

Watershed Educational Game

Aimed at a 4th to 6th grade audience, this game takes a highly interactive “problem solving” approach to educating people on the types and sources of water pollution and potential solutions.

Players take a canoe trip down the mighty “(?)” river from the mountains to the ocean. Along the way they pass pollution causing situations and similar, but non-pollution causing, situations. Players identify potential sources of pollution, ascertain whether or not significant pollution is present, and, if so, choose the most appropriate solution from a palette of options.

For example, a player passes an agricultural feedlot that abuts the river. Taking a water sample for nitrates would show that the feedlot is indeed polluting the river. Among the mitigators in the solutions palette are a settling pond and a greensward. While the settling pond is a solution, the chance of flooding negates this particular option, as the “best” choice while the greensward would be the most successful intervention. The pond might be worth 6 points whereas the greensward would be worth 10 points.

Examples of pollutants will vary from region to region, with inorganic chemicals leaching from mines in the mountains, to pesticide runoff in the plains, to industrial hot water dumping and chemical leaks near the coast.

For the initial proof-of-concept version we built an online single player version that we could host on the E-learning website. A more robust multi-player version could be offered free of charge to educational and environmental agencies.

Technical Information/Content

We developed a palette of pollution solutions. Solutions needed to be offered for the following problems:

- Sediment runoff
- Mining chemicals (cyanide, mercury, etc.)
- Extremes of water temperature (dams can cool, factories can heat)
- Animal wastes
- Hydrocarbons from leaking tanks and pipes
- Organic wastes from food and other processing
- Pesticides from agriculture
- Fertilizers from agriculture

Solution options included:

- Settling Ponds
- Reforestation
- Chemical Recovery
- Better Tillage
- Bacterial Pond

Constructive Wetland
pH Moderation
Temperature Remediation

Matrixes were developed for each screen to allow for geographical “point” value differences as well as relevance differences between the mediation options.