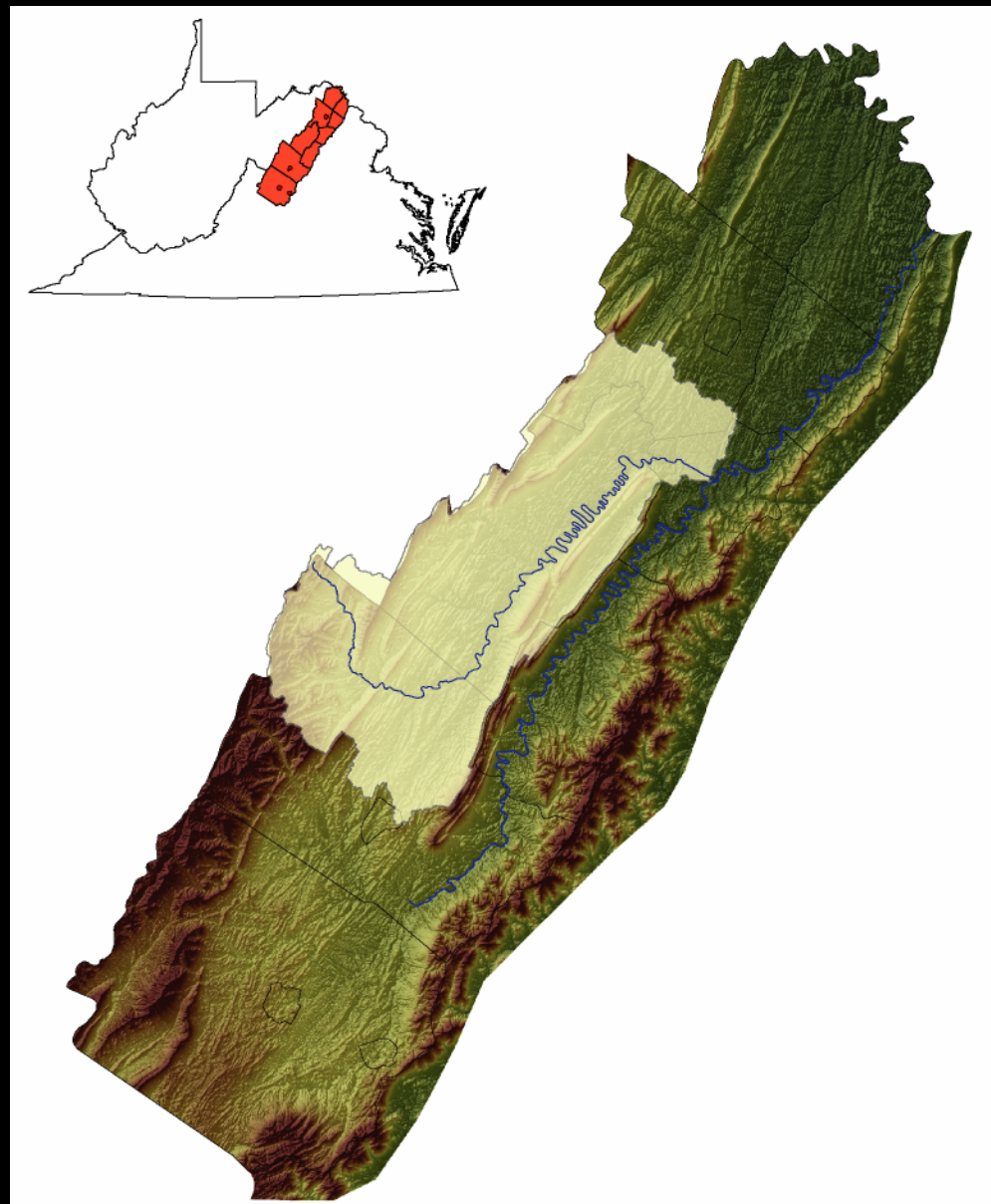


North Fork Shenandoah River Results Application For the State Drought Assessment Plan



Jennifer L. Krstolic and
Donald C. Hayes



Virginia Drought Assessment and Response Plan

Drought Indicators: Precipitation Deficits
 Reservoir Storage
 Ground-Water Levels
 Streamflow Statistics

Emergency	Warning	Watch	Normal
< 5th percentile	5 - 10th percentile	10 - 25th percentile	> 25th percentile

Representative daily values will be compared with historic Streamflow Statistics for the period of record.

