Nutrient Reduction Priorities

What You Can Do

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Kentucky Division of Water

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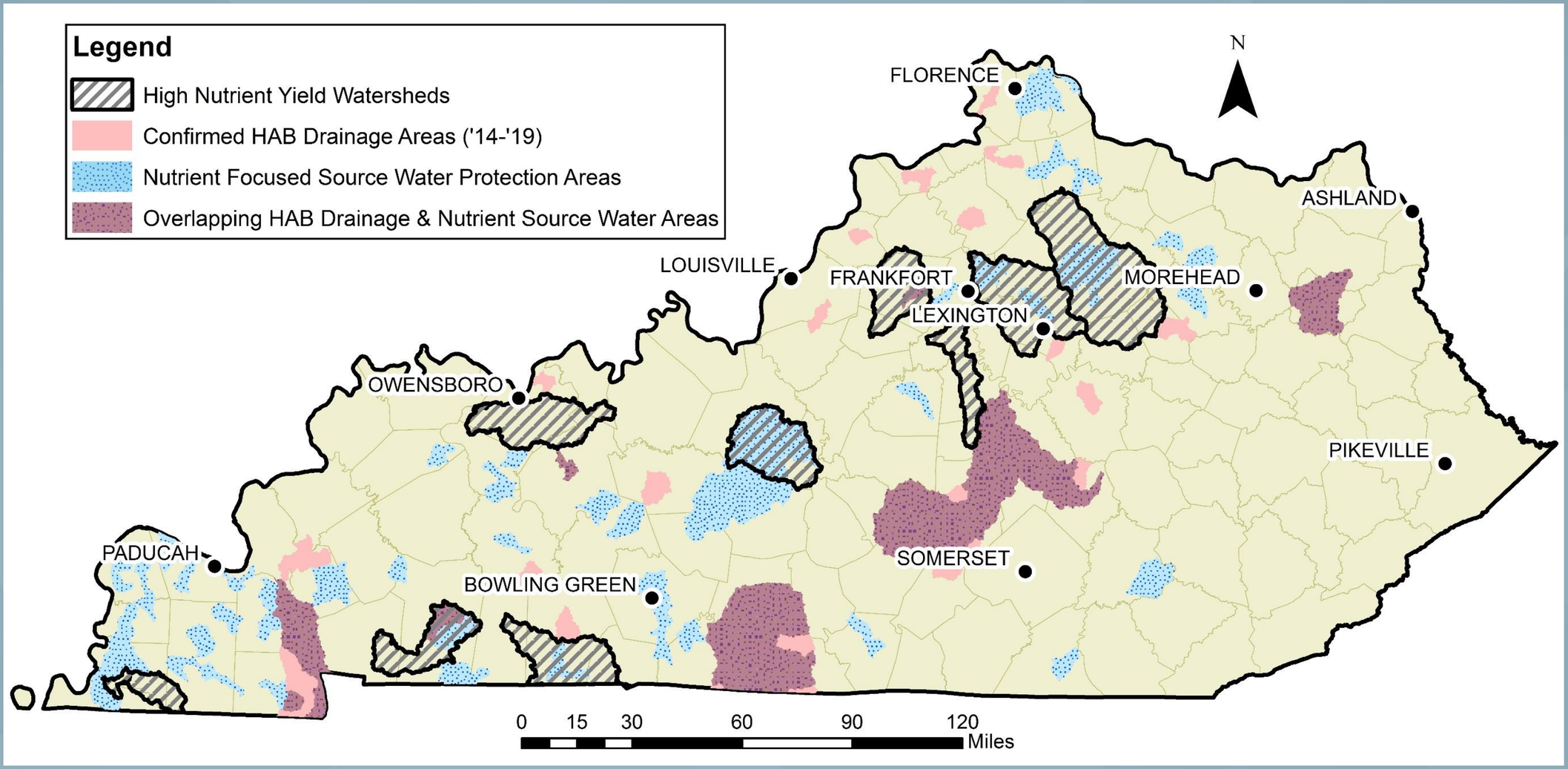
ENERGY AND ENVIRONMENT CABINET

What are Kentucky's Nutrient Priority Areas?



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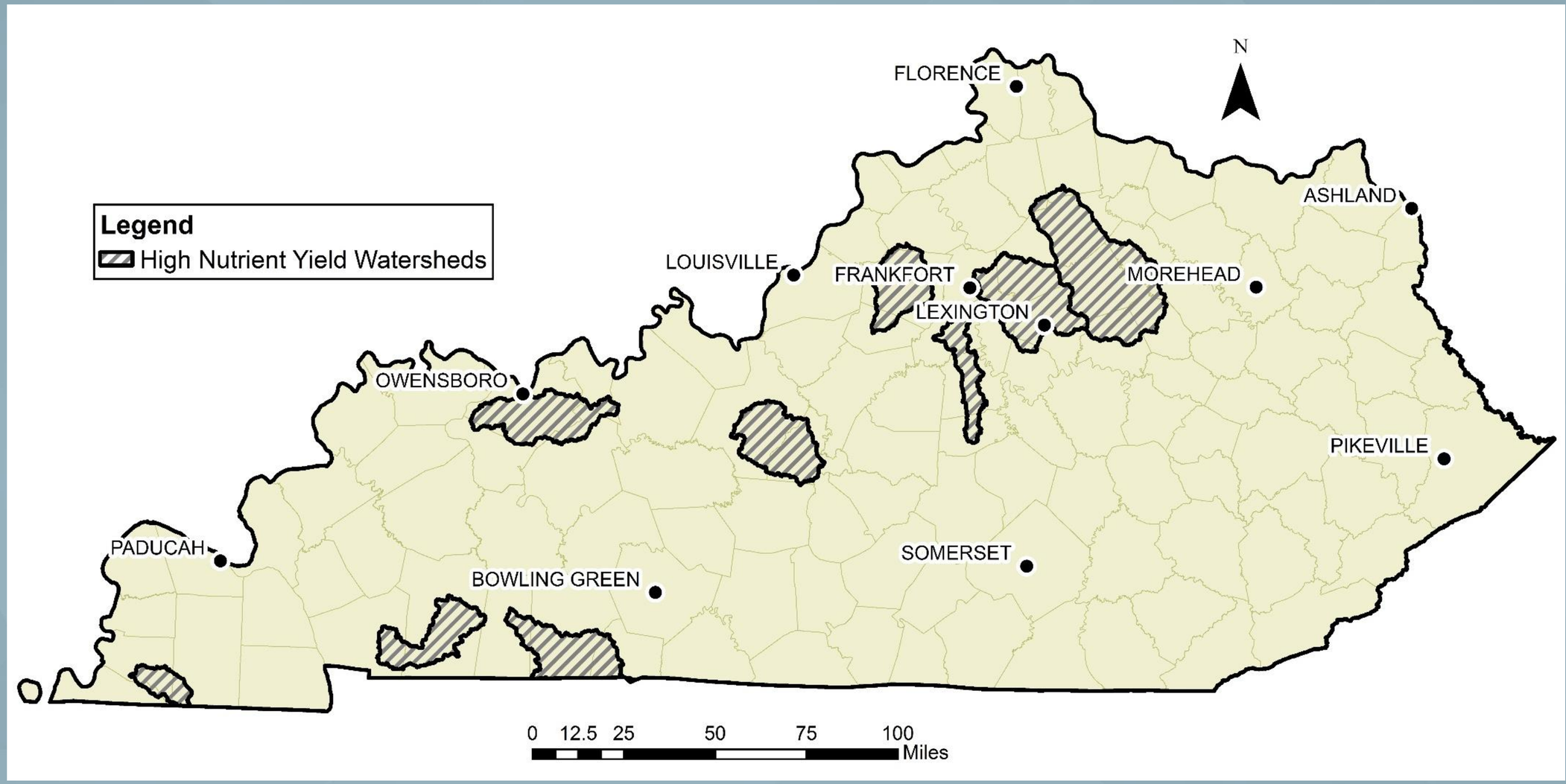
How did we select high nutrient watersheds?



