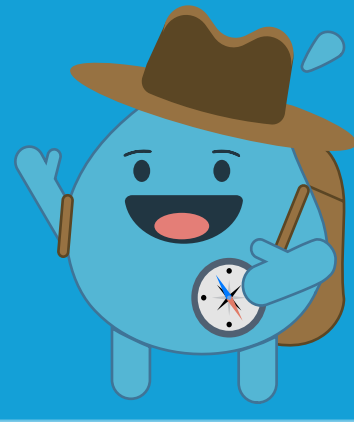
Julie Ann Wrigley Global Futures Laboratory™
Arizona State University

Arizona Water Innovation Initiative



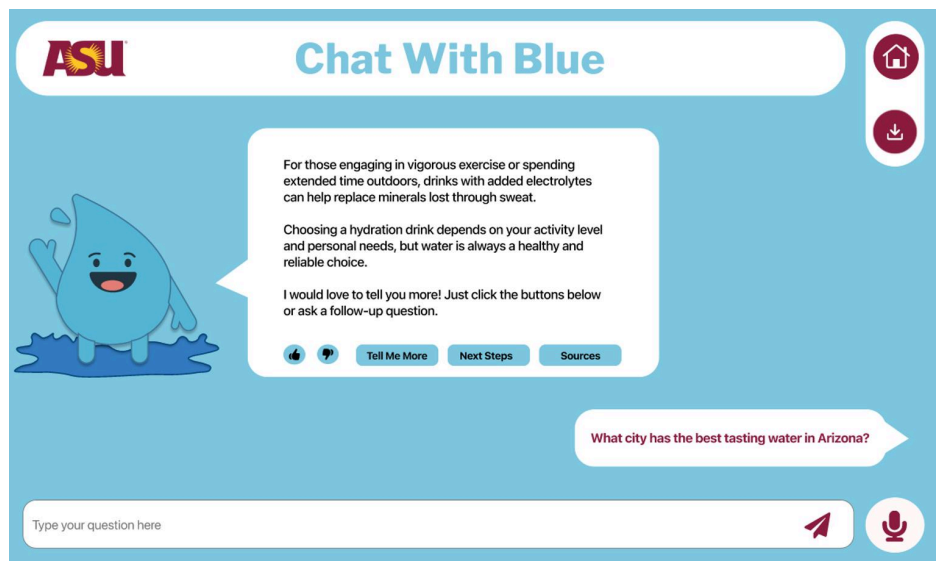
Using the Arizona Water Chatbot

What is the Arizona Water Chatbot?

The Arizona Water Chatbot (Waterbot) is an AI chatbot that answers questions about water in Arizona, including conservation, management, and drought.

This capacity-building tool helps the Arizona Governor's Office and other public agencies deliver water information from local, state, tribal, regional and national sources.

Since launch, Waterbot has answered thousands of questions from Arizona residents and continues to grow in reach and accuracy.



How do I use the Arizona Water Chatbot?

1. Visit azwaterbot.org
2. Enter your question in the prompt box.
3. Get an answer.

How was the Arizona Water Chatbot developed?

Created by ASU researchers with support from the Arizona Water Innovation Initiative (AWII) Impact Water - Arizona program, the chatbot provides curated answers to user questions about Arizona water.. Residents across the state participated in testing to ensure clear, relevant answers.

Waterbot is continually updated based on user feedback and technical improvements. A new retrieval-augmented generation (RAG) system uses trusted water data to deliver more accurate and context-aware answers. A bilingual English/Spanish toggle is also being added to improve accessibility for all Arizona communities.

What information does the Arizona Water Chatbot use?

Waterbot provides context-sensitive information that incorporates a range of perspectives, including those of Indigenous communities. These public sources include the text of every federal water adjudication with Arizona's Indigenous peoples, reports from the Tribes on water issues, water resources information from every city and town in Arizona with an available city plan and materials from Arizona Department of Water Resources and other state sources. This robust collection of trusted information allow the Arizona Water Chatbot to deliver a balanced, multidimensional representation of water knowledge.

Who can I contact about the Arizona Water Chatbot?

Please contact Dr. Stephen Carradini (Stephen.Carradini@asu.edu) and Dr. Claire Lauer (Claire.Lauer@asu.edu) for questions regarding organizational use, technical aspects of the project or chatbot answer quality.

