



ROSEMARY LOWE-MCCONNELL

1921-2014, UNITED KINGDOM

Pioneer in the study of tropical fish ecology.
She mostly worked in Africa and South America.

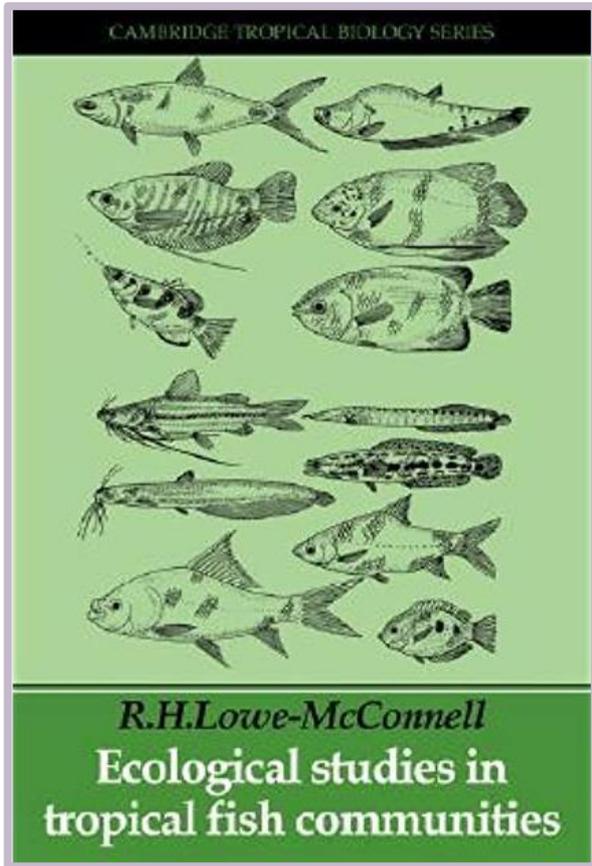
She was one of the first persons to use scuba diving for scientific research.

Her work was requested by many global organizations, including the FAO.

HERSTORY

Rosemary did not receive any support from any fishery during her first studies and relied heavily on local fishermen for assistance with her research.

TILAPIA



*Ecological Studies
in Tropical Fish Communities,
Rosemary Lowe-McConnell, 1950.*

Tilapia: ~100 species of cichlid fish

*coelotilapine, coptodonine, heterotilapine,
oreochromine, pelmatolapiine and tilapiine.*

Characteristics:

Tropical freshwater fish

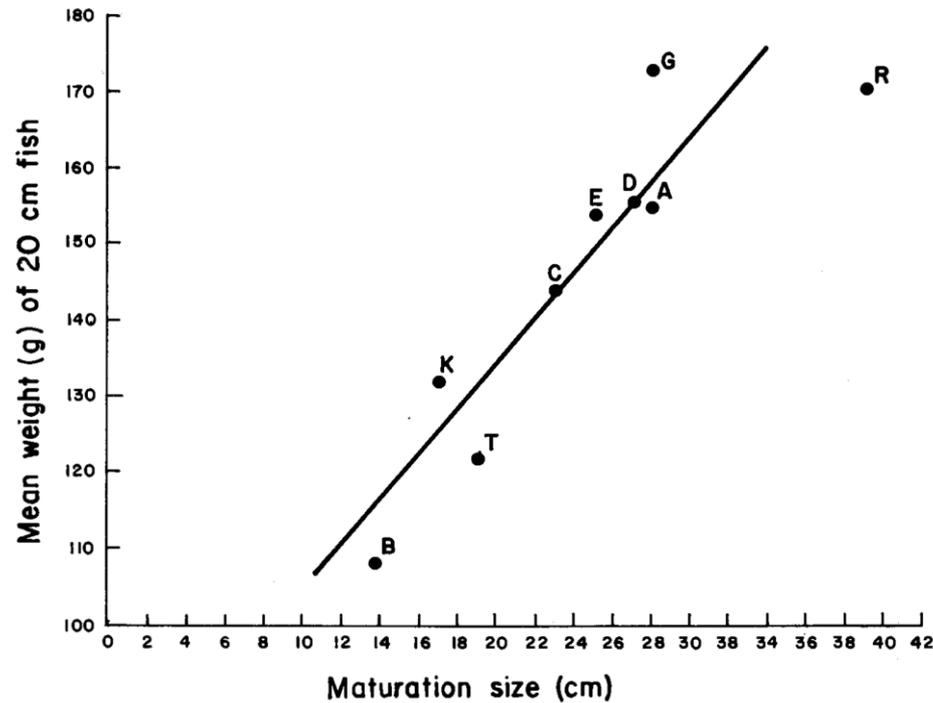
Important for artisanal fishing and aquaculture
in Africa.

