

Current Status of Fish Populations in the Henrys Fork Snake River

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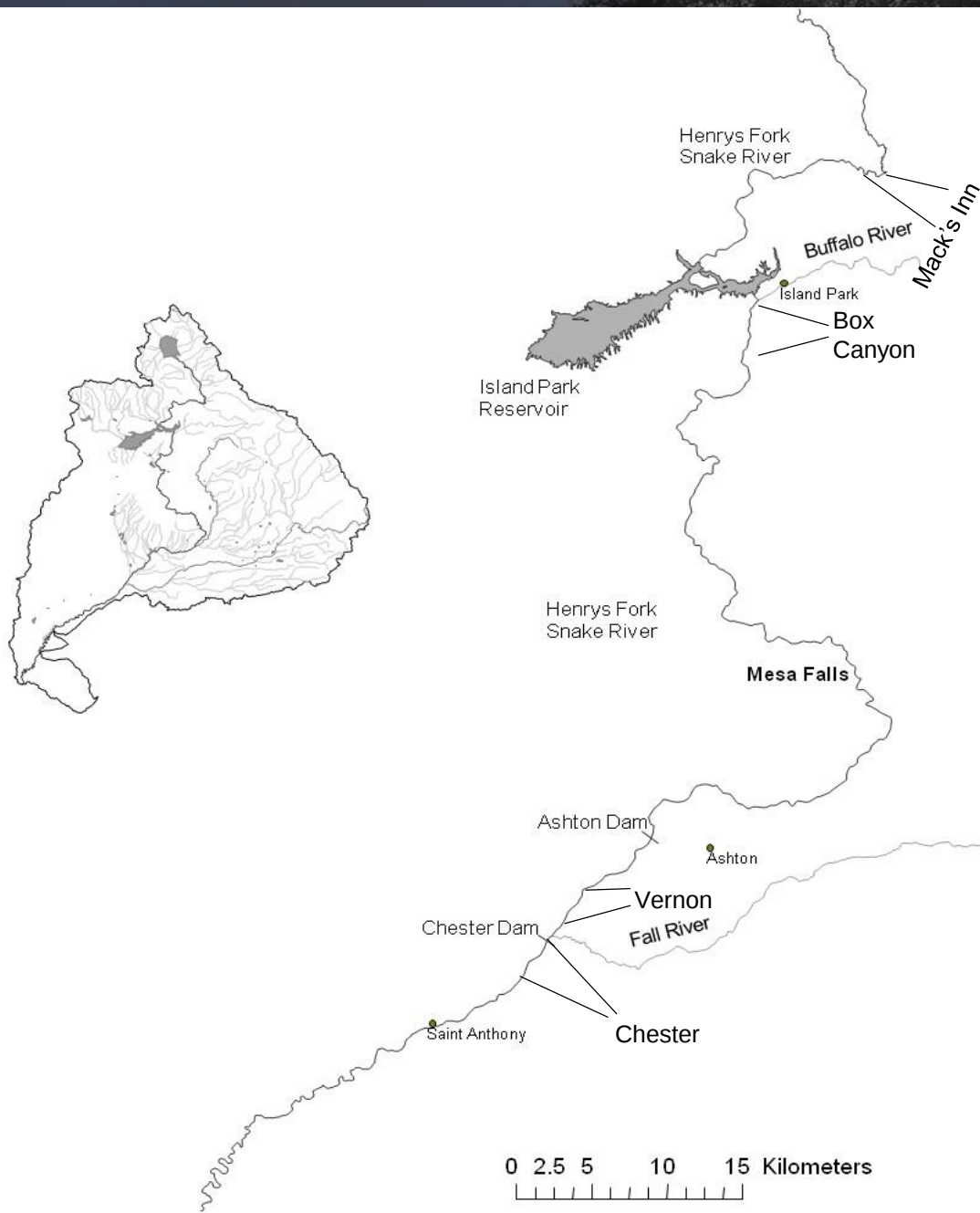
Introduction



Objectives

- Obtain current information on fish population characteristics
 - Inform fishery management decisions
 - Evaluate exploitation and use of stocking
 - “Tag You’re It”
 - Age and growth
 - Mortality





Methods

- Raft electrofishing
- Mark/recapture pop estimates
 - Size selective MP based on recaps
- Reaches
 - Mack's Inn
 - Opportunistic sampling
 - Tag You're It: exploitation and use
 - Box Canyon
 - Annual survey
 - Age and growth
 - Vernon
 - Triennial
 - Chester
 - Triennial



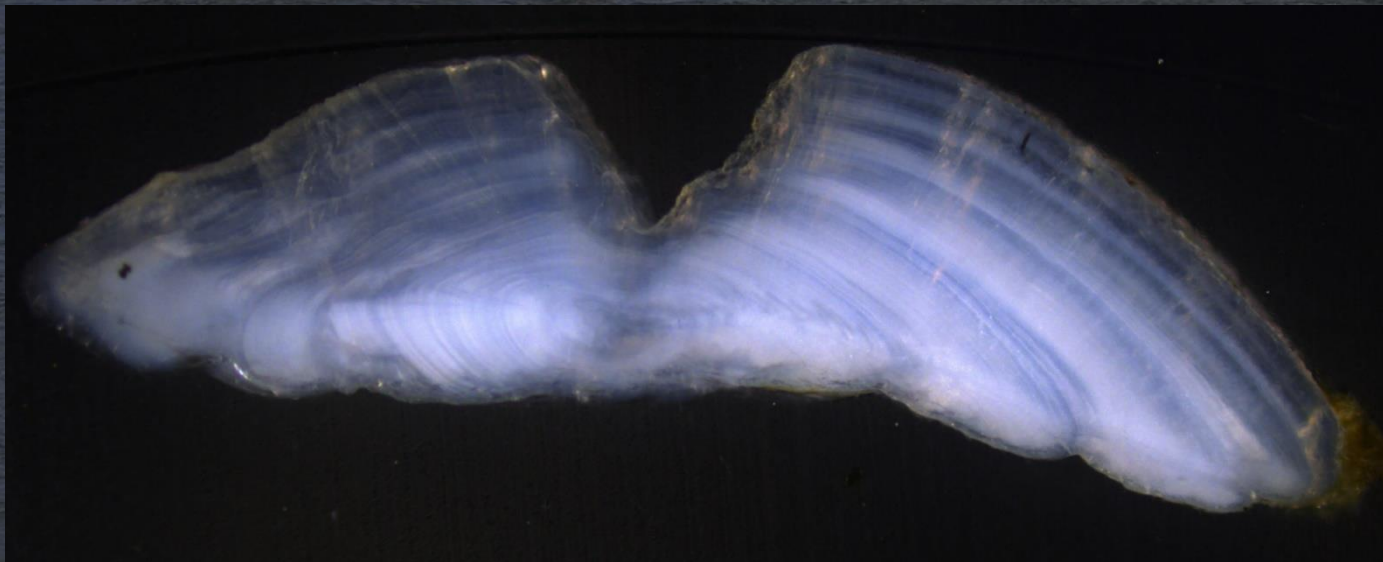
Methods

- “Tag You’re It”: Mack’s Inn
 - Reward and nonreward tags
 - Catchable-sized RBT stocked in Mack’s Inn
 - Statewide tag reporting system
 - Exploitation and angler use



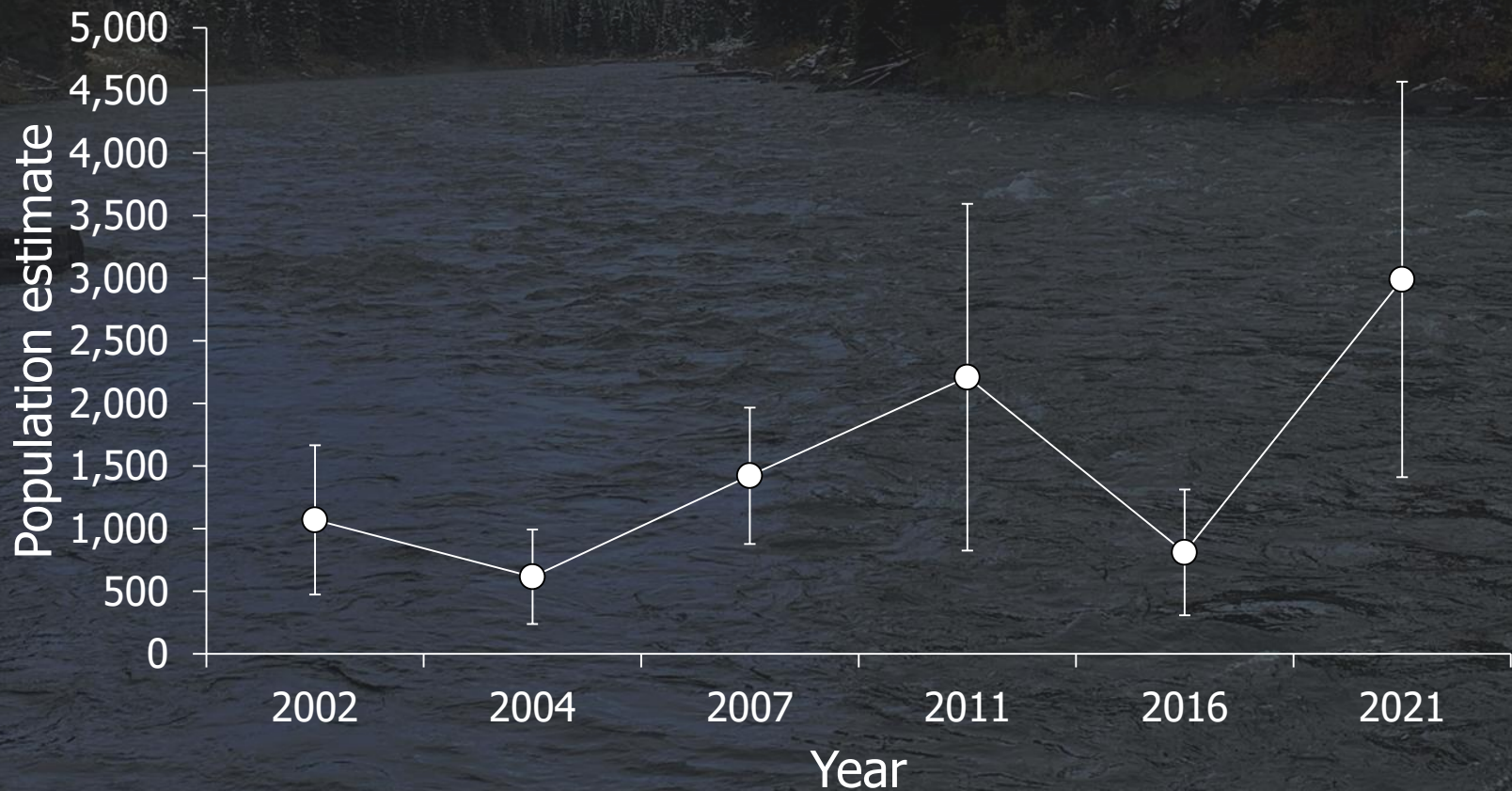
Methods

- Age and growth: Box Canyon
 - Extract otoliths
 - Count annuli to estimate age of fish
 - Apply age of subsample to total catch
 - Catch curve to estimate mortality



