

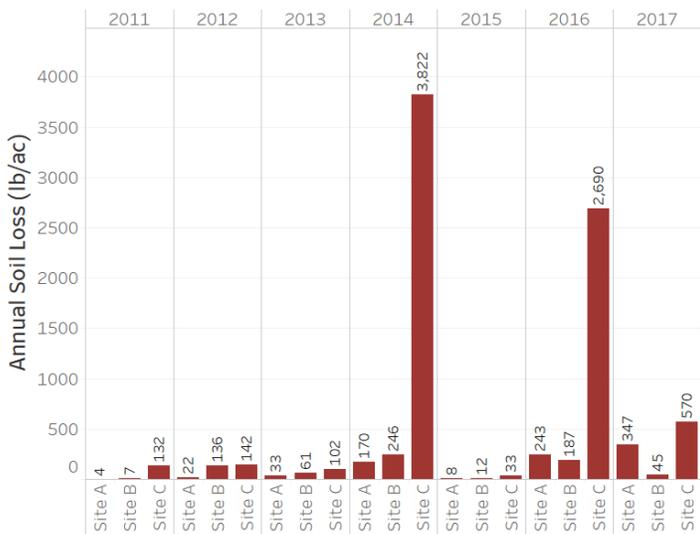
# Jersey Valley Watershed what we know seven years later...



March 2018 | aradatz@wisc.edu

UW Discovery Farms has monitored water quality at various monitoring sites (see table) in the Jersey Valley Watershed for the past seven years. In addition, the program has also monitored stream and lake water quality. This handout highlights key findings with more details presented in an upcoming final report.

Site Information	Site A	Site B	Site C	City Site	Gully Site
Overview Description	Grazed hay field and permanent pasture naturally deposited with beef cattle manure.	Medium sized dairy. Corn for silage or grain/hay rotation. Liquid manure.	Permitted dairy. Corn silage/hay rotation. Liquid manure.	Rural village with a population of 1,100 that covers 5.7 sq. miles.	A steep natural wooded ravine that receives runoff from Site 1.
Alfalfa during study (Yes or No)	Yes	Yes	Yes	NA	NA
Tillage (No-till, Conservation Tillage)	No-till	No-till	Conservation tillage	NA	NA
Manure Management (Surface, Incorporated)	Naturally Deposited	Surface	Incorporated	NA	NA



## No-till and pasture sites lost less soil.

The permanent pasture site (Site A) and no-till corn/alfalfa site (Site B) had lower soil loss than the conservation tillage site (Site C) in every year.

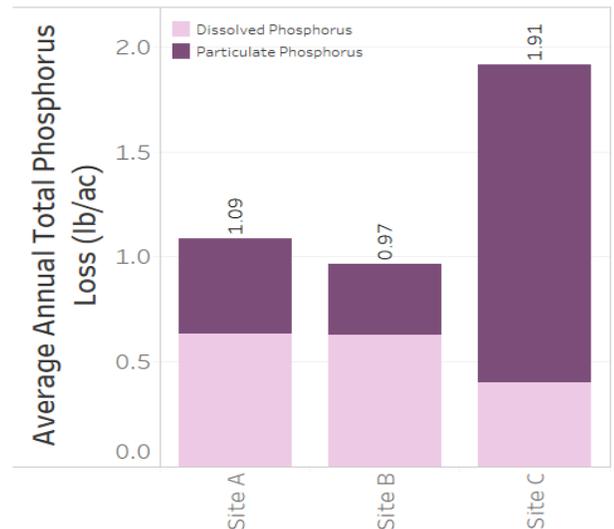
In 2014 and 2016, Site C had dramatically higher levels of soil loss due to the point in the crop rotation and timing and intensity of tillage practices.

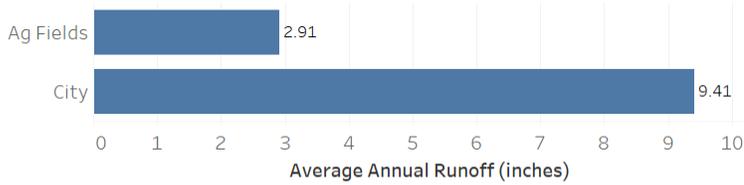
## Phosphorus loss was not tillage dependent.

Phosphorus losses at Sites A and B were dominated by dissolved P, in contrast to Site C, which was dominated by particulate P.

Dissolved P losses could be decreased at Site B by placing manure or fertilizer below the surface, but any action that increases soil loss at this site would not result in a P loss benefit.

For Site A, it seems unlikely that any pasture management practices could reduce dissolved P short of pasture renovation to mix surface phosphorus deeper into the soil, which brings a risk of soil loss.

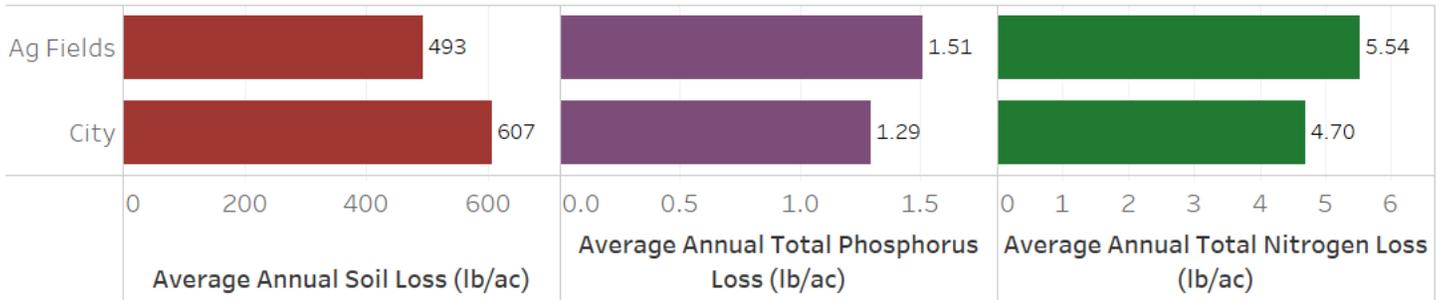
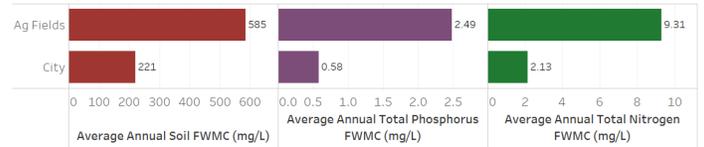




## More runoff from the city led to similar losses between the city and ag sites.

There was approximately 2 to 3 times more runoff from the city site than from ag sites.

Losses from the city were similar to those from ag sites because nutrient concentrations at the city site were lower.



## The gully area was mostly a sink.

More total P, dissolved P, total N and runoff entered the top of the gully than left the bottom during six out of seven years.

Weather played a significant role in losses from the gully in 2017.

There was always more nitrate at the bottom of the gully than what was measured at the top.

