



Public Health Potpourri 2015 Biology Seminar

Presented by:

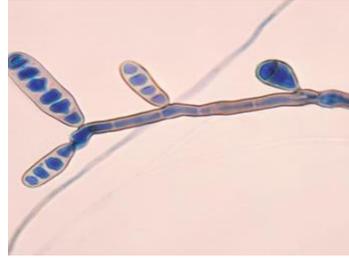
**John J. Lanza, MD, PhD, MPH, FAAP
Director, Florida Department of Health
In Escambia County**

Topics to Be Covered

- **My FDOH Disaster Experiences**
- **Toxic Release Inventory**
- **Vibrio vulnificus**
- **Public Health in Africa**

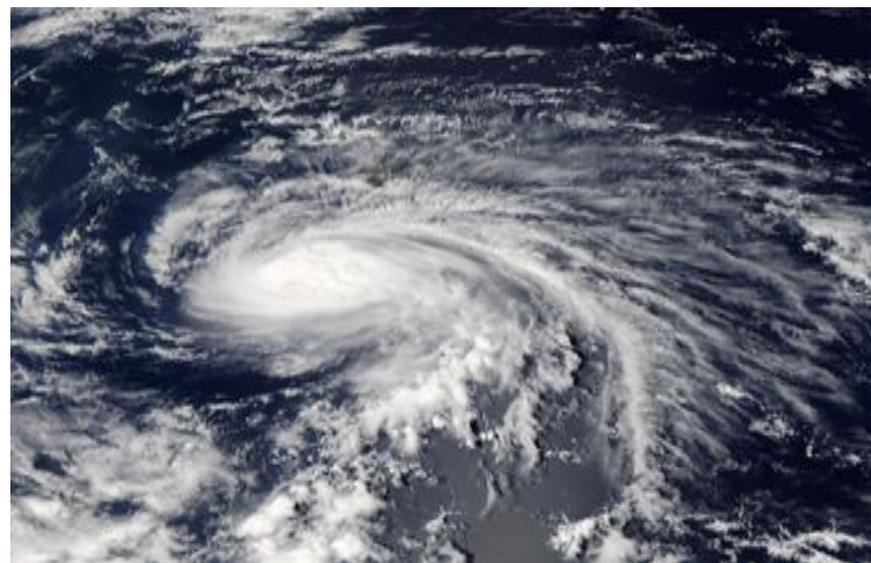
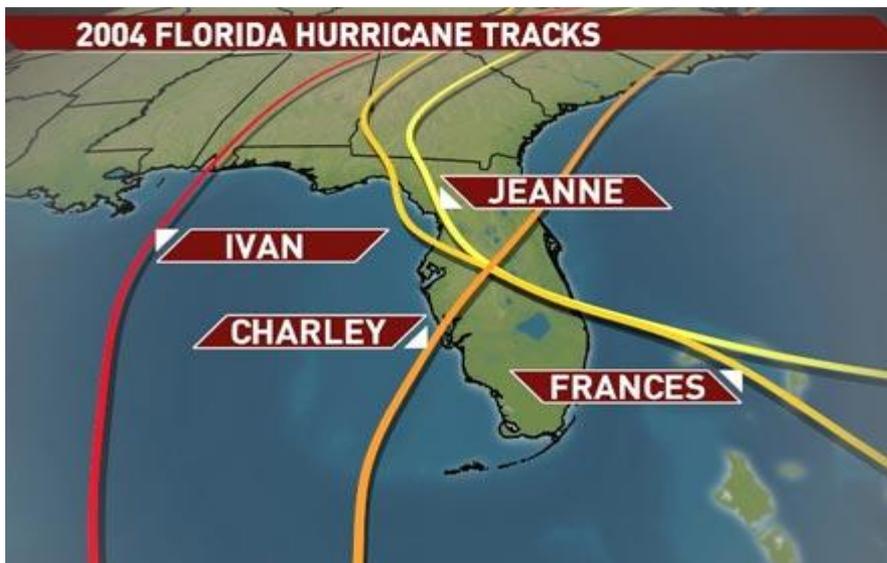


My FDOH (+/-) Disaster Experiences





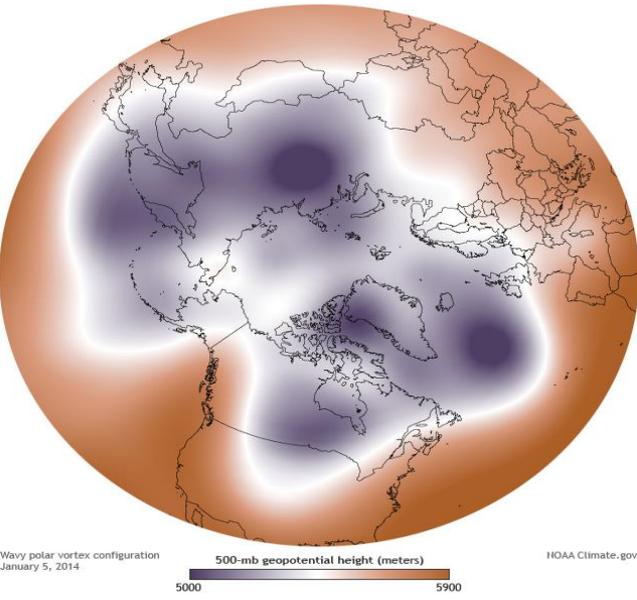
Tropical Activity (Atlantic & Pacific)



Flood



Polar Vortex



Train Wreck during Polar Vortex





Rabies



What Problem(s)
When Date
 Different, unusual, unique
Where State, city
 Facility, site
 Unit, area, equipment
 Task being performed

Transplant with rabies-infected organ
See timeline
Donor suffered from encephalitis
Pensacola, Florida
Organ Recovery Service
Heart, liver, kidneys
Organ donation

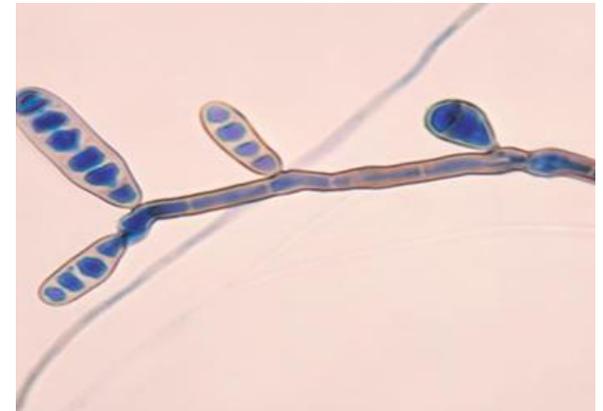
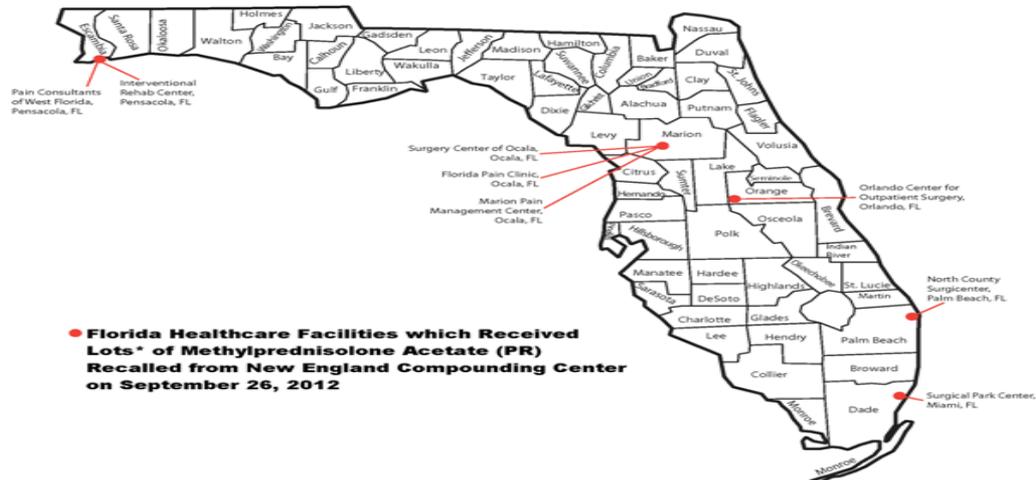
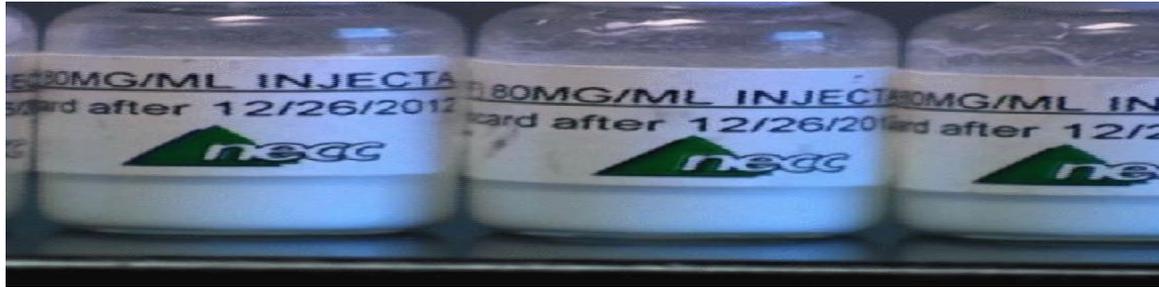
Impact to the Goals

Patient Safety	Recipient death
Patient Services	Organ recipients received infected organs
Property, Equip, Mtls	Treatment for rabies for other recipients
Labor, Time	

Frequency	Only one other known case of rabies transmission through a transplant (2004 in TX)
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Fungal Meningitis

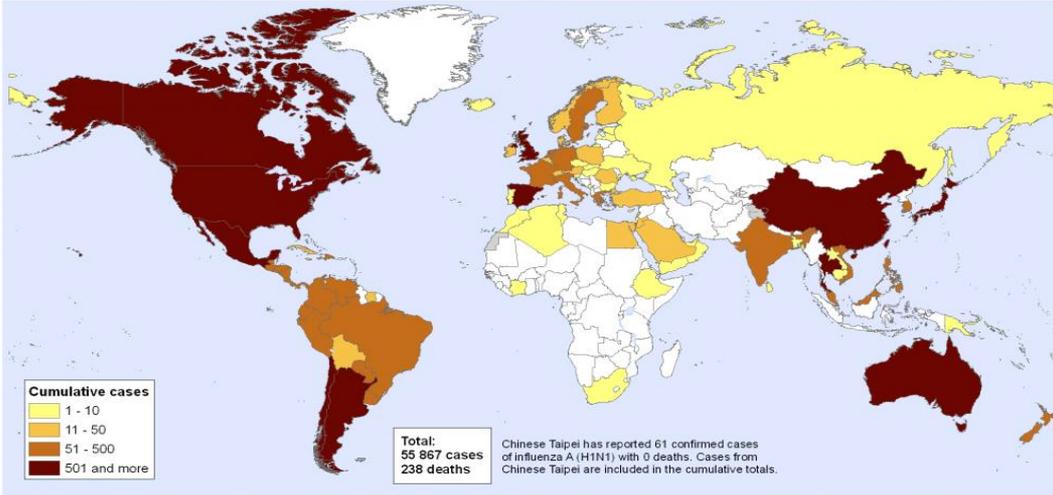


Pandemic



New Influenza A (H1N1),
Number of laboratory confirmed cases as reported to WHO

Status as of 24 June 2009
06:00 GMT

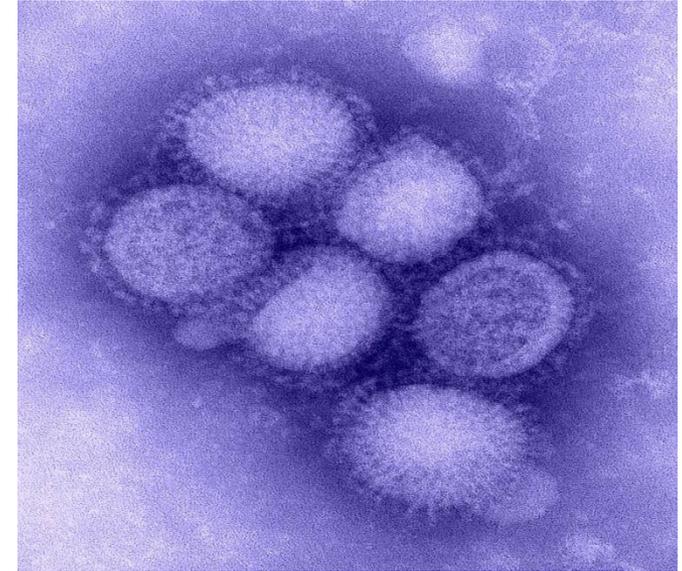


The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Public Health Information
and Geographic Information Systems (GIS)
World Health Organization

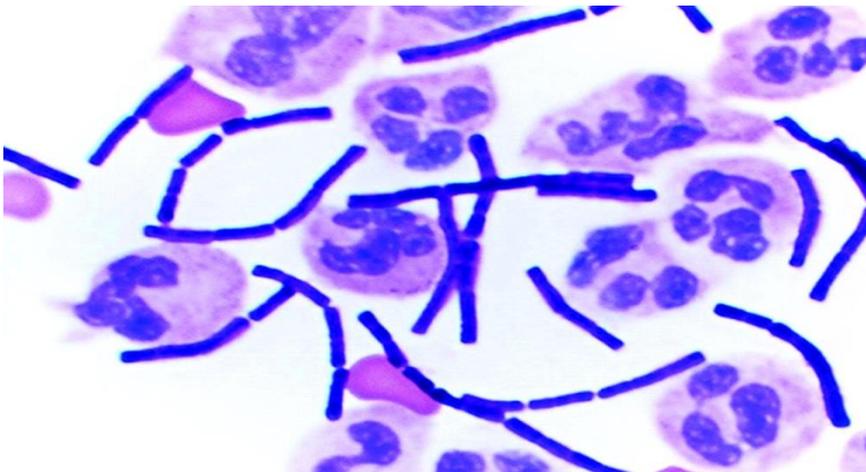
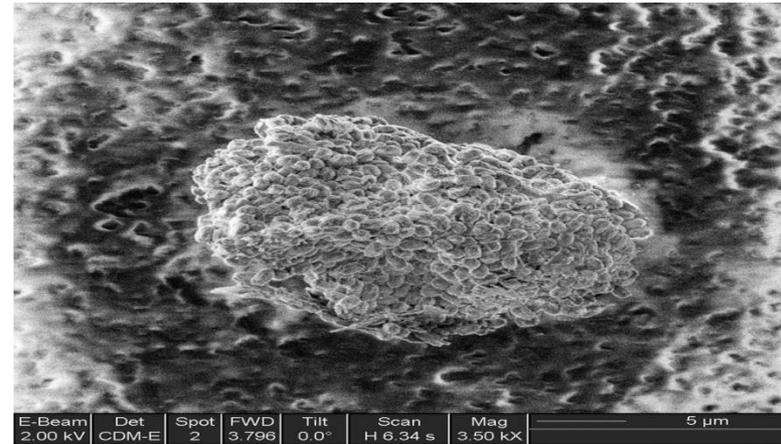
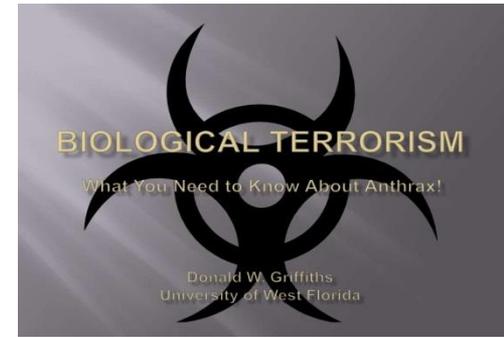
 World Health Organization
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Map produced: 24 June 2009 10:00 GMT





