



COOPERATIVE EXTENSION
College of Agriculture, Forestry and Life Sciences

GAME ON FOR THE GROUND: GAME-BASED LEARNING FOR EROSION SOLUTIONS

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OUTLINE

- The Watershed Game:
 - Origin
 - Coast Model
- Interactive Decision Making:
 - Increase Flood Resilience
 - Decrease Water Pollution
- Communities & Collaboration:
 - Local leaders
 - Residents
 - Youth
- Customize
- Resources



<https://seagrant.umn.edu/watershed-game/local-leader-version>

ORIGIN & COAST MODEL



INTERACTIVE DECISION MAKING

Watershed

#

STARTING TOTALS	
1	

CURRENT BALANCE	
2	INDUSTRIAL
3	AGRICULTURE
4	URBAN
5	RESIDENTIAL
6	RURAL
7	
8	

Unanticipated Event

CLEAN WATER GOAL REVISED

Cost: -20 PUs

New research and monitoring have revealed that the current Clean Water Goal is not set at a level that is low enough to ensure that water quality is good enough to support designated uses, including protection and propagation of fish, shellfish, and wildlife; recreation; drinking water; and other uses. The Clean Water Goal has been revised to be 20 PUs lower.

Plan Card

FLOOD / DROUGHT

Never underestimate Mother Nature's power! There has been a very damaging flood throughout the coastal area. Fields are flooded, buildings and infrastructure are damaged, and significant shoreline erosion and runoff have flushed sediment and nutrients downstream. Every land use has experienced damage, but planning pays off. Land Use Teams that implemented a plan and/or increased resilience significantly in Year 1 had less damage and will be able to recover more quickly and at less cost.