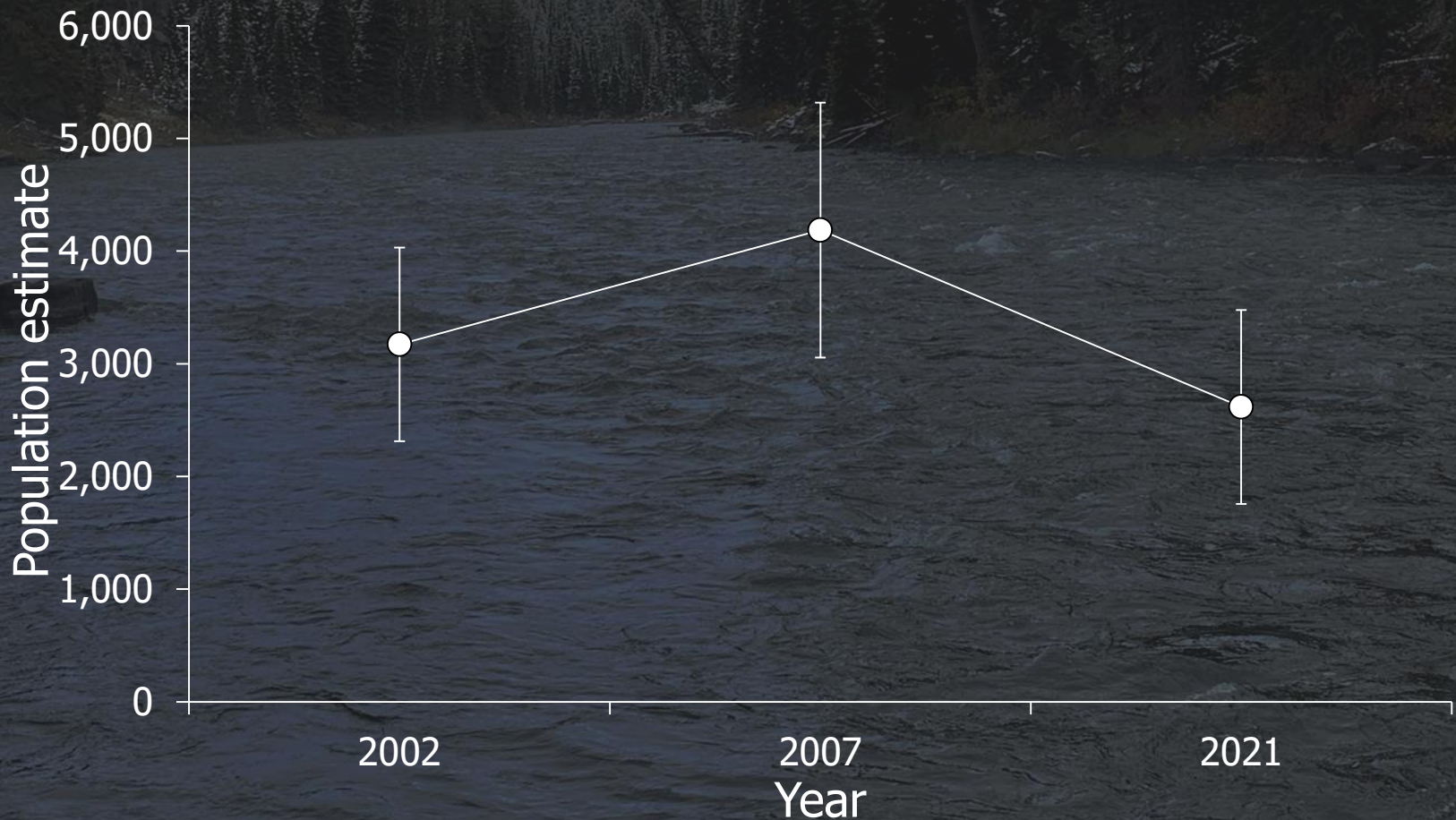
Mack's Inn Results

- 1,994 trout/mi $\pm$ 1,053 (95% CI)
- 1,208 RBT/mi, 918 BKT/mi



Mack's Inn Results

- 1,745 MWF/mi $\pm$ 573



Mack's Inn Results

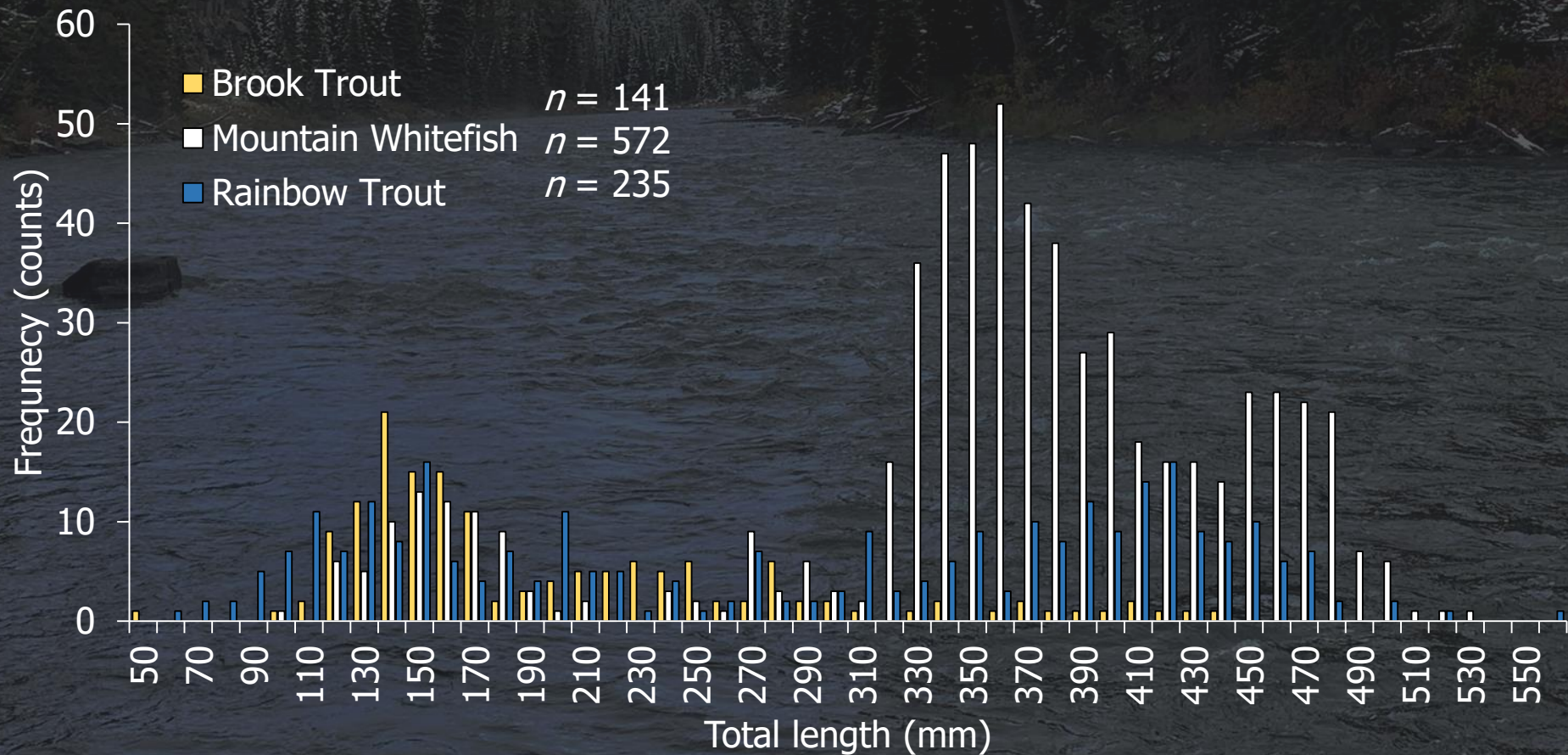
- Tag You're It

- Angler reporting rate (λ) = 35%, 54%
- Angler exploitation (u') = 14%
- Total angler use = 25%



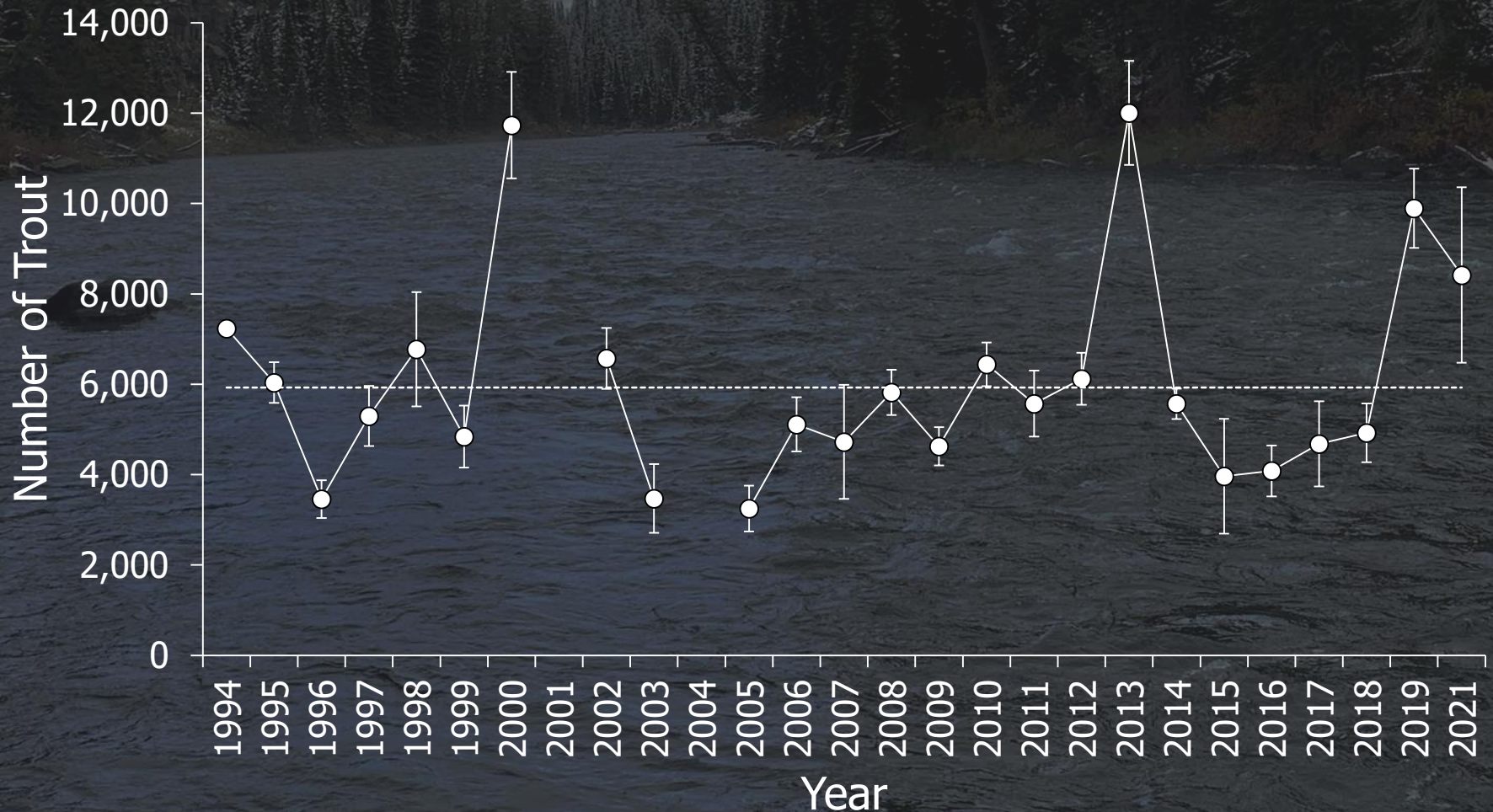
Mack's Inn Results

- Mean TL: RBT 12", BKT 8", MWF 14"



