

2006 National West Nile Virus Conference



8th Annual National West Nile Virus Conference

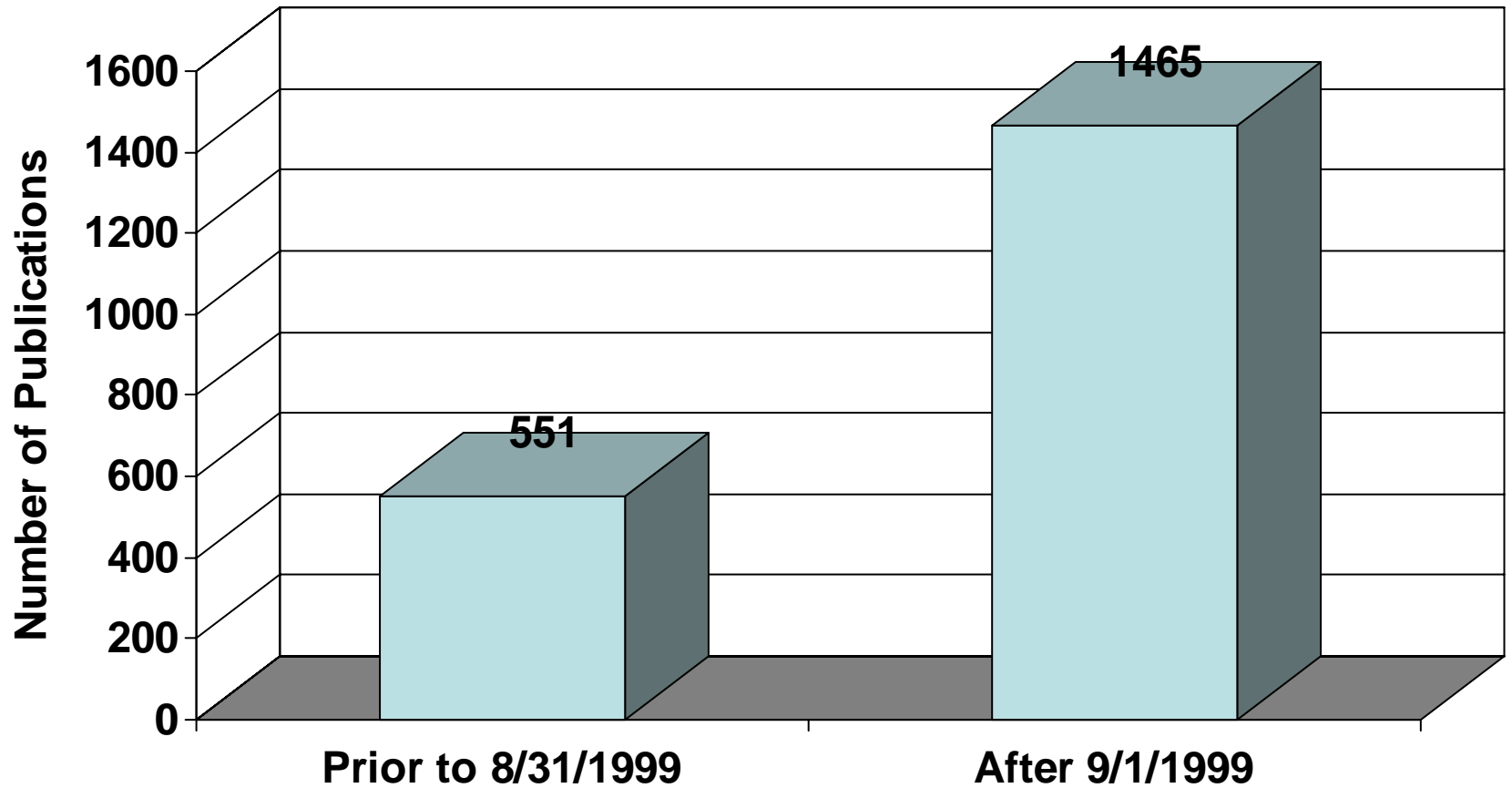


West Nile Virus Science and Public Health

- **Initial goals:**
 - **Develop national response plan**
 - **Identify research priorities**
 - **Share available information**