<http://www.deq.virginia.gov/waterresources/droughttac.html>

North Fork Low-Flow Statistics For Gages

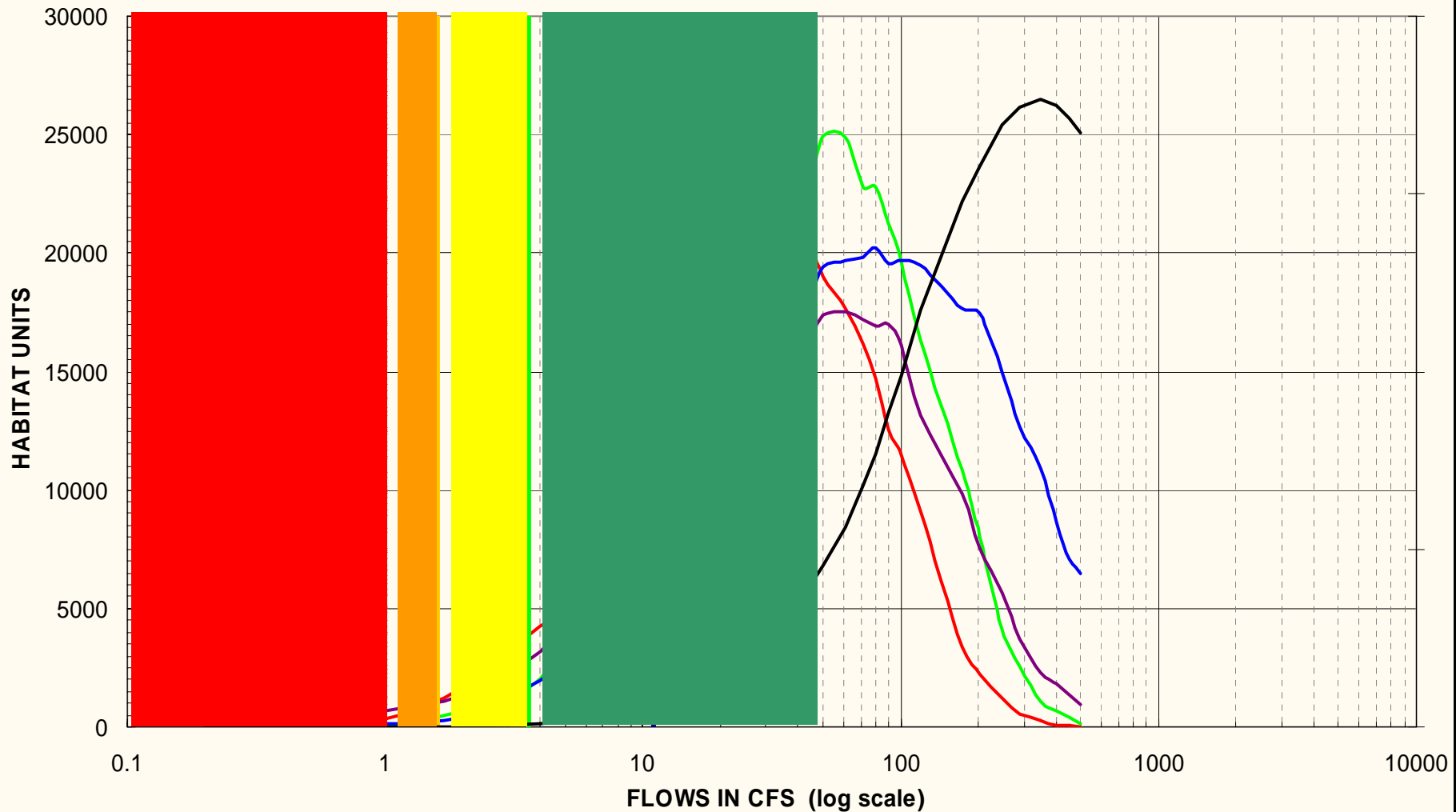
Drought Indicators: Streamflow Statistics

Emergency	Warning	Watch	Normal
< 5 th percentile	5 - 10 th percentile	10 - 25 th percentile	> 25 th percentile

Cootes store	< 1	1 - 1.6	1.6 - 3.6	> 3.6
Mt. Jackson	< 22	22 - 29	29 - 43	> 43
Strasburg	< 75	75 - 85	85 - 160	> 160

Values represent historic Streamflow Statistics for the period low-flow months: August September & October