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How did we select high nutrient watersheds?

- We compared the highest yielding nitrogen and phosphorus watersheds from the 2021 Loads & Yields Study.

2021 Highest Yielding Nitrogen Watersheds Ranked

Station	Period of record	Drainage Area (mi^2)	Estimated mean annual yield	
			total nitrogen	phosphorus
			(ton/yr)/mi^2	
PRI069-1	2005-2019	550	7.79	0.56
PRI105	2005-2019	262	7.41	0.72
PRI043	2005-2019	268	6.58	0.31
PRI098	2005-2019	473	6.37	1.04
PRI021	2005-2019	351	5.50	0.35
PRI109	2005-2019	103	5.34	1.31
PRI113	2011-2019	372	5	0.67
PRI052	2005-2019	173	4.82	0.76
PRI060	2005-2019	287	4.74	0.72
PRI103	2005-2019	3136	4.64	0.20
PRI077	2005-2019	262	4.55	0.42

poor model fit

2021 Highest Yielding Phosphorus Watersheds Ranked

Station	Period of record	Drainage Area (mi^2)	Estimated mean annual yield	
			total nitrogen	phosphorus
			(ton/yr)/mi^2	
PRI109	2005-2019	103	5.34	1.31
PRI098	2005-2019	473	6.37	1.04
PRI059	2013-2019	838	4.28	0.94
PRI052	2005-2019	173	4.82	0.76
PRI105	2005-2019	262	7.41	0.72
PRI113	2011-2019	372	5	0.67
PRI060	2005-2019	287	4.74	0.72
PRI100	2005-2019	259	3.57	0.69
PRI041	2005-2019	436	3.62	0.63
PRI069-1	2005-2019	550	7.79	0.56
PRI029	2005-2019	1197	3.65	0.54

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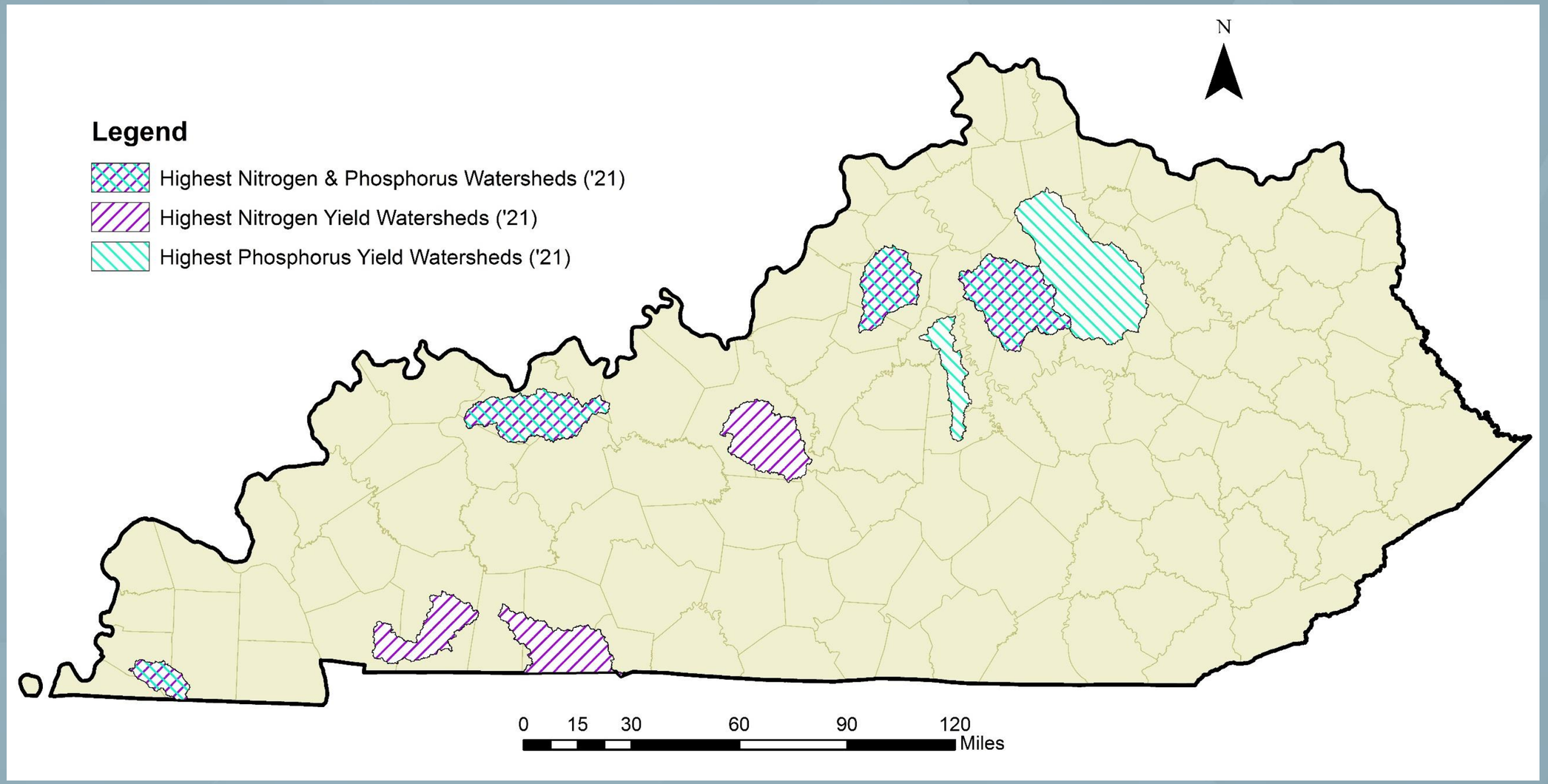
How did we select high nutrient watersheds?

