GREAT LAKES FISH HEALTH COMMITTEE

2007 Special Meeting
Dundee, Michigan
August 14-15, 2007

Minutes
(with attachments)

Submitted By:

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GREAT LAKES FISHERY COMMISSION
2100 Commonwealth Blvd
Ann Arbor, Michigan 48105-1563
Great Lakes Fish Health Committee

2007 Special Meeting

Dundee, Michigan
August 14-15, 2007

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GLFHC Meeting Minutes

August 14 and 15, 2007
Cabela's, Dundee, MI

List of Attendees

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GLFHC Meeting Agenda

August 14 and 15, 2007
Cabela's, Dundee, MI

- Discussion Items – August 14
  - VHS Disinfection Result Analysis – Gary Whelan – August 14 – 1 PM - 2 hours
    - All agencies to provide summaries of results
    - Key Product – Initial future coolwater egg disinfection recommendations for 2008
  - Surveillance Result Analysis – Gary Whelan – August 14 – 3:15 PM - 2 hours
    - All agencies to provide overview of results and interpretation of initial findings
    - Prevalence estimation – Greg Wright
    - Key Product – Initial surveillance recommendations for 2008
  - GLFHC Recommendations without consensus – Greg Wright – 5:15 - 20 minutes
    - Key Product - Whether to attempt to reach consensus
  - Laboratory Capacity – Gary Whelan – August 15 – 8 AM – 1 hour
    - Current Status of Laboratory Availability
    - Potential New Laboratory Capacity
    - Key Product - Initial recommendations on needed future capacity
  - Vaccine Development - Paul Dominowski – August 15 – 9 AM - 1 hour
  - Additional VHSv Discussions – Gary Whelan August 15 – 1:40 PM – 1.5 hours
- Information Items – August 15
  - Guelph VHS Workshop Summary – John Dettmer – August 15 – 10:15 AM – 20 minutes
  - Risk Assessment Document Status – Greg Wright – August 15 – 10:35 AM – 15 minutes
  - Quantitative Fisheries Center Projects – Greg Wright – August 15 – 10:50 AM – 20 minutes
  - EEDv Screening Tool Status – Greg Wright – August 15 – 11:10 AM – 20 minutes
  - Mass Marking Program Status – John Dettmer – August 15 – 11:30 AM – 20 minutes
  - WI SVC Update – Ken Phillips – August 15 – 1:00 PM – 20 minutes
  - Lake Whitefish Natural Mortality Study Update – Mohamed Faisal – August 15 – 1:20 AM – 20 minutes

Introductions and announcements were made.

The chair explained that the goal of this meeting is to develop VHS recommendations for the CLC and discuss agency VHS surveillance plans.

1. **Discussion Items – VHS**
   a. **Disinfection Result Analysis**
      i. **All agencies to provide summaries of results**
      ii. **Key Product – Initial future coolwater egg disinfection recommendations for 2008**

Dave Meuninck compiled a summary of egg disinfection experiments for each agency. Not all agencies have submitted requested information to date. Each agency then reviewed their findings and related VHS information.

Michigan: Walleye eggs from the Detroit River and muskellunge eggs from the St Claire River were exposed to 50 ppm iodophor for 30 min during water hardening and then 100 ppm for 10 minutes afterward. No VHS was isolated from 98 adult walleye pairs or 27 muskellunge pairs, so survival studies were not conducted.

CORA: No exposure study was conducted by CORA. Fish harvested from culture ponds will be tested for VHS.

Indiana: An exposure study was conducted using fertilized muskellunge and walleye eggs. Instead of exposing eggs to 0 and 50 ppm iodophor for one hour, all eggs were mistakenly exposed to 500 ppm and rinsed after 15 minutes. In the end, egg survival and mortality after hatch were normal. Adult walleye and muskellunge were negative for VHS.

Illinois: Northern pike eggs were treated for 60 minutes at 0 and 50 ppm iodophor. No notable difference in mortality has been observed to date, although overall survival is lower than normal, but that may be attributed to the late egg take.

USFWS-LaCrosse: The Genoa hatchery has disinfected eggs with iodophor for five years. Walleye egg survival this year was 48% and northern pike was 33%, but no negative controls were used.

New York: Studies were conducted to address efficacy and survival. For efficacy, VHS-exposed walleye eggs (Oneida Lake) were treated with 0, 50, and 100 ppm iodophor but results were inconclusive. For egg survival, walleye (Oneida lake) and muskellunge (Chatauqua Lake) eggs were treated with 0, 50, and 100 ppm iodophor for 30 minutes during water hardening. Egg hatch and fry survival were the same for each treatment group.

