

National Wildlife Rehabilitation Conference

Canberra, Australia
22 July 2008

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Jakarta Flooding, 07

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- Manager – International Disaster Response



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AGENDA

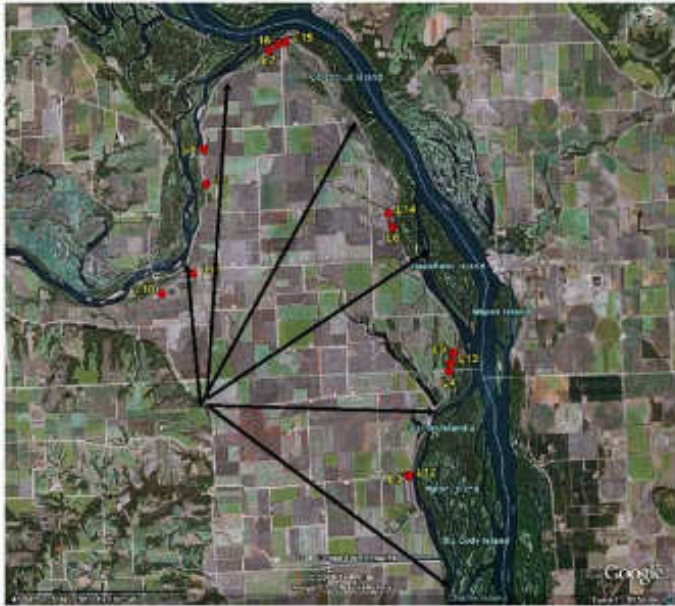
- Rescue some pigs
- Global Overview
 - Incidence and Types of Disasters
- National/Regional View
- Trends
- Next Steps



Big Ditch Pig Rescue

- Oakville, IA levee breached in two sites - creating a lake 60 km in circumference
- Evacuation (35-50K) of factory farmed pigs
- Hundreds left behind to drown or swim
- Only thing above water level was levee
- Tearing plastic/sandbags
- Shooting the pigs on the levee





Management by Objectives

1. Assess
2. Stabilize and treat
3. Mobilize, capture, and hold
4. Transport
5. Sanctuary



A Small Victory

- At least for 68 pigs
 - 6 euthanized on the levee
 - Hundreds died swimming
 - Hundreds died in the barns
-
- The majority of deaths were preventable had a better evacuation plan been in place.





Texas Fires, 2006

Quiz Question #1

List the Top 5 Countries Impacted by Disasters

Where disasters occur

Since 2000, top ten countries impacted by disasters

| | |
|--------------------------------|-------|
| 1. China | 6.46% |
| 2. USA | 5.55% |
| 3. India | 4.19% |
| 4. Indonesia | 3.31% |
| 5. Philippines | 2.33% |
| 6. Russia | 2.30% |
| 7. Afghanistan | 2.11% |
| 8. Bangladesh | 1.98% |
| 9. Viet Nam | 1.83% |
| 10. Pakistan, Australia, Zaire | 1.58% |

Natural disaster occurrence in 2007



Quiz Question #2

List the Top 5 Types of Disasters

Types of Disasters

Since 2000, most prevalent disasters

1. Floods 37.30%
2. Windstorms 22.09%
3. Epidemic 14.56%
4. Earthquake 6.55%
5. Extreme Temperatures 4.95%
6. Drought 4.47%
7. Slides 4.32%
8. Wildfires 3.40%
9. Volcano 1.32%
10. Wave/surge 0.54%

Australia and New Zealand 2000-2007

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | Total |
|---------------------|------|------|------|------|------|------|------|------|------|---------------|
| Drought | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 2 (2/0) |
| Epidemic | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 (1/1) |
| Extreme Temperature | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 (0/1) |
| Flood | 2 | 4 | 1 | 4 | 5 | 2 | 2 | 1 | 1 | 22 (16/6) |
| Insect Infestation | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 2 (2/0) |
| Wild Fires | 1 | 1 | 2 | 1 | 0 | 1 | 3 | 0 | 0 | 9 (9/0) |
| Wind Storm | 4 | 3 | 3 | 6 | 3 | 3 | 3 | 2 | 0 | 27 (23/4) |
| Total | 8 | 9 | 7 | 13 | 9 | 6 | 9 | 3 | 1 | 65 (53/12) |

Bunbury Mail 16 July

- WA's sea levels risen 20cm last 100 yr.
- Reports suggest an 88cm rise by end of century
 - Oceans warming 50% faster and ice caps melting more quickly than predictions.
- South West - sea levels possibly rising by more than a metre by end of century.
- Bunbury has already witnessed king tides this year, with several jetties frequently under water.
- 15 July, plug at mouth of inlet closed to prevent possible flooding in Bunbury.

AP 20 July 2008

Drought



- Worst drought in a century – lasted more than 7 yr in some areas - water restrictions in major cities.
- "It just reminds us, yet again, the way in which Australia, is vulnerable to climate change."
- Report by nation's top scientists this month - Australia in for a tenfold increase in heat waves.
- Exceptionally hot years, which used to occur once every 22 yr, would occur every 1-2 yr, making drought permanent part of Australian landscape.