Anthrax

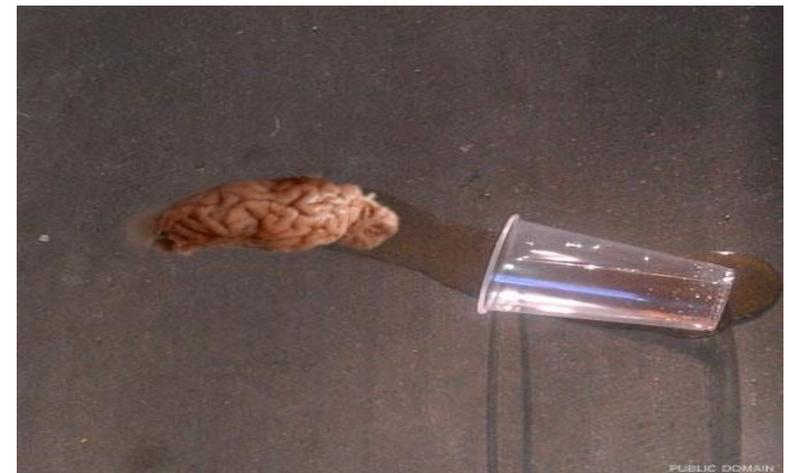


Where anthrax was found

Location of anthrax spores and infections from 2001 outbreak:



Body Parts



PUBLIC DOMAIN

Oil Spill



Health Notice

Escambia County Health Department

This beach may be affected by the oil spill

Please check with the lifeguard about the current conditions on this beach

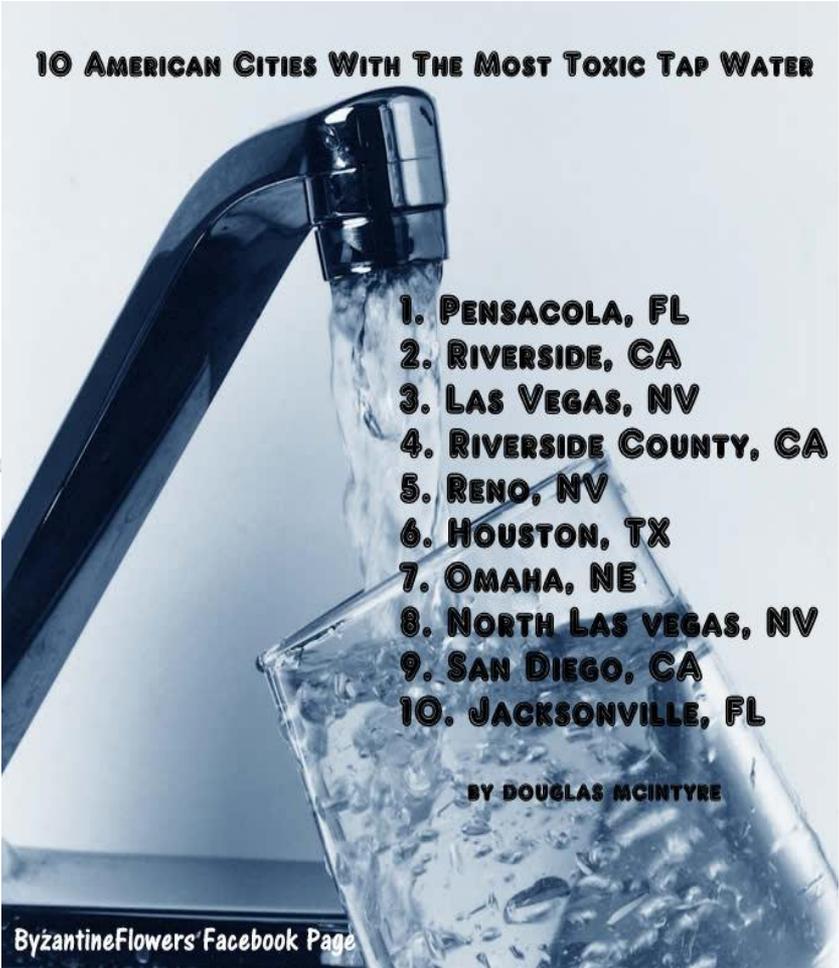
If oil product is present on the beach or in the water (such as too numerous to count tar chips/balls; tar mats; oil mousse, sheen or slick):

- Avoid wading, swimming, or entering the water.
- Avoid touching oily product on the beach or in the water.
- Avoid contact with dead or dying fish or other water life. If you see animals needing rescue, call 311 – Option 0.
- If experiencing respiratory problems, leave the area and contact your physician, as you deem necessary.
- For more information contact:
 - Escambia County Health Department at 850.595.6700
 - Escambia County Emergency Management at www.escambiadisasterresponse.com
 - Florida Oil Spill Information Line at 888.337.3569



Water

10 AMERICAN CITIES WITH THE MOST TOXIC TAP WATER

- 
1. PENSACOLA, FL
 2. RIVERSIDE, CA
 3. LAS VEGAS, NV
 4. RIVERSIDE COUNTY, CA
 5. RENO, NV
 6. HOUSTON, TX
 7. OMAHA, NE
 8. NORTH LAS VEGAS, NV
 9. SAN DIEGO, CA
 10. JACKSONVILLE, FL

BY DOUGLAS MCINTYRE

ByzantineFlowers Facebook Page



WELCOME
TO PENSACOLA BEACH

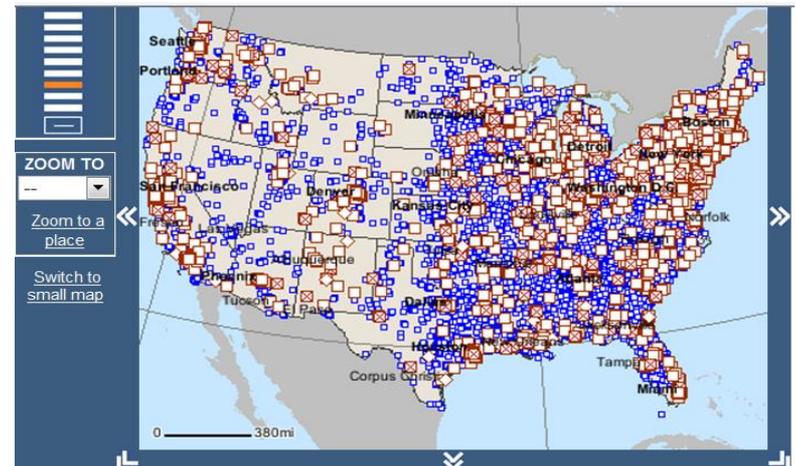
STAY OUT OF THE
WATER

watchFire signs

Sewage Spills/Septic



Chemical Spills



WNV

WNV TRANSMISSION CYCLE

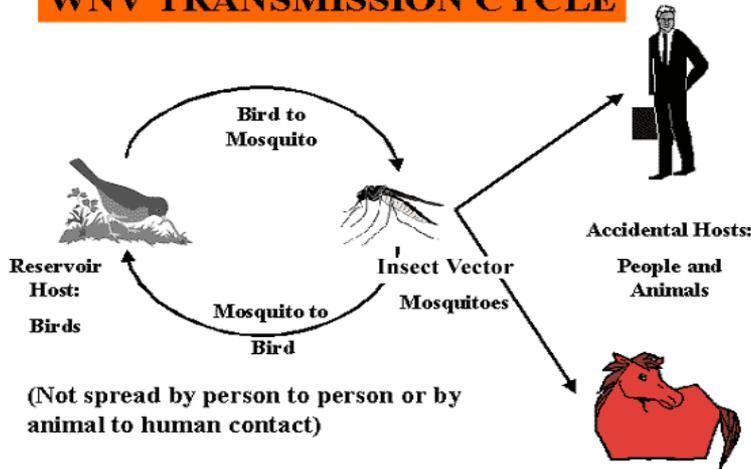


FIGURE 1. Areas reporting West Nile virus (WNV) activity — United States, 2001*



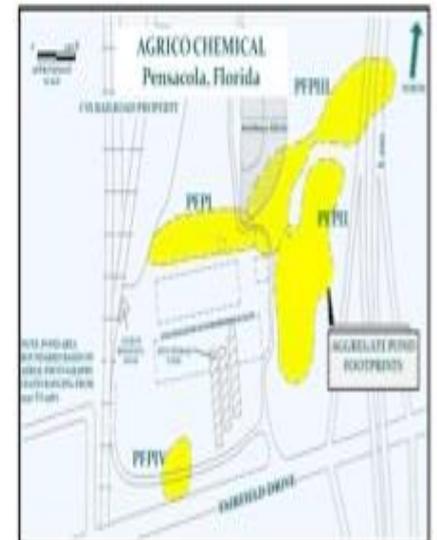
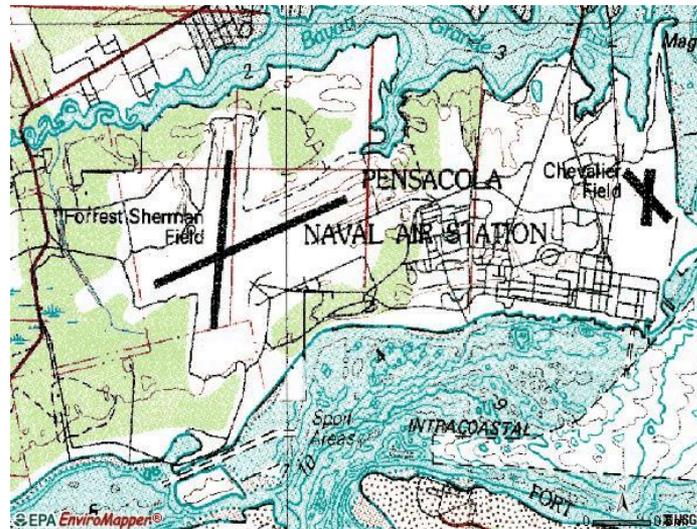
*As of September 18, 2001.

† Kentucky reported WNV activity in a horse but no birds.

Tornado



Superfund



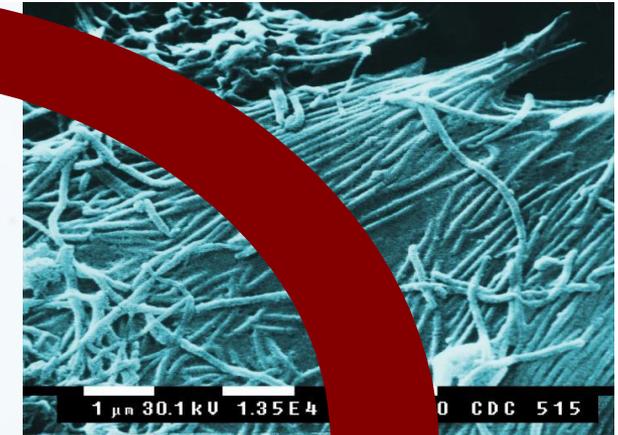
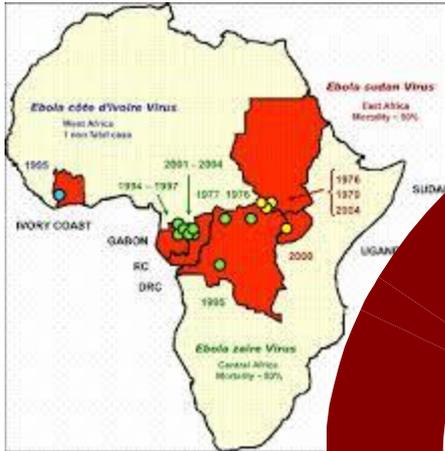
Landfill



Tsunami



Ebola



Escambia County, Florida 2013 EPA Toxic Release Inventory (TRI) Reports

Compiled by:

**John J. Lanza, MD, PhD, MPH, FAAP
Director, Florida Department of Health
in Escambia County**



2013 EPA Toxic Release Inventory (TRI) Reports

- ◆ All EPA TRI information is available at the below EPA website for any geographic region and for national, state, county governmental entities.
- ◆ In addition, facility and chemical data is also available
- ◆ <http://www.epa.gov/tri/>



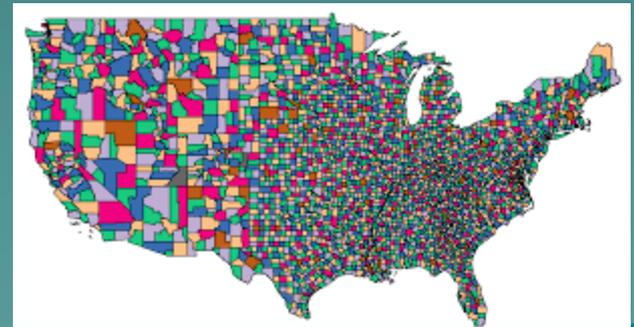
In the United States and its territories, there are about 3,350 counties. Some national, state, and county statistics ranking pollution sources in our region include:

- **Ranking of states in U.S. for on- and off-site releases of all TRI chemicals in all industries (EPA 2013) (million pounds):**
 - **Alaska → 1st (970)**
 - **Texas → 4th (223)**
 - **Louisiana → 6th (138)**
 - **Alabama → 10th (87)**
 - **Georgia → 14th (71)**
 - **Mississippi → 17th (67.1)**
 - **Florida → 18th (67)**



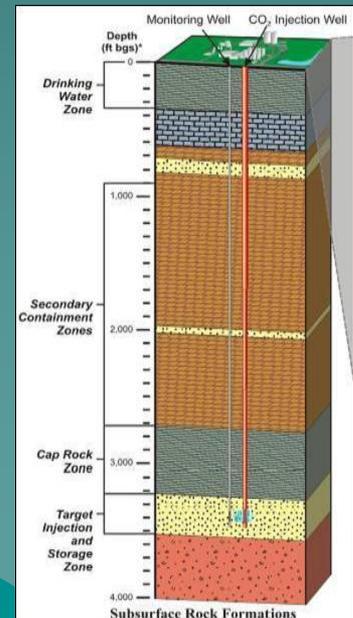
Regional Data

- Ranking of counties in U.S. for on- and off-site releases of all TRI chemicals in all industries (EPA 2013) (million pounds):
 - NW Arctic (AK) → 1st (906)
 - Escambia (FL) → 13th (33)
 - Jefferson (AL) → 35th (13)
 - Sumter (AL) → 51st (10)
 - Mobile (AL) → 61st (9)