Julie Ann Wrigley Global Futures Laboratory™
Arizona State University

Arizona Water Innovation Initiative

Learn and Reflect with RiverBot

What is the Arizona Riverbot?

RiverBot is an educational AI tool that responds to questions as a river. This design shifts the chatbot from a transactional question-and-answer process toward relational dialogue about water experiences. Users in K-12 classrooms, museums, libraries, and community spaces are invited to reflect on their own experiences of water, place, and sustainability in new ways.

How Do I Use RiverBot?

- Visit the RiverBot website (AZwaterbot.org/riverbot)
- Type a question into the prompt box.
- Receive a response written in the voice of a river.

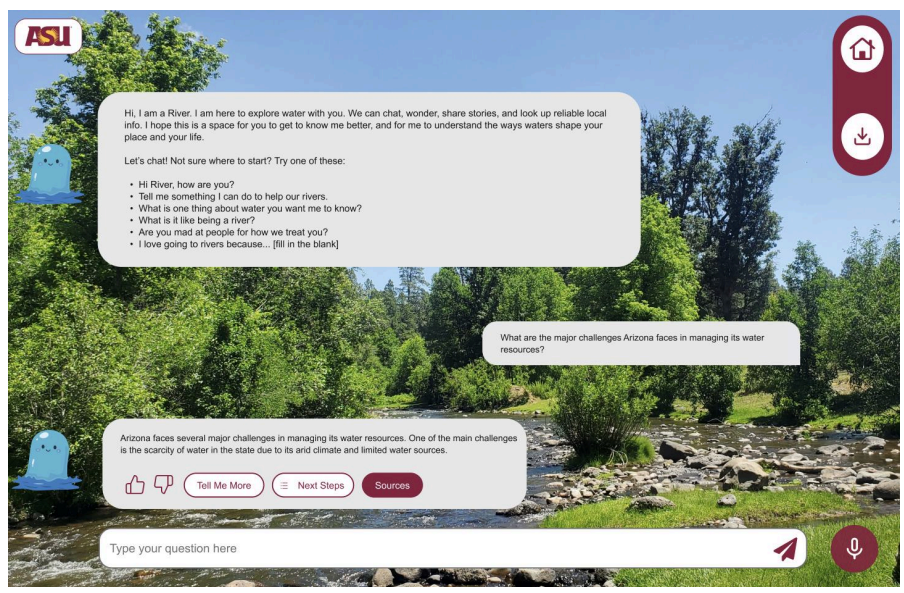
You can continue the conversation through simple follow-up buttons such as “Tell me more” or “Sources.” The system can support questions given in English and Spanish.

What Makes RiverBot Different?

RiverBot builds on existing software from the Arizona Water Chatbot. Instead of using detailed prompt instructions to guide the answers, RiverBot is guided by a minimalist orientation prompt: “You are a river. Answer as a river would.” This shift, informed by Indigenous epistemology in collaboration with colleagues from American Indian Studies, changes the tone of the interaction while maintaining factual accuracy.

Most chatbots are designed to deliver information efficiently. RiverBot is designed to create a relational learning experience. It helps learners explore topics such as water cycles, drought, governance, and climate change through a perspective grounded in place.

Because it speaks as a river, the system draws user attention to ecological context, lived experience, and human responsibility. When paired with curated materials, it can surface Indigenous and community perspectives alongside scientific information.



How Is RiverBot Built?

RiverBot is adapted from a large language model-based conversational AI system and web platform first developed for the Arizona Water Chatbot; this AI system and platform underwent extensive expert review and public testing. RiverBot can operate with or without a curated knowledge database. When a database is enabled, it retrieves information from curated local sources. The system also includes built-in safeguards to support safe and relevant responses.

Where can RiverBot be used?

- K–12 STEM and environmental education
- Museums and science centers
- Libraries and informal learning programs
- Community events focused on sustainability

Who Can I contact?

Please contact Dr. Stephen Carradini (Stephen.Carradini@asu.edu) or Dr. Liliana Caughman (Liliana.Caughman@asu.edu) for questions regarding organizational use, technical aspects of the project or chatbot answer quality.

Overview

The WaterSIMmersive project is designed to help community members from a wide range of backgrounds—especially those who have historically been underrepresented in key conversations—deepen their understanding of their local water systems and their relationships with water.

