PE/WI v2: A QUICK STARTER GUIDE

Objectives for playing PE/WI may be exploratory learning or goal-oriented. Before using PE/WI, players or instructors may review the PE/WI Classroom Exercises, which contain learning objectives, activities, and questions for review and discussion.

When players first open the PE/WI link at nrem.iastate.edu/landscape/pewi, they'll see the approximately 5900 acre (2400 hectare) watershed in the center screen. This main screen initially presents the first of three years of possible land use in the game. On this screen, players will design a land-use scenario for each of three years. From the main screen, players can navigate to three pop-up pages to evaluate land-use outcomes and also navigate between years 1, 2, and 3.

MAIN SCREEN FEATURES

Each pixel in the watershed represents an area no larger than 10 acres (4 hectares). The left side of the screen contains inputs into the PE/WI model—5 predefined physical features of the watershed and a selection of 15 possible land covers. Using the land cover tool bar, players can “paint” each pixel or groups of pixels in the watershed with a land cover by pointing, clicking, and dragging the mouse.

The bottom of the screen contains information about the precipitation category (wet, dry, or normal) for the current year, as well as the name of the land cover currently selected in the land cover tool bar. By hovering over a pixel in the watershed, the name of the existing land cover on that pixel will also appear in the bottom panel.

The right side of the screen contains an info button at the top, three views of land-use outcomes directly below, and buttons to navigate between years 1, 2, and 3 at the bottom right. The purpose of navigating through multiple years is to see temporal effects (continuous crop covers versus rotations and inter-annual precipitation variability) on land-use outcomes.

[Legends in the physical feature maps have not been implemented yet, as well as other labeling and design features.]

POP-UP PAGE FEATURES

SCORE PAGE:

The Score page presents land-use outcomes in the form of an interactive bubble chart, with possible scores ranging from 0 (worst-case outcome possible in PE/WI) at the bottom of the index to 100 (best-case outcome possible in PE/WI) at the top of the index. The scores are unitless. For example, a corn yield score of 75 would indicate that the scenario achieved 75% of the best-case corn yield in attainable in PE/WI. Depending on temporal and climate factors, the best-case scenario may not be attainable in a given year.
Although this guide uses the terminology best-case and worst-case for clarity, players must decide what index score level best meets their objectives for an agricultural landscape.

On the bubble chart, players will see scores for each year they have navigated to in the tool, and they can see whether their scores have improved or worsened over time and across different climate conditions (labeled as wet, dry, or normal). Sixteen indicators in total are present.

By clicking on any bubble or indicator, the bubble and indicator label will change from gray to a random color. Hovering over a bubble will provide the exact index score for that year. The bar chart to the right of each indicator label presents the average score across all years that have been navigated to in the tool.

[Labels and tool-tip features have not been completed on this page.]

**MAP PAGE:**

The map page provides three nutrient source maps. These map direct players to locations in the watershed for targeting improvements in nitrate, erosion, and phosphorus indicators. At present, the page only shows the current year. Our plan is to enable switching between years so that players can see changes over time.

**RESULTS PAGE:**

The results page provides four tables with summary results for the watershed in English and metric units.

Table 1 contains the percent and total area in the watershed for each land cover for all three years.

Table 2 contains each indicator score from the score page and the actual measurement value driving the indicator score for all three years. To continue the above example, it contains a first year corn yield index score, 75, and the actual total yield amount, approximately 900,000 bushels (23,000 megagrams).

Table 3 contains the number of strategic wetlands designated by the player as wetlands for each year, and it lists the precipitation amount for each year.

Table 4 contains all three nutrient source maps for each year.

[Nutrient source maps, several calculations, and print functionality have not been implemented on this page yet.]

**TECHNICAL ISSUES**

Technical bugs are present in the current Beta release of PE/WI. Triggering a bug often results in temporarily breaking other features in PE/WI for the current session. If you encounter a bug, you may want to refresh the web page and start over. We encourage players to send us a notification using the comment form on the LESEM lab PE/WI page (nrem.iastate.edu/landscape/content/pewi). Other feedback, comments, and questions are also welcomed and will help to further improve PE/WI.

Thanks for your help!