

# West Rosebud Creek Whitewater Flow Study

## Introduction

PPL Montana is partnering with American Whitewater and the Beartooth Paddling Club to identify a preferred range of whitewater boating flows on West Rosebud Creek below Emerald Lake. PPL Montana operates the Mystic Lake Hydroelectric Project in the upper West Rosebud drainage. The Project is undergoing relicensing with the Federal Energy Regulatory Commission (FERC) and PPL Montana, American Whitewater, Beartooth Paddlers and other stakeholders are involved in FERC's new Integrated Licensing Process.

The partners have jointly agreed to survey whitewater boaters that paddle any portion of West Rosebud Creek from Emerald Lake to the irrigation diversion ten miles downstream. Information from the survey will help us identify a flow preference curve for whitewater boating, which will identify minimum acceptable and optimum flows. This flow preference curve will be used to evaluate possible effects on whitewater boating from Project operation and help define flow needs.

If you paddle West Rosebud Creek, please complete this questionnaire each time you boat the creek between June 1 and August 31, 2005. Information from repeat paddlers provides valuable comparative information that helps us better understand the boatable flow range.

We are interested in your use of any portion of West Rosebud Creek between Emerald Lake and the irrigation diversion. The creek is commonly delineated into an upper run (between Emerald Lake and Pine Grove Campground) and lower run (from Pine Grove Campground to the irrigation diversion).

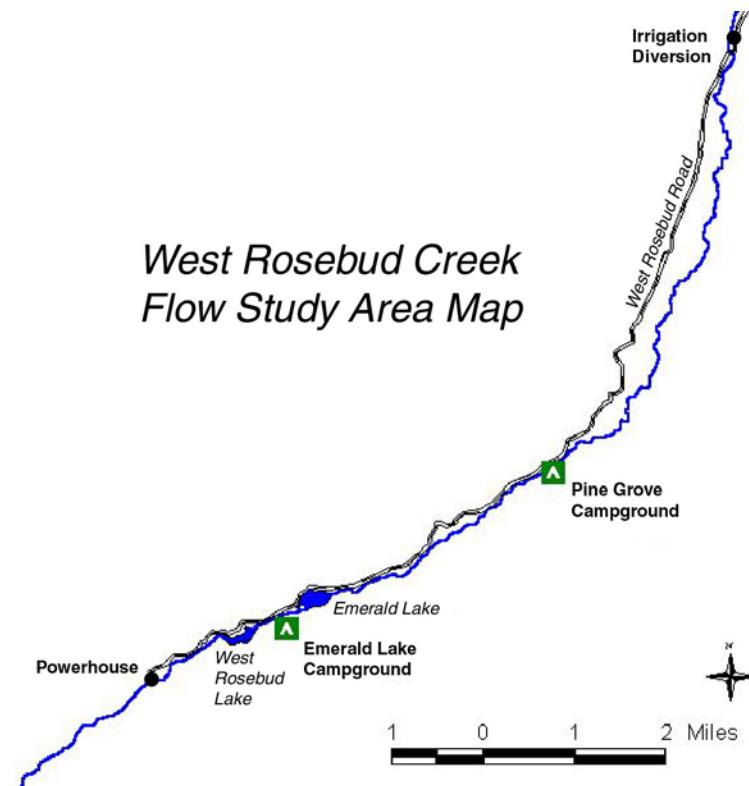
In 2005 PPL Montana began reporting real-time flows from a new gage immediately below West Rosebud Lake to help boaters track favorable whitewater conditions.

Please reference these flow reports, available from the Mystic Lake Relicensing Coordination website ([mysticlakeproject.com](http://mysticlakeproject.com)), to determine what flow you boated before you complete this survey. The USGS maintains a real-time flow gage upstream of West Rosebud Lake, but because the lake functions as a re-regulation reservoir for the upstream hydropower project, it doesn't accurately reflect downstream flows and shouldn't be used for your survey reference.

Please pass along the word about this study to fellow boaters. The more responses we get the more useful our results will be.

The Internet-based version of this study questionnaire can be accessed from a link on the Mystic Lake Relicensing Coordination website: [mysticlakeproject.com](http://mysticlakeproject.com). For further information about the study contact: [jefrost@rec-res.com](mailto:jefrost@rec-res.com).

**Please return completed questionnaires to:**  
**APLE Helena, 460 Russell Lane, Helena, MT 59602**



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## About Yourself

1. Your name: \_\_\_\_\_
2. Your email address: \_\_\_\_\_
3. Have you completed this survey before for another trip on the West Rosebud?  
 Yes  
 No

## Your Recent Boating Trip – tell us about your most recent trip on the West Rosebud...

4. Month: \_\_\_\_\_
5. Day: \_\_\_\_\_
6. When did you put in? \_\_\_\_\_
7. When did you take out? \_\_\_\_\_
8. Where did you put in?  
 Emerald Lake     Pine Grove Campground    Other: \_\_\_\_\_
9. Where did you take out?  
 Pine Grove Campground     Bridge below diversion  
 Irrigation diversion    Other: \_\_\_\_\_
10. What type of craft did you use?  
 Hard shell kayak     Open canoe  
 Inflatable kayak     Catarraft  
 Closed deck canoe     Wrap-floor raft  
 Self-bailing raft    Other: \_\_\_\_\_

