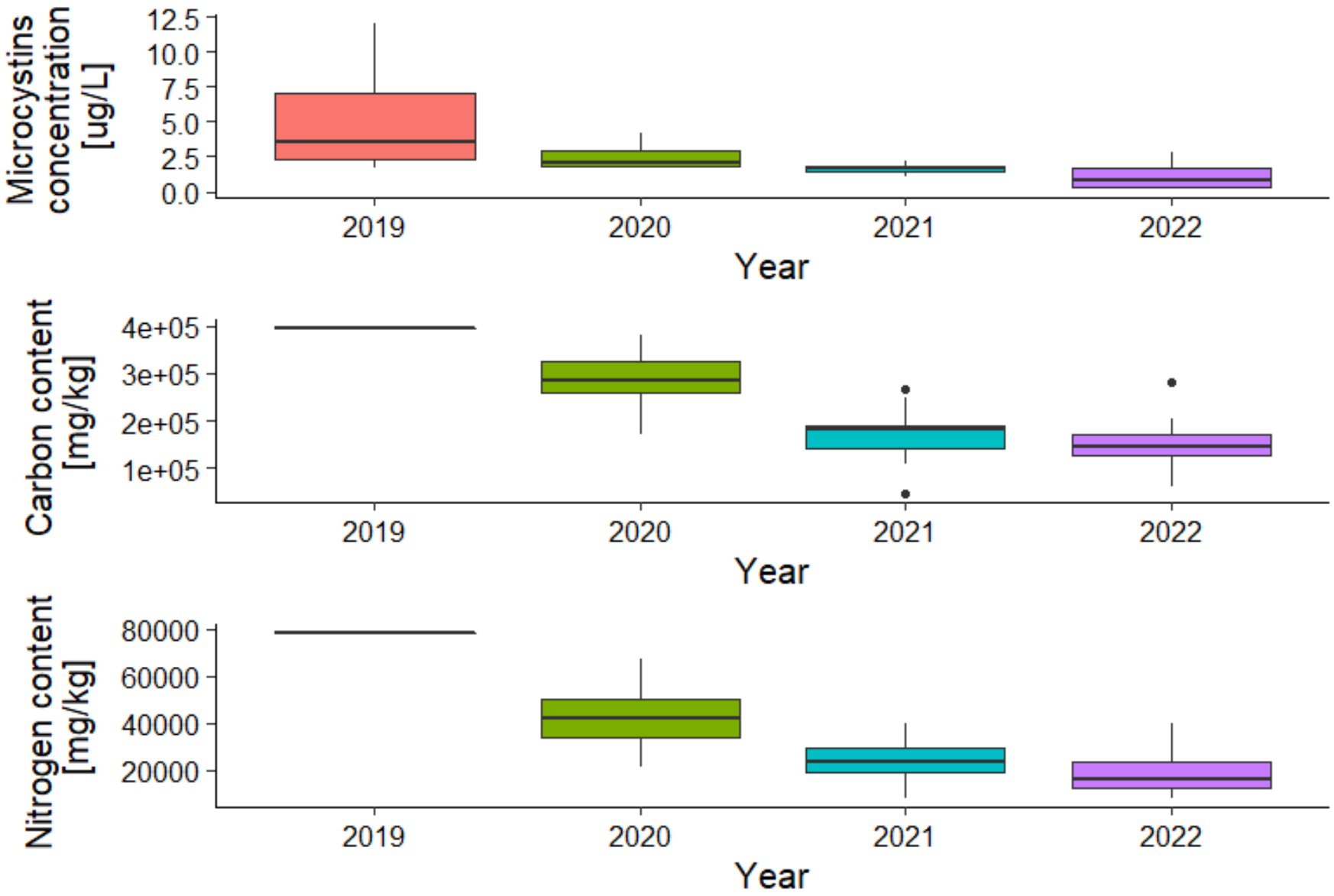



Chlorophyll *a*
Chla
200
150
100
50
0
2019
2020
2021
2022


PC
PC
15
10
5
0
2019
2020
2021
2022

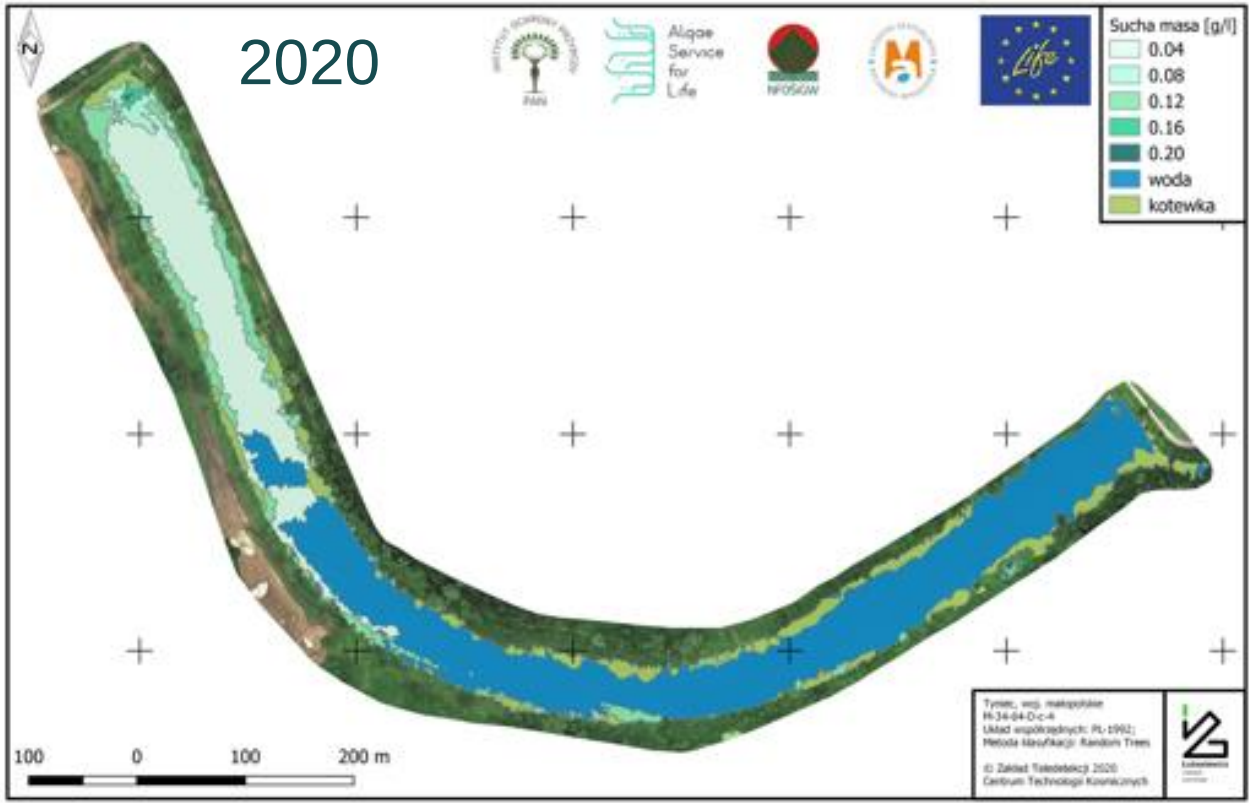

Ntot
Ntot