The result is a total of 9 high nutrient yield watersheds.



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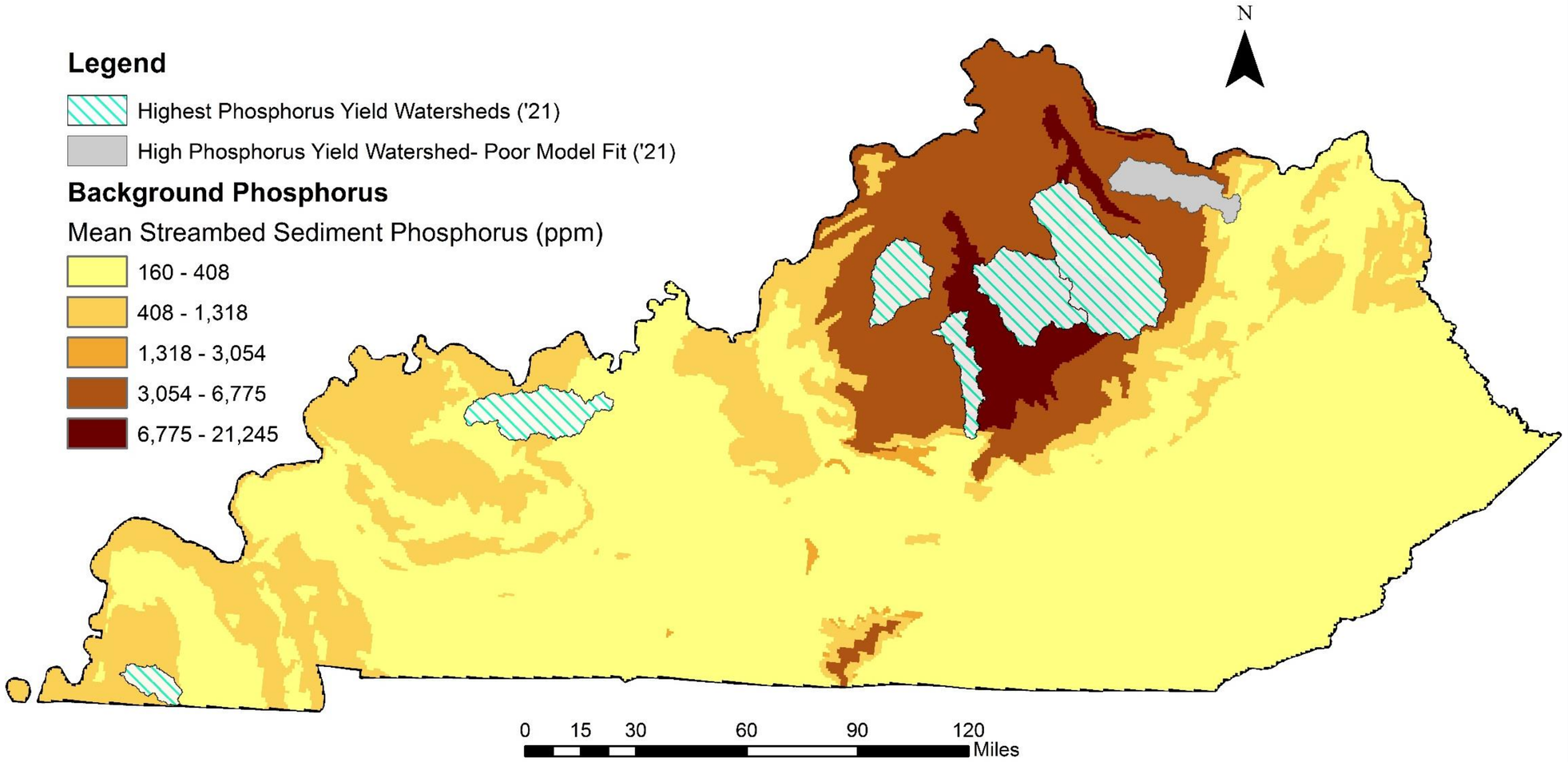
How did we select high nutrient watersheds?

Clear connection between high phosphorus watersheds and soil concentrations.



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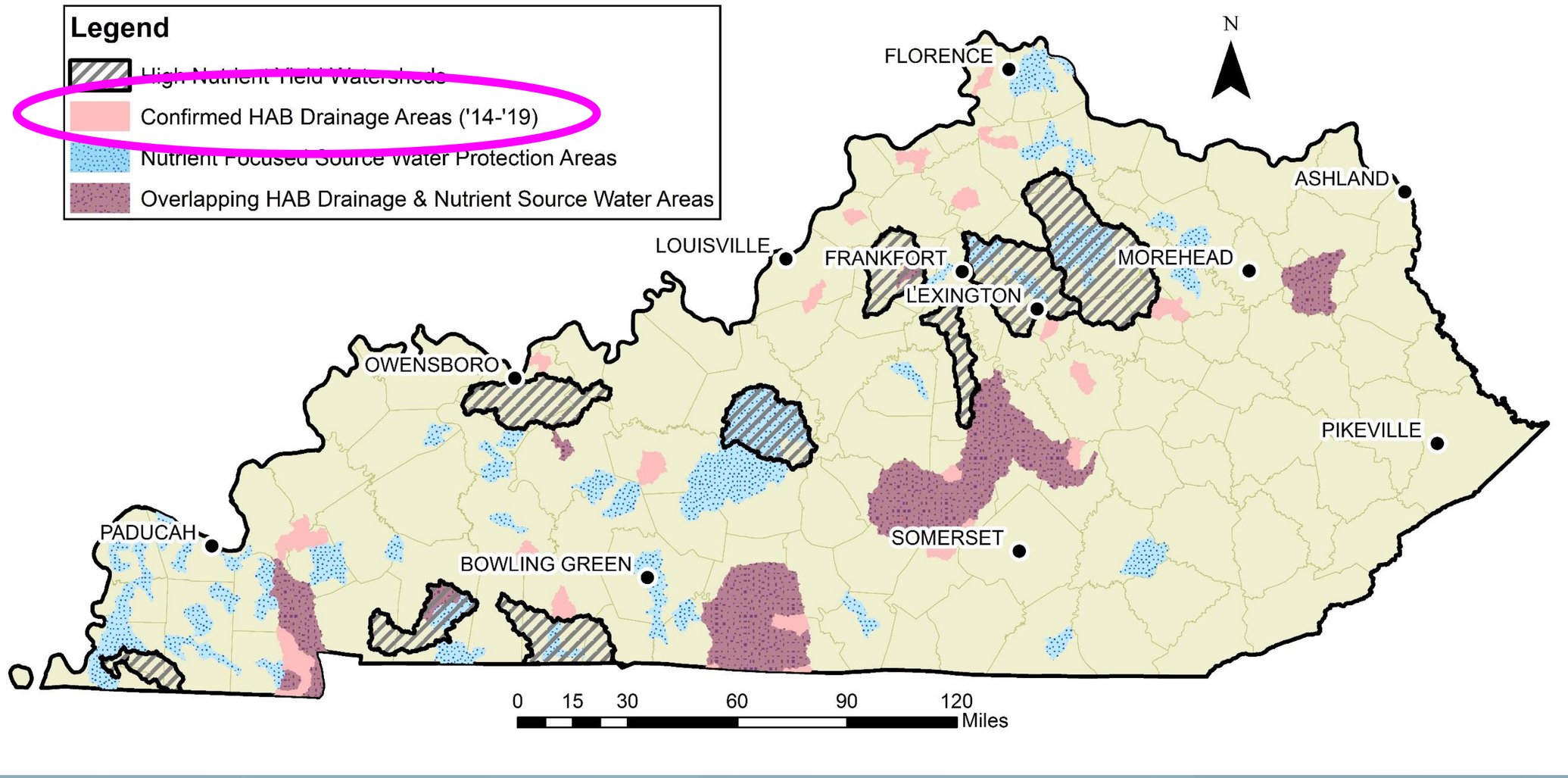
How did we select high nutrient watersheds?



