

**The Munich Re NatCat*SERVICE***





# MRNatCat SERVICE

MR-Nr

Created on:  Updated on:

Event:

Mark:  Double:   
Master:  Version:   
Estkey:  To print:   
 To GREAT  Print omitted  
 To ESTCAT

Date:  to:

Country:

Region:     To WM

Deaths:  by  Source:

Remarks:

	in Mio. US\$	in Mio. YEN	in Mio. DM	Source
Economic losses >	<input type="text" value="100,000.00"/>	<input type="text"/>	<input type="text" value="150,000.00"/>	<input type="text"/>
Insured losses	<input type="text" value="3,000.00"/>	<input type="text" value="220,000.00"/>	<input type="text"/>	<input type="text"/>
MR share	<input type="text"/>	<input type="text"/>	<input type="text" value="200.00"/> (gross)	
	<input type="text"/>	<input type="text"/>	<input type="text"/> (net)	
Exchange	<input type="text"/>	<input type="text"/>		

Effects on:

- People
  - Injured
  - Homeless
  - Missing
  - Affected
  - Evacuated
- Houses
  - Damaged
  - Dam/Destr
  - Destroyed
- Boats, vessels
- Affected :
  - Agriculture
  - Infrastructure
  - Water supply
  - Electricity
  - Industry

M 6.1 mb, 6.8 Ms. Max. intensity (MM) VII (Kobe area and Awaji-shima). Duration 40 sec., depth 20 km. Epicentre Island of Awaji-shima. Series of aftershocks. Landslides. Fire following earthquake (20,000 houses destroyed). Affected area: radius of 200 km. 394,000 houses destroyed or severely damaged. Historical City of Kyoto damaged, esp. temples. Major losses to Kobe port (US\$ 5.000.00m). Oil, steel, electronic and automobile industry severely affected. Highways, roads, bridges, railroads (esp. Kyoto/Kobe) destroyed, numerous trains derailed. Infrastructure



**no borders**



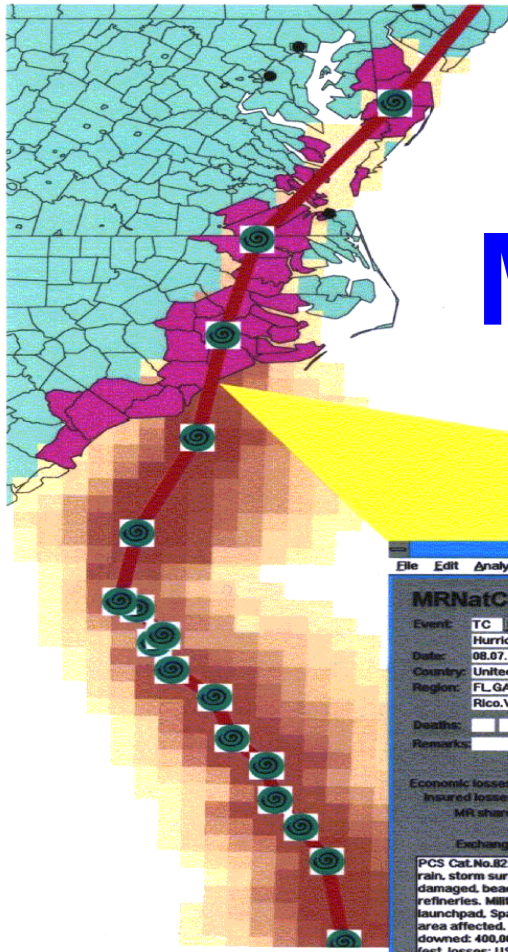




# Hurricane Bertha - Landfall Area - Analysis

## 05.07. - 14.07.1996

# Monitoring



MRNatCat

File Edit Analysis Administration Help

MRNatCat SERVICE US19960708 MR-Nr: MR9607080 80 Created on: 19.08.1996

Event: TC Tropical Cyclone Storm Updated on: 04.12.1996

Date: 08.07.1996 to: 14.07.1996 B.-14.7.96 Mark I: B Double: g

Country: United States Northern America Mark II: Vorst:  Print omitted

Region: FL,GA,SC,NC,VA,NJ Washington D.C. NY Caribbean: Puerto

Rico, Virgin Islands

Deaths: 10 by (Caribbean: 5, USA: 5) Source: CNN14.7.96

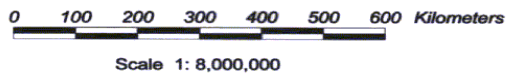
Remarks:

	In Mio. US\$	In Mio	In Mio. DM	Source
Economic losses	> 400.00			Rauch2.9.96
Insured losses	195.00			ILL15.7.96
MR share				(gross)
Exchange				(net)

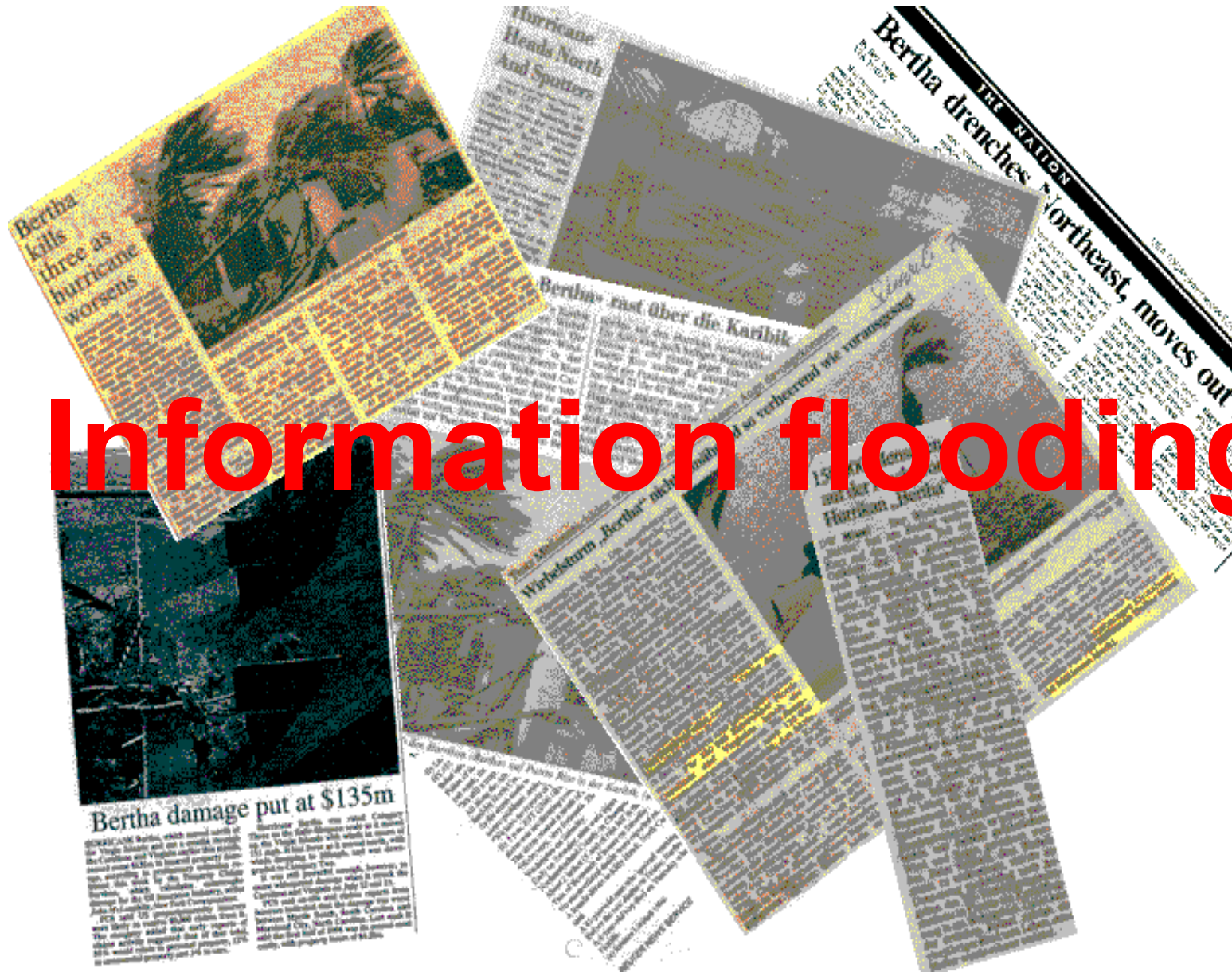
Effects on:

- People:
  - Injured: \_\_\_\_\_
  - Homeless: \_\_\_\_\_
  - Missing: 40
  - Affected: 400,000
  - Evacuated: 300,000
- Houses:
  - Damaged: 200
  - Dam/Destr: \_\_\_\_\_
  - Destroyed: \_\_\_\_\_
- Boats, vessels: \_\_\_\_\_
- Utility network:
  - Infrastructure
  - Water supply
  - Electricity
  - Industry

PCS Cat.No.82. Wind speeds 165 km/h, gusts up to 185 km/h, torrential rain, storm surge. Hundreds of houses, mobile homes, roads, ocean piers damaged, beaches eroded, 3 mobile homes destroyed. Damage to refineries. Military jet accident. Space shuttle evacuated from seaside launchpad, Space Center closed. Touristic industry, Olympic Yachting area affected. Air and land traffic affected. Trees and power lines downed: 400,000 without electricity. Damage to corn and tobacco fields (est. losses: US\$ 15m). Water supply affected. Est. no. of claims: 80,700



# During and after the event...



# Information flooding





# Sources

Atti della Associazione di Geofisica

## ANNALI GEOFISICA

VII Workshop  
GEO-ELECTROMAGNETISM  
Atti del Terzo  
September 7-9, 1988

# BS

Bulletin  
Seismological  
Society  
of America

West May downpour in 50 years rocks Mumbai's liekboat

# THE TIMES OF INDIA

Volume 321 No 1

## LLOYD'S Casualty

WEEK  
CONTENTS

Poles appeal over  
IACCS expulsion

# Data sources

- **Online databases and information systems**  
(e.g. Internet, Reuters Insurance Briefing)
- **Media reports**  
(press, radio, television)
- **Worldwide network of contacts**  
(scientists, official agencies, companies, technical seminars, workshops, expert opinion)
- **Technical literature**  
(scientific reports, essays, conference papers, etc.)
- **Munich Re connections**  
(subsidiaries, branch offices, liaison offices, service companies, clients in more than 150 countries)





# Scientific reports

- Annali di geofisica
- BSSA (Seism. Soc. of America)
- Climatic Perspectives
- Disasters in China
- Earthquake and Volcanoes
- Earthquake Spectra
- EERI (EQ Engineering Res. Inst.)
- EM-DAT (CRED)
- Hong Kong Observatory
- International Seismological Centre
- Journal of Meteorology
- National Hurricane Center
- Natural Hazard Observer
- Natural Hazards
- NOAA
- PIK (Potsdam Inst. of Climate Impact
- University of Hawaii
- Research
- Swiss Earthquake Service
- Transactions Am. Geophys. Union
- USGS (United States Geological Survey)
- World Meteorological Organisation
- Various newsletters and periodicals  
(e.g. Technisches Hilfswerk)
- Others

# NGOs

- ECLAC
- International Federation  
of Red Cross and Red Crescent
- OCHA/DHA
- United Nations
- USAID/OFDA
- Others