Ohio: Maumee River Walleye were treated with tannic acid, then exposed to 0, 50, 100, 200, 400 ppm iodophor for 30 and 60 minutes. Survival was favorable in most groups although the results may not be released yet.

Minnesota: Several experiments were conducted. In one trial, Lake Superior walleye eggs were surface disinfected with 0, 50, or 100 ppm iodophor for 30 minutes. In another trial, groups were treated during water hardening, surface disinfected, or both. In a third trial, eggs were treated at 0, 20, 30, or 40 ppm for up to 4 hrs. Results are not available yet.

Summary of Agencies Studies: For most studies, the survival of eggs exposed to iodophor was encouraging, but iodophor efficacy in destroying VHS on or in eggs is unknown. The committee needs to make a recommendation to the CLC for agencies to use as guidance. New York will disinfect all eggs produced by NYSDEC facilities in 2008 and Michigan remains undecided. Many uncertainties need to be resolved before committee has enough confidence in disinfection methods. The effect of additives like tannic acid need to be studied.

Recommendations:
1. Agencies will treat all eggs with 50-100 ppm iodophor.
2. Agencies will inspect Broodstock for VHS

b. Surveillance Result

i. All agencies to provide overview of results and interpretation of initial findings

ii. Key Product – Initial surveillance recommendations for 2008

Michigan: In the 2007 surveillance program, the only positive location is Budd Lake. In all, 122 collections were made and 5000 fish were collected but very few came from the upper peninsula. Lampreys tested to date have been negative.

CORA: This was covered in the Michigan report. No VHS was detected in CORA collections.

Indiana: Walleye, striped bass, and hybrid striped bass cultured in the state hatchery system were tested for VHS and all were negative. Fish were stocked after testing was complete. Fish from a number of inland lakes, including Webster Lake, were also tested and all were negative.

USFWS-LaCrosse: Most of the testing was done for state agencies who are reporting here.

New York: From state, private and county hatcheries, 9000 hatchery fish have been tested to date and no VHS has been isolated. From 39 wild locations, six Great Lakes collections were positive.

Ohio: Largemouth bass and bluegill from East Harbor of Lake Erie tested positive for VHS from a collection of 10 species. Fish collected from various fish kills tested negative. They have submitted a proposal to SeaGrant for future research.

Minnesota: Collections focused on fish collected near Duluth on Lake Superior. No VHS was isolated.

Committee Discussion: Continued surveillance is needed with two goals: (1) continue to evaluate and improve detection methods and (2) continue to monitor new locations while investigating new ones. We need to identify how much surveillance we need and develop surveillance plans accordingly. It is difficult to make a plan based on the diversity of Great Lakes and should consult an epidemiologist.

Committee Recommendation: Surveillance needs to continue in the Great Lakes

c. Laboratory Capacity
- **i. Current Status of Laboratory Availability**
- **ii. Potential New Laboratory Capacity**
- **iii. Key Product - Initial recommendations on needed future capacity**

The committee was polled and asked what lab capacity for detection.

CORA: Samples sent to outside labs.

Indiana: Purdue does lab work for the agency but unsure what the capacity is.

USFWS-LaCrosse: Has the capacity to do 20 fish lots per week. USGS-Lamar has fewer staff, so they probably can't do as many.

Ohio: All samples are currently sent to outside labs for testing, but the OH Dept of Ag. will soon be able to handle three lots per week.

Minnesota: Lab is currently running at full capacity and no additional surveillance is possible. If additional surveillance is required, then state sampling will be given higher priority to others.

New York: Has the capacity to inspect 600 fish per week in summer and fall when temporary staff are employed.

CFIA: CFIA has three fish health centers in Canada, but little ability to expand beyond current work flow.

Michigan: Current work capacity is 20 lots per week, although 10 per week is ideal. Samples are often frozen at -80 C. Private hatcheries can send samples to private testing labs.

Recommendation: Lab space is cramped and work flow in labs is maximized.

d. GLFHC Recommendations without Consensus

Since the last meeting, many states have developed and adopted disease regulations. But there are four decision issues we have not reached consensus on. Regulations adopted by some agencies may supersede GLFHC recommendations, thus making further discussion to bring consensus moot. Chair suggested that we make the CLC aware that agencies have already adopted regulations prior to issue consensus within the committee.

Action: Chair has agreed to bring this up with the CLC.