Regional Data

- Ranking of counties in U.S. for reported release of all TRI chemicals from all industries as underground injection (EPA 2013) (million pounds):
 - Brazoria (TX) → 1st (37)
 - Escambia (FL) → 2nd (30)
 - St. Charles (LA) → 3rd (19)



Regional Data

Ranking of Escambia County, FL for reported release of all TRI chemicals from all industries not including underground injection (EPA 2013) (million pounds):

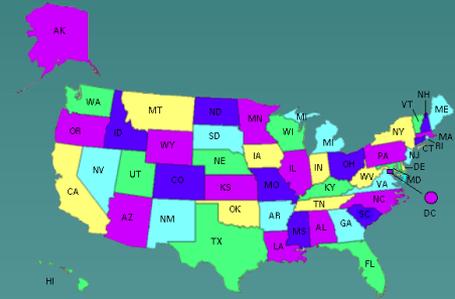
Escambia (FL)

From 13th (33) to →
620th (0.6)



Listings of 27 states and territories each releasing less TRI chemicals than Escambia County (FL) (EPA 2013):

- ◆ Oklahoma
- ◆ Nebraska
- ◆ Colorado
- ◆ Minnesota
- ◆ Oregon
- ◆ Kansas
- ◆ Wyoming
- ◆ Washington
- ◆ New York
- ◆ New Mexico
- ◆ New Jersey
- ◆ Maryland
- ◆ Maine
- ◆ Delaware
- ◆ South Dakota
- ◆ Puerto Rico
- ◆ Massachusetts
- ◆ Hawaii
- ◆ New Hampshire
- ◆ Connecticut
- ◆ Virgin Islands
- ◆ Rhode Island
- ◆ Vermont
- ◆ Guam
- ◆ District of Columbia
- ◆ Northern Marianna Is.
- ◆ American Samoa



Regional Data

- **Ranking in U.S. of all facilities for TRI on- and off-site releases (EPA 2013) (million pounds):**

- Red Dog Ops (NW Arctic, AK) → 1st (906)
- Ascend (Escambia, FL) → 11th (30.5)
- Ascend (Chocolate Bayou, TX) → 12th (29.5)



- **Ranking in Florida of facilities by on- and off-site release of all TRI chemicals (EPA 2013) (million pounds):**

- Ascend (Escambia, FL) → 1st (30.5)
- International Paper (Escambia, FL) → 9th (1.6)
- Gulf Power (Escambia, FL) → 18th (0.8)



Regional Data

- Ranking of electric utilities in US for TRI on-and off-site releases (EPA 2013) (million pounds):
 - Gulf Power (Escambia, FL) → 194th (0.8)





Escambia, FL Data



TRI trends report for all industries for 2001-2013 (EPA 2001-2013)(million pounds):

<u>Year</u>	<u>Total air emissions</u>	<u>Total Underground Injection</u>	<u>Total on/off site releases</u>
2001	14.5	22.5	37.9
2002	12.2	25.4	38.2
2003	9.2	20.8	31.2
2004	9.5	22.6	33.8
2005	7.5	31.4	40.5
2006	5.1	30.7	37.8
2009	11.7	17.4	31.3
2011	1.7	32.6	35.3
2013	1.9	30.3	33.0

Vibrio vulnificus

Presented by:

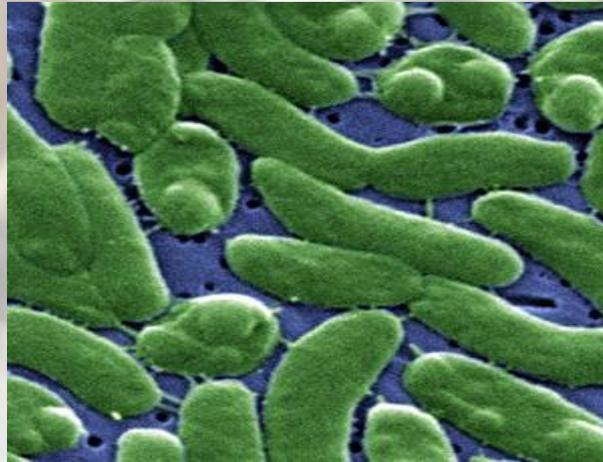
John J. Lanza, MD, PhD, MPH, FAAP

Florida Department of Health



What is *Vibrio vulnificus*?

- *Vibrio vulnificus* is a bacterium in the same family as those that cause [cholera](#) and [Vibrio parahaemolyticus](#). 1st identified 1970's.
- It normally lives in warm seawater and is part of a group of vibrios that are called "halophilic" because they require salt.



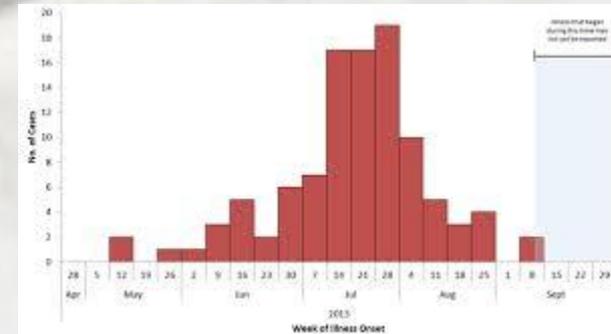
What type of illness does *V. vulnificus* cause?

- Eating contaminated seafood or an open wound
- Wound or soft tissue infections. In persons with underlying medical conditions, especially liver disease, can cause bloodstream infections characterized by fever, chills, decreased blood pressure, blistering skin lesions, and often, death.
- In otherwise healthy persons, causes diarrhea, vomiting, and abdominal pain.



How common is *V. vulnificus* infection?

- An average of 50 culture-confirmed cases, 45 hospitalizations, and 16 deaths are reported each year from the Gulf Coast region (reporting states are Alabama, Florida, Louisiana, Mississippi, and Texas).
- Nationwide, there are as many as 95 cases (half of which are culture confirmed), 85 hospitalizations, and 35 deaths.



How do persons get infected with *V. vulnificus*?

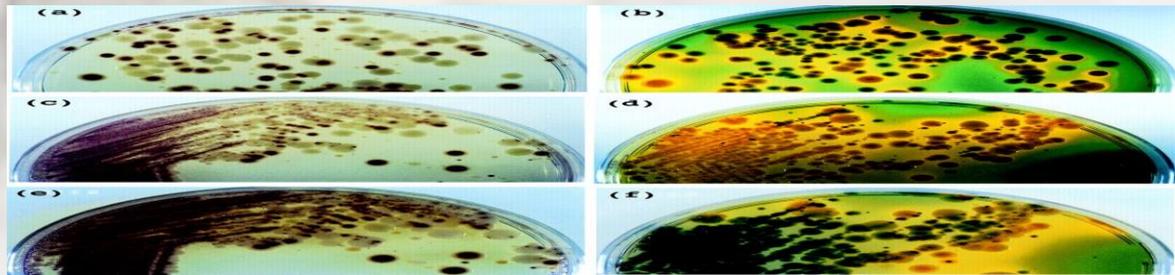


- Persons who are immunocompromised, especially those with chronic liver disease are at risk (>80X) for *V. vulnificus* when they eat raw seafood, particularly oysters.
- The bacterium is frequently isolated from oysters and other shellfish in warm coastal waters during the summer months
- People with open wounds can be exposed to *V. vulnificus* through direct contact with seawater.
- There is no evidence for person-to-person transmission of *V. vulnificus*.



How can *V. vulnificus* infection be diagnosed?

- *V. vulnificus* infection is diagnosed by stool, wound, or blood cultures.
- Special growth medium should be used to increase the diagnostic yield.
- Doctors should have a high suspicion for this organism when patients present with gastrointestinal illness, fever, or shock following the ingestion of raw seafood, especially oysters, or with a wound infection after exposure to seawater.



How is *V. vulnificus* infection treated?

- If *V. vulnificus* is suspected, treatment should be initiated immediately because antibiotics improve survival. Aggressive attention should be given to the wound site.
- Clinical trials for the management of *V. vulnificus* infection have not been conducted.
- Culture of wound or hemorrhagic bullae is recommended, and all *V. vulnificus* isolates should be forwarded to a public health laboratory
- Blood cultures are recommended if the patient is febrile, has hemorrhagic bullae, or has any signs of sepsis
- Necrotic tissue should be debrided; severe cases may require fasciotomy or limb amputation



Are there long-term consequences of *V. vulnificus* infection?

- *V. vulnificus* infection is an acute illness, and those who recover should not expect any long-term consequences.
- Bloodstream infections in persons with liver disease are fatal approximately 50% of the time. Persons who recover suffer no long-term consequences.



Trends, Challenges, & Opportunities

- Infections are seasonal; over 85% occur between May and October. Environmental factors, such as warm water and moderate salinity, can increase the number of *V. vulnificus* organisms in shellfish.
- Many persons prefer to consume oysters and other shellfish raw. Many persons with liver disease are unaware of the hazards of raw oyster consumption and exposure to warm seawater.
- Education focusing on the risks associated with consumption of raw and undercooked shellfish, especially in warm months. Implement refrigeration from harvesting to consumption. Timely reporting of *V. vulnificus* infections. Revision of the standards used for closing and re-opening of oyster beds to take into account the role of environmental factors.



How can I learn more about *V. vulnificus*?

- You can discuss your medical concerns with your doctor or other health care provider.
- Your county health department can provide information about this and other public health problems that are occurring in your area.
- Information about the potential dangers of raw oyster consumption is available 24 hours a day from the FDA's Seafood Hotline (telephone 1-800-332-4010) Information is also available on the world wide web at <http://vm.cfsan.fda.gov> External Web Site Icon.

Tips for Preventing *V. vulnificus* Infections

- Do not eat raw oysters or other raw shellfish.
- Cook shellfish (oysters, clams, mussels) thoroughly.
- For shellfish in the shell, either a) boil until the shells open and continue boiling for 5 more minutes, or b) steam until the shells open and then continue cooking for 9 more minutes. Do not eat those shellfish that do not open during cooking. Boil shucked oysters at least 3 minutes, or fry them in oil at least 10 minutes at 375°F.
- Avoid cross-contamination of cooked seafood and other foods with raw seafood and juices from raw seafood.
- Eat shellfish promptly after cooking and refrigerate leftovers.
- Avoid exposure of open wounds or broken skin to warm salt or brackish water, or to raw shellfish harvested from such waters.
- Wear protective clothing (e.g., gloves) when handling raw shellfish.

Questions?

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My African Experience (Remember You Asked For It!)

