Correction of BMPs at Point Locations

Phase 5.3.2 Model

- Re-ran 2017 progress (Phase 5.3.2) after applying the “lat-long fix” – where BMPs submitted by jurisdictions with point locations (latitude-longitude) were distributed among segments in a state rather than in a particular segment.
- Detailed and summary data for BMPs and loads have been on BayTAS for review https://baytas.chesapeakebay.net/
- Concerns or approval of the progress scenario were due COB Thursday, May 24th

Summary of Findings
Phase 5.3.2 Model

- At large state-wide scales, nitrogen load changes vary from 0 to 7,000 lbs. As a percent change, the greatest difference in nutrient loads is 0.5%.
- The effects of the fix were both increases and decreases in loads.
  - Load increases were typically the result of less crediting:
    1) The lat-long of a BMP was not in the state (or CB watershed portion of the state) that reported the BMP, or
    2) A BMP was "cut-off" because the segment had already reached a 100% implementation level for that BMP.
  - Load decreases were typically the result of:
    1) Locating a BMP in a land-river segment with a greater river-to-bay delivery factor – compared to the distribution of the BMP among segments, or
    2) Locating a BMP in a segment that's entirely in the CB watershed rather than a distribution across segments that have a portion outside the CB watershed boundary.

Summary of Findings

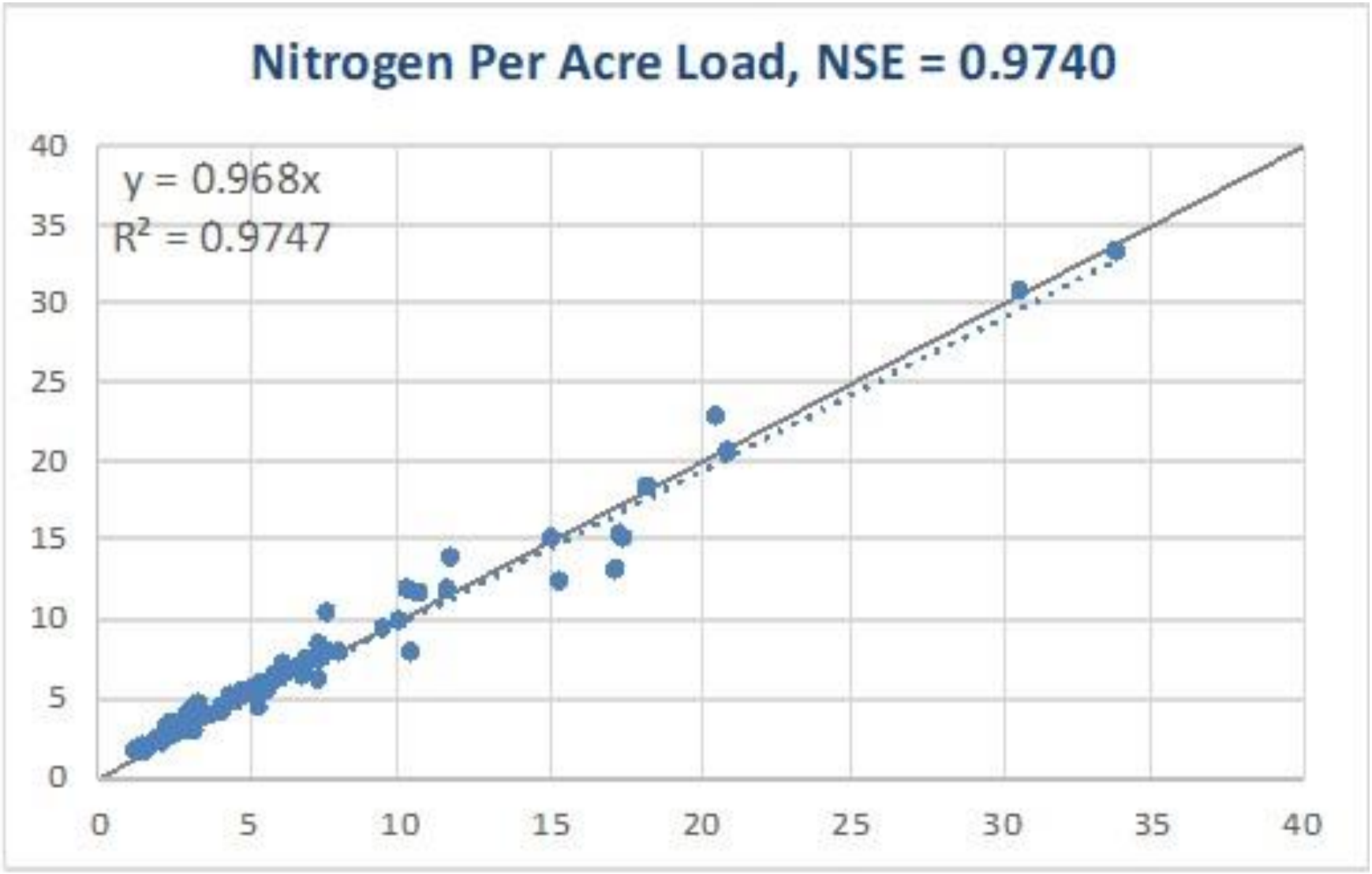
Phase 5.3.2 Model

		2017 Progress Version 11	2017 Progress w/ Lat-Long Fix	2017 Progress	2017 Progress
		Phase 5.3.2	Phase 5.3.2	Difference	Difference
		2017ProgressV11N051018	2017ProgressV12N051518		
		Nitrogen			
