MARGARET A. PALMER

UNITED STATES

Leader on restoration ecology and internationally known for her work in aquatic biodiversity and biogeochemistry.

Her emphasis is on streams, rivers and wetlands and how to improve their water. To do so, she works at the interface of science, society, and policy.

She is a Distinguished Professor at the University of Maryland and Director of the National Socio-Environmental Synthesis Center (SESYNC).

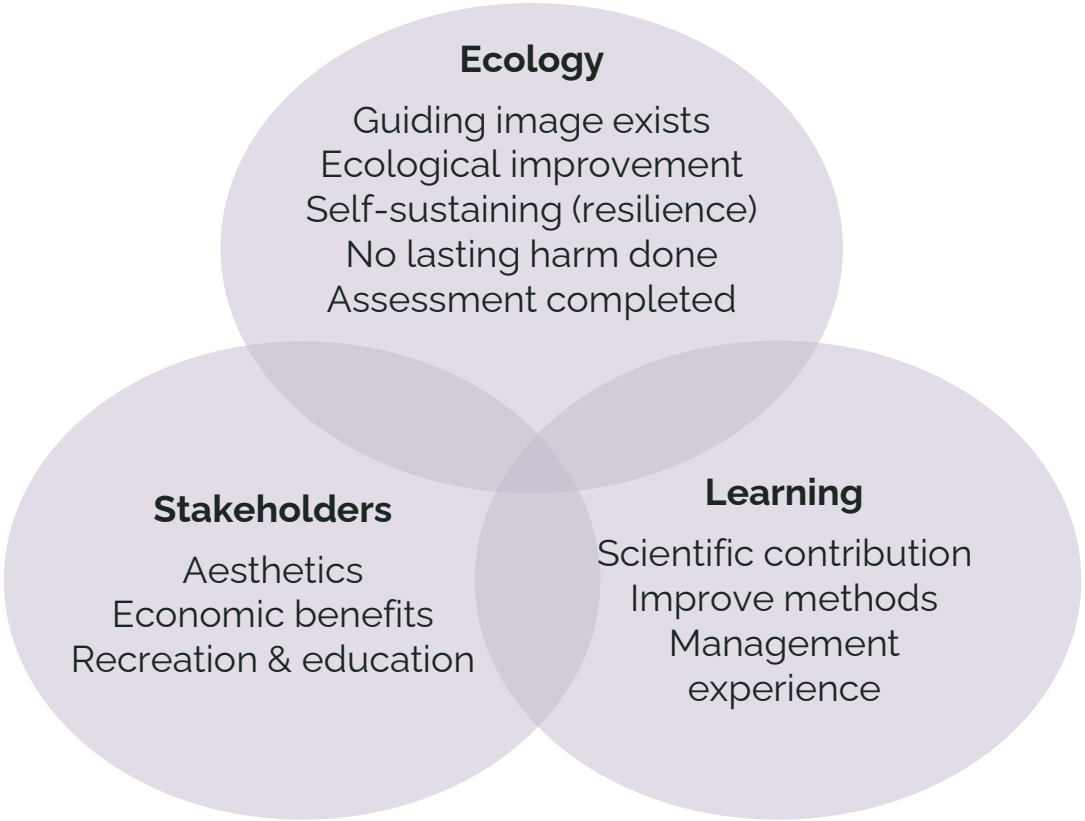
HERSTORY

She believes that “life is an improvisation”. Probably, that’s why she has done many different things during her career. In fact, her PhD was on coastal oceanography!

RIVER RESTORATION

Most effective restoration takes into account:

- Stakeholder success
- Ecological success
- Learning success



Other tips

1. Avoid ineffective approaches and remain ecologically sound
2. Select proper indicators of success based on initial goals

Adapted from: Margaret Palmer et al. (2005). Journal of Applied Ecology.

RIVER RESTORATION

Most common restoration goals:

1. Biodiversity (33%)
2. In-stream or riparian habitat (29%)
3. Channel stability (22%)
4. Water quality (14%)

Most common restoration method:

1. In-stream hydromorphic (38%)
2. Channel hydromorphic (32%)
3. Riparian restoration (17%)
4. Watershed action (4%)

Margaret Palmer et al.(2014). Annual Review of Ecology, Evolution and Systematics.