Problematic invasive species in new warm-
water habitats, such as Australia.

FITNESS & ENVIRONMENT

Fitness: quantitative representation of natural selection within evolutionary biology. It is manifested through phenotype.

The fitness is affected by the **environment**.



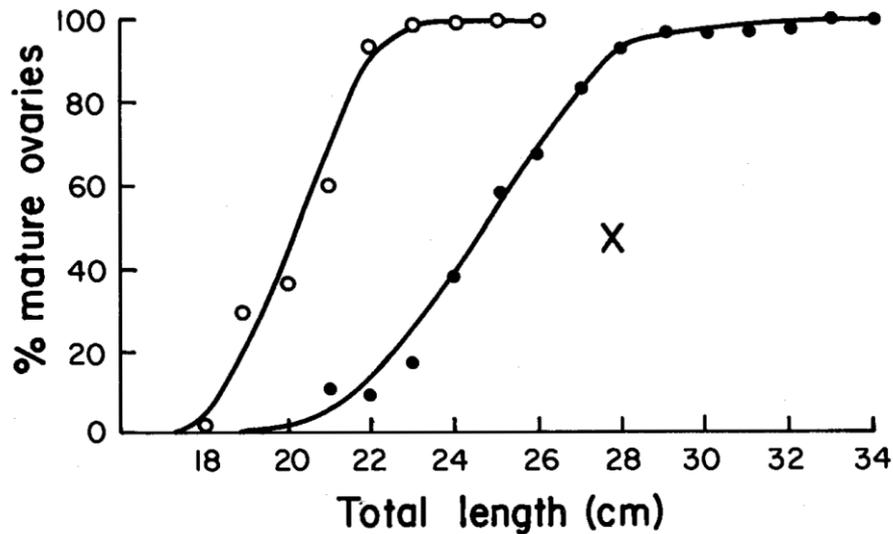
Example: The relation between mature size and mean weight of *S. niloticus* populations is different among African lakes because the fitness is affected by the environment.

Rosemary Lowe-McConnell.
(1958). Rev. Zool. Bot. Afr.

FITNESS & ENVIRONMENT

The fitness can ***change over time*** due to changes in:

- food
- predators
- environmental conditions (e.g., temperature)
- fishing pressures



Example: The maturation size of female *S. niloticus* declined from 1950 to 1970 in the Lake George (Uganda) due to increases in fishing pressure.

Roger S.V. Pullin and Rosemary Lowe-McConnell. (1982).
The Biology and Culture of Tilapias.

CONTRIBUTIONS

Lowe-McConnell, R. H. (1958). Observations in the biology of *Tilapia nilotica* Linné in East African waters. *Revue de zoologie et de botanique africaines*, 57, 129-170.

Lowe-McConnell, R. H., Worthington, E. B. (1965). Man-made lakes. *Nature*, 208, 1039-1042.

Lowe-McConnell, R.H. (1975). Fish communities in tropical freshwaters; their distribution, ecology and evolution. Longman, London. 337 pp.

Pullin, R. S. V, **Lowe-McConnell, R. H.** (1982). The biology and culture of tilapias. International Center for Living Aquatic Resources Management (ICLARM) Conference Proceedings 7, Manila, 432 pp.

Lowe-McConnell, R. H. (2003) Recent research in the African Great lakes: fisheries, biodiversity and cichlid evolution. *Freshwater Forum* 20, 64 pp.

LOOKING
FOR MORE?

You can find more information about her story and research at:

https://en.wikipedia.org/wiki/Rosemary_Lowe-McConnell

Balon E. K., Bruton M. N., Noakes D. L. G. (1994). Women in ichthyology: an anthology in honour of ET, Ro and Genie. Springer, Dordrecht.