WOMEN IN LIMNOLOGY
HERstory, current & future perspectives

Presentation by Gender & Science AIL Group
**LIMNOLOGY**

Limnology is the study of **inland waters** - lakes (both freshwater and saline), reservoirs, rivers, streams, wetlands, and groundwater - as **ecological systems interacting with their drainage basins and the atmosphere**.

https://www.aslo.org/

Photo: A. Pastor
The study of inland waters is fulfilled by women researchers. However, they have less visibility than their male counterparts.

Graphic source: Flaticon
1900-1930: CONTRIBUTION OF THE PIONEERS

Limnology was developed in the 19th century & was essentially descriptive and mainly focused on lake hydrology, morphology, and geology.

Female scientists were extremely uncommon. Despite of the prominent barriers for women during this time, some emerged as pioneer limnologists.
Harriet B. Merrill

Possibly the first Female limnologist hired by an American university.

Rina C. Monti

Wrote the first British book of aquatic ecology: *Life in Inland Water*.

Kathleen Carpenter

Co-founded the Italian Institute of Hydrobiology. She was the first Italian woman to hold a permanent university professorship.

Ann H. Morgan

Wrote *Field Book of Ponds and Streams*. She was one of the three women listed in the *American Men of Science* (1933).
In this period, women became more common, but many of them did not receive recognition from the limnological community during their life-time span.
First scientist with **focus on diatoms** as indicators of water quality in rivers.

**Ruth M. Patrick**

Wrote **Silent Spring**, a book about the effect of pesticides on natural ecosystems that inspired many social environmental movements.

**Rachel Carson**

First woman **director of the Zoology Department** at the National University of La Plata (Argentina).

**Armonia S. Alonso**

Director of the J.B.L Smith Institute of Ichthyology (South Africa). She was ichthyologist and fish illustrator.

**Margaret M. Smith**

Chair of the Invertebrate Zoology Department at Irkutsk State University (Russia).

**Olga M. Kozhova**

Source: Smithsonian Institution Archive, Academy of Natural Sciences (Drexel University), Hugo L. López, WikiCommons, South African Institute for Aquatic Biodiversity, Eugene Silow.
1970-PRESENT: TECHNOLOGICAL REVOLUTION

- **New techniques in physical, chemical, and biological fields**
- **Large accumulation of observations: long-term datasets, comparative treatment of cases within wide-ranging surveys**
- **In the 80s, limnological associations were established in many countries of Latin America, Africa, and Asia**

The participation and leadership of women in research groups has become commonplace. Their contribution across different fields of Limnology is outstanding and some of them are already receiving full recognition of their research careers.

Graphic source: Flaticon.
CURRENT SITUATION:
HAVE WE ACHIEVED GENDER BALANCE?

Proportion of women and men at the different stages of the professional academic career at the Society of Limnology of the Iberian Peninsula (AIL).

Source: Sánchez-Montoya et al., 2016
BARRIERS IN SCIENCE ARE NOT THE SAME FOR EVERYONE

Primary barriers that caused male and female limnologists to leave science are: the scarcity of job opportunities, the scarcity of grants/funding, and the low pay.

However, barriers related to family care are more frequently identified for women.

Source: Sánchez-Montoya et al., 2016
THE ROLE OF WOMEN IN FRESHWATER SOCIETIES

Map of the freshwater societies with man (grey) and woman (purple) presidents. Only the names for women presidents are depicted.

Source: Catalán et al., in press
# The Role of Women in Freshwater Societies

<table>
<thead>
<tr>
<th>Society</th>
<th>Percentage of Women</th>
<th>Percentage of President Women</th>
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<tbody>
<tr>
<td>AFL (1947-2020)</td>
<td>A</td>
<td>B</td>
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<tr>
<td>AIL (1981-2020)</td>
<td>A</td>
<td>B</td>
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<td>ALSO (1935-2020)</td>
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<td>DGL (1993-2021)</td>
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<td>EFFS (2005-2018)</td>
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<td>PTH (1964-2021)</td>
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<td>B</td>
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<td>SFS (2016-2021)</td>
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<td>B</td>
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<td>SGHL (1999-2018)</td>
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<td>B</td>
</tr>
<tr>
<td>SIL (1923-2021)</td>
<td>A</td>
<td>B</td>
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</tbody>
</table>

Source: Catalán et al., in press
CONFERENCES: PLATFORMS OF VISIBILITY & CAREER PROGRESSION

Number of women as invited key-speaker at the meetings of the Iberian Society of Limnology

Source: Catalán et al., in press
CONFERENCES:
PLATFORMS OF VISIBILITY & CAREER PROGRESSION

THE PARTICIPATION IN CONFERENCES IS NOT THE SAME: MEN ASK MORE QUESTIONS THAN WOMEN

**Dots location**

Women asked less questions than men (average ratio=0.7)

**Slope = 1**

Women asked more questions when there were more women in the audience.

Source: Lupon et al., in preparation
GRASSROOT INITIATIVES IN THE FIELD: MOVING FORWARD FOR A CHANGE

https://eswnonline.org/

Women in Science – Ecology Virtual Conference
November 4th-6th, 2020
https://www.wisecology.net/

https://www.limnetica.com/en/genderscience
THANKS FOR YOUR INTEREST!

Any comment or question?

Contact us at: genderscienceail@gmail.com

We want to know your opinion:

Do you think the scientific system offers equal opportunities for different genders?

What could be improved to advance to equality in academia?

Answer on menti.com with the code 86 60 45 9

ACKNOWLEDGMENTS