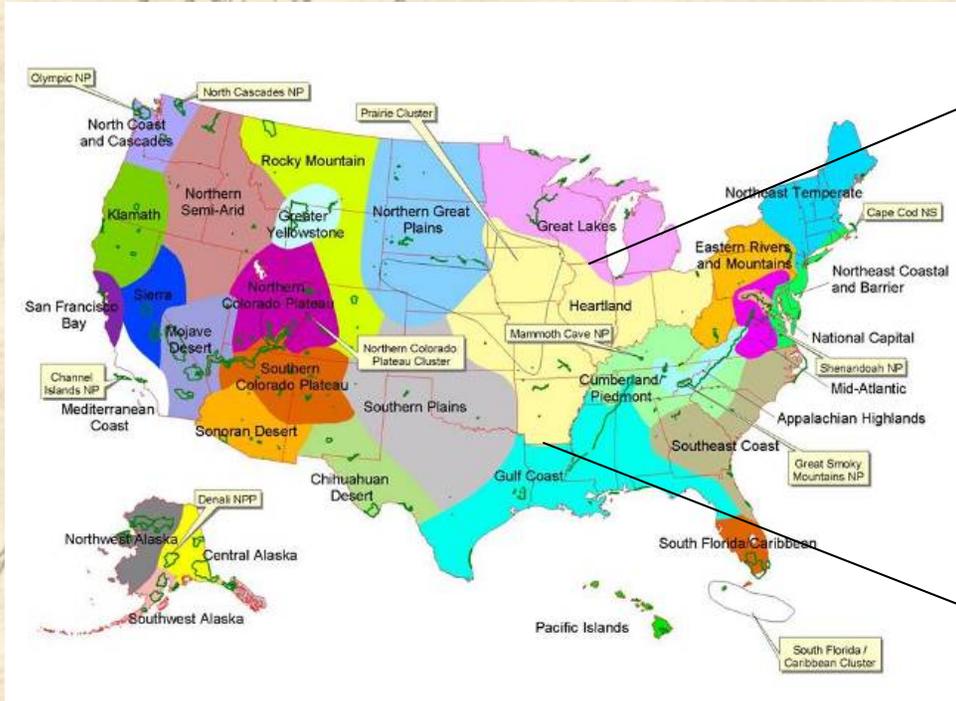




**Heartland Inventory & Monitoring Network
Aquatic Monitoring Program
Wilson's Creek National Battlefield
Republic MO**

**Dr. David E. Bowles, Aquatic Program Leader
c/o Department of Biology
Missouri State University
Springfield MO**

NPS Inventory & Monitoring Networks



Heartland Network

Heartland I&M Network



Purpose of Inventory & Monitoring



- Determine the status/trends in the condition of park resources:
 - Provide early warning of impending threats
 - Provide a basis for understanding and identifying change in complex and variable natural systems
 - Inventory & monitoring are critical for cost effective, accountable resource management informed by scientific information.
 - Vital Signs monitoring



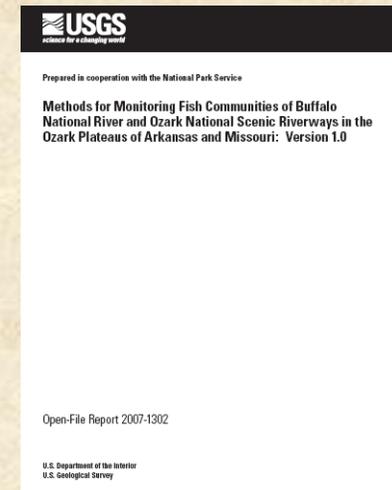
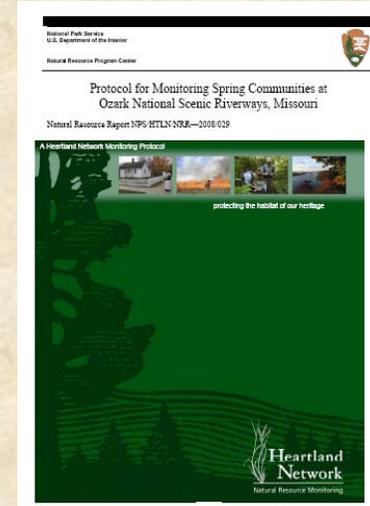
Vital Signs Monitoring



To track a subset of physical, chemical, and biological parameters that represent the overall health of the parks

1. Long-term, ecological monitoring perspective
 - Core staff & dedicated funding
 - Rigorous planning & documentation standards (protocols, reports, pubs)
 - Focus on long-term trends
2. Integration and coordination among parks, programs and agencies
3. Information Management is Critical
 - 1/3 staff time spent managing & analyzing data
 - Database systems and processes to insure data integrity (full-time data manager)
 - Making information available to managers through analysis and interpretation

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Vital Signs Monitoring



Vital signs for aquatic resources center around invertebrates, fish, basic water quality, aquatic vegetation, and geomorphology



Ozark Vital Signs



What are the specific vital signs at our Parks?



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Overview of Aquatic Vital Signs Monitored



- **Community Monitoring**

- **Stream aquatic invertebrates & fish**

- 9 mainstem sites & 15 tribs, OZAR
- 6 mainstem sites & 30 tribs, BUFF

- **Spring communities at OZAR (vegetation, invertebrates, fish)**

- **Physical/Chemical Monitoring**

- **Water chemistry (CORE 5)**

- **Discharge**

- **Instream & riparian habitat features**

- **Stream geomorphology (projected for FY 09)**



Questions?



For more information, please visit our website:
<http://science.nature.nps.gov/im/units/html/>