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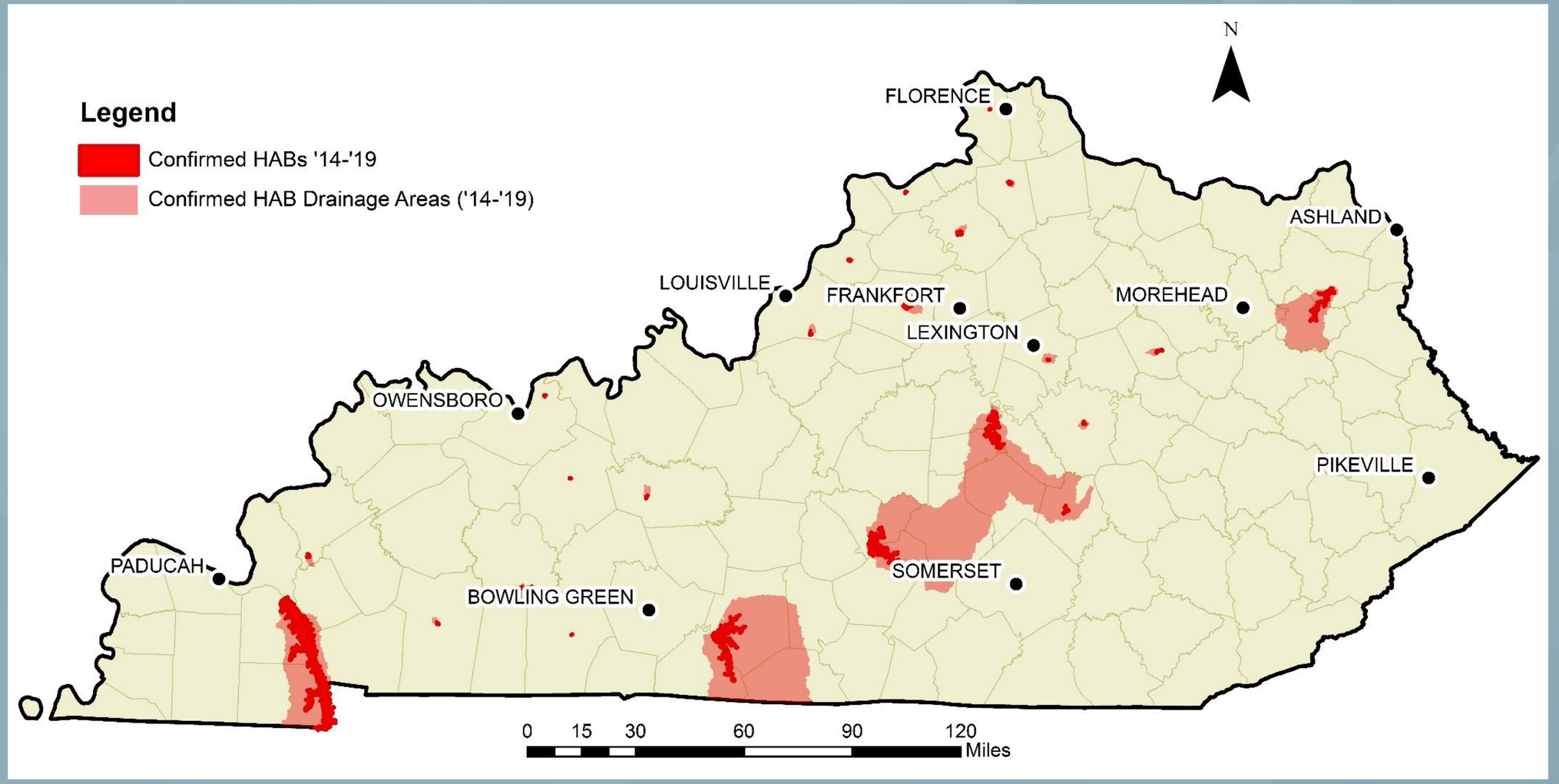
How did we select high nutrient watersheds?

We identified HAB waterbodies and their drainage areas that were confirmed via sampling (2014-2019).