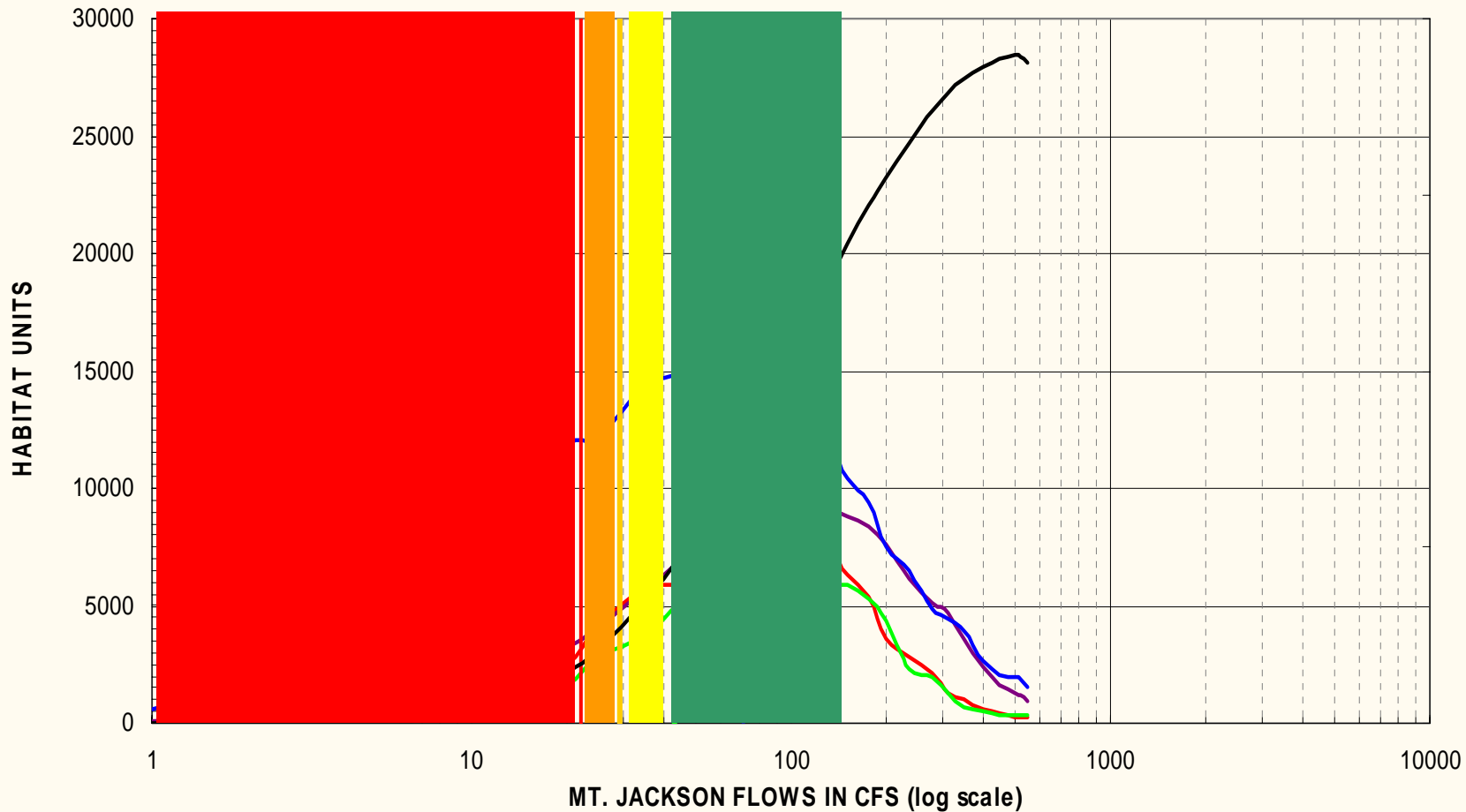
Cootes Store Low-Flow Statistics and Habitat



