

Rivers & Dams:

A multiplayer role-play game that promotes learning in collaboration and team-oriented communication

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Overview

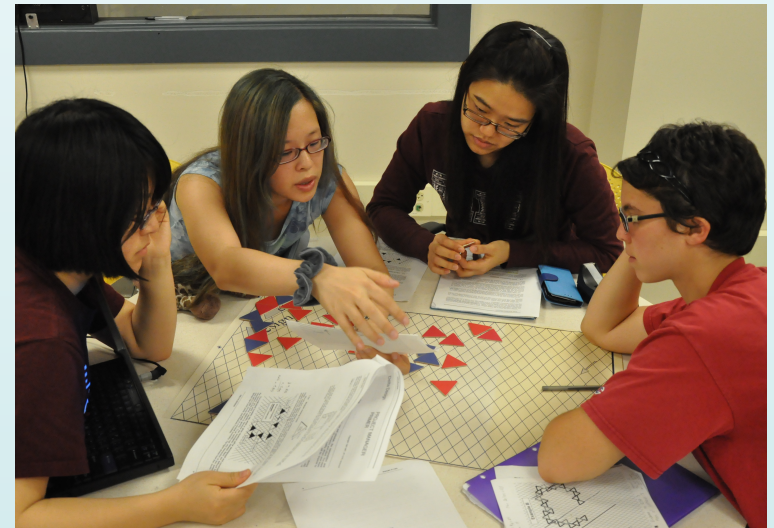
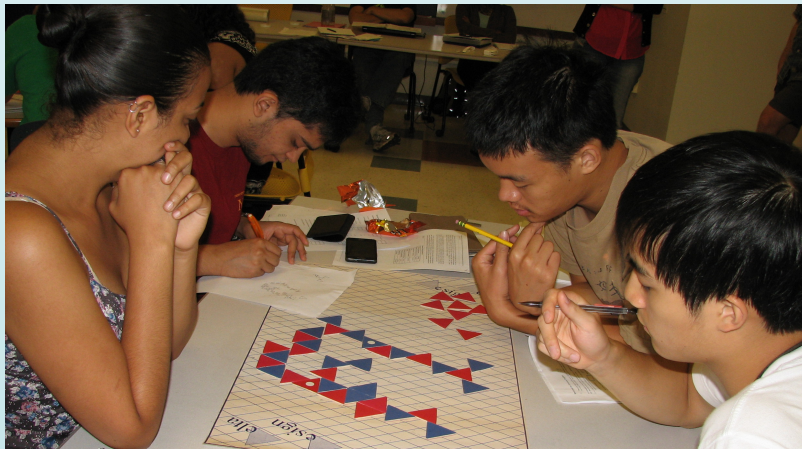
- Developed for University of Georgia Ph.D. Program in Integrative Conservation (ICON)
- Designed to be used by multiple kinds of players, both technically advanced and non-technical (possibly in the same session)
- Played in a single, three-hour session by 12 players, with homework assignments before and after gameplay

UGA' s ICON Ph.D. Program

- Designed to train conservation scientists who will be able to work across disciplines easily and fluidly
- Students choose a home department—Anthropology, Ecology, Forestry/Natural Resources, or Geography—but must, as individuals, be able to cross disciplinary boundaries
- Students come from a wide variety of backgrounds; they require training, early in the program, in ways to communicate with one another, listen to one another
- Program' s focus on experiential learning is philosophically consistent with using a game as a learning tool

Prior Work: “Delta Design Game” (Bucciarelli, 1999)