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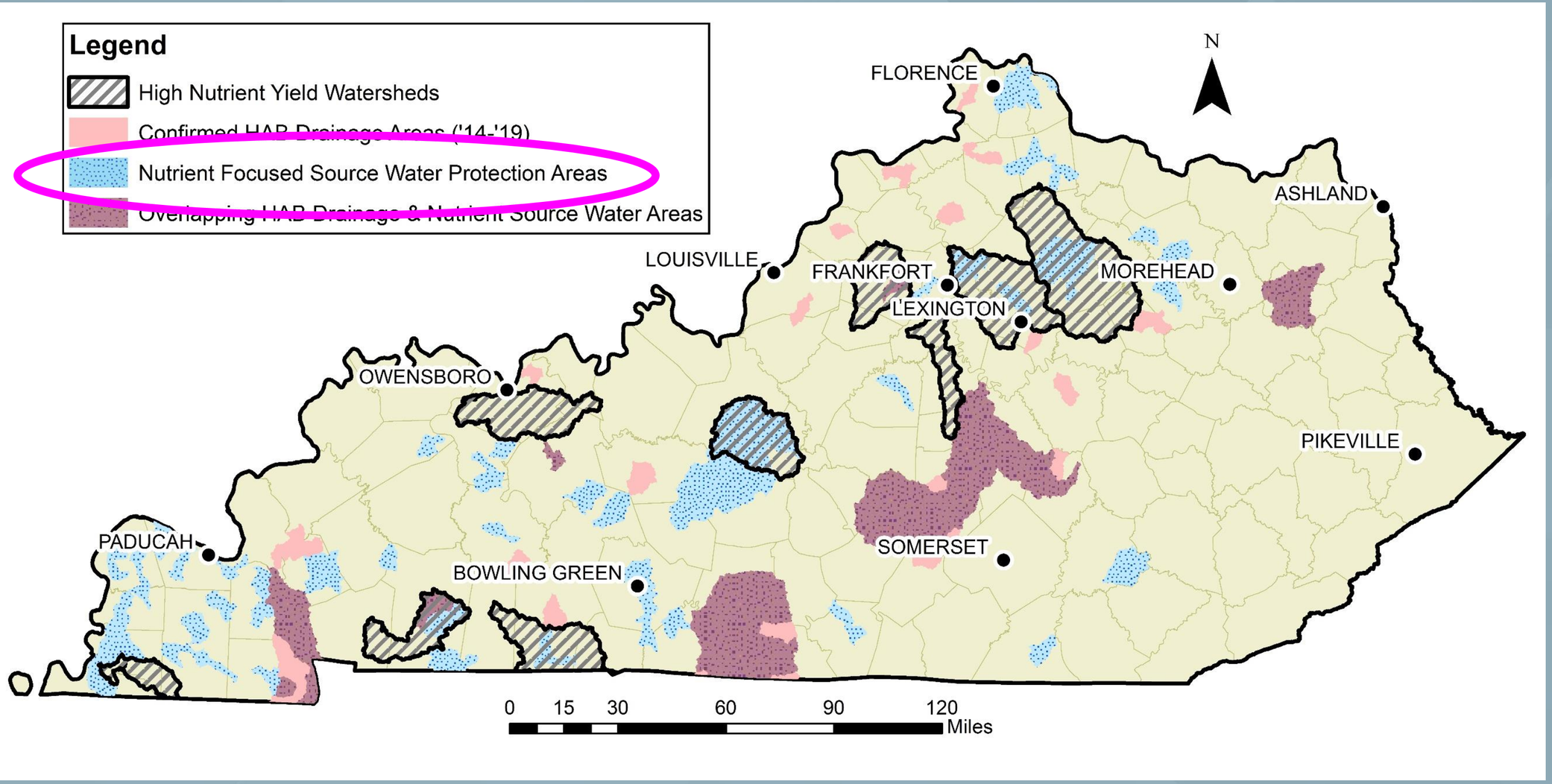
How did we select high nutrient watersheds?



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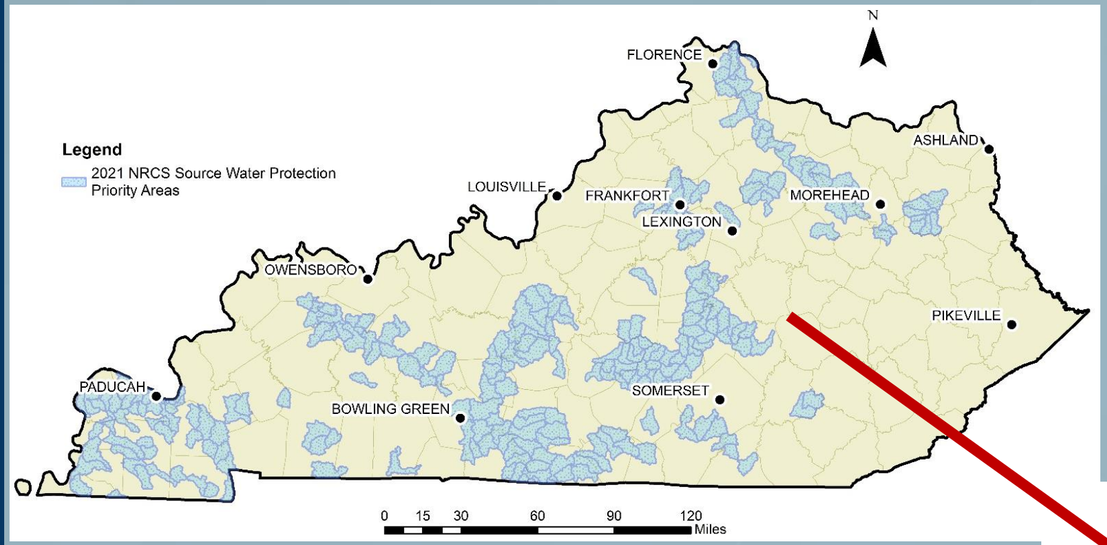
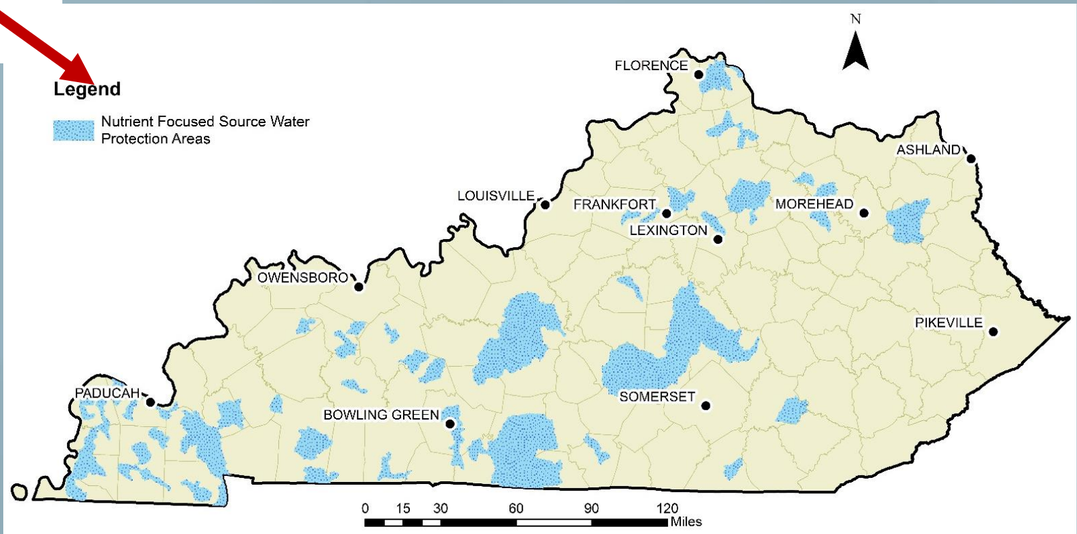
How did we select high nutrient watersheds?

