

Freshwater Science BRIDGES

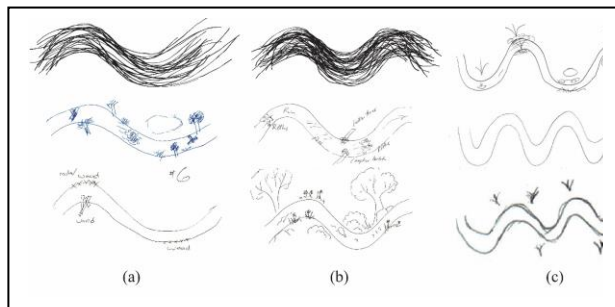
Volume 39 • Issue 2 • Pages 347–361
June 2020 Fact Sheet



Towards Integrating Art and Freshwater Science

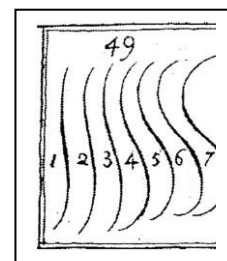
Two papers in this BRIDGES cluster use artistic perceptions to communicate scientific results and engage with scientific and public audiences. Key points include:

- *Freshwater ecoacoustics* is an emerging field that uses underwater audio recordings to detect the presence, location, and density of particular species in non-invasive and unbiased ways ([Barclay et al. 2020](#)).
- *River Listening* is an interdisciplinary research project exploring how freshwater *ecoacoustics* can be used in the conservation and management of global river systems. Artistic outcomes from *River Listening* are central to public engagement efforts, including mobile phone applications with soundscapes triggered by GPS along rivers and live streaming hydrophone arrays ([Barclay et al. 2020](#)).
- Audience engagement, such as at a recent SFS meeting, was used to examine the *ideal meander* as various wavelengths depicted in historical channel designs used in river management and in art ([Wilson et al. 2020](#)). Results showed that restoration designs should be expanded to include disorderly designs with non-symmetrical single-thread meanders and multi-threaded channels ([Wilson et al. 2020](#)).
- Both studies highlight (see [Robinson et al. 2020](#)) the use of artistic techniques to better understand and expand scientific efforts to restore and manage freshwater ecosystems.



Meanders as drawn by respondents at the 2017 SFS meeting from which the paper by Wilson et al. (2020) was based.

Meanders were isolated to the channel pattern and overlaid to emphasize the similarity in form: (a) one wavelength, (b) 1.5 wavelengths, (c) two or more wavelengths drawings. Meanders were compared to the artist Hogarth's 'line of beauty' (curve #4 in the adjacent plot, see Wilson et al. 2020 for details).



ABOUT THE AUTHORS:

Christopher T. Robinson is a senior research scientist at Eawag/ETHZ with a focus on the ecology of alpine streams. **Irene Hediger** coordinates the Artists-in-Labs program at Zürich University of the Arts. **Judy Li** is a retired professor at Oregon State University and is currently writing children's books. **Ann Rosenthal** is an artist and runs the Locus Art Studio in Pennsylvania.

Leah Barclay is a research scientist at Queensland Conservatorium Research Centre, Griffiths University, **Toby Gifford** is a scientist at Sensilab, Monash University, and **Simon Linke** is a research scientist at the Australian Rivers Institute, Griffiths University. All three are working on freshwater ecoacoustics.

Kristen N. Wilson works with the Nature Conservancy in California, **Suzanne L. Baker** works in the Lawrence Berkeley Laboratory, University of California, and **G. Mathias Kondolf**, is a scientist at the University of California, Berkeley. All three worked together on using art as a tool in river restoration.