CAFOs
The Missouri Experience

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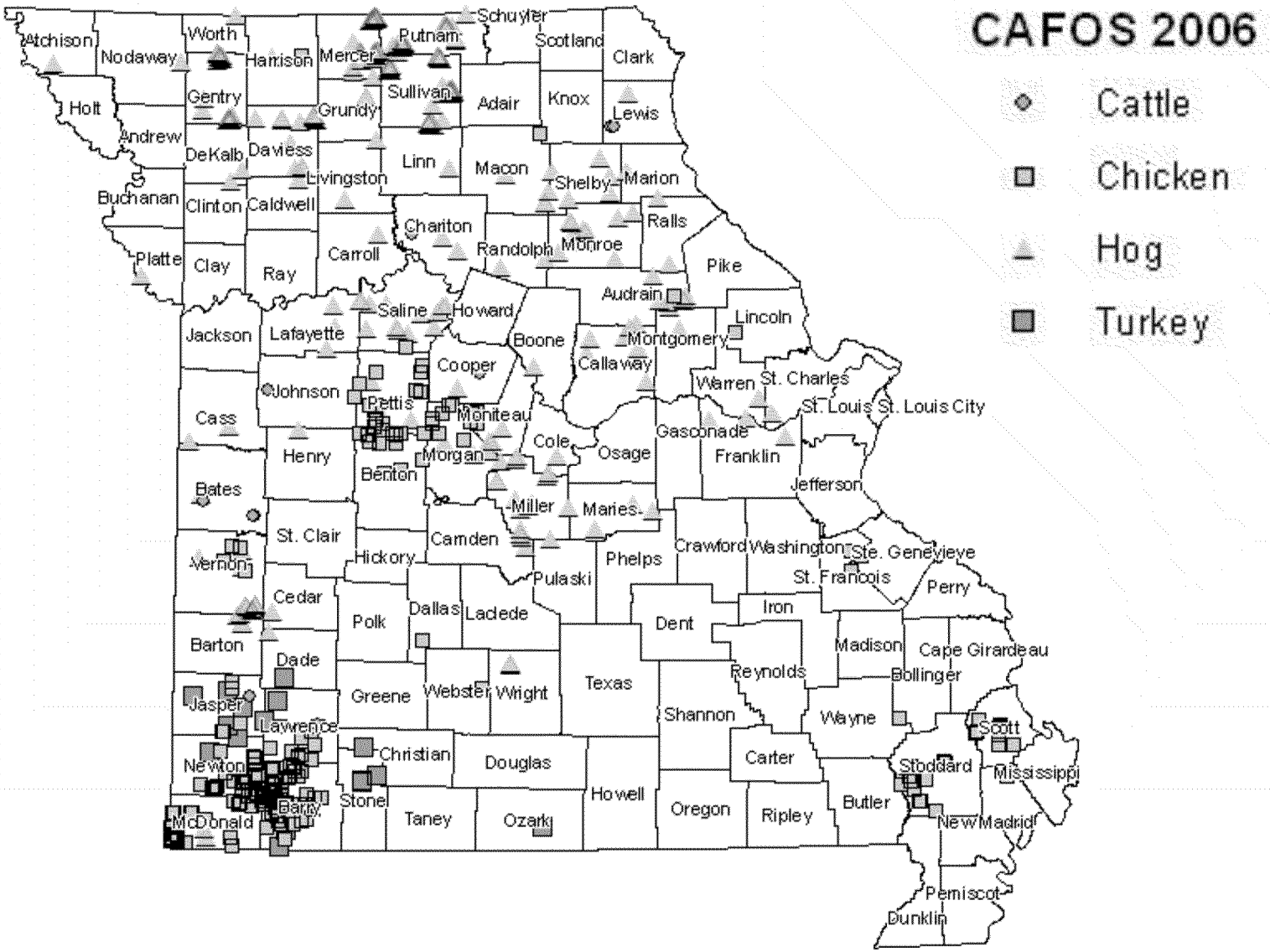
Missouri CAFOs