2. Information Items

a. Guelph VHS Workshop Summary

John Dettmers gave a summary of the VHS workshop and presented the major discussion topics from the meeting. Highlights included comparison between US and EU strains of VHS, biosecurity tactics that should be considered, and potential effects to fish populations. The Bi-national surveillance plan was also discussed.

b. Risk Assessment Document Status

Greg Wright discussed an aquatic animal risk assessment for european aquaculture (DIPNET) and discussed the major features. Mohamed Faisal reported that the risk assessment document is almost done and needs to be circulated. Members will need time to edit it. The intent is to send it to the CLC by October and sent independently of the Model Program.

c. Quantitative Fisheries Center Projects

Greg Wright discussed the Quantitative Fisheries Center at Michigan State. The center was developed to address quantitative and data intensive fisheries program needs. They are willing to entertain a wide range of project topics and may conduct research projects. An example for the type of project they would consider is developing a valid collection strategy for pathogen surveillance in a wild fish population. This is important because our current collection strategy is based on hatchery populations. There are many other areas this center may help this committee in the future.

d. EEDv Screening Tool Status

Greg Wright inquired about the progress of this project. Sue Marcquenski replied that the archived EEDv-positive tissue she was aware of is unsalvageable, so it will be difficult to compare recent disease episodes to those that occurred in the 1980's. Ron

Hedrick (UC-Davis) has begun his work to develop an EEDv detection tool and the committee needs to be updated on his findings.

e. Mass Marking Program Status

The GLFC intends to mark all salmonids being stocked into Great Lakes. Agency chiefs secured enough money to purchase 1.5 mass marking trailers and the goal is to have six trailers for region. The same trailer may eventually be used for batch vaccination if we choose to do so. New York has plans to purchase one from another source of funding.

f. Wisconsin SVC Update

Spring Viremia of Carp virus (SVCv) was isolated from moribund common carp in the Mississippi River near LaCrosse, Wisconsin. In all, 79 common carp were collected in pooled samples and tested at the USGS fish health lab in LaCrosse. In 2002, SVC was detected by ELISA in the same location, but no live virus was isolated. It is still uncertain whether native cyprinid species are susceptible.

g. Lake Whitefish Natural Mortality Study Update

Mohamed Faisal updated the committee on factors that influence natural fish mortality which nears completion. 8000 fish were initially tagged and fish were sampled quarterly, although tag loss was problematic. Of the 1300 fish analyzed, only one fish had VHS. Commonly found bacterial pathogens included *R. salmoninarum*, *Carnobacteria*, motile *Aeromonas*, and an assortment of others. He suggested that Diporeia may harbor fish pathogens.

h. Additional Discussion- LMBV Research update

Powerpoint

Mohamed Faisal gave a brief summary of his LMBV work. Stained tissue sections were shown to highlight key lesions. He found that cell culture-negative fish often had clinical signs and were antibody-positive. Mortality seems to occur when PCR is positive, lesions appear, cell culture is positive and antibody development occurs.

i. Additional VHSv Discussions

Powerpoint

Gary Egrie gave a summary of the VHS surveillance program proposed by USDA-APHIS. The proposal was awarded $1.5 M with $360K for NVSL use, $250K for public affairs, and $890K for state surveillance. Nineteen states are eligible to cooperate in this project and receive money and the eight Great Lakes states can receive money for surveillance or compliance programs. Cooperating agencies need to finalize agreements

with APHIS by 9/30/07. Hydrologic Unit Codes (HUC) will be used rather than state boundaries in this study. The susceptible species list will also be updated.