Jurisdiction	Source	(lbs/year)	(lbs/year)	(lbs/year)	(%)
NY	AllSources	10,884,697	10,884,697	0	0.0000%
PA	AllSources	111,027,729	111,020,516	-7,213	-0.0065%
MD	AllSources	46,894,453	46,901,250	6,797	0.0145%
VA	AllSources	55,908,684	55,907,816	-868	-0.0016%
WV	AllSources	5,093,721	5,094,445	724	0.0142%
DE	AllSources	4,130,932	4,131,960	1,028	0.0249%
DC	AllSources	1,574,628	1,573,636	-992	-0.0630%
AllJurisdictions	AllSources	235,514,844	235,514,319	-525	-0.0002%
		Phosphorus			
		(lbs/year)	(lbs/year)	(lbs/year)	(%)
NY	AllSources	747,926	747,926	0	0.0000%
PA	AllSources	4,200,896	4,200,651	-246	-0.0058%
MD	AllSources	2,718,520	2,718,518	-2	-0.0001%
VA	AllSources	6,433,405	6,433,283	-122	-0.0019%
WV	AllSources	652,850	652,933	83	0.0127%
DE	AllSources	271,149	271,163	14	0.0053%
DC	AllSources	73,626	73,231	-396	-0.5374%
AllJurisdictions	AllSources	15,098,372	15,097,704	-668	-0.0044%
		Sediment			
		(lbs/year)	(lbs/year)	(lbs/year)	(%)
NY	AllSources	321,859,487	321,859,487	0	0.0000%
PA	AllSources	2,377,358,950	2,377,333,914	-25,036	-0.0011%
MD	AllSources	1,176,134,749	1,185,165,276	9,030,527	0.7678%
VA	AllSources	3,475,300,802	3,475,296,974	-3,828	-0.0001%
WV	AllSources	330,710,397	330,796,639	86,241	0.0261%
DE	AllSources	82,732,500	81,087,663	-1,644,837	-1.9881%
DC	AllSources	15,646,217	15,554,197	-92,021	-0.5881%
AllJurisdictions	AllSources	7,779,743,103	7,787,094,149	7,351,046	0.0945%

Summary of Findings
Phase 5.3.2 Model

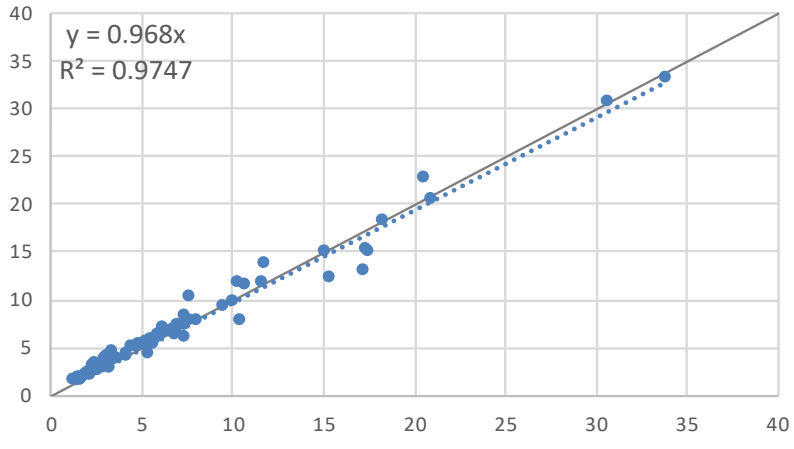
- Although differences in loads were minor at large spatial scales, it's important that BMPs are located according to the jurisdictions' submission through NEIEN
  - Verification
  - Accurate accountability – BMP levels and modeled loading

