Understanding Regional Water Availability at Select Army Installations

Marc Kodack
Army Environmental Policy Institute

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Outline

- Overview of water availability studies
- Discuss findings and status
  - Findings/recommendations from the pilot study at Fort Bragg and Fort Bliss
  - Application of pilot study methods
    - ❖ Ten CONUS installations
    - ❖ Three overseas installations
- Possible next steps

Overview

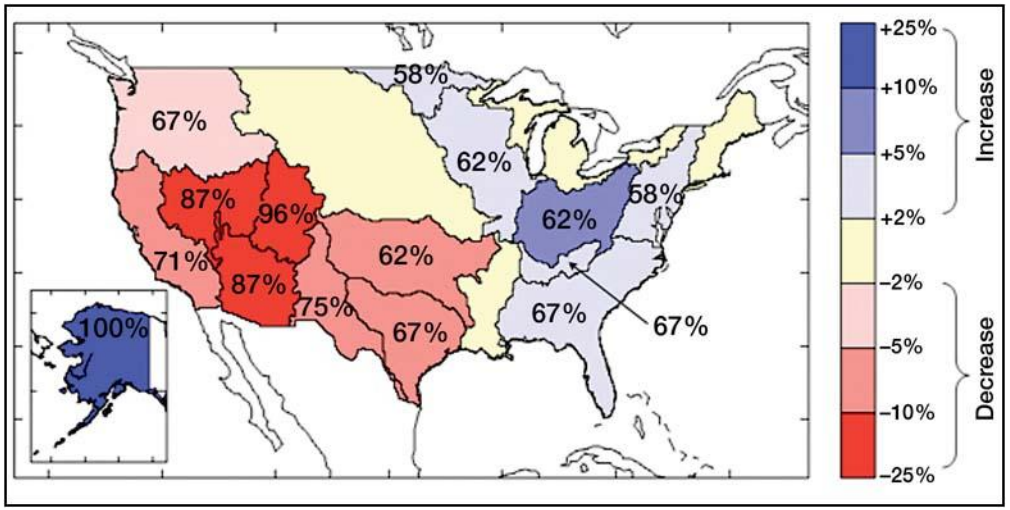
Increasing Demand:

- Population growth
- Overdevelopment
- Aging infrastructure
- Increased energy use
- Agriculture and industrial use

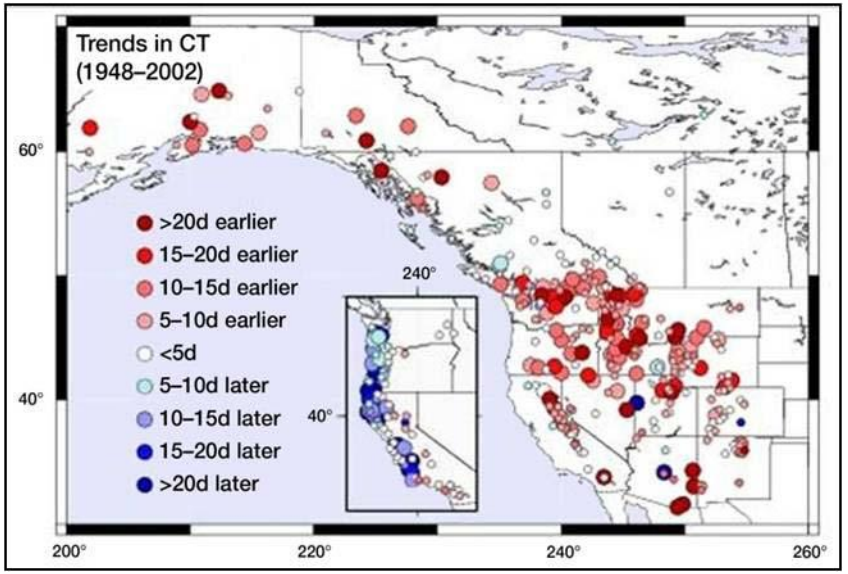
Decreasing Supply:

- Over withdrawal
- Complex water rights
- Climate change
- Cost and financing
- Quality degradation

