Assessing the Nation’s water quality

1. What is its current condition?
2. How has it changed over time?
3. What will be its condition in the future?
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Drivers of change: **Climate**

Source: Figure from K. Hayhoe
Drivers of change: **Land use**

![Forecasted Urban Growth in the Chesapeake Bay Watershed Trend Scenario (2006 - 2025)](image)

Source: P. Claggett
Drivers of change: Management practices
NAWQA Cycle 3 forecasting products

• **Models** that predict how natural factors and human activities may affect future water quality and ecosystem conditions

• **Model-based decision-support tools** for scientists, managers and policy makers
Models provide estimates of change in water-quality conditions and lag times

Source: Kauffman, 2001
Models that predict the suitability of water resources for human and aquatic ecosystem needs

Groundwater
Streams and rivers

Stressors
• Physical
• Chemical

Spatial scales
• National
• Regional
• Watershed and aquifer
Decision-support tools

• Target audience
  – Policy makers
  – Water resource managers
  – Scientists

• Scales range from national to single aquifer or watershed

• Functionality ranges from simple to complex
Currently mapping Total Load. The map is up to date.
Related sessions during the week

• Tue, C6: Dam removal
• Tue, C9: Decision-support systems
• Wed, D4: Climate change impacts on water quality
• Thu, I6: Dam removal