When Every Drop Counts: The Public Health Impact of Drought

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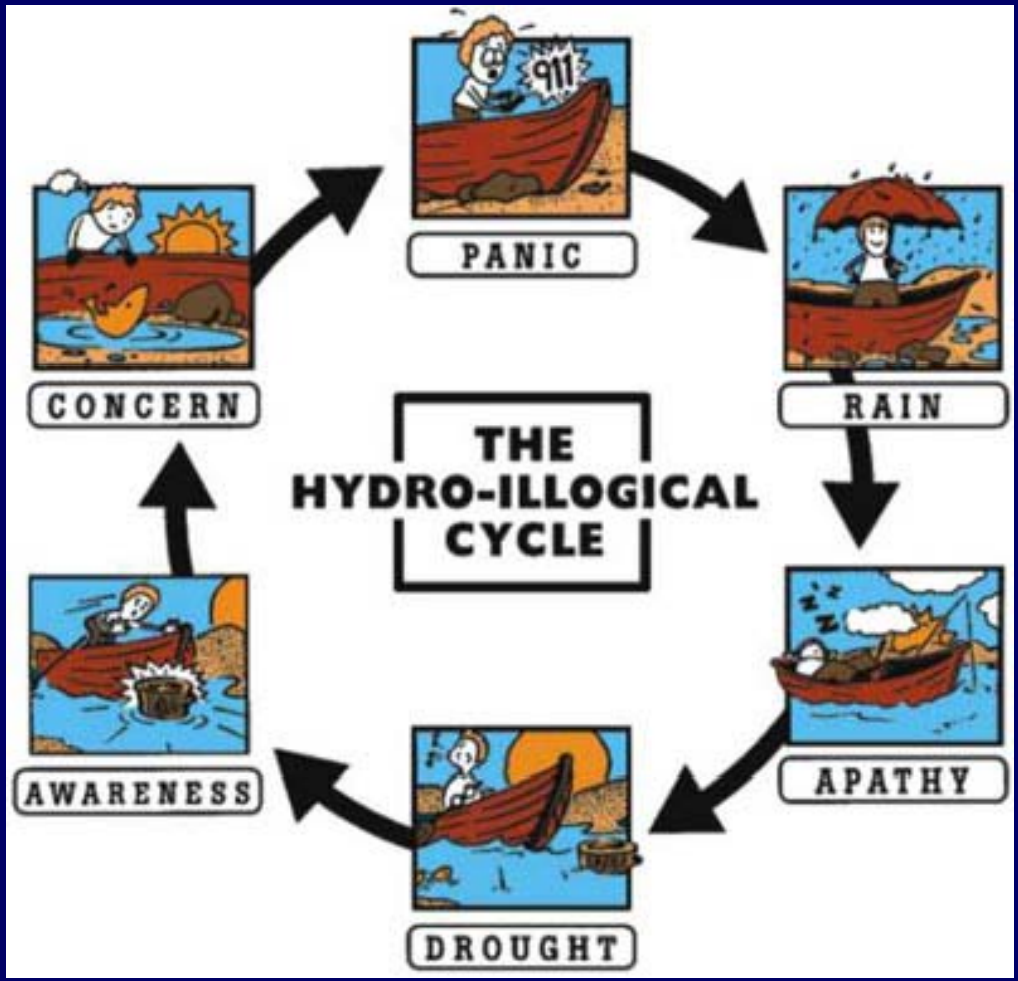
Outline

- Public health effects of drought
- Role of public health and environmental health in planning for drought
- Political implications of drought and need for public health to be involved in drought planning
- How can we reshape environmental health involvement in drought planning?