Water Goal: 250 PUs
Resilience Goal: 10,000 RUs

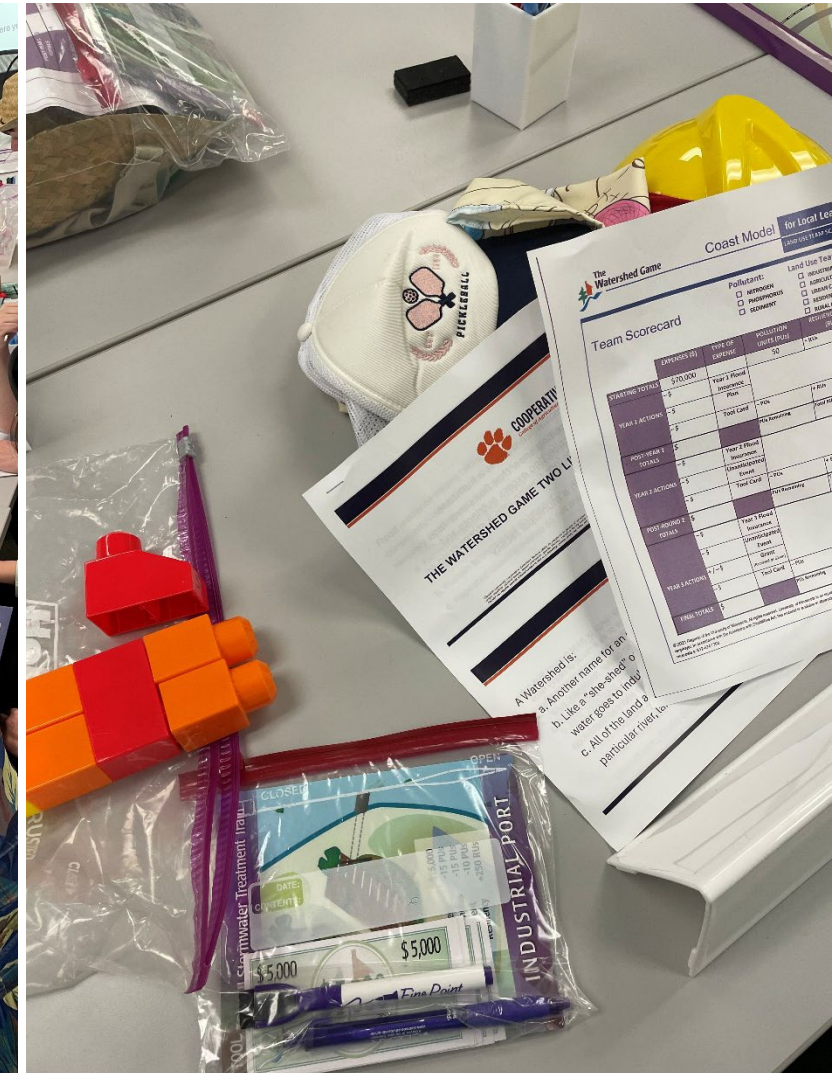
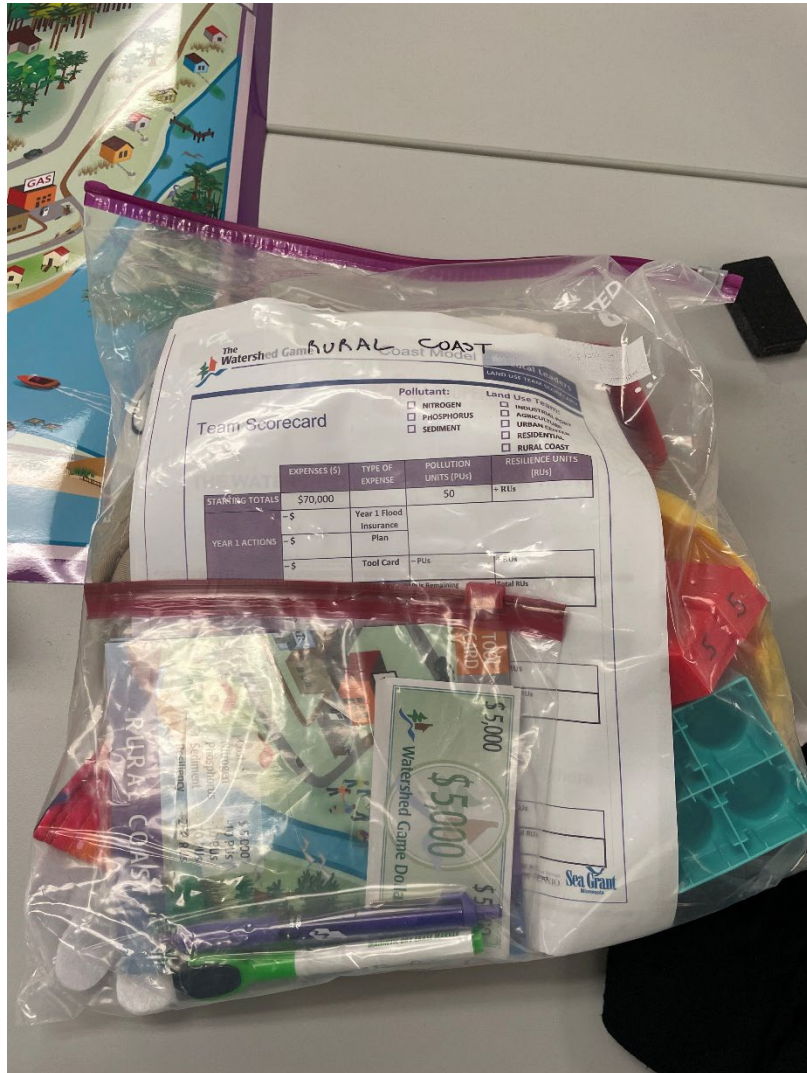
PLAN ≥ 750 RUs

Cost	RUs > 750	RUs < 750
RU Threshold		
Plan Purchased	No Cost	-5 SR
No Plan Purchased	-5SR	-510R

COMMUNITIES & COLLABORATION



CUSTOMIZE



CUSTOMIZE

A Watershed is:

- Another name for an outhouse
- Like a “she-shed” or “man-cave” but a place where water goes to indulge in its own interests
- All of the land and water areas that drain toward a particular river, lake, or ocean