# Weather services

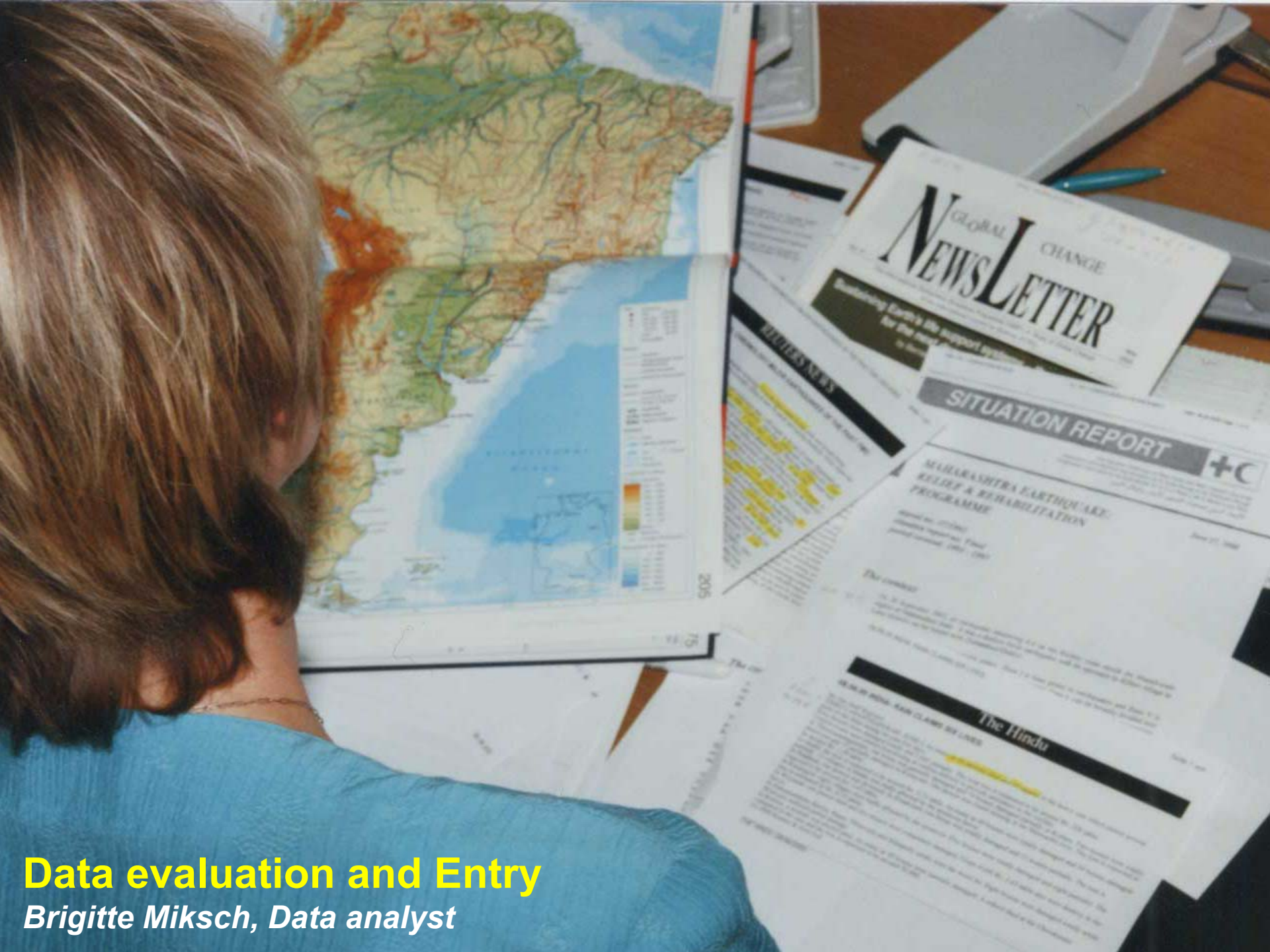
- Fiji Meteorological Service
- German Weather Service
- Monthly Weather Report
- United States Weather Service
- Weekly Climate Bulletin
- etc.

# More sources...

- 10+ insurance related
- 5+ News agencies
- Worldwide network of contacts  
in science, economy etc.
- Proceedings
- Munich Re Branches, 50+ countries
- Claims/Loss Reports from clients
- Reports insurance companies