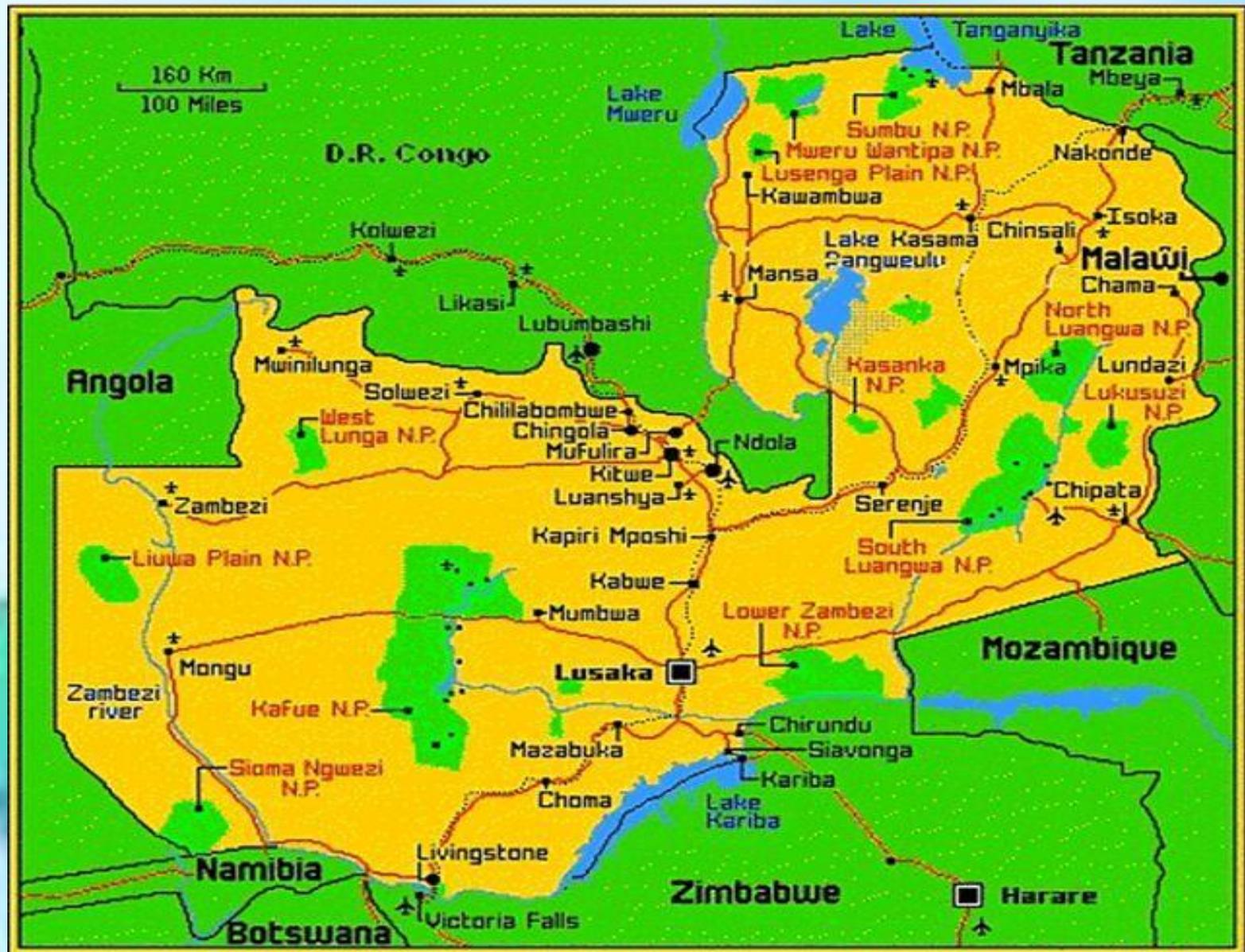


by
John J. Lanza, MD, PhD, MPH, FAAP
UWF Biology Grand Rounds

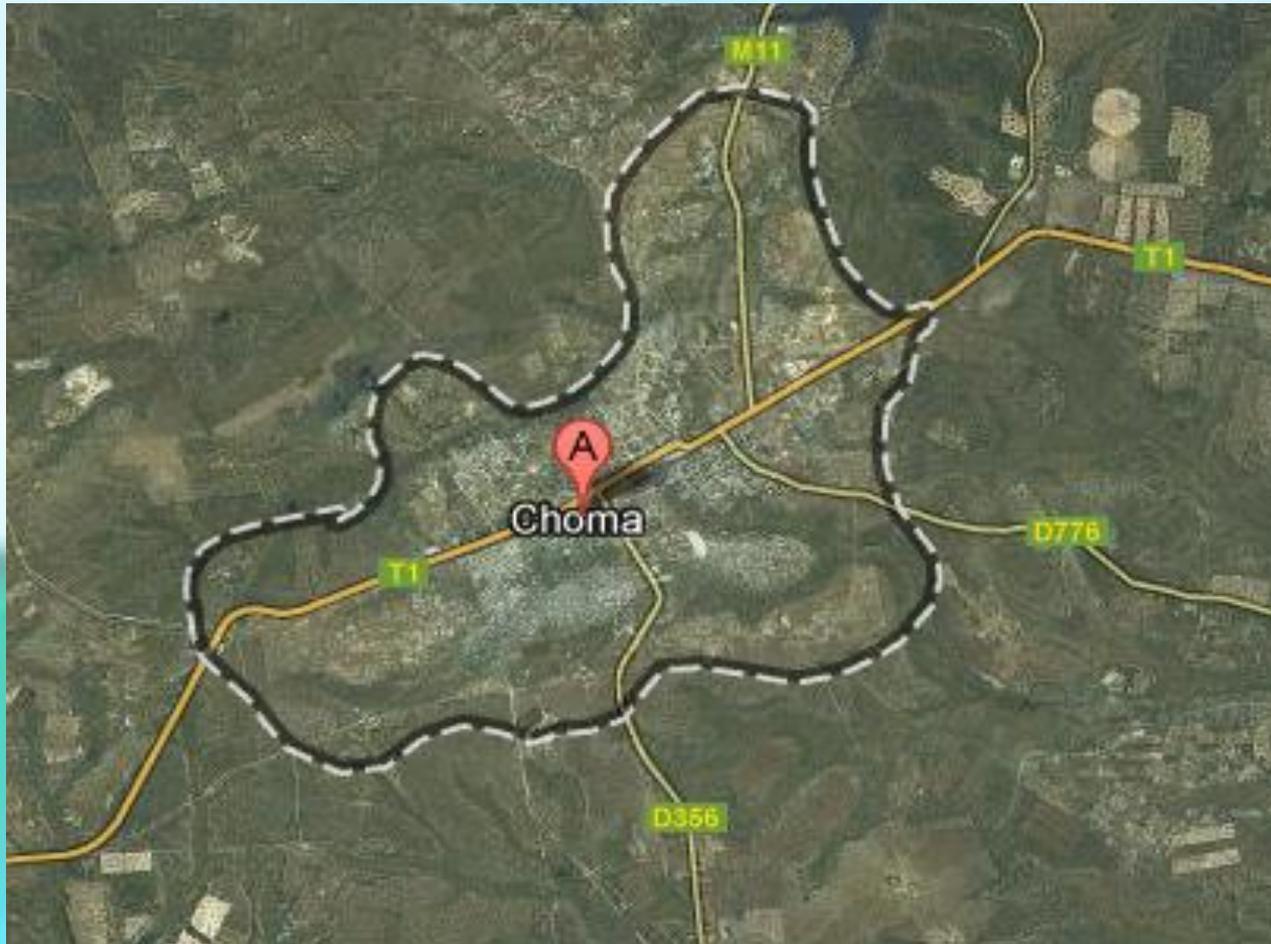
Why I went to Africa?

- Mission trip in planning for two years
- My family had already done so my turn
- Mangum's were friends and needed a doc
- I like the adventure?
- 1930's Tarzan movies
- Bucket list item?

WHY
WE DO
WHAT
WE DO



Choma, Zambia



Lusaka International Airport



Coca Cola Tunnel



08/09/2012

Off to Choma--First (Veggie) Lunch



Welcome
to

Choma

Moving Forward™



Stanbic Bank
A member of Standard Bank Group



Authorized financial services and registered credit provider
Moving Forward is a trademark of The Standard Bank of South Africa Limited

SUBSCRIPTION
KEYS/LOCK
REMOVED

Air

08/15/2012

CHOMA
ING SUPPLIES

Home for 3 Weeks



The Mission

- **Spiritual—SDA**
- **Public health messages**
- **Patient care - medical**
- **The people**



The Team



Lanza NOT Preaching!



