

POTOMAC BASIN UNREPORTED WATER USE



UNREPORTED WATER USE IS DIFFICULT TO
QUANTIFY, BUT REPRESENTS A SMALL YET
IMPORTANT AMOUNT IN THE POTOMAC BASIN

This flyer documents high-level results of one technical recommendation of the [Potomac Basin Comprehensive Water Resources Plan's](#) water use and supplies challenge area: specifically, to “conduct additional studies on water uses that fall below state water reporting thresholds.”

The plan explains the recommendation as follows:

“Each basin jurisdiction requires water use reporting for withdrawals that meet specific criteria (Palmer and Moltz 2013); however, there is a lack of understanding about water use that falls below state reporting thresholds. This volume of water can represent a significant portion of total water use in some of the basin’s interstate watersheds and impacts calculations of consumptive use in the basin...Additional evaluation of unreported withdrawals will supplement planning efforts for ensuring sustainable water use and supplies in watersheds throughout the basin. For a summary of water use reporting requirements for each state, see the section on state data in Palmer and Moltz (2013).”

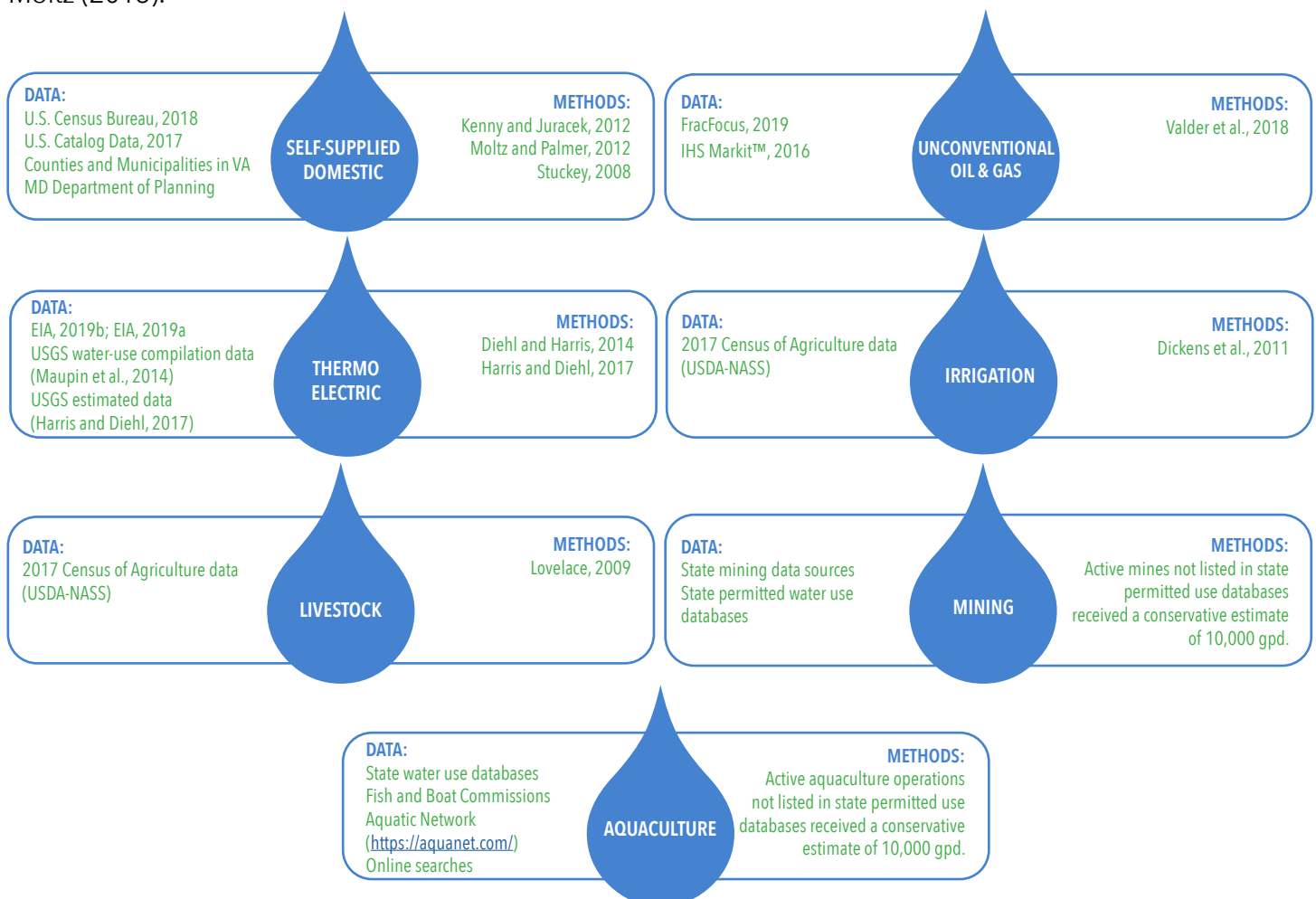
To fulfill the objectives of this recommendation, ICPRB staff undertook an analysis of unreported water uses by 8-digit HUC watersheds (HUC8s) in the Potomac basin. Water use categories that may fall below state reporting thresholds described in this analysis included irrigation, livestock, aquaculture, self-supplied domestic, thermoelectric, mining, and unconventional oil and gas development. Methods and results are summarized below.