- DOW identified a subset of NRCS SWPPA prioritization to include in Nutrient Priority Areas



(HTF Success Stories)



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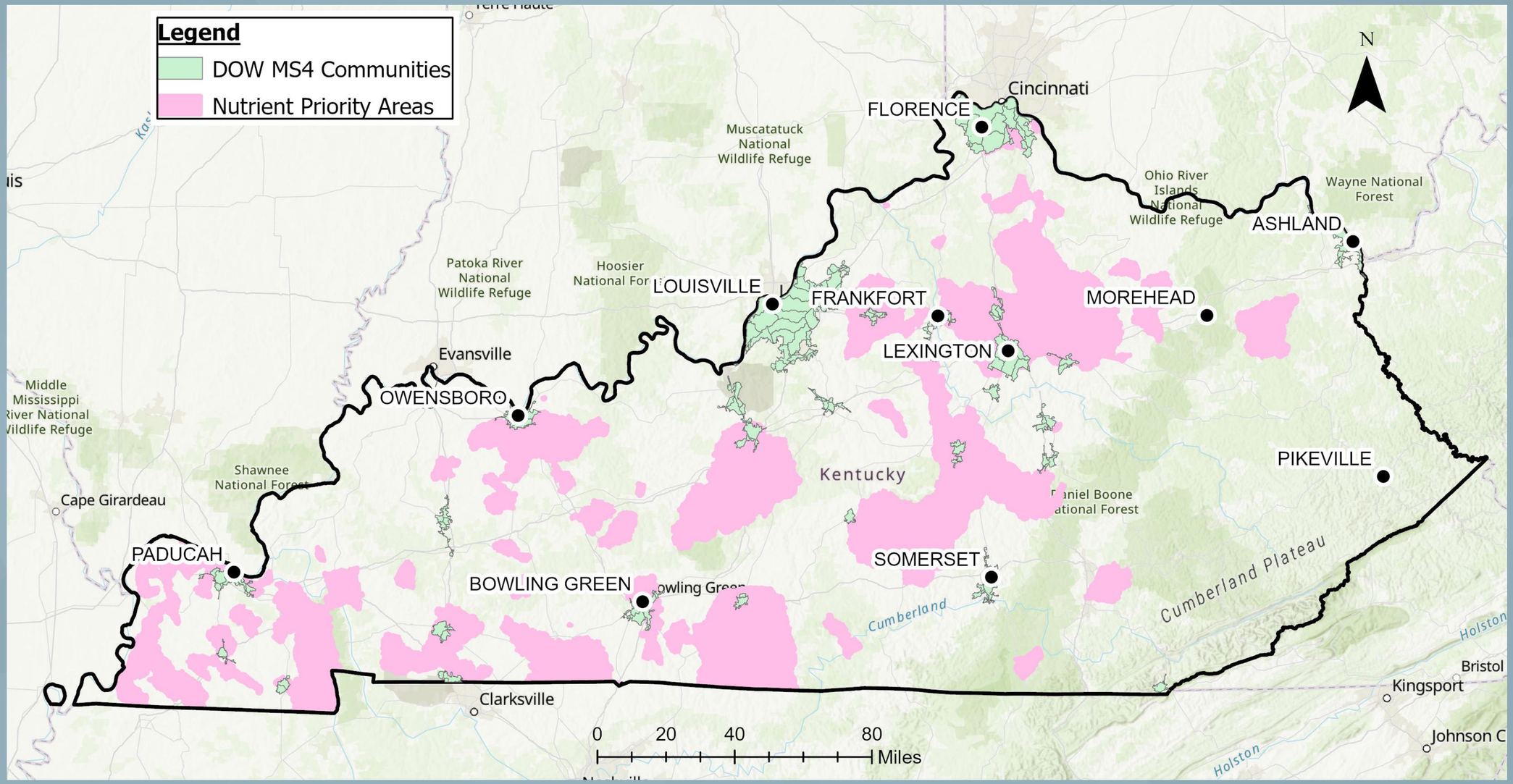
Are You in a Nutrient Priority Area?



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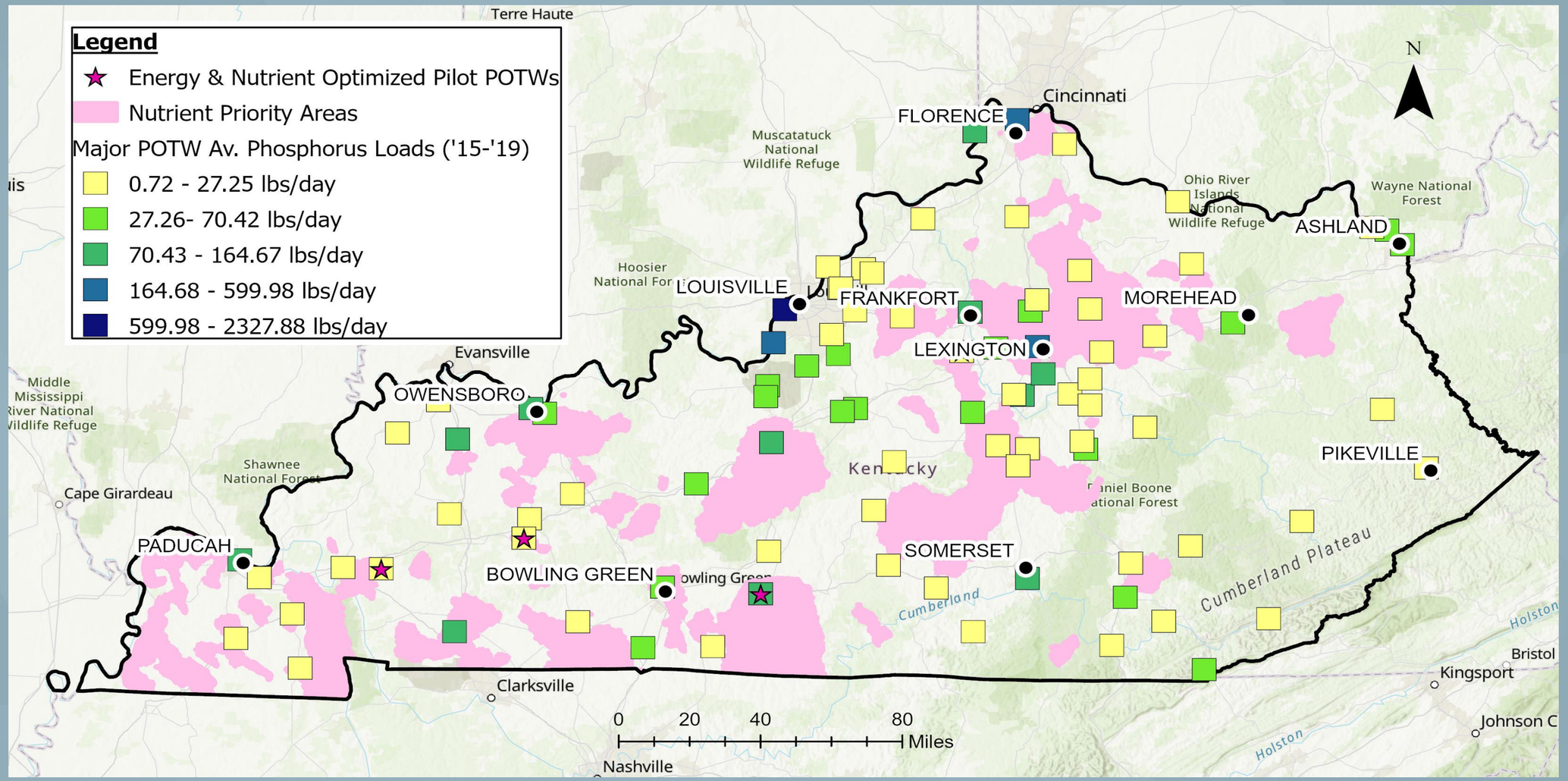

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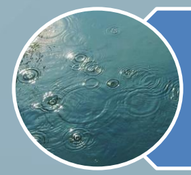
What Can You Do?