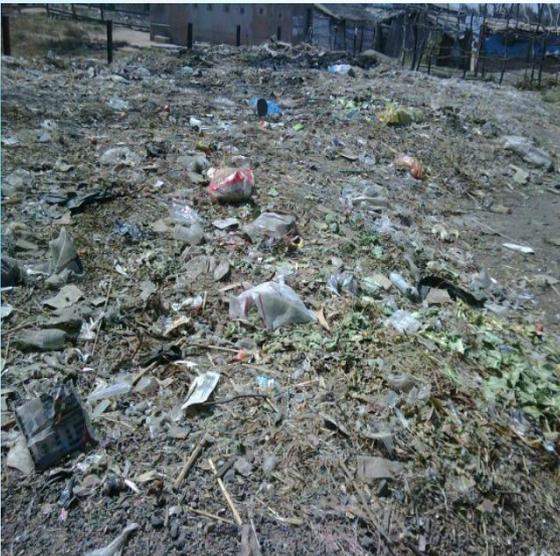
Dunked, not Sprinkled--340



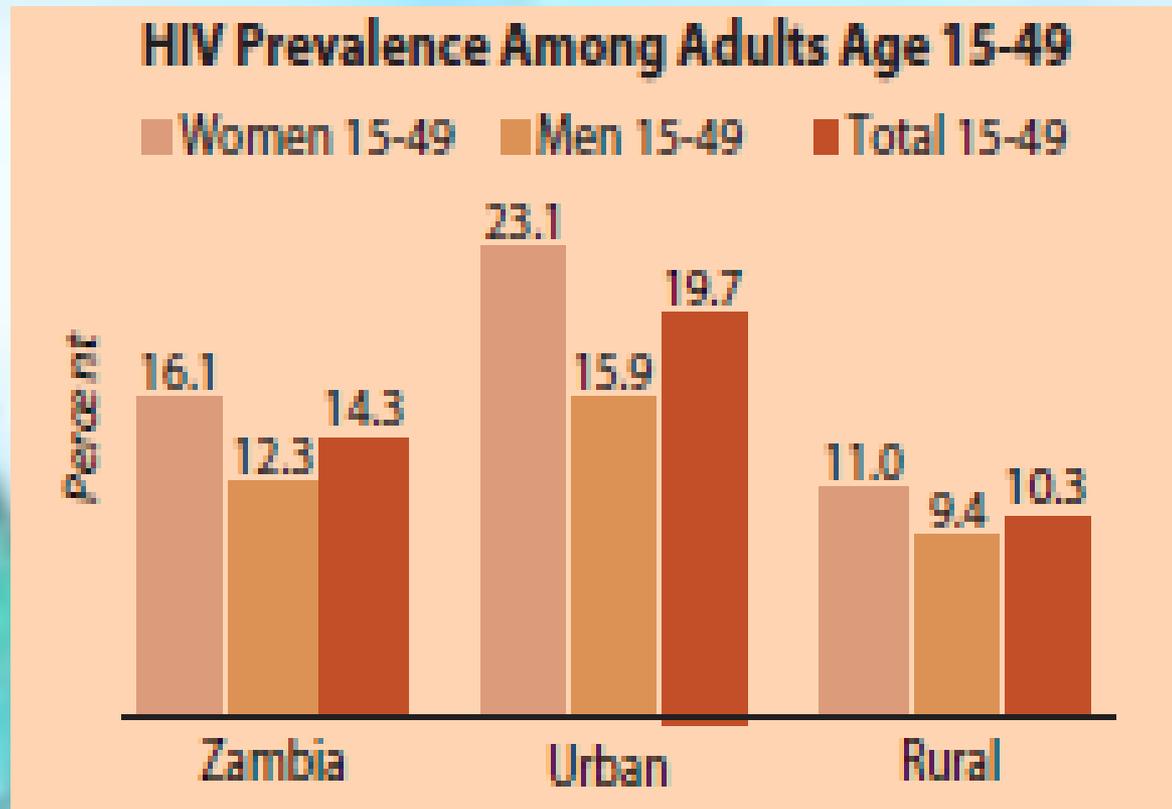
The Mission

Public Health and Medical

- What I expected
- What I did not expect

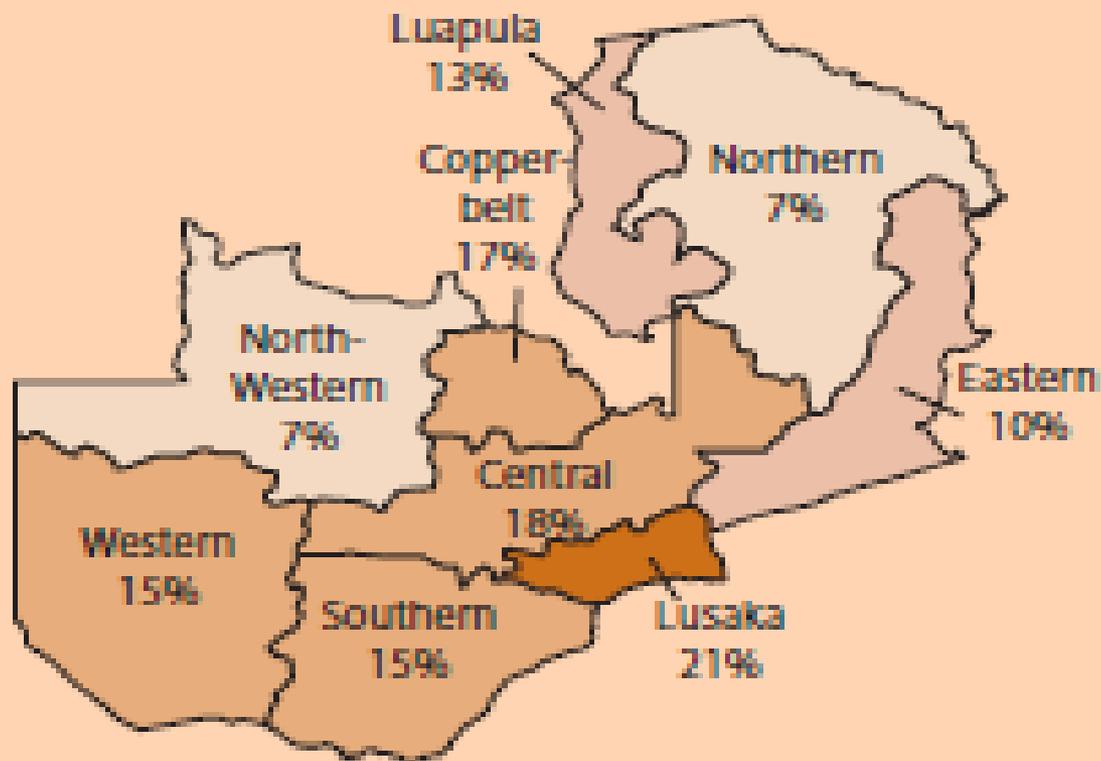


2007 Zambia Demographics and Health Survey



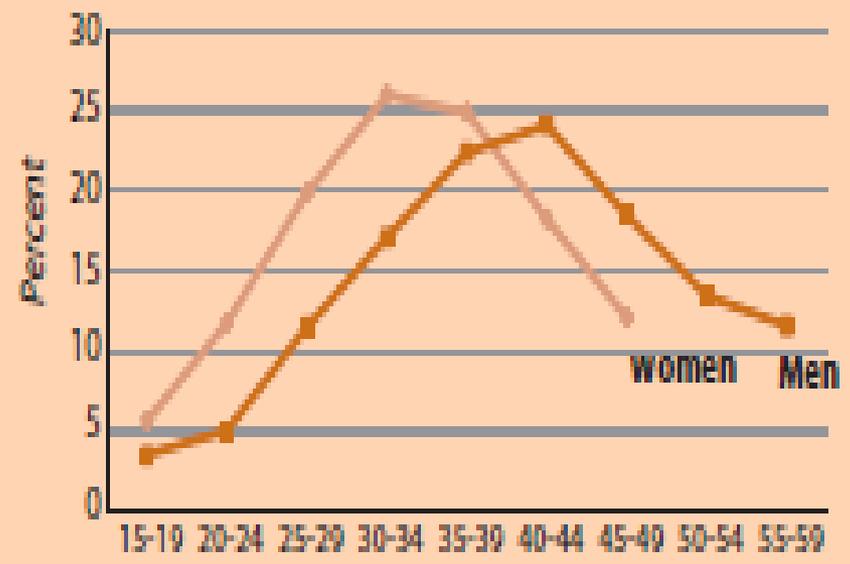
HIV Prevalence by Province

Percent of women and men age 15-49





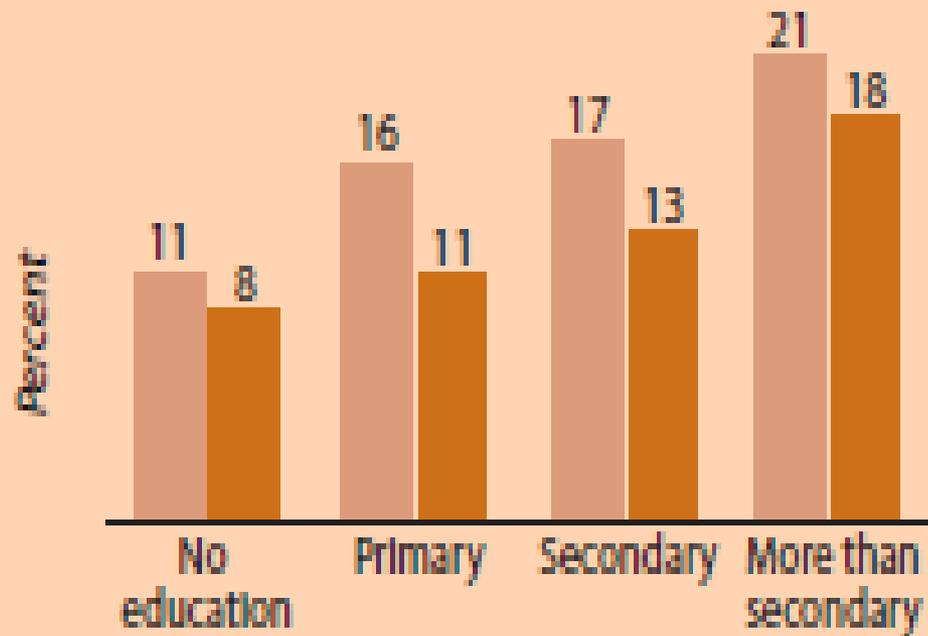
HIV Prevalence by Age



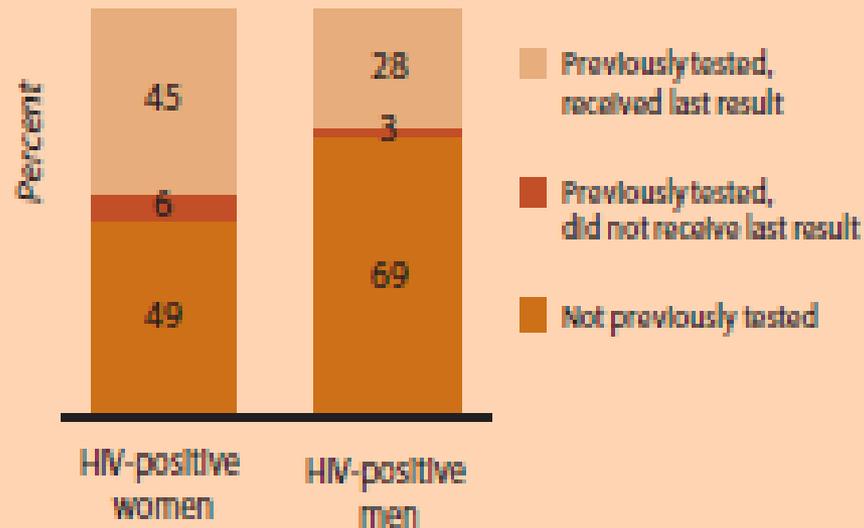


HIV Prevalence by Education

■ Women 15-49 ■ Men 15-49



Prior HIV Testing among HIV-Positive Respondents

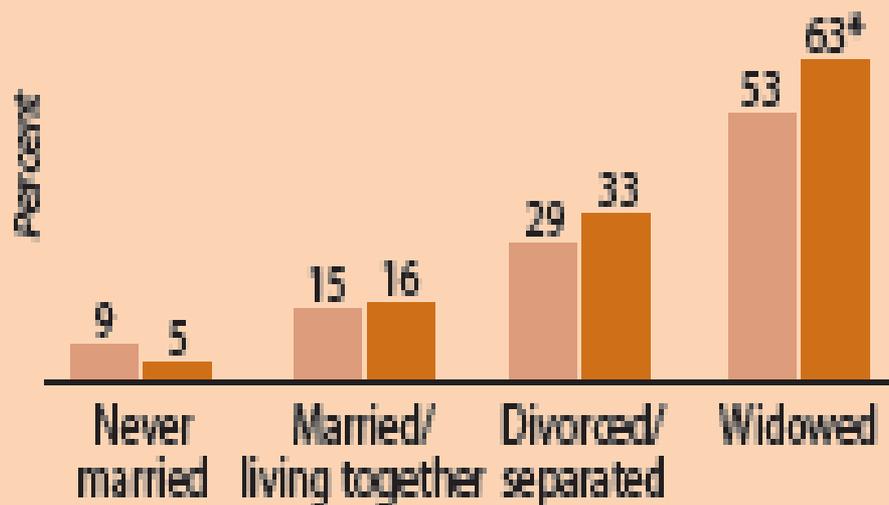


More than half of HIV-positive women and almost three-quarters of HIV-positive men do not know that they are infected.



HIV Prevalence by Marital Status

Women Men



*Based on 49 unweighted cases

Zambian Medical System

- **Socialized medicine—free, if you can find it**
- **660 doctors in country of 14 M**
- **No psychiatrists**
- **Main hospital in Lusaka– surgeries**
- **Many outlying hospitals and clinics/dental**
- **Mostly free medication—if available**
- **Some private clinics—GP = dentist!**



University of Zambia Med School Teaching Hospital, Lusaka



08/09/2012

Choma Hospital



Men's Ward



Women's Ward



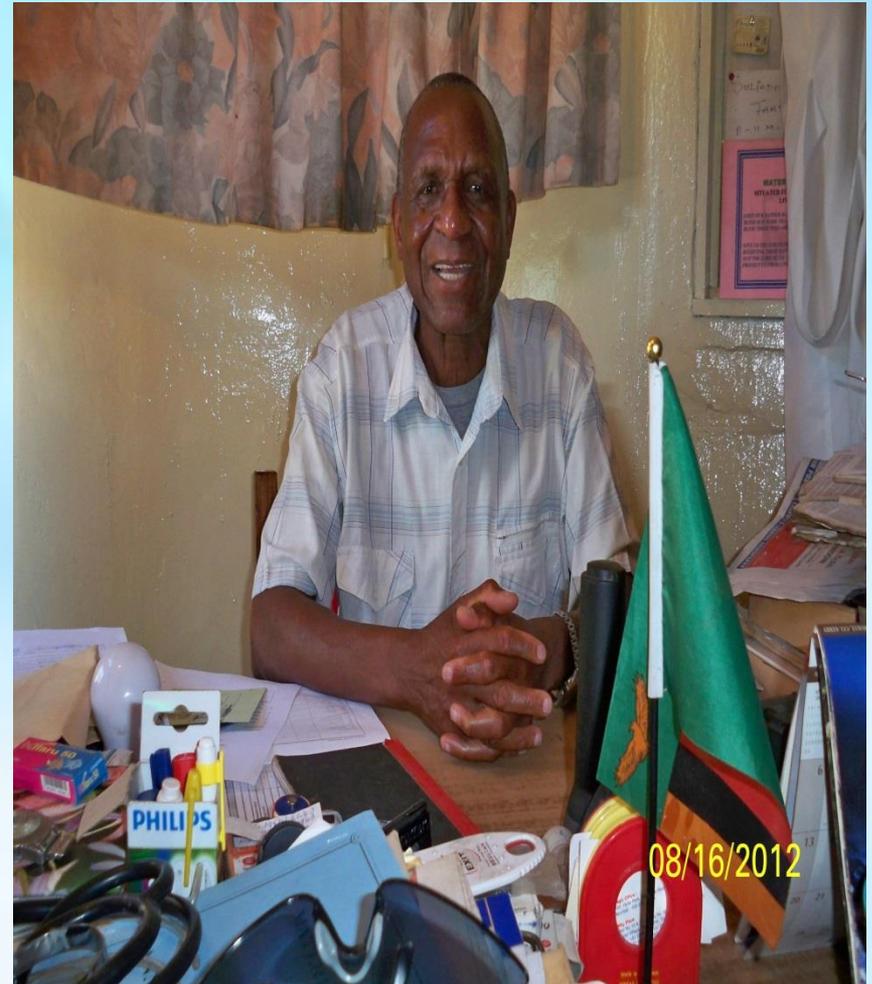
Operating Room



Choma Government Clinic



Local Private Medical Clinic



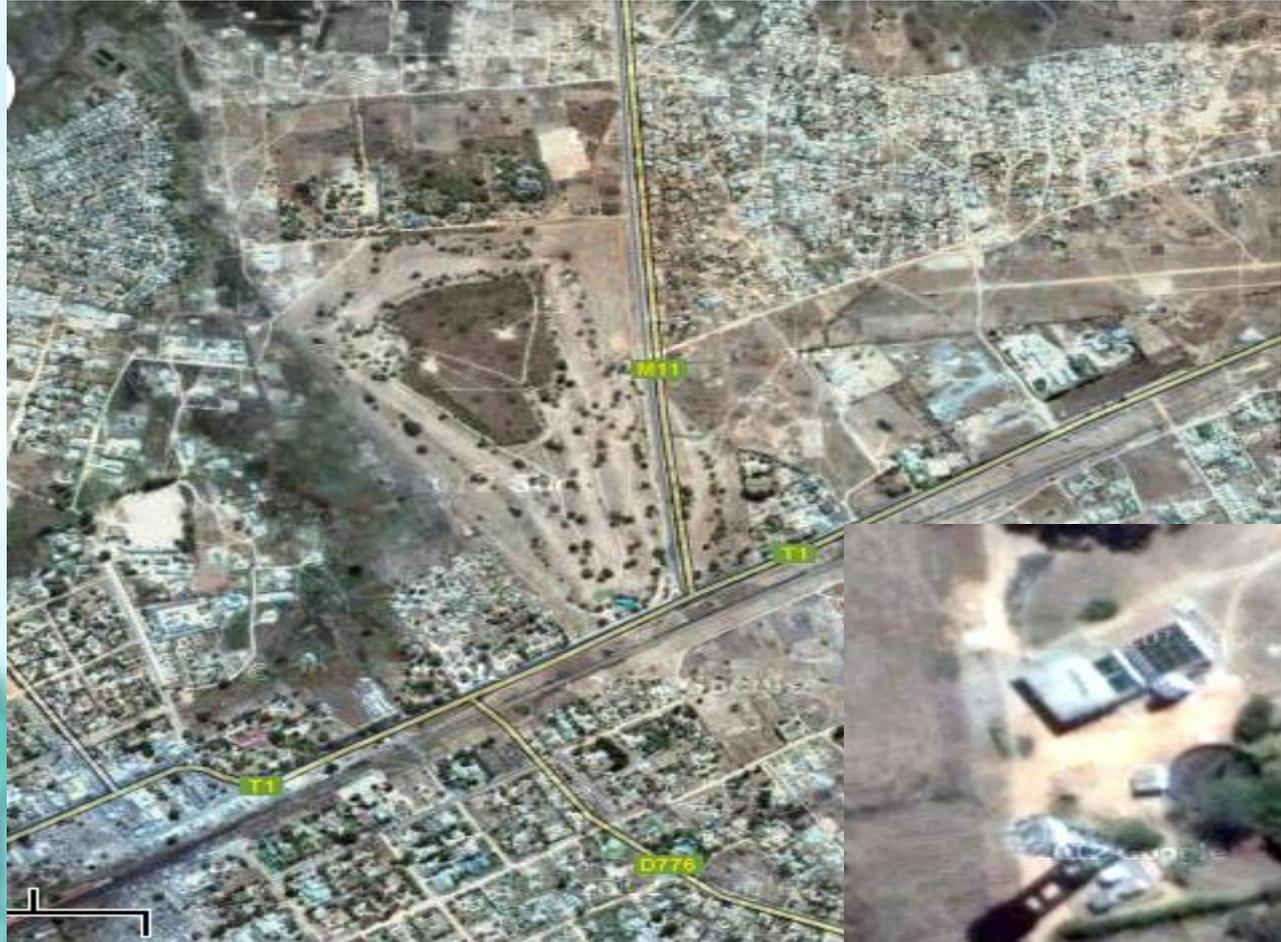
My “Clinic”