Water is more than a resource to be managed; it is a living presence that connects ecosystems, cultures, economies, and generations. This project invites participants to explore where water comes from, how it moves through landscapes and communities, who and what depend on it, and how our choices shape its future. We also recognize and honor diverse cultural perspectives that understand water as kin—an entity with which we are in relationship, carrying responsibilities of care, reciprocity, and respect.

Through exhibits developed in collaboration with communities across the state, we aim to inspire STEM learning alongside place-based knowledge, cultural wisdom, and community leadership. By bringing these ways of knowing together, WaterSIMmersive empowers people of all ages to make informed, values-driven decisions that sustain the health, dignity, and vitality of Arizona communities for generations to come.

An Introduction to the Museum Experience

Games and Experiences

Explore interactive games, conversations, and virtual experiences designed to help you learn more about water: how it moves, how we use it, and why it matters. From browser-based games and water-focused chatbots to a virtual water treatment facility tour, these experiences invite you to discover, play, and learn at your own pace.

All games and experiences are modular and customizable. They can be mixed and matched across events and exhibits, allowing communities to shape the content, tone, and focus to reflect their local water histories, needs, and priorities.

Immersive and Experiential Media | Interactive Games and Simulations | Stories of Place and Water | Participatory and Civic Engagement Tools

Immersive and Experiential Media

Being Water Game

An interactive screen-based experience where participants become a "water spirit" and travel through different water forms and uses across Arizona, performing tasks and learning about the water cycle and conservation.

360° Virtual Tour

Advanced Water Purification

An interactive 360° tour lets users explore an AWP plant step-by-step through panoramic scenes and pop-up explanations. It offers an accessible way to see how recycled water becomes safe drinking water.

Flow Forward VR Game

Advanced Water Purification

A virtual reality experience where participants ride a nanosub through the pipes of an Advanced Water Purification (AWP) plant, battling contaminants and learning how water is cleaned, purified, and tested for safety. Watch a gameplay demo.

Arizona Water Chatbot

A chatbot where community members can ask questions about water in Arizona and receive real-time answers through the Arizona Water Chatbot. Designed to make water topics accessible and engaging for all ages.

Riverbot

A chatbot that helps users explore local river systems through story and place-based knowledge. It encourages relational learning, inviting users to see waterways as connected to community, culture, and future stewardship.

Hear what happened when someone turned RiverBot's poetic response into a song and music video—showcasing an unexpected collaboration between human creativity

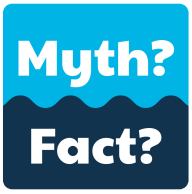
and AI that lets the river's voice truly sing in Why Does Water Matter?"

Interactive Games and Simulations

Build a Facility

Advanced Water Purification

A game where users assemble a water treatment plant by placing process steps in the correct order. It introduces core treatment stages, highlights their unique functions, and shows how different water sources move through the system.



Water Myth vs Fact Game

A game that invites visitors to test their knowledge by sorting water-related statements into "myth" or "fact." Content highlights water issues in Arizona and can be customized to reflect local concerns.

Water Saving Game

This choice-based game challenges players to reduce water use by making decisions at both local and global scales. Along the way, it highlights conservation strategies and shows how small changes can add up to meaningful impact.

Water Adventure

Created by Cleveland Williams for the UXP 101 class, this adventure game follows Blue, a water-drop hero, on a quest to rescue their missing friends. Explore the world, solve challenges, and answer questions about water.

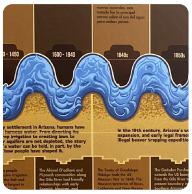
Stories of Place and Water

Agua Fria Mural

A mural depicting local water sources and cultural patterns unique to the region. It invites participants to visualize how community stories and landscapes connect to the area's water systems.

Community Storymap

A digital map that layers community narratives with local water sources, infrastructure, and landscapes. It helps users explore how experiences and water systems intersect across the region.



Localized Timeline

A customizable timeline exhibit that explores the history of water in Arizona with a focus on the host community's local water milestones, challenges, and achievements.

Participatory and Civic Engagement Tools

Community Mural

A collaborative mural inspired by local water sources and regional culture. Visitors are invited to add their own creative touch, contributing stories, symbols, and memories that reflect how water connects our community and landscape.

Letters to Water

A reflection table where visitors select a postcard and write or draw a message to water to express gratitude, recall memories, or honor its role in their lives and communities.

Water Pledge Station

A station where visitors share one action they will take to support their community's water future, contributing to a collective display of commitments and care.