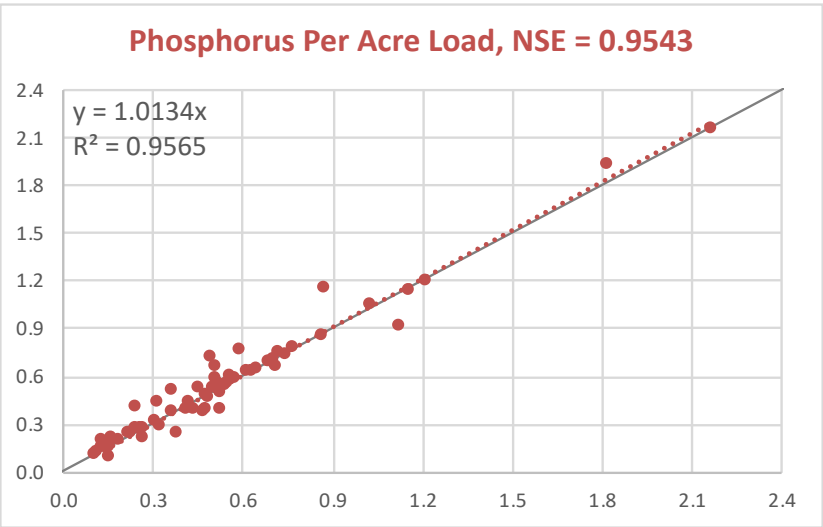
Phase 6 – geographic efficiencies
How well do we predict differences in load per acre?

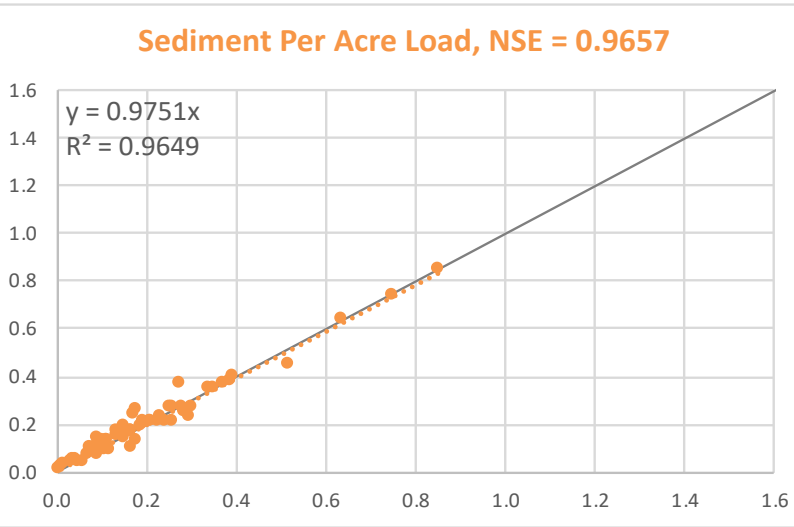


Phase 6 – geographic efficiencies

	Phase 5	Phase 6	Change in Calibration
Nitrogen	0.8704	0.9747	-0.0002
Phosphorus	0.6321	0.9565	-0.0003
Sediment	-0.077	0.9649	0.0016