Mexico Flooding, 2007

Quiz Question #3

What were the Top Two Disasters in 2007 in terms of overall impact?

Top 10

Natural Disasters by Number of Deaths - 2007

| | | |
|------------------------|------------|------|
| Cyclone Sidr, November | Bangladesh | 4234 |
| Flood, July-August | Bangladesh | 1110 |
| Flood, July-September | India | 1101 |
| Flood, August | Korea | 610 |
| Flood, June-July | China | 535 |
| Earthquake, August | Peru | 519 |
| Heat Wave, July | Hungary | 500 |

Number of Deaths Since 2000

| | Australia | New Zealand | Total |
|---------------------|-----------|-------------|-----------|
| Drought | 0 | 0 | 0 |
| Epidemic | 0 | 0 | 0 |
| Extreme Temperature | 0 | 0 | 0 |
| Flood | 21 | 4 | 25 |
| Insect Infestation | 0 | 0 | 0 |
| Wild Fires | 26 | 0 | 26 |
| Wind Storm | 10 | 2 | 12 |
| Total | 57 | 6 | 63 |

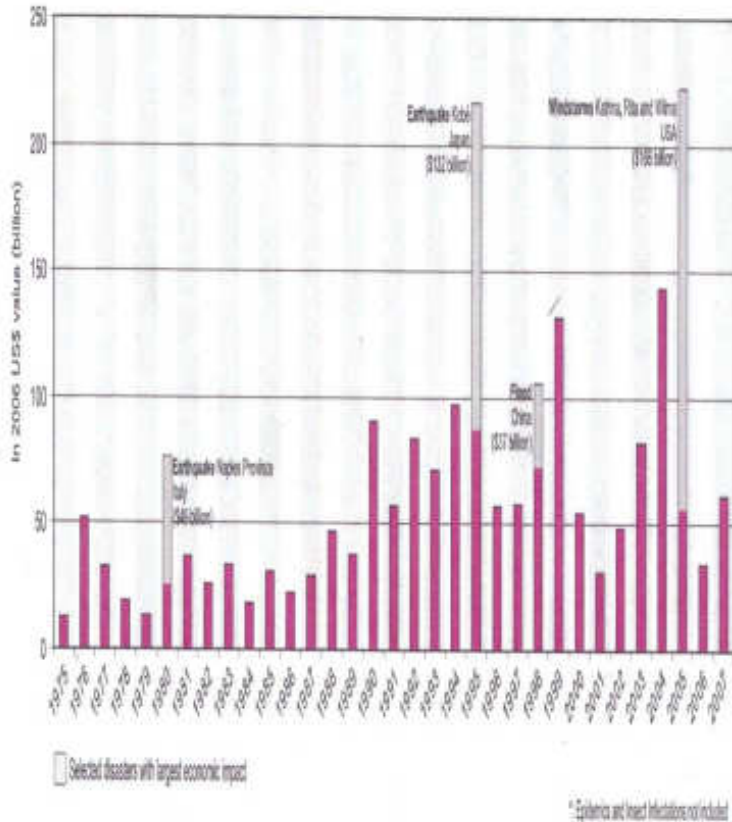
Tired of these questions?



Hurricane Floyd, 1999

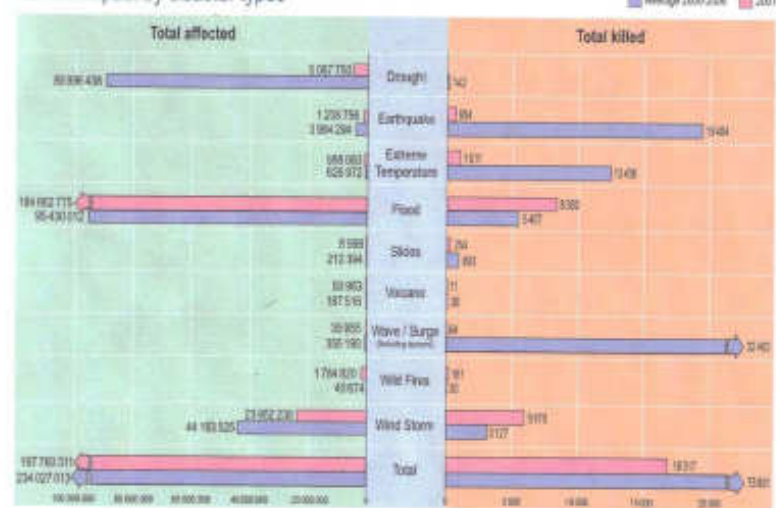
Which disasters (2000-2007) were the most *costliest*?