Cootes store < 1 1 - 1.6 1.6 - 3.6 > 3.6



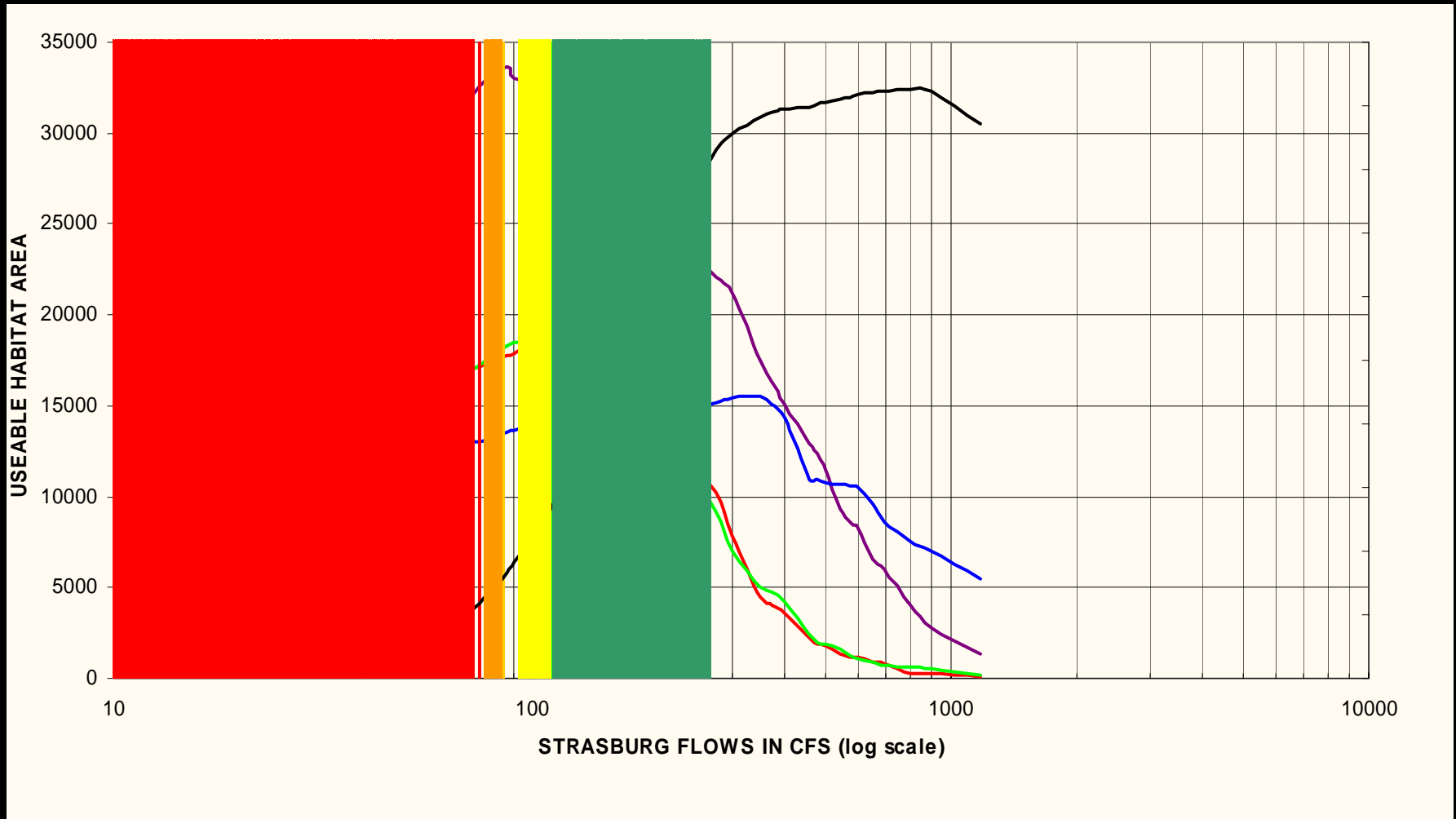
Mount Jackson Low-Flow Statistics and Habitat