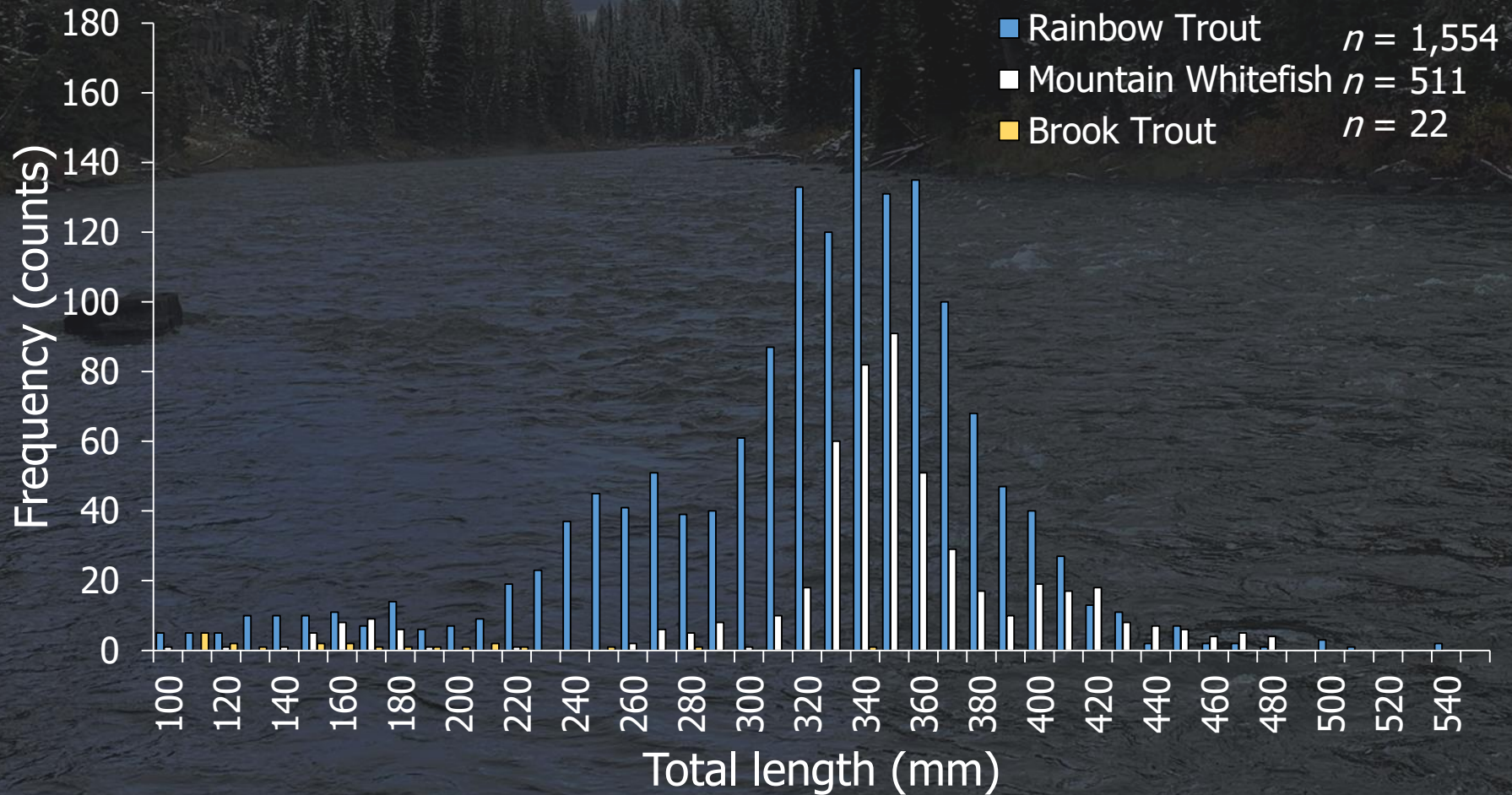
Box Canyon Results

• 4,209 RBT/mi $\pm$ 970

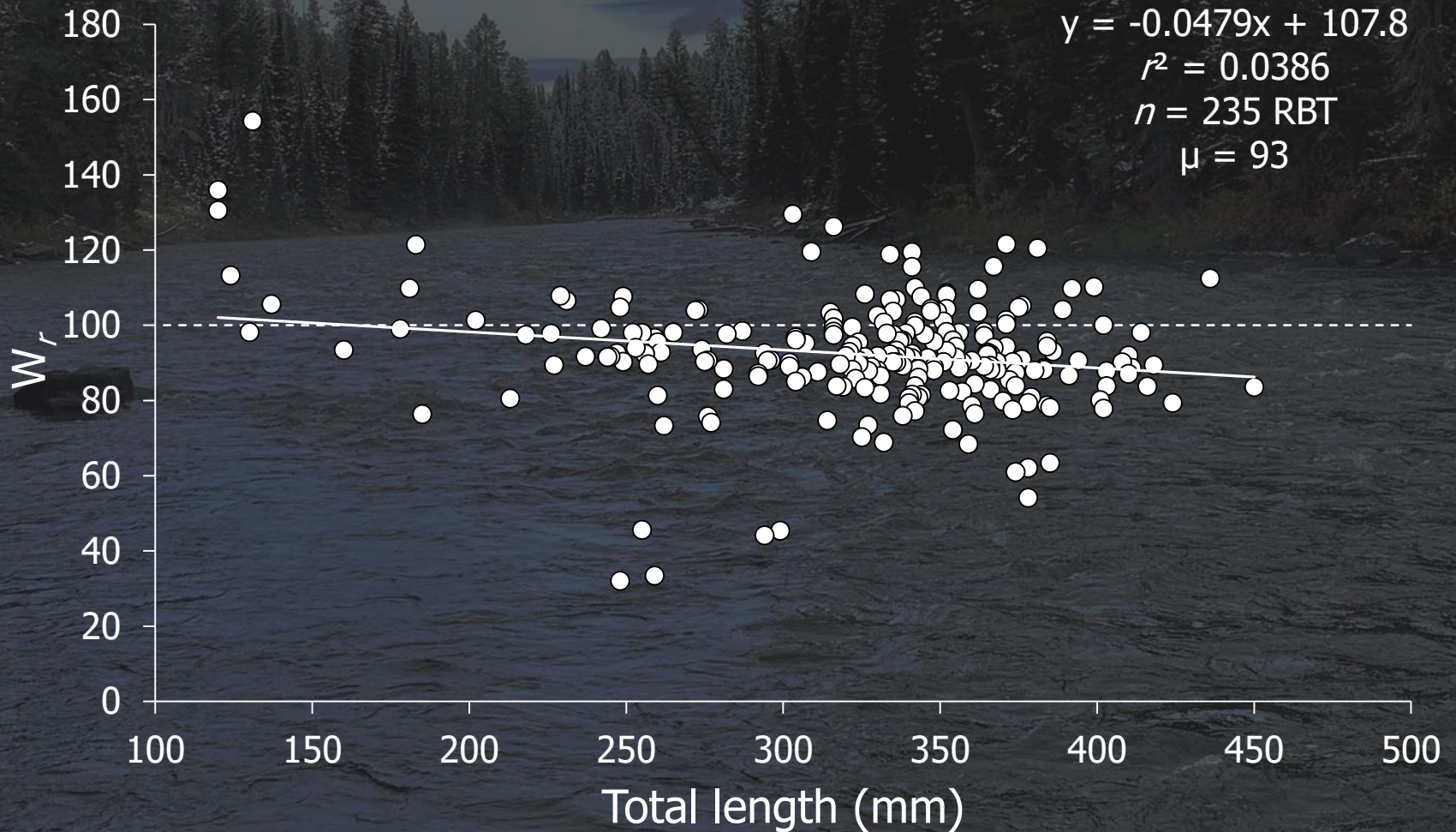


Box Canyon Results

- RBT mean TL 13"