Leon's Lodge Sanitation



Aerial View of Northern Water Chlorination Plant



Candy WTP



Watershed



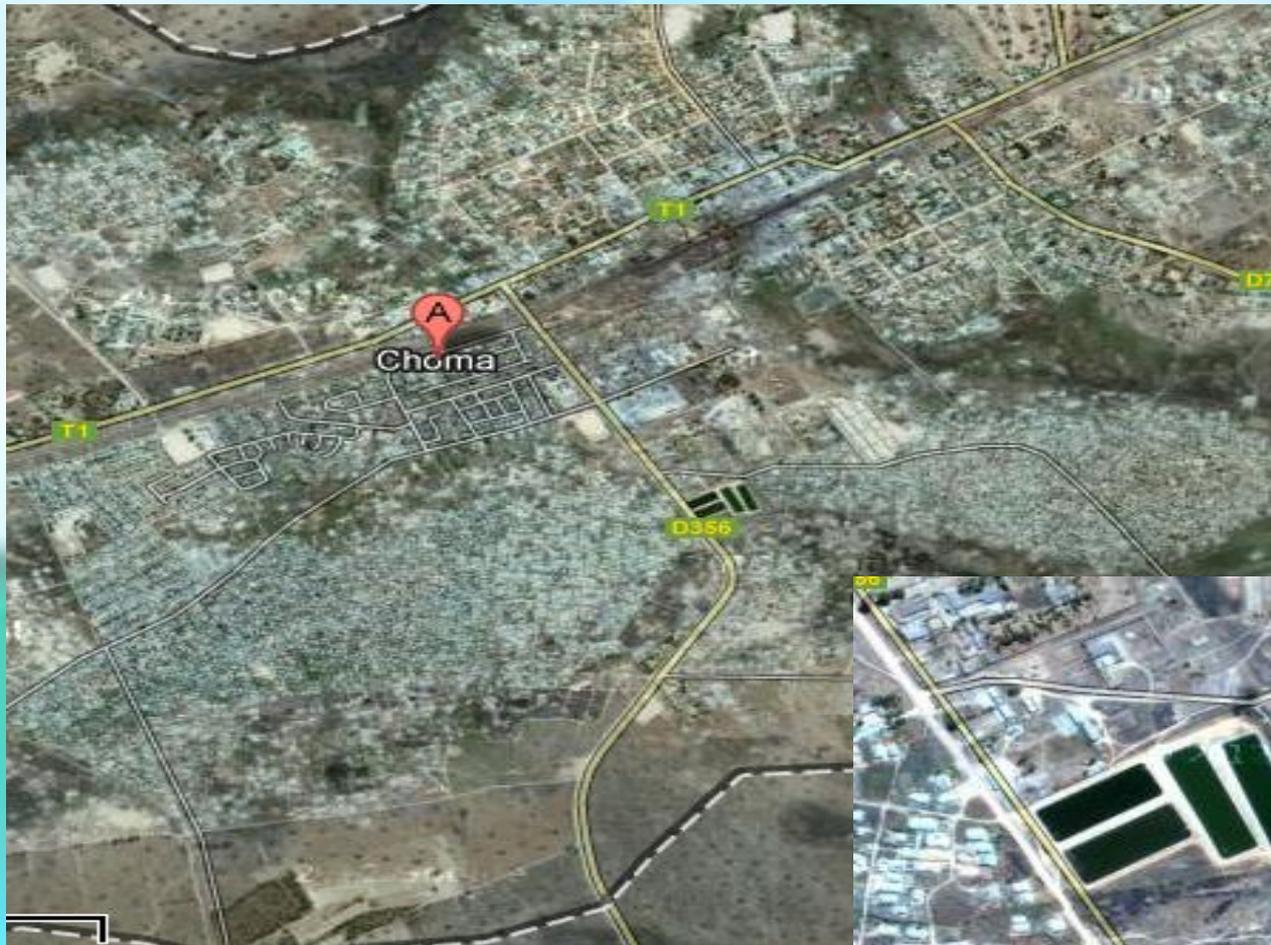
Aerial of Main Water Operations Center



Main Treatment Site



Sewage Treatment Ponds



Sewage Treatment Ponds



The Hazards





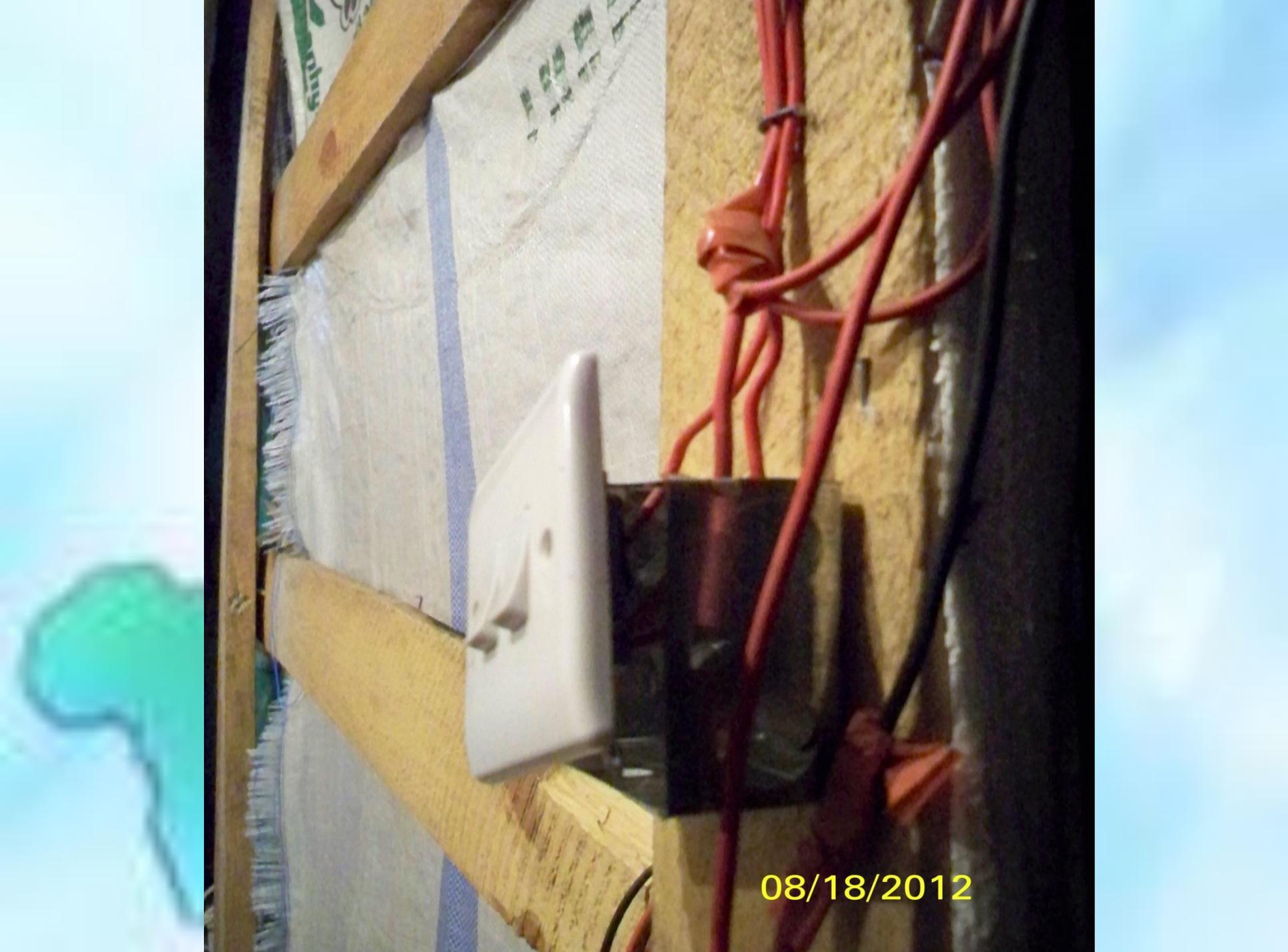
FOOT AND MOUTH DISEASE CONTROL

**THE FOLLOWING ITEMS
ARE NOT ALLOWED INTO BOTSWANA**

- (1.) Meat and meat products from cloven hoofed animals
- (2.) Livestock feeds, fodder, manure and bedding.
- (3.) Hides, skins, reams etc.
- (4.) Bones, hoofs etc.
- (5.) Game trophies and skins.
- (6.) Fresh milk.

08/26/2012



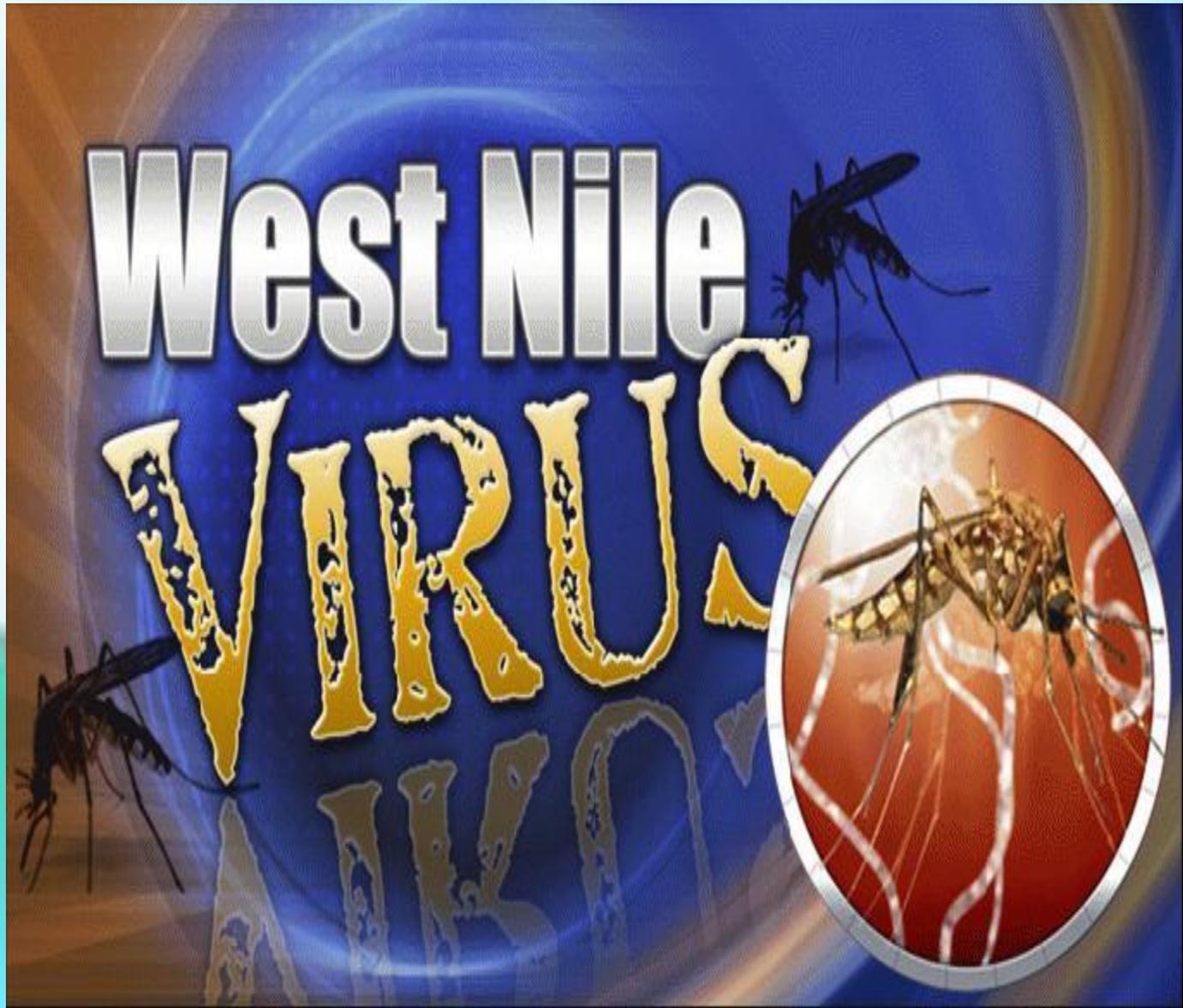


08/18/2012

is avoidable
& preventable,
**Abstain
or Practice
Safe Sex**

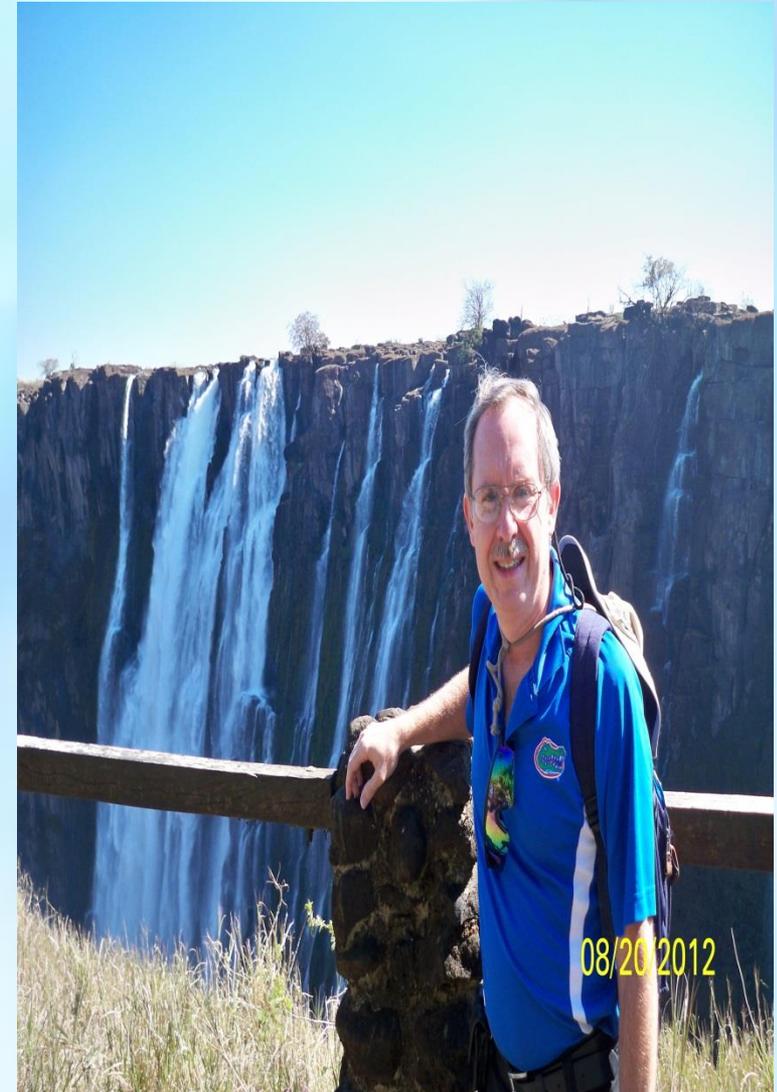
© 2011 USAID/PEPFAR
www.pepfar.org

08/15/2012

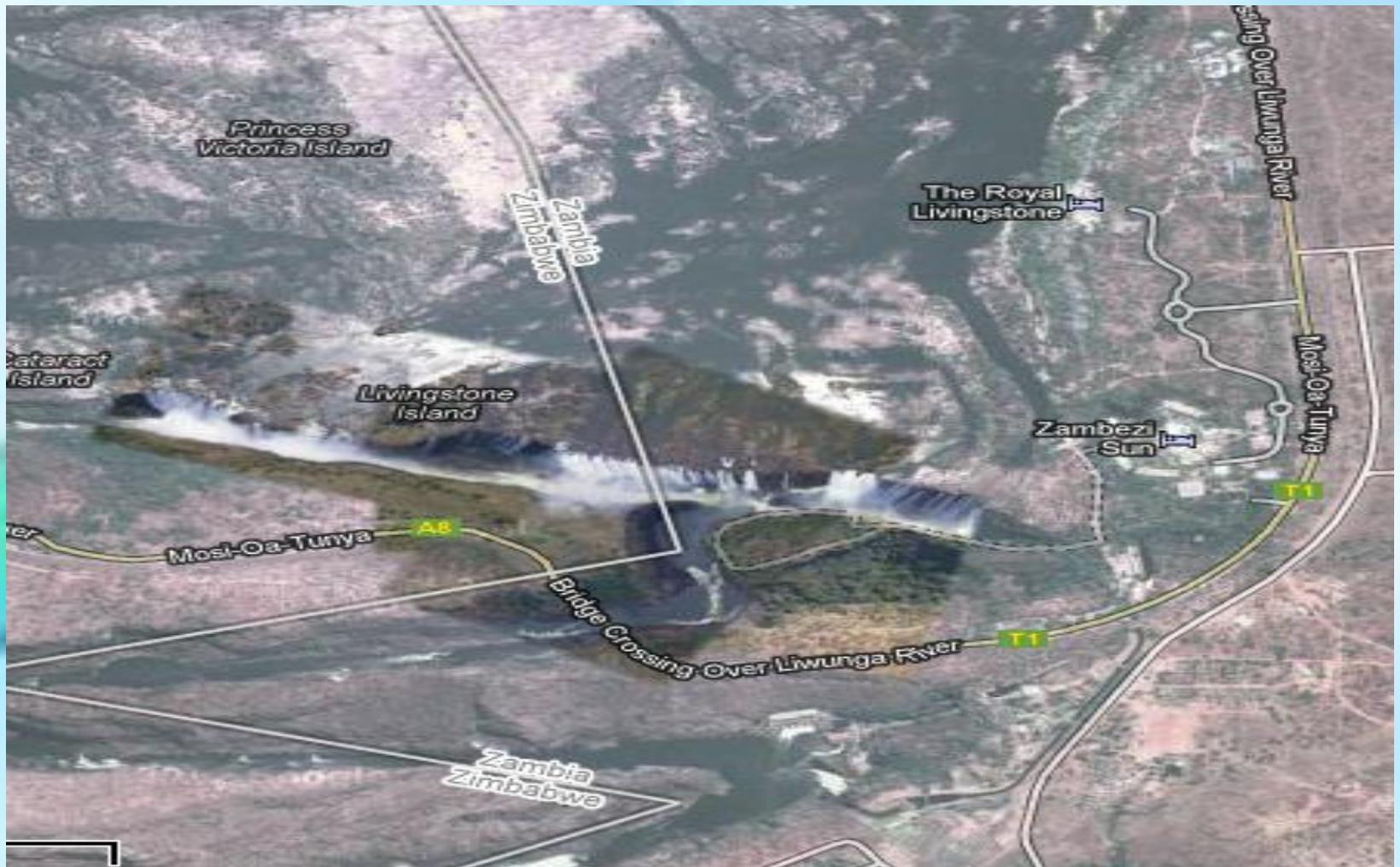


“You can’t go to Africa without...”