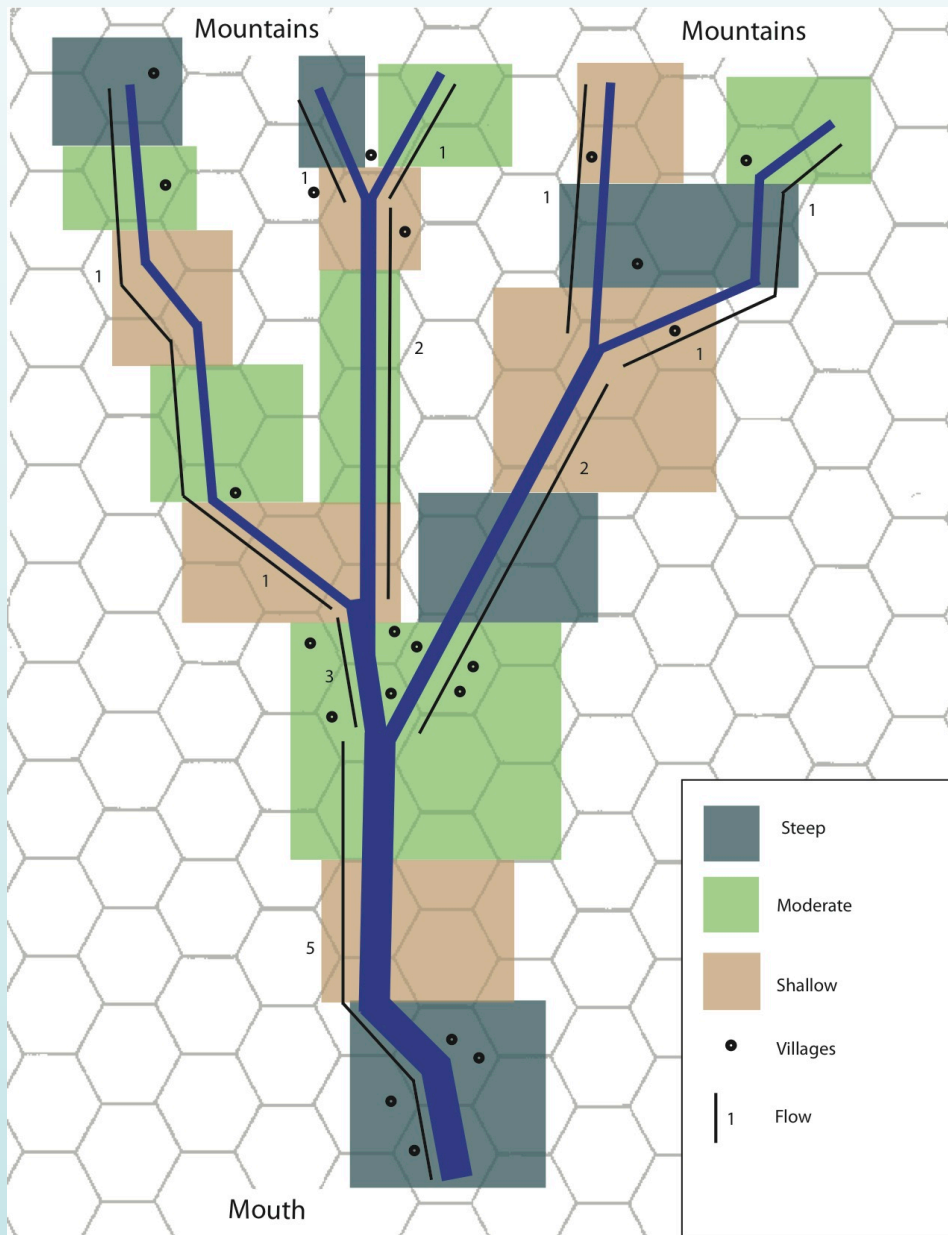
- Highlights design as “a social process of negotiation”
- Teams of four specialists take on a technical design task
- Conflict arises from differing criteria for success and diverse areas of expertise