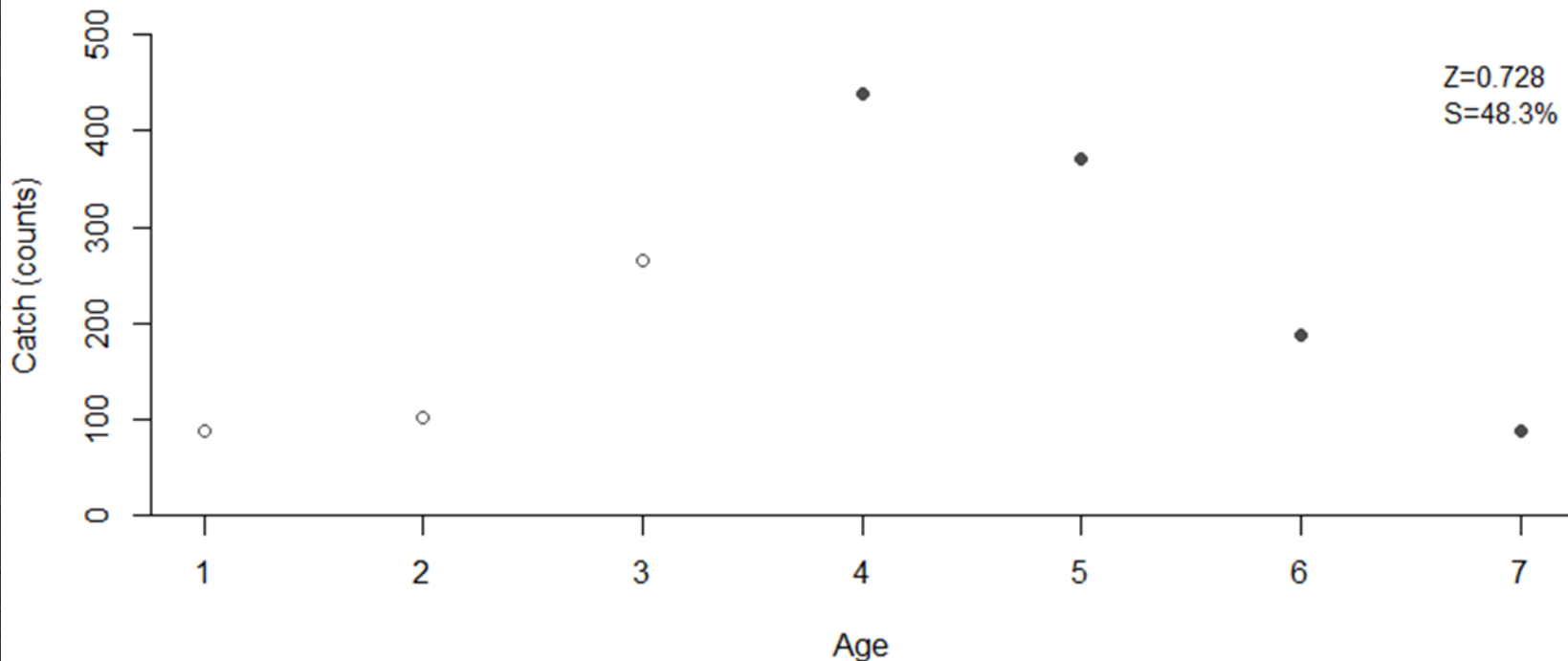
Box Canyon Results

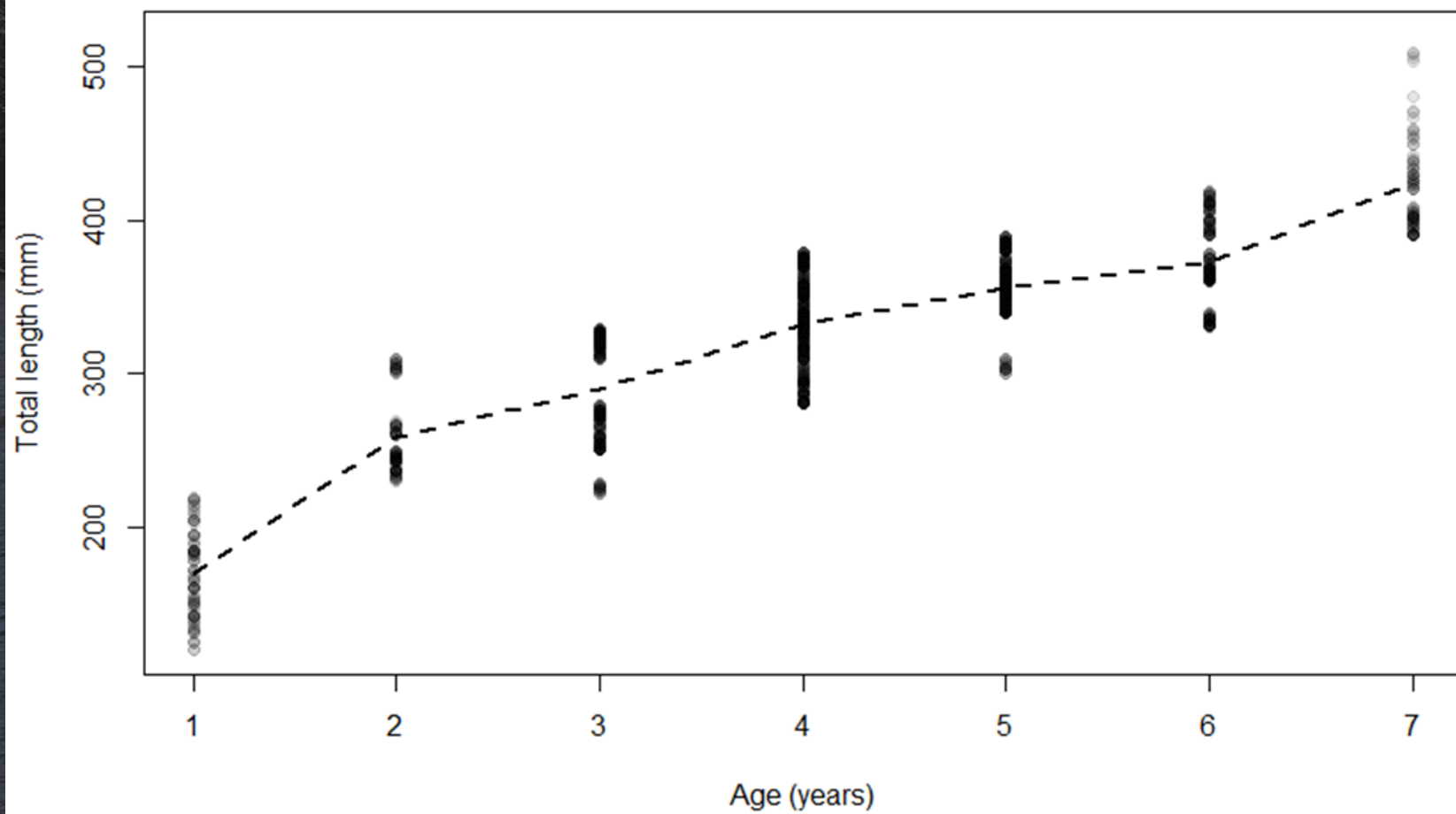


Box Canyon Results

- Mortality

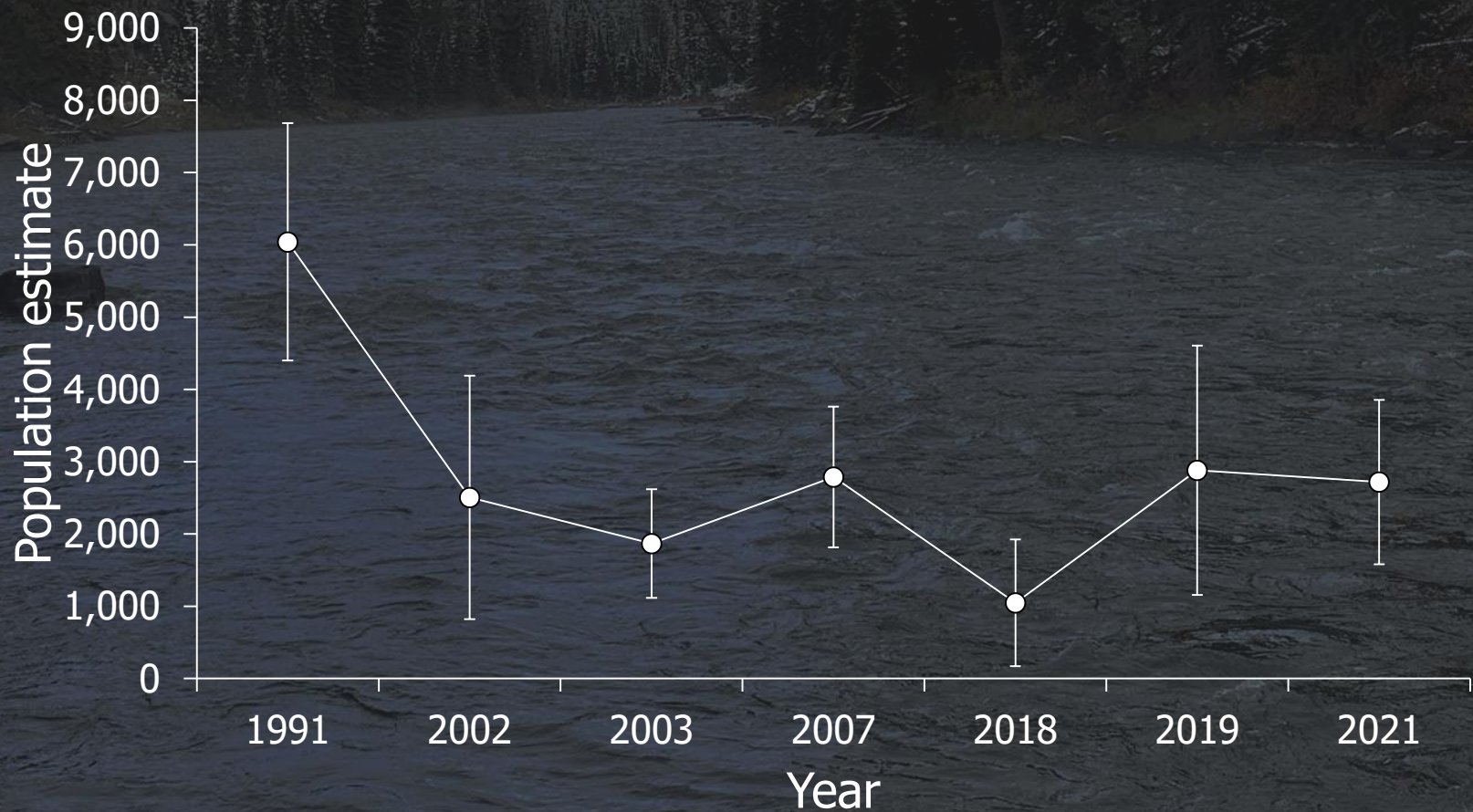
- Natural mortality and survival
 - Box Canyon: 52% annual natural mortality
 - Varies between 45-60%