ECOLOGICAL THEORY & RIVER RESTORATION

CONSTANT COMMUNITY

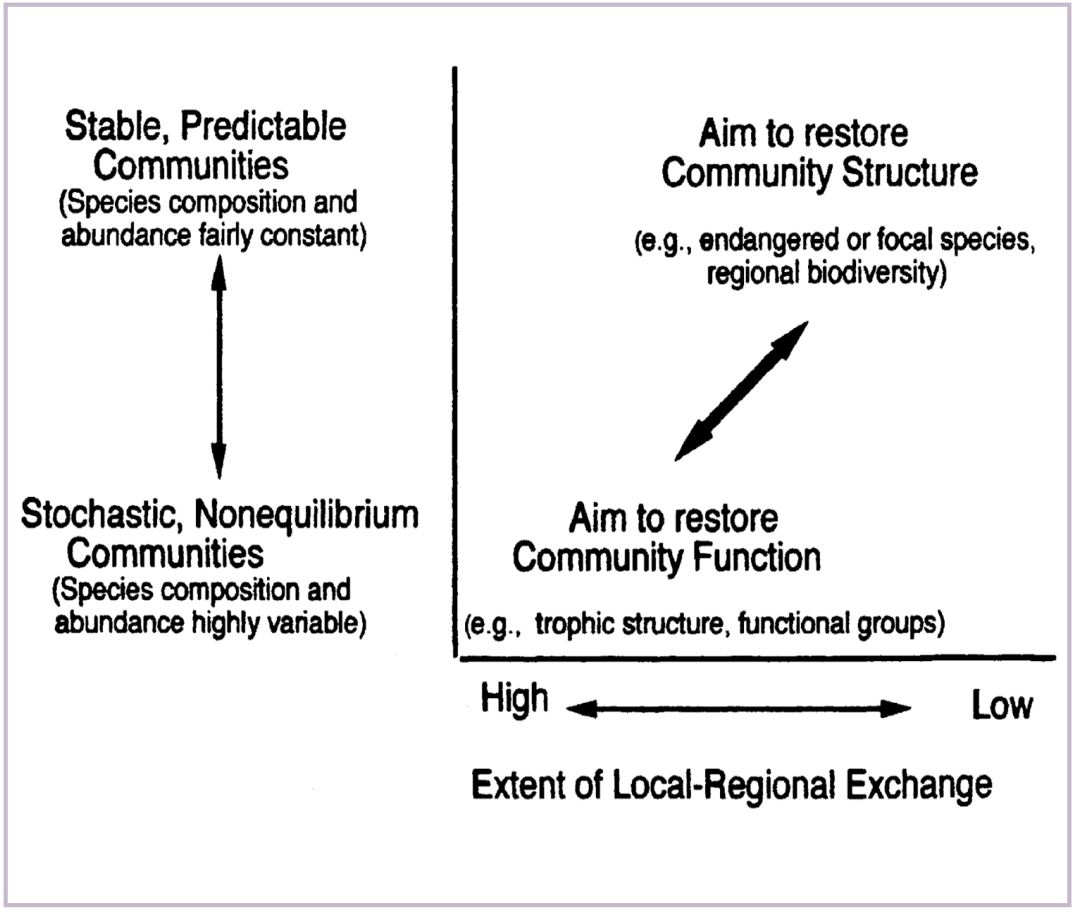
Useful theories
Community assembly
Ecological succession

Restoration strategy
Structure (focal species)

STOCHASTIC COMMUNITY

Useful theories
Supply-side
Lottery models
Recruitment limitation

Restoration strategy
Function (process)



Margaret Palmer et al. (1997). Restoration Ecology.

RELEVANT CONTRIBUTIONS

Palmer, M. A., Ambrose R. F., Poff, N. L. (1997). Ecological theory and community restoration ecology. Restoration ecology, 5, 291-300.

Bernhardt, E. S., **Palmer, M. A**., Allan, J. D., et al. (2005). Synthesizing US river restoration efforts. Science, 208: 636-637.

Palmer, M. A., Bernhardt, E. S., Allan, J. D., et al. (2005). Standards for ecologically successful river restoration. Journal of applied ecology, 42, 208-217.

Palmer, M. A., Menninger, H. L., Bernhardt, E. S. (2010). River restoration, habitat heterogeneity and biodiversity: a failure of theory or practice? Freshwater biology, 55, 205-222.

Palmer, M. A., Hondula, K. L., Koch, B. J. (2014). Ecological restoration of streams and rivers: shifting strategies and shifting goals. Annual Review of Ecology, Evolution, and Systematics, 45, 247-269.

Palmer, M. A., Ruhi, A. (2019). Linkages between flow regime, biota, and ecosystem processes: Implications for river restoration. Science, 365, 6459.

LOOKING FOR MORE?

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

https://palmerlab.umd.edu/

https://en.wikipedia.org/wiki/Margaret_A._Palmer