METHODS

Amounts for each water use category were estimated by gathering available data from the literature and the extent to which this type of withdrawal occurs in the basin using readily available geospatial or other data. **Figure 1** summarizes the data sources and methods for estimating unreported water uses in all sectors.

FIGURE 1.

Data sources and methods for estimating unreported water uses.



RESULTS

Unreported water uses from all sectors combined are approximately 180 million gallons per day (MGD). Results are shown geographically by HUC8 watershed in **Figure 2**. The interstate Conococheague-Opequon watershed of Pennsylvania and Maryland and the South Fork Shenandoah watershed in Virginia have the largest amount of unreported water uses in the basin (shown in the darkest blue in **Figure 2**).

The Conococheague-Opequon watershed's unreported water uses are primarily for self-supplied domestic and livestock purposes. The South Fork Shenandoah watershed's unreported water uses are primarily for livestock. The South Branch Potomac has the smallest amount of unreported water use in the basin at approximately 3 MGD. The details of unreported water use by watershed and sector are available in **Table 1**.

FIGURE 2.

Total unreported water uses by 8-digit HUC watersheds in the Potomac basin (MGD).

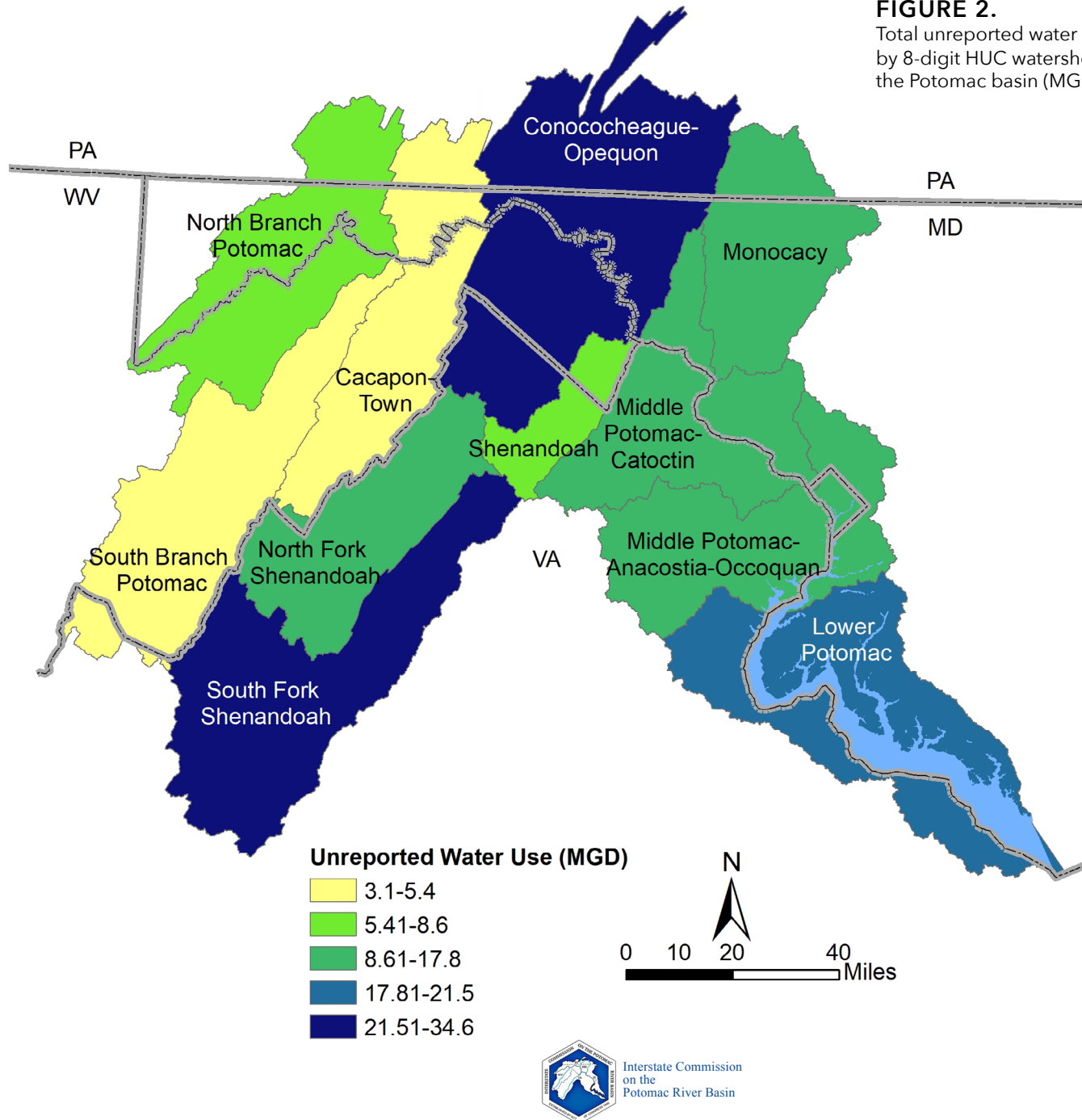
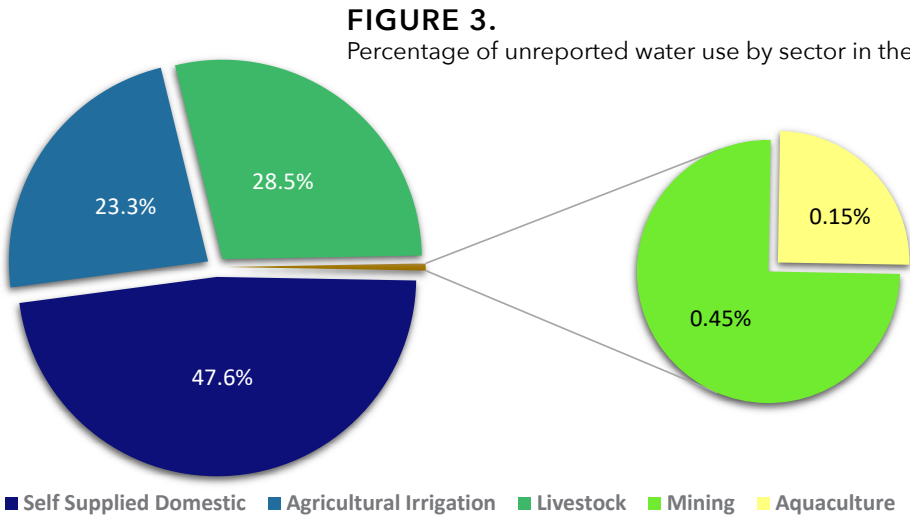