The Watershed Game **Coast Model** **for Local Leaders**

LAND USE TEAM SCORECARD

Team Scorecard

Pollutant:
☐ NITROGEN
☐ PHOSPHORUS
☐ SEDIMENT

Land Use Team:
☐ INDUSTRIAL PORT
☐ AGRICULTURE
☐ URBAN CENTER
☐ RESIDENTIAL
☐ RURAL COAST

	EXPENSES (\$)	TYPE OF EXPENSE	POLLUTION UNITS (PUs)	RESILIENCE UNITS (RUs)
STARTING TOTALS	\$70,000		50	+ RUs
YEAR 1 ACTIONS	-\$	Year 1 Flood Insurance		
	-\$	Plan		
	-\$	Tool Card	- PUs	+ RUs
POST-YEAR 1 TOTALS	\$		PUs Remaining	Total RUs
YEAR 2 ACTIONS	-\$	Year 2 Flood Insurance		
	-\$	Unanticipated Event		
	-\$	Tool Card	- PUs	+ RUs
POST-ROUND 2 TOTALS	\$		PUs Remaining	Total RUs
YEAR 3 ACTIONS	-\$	Year 3 Flood Insurance		
	-\$	Unanticipated Event		
	+ / - \$	Grant (Received or Given)		
	-\$	Tool Card	- PUs	+ RUs
FINAL TOTALS	\$		PUs Remaining	Total RUs

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Sea Grant Minnesota

CUSTOMIZE



RESOURCES

Training materials:

[The Watershed Game Information Guide](#)

[The Watershed Game Fundamental Concepts](#)

[Local Leader Version of the Watershed Game: Overview](#)

[Classroom Version of the Watershed Game: Overview](#)

Training videos:



Introduction to the Watershed Game
January 11, 2022

This video is intended to provide a brief introduction to the Watershed Game and the different models available, as well as an overview of game components.



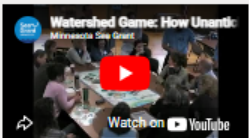
Watershed Game Demonstration
September 30, 2021

The Watershed Game Demonstration video provides an introduction to the Watershed Game, including a short demonstration of the Local Leader Version and the Classroom Version.



Fundamental Concepts
October 18, 2021

The Fundamental Concepts video introduces you to the science behind the Watershed Game. We recommend this video before you play the game with your classroom or local community.



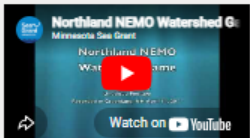
Using Unanticipated Event Cards
April 14, 2011

The Using Unanticipated Event Cards video shows a facilitator introduce an unanticipated event card and see how it affects the game play.



Introduction to Pollution Points
April 14, 2011

The Introduction to Pollution Points video introduces pollution points and how they work.



Northland NEMO Watershed Game Training: Introduction to the Game
April 14, 2011

The Northland NEMO Watershed Game Training video is an introduction to the Watershed Game held in Greenland, New Hampshire.

<https://seagrant.umn.edu/watershed-game/training-events>

Stream Model

The Watershed Game for Local Leaders - Stream Model addresses an entire headwaters watershed and the land uses often found in it.

Resources:

[Local Leader Version of the Watershed Game Overview](#)

[Stream Model Scorecard](#)

[Stream Model Pollution Sources Key](#)

Lake Model

The Watershed Game for Local Leaders - Lake Model concentrates on land uses surrounding a typical lake.

Resources:

[Local Leader Version of the Watershed Game Overview](#)

[Lake Model Scorecard](#)

[Lake Model Pollution Sources Key](#)

River Model

The Watershed Game for Local Leaders - River Model addresses the land uses associated with large river systems and urban areas.

Resources:

[Local Leader Version of the Watershed Game Overview](#)

[River Model Scorecard](#)

[River Model Pollution Sources Key](#)

Coast Model

The Watershed Game for Local Leaders - Coast Model represents a typical coastal community or estuary. It includes resilience to community flooding in addition to achieving a clean water goal.

Resources:

[Local Leader Version of the Watershed Game Overview](#)

[Coast Model Overview](#)

[Coast Model Team Scorecard](#)

[Coast Model Gameboard Key](#)

[Coast Model Facilitator Scorecard](#)

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QUESTIONS

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