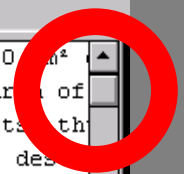


**Data evaluation and Entry**  
*Brigitte Miksch, Data analyst*



US20000101	MR200001D065	Forest fires	Jan. - April 2000	FL	2,255 seats of fire. 300 km²
US20000101	MR200001D075	Brush fires	Jan.-Sept.2000	MS,	74.571 seats of fire. Area of
US20000102	MR200001B064	Severe storm, tornadoes	2.-4.1.2000		Cat. No. 11. Strong gusts th
US20000102	MR200001B064	Tornado	2.-4.1.2000	KY,	Cat. No. 11. 700 houses des
US20000105	MR200001B049	Severe storm	5.1.2000		High wind speeds. Houses car
US20000106	MR200001A069	Earthquake	6.1.2000	AK,	M 6.0. Minor damage to proper
US20000109	MR200001B047	Severe storm	9.-10.1.2000		heavy rain and snow, high win
US20000111	MR200001D048	Avalanche	11.1.2000		
US20000112	MR200001B052	Severe storm	12.1.2000	MD;	High wind speeds, heavy rain
US20000114	MR200001D045	Cold wave	14.-19.1.2000		
US20000114	MR200001B051	Severe storm	14.1.2000	NC,	Heavy rain and snowfall, stro
US20000117	MR200001B062	Windstorm	17.1.2000	OR,	High wind speeds. Buildings d
US20000122	MR200001B046	Winter storm	22.-25.1.2000		Cat. No. 13. Freezing, ice, s
US20000126	MR200001D053	Avalanche	26.1.2000	AK,	Several warehouses, 1 house d
US20000127	MR200001B050	Winter storm	27.1.2000		Heavy snowfall. Roads, highwa
US20000130	MR200001B054	Winter storm	30.-31.1.2000		Snowstorm, high wind speeds,
US20000201	MR200002D002	Avalanches	1.4.2.2000	AK,	Heavy snowfall, rising temper
US20000203	MR200002B040	Windstorm	3.2.2000	CA,	Gusts up to 90 km/h. Houses (
US20000213	MR200002B046	Tornadoes	13.2.2000	FL,	Thunderstorm, strong gusts. 5
US20000214	MR200002B030	Tornadoes, severe storm	14.2.2000	GA,	Wind speeds up to 250 km/h, t
US20000214	MR200002B042	Tornado	14.2.2000	ID,	Thunderstorm, strong gusts. P
US20000218	MR200002B045	Tornadoes	18.2.2000		Strong gusts, thunderstorms.
US20000219	MR200002C043	Floods	19.-20.2.2000	KY, OH	Thunderstorm, strong gusts, h
US20000219	MR200002D044	Avalanche	19.2.2000	NY,	
US20000222	MR200002B026	Winter storm	22.2.2000	CA,	High wind speeds, heavy rain,
US20000222	MR200002D027	Avalanche	22.2.2000	NH,	
US20000224	MR200002B041	Severe storms	24.-26.2.2000		PCS Cat. No. 14. Thunderstorm
US20000226	MR200002D047	Forest fire, grassland fire	26.2.-1.3.2000	FL,	Dry conditions. 80 km² of gra
US20000228	MR200002A033	Volcanic activity Mt. Kilauea	28.2.2000	HI	Swarm of tremors. Road closed
US20000302	MR200003B007	Severe storm	2.3.2000		PCS Cat. No. 15. Thunderstorm
US20000307	MR200003B043	Severe storm	7.3.2000	CA, AZ	Strong gusts, heavy snowfall.
US20000308	MR200003B035	Tornado	8.3.2000	WI,	Thunderstorm, strong gusts. B
US20000309	MR200003D042	Brush fires	9.3.2000	MO	Gusts up to 80 km/h. >30 seat
US20000310	MR200003B038	Severe storm	10.-11.3.2000		Thunderstorm, wind speeds up
US20000313	MR200003D041	Landslide	13.3.2000	CA,	Heavy rain, mudslide. 5 homes
US20000315	MR200003B040	Tornado	15.3.2000	LA,	Thunderstorm, heavy rain. 70

Scientific background





# MRNatCat SERVICE

MR-Nr

Created on:  Updated on:

Mark:  Double:

Version:

To print:

Print omitted

To WM

Event:

Date:  to:

Country:

Region:

Deaths:  by  Source:

Remarks:

in Mio. US\$ in Mio.  in Mio.

Economic losses

Insured losses

MR share

Exchange

**M 6.0.** Minor damage to property.

### Scientific Background

Latitude:  \*  ' N Longitude:  \*  ' W

⇒ Juneau	58.300	-134.417
----------	--------	----------

Windspeed

Peak gust

EQ magnitude

max. intensity (MM)



**Date**

10.-14.7.1996

**Area affected**

United States:  
FL, Penascola; SC; NC,  
Wilmington, GA; VA,  
Northumberland;  
Washington D.C.; NJ; NY,  
Manhattan

**Loss Event****Hurricane Bertha****MR199607B080**

PCS Cat.No.82. Wind speeds 165 km/h, wind gusts up to 185 km/h, torrential rain, storm surge, Elizabeth City flooded. 5,000 houses, mobile homes, roads, ocean piers damaged, beaches eroded. 3 mobile homes destroyed. Military jet accident. Space shuttle evacuated from seaside launchpad, Space Center closed. Touristic industry, Olympic Yachting events affected. Air traffic, surface traffic affected. Trees and power lines downed: 400,000 without electricity. Est. no. of claims: 80,700.