Effects of Climate Change on Water

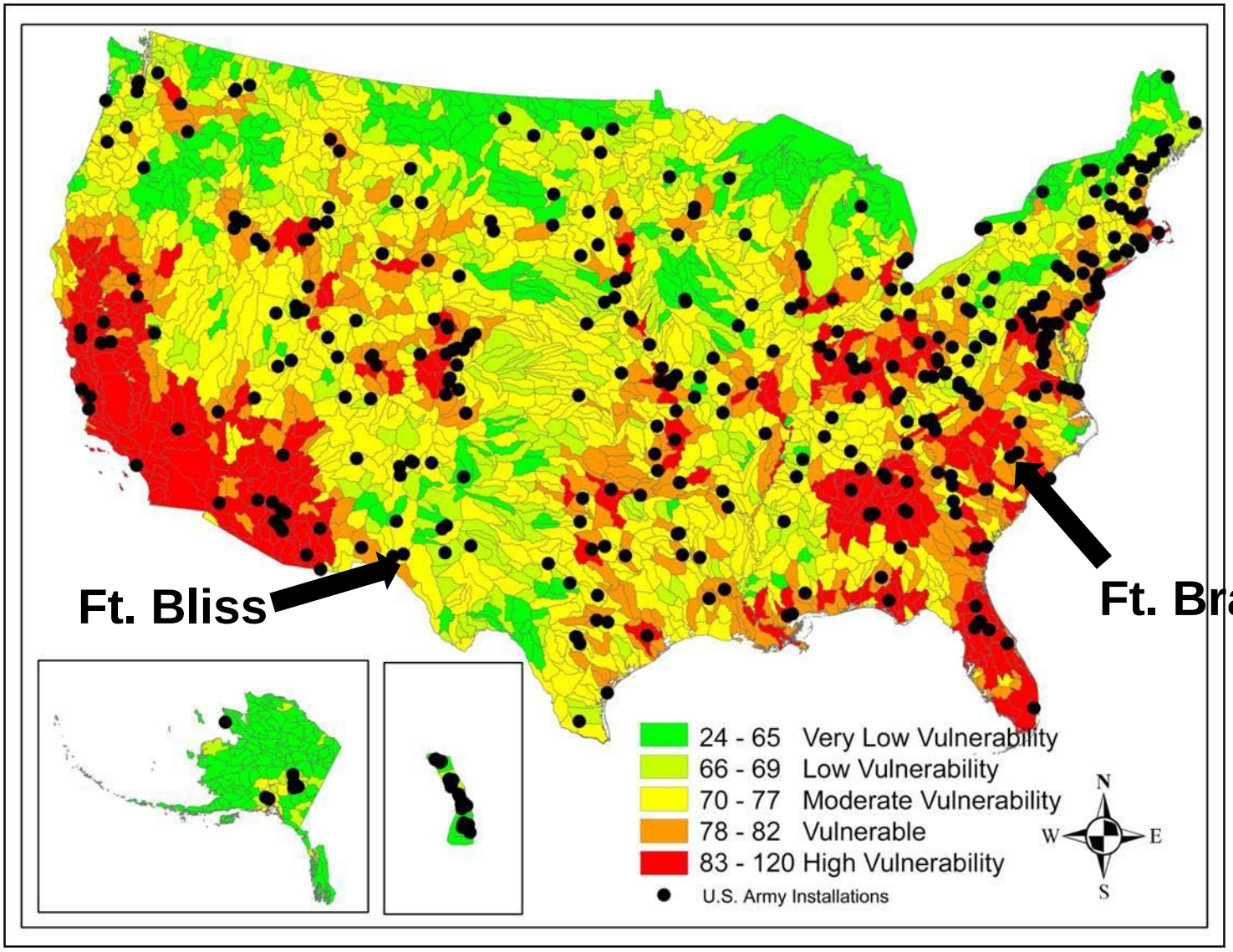


Probability of changes in runoff, 2041-2060



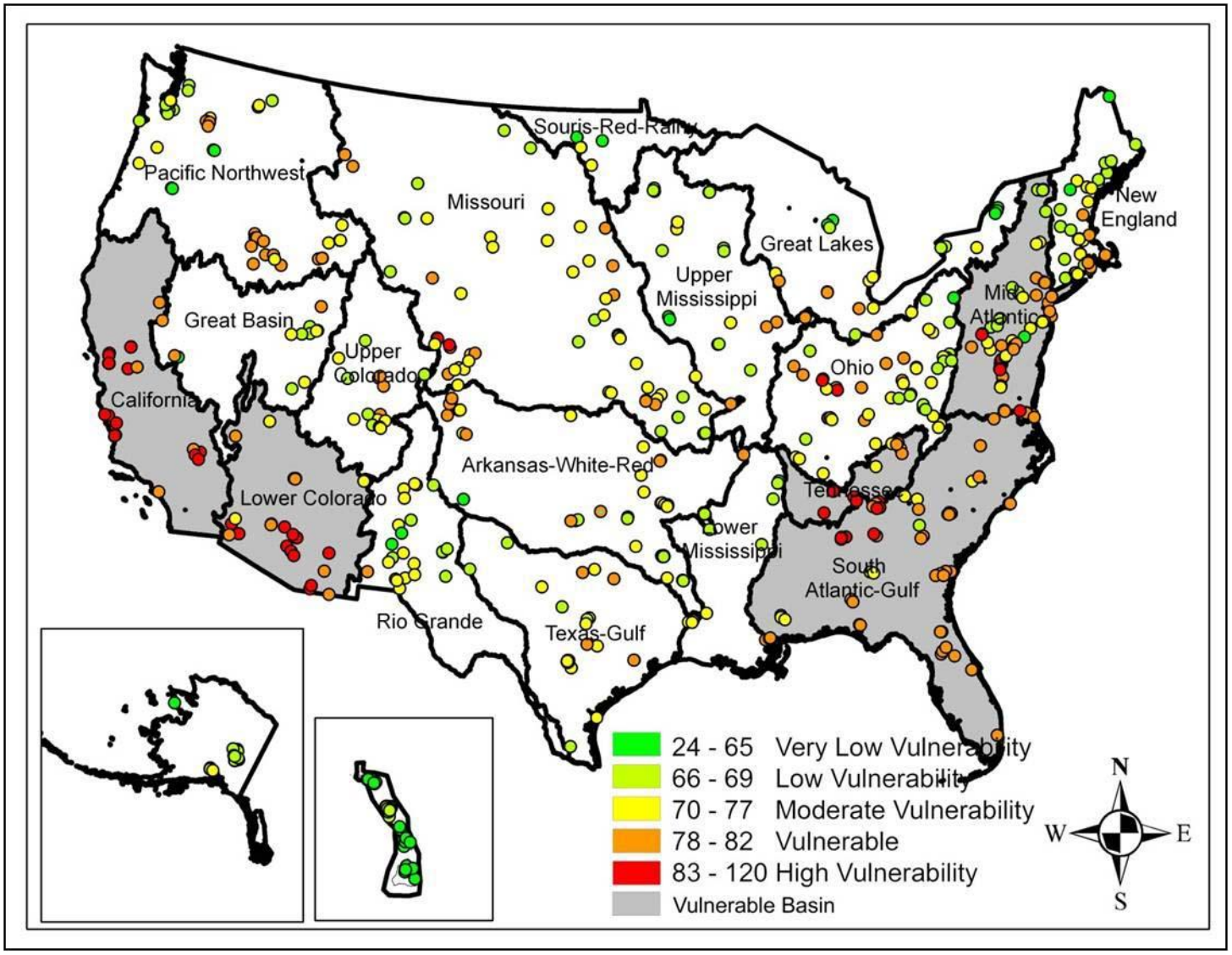
Historic changes in snowmelt runoff timing, 1948-2002

Watershed "Health"



RED watersheds are those having the greatest need for correction, protection, or restoration

Priority Watersheds/Basins



GRAY highlights target basins/ installations for more detailed study and water resource protection

Pilot Study Objectives

- Evaluate the vulnerability of Army installations to potential water shortages over the next 30 years
- List installations by water vulnerability criteria, primary mission, and relative demand for water
- Develop methods and conduct detailed water valuations at select installations
- Identify policy options and technology advances to minimize potential affects of water shortages to Army missions

Pilot Study Findings

Fort Bliss

- The Fort Bliss region is anticipated to receive even less precipitation under global climate change
- Although scientific estimates of aquifer longevity differ, the aquifers are a declining resource and represent a limited non-renewable supply of water
- Existing utility wells have been capped due to salinity and the effect of pumping from new wells is unknown
- Additional demand for waters of the Rio Grande are anticipated, including upstream users in New Mexico
- Establish an aggressive water conservation program to reduce demand on existing wells and the back-up supply
- Institute a program of total water management to include a "purple pipeline" on post, as the utility has done in El Paso

Pilot Study Overall Recommendations

- Emphasize water manager staffing
- Centralize data collection on-post and globally
- Include water efficiency measures in all projects
- Adopt a total water management program
- Emphasize metering/system upgrades
- Review installation water rates/contracts
- Engage local communities in regional planning for sustainable water

Possible Next Steps

- Document tools and findings in public works tech bulletins and on websites
- Prove-out concept for adoption by all CONUS installations
- Develop and apply assessment methods for all overseas regions
- Develop Water Collaboration Portal
- Conduct a water recycling feasibility assessment