Rivers & Dams

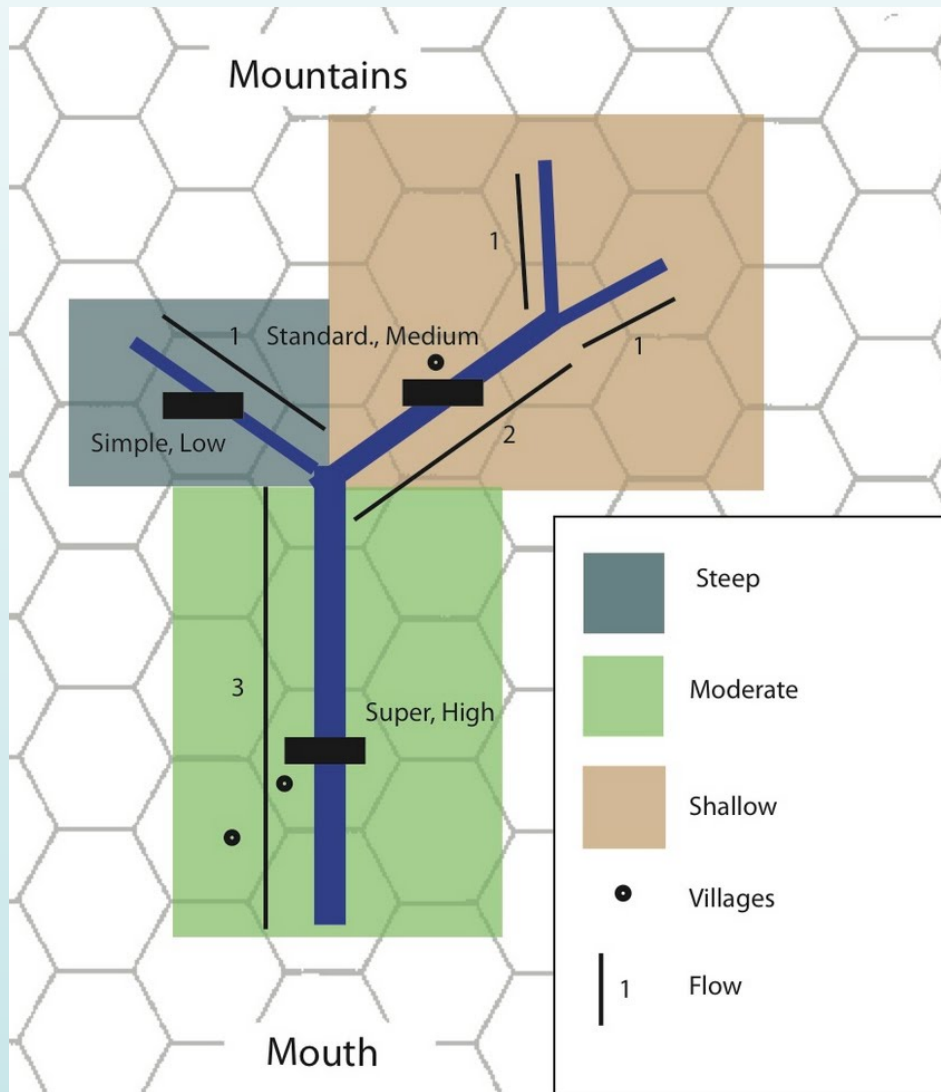
- Trickery: *Appears* to be one sort of game (sharing limited resources, negotiation among stakeholders) really *is* a different sort of game (targeted exercise in communication and collaboration)
- Provides *repeated* cycle of preparation, interaction, success (or failure), debriefing, reflection
- De-emphasizes technical nature of task, adds emphasis on role-play/motivating fiction
- Adds emphasis on differences in language (same language for different concepts, different language for same concepts) and overall outlook

Scenario



- River system on fictional planet
- Three sentient species, very different from one another
- One species wishes to build hydroelectric dams
- Other species see potential gains and losses
- Stated objective: Come up with acceptable plan

Scenario



- For each dam, must specify:
 1. Location (terrain and flow both important)
 2. Technical sophistication
 3. Height
- Each player belongs to one species, has specific expertise and objectives

Tree-Dwellers (industrialized teddy bears)

Live far away, need electrical power, decide by voting

- Project Manager: understands cost and time for construction of dams
- Power-Grid Operator: understands dams' power output and reliability
- Logistics Expert: understands dams' durability and operating cost
- Diplomat: has some (limited, flawed) understanding of other species' priorities

Land-Dwellers (giant carnivorous frogs)

