

Integrating science and art to improve water resources education for the general public

Sarah Null¹

¹Utah State University

November 22, 2022

Abstract

Water resources decisions are often presented as bonds for public vote, but water resources management is an esoteric topic for which improved public understanding is crucial. An art-science museum exhibit was developed to visualize aquatic habitats and species, communicate management tools, tradeoffs, and alternatives that guide water resources decision-making, and empower the public to make informed decision about water resources. Drone-based river habitat data was collected to identify vegetation, measure water surface temperature, represent topography, and show visible light. An artist composited all data into single large-format images to visualize river habitat. Another artist painted native fish, including Bonneville Cutthroat Trout and Bluehead Sucker that are managed for conservation, to capture the transcendent experience of encountering wild fish. 3D maps with video projections told stories of past water development choices, those we face in the future, and described water management models to balance river preservation with human water supply. Visitor surveys were conducted with willing participants to understand how art affected their experience and behavior. Preliminary results suggested that 41% of visitors thought integrating art and science greatly added to the exhibit experience, 22% thought art helped them to understand water management problems and opportunities, and 26% responded that art drew them into the exhibit. After visiting the exhibit, 15% of respondents said they were likely to write letters to government officials about water concerns, 25% said they were likely to attend a public meeting, 50% said they were likely to watch a presentation with proposed actions about water management, 59% said they were likely to talk to friends and family about water resources, and 62% said they were likely to visit a local river. This exhibit is estimated to reach about 130,000 visitors, despite capacity restrictions due to COVID-19 social distancing.

Hosted file

essoar.10508587.1.docx available at <https://authorea.com/users/537276/articles/599280-integrating-science-and-art-to-improve-water-resources-education-for-the-general-public>

Integrating science and art to improve water resources education for the general public

Sarah Null

Water resources decisions are often presented as bonds for public vote, but water resources management is an esoteric topic for which improved public understanding is crucial. An art-science museum exhibit was developed to visualize aquatic habitats and species, communicate management tools, tradeoffs, and alternatives that guide water resources decision-making, and empower the public to make informed decision about water resources. Drone-based river habitat data was collected to identify vegetation, measure water surface temperature, represent topography, and show visible light. An artist composited all data into single large-format images to visualize river habitat. Another artist painted native fish, including Bonneville Cutthroat Trout and Bluehead Sucker that are managed for conservation, to capture the transcendent experience of encountering wild fish. 3D maps with video projections told stories of past water development choices, those we face in the future, and described water management models to balance river preservation with human water supply. Visitor surveys were conducted with willing participants to understand how art affected their experience and behavior. Preliminary results suggested that 41% of visitors thought integrating art and science greatly added to the exhibit experience, 22% thought art helped them to understand water management problems and opportunities, and 26% responded that art drew them into the exhibit. After visiting the exhibit, 15% of respondents said they were likely to write letters to government officials about water concerns, 25% said they were likely to attend a public meeting, 50% said they were likely to watch a presentation with proposed actions about water management, 59% said they were likely to talk to friends and family about water resources, and 62% said they were likely to visit a local river. This exhibit is estimated to reach about 130,000 visitors, despite capacity restrictions due to COVID-19 social distancing.