Annual reported economic damages from natural disasters: 1975-2007



Comparing present to past

Human impact by disaster types



“Dramatic Increase in Disasters”

- Population growth
- Urbanization
- Environmental fragility
- Move toward coastal areas
- Global climate change

- Job Security
- 6 Hurricanes
- 2 Earthquake
- 2 Land/mudslides



Zun Dao, 2008

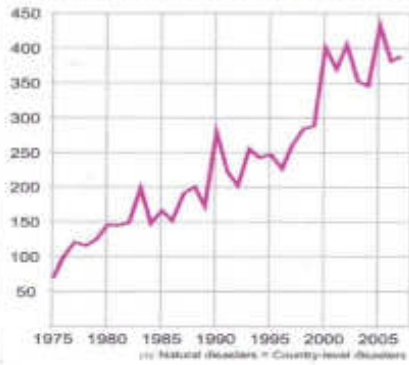
- 1 Tsunami
- 1 Volcano
- 5 Floods
- 5 Fires

“Reported number of natural disasters worldwide has been rapidly increasing, from fewer than 100 in 1975 to more than 400 in 2005.”

“The human cost of these disasters has been staggering. The number of people affected by natural disasters each year nearly quadrupled from 1975–84 to 1996–2005.”

World Bank, 2007

Time trend of reported natural disasters⁽¹⁾, 1975-2007

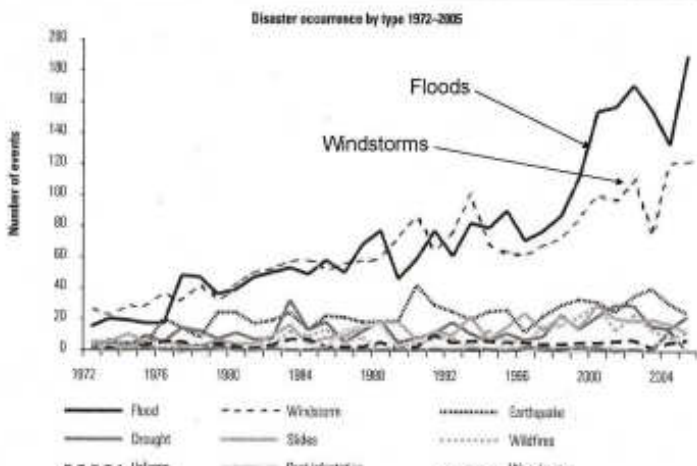


Chaiten Volcano, 2008

Quiz Question #4

Which Types of Disasters are Increasing at a Faster Rate?

Flood and Wind Storm Disasters Are Increasing in Frequency



Source: UNISDR: The OFDA/CRED International Disaster Database (www.unisdr.org/we/inform/portal/default.do) - Universita College de Louvain, Brussels, Belgium.



Iowa, U.S., 2008



2008

Likely the *biggest* year ever in terms of disasters

China, 2008



Burma, 2008

NATURAL disasters killed at least 150,000 people in the last 6 months

- More than in the whole of 2004 when south-east Asia was struck by a tsunami.
- 400 natural catastrophes in the first half of 2008
 - Overall losses estimated at \$US50 billion.



Sri Lanka, 2005

May, 2008

- In Burma, cyclone Nargis killed 138,000
- In China, earthquake left 80,000 dead



U.S.

- Highest number of tornadoes ever recorded in the first six months of a year.
- Billions of dollars in damage - heavy rain and hail and subsequent flooding throughout Midwest.
- As of last week, 1781 fires burning in CA with nearly 1M acres impacted.
- SE and OK severe drought.

Livestock Loss

- Bangladesh, Sidr – 540,000 livestock
- Burma, Cyclone Nargis - estimated 120,000 water buffaloes and draught animals
- China - over 3m pigs, up to 70% of livestock, \$2B.
- U.S., Hurricane Katrina/Rita - 35,000 cattle, 6m chicken
- U.S., Hurricane Floyd - Almost 3 m chickens/turkeys, 30,000 hogs.



Bushfires



- 1978/9: "Heavy stock losses"
- 1984/5: 40,000 stock
- 1990/91: 120,000 sheep, 200 cattle
- 2001/2: 7,043 stock (cattle, sheep, goats, chickens)

Bonus Question



How Do Wildlife Fare
During/Following a Disaster?

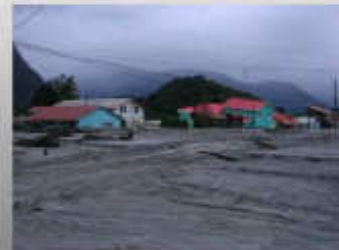


We Don't Know

Wildlife

- Census Data is unreliable in many areas
- Carcass counting/identification is difficult

Earthquakes
Windstorms



Volcanoes
Drought
Floods
Fires

Chaiten, Chile, 2008

What We Do Know

- There are hot spots in the world
- Disasters are occurring more frequently and with greater impact
- Floods, windstorms, and likely fires are occurring even more frequently than other types
- Disaster preparedness and risk reduction is a much better investment than response!



Sichuan, 2008

"What we are seeing in every urban earthquake is a result of mostly avoidable errors."

Risk Reduction

- Mitigation
 - Stricter building codes
 - Developing flood resistant communities
 - Evacuation plans
- Planning
 - Requiring animal evacuation plans
 - Requiring a plan for evacuating livestock
 - Training wildlife folks in technical rescue