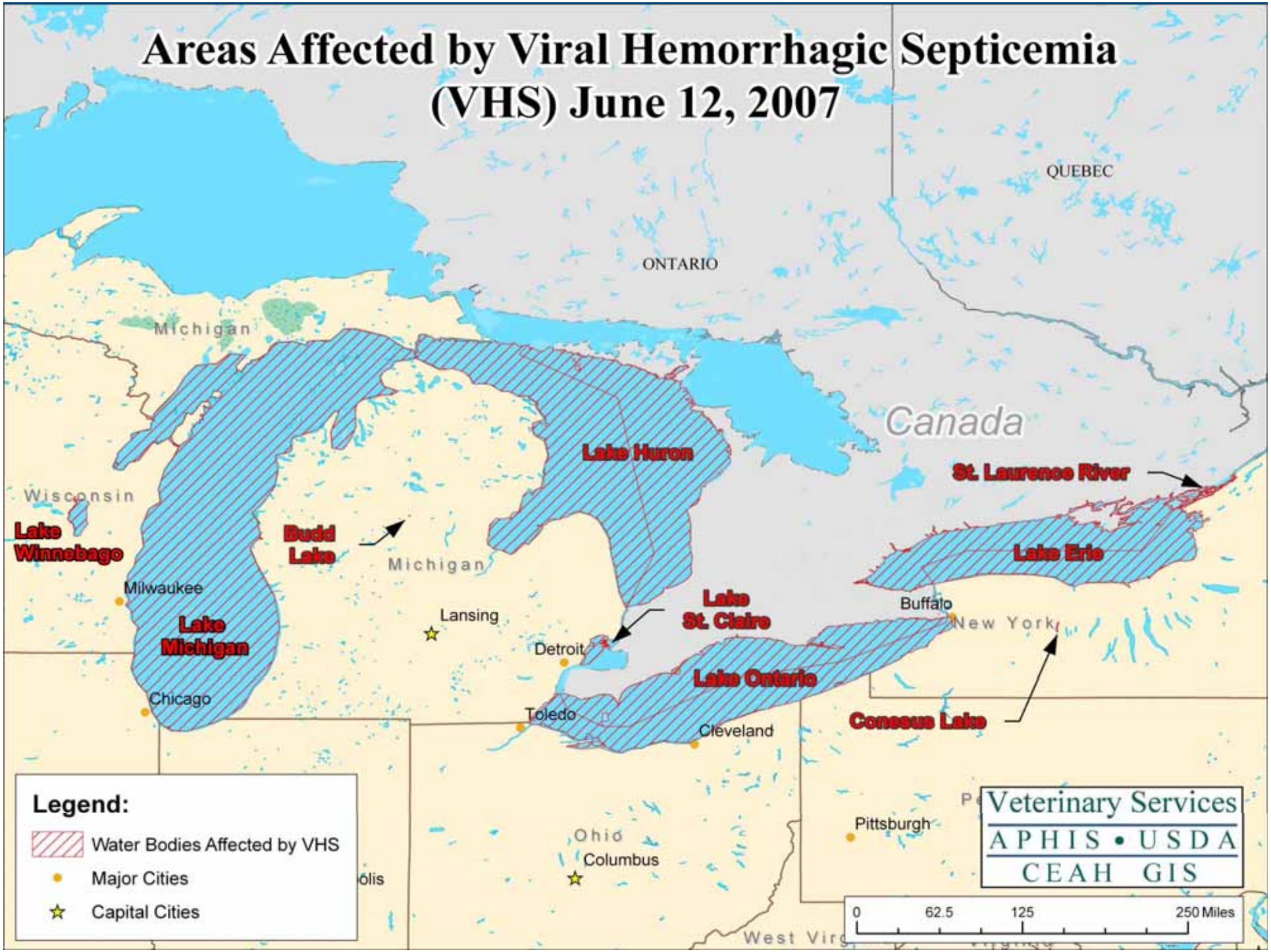
Closing Comments

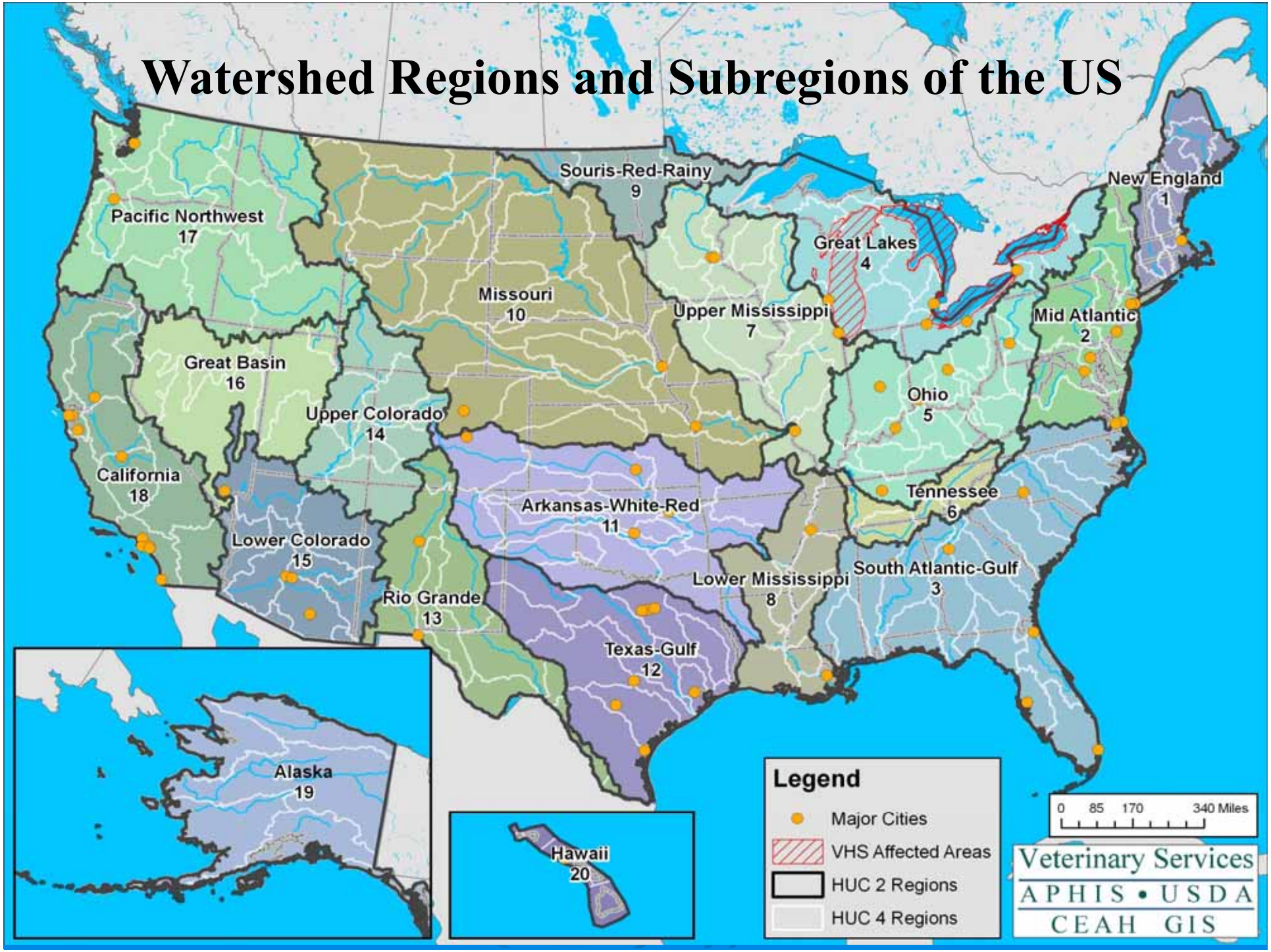
We will have one or two conference