- **Mature scientific meeting**
 - **Breadth**
 - **Depth**

West Nile Virus Publications*

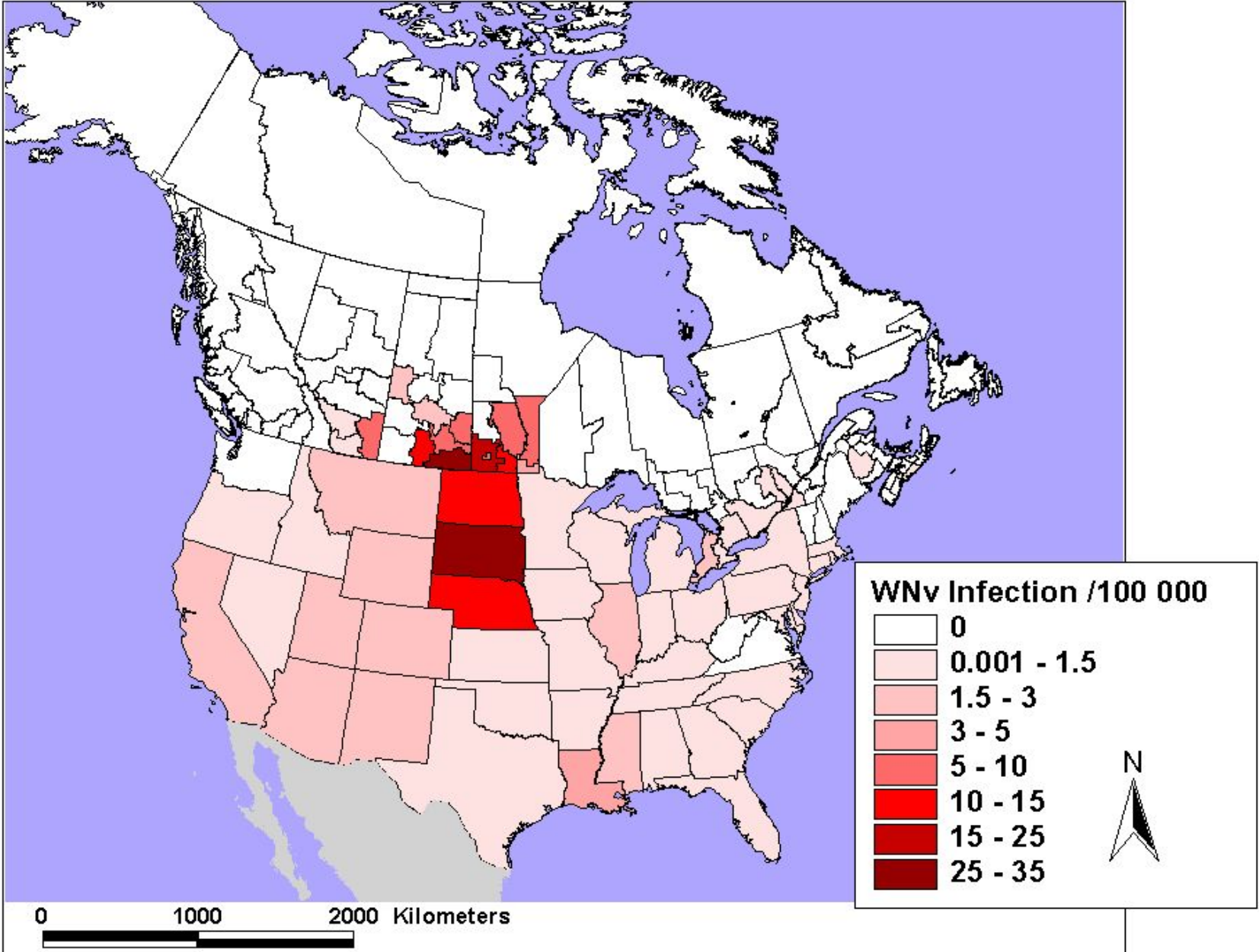


*PubMed Search 2/23/06, West Nile Virus

Surveillance

- **North American WNV epidemic persists**
- **Important alternative sources of infection.**
- **Getting better at planning surveillance and using surveillance data.**
- **Association of habitat parameters with risk**
- **Daring approaches to distribution mapping.**

Rates of Confirmed Human West Nile Virus Infection in Canada and the United States of America in 2005



Epidemiology/Clinical Studies

- **Complex risk factors.**
- **Complex presentations, including persistent infection with encephalitis.**
- **WN Fever not “Benign”**
- **Lengthy recovery**
- **Pediatric disease similar to adult disease.**
- **Better understanding of prognostic indicators.**

Epidemiology/Clinical Studies

- **During a WNV epidemic, you don't want to be:**
- **Old, diabetic, hypertensive, homeless male with a transplanted liver and a drinking problem.**
- **“West Nile Dim Sum”**

Field Biology/Ecology

- **Role of different bird species**
- **Impact of bird community “herd immunity”**
- **Vector mosquitoes show distinct host preferences.**
- **Host use patterns vary spatially/temporally, with significant impacts on transmission intensity.**
- **Small mammals may contribute to amplification.**
- **Host-use shifts may drive epidemics in some areas.**

Field Biology/Ecology

- **Shift to 30% feeding on humans in late Summer in Washington DC:**
- **Staffers running amok in Rock Creek Park while U.S. Congress is in recess?**

Virology

- **Associating genetic with phenotypic characteristics of WNV**
- **Determinants of virulence**
- **Allow better “molecular epidemiology”**
- **Differentiate high/low virulence strains**
- **Model risk based on virus characteristics as well as vector/host/weather parameters.**



Prevention and Control

- **Surveillance programs can quantify WNV transmission levels associated with elevated risk.**
- **Aerial ULV application of pesticides reduces adult mosquito density.**
- **Reducing mosquito density reduces risk of infection.**
- **Repellent use reduces WNV cases.**

Prevention and Control

WNV Risk Factor

= Bite of an Infected Mosquito

WNV Prevention

**= Stop Infected Mosquitoes from Biting
People**

Global Perspective and Preparedness

- **Zoonotic arboviruses are on the move.**
- **WNV response has created a core public health capacity to deal with exotic zoonoses in the United States.**
- **Challenge: Retain capacity to provide rapid, comprehensive public health response.**
- **Could be teaching local media to pronounce Chikungunya or Usutu.**

West Nile Campaign Medallion



"West Nile Lyle"