## Flow Conditions – tell us about the flow conditions during your recent trip...

11. If you checked the staff gage at the bridge near Pine Grove Campground, what was the creek height in feet?  
\_\_\_\_\_ feet
12. Considering the flow conditions during your trip, in general how would you rate the whitewater difficulty of the reach you boated using the International Whitewater Scale? If you are unsure or didn't boat one of the reaches, choose N/A. (Check one box for each row)

	Class I	Class II	Class III	Class IV	Class V	Class VI	N/A
<b>Upper Run</b> – 3 miles: Emerald Lake to Pine Grove Campground							
<b>Lower Run</b> – 7 miles: Pine Grove Campground to irrigation diversion							

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13. Please evaluate the flow on this run for your craft and skill level for each of the following characteristics. (Check one box for each row)

	Highly Unacceptable	Somewhat Unacceptable	Marginal	Somewhat Acceptable	Highly Acceptable
Boatability					
Availability of challenging technical boating					
Availability of powerful hydraulics					
Availability of whitewater "play areas"					
Overall whitewater challenge					
Safety					
Aesthetics					
Length of Run					
OVERALL RATING					

## ***Flow Preferences – tell us about your preferred flow conditions...***

14. Are you likely to return to boat this flow you just evaluated? (Choose one)

Definitely no  
 Possibly  
 Probably  
 Definitely yes

15. In general, would you prefer a flow that was higher, lower or about the same as this flow? (Choose one)

Much lower flow  
 Slightly lower flow  
 About the same; this was close to an optimum flow  
 Slightly higher flow  
 Much higher flow

16. Are you likely to return for future boating at the preferred flow you identified in Question 15?

Yes  
 No

17. Including your recent trip, how many times have you boated this section of West Rosebud Creek?

1 time  
 2-5 times  
 6-10 times  
 11-20 times  
 21-30 times  
 More than 30 times

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**Please Note:** If you completed a survey before for a previous West Rosebud trip, your responses to the remaining questions might be different than what you reported earlier, based on new knowledge from your most recent trip. During study analysis, only your most recent responses to the remaining questions will be used. Please update the rest of the survey with your latest opinions.

## Quality of Various West Rosebud Flows

18. For comparative purposes please estimate the quality of the following West Rosebud flows for your craft and skill level. In making your evaluations, please consider all the flow-dependent characteristics that contribute to a high quality trip (e.g., boatability, whitewater challenge, safety, availability of surfing or other play areas, aesthetics, and length of run). If you do not feel comfortable evaluating a flow you have not seen, leave that row blank.

	Highly Unacceptable	Somewhat Unacceptable	Marginal	Somewhat Acceptable	Highly Acceptable
100 cfs					
150 cfs					
200 cfs					
250 cfs					
300 cfs					
350 cfs					
400 cfs					
450 cfs					
500 cfs					
550 cfs					
600 cfs					
650 cfs					
700 cfs					

**Minimum and Optimum Flows** – Based on your boating trips on the West Rosebud, please specify the flows that provide the following types of experiences. (Note: you can specify flows that you have not seen, but which you think would provide the type of experience in question.)

19. From a recreational perspective what is the **minimum acceptable flow** for this run? The minimum acceptable is the lowest flow you would return to boat, not the minimum flow necessary to navigate. (Choose one)

100 cfs	150 cfs	200 cfs	250 cfs	300 cfs	350 cfs	400 cfs	450 cfs	500 cfs	550 cfs	600 cfs	650 cfs	700 cfs

20. For you, what is the **optimum flow** for this run? (Choose one)

100 cfs	150 cfs	200 cfs	250 cfs	300 cfs	350 cfs	400 cfs	450 cfs	500 cfs	550 cfs	600 cfs	650 cfs	700 cfs

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21. Many people are interested in a “standard” whitewater trip at medium flows. Think of this “standard trip” in your craft. What is the best or optimal flow for a **standard** trip? (Choose one)

100 cfs	150 cfs	200 cfs	250 cfs	300 cfs	350 cfs	400 cfs	450 cfs	500 cfs	550 cfs	600 cfs	650 cfs	700 cfs

22. Some people are interested in taking trips at higher flows for increased whitewater challenge. Think of this “high challenge trip” in your craft. What is the best or optimal flow for a **high challenge trip**? (Choose one)

100 cfs	150 cfs	200 cfs	250 cfs	300 cfs	350 cfs	400 cfs	450 cfs	500 cfs	550 cfs	600 cfs	650 cfs	700 cfs

23. If one flow for boating was released, **what flow would you prefer?** (Choose one)

100 cfs	150 cfs	200 cfs	250 cfs	300 cfs	350 cfs	400 cfs	450 cfs	500 cfs	550 cfs	600 cfs	650 cfs	700 cfs

24. At the optimum flows for standard and high challenge trips, would you recommend this section to others?

**Standard trip:**                    **High challenge trip:**

Yes

Yes

No

No

## Summing Up

25. How would you rate boating opportunities on the West Rosebud compared to:  
(Choose one per row)

	Worse than average	Average	Better than average	Excellent	Among the very best
Other rivers within a one hour drive					
Other rivers in Montana					
Other rivers in the Rockies					
Other rivers in the country					

26. Do you have other comments you'd like to make about flows on the West Rosebud?

**THANK YOU FOR YOUR PARTICIPATION!**