Evacuated: 300,000.

Deaths: 5

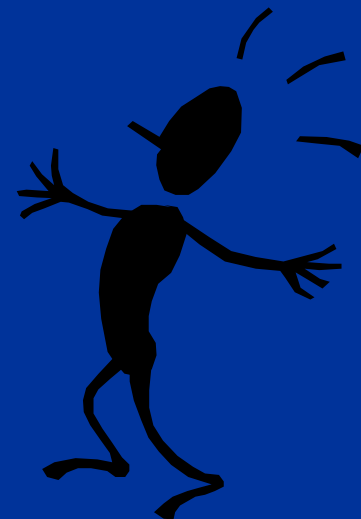
Economic losses: US\$ 400.00m

Insured losses: US\$ 195.00m

Sources: PCS; NZZ; LL; FAZ; R; USA Today; Insurance Inf. Inst.; dyp

## NatCatSERVICE Information

- screened carefully
- concise and clear
- containing the relevant facts
- standardised
- referenced





# Loss Estimation Methods

Where there are no loss figures given we cannot assume there was no monetary loss !

1. Ratio Economic/Insured Loss
2. The Estimation Catalogue
3. Expert opinion

*Results are mainly used in MR only !*

Selection

Only Records with  in Mark  in Double  
 To GREAT  in Master  in Version  
 To ESTCAT  in Estkey  in To print  
 To WM

Period:  .  .  -  .  .

Event:  Subevent:  Only the first  Records

Continent:  Subcontinent:  Country:

Date	Area affected	Loss Event
4.-9.1.1996	Indonesia: NW, SW, Sumatra N, esp. Aceh Province; Java W, esp. Jakarta	<b>Floods</b> <span style="float: right;"><b>MR199601C015</b></span> Persistent torrential rain. Worst flooding in 50 years (Sumatra), 20 years (Jakarta). 4,000 houses damaged. Rantau oil fields closed. Losses to livestock and crops. Missing: 20, homeless: 15,000, evacuated: 175,000. Economic losses in Jakarta US\$ 20.00m, in Aceh Prov. US\$ 90.00m. Deaths: 24 Economic losses: US\$ 110.00m Sources: R; LL; WIR; Jakarta Post



# Quality

The sources and entries are screened carefully, standardised and given the Munich Re stamp of approval.

Each event is given a Munich Re reference number, e.g. **MR199607B080**.

The number helps to identify and research events.



### 10 Major Natural Catastrophes in 1997

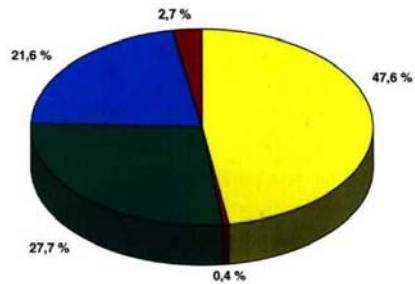
Date	Region	Event	Deaths	Economic Losses US\$m	Insured
1-11 January	USA, Westcoast - esp. CA	Floods	10	2,000	280
1-11 January	USA, esp. ND	Floods	1,573	1,215	227
1-11 January	Iran	Earthquake	284	900	800
1-11 January	China	Floods	1,000	1,250	2
1-11 January	Central Europe	Floods	311	6,900	2
1-11 January	Myanmar	Floods	11	2,700	2
1-11 January	esp. China, Japan, Taiwan	Typhoon Winnie	1,850	2,200	2
1-11 January	esp. Assisi	Earthquake	764	470	2
1-11 January	India, Kenya, Thailand	Floods			
1-11 January	India, Thailand	Typhoon Linda			

# Data analyses

Great Natural Disasters 1960 - 1997



Economic losses (US\$ 460 billion)





# Analyses

a wide variety to choose from

- **Event listings**

by type of event, country, timeframe, etc.

- **Tables**

e.g. key information, sorted by relevant criteria  
(i.e. ten costliest earthquakes in Asia, etc.)