15
10
5
0
2019
2020
Year
2021
2022

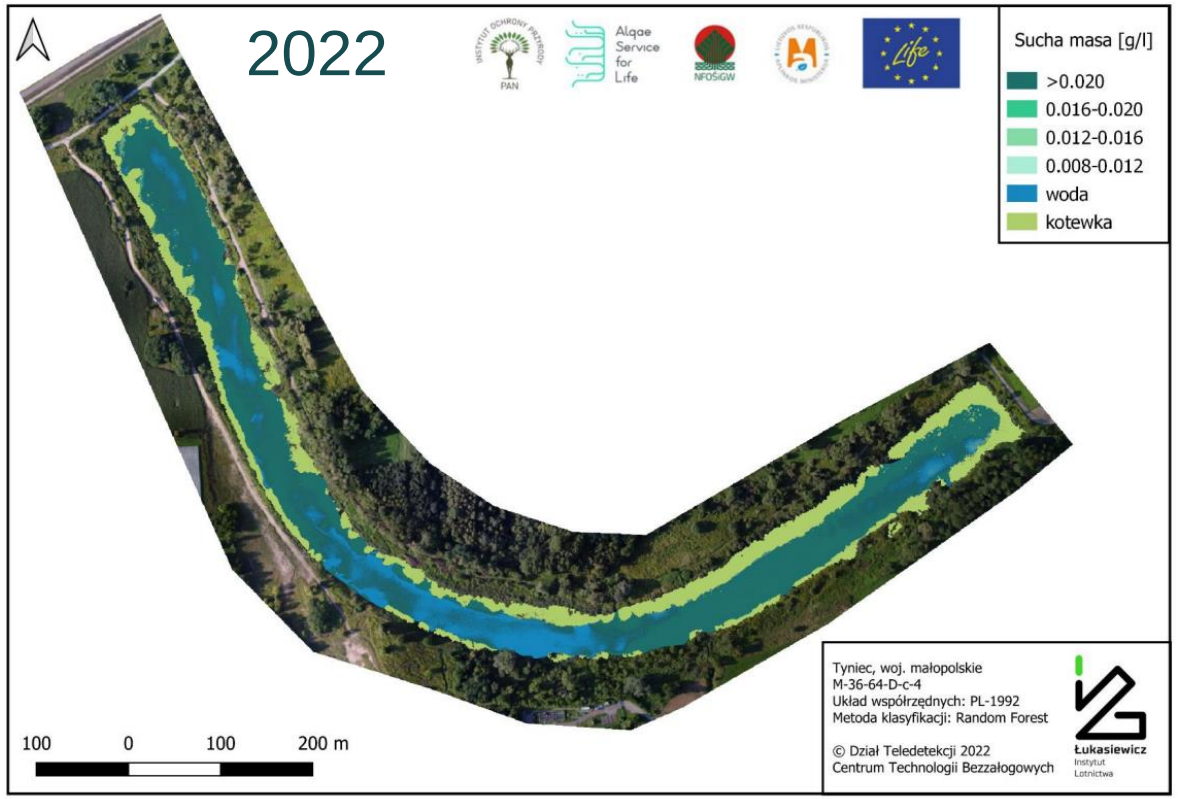

Ptot
Ptot
0.4
0.2
0.0
2019
2020
Year
2021
2022



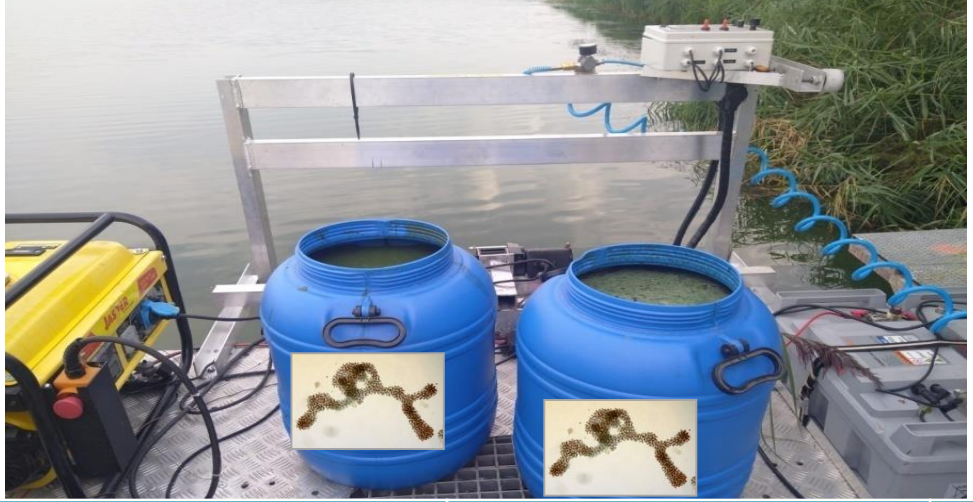
Poster: Budziak et al. *Do initial circumstances forge endpoint effects?*

Developing an UAV method of monitoring of cyanobacterial blooms in freshwater ecosystems with Łukasiewicz - Institute of Aviation, Warsaw