Why

- Citizen Complaints
  - Ancedotal Accounts of Health Problems
    - Increased Asthma
    - Burning Eyes, Nose, Throat
    - Thrush like Rash
    - Difficulty Breathing
- Other Complaints
  - Sierra Club

Why

- EPA Air Monitoring
  - Pursuing legal action against large hog CAFO
- Missouri Department of Natural Resources Air Monitoring
  - Verified EPA results
  - Multiple Complaints from Citizens

Why

- CAFOs are regulated by the Missouri Department of Natural Resources (MDNR) and the U. S. Environmental Protection Agency
- The Missouri Department of Health & Senior Services (MDHSS) role is to assess health effects from exposure to environmental discharges

How

- Meeting Between MDHSS and MDNR
- MDHSS Staff contacted ATSDR
  - Lack of Scientific Information Available
  - Additional Air Monitoring Needed
  - Exposure Investigation Proposed

How

- Windshield Survey
  - Determine Layout of Largest CAFOs
  - Estimate # of People Living within 1 mile
  - Determine Potential EI Sites

How

- Conducted Door-to-Door Census
  - Two Different Facilities
- Tested Air Monitoring Equipment
  - Tape Meter
  - Innova 1312
- ATSDR Funding & Staff Assistance

DHSS Exposure Investigation

- Collaborated with MDNR
  - Temporary Monitoring Station
  - Co-located Monitoring
- Collaborated with EPA
  - Co-located Monitoring
  - Tube Sampling

What We Found

- Results of the exposure investigation
  - Adverse health effects are not expected based on levels of ammonia found in the air during the exposure investigation.
  - Airborne ammonia exposures during the period of the exposure investigation are classified as a no apparent public health hazard.
  - However, the exposure investigation occurred during a period that may not necessarily represent the period of maximum exposure.

What We Found

- **Results (cont'd)**
  - **In general, air sampling confirmed the results of the community survey (i.e., ammonia levels in the air were higher in the evening and early morning hours than other times of day).**

What We Found

- **Results (cont'd)**
  - **Even though monitors were downwind during only 10% of the monitoring period, ammonia concentrations were significantly higher when the wind was blowing from the CAFO toward the monitor.**
    - **This suggests the site is affecting ambient ammonia concentrations.**

What We Found

- **Results (cont'd)**
  - **No generalization of the data can be made from this exposure investigation to any other site or any date/time different from when it was collected.**
  - **The information is specific to this site at the date and time collected.**

Lessons Learned

- Complex Issue
- Isn't JUST a Public Health Issue
  - Economic Issue
  - Psychological Issue
  - Emotional Issue
  - Community Issue

What Has Happened

- Changes in Operation
  - Contracting w/ Individual Farmers
  - Trying New Technologies
- Counties Passing Ordinances
  - Counties are autonomous
    - County Commission
    - County Board of Health

Where We Are Now

- Odor Work Group Looked at Revising State Air Standards
- MDHSS issued Perspective Paper
  - Currently in Process of Revising

Where We Are Now

- Toxicologist and Other Staff Reviewing Literature
  - 97 Articles Reviewed
    - None are Statistically Valid
    - Rely on Self-Reported Information
    - No Real Time Environmental Sampling
    - No Medical Monitoring of Persons Interviewed

What Is Needed

- Support from the National Level
- Funding
  - Medical Studies
    - Antibiotics/Resistance
    - Steroids
  - Health Studies
    - Long Term Exposure
    - Larger Exposed Population

What Is Needed

- Psychological Studies
  - Mental Stress
- Environmental Studies
  - Groundwater
  - Surface Water
  - Air

Where Are We Headed?

Evidence Based Decision Making

vs

The Precautionary Principle

Most Recent Development

- **Lawsuit filed by Citizens of Arrow Rock, MO against MDNR for issuing a construction permit for a hog CAFO 2+ miles away from the town and adjacent state park**

Additional Information

- **For further information please visit the following websites:**
- **http://www.dhss.mo.gov/EnvirConsult/**
- **http://www.dnr.mo.gov/env/wpp/cafo/**
- **http://agebb.missouri.edu/commag/permit/index.htm**