calls before our winter meeting in January, 2008. The committee was advised to begin plans for the APHIS surveillance program.

Regulating 'VHS Affected Areas'

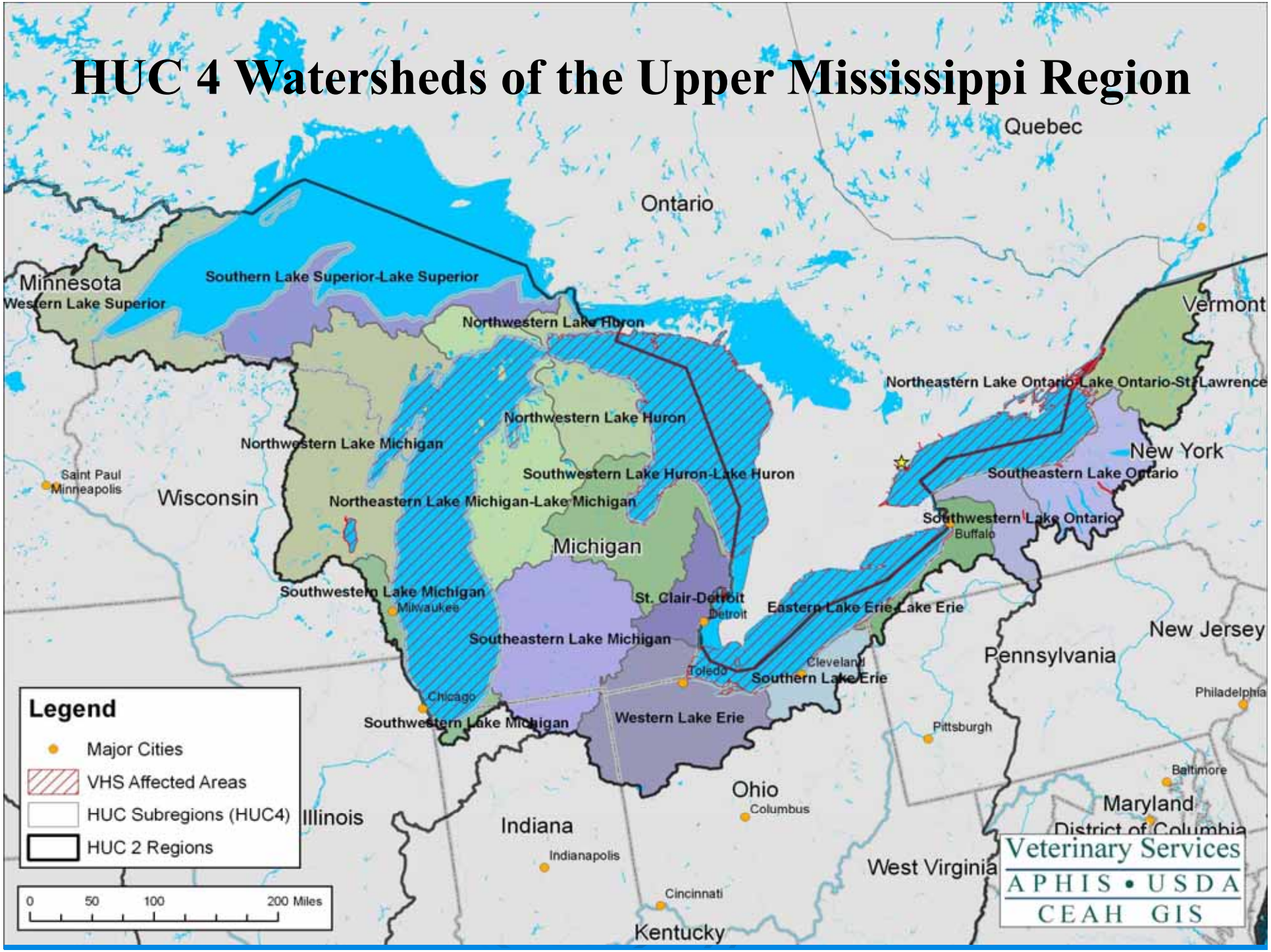
Great Lakes Fish Health Committee
August 15, 2007
Dundee, MI

