Spring Put-and-Take Trout Fishing Creel Survey: Developing a Waterbody Performance-Based System to Improve Angler Catch

1. Spring 2026 Email Creel Survey Put-and-Take Summary

The 2026 Spring Put-and-Take trout stocking program represents a definitive pivot toward a data-driven, performance-based management framework. Historically, prohibitive costs and the limited spatial scope of traditional roving creel surveys have constrained resource allocation. To modernize operations, Fishing and Boating Services implemented a stratified online methodology targeting 38,192 trout stamp purchasers. This strategic shift allows for a broad-scale quantitative assessment of the fishery, identifying high-performance assets while flagging underutilized waterbodies for reallocation. By integrating biological potential with social utility, this framework ensures that hatchery resources are optimized for maximum public benefit. Based on the 2026 survey data, the following statewide performance totals have been established:

- **Total Trout Stocked:** 254,810
- **Waterbodies Stocked:** 118
- **Total Fishing Effort:** 277,167 angler-hours
- **Total Trout Catch:** 150,080 trout
- **Total Trout Harvest:** 61,386 trout

While these aggregate totals indicate a robust program with a 59% statewide catch return, the significant performance variance across 118 distinct waterbodies necessitates a localized, site-specific analysis to guide future allocations.

2. Methodology and Statistical Reliability Standards

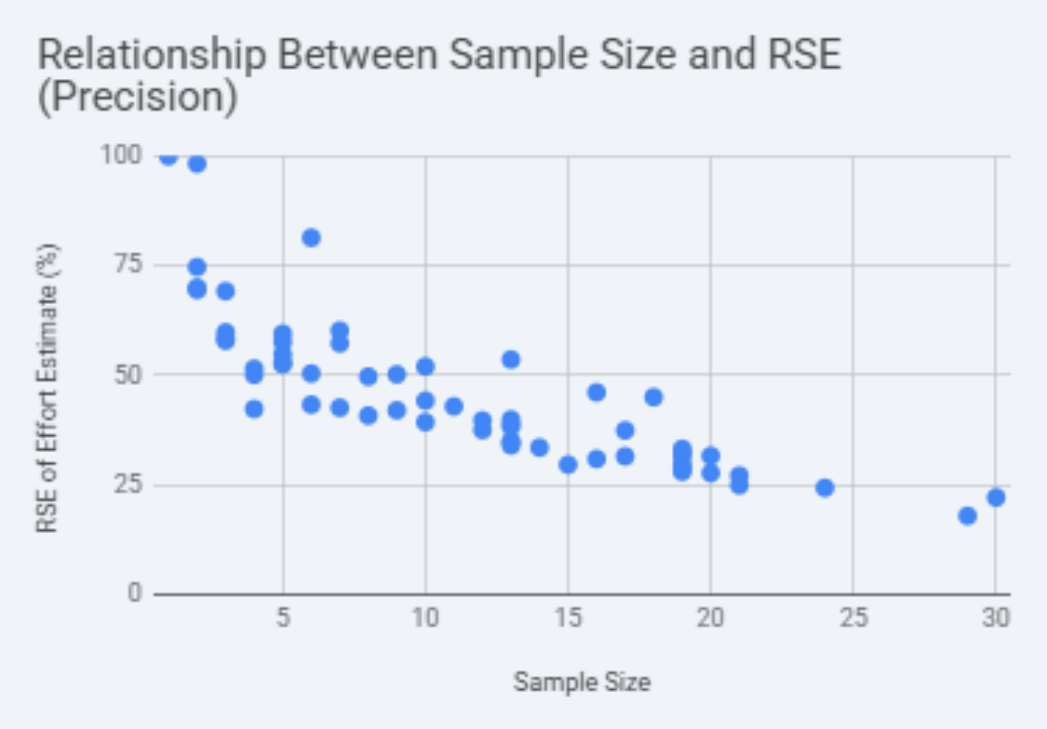
Stocked trout management policy must be rooted in statistical rigor. This framework utilizes probability sampling to estimate angler effort and catch, providing a mathematical foundation for resource allocation. By evaluating Weekday (WD) and Weekend (WE) strata independently using a ratio of means, we account for fluctuations in pressure and success rates. This ensures that management decisions reflect actual fishery dynamics rather than sampling artifacts or seasonal outliers.

Table 1. Effort, catch and harvest by day stratum.

Stratum	Estimated Effort (Angler-Hours)	Estimated Catch (Trout)	Estimated Harvest (Trout)
Weekday (WD)	130,640	75,348	29,252
Weekend (WE)	146,527	74,732	32,134
Total Combined	**277,167**	**150,080**	**61,386**

These reliability metrics are integrated into waterbody performance to ensure that significant shifts in hatchery output are only authorized when backed by precise empirical evidence.