Mt. Jackson < 22 22 - 29 29 - 43 > 43



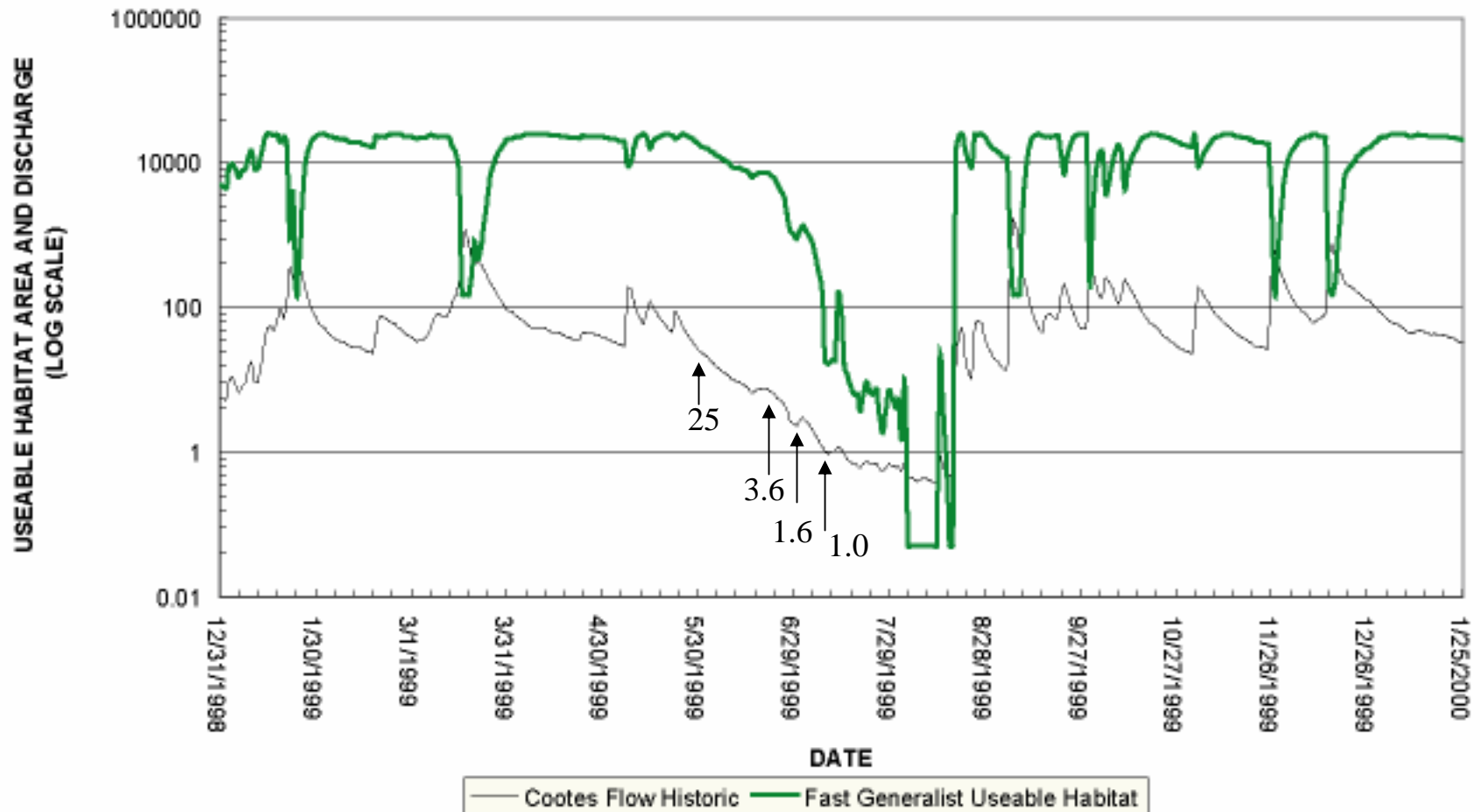
Strasburg Low-Flow Statistics and Habitat