Dr. Gary Egrie
USDA APHIS Veterinary Services

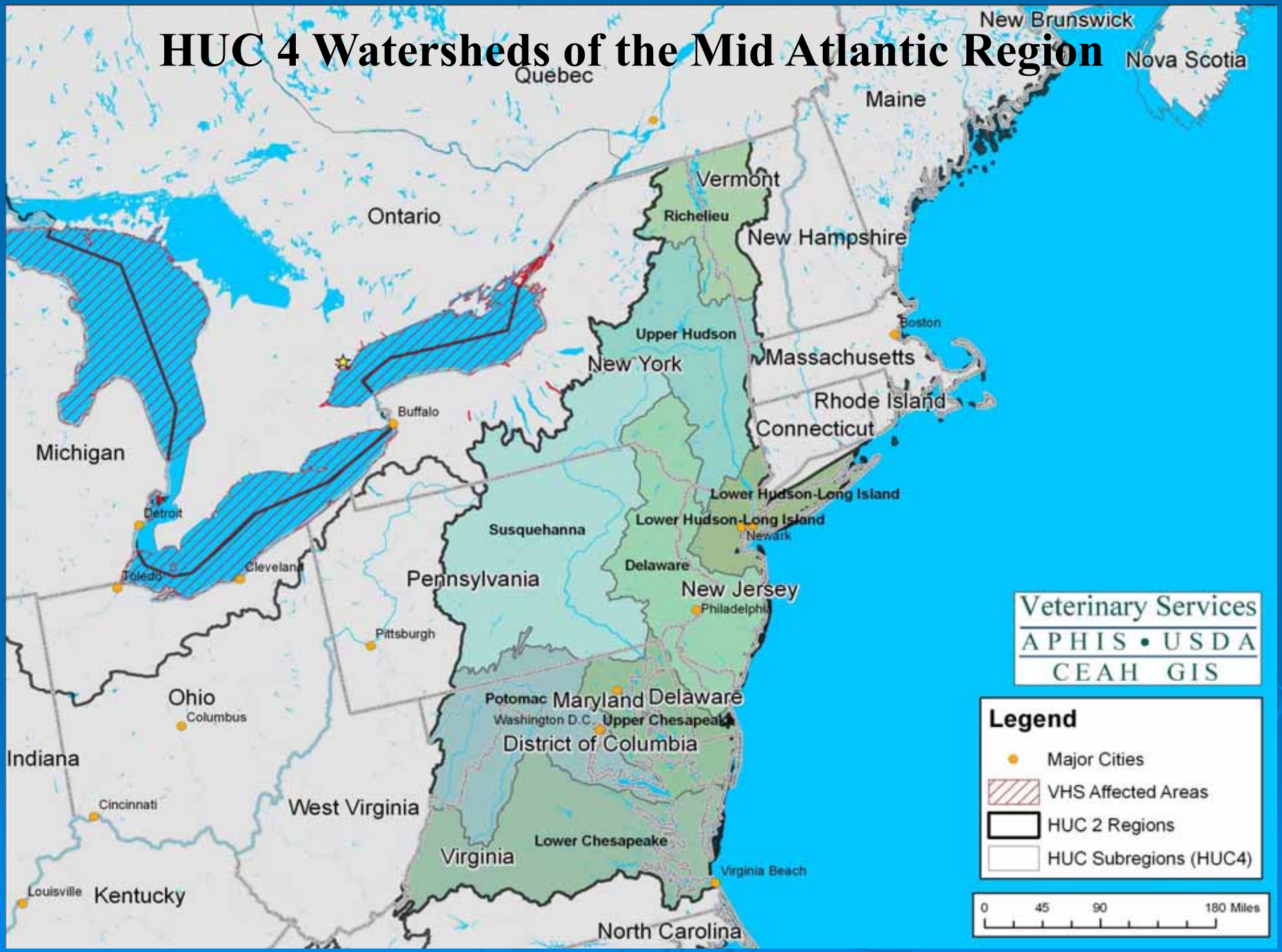

Areas Affected by Viral Hemorrhagic Septicemia (VHS) June 12, 2007
QUEBEC
ONTARIO
Michigan
Canada
Lake Huron
St. Laurence River
Wisconsin
Lake Winnebago
Budd Lake
Michigan
Lake Erie
Milwaukee
Lake Michigan
Lansing
Lake St. Clair
Buffalo
New York
Detroit
Lake Ontario
Chicago
Toledo
Cleveland
Conesus Lake
Pittsburgh
Ohio
Columbus
West Virg
Legend:
Water Bodies Affected by VHS
Major Cities
Capital Cities
Veterinary Services
APHIS • USDA
CEAH GIS
0
62.5
125
250 Miles