Box Canyon Results

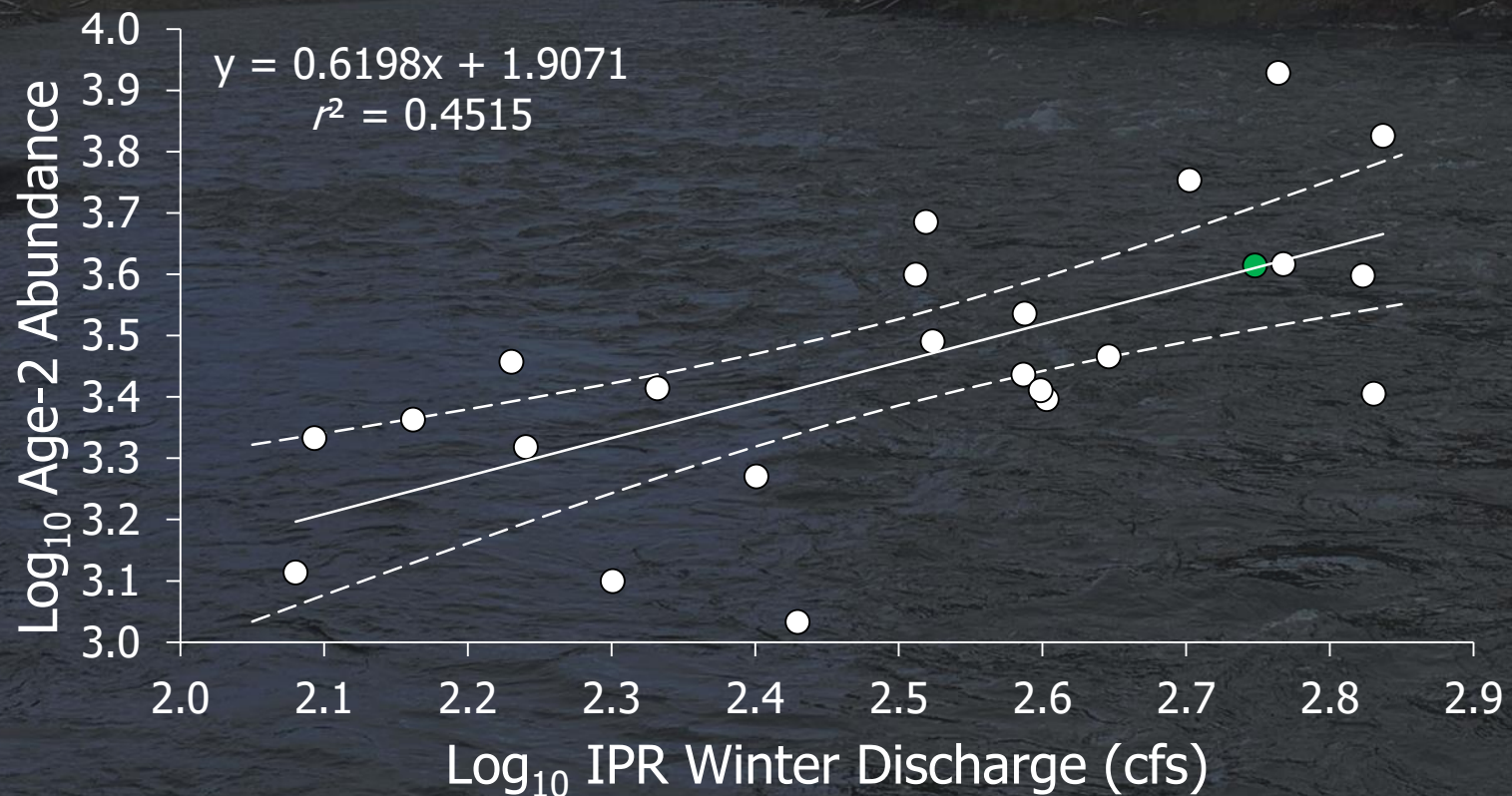
- 1,359 MWF/mi $\pm$ 569



Over Winter Flow

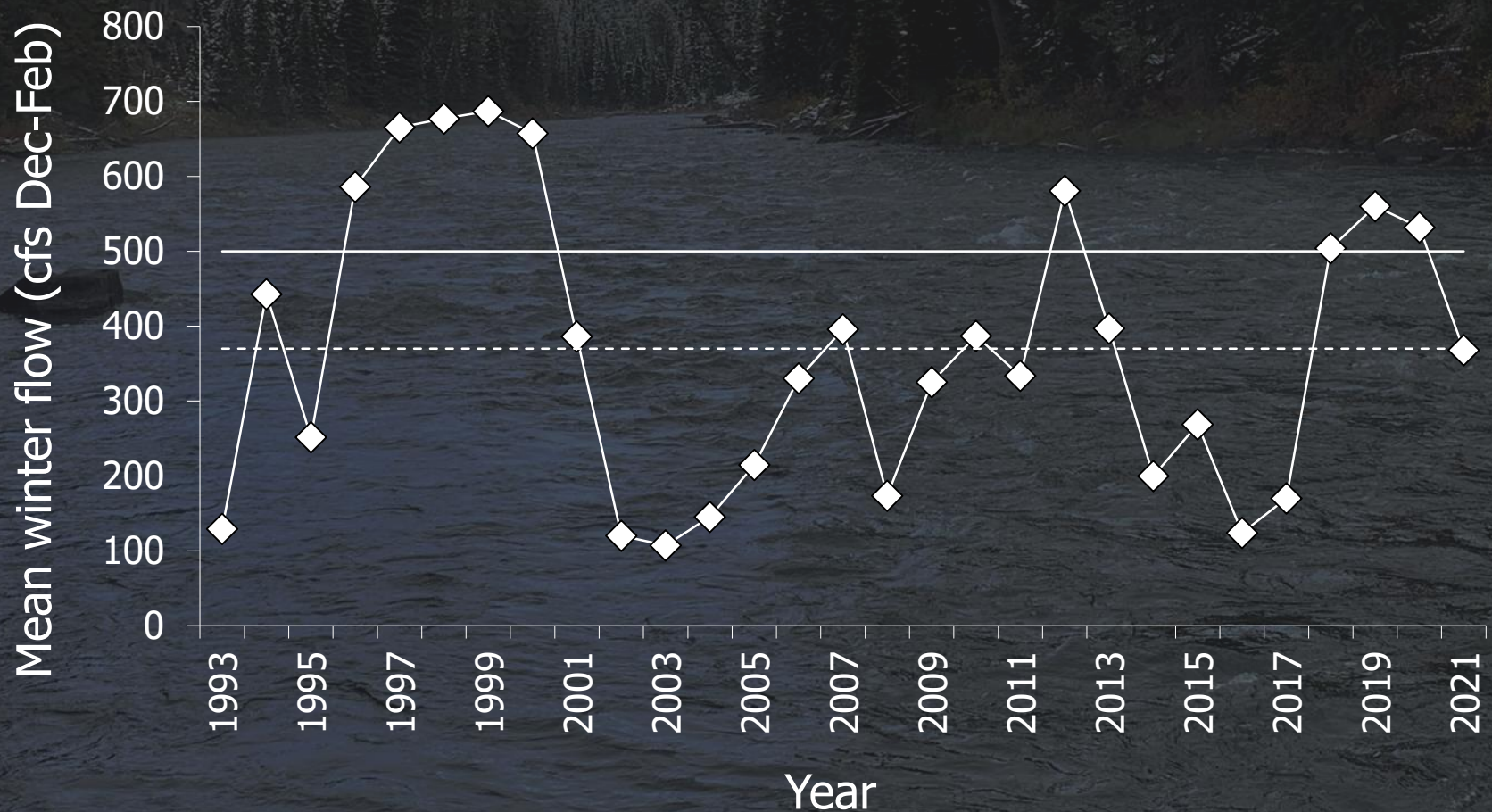
- 2021 data

- Observed age-2 abundance = 4,109 RBT
- Predicted age-2 abundance = 4,073 RBT



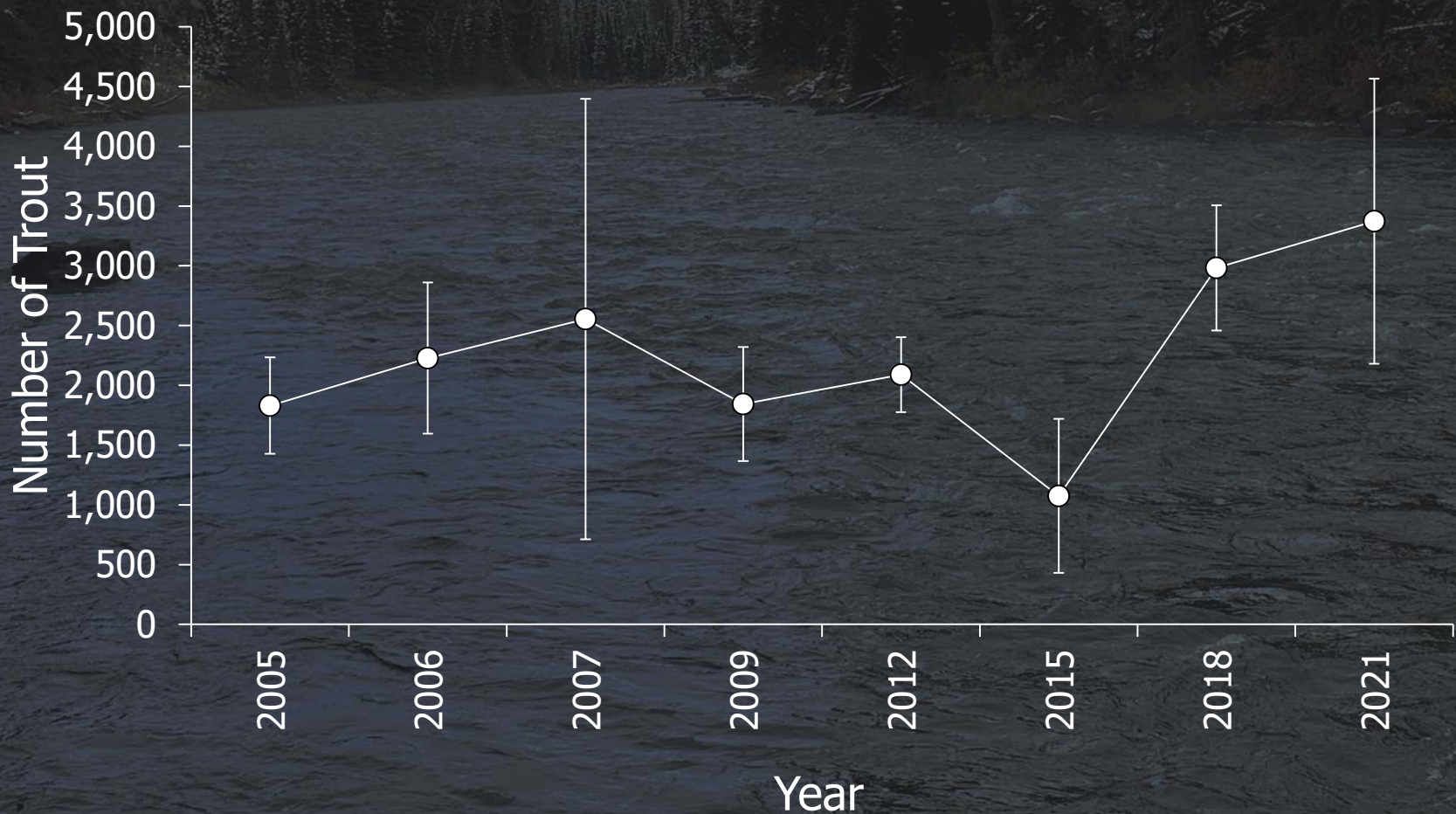
Over Winter Flow

- Mean flow 370 cfs (SD $\pm$ 189)