Engage in Kentucky Nutrient Workgroups

Apply for funding

Schedule an optimization audit



Train staff using MS4 Modules and EPSC update

Promote low phosphorus fertilizers

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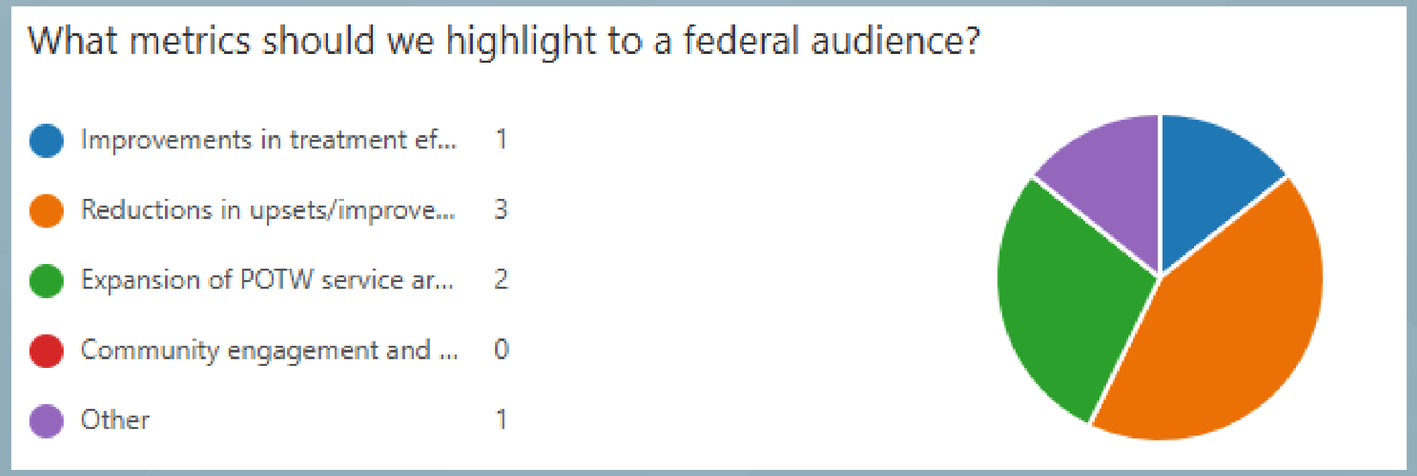
Engage in Kentucky Nutrient Workgroups

- Agriculture Workgroup
- Utilities Workgroup
- Public Agencies Workgroup
- NGOs Workgroup

(Workgroup Summary Example)

How?

- Attend quarterly meetings
- Provide input on DOW's Nutrient Programs



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Apply for funding

Programs

- OSG funding
  - CSO, SSO and stormwater management via green infrastructure
- 319 Funding
  - Watershed planning, septic rehab, innovative practices
- State Revolving Funds
  - Drinking water, wastewater and stormwater infrastructure projects.
- Sourcewater Protection Assistance Program
  - Water well closure, groundwater protection, community engagement
- USDA-NRCS
  - Fund easements, property buyouts and stormwater practices.

(EEC Programs)

(NRCS Programs)

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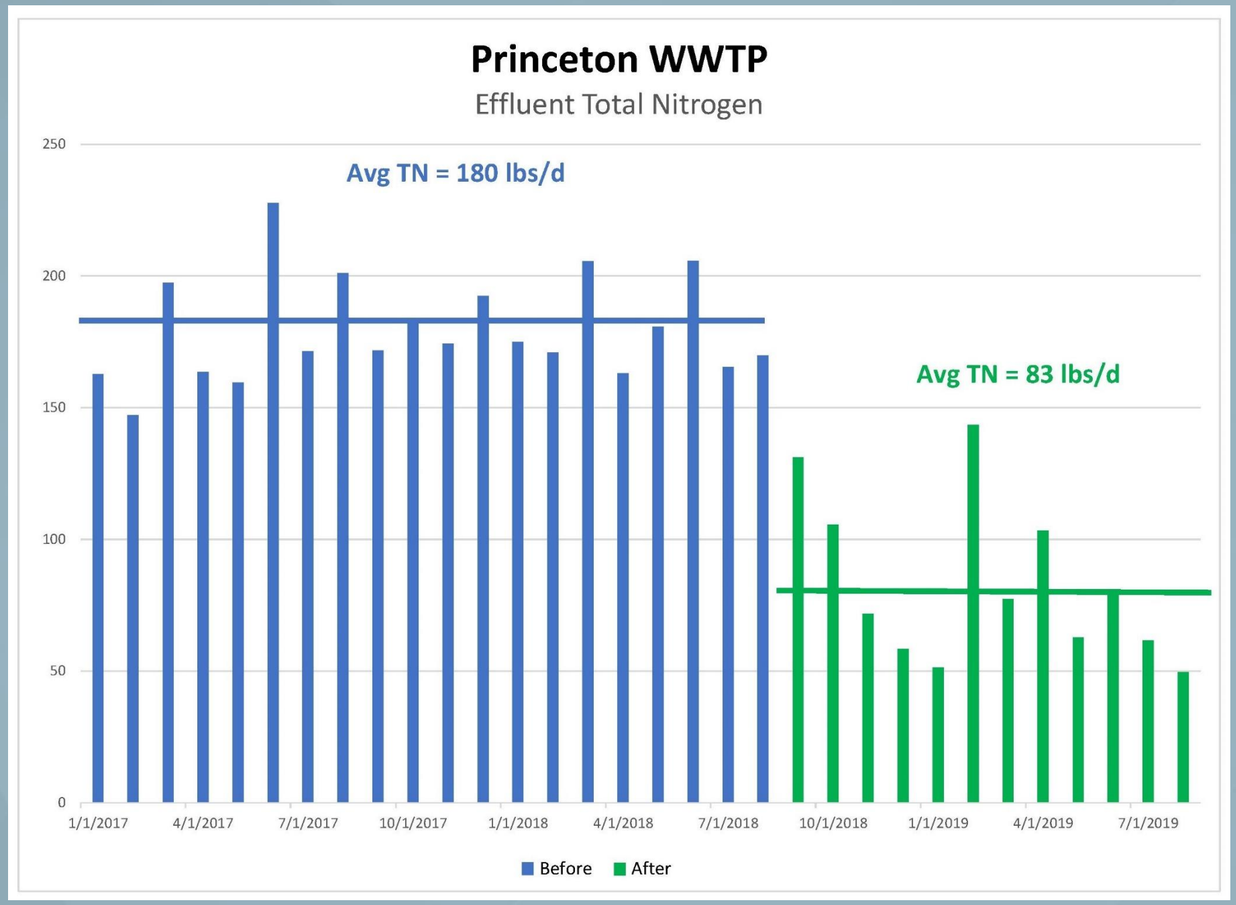
Schedule an optimization audit



