

Description of bundled scenarios for Maumee multi-model comparison 12/18/2015

1. Nutrient management at feasible levels (“NutMgtFeas”)

25% of row crop acreage was randomly chosen and the following practices were applied: a 50% reduction in P fertilizer application, fall timing of P applications, and subsurface placement of P into the soil.

2. Nutrient management throughout (“NutMgt100”)

Same as scenario 1 except the three nutrient management practices were applied to 100% of row crop fields throughout the watershed.

3. Commonly recommended practices (“ComRecsRand”)

Four BMPs were applied, each on a different 25% of the crop fields so that every row crop field had one of the four BMPs on it. The BMPs were: 50% reduction in P fertilizer application, subsurface application of P fertilizers, continuous no-tillage, and medium-quality filter strips.

4. Tillage and placement (“TillPlaceRand”)

50% of row crop acres were randomly chosen to apply both continuous no-tillage and subsurface application of P fertilizers.

5. Land conversion (“LandConv10, 25, and 50”)

In this set of three scenarios, 10%, 25%, and 50% of the row croplands with the lowest crop yields and greatest P loss were converted to switchgrass and managed for wildlife with limited harvesting for forage and no P fertilization.

6. Series targeted (“SeriesTarg”)

In this scenario, a series of practices were targeted to the 50% of row cropland with the highest P loss in the watershed. These practices included: subsurface application of P fertilizers, cereal rye cover crop in the winters without wheat, and application of medium-quality filter strips.

7. Series at random (“SeriesRand”)

The same series as scenario 6 but applied to a random 50% of row cropland instead of targeting high P loss areas.

8. Alternative rotations (“AltRot”)

An alternative corn-soybean-wheat rotation with a cereal rye cover crop all winters without wheat was applied over a randomly chosen 50% of row cropland.

9. Wetlands and filter strips (“WetFilt”)

Wetlands were targeted to the 25% of subwatersheds with the greatest P loading and assumed to intercept half of overland and tile flow, and medium-quality filter strips were targeted to the 25% of row crop acreage responsible for the greatest P loss.

10. In-field practices at feasible levels (“InFieldFeas”)

Four in-field practices were applied to a random 25% of row cropland: 50% reduction in P fertilizer application, fall timing of P applications, subsurface placement of P fertilizers, and a winter cereal rye cover crop.

<i>T = Targeted</i> <i>R = Random</i>			<i>Nutrient management</i>			<i>Tillage and crop choice</i>			<i>Land conversion</i>		
Bundle	Long Name	Policy Question	50% reduction in P fertilizers	Fall P application	Subsurface P application	Continuous no tillage	Cereal rye cover crop	Winter wheat rotation	Filter strip	Wetland	Switchgrass
1: NutMgtFeas	Nutrient management at feasible levels	Will feasible levels of nutrient management be sufficient?	25% R	25% R	25% R						
2: NutMgt100	Nutrient management throughout	Can nutrient management alone achieve targets?	100%	100%	100%						
3: ComRecsRand	Commonly recommended practices	Can feasible adoption of commonly recommended BMPs achieve the target?	25% R (separate)		25% R (separate)	25% R (separate)			25% R (separate)		
4: TillPlaceRand	Tillage and placement	Is no-tillage effective if P is applied below the soil surface?			50% R	50% R					
5: LandConv10, 25, and 50	Land conversion	How much land would we need to retire to grassland to achieve the targets?									(a) 10%T (b) 25%T (c) 50% T
6: SeriesTarg	Series targeted	What extent of spatially targeted in-field and edge-of-field practices is required to reach the targets?			50% T		50% T		50% T		
7: SeriesRand	Series at random	What if those practices were applied at random?			50% R		50% R		50% R		
8: AltRot	Alternative rotations	How much good comes from bringing back winter wheat and other winter cover crops?					50% R	50% R			
9: WetFilt	Wetlands and filter strips	How much nutrient reduction can we achieve through structural practices?							25% T	25% T	
10: InFieldFeas	In-field practices at feasible levels	What can we achieve at feasible application of in-field practices?	25% R	25% R	25% R		25% R				