Live nearby, charge mobile phones, clan leader decides

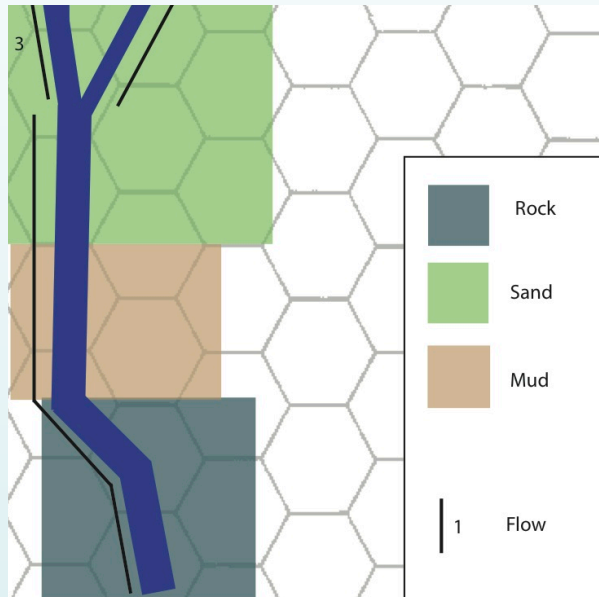
- Clan Leader: understands dams' reliability and distribution of power to villages
- Agronomist: understands flooding of agricultural areas and dams' effects on fisheries
- Civil Engineer: understands durability and construction cost of dams
- Economist: understands construction time and operating cost of dams

River-Dwellers (dugongs with hive-mind)

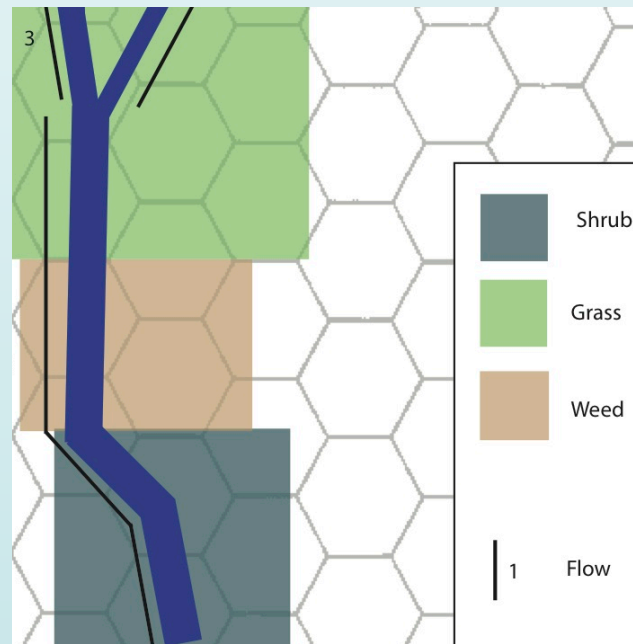
Live in river, need no electricity, decide by consensus

- Lucy: understands construction time, power output, and effects of dams on river ecosystems
- Ricky: understands reliability of dams, ways in which flooded areas provide new food, and ways in which dams interfere with river travel
- Fred: understands construction time, durability of dams, and ways in which dams interfere with river travel
- Ethel: understands effects of dams on river ecosystems, durability of dams, and ways in which flooded areas provide new food

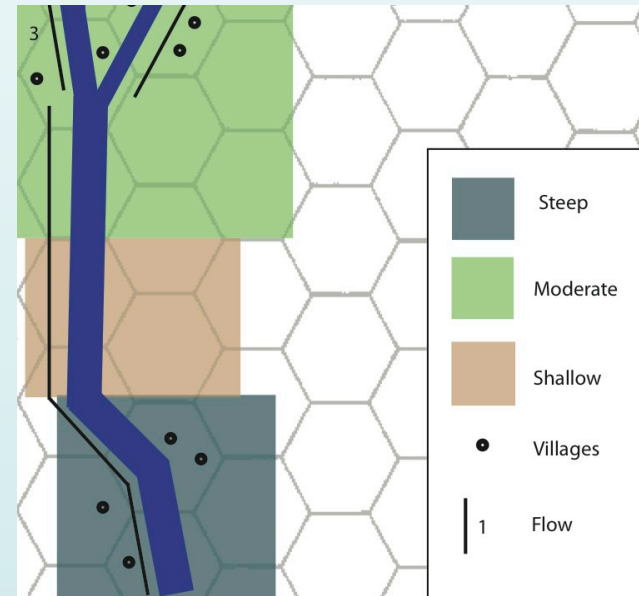
Species' maps differ in information provided, terminology used



