

## **Oral Presentation Proposal**

### **Boater Safety Considerations for Placing In-stream Woody Debris: Perspectives From a Recreational Rafter and Restoration Practitioner**

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Topic: boater safety in stream design, large woody debris

Safety of recreational river users is receiving increased attention in stream restoration design. While some woody debris in rivers has the potential to be hazardous, most of it is not. A myriad of environmental and user-specific conditions factor into any river safety incident. However, recent regulations passed under the auspices of improving boater safety assume a one-way causal or deterministic relationship between project actions and user safety.

Focusing on the minutia of any particular design element can produce false confidence that misses the big picture. Whether or not the additional process and expense of scrutinizing individual design elements improves the safety of the finished product is debatable.

An alternative approach will be presented that considers safety effects of project actions based on the ambient hazard of the broader river reach. Additionally, photographic examples of element-scale considerations will be presented, including:

- Approach speed
- Approach angle
- Structure porosity
- Position in the water column
- Percent of cross section obstructed
- Juxtaposition of elements

The presentation will put risk to boaters into context, and discuss simple, effective mitigation options. Content draws on the experience of the speaker who has floated over 3,500 miles as a recreational rafter and placed over 2,000 pieces of large woody debris as a stream restoration practitioner.