Simulated Per Acre Load

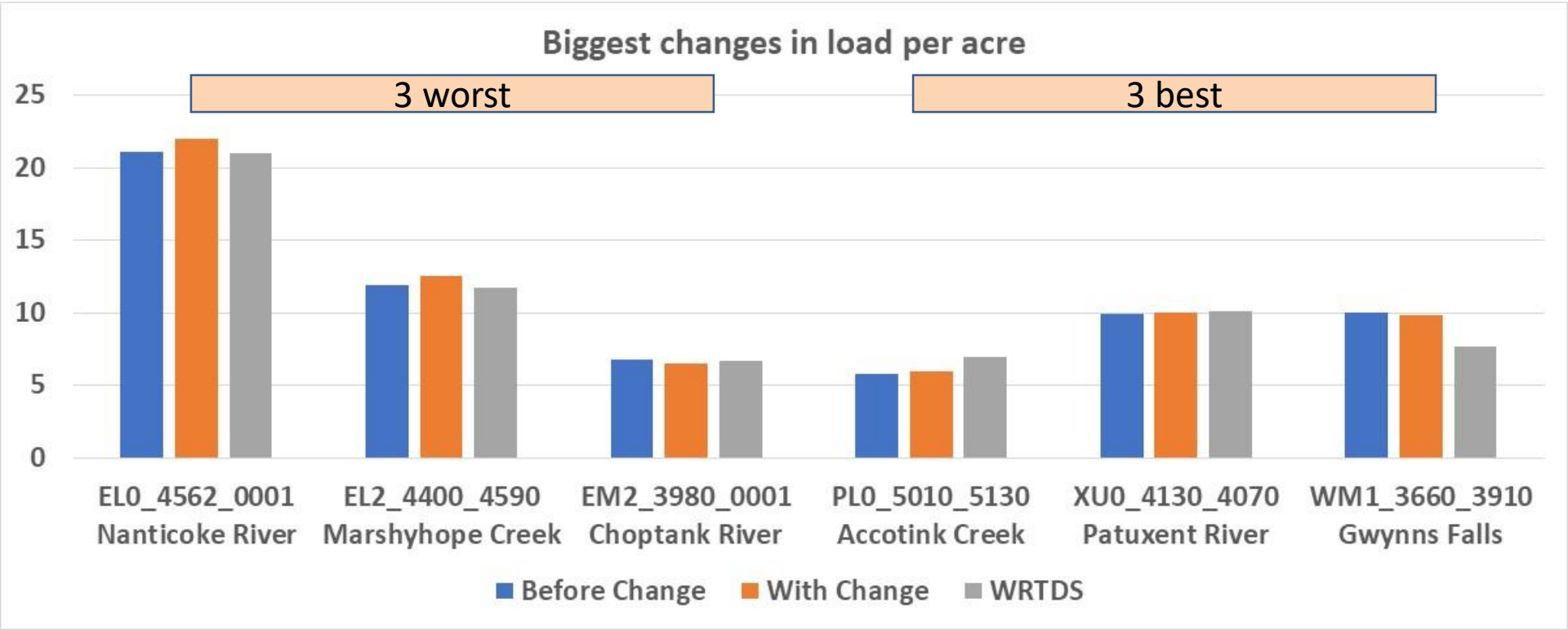
WRTDS Per Acre Load

Calibration Summary

- The change to the calibration accuracy is very small in absolute terms or compared to the improvement in accuracy over Phase 5.3.2
- Most basins did not change at all. Cases with the greatest differences are only a 1% to 5% better or worse calibration.
- **Most importantly**
  - This does not affect No Action and E3, even for the basins that changed a bit in the calibration
  - It does not affect Planning Targets