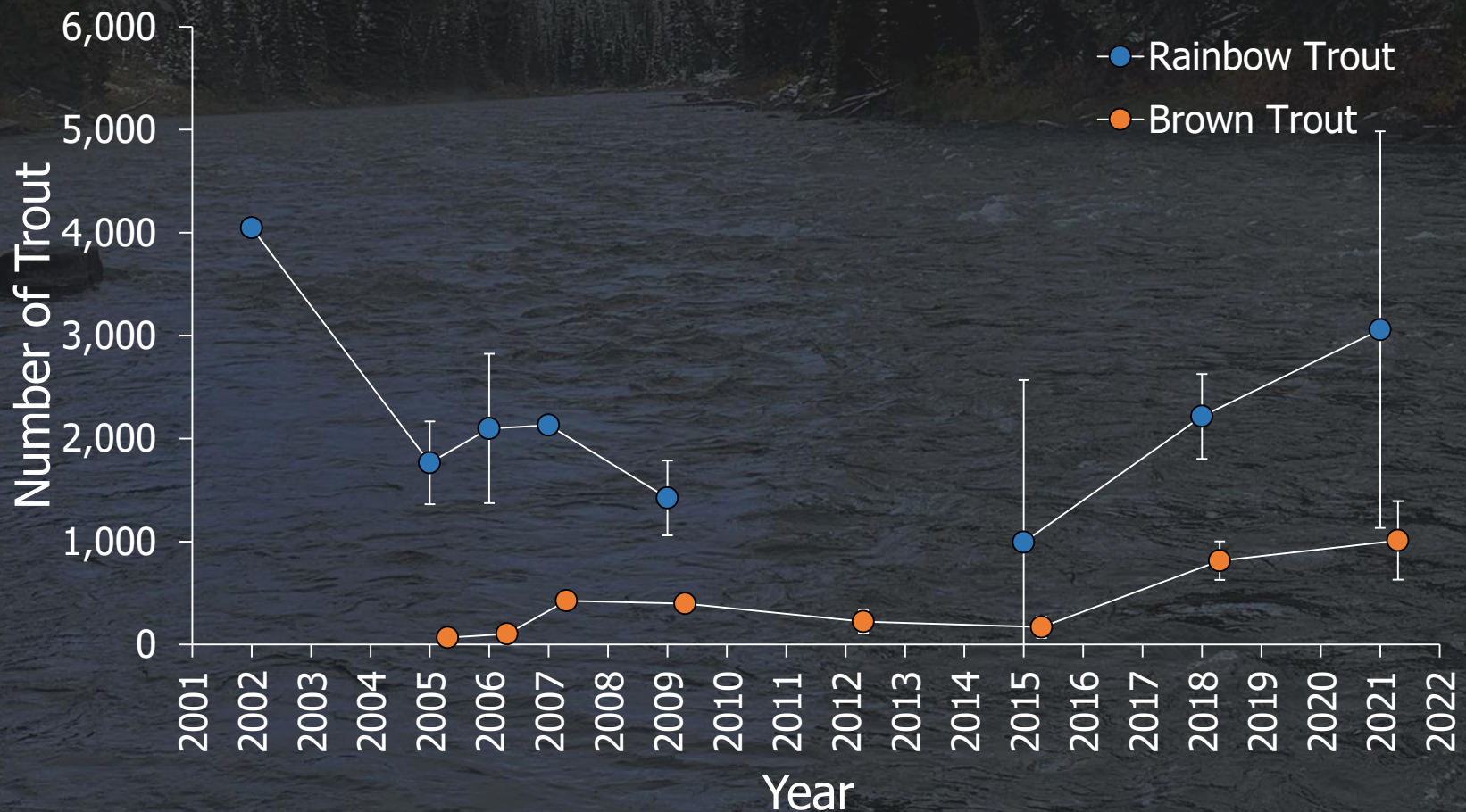
Vernon Results

- 1,423 trout/mi $\pm$ 442



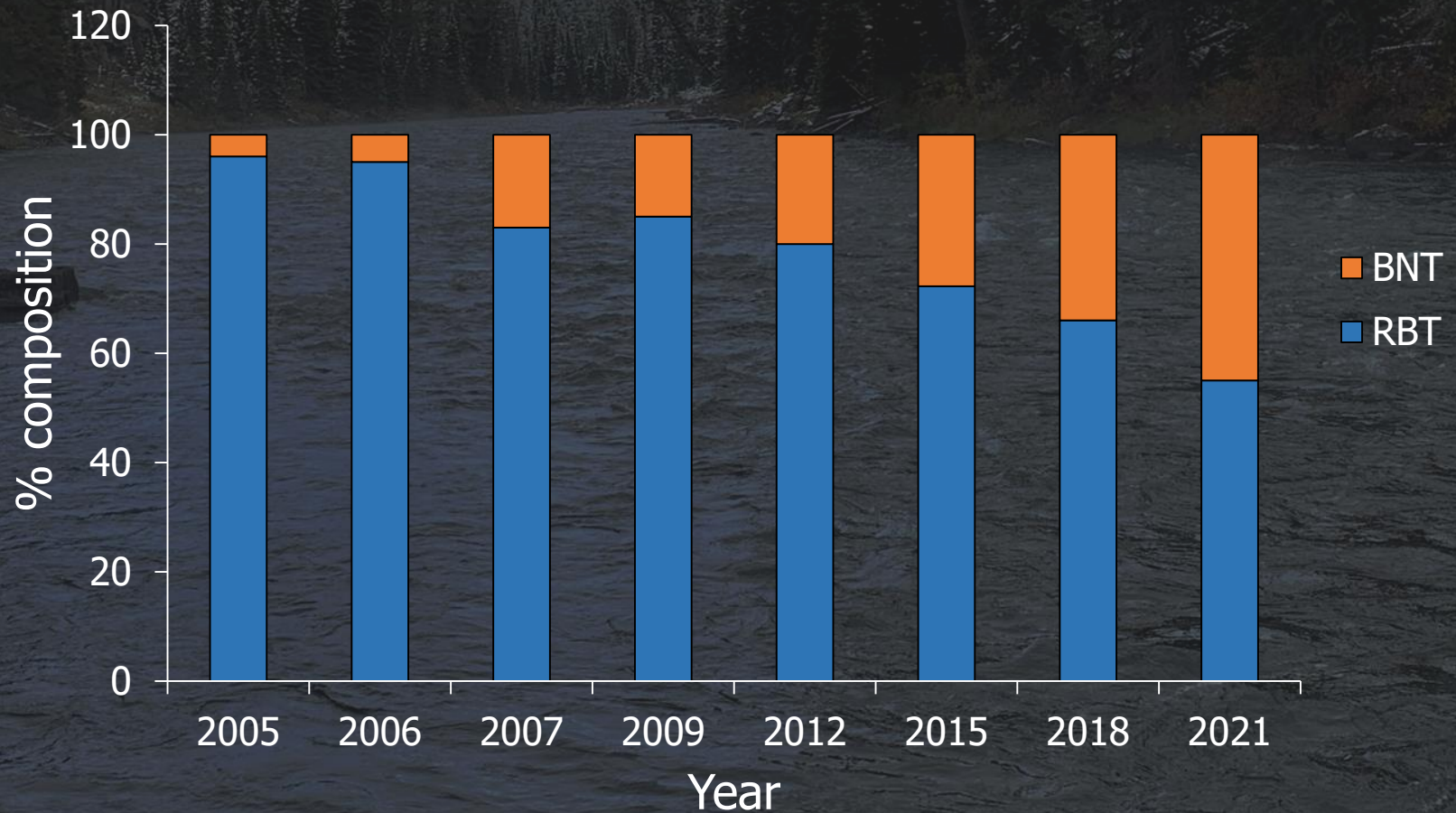
Vernon Results

- 427 BNT/mi, 1,290 RBT/mi



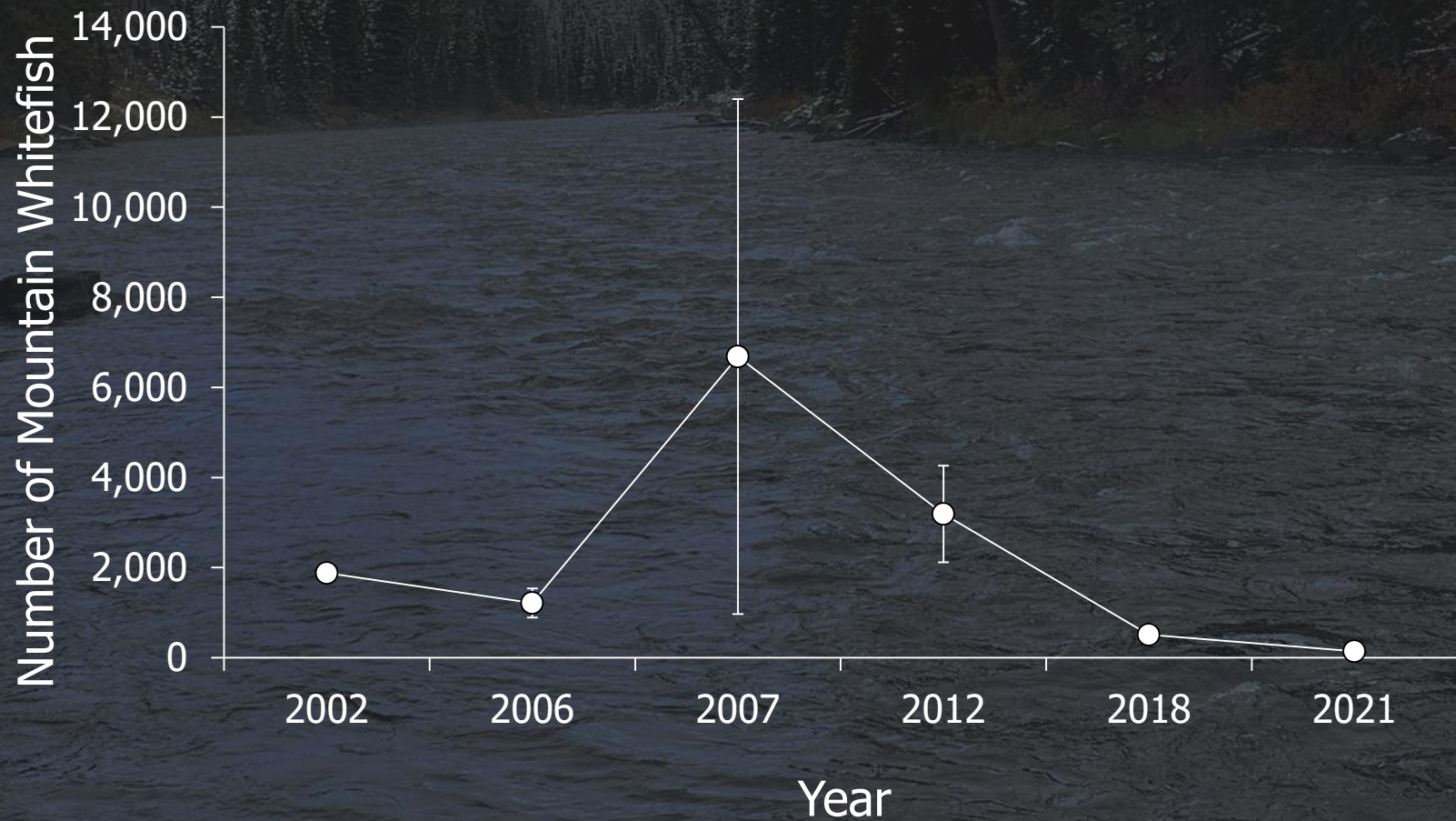
Vernon Results

- 55% RBT, 45% BNT



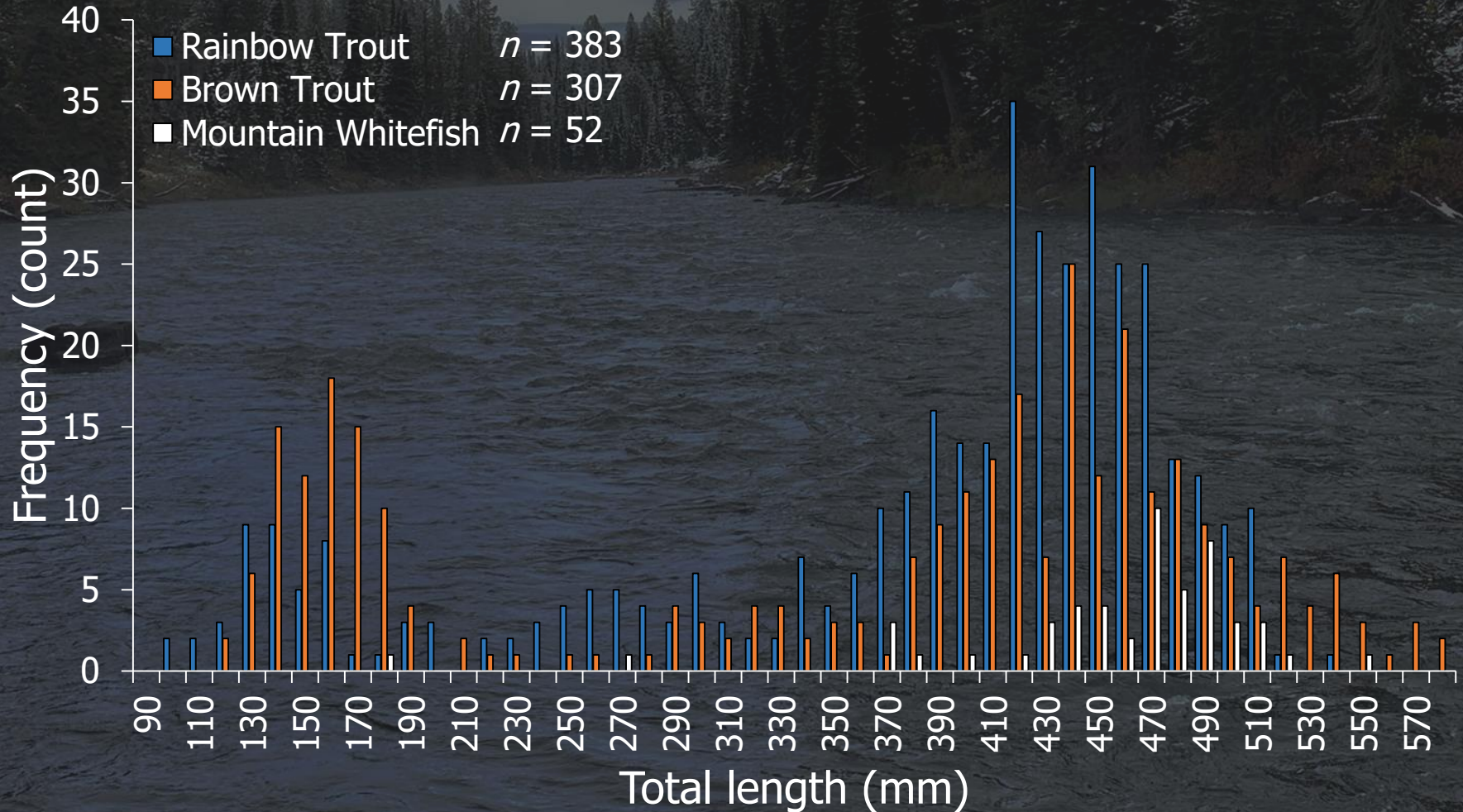
Vernon Results

- 70 MWF/mi $\pm$ 45



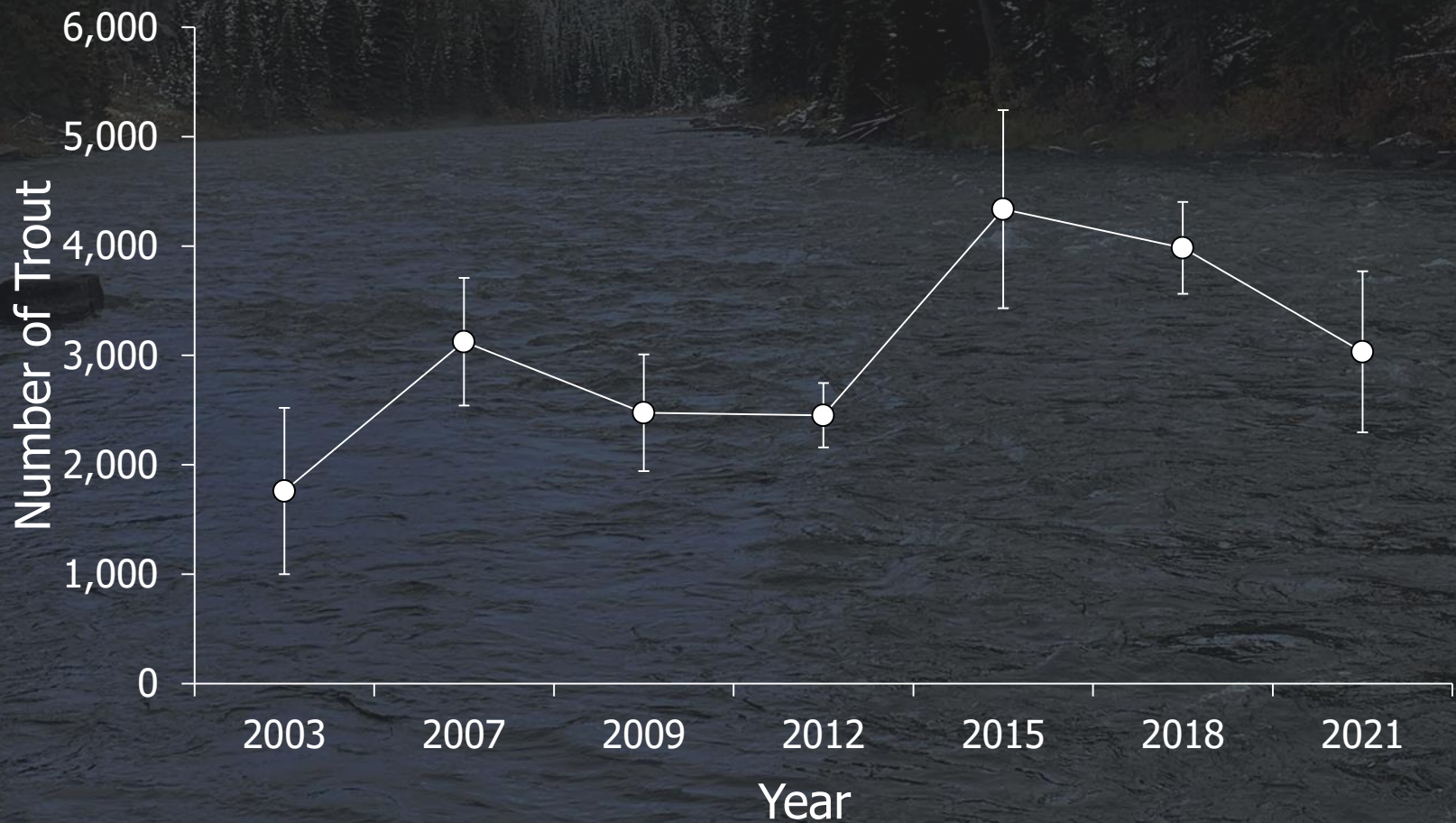
Vernon Results

- Mean TL: RBT 15", BNT 14", MWF 18"