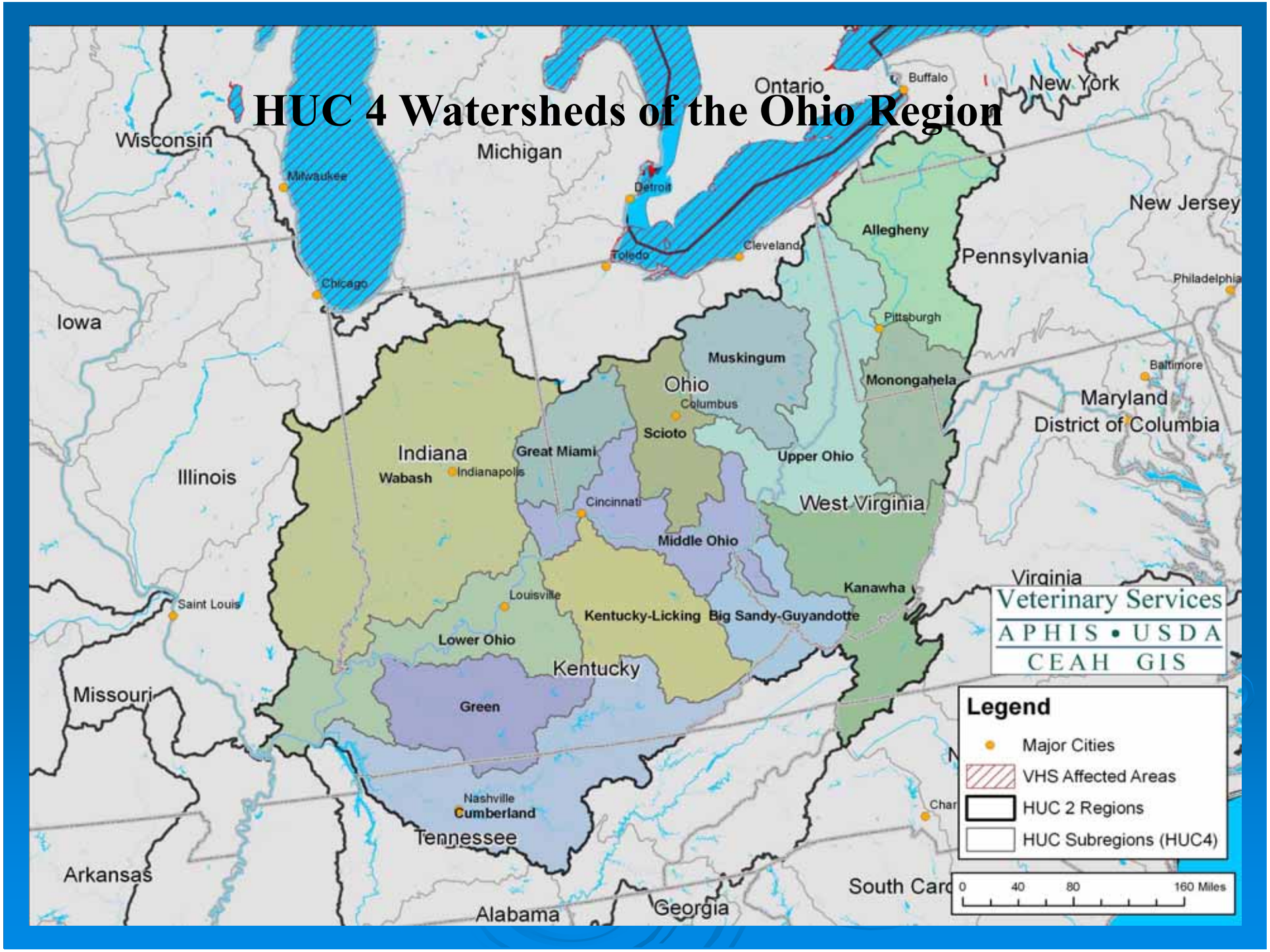

Watershed Regions and Subregions of the US
Souris-Red-Rainy
9
New England
1
Pacific Northwest
17
Great Lakes
4
Missouri
10
Upper Mississippi
7
Mid Atlantic
2
Great Basin
16
Ohio
5
Upper Colorado
14
California
18
Tennessee
6
Arkansas-White-Red
11
Lower Colorado
15
South Atlantic-Gulf
3
Lower Mississippi
8
Rio Grande
13
Texas-Gulf
12
Alaska
19
Hawaii
20
Legend
Major Cities
VHS Affected Areas
HUC 2 Regions
HUC 4 Regions
0 85 170 340 Miles
Veterinary Services
APHIS • USDA
CEAH GIS

HUC 4 Watersheds of the Upper Mississippi Region



HUC 4 Watersheds of the Mid Atlantic Region




HUC 4 Watersheds of the Ohio Region
Ontario
Buffalo
New York
Wisconsin
Michigan
Milwaukee
Detroit
New Jersey
Allegheny
Cleveland
Toledo
Pennsylvania
Chicago
Philadelphia
Iowa
Pittsburgh
Muskingum
Baltimore
Ohio
Monongahela
Columbus
Maryland
District of Columbia
Scioto
Indiana
Great Miami
Upper Ohio
Illinois
Wabash
Indianapolis
Cincinnati
West Virginia
Middle Ohio
Virginia
Kanawha
Saint Louis
Louisville
Kentucky-Licking
Big Sandy-Guyandotte
Lower Ohio
Kentucky
Missouri
Green
Nashville
Cumberland
Tennessee
Arkansas
South Carc
Alabama
Georgia
Veterinary Services
APHIS • USDA
CEAH GIS
Legend
Major Cities
VHS Affected Areas
HUC 2 Regions
HUC Subregions (HUC4)
0
40
80
160 Miles


HUC 4 Watersheds of the Great Lakes Region
Saskatchewan
Manitoba
Ontario
North Dakota
South Dakota
Nebraska
Iowa
Minnesota
Wisconsin
Michigan
Illinois
Indiana
Ohio
West Virginia
Missouri
Mississippi Headwaters
St. Croix
Chippewa
Minneapolis
Saint Paul
Minnesota
Upper Mississippi-Black-Root
Wisconsin
Milwaukee
Detroit
Toledo
Cleveland
Upper Mississippi-Maquoketa-Plum Rock
Des Moines
Chicago
Upper Mississippi-Iowa-Skunk-Wapsipinicon
Upper Illinois
Omaha
Columbus
Lower Illinois
Cincinnati
Upper Mississippi-Salt
Kansas City
Saint Louis
Louisville
Upper Mississippi-Kaskaskia-Meramec
Wichita
Legend
Major Cities
VHS Affected Areas
HUC Subregions (HUC4)
HUC 2 Regions
0
50
100
200 Miles
Veterinary Services
APHIS • USDA

Additional Comments

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