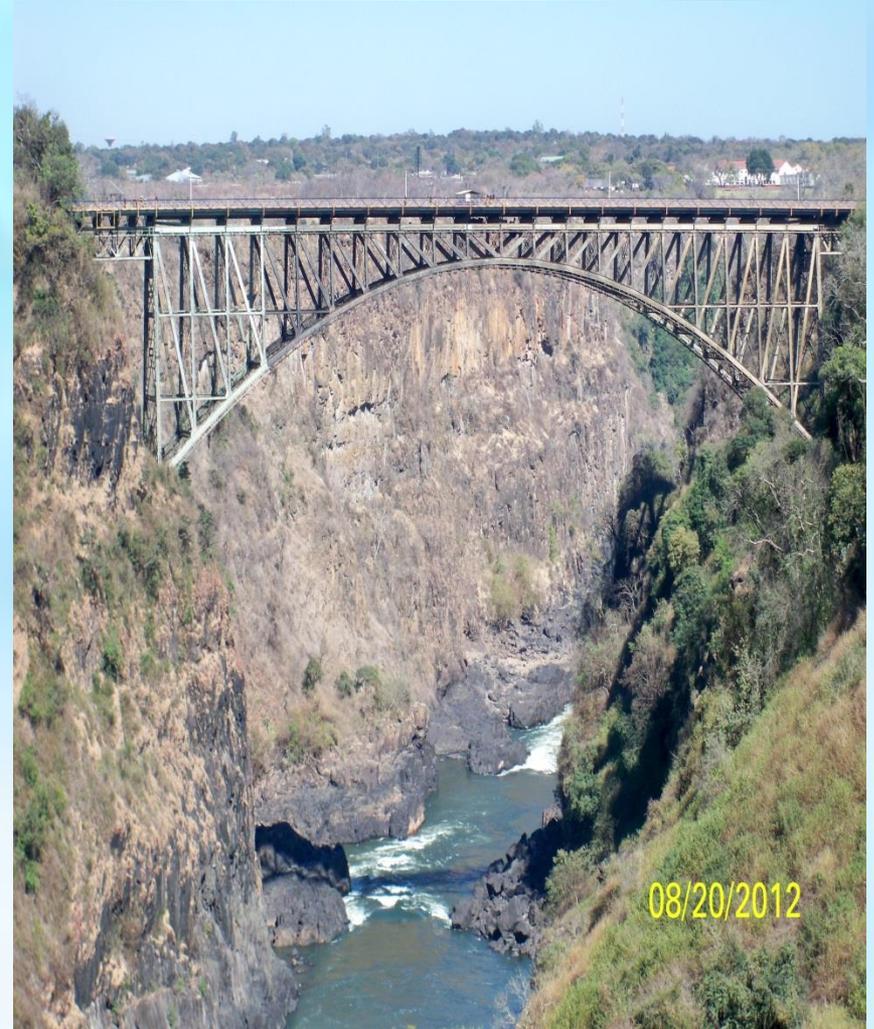
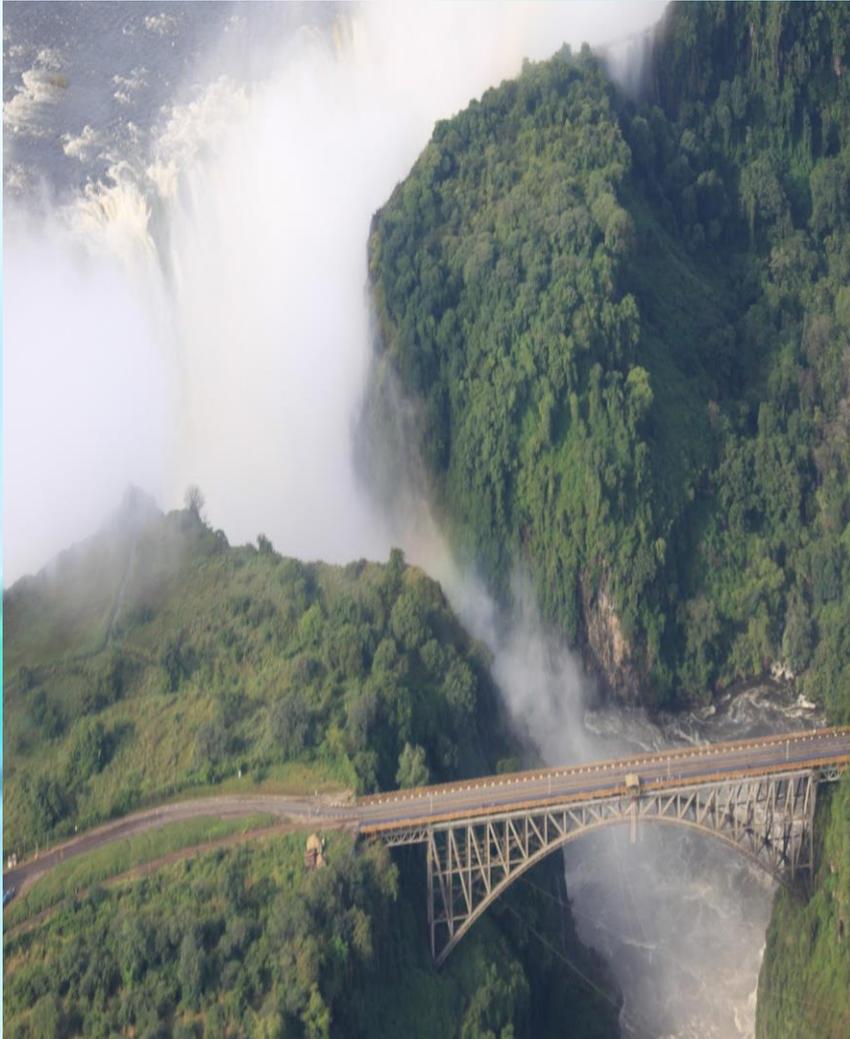
- Victoria Falls
- Safari



Aerial of Victoria Falls



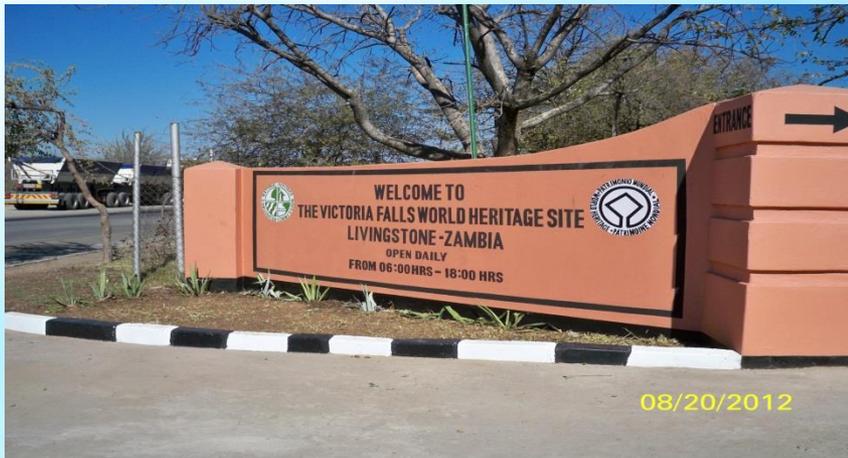
Bridge btw Zambia and Zimbabwe



Mosi-oa-Tunya (The Smoke That Thunders)