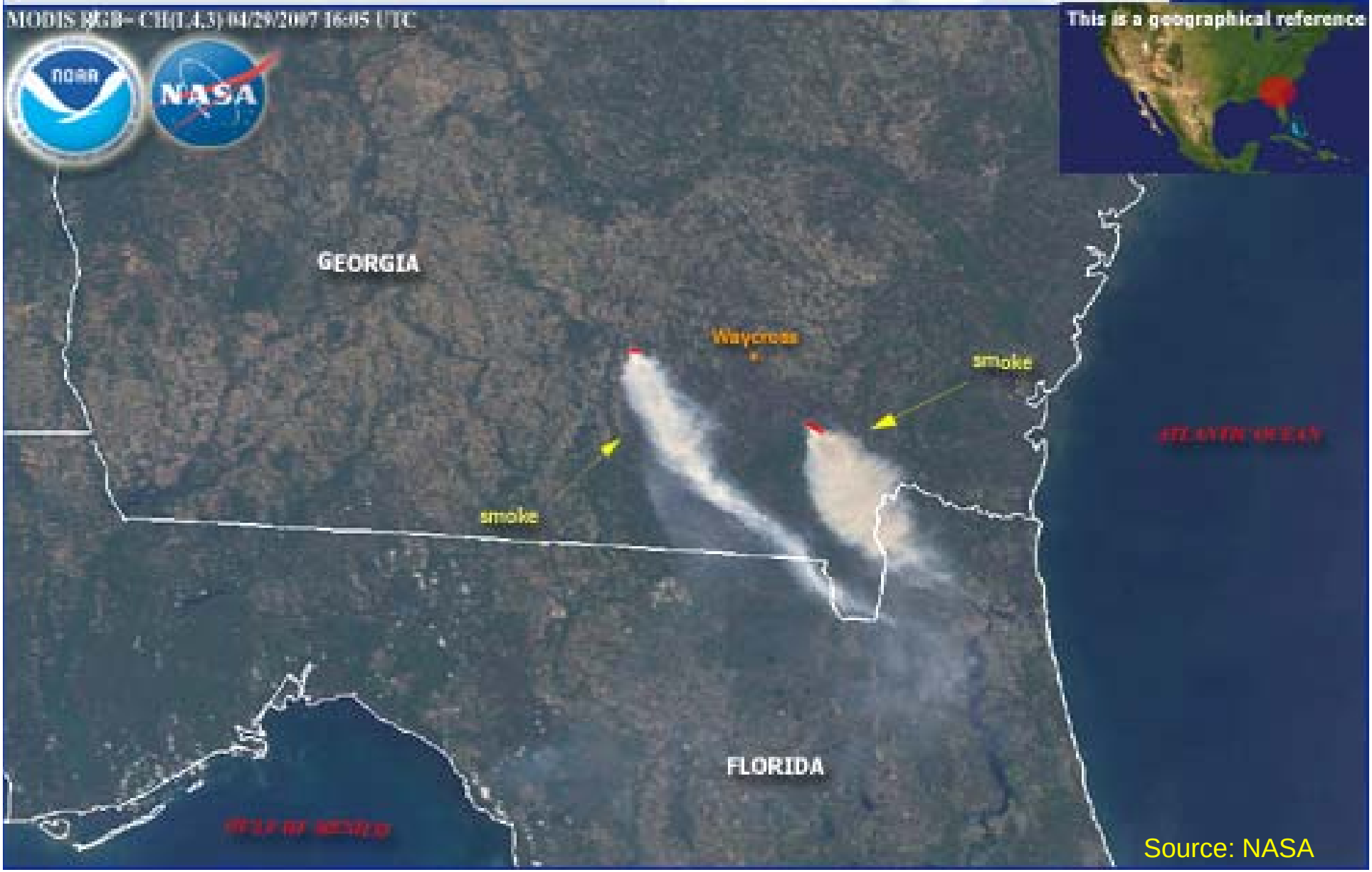
Common Drought Awareness



Public health consequences of drought

- Wildfires leading to other emergency response (evacuations, shelters, etc)
- Air quality / respiratory issues
- Focus on at-risk and special populations (elderly, disenfranchised, dialysis)
- Climate
- Changing patterns of recreational water use
- Distribution of surface water (pathogens, vectors, wildlife habitat)

This MODIS satellite image shows the largest wirefile in Georgia state history has burned an estimated 78,887 acres that are located south of Waycross. Hotspots (detections) can be seen as red dots.



Source: NASA

Air Quality

- Public health involved in wildfire evacuations and sheltering
- Dusty, dry air – asthma and other respiratory issues
- Changing profile of infectious disease – pathogens are different depending on air quality

At risk and special populations

- Susceptibility to contaminated water
- Higher prevalence of heat stroke and dehydration
- Medical treatments that require high volumes of exceptionally well treated water (i.e. kidney dialysis)
- People with compromised respiratory systems (asthma, COPD, CF)

Changing profile of water use

- Less water available for large industry, agriculture
- Water for recreational use may be more contaminated
- Grey water or water re-use research
- Water restrictions for commercial use
- Water restrictions for homeowners

Source: Airtran Airways

Climate trends

- Vectors
- Patterns of rainfall
- Snowpack / snowmelt / glacier shrinkage
- Rising sea levels
- Changing habitats for wildlife
- Regional and local extremes of weather

Political implications of drought and need for public health to be involved in process

- Water rights: downstream needs for individual and environmental use of fresh water
- Rationing at the individual and commercial level
- Prioritization of water use: Hospitals? Nuclear plants? Consumers? Lawns?
- Economics: importance of industrial / agricultural water use to maintaining jobs

Competing priorities – where should the scarce water resources be allocated?