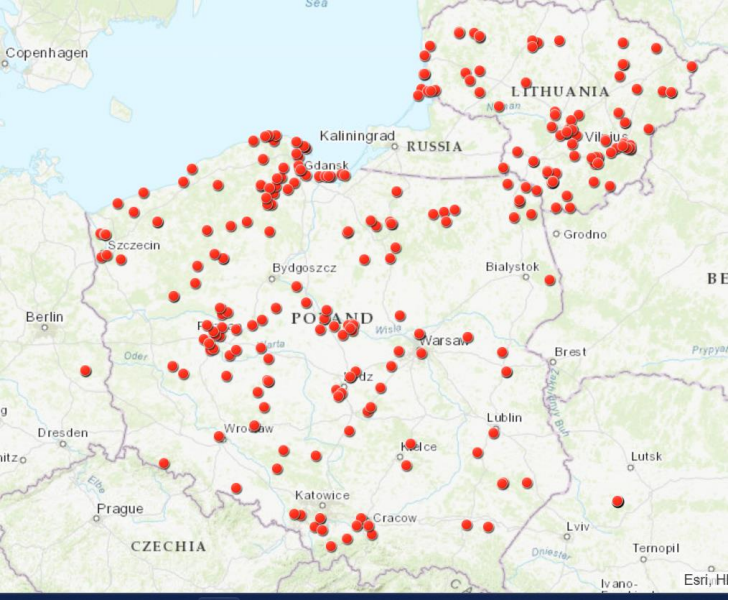


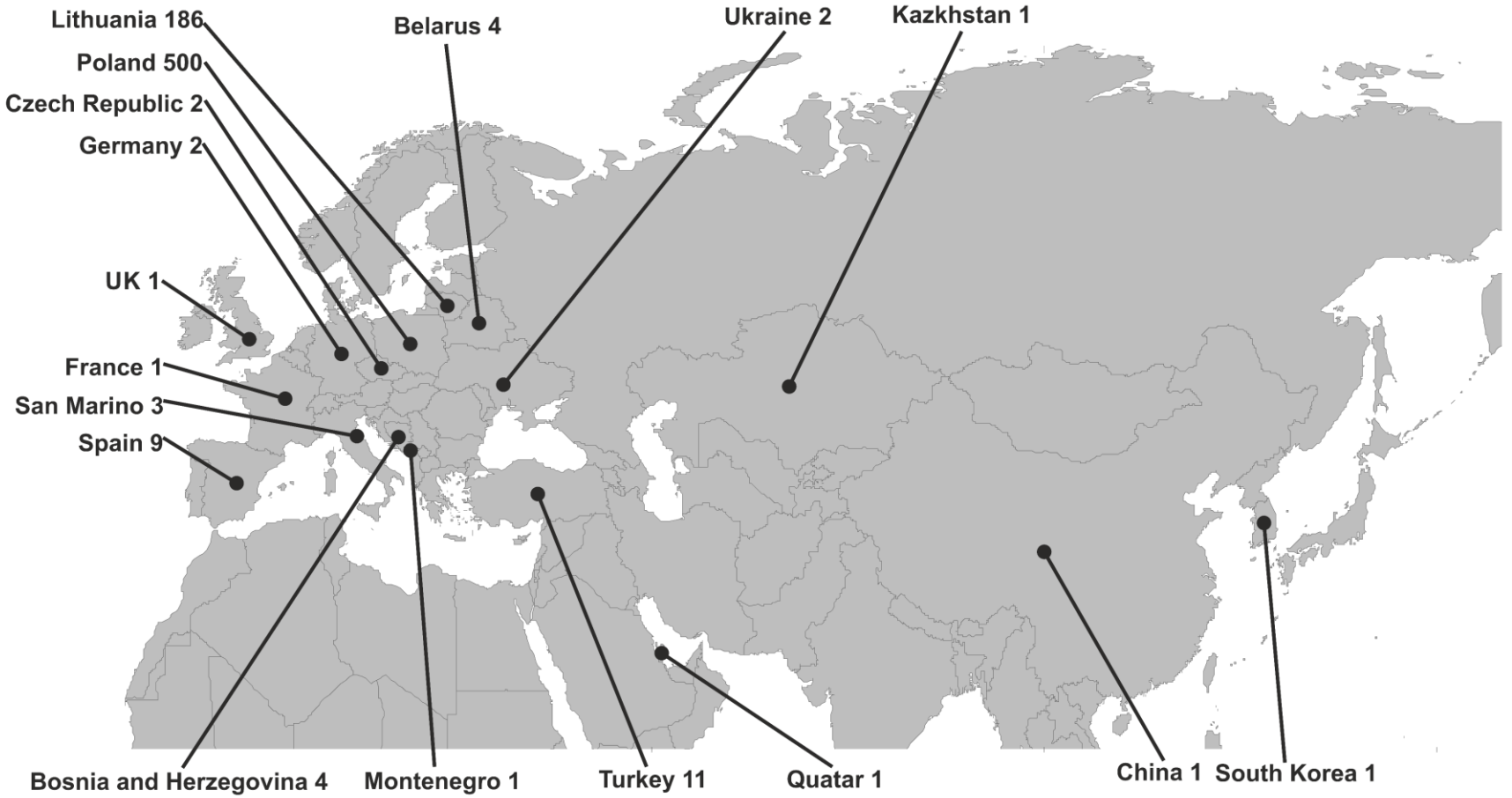


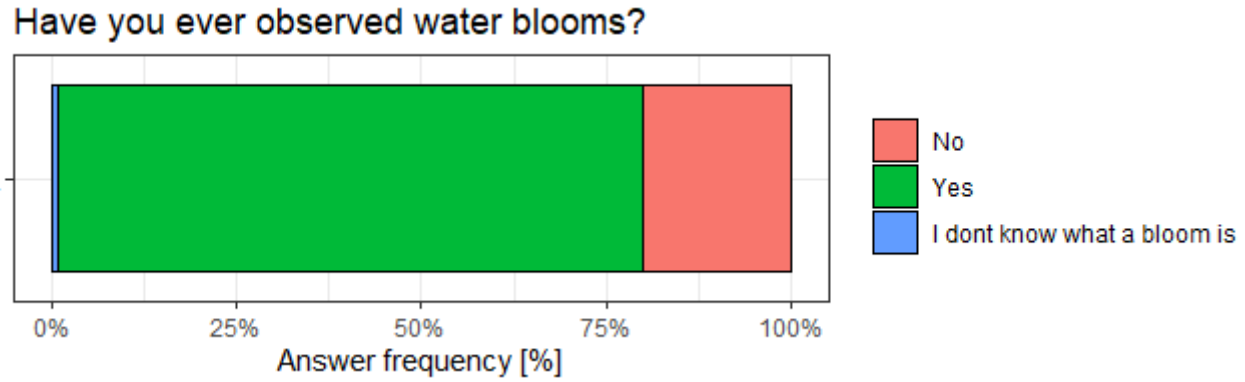
Poster: Walusiak et al. *UAV monitoring of blue-green algae blooms in freshwater ecosystems*



data	Dominated taxa/reservoir	Dry mass [%]	Dry organic mass [% s.m.]
22.08.2022	Microcystis spp./ Tyniec oxbow	1.3	77.26
23.08.2022	Microcystis spp./ Tyniec oxbow	0.98	79.53
24.08.2022	Aphanizomenon f.a./ Podkamycze 1	1.58	87.63
24.08.2022	Aphanizomenon f.a./ Podkamycze 1	1.87	87.11
25.08.2022	Aphanizomenon f.a./ Podkamycze 1	1.13	81.76
25.08.2022	Aphanizomenon f.a./ Podkamycze 1	1.11	81.14







Poster: Wilk-Woźniak et al.
How familiar are you with cyanobacterial blooms? The survey results

THANK YOU!

Algae Service for Life

The **„Algae Service for LIFE”** project (LIFE17 ENV/LT/000407) is supported by the EU LIFE Programme and co-financed by the Ministry of Environment of the Republic of Lithuania, the National Fund for Environmental Protection and the Water Management in Poland, and by the project partners. The content of this publication does not reflect the official opinion of the European Union. Responsibility for the information and view expressed therein lies entirely with the authors.

AlgaeService for LIFE No. LIFE17 ENV/LT/000407

„Algae - Economy Based Ecological Service of Aquatic Ecosystems/ Glony - Gospodarka ekologiczna"

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Adam Mickiewicz University in Poznań, Faculty of Biology and Faculty of Chemistry;
Nature Research Centre, Vilnius, Lithuania;
Baltic Environment, LTD, Vilnius, Lithuania;
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