TABLE 1. Unreported water use by HUC8 and sector (MGD).

HUC8		SELF SUPPLIED DOMESTIC	AGRICULTURE		MINING	AQUACULTURE	TOTAL
Number	Name		Irrigation	Livestock			
02070001	South Branch Potomac	1.94	0.14	0.93	0.04	0.04	3.09
02070002	North Branch Potomac	4.25	1.19	3.05	0.08	0.01	8.58
02070003	Cacapon-Town	2.53	0.45	2.47	0	0	5.44
02070004	Conococheague-Opequon	17.21	5.11	12.02	0.23	0.04	34.60
02070005	South Fork Shenandoah	9.32	9.59	14.63	0.09	0.01	33.64
02070006	North Fork Shenandoah	5.11	5.30	6.89	0.06	0.03	17.39
02070007	Shenandoah	4.47	0.83	2.82	0.01	0	8.13
02070008	Middle Potomac-Catoctin	10.08	7.48	0.17	0.04	0.03	17.80
02070009	Monocacy	9.18	2.90	2.99	0.04	0.04	15.15
02070010	Middle Potomac-Anacostia-Ococoquan	9.77	2.89	2.46	0.07	0.04	15.24
02070011	Lower Potomac	12.15	6.15	3.09	0.12	0.02	21.53
TOTAL		86.01	42.01	51.53	0.78	0.26	180.60

Overall, self-supplied domestic water use represents almost half (47.6%) of the unreported water uses in the basin, followed by agricultural irrigation and livestock uses (23.3% and 28.5%, respectively) (Figure 3). Mining and aquaculture represent only 0.6% of unreported water uses. There were no identified unreported water uses for the thermoelectric and unconventional oil and gas development water use sectors in the Potomac basin.



NEXT STEPS

State-reported water use data are currently being collected under the sustainable water use and supplies challenge area of the basin-wide plan. That recommendation is to develop a report on basin-wide water uses, projected demands, and consumptive demands. In combination, the assessment of unreported and reported water uses is expected to provide a thorough picture of water use in the basin. It will further provide an opportunity to compare the magnitude of unreported and reported water uses in each watershed and across the basin. The final report on water use is expected to be complete by 2023.

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