Statistical Reliability: The primary statistical metric was Relative Standard Error (RSE), defined as the standard error divided by the estimate (e.g. catch, effort, harvest) and multiplied by 100. A RSE of 50% or higher indicates poor precision or instability, suggesting either a need for survey redesign or a lack of consistent angler success, which we use to evaluate policy shifts.



The Relative Standard Error (RSE) declines with sample size. Survey sample sizes greater than 10 exhibited RSE less than 50% and therefore generally provide sufficient reliability in the experimental design to base management decisions.

The 2026 Matrix Methodology

Based on the consolidated 2026 spring survey data, applying these criteria creates a dynamic, data-driven framework. Rather than relying solely on arbitrary flat numbers, using percentiles ensures that your management actions naturally adapt to the actual distribution of angler engagement and success. Here are the computed benchmarks across all surveyed waterbodies:

- **Angler Effort 75th Percentile:** 2,331 angler-hours
- **Angler Effort 25th Percentile:** 660 angler-hours
- **Angler Effort 10th Percentile:** 229 angler-hours
- **Percent Caught 75th Percentile:** 58.3% catch return

- **Percent Caught 25th Percentile:** 12.0% catch return

3. Waterbody performance

Table 2: Top 10 Performing Lakes & Ponds

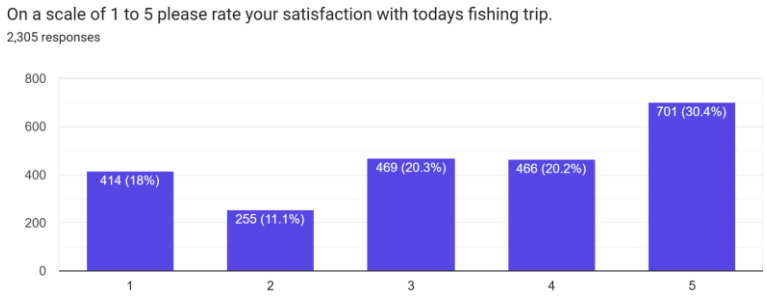
Waterbody Name	Percent Caught	Angler Effort	RSE
Calvert Cliffs Pond	120.6%	1,061 hrs	44.9%
Warfield Park Pond	103.4%	1,910 hrs	46.9%
Pangborn Pond	102.2%	1,124 hrs	47.1%
Bynum Pond	98.8%	3,624 hrs	33.5%
Centennial Lake	83.9%	2,161 hrs	46.8%
Westminster Pond	80.6%	1,110 hrs	48.1%
MLK Jr. Pond	76.1%	1,978 hrs	44.8%
New Germany Lake	69.5%	3,353 hrs	35.2%
Hutchins Pond	66.6%	1,042 hrs	43.4%
Wheatley Lake	59.2%	1,751 hrs	35.5%

Table 3: Top 10 Performing Rivers & Streams

Waterbody Name	Percent Caught	Angler Effort	RSE
SB Patapsco, River Road	105.8%	8,130 hrs	32.3%
Bear Creek	97.5%	11,572 hrs	16.0%
Antietam Creek (Backbone)	90.7%	7,786 hrs	35.7%
Patuxent River, Laurel	89.2%	2,062 hrs	37.8%
SB Patapsco, Marriottsville	77.8%	4,980 hrs	32.9%
Gunpowder Falls, Upper	77.6%	9,652 hrs	20.6%
Gunpowder Falls, Lower	77.3%	7,378 hrs	26.9%
Great Seneca Creek	67.7%	8,412 hrs	37.9%
Unicorn Branch	67.6%	1,035 hrs	37.6%

Waterbody Name	Percent Caught	Angler Effort	RSE
Little Gunpowder Falls	66.9%	5,778 hrs	27.9%

4. Current Angler Satisfaction with the Put and Take Stocking Program



The 2026 angler satisfaction survey utilized a Likert scale (1–5) to quantify the social utility of stocked trout fisheries. The results indicated a robust positive correlation between catch rates and reported angler satisfaction. Higher-performing water bodies garnered higher satisfaction metrics, suggesting that hatchery efficiency directly impacts the quality of the angling experience. These satisfaction data points serve as critical indicators of program success, validating the strategic reallocation of resources from low-performing, low-satisfaction fishing areas to high-utility waterbodies that support greater angling pressure.

5. Conclusions

Future allocation cycles will focus on the following strategic priorities:

- **Stocking Optimization:** Prioritize top-performing sites demonstrating high angler effort, strong catch returns, and high statistical reliability.
- **Data-Driven Management:** Utilize the 50% RSE threshold to mandate survey redesigns for underperforming waters.
- **Efficiency Maximization:** Reallocate resources from underperforming waters to high-use waters to optimize catch and harvest rates of hatchery-raised trout.
- **Facility/Hatchery Upgrades:** Determine the possibility of increases in trout production and stocking allocations following facility upgrades at Albert Powell and Bear Creek Hatcheries.