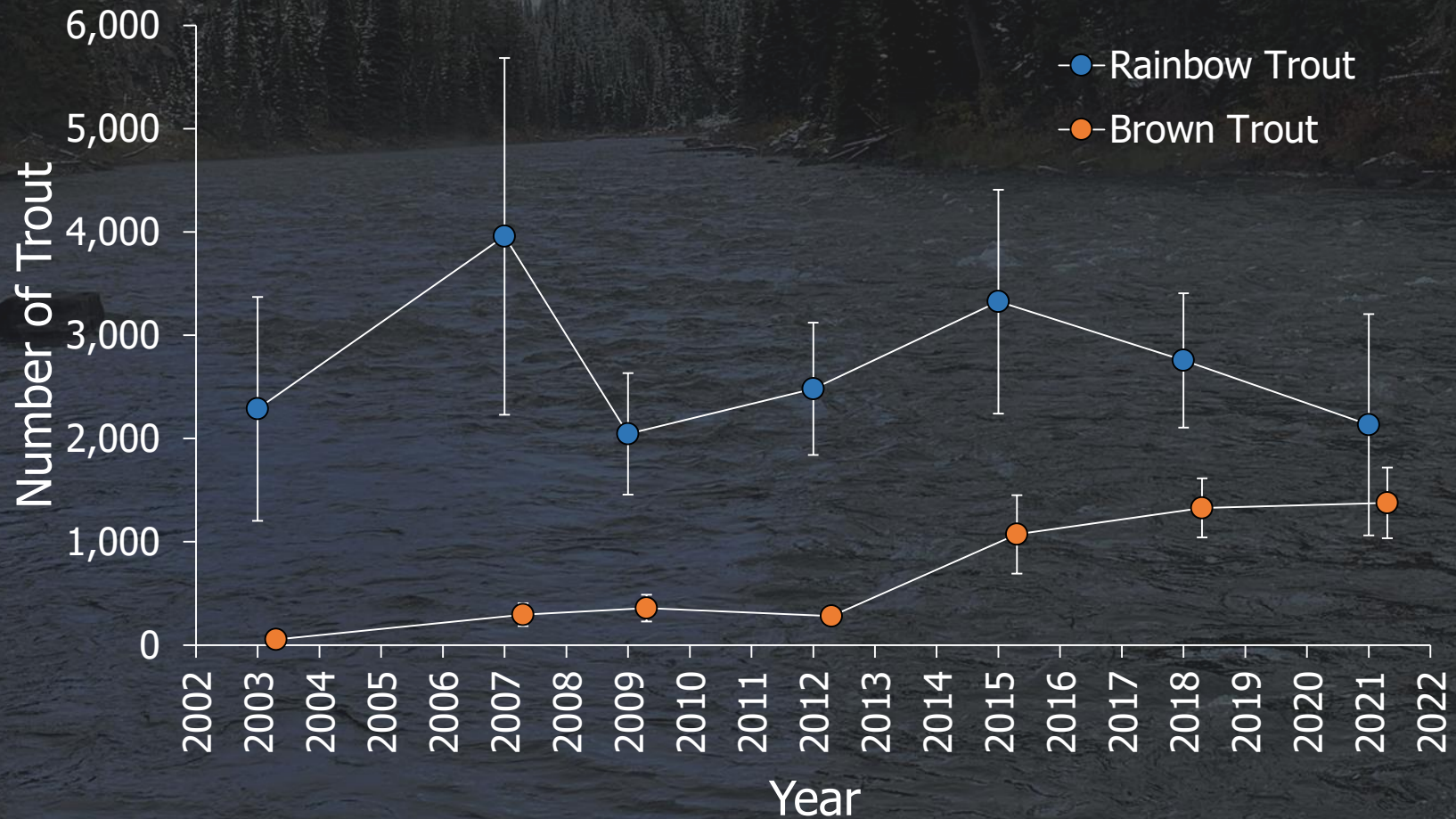
Chester Results

- 1,011 trout/mi $\pm$ 129



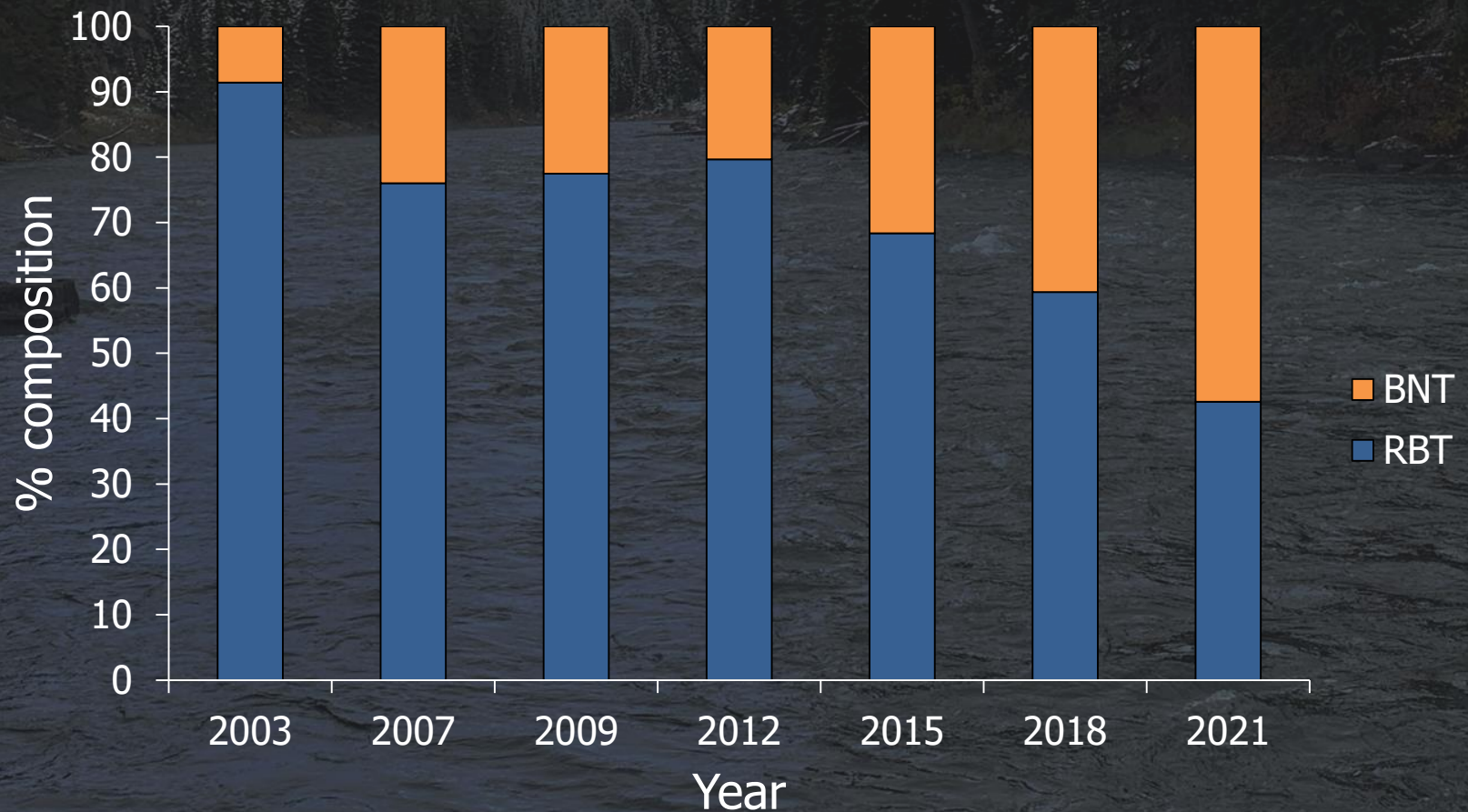
Chester Results

- 444 BNT/mi, 711 RBT/mi



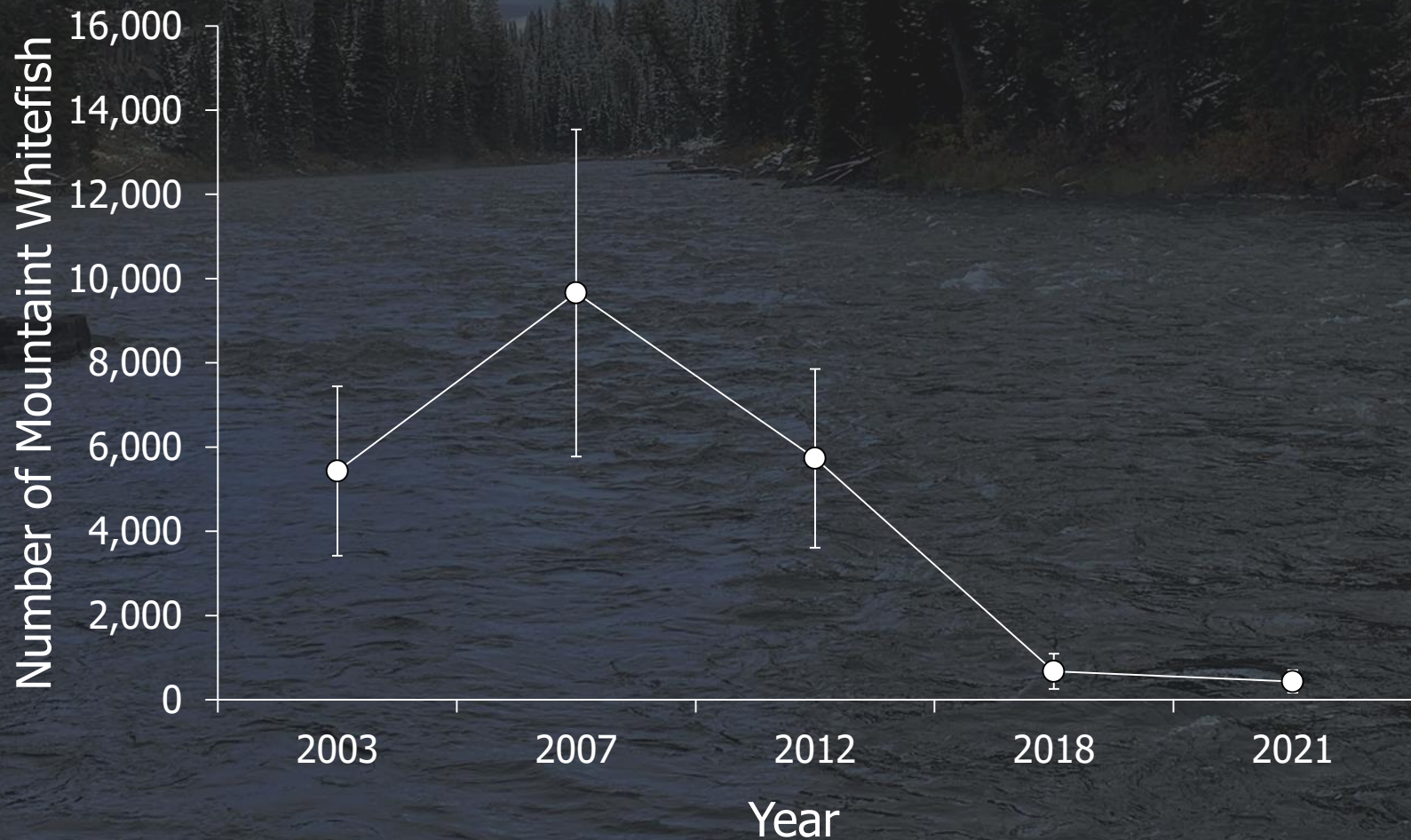
Chester Results

- 57% BNT, 43% RBT



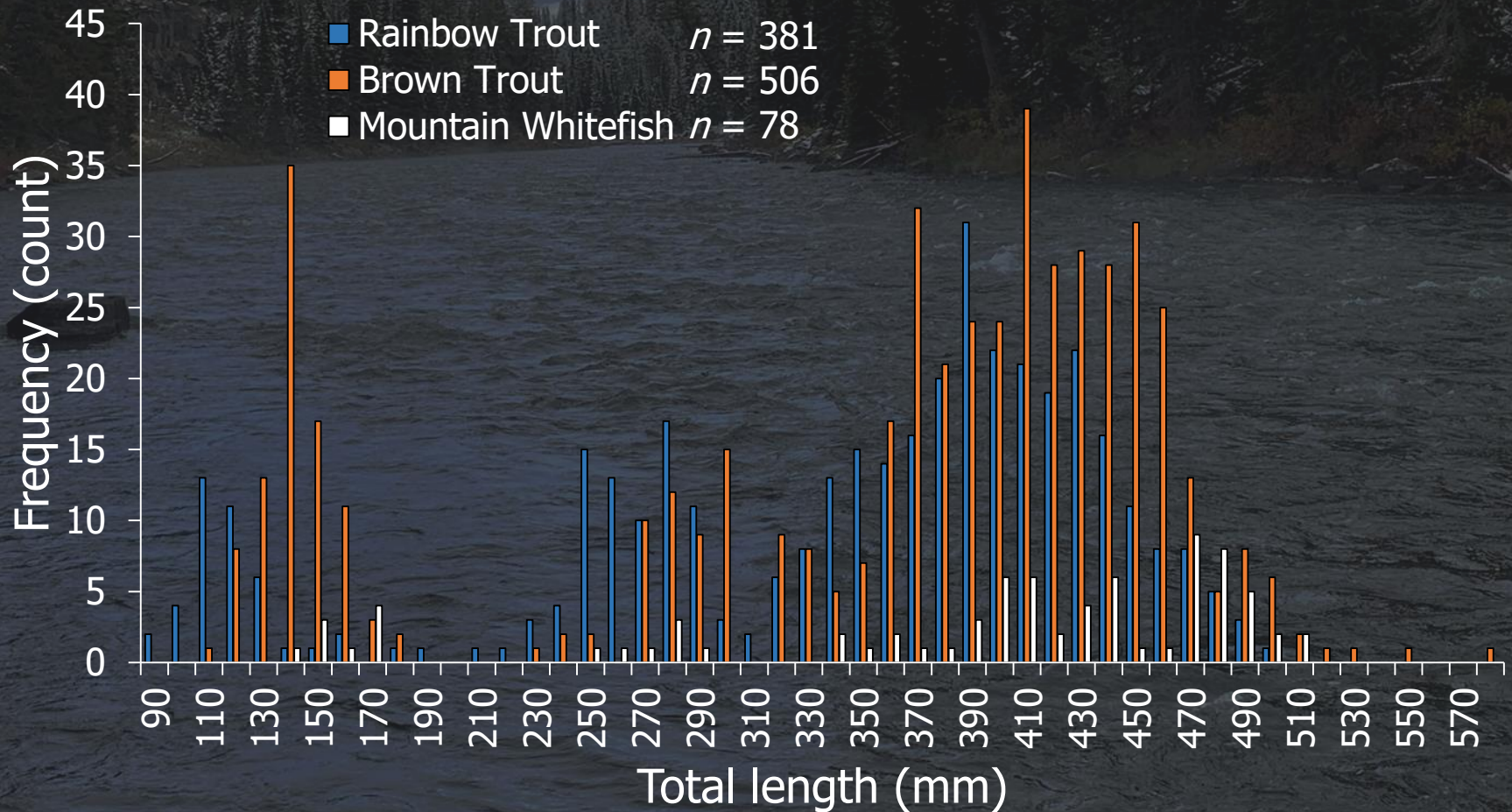
Chester Results

- 145 MWF/mi ± 83

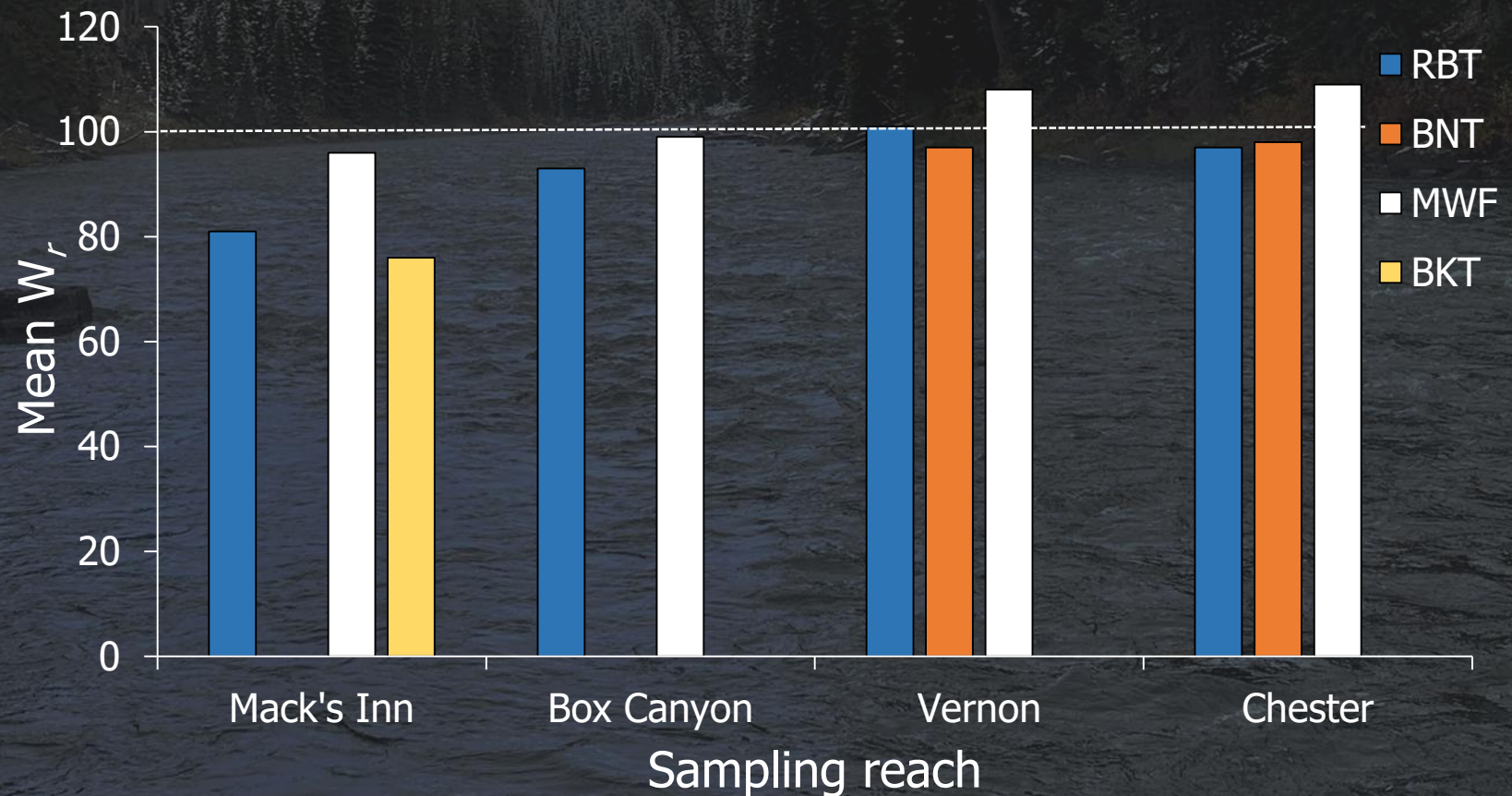


Chester Results

- Mean TL: RBT 14", BNT 14", MWF 16"



Summary



Results Summary

Reach	Species	Abundance estimate (± 95% CI)	No./km (± 95% CI)	% Composition	Capture efficiency (%)	CPUE (fish/min)	Mean TL (± SD)
Mack's Inn	RBT	1,812 (1,106)	755 (459)	62	6	0.80	294 (129)
	BKT	1,377 (1,279)	574 (531)	37	5	0.26	201 (78)
	YCT	--	--	<1	--	--	460
	All trout	2,991 (1,580)	1,246 (656)	--	6	1.07	--
	MWF	2,617 (860)	1,090 (357)	--	13	2.00	361 (91)
Box Canyon	RBT	8,417 (1,940)	2,616 (603)	99	9	4.73	325 (63)
	BKT	--	--	<1	0	0.03	197 (62)
	MWF	2,718 (1,138)	845 (569)	--	10	1.14	370 (61)
Vernon	RBT	3,058 (1,927)	803 (438)	55	7	0.70	386 (107)
	BNT	1,011 (382)	265 (87)	45	17	0.83	363 (137)
	All trout	3,373 (1,193)	885 (271)	--	12	1.53	--
	MWF	145 (122)	44 (28)	--	18	0.10	458 (61)
Chester	RBT	2,134 (1,071)	427 (222)	43	5	1.09	345 (101)
	BNT	1,377 (342)	275 (71)	57	12	1.50	356 (112)
	All trout	3,032 (737)	606 (153)	--	9	2.60	--
	MWF	436 (393)	87 (81)	--	5	0.20	395 (105)

Summary

- Trout abundances higher than average in most reaches
- Mountain Whitefish abundance in decline in Vernon and Chester
 - Focused MWF research
- BNT composition increasing
- Size structure $>12''$ per species in all reaches



Questions?