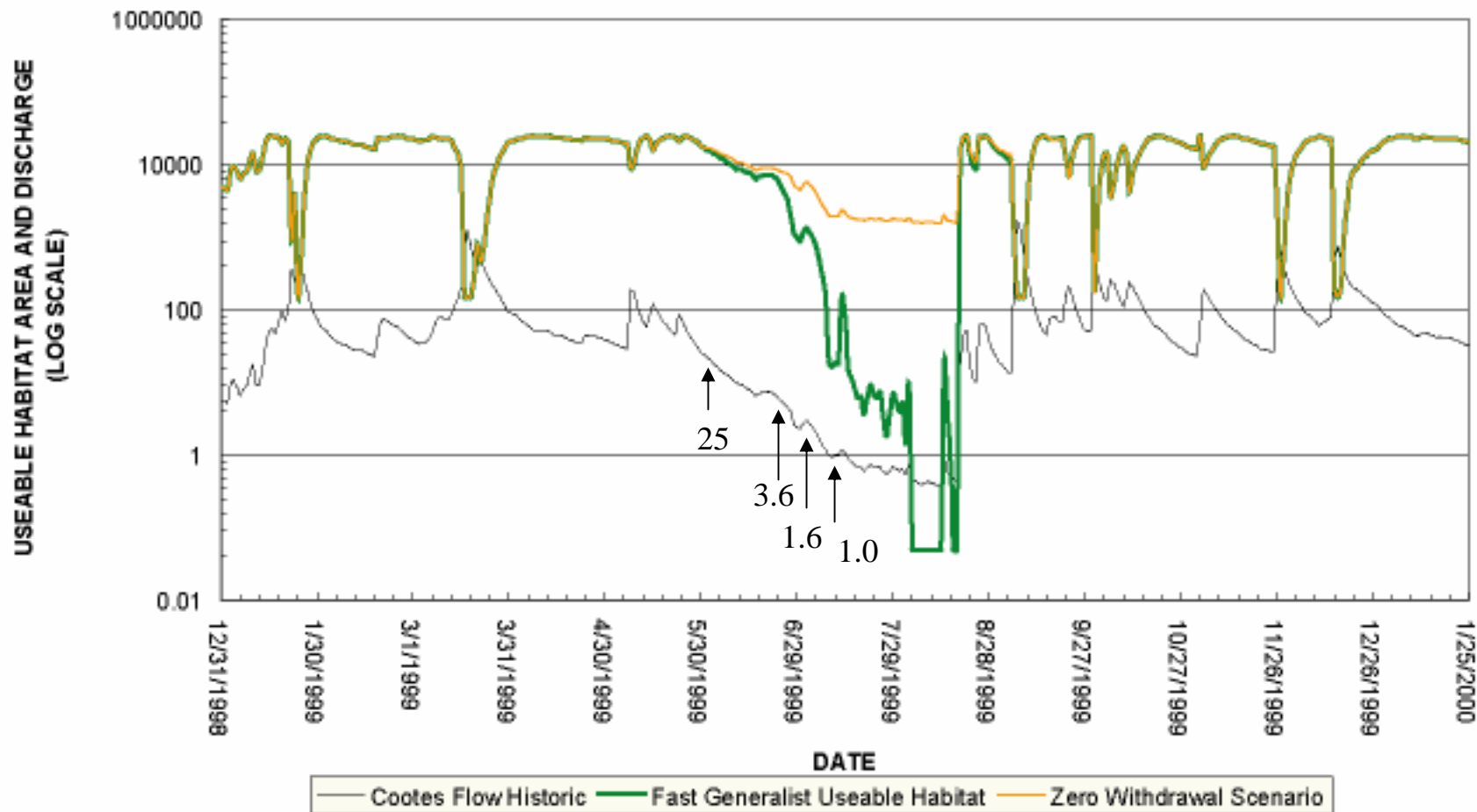
Strasburg < 75 75 - 85 85 - 160 > 160



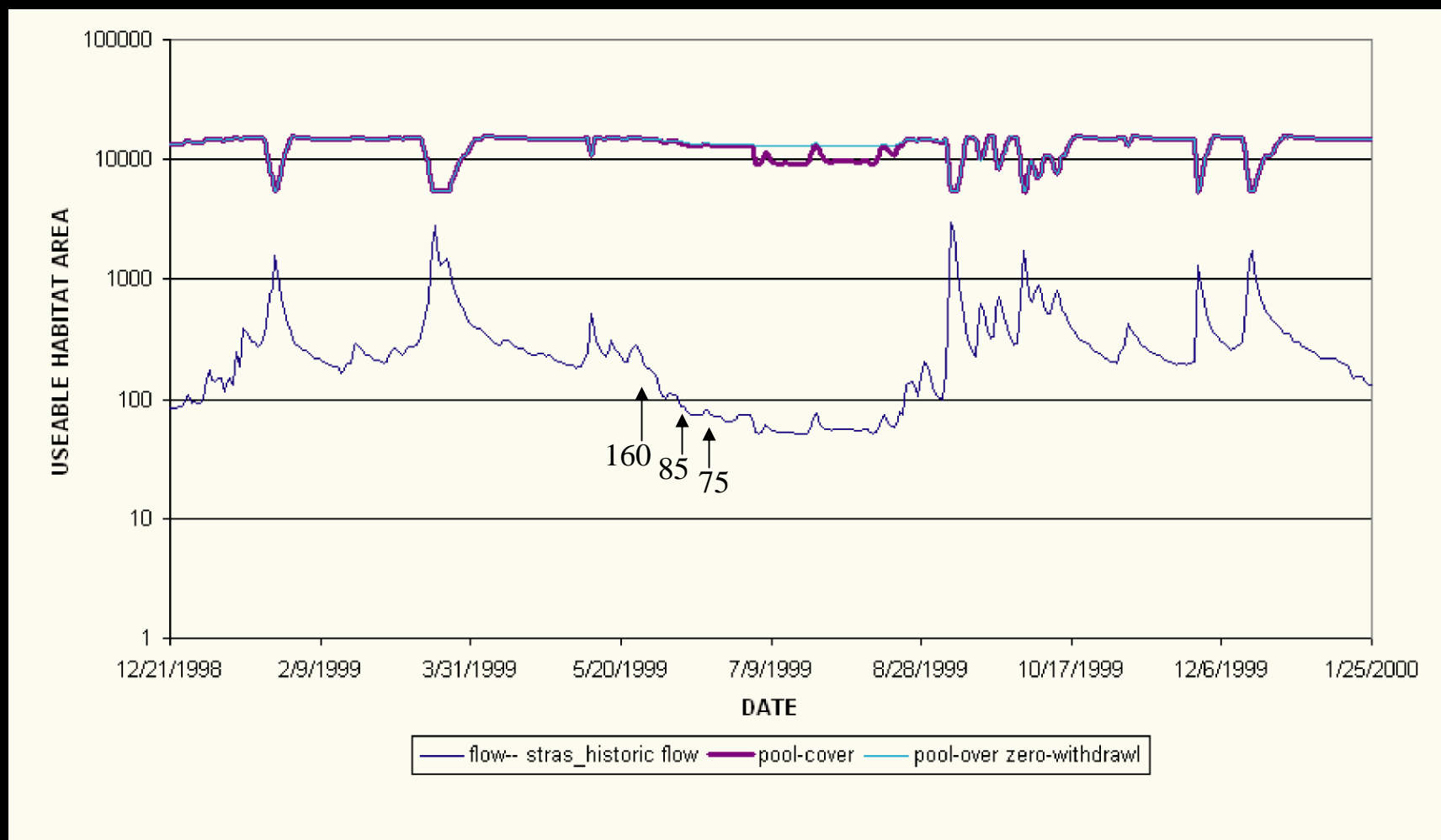
Fast Generalist Time Series 1999 Cootes Store



Zero Withdrawals Time Series 1999 Cootes Store



Zero Withdrawals / Pool Cover Time Series 1999 Strasburg



What Does the Future Hold?

Habitat loss does occur with droughts

Habitat loss can be lessened with water restrictions

10–15 % water-use reductions with mandatory water restrictions (*Virginia Drought Assessment and Response Plan*)