Tree-Dwellers



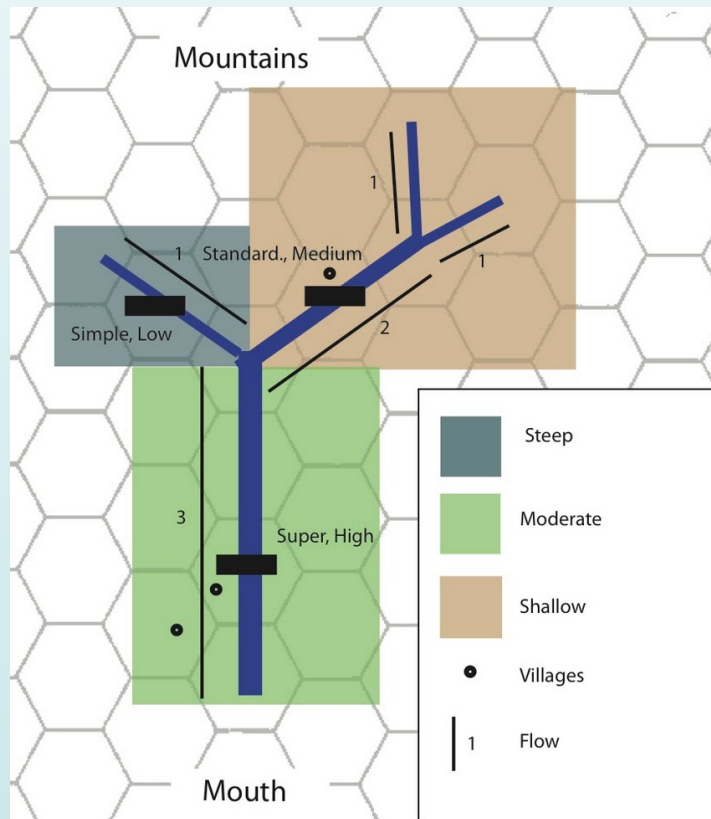
River-Dwellers



Land-Dwellers

Game Sequence

- Learn roles (homework)
- Work in species-specific teams
- Debrief
- Prepare for next stage
- Work in multi-species teams
- Debrief
- Reflect (homework)



Selected Student/Player Reflections

“The game was helpful in that **it made me think** (sometimes consciously, other times not) **of how I was acting and re-acting within the group, especially the second go-around....** in thinking of consensus, **it is not a simple matter of adding a teaspoon of input and/or needs here and there, then stirring; then viola, you have consensus.** What the game did make you realize to some degree was that **it takes effort, patience, flexibility, listening, re-negotiation, and legitimization to make it work.**”

Selected Student/Player Reflections

“What I liked about the game was that **it felt important in some way**, as if I were actually deciding the fate of a river with my actions, **particularly during the second round. I don't know how to describe why I got sucked into it, it just happened.** The roles were ambiguous enough that **you didn't have to invent an entirely different personality—you could utilize the limited information that you had and let your actions unfold naturally.** I think that aspect made it less forced than games in which you have to act out a caricature. **The character I played was me.**”

Selected Student/Player Reflections

“Our tree-dweller diplomat felt as though none of her needs were being met because the rest of us were focused on the numbers. She had a powerful role to play but her skills set was unutilized until she was out on her own. I jokingly said, “Now you know what it’s like to be a social scientist.” I think that one of the more powerful lessons I learned from the initial group was how easy it is to dismiss the knowledge of others and to be dismissed based on what people may see as the inherent biases of a project.”

Selected Student/Player Reflections

“Lastly, as others have mentioned, **this activity taught me about translation** in that **my shrub might be someone else’s sandy soil** and that **we could be talking about the same thing, but inevitably past one another if we fail to recognize this fact and ultimately reconcile our vocabularies.**”