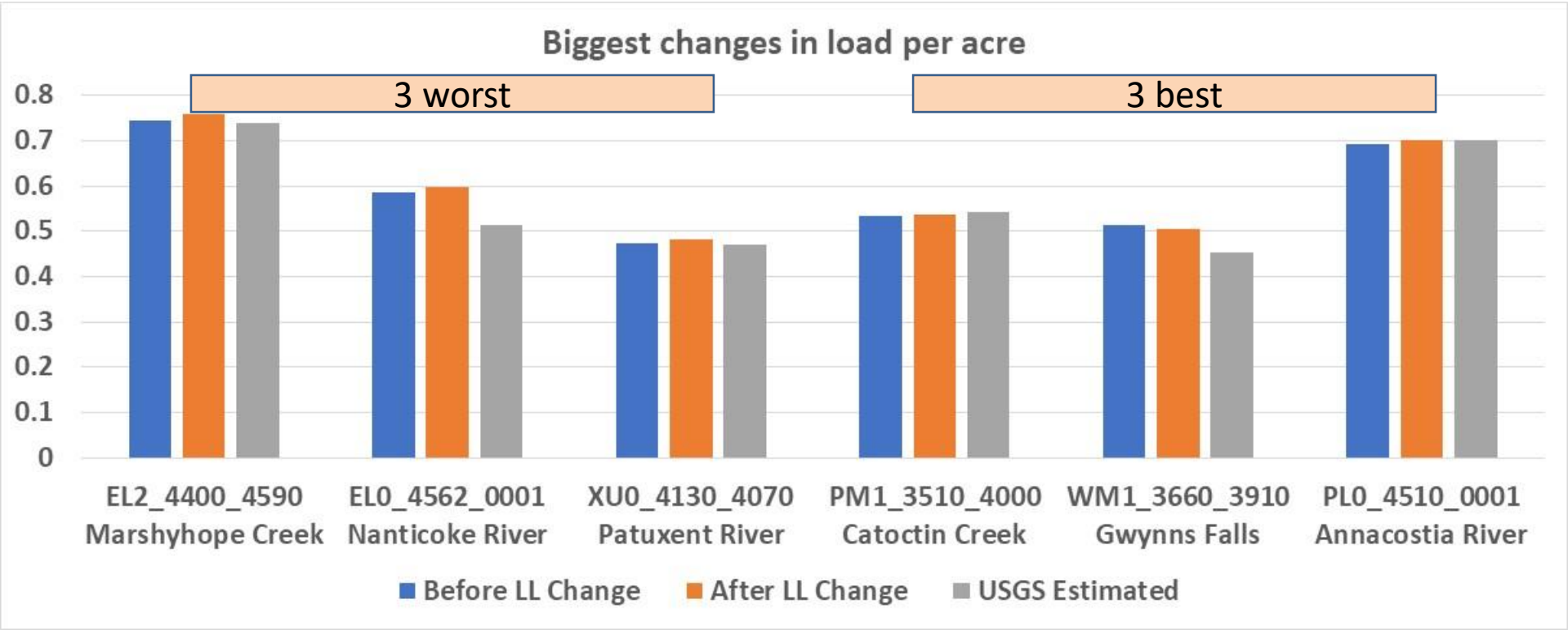
Greatest Differences - Nitrogen

- 77 sites, 22 Changed load



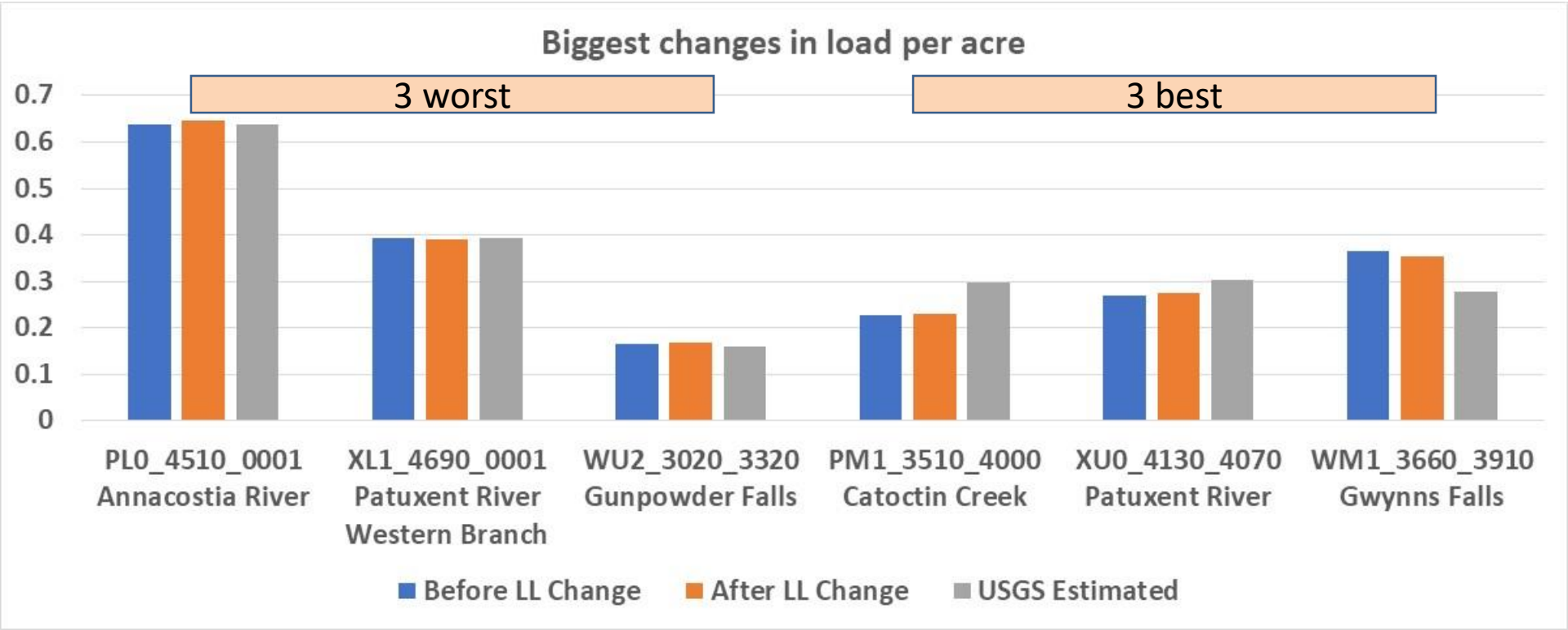
Greatest Differences - Phosphorus

- 61 sites, 21 Changed load



Greatest Differences - Sediment

- 60 sites, 19 Changed load



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