Habitat loss might be increased with greater water use

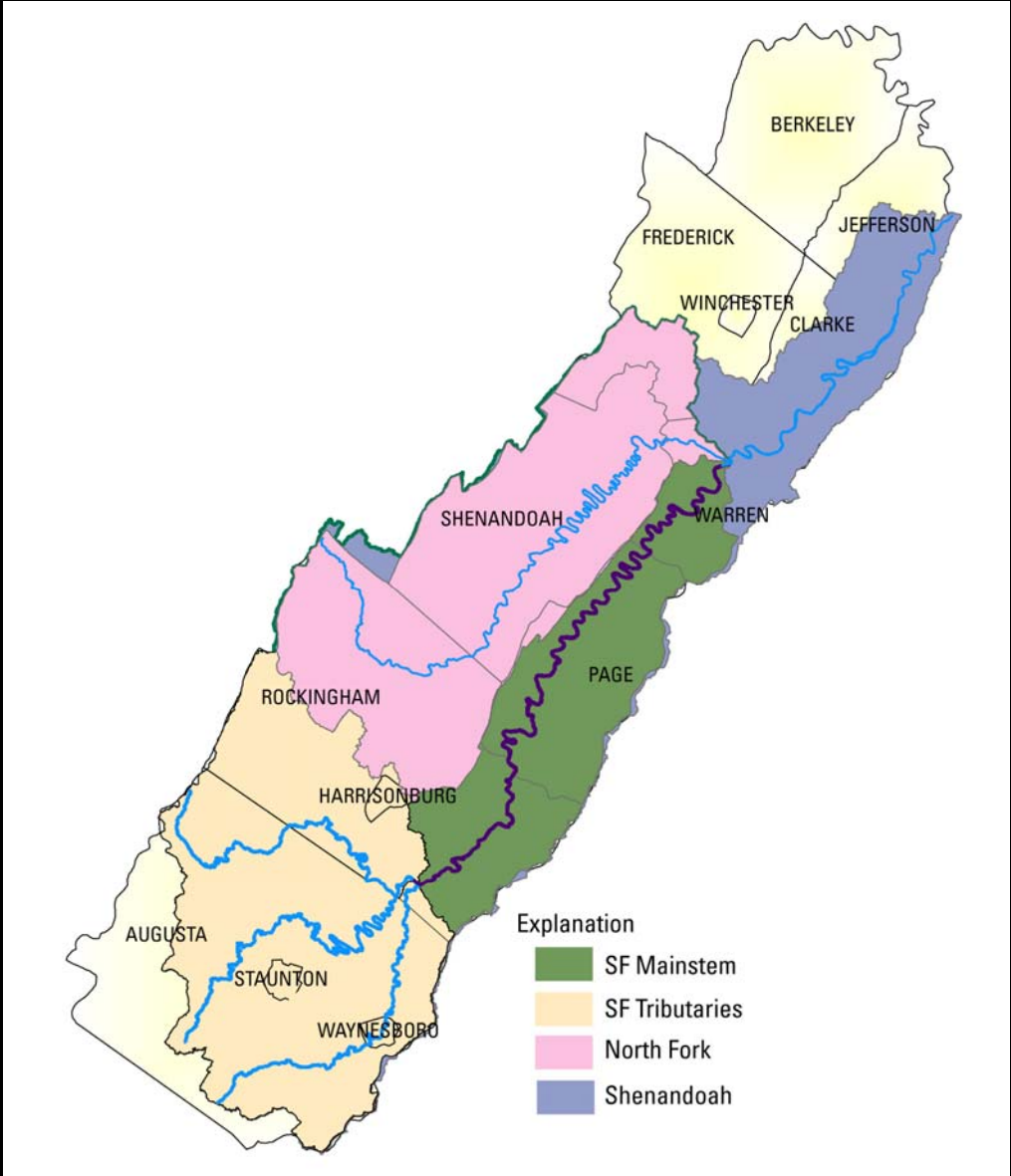
Climate-induced low flows

Withdrawal-related low flows

What will be done if water conservation is not enough?

Major Basins of the Shenandoah Valley

South Fork Shenandoah Study Area (Green)



South Fork Reconnaissance

Virginia Department of Game and Inland Fish
and USGS visit potential research sites



South Fork Reconnaissance



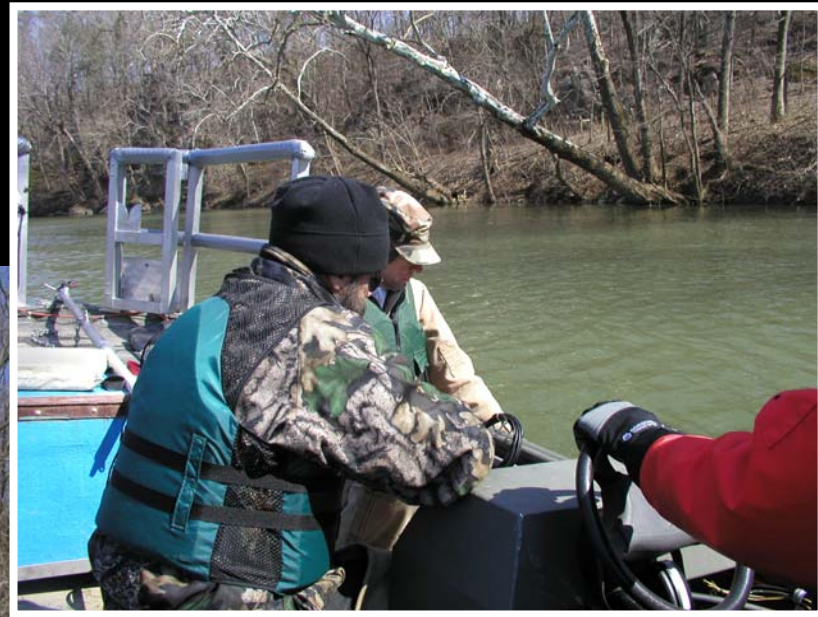
South Fork Reconnaissance

Particle Riffles and shallow water



South Fork Reconnaissance

Measuring Pool Depths



South Fork Reconnaissance

Wildlife on the River



South Fork Reconnaissance



Questions?

