

Spill Monitoring below Libby Dam

Montana Fish, Wildlife & Parks

funded by

Bonneville Power Administration



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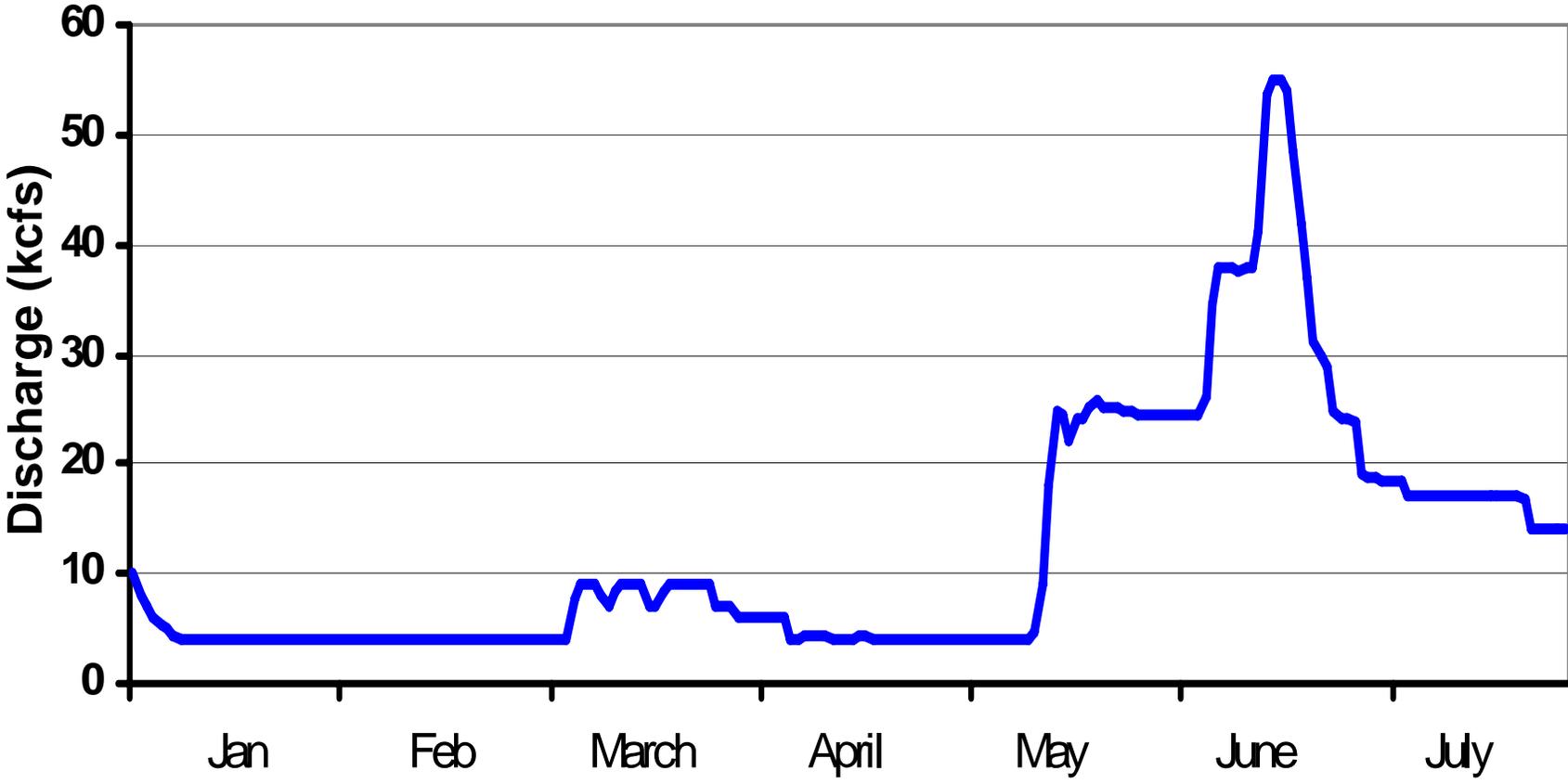
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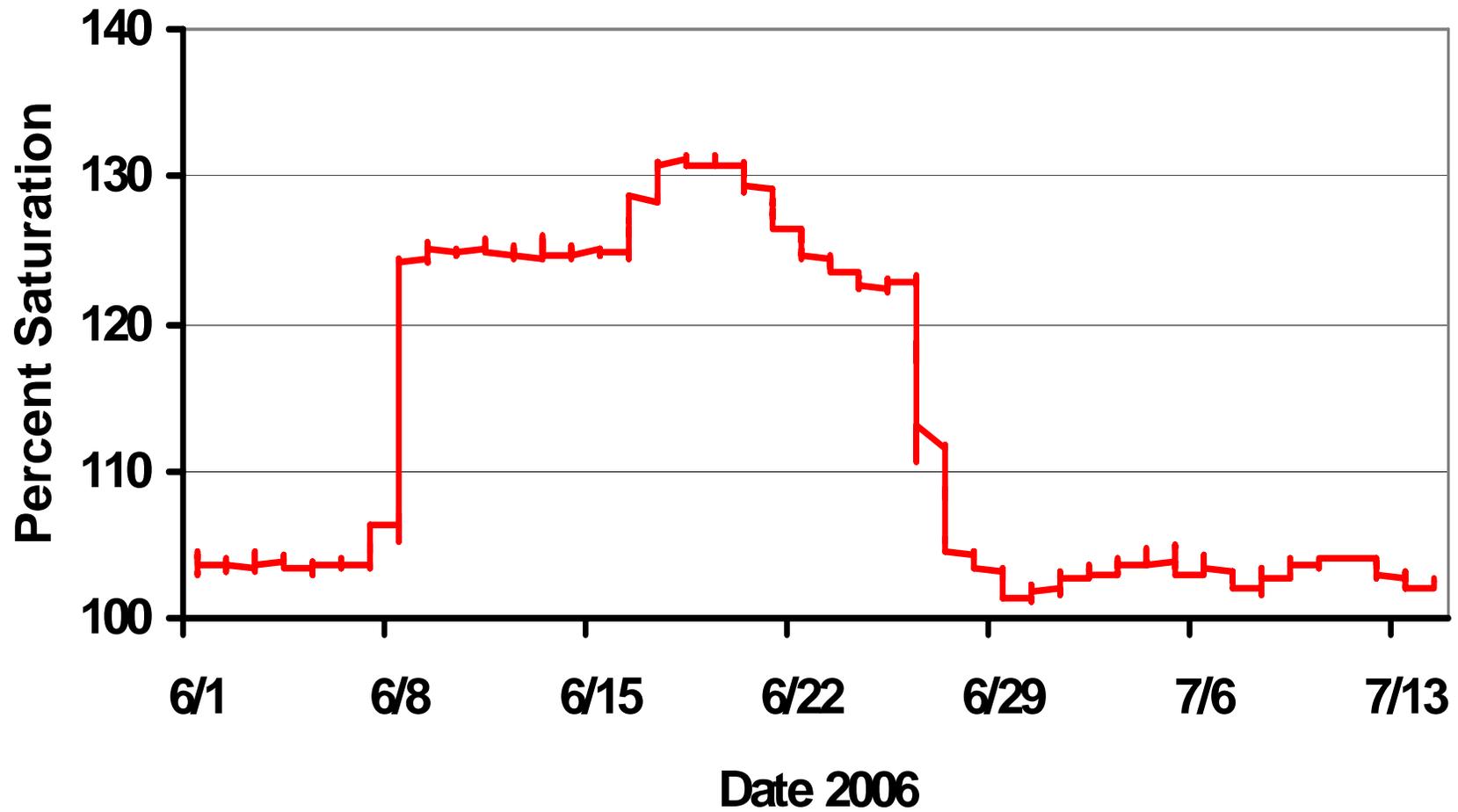




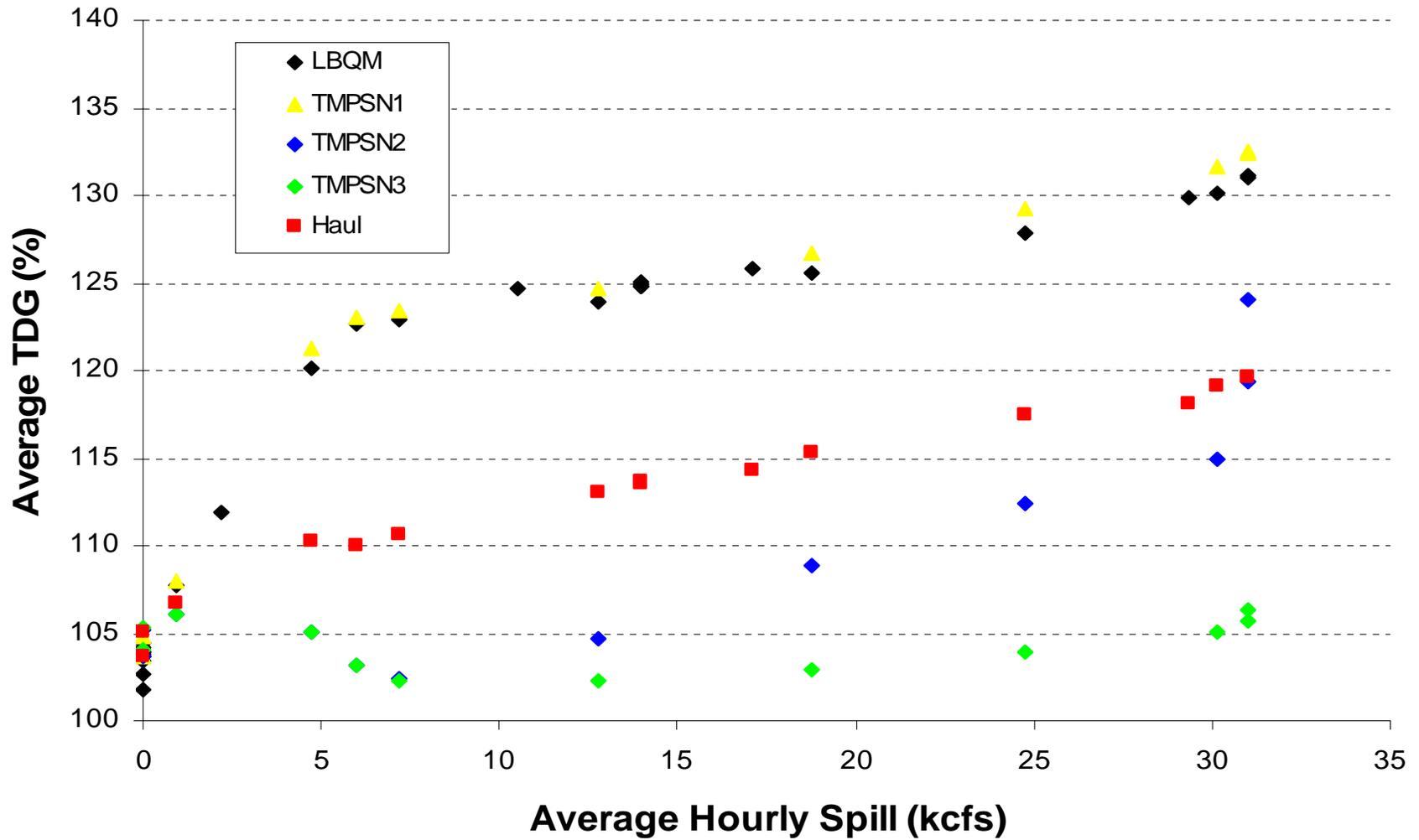
Libby Dam Discharge - 2006

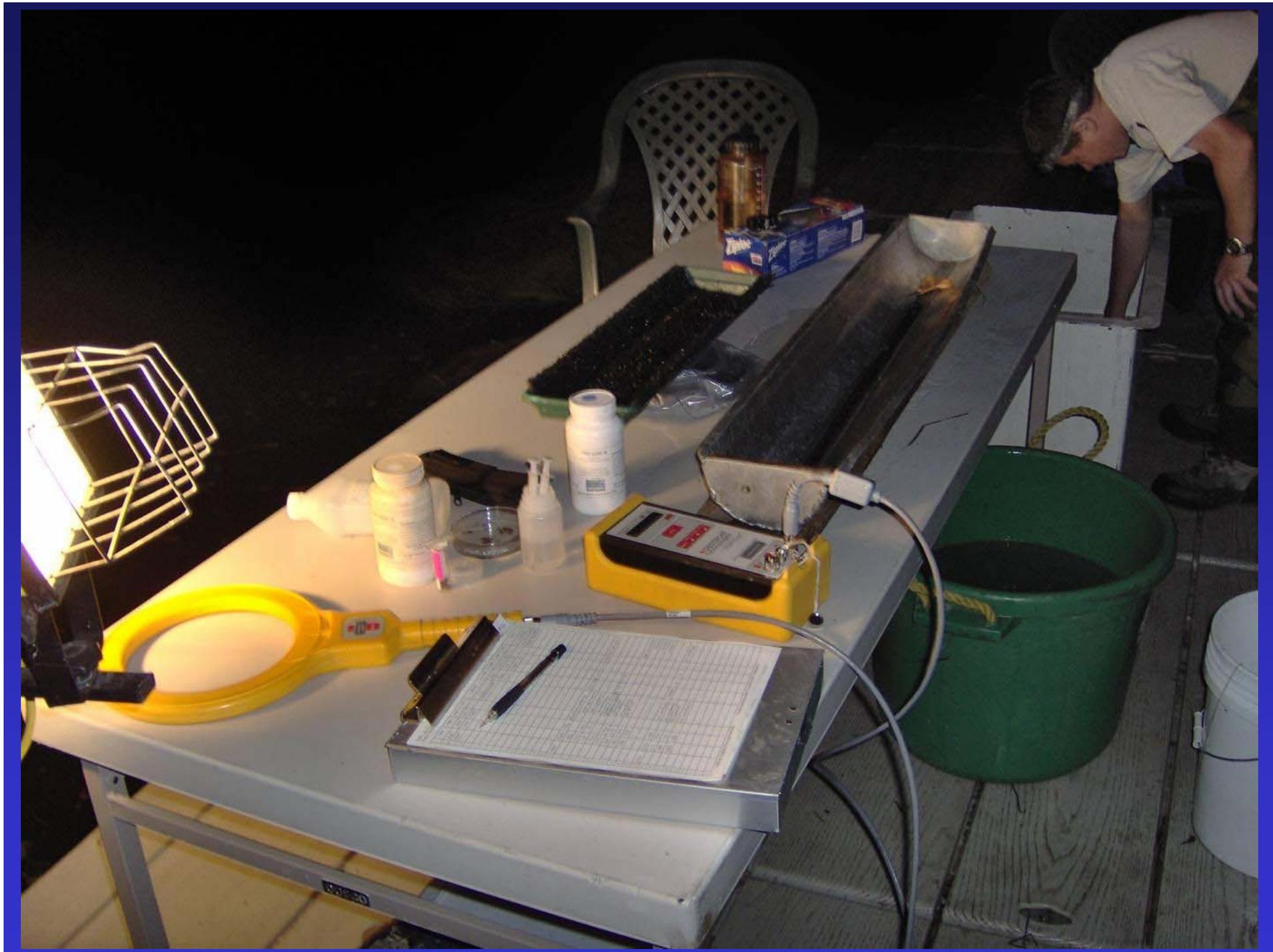


Kootenai River Gas Supersaturation









Example of Gas Bubbles in Fins

Bubbles Also Observed in Eyes and Under Skin,
Resulting in Split Fins and External Hemorrhages





Post Spawning Injury Exacerbated by Gas Bubble Trauma



**Post Spawning Injury and GBT Increase Susceptibility to
Secondary Infection and Perhaps Latent Mortality**

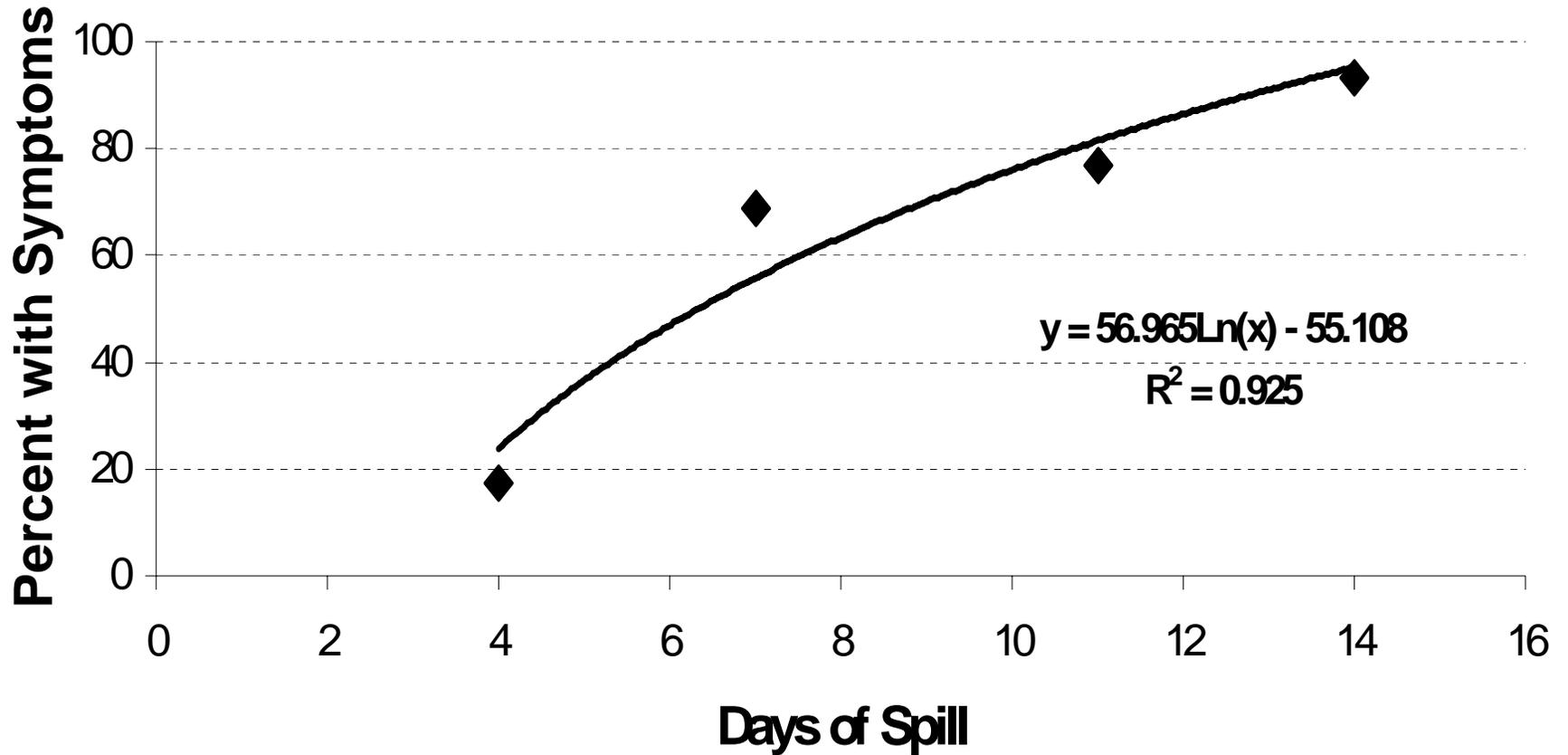
Incidence of Gas Bubble Trauma

Bull Trout



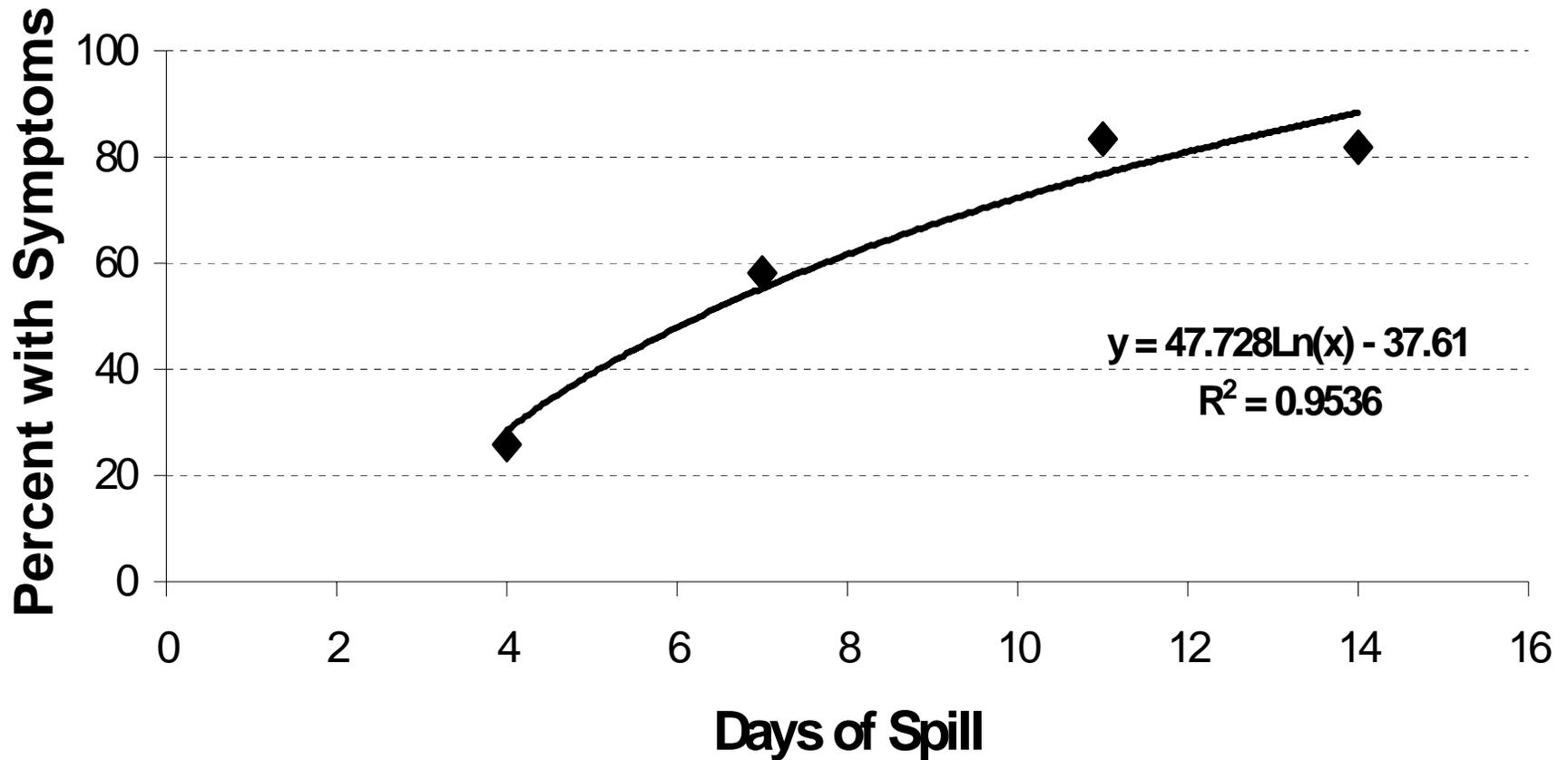
Incidence of Gas Bubble Trauma

Rainbow and Westslope Cutthroat Trout



Incidence of Gas Bubble Trauma

Mountain Whitefish



- **Depth Compensation Apparently Reduced GBT Symptoms**
- **Repeated Exposures Are Additive**
- **Direct Mortalities Were Not Quantified; Few Were Documented**
- **Post-Spill Monitoring of Fish Populations Will Be Completed Next Spring**