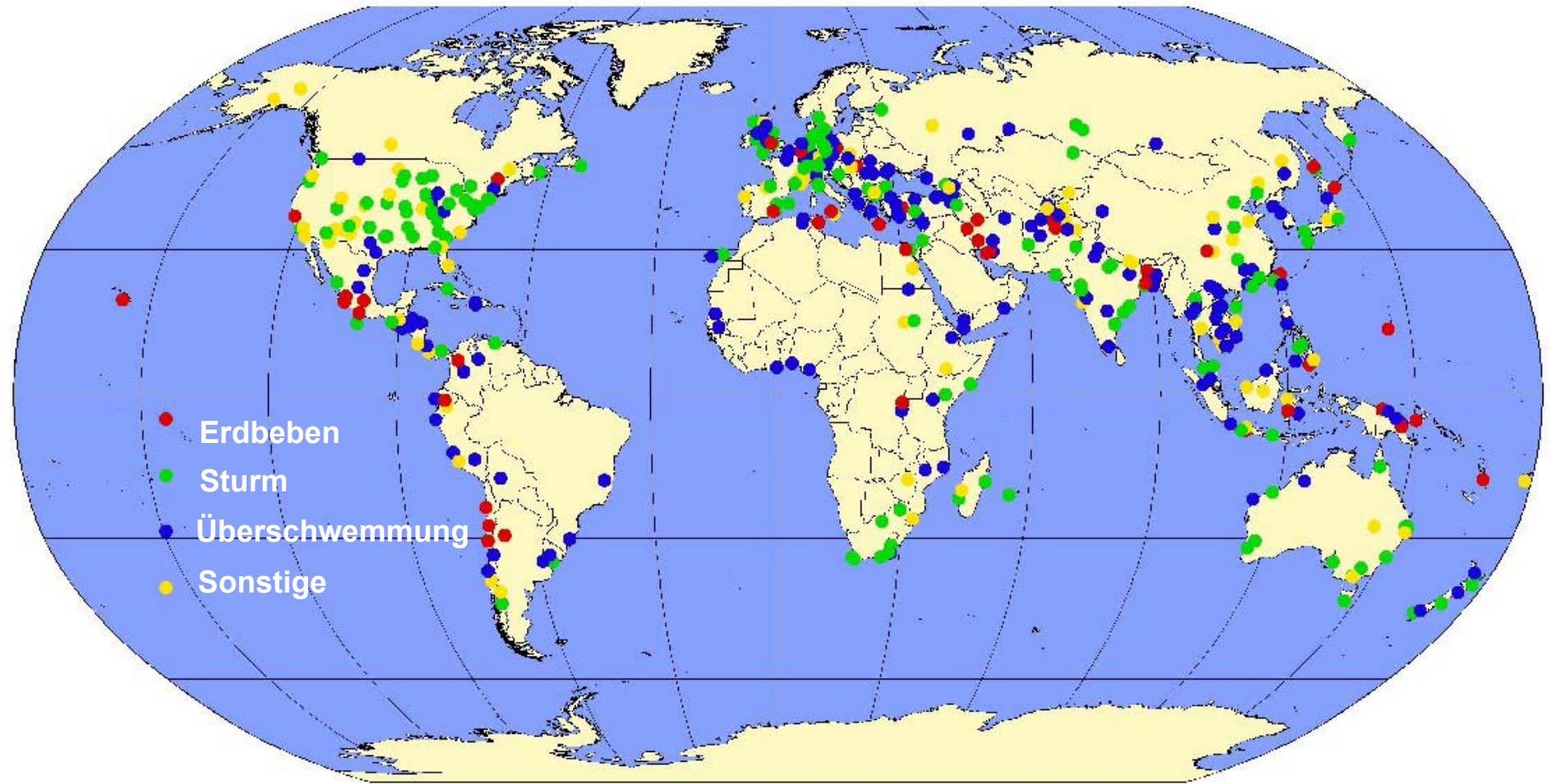
- **Maps**

world, country (all sizes, zooms, projections)

- **Statistics**

Some examples →



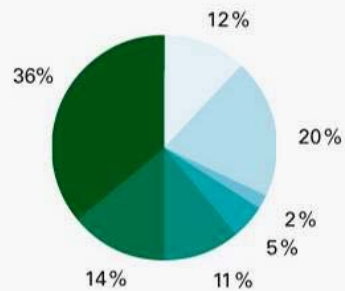


**2003: 700 natural catastrophes**