- Water wars between Georgia and Tennessee
- Florida's water needs for shellfish beds, bay area aquatic health, and more
- Colorado River Basin
- Saltwater intrusion into freshwater habitat along coastal areas

Rationing

- Impacts on individual consumers
  - Lawns or xerascaping?
  - Water-efficient appliances
  - Recreational activities involving water
- Impacts on large users
  - Reduced production/manufacturing
  - Loss of jobs

Drought Priority Allocations

- Medical
  - Sanitation, hygiene, food safety, medically vulnerable populations, hospital use
- Industrial
  - Generation of electricity, bottling plants, manufacturing
- Agricultural
  - Impact on food security

The cost of drought: Economic

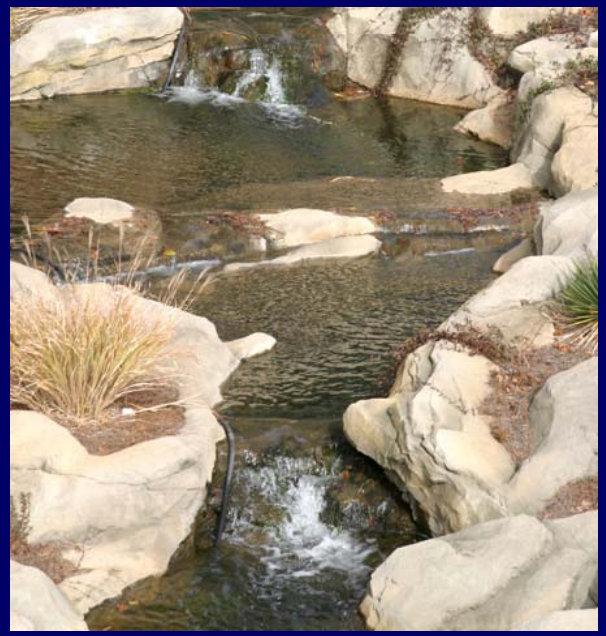
- **Increasingly marginal existence for small water operators**
- **Rate increases**
- **Reduced recreational use and tourism**
- **Damage due to wildfires**
- **Crop failures**

The cost of drought: Environmental

- **Agriculture**
- **Related natural resources**
  - **Wildlife**
  - **Vegetation**
  - **Aquatic life**
- **Recreational water**
- **Reservoirs**

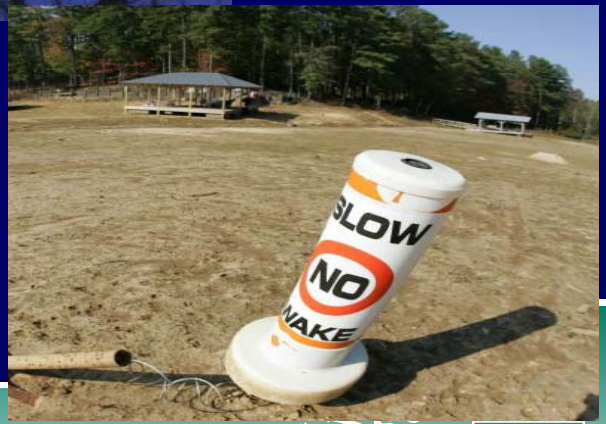
The cost of drought: Social

- **Medical and public health effects**
- **Political implications**
- **Built environment, housing, infrastructure**
- **Recreational gatherings**



The forgotten cost of drought: Health

- Agricultural production
- Food safety
- Vector control
- Potable water
- Wastewater
- Nutrition
- Mental health
- Injury prevention
- Respiratory health



Public Health and Drought Planning

- Public health omitted from drought planning
- Separation of environment and public health since the 1970's
- Importance of conserving water without compromising health

Need for Public Health Involvement in Drought Planning

- Clear role exists
- Voice must be heard
- Need a comprehensive document on public health and drought

CDC Continuity of Operations

- Drought-associated steps developed for emergency situations
- Disruption of core critical functions will not happen
  - Worker safety
  - Animal care
  - Laboratory containment
  - Public health functions
  - Emergency management

Source: CDC

How CDC responded to Atlanta's drought

- WaterSense certification by EPA
  - All new installations are either low-flow or ultra-low-flow fixtures
  - Rainwater capture/ recycling used for outdoor landscaping
  - Green buildings
  - Premium efficiency HVAC equipment

Source: CDC

Political and organizational partners that public health professionals could work with to address drought include:

- All levels of government – city, county, state, federal, tribal
- Water industry professionals
- Hospitals and emergency response professionals
- Professional associations
- Non-governmental organizations

What are the primary drought issues or impacts in your state or region?

How is drought measured within your community?

How can that vary nationally and what are the triggers/warning signs of drought?

What are the levels of response related to planning?

How can community planners and environmental health professionals work together to prepare for drought?

How do you become a more drought-resilient community by working proactively to prepare for adverse conditions?

How can we reshape environmental health involvement in drought planning?

Thank you for your attention!

For more information, please contact:

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