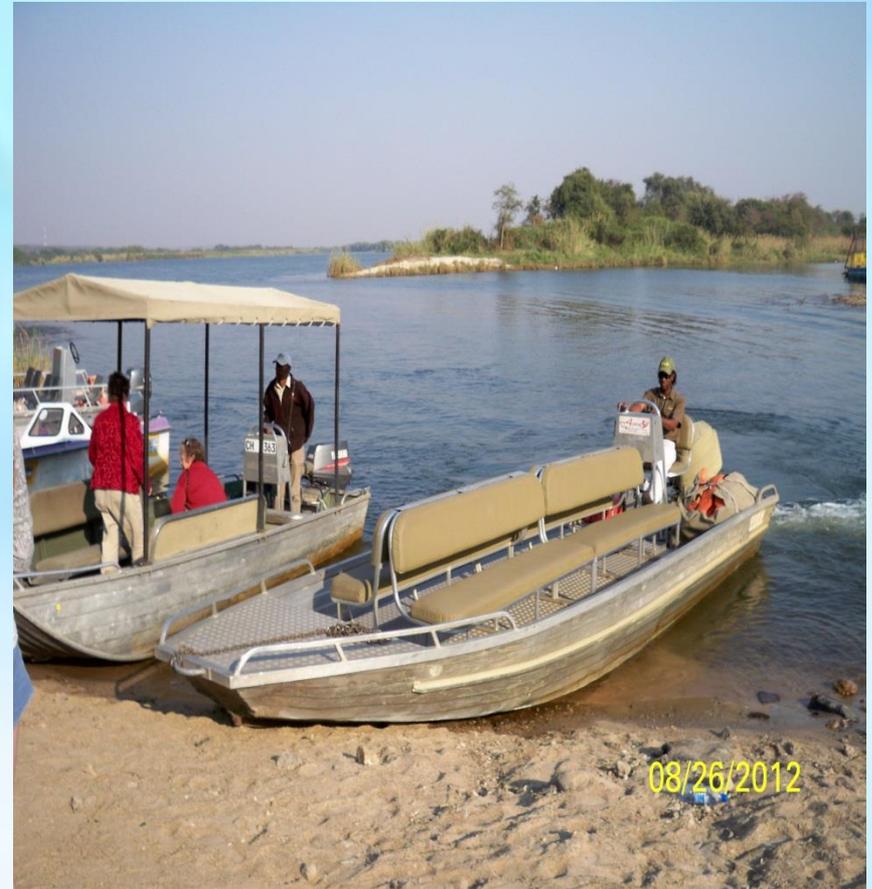


This is the Dry Season

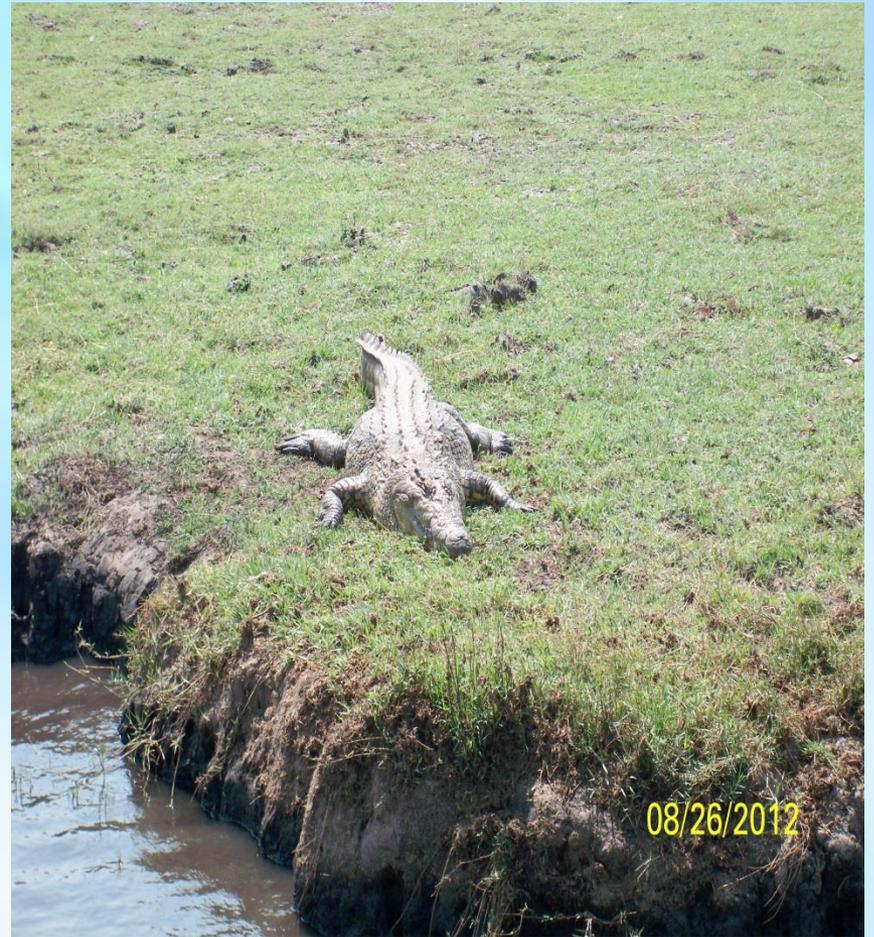


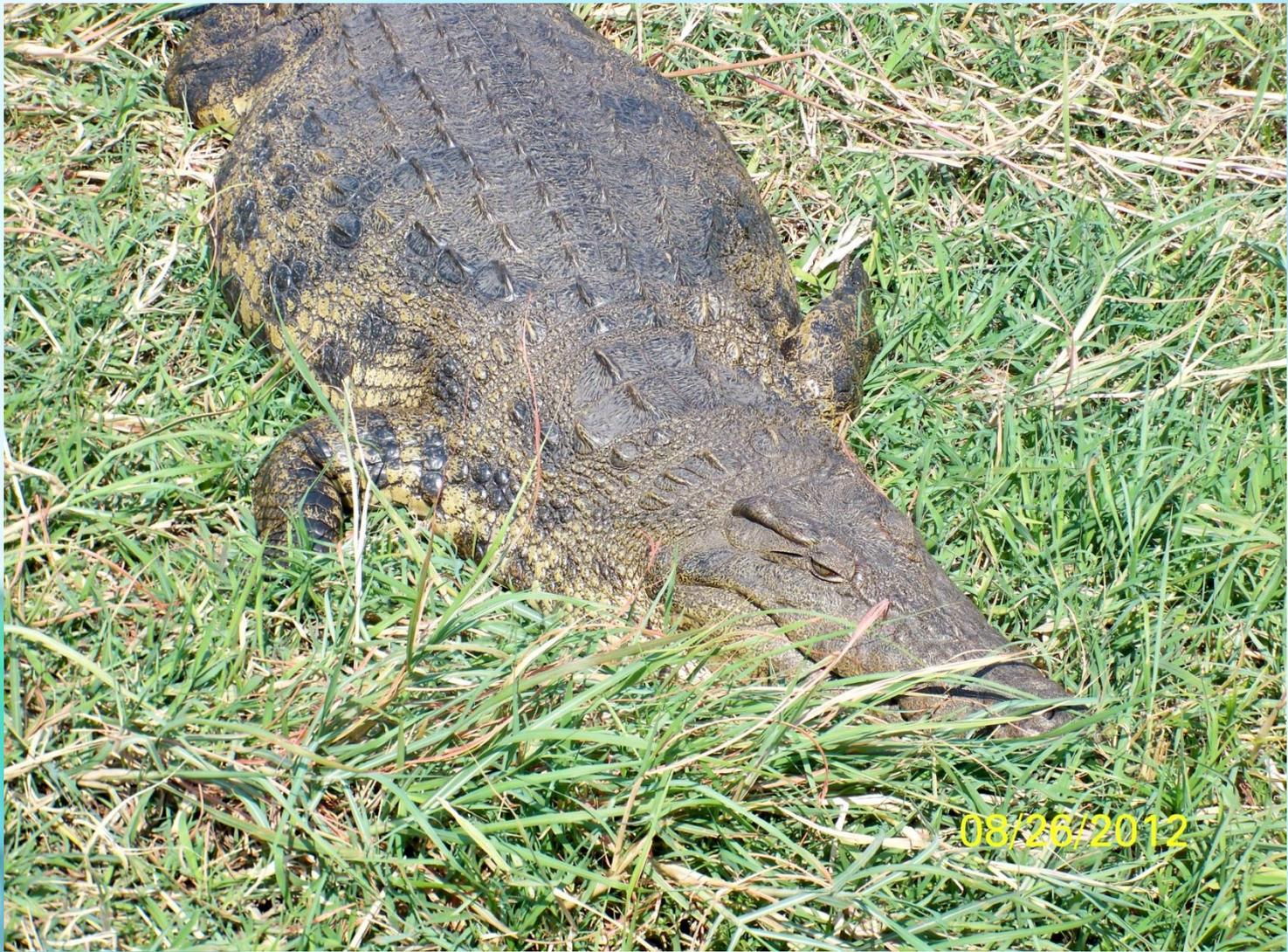


The Border- Zambia, Zimbabwe, Namibia, Botswana



The Animals





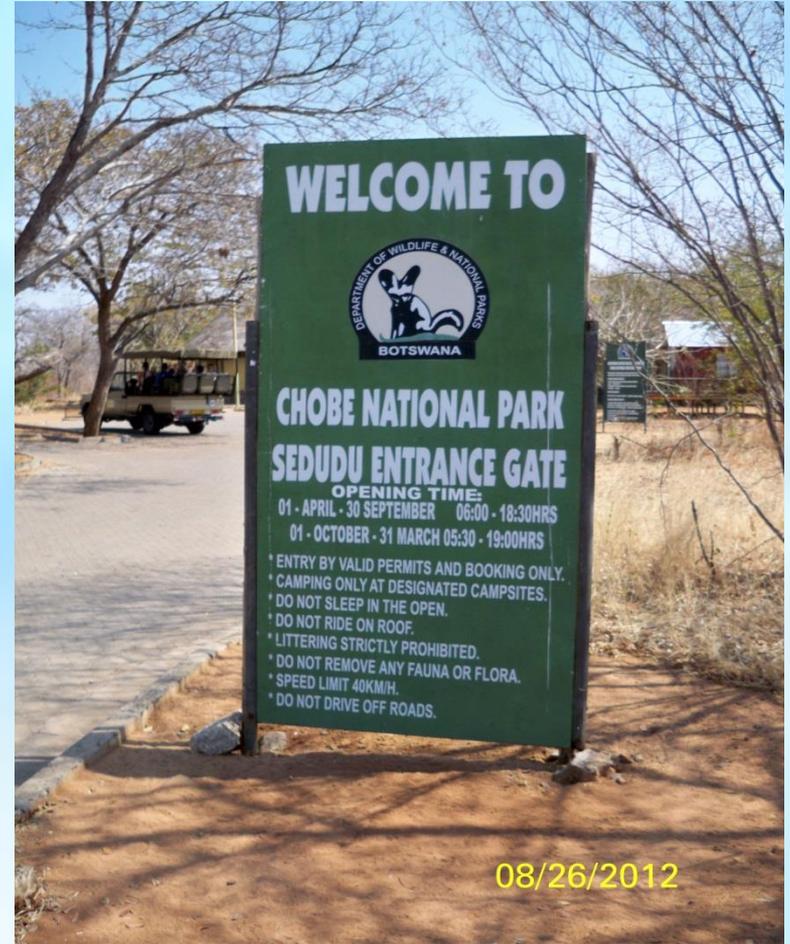


08/26/2012



08/26/2012

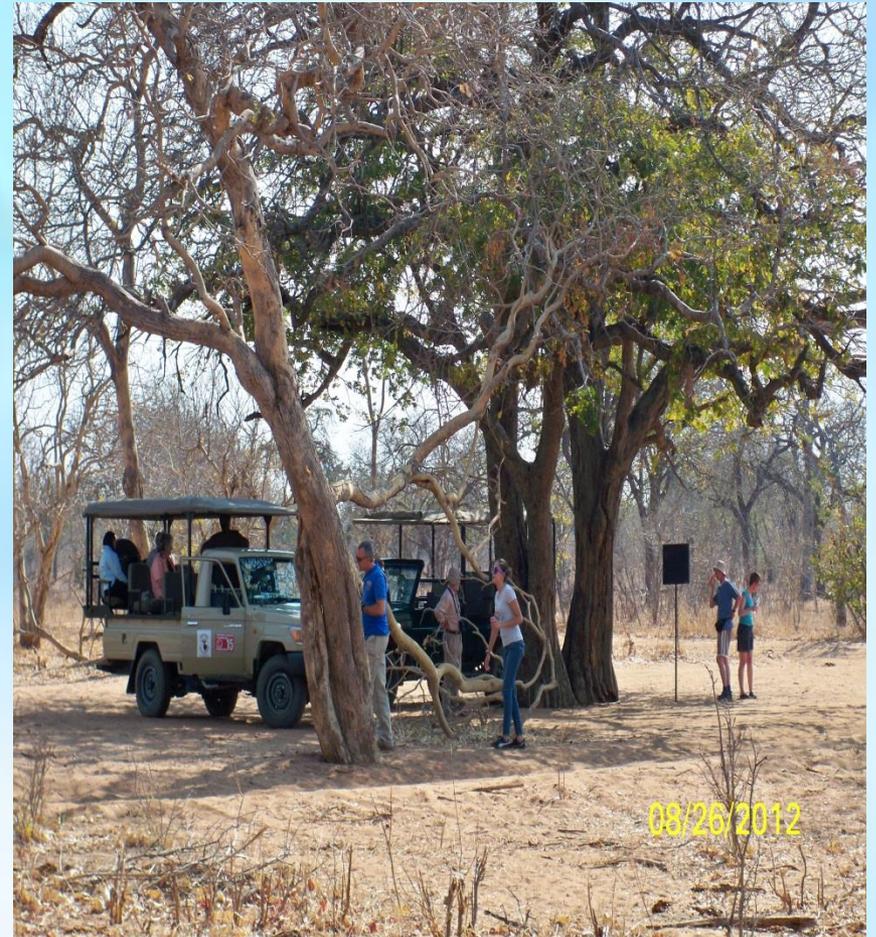
More Animals



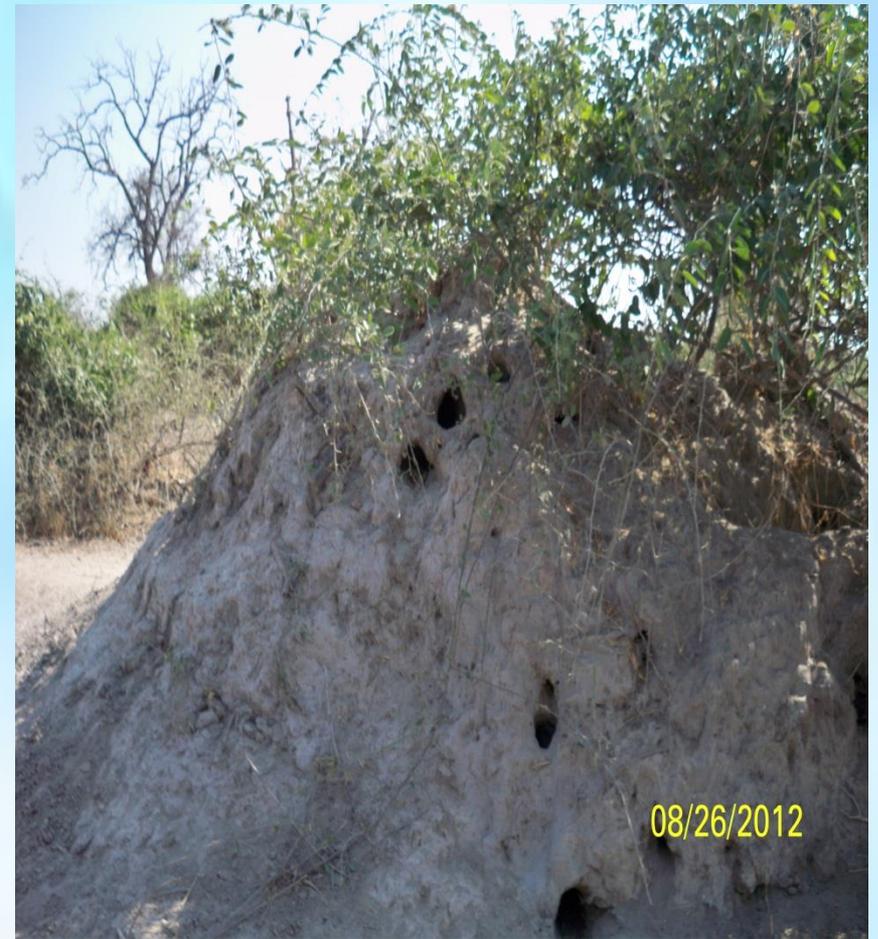
Animals



Elephant—Rest Stop



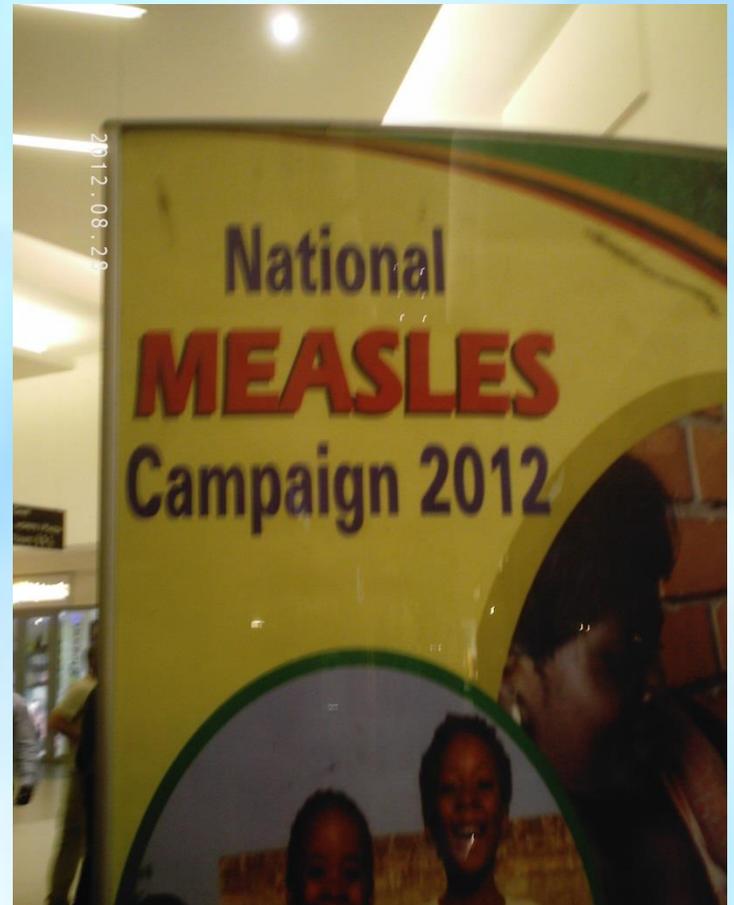
Impala—Meerkat Mound



Back to Reality?

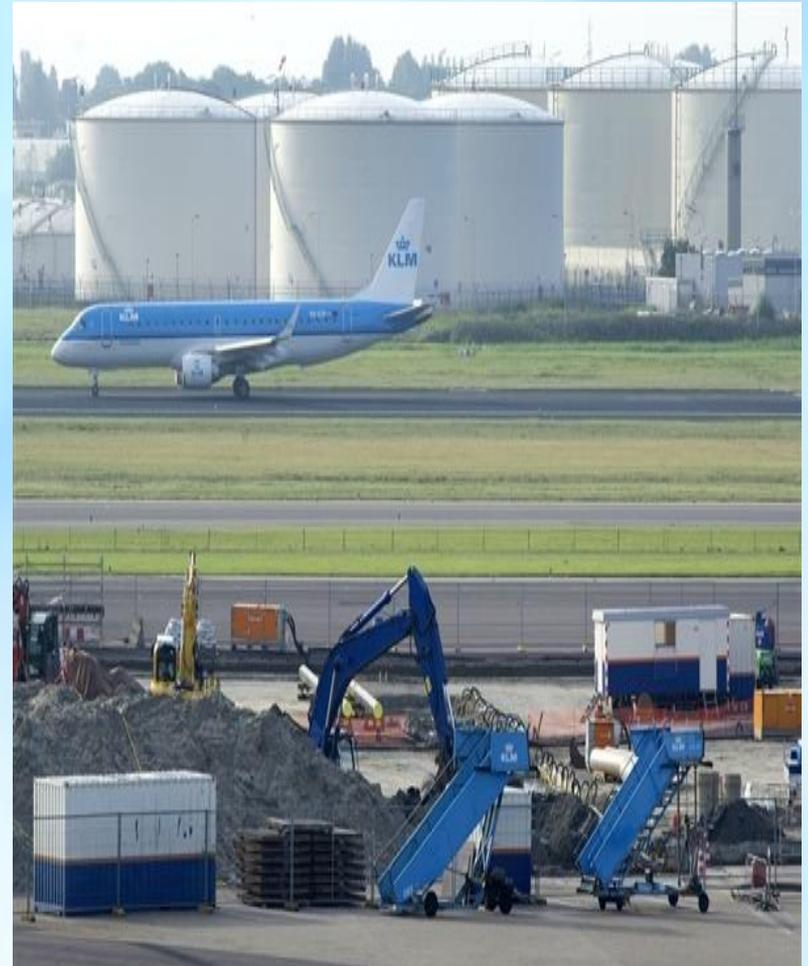


Last Few Hours in Zambia



Amsterdam Airport

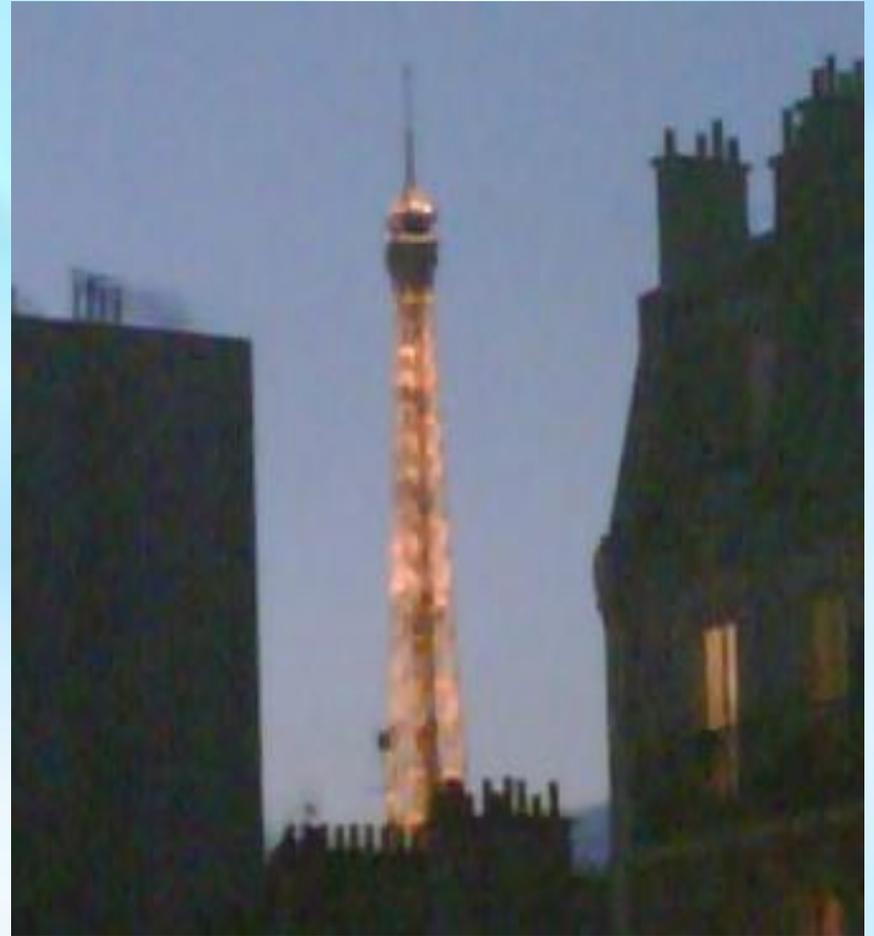
Unexploded WWII bomb disrupts Amsterdam Schiphol airport



The Louvre



View from Hotel Room



Questions?

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