(KY Nutrient Optimization)

Contact Paulette Akers (paulette.akers@ky.gov) for an on-site audit.

Sign up for an optimization training with Kentucky Operator Certification Program (April 30th, May 29th)

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Train staff using MS4 Modules and EPSC update

(Ky Ms4 Training)

(EPSC Resources)

Diverting Upland Runoff Around Exposed Soils

Keep clean upland runoff from flowing through your construction site or route it through stable ditches so it won't get muddy. Included are some simple approaches for dealing with uphill sources of runoff.

Diversion berms

A diversion berm is a long, mounded "collar" of compacted soil located uphill from the excavated area. The berm is designed to intercept overland runoff and direct it around the construction site. This prevents "clean" water from becoming muddied with soil from the constructions site. Berms can be temporary or permanent landscape features of the site.

Berms should be located so that stormwater flowing along their uphill face follows a gently sloping path (i.e., less than 5% channel slope). Turf reinforcement mats, erosion control blankets, or rock protection might be needed for berms that channel water at a slope of 5% or more. Berm side slopes should be 2:1 or flatter, 10 to 14 inches high, and seeded immediately after construction.

Extend the downhill end of the berm so it directs overland flow to areas of thick vegetation or flat surfaces to promote dispersal and infiltration. Seed and mulch berms after construction to minimize erosion.

Berms and ditches diverting clean upland runoff around construction sites reduce erosion and sedimentation problems. Seed berms and ditches after construction.

Desvío de Runoff de Tierras Altas Alrededor de Suelos Expuestos

Mantenga limpio el runoff de las tierras altas de fluir a través de su sitio de construcción o la ruta a través del desfiladero estable para que no se moldea. Se incluyen algunos enfoques simples para hacer frente a las fuentes de escape.

Barras de desviación

Un berm de desvío es un "collar" largo y montado de suelo compacto situado en la cima de la zona excavada. El berm está diseñado para interceptar las corrientes terrestres y dirigirlo alrededor del sitio de construcción. Esto evita que el agua "limpiada" se torne mudo con el suelo del sitio de las construcciones. Las bermas pueden ser características paisajísticas temporales o permanentes del sitio.

Las berms deben estar situadas de manera que el agua de la tormenta que fluye a lo largo de su superficie subterránea siga un camino de inclinación suave (es decir, menos del 5% de la inclinación del canal). Las alfombras de reforzamiento de turba, tapices de control de la erosión o protección de la roca pueden ser necesarias para las barras que canalizan el agua a una pendiente del 5% o más. Las pendientes laterales de berm deben ser 2:1 o más planas, de 10 a 14 pulgadas de altura, y sembradas inmediatamente después de la construcción.

Extender el extremo descendente de la berma de modo que dirige el flujo de tierra a áreas de vegetación gruesa o superficies planas para promover la dispersión e infiltración. Siembra y mulche las semillas después de la construcción para minimizar la erosión.

Las barrancas y los desfiladeros que desvían la corriente de tierras limpias alrededor de los sitios de construcción reducen los problemas de erosión y sedimentación. Barras de semilla y fosos después de la construcción.

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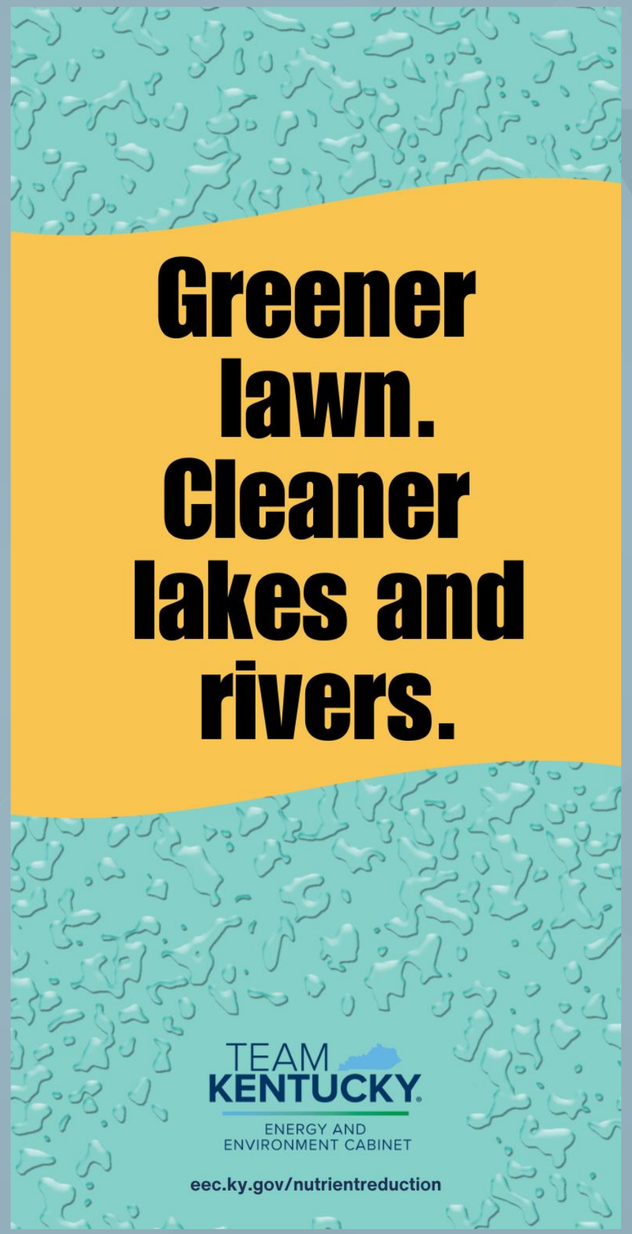
Promote low phosphorus fertilizers

(Lawncare Template)

- Digital media templates available on DOW's webpage.
- Limited quantities of printed door-hangers are available from DOW.



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Contact

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eec.ky.gov/nutrientreduction

(Nutrient Reduction Webpage)

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