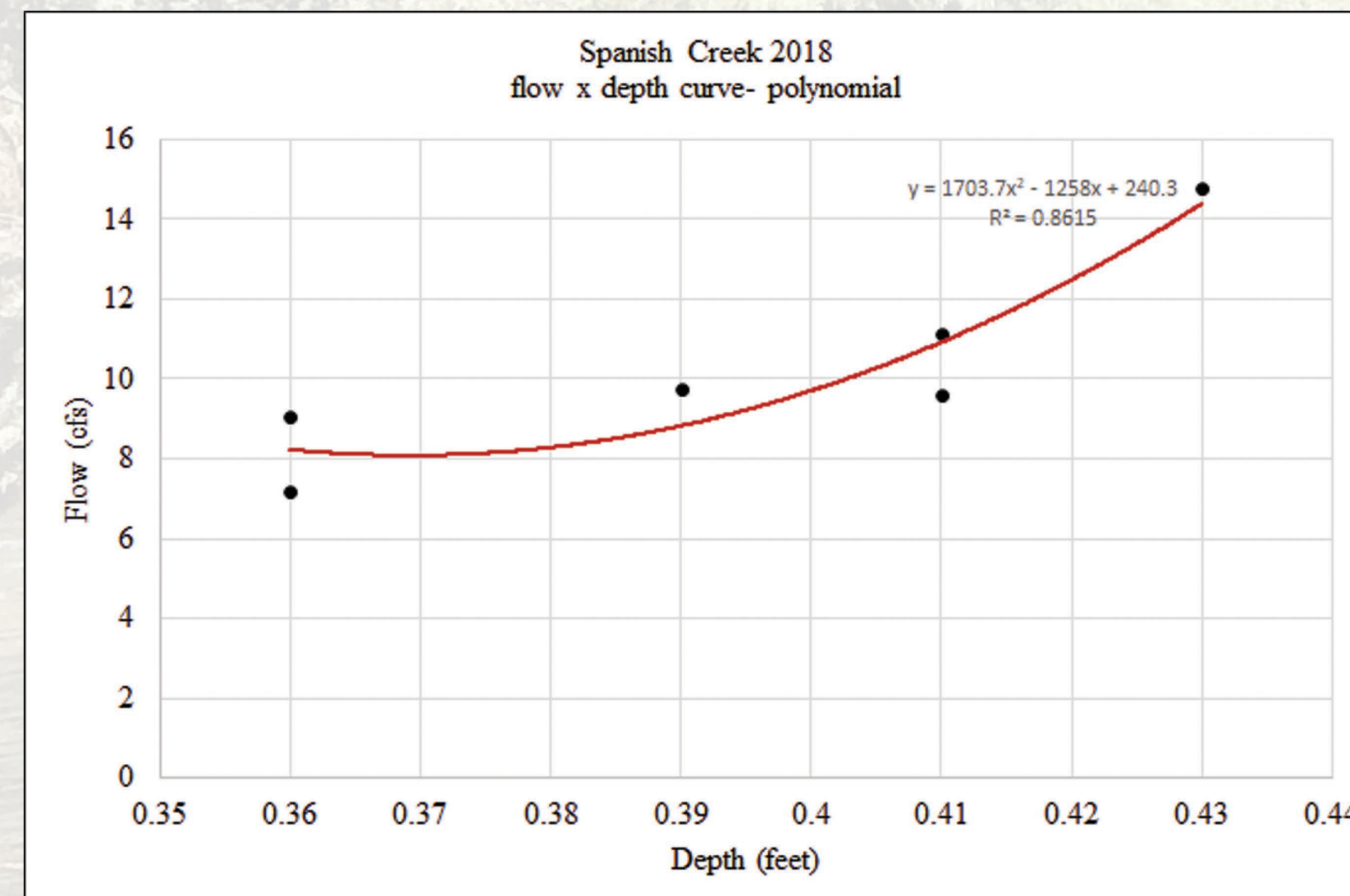


Spanish Creek Water Quality

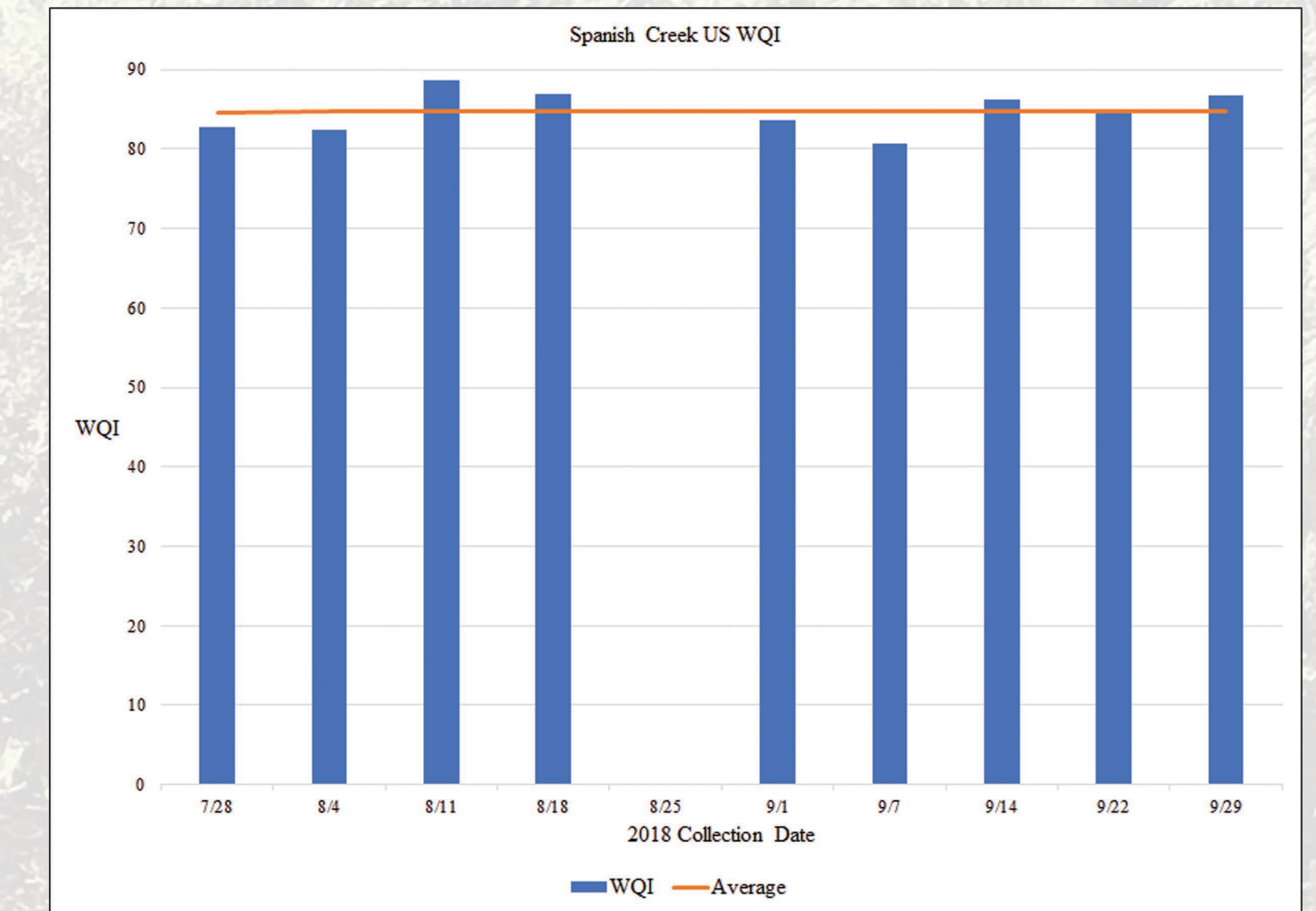
Carolyn Nealen - Gallatin Gateway, Montana (Lee Metcalf Wilderness Area)

Synopsis

- Nine parameters measured to determine health of Spanish Creek via water quality index (WQI)
 - Temperature
 - pH
 - Total dissolved solids (TDS)
 - Dissolved oxygen (DO)
 - Biochemical demand (BOD)
 - Nitrates
 - Phosphates
 - Turbidity
 - Fecal coliform colonies
- Recreation impacted measured by comparing data at two
- Electrical conductivity and flow measured
- Benthic macroinvertebrates sampled



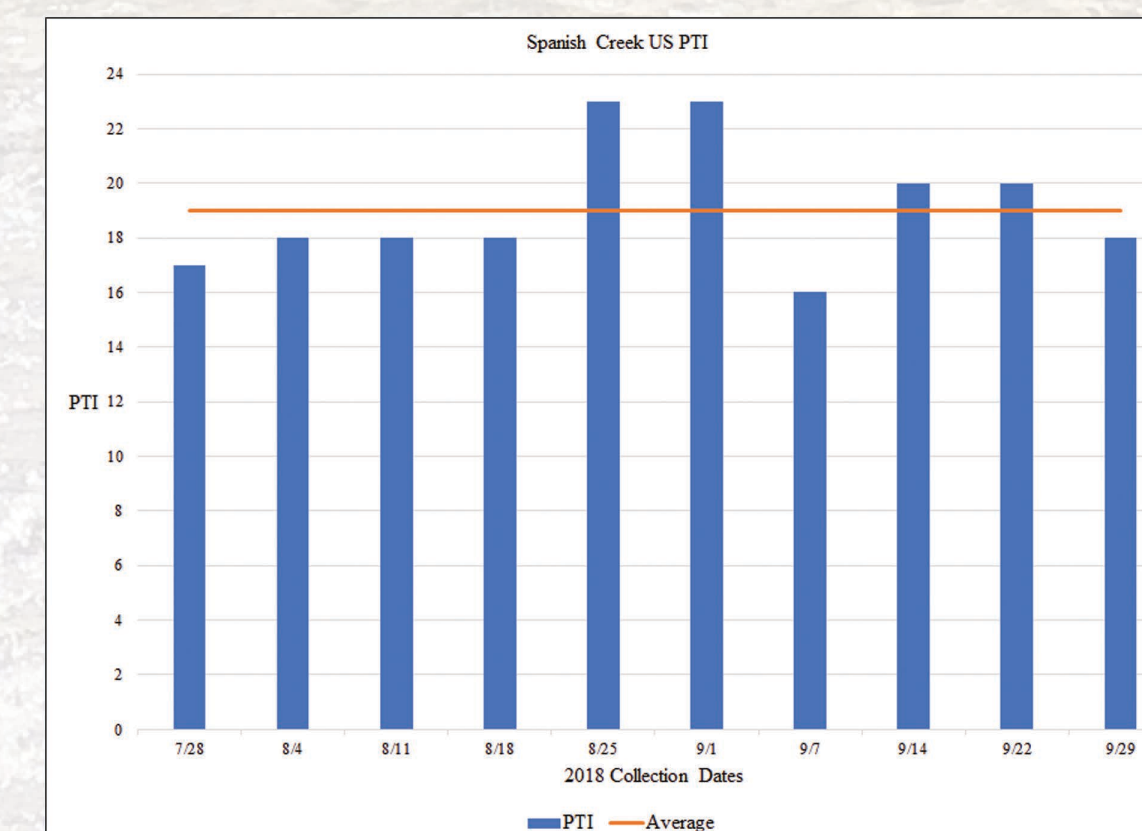
The relationship between water depth and flow or volume of water moved



Spanish Creek Water Quality Index (WQI)



Caddisflies larvae



Spanish Creek Pollution Tolerance Index (PTI)



Elmid Beetle



Whirlygig Beetle Larva



Macroinvertebrate Sampling



Measuring Flow



Spanish Creek Sample Sites



Henry reading phosphates

Conclusion

The WQIs calculated suggest that Spanish Creek is healthy. Comparison of data from DS and US sites suggests that Spanish Creek's water quality is good. While current data suggests that Spanish Creek is not negatively impacted by recreational use, more extensive data collection is needed..

Resources

Highly recommended resources on water quality:

- Field Manual for Water Quality Monitoring - Mitchell & Stapp
- A Guide to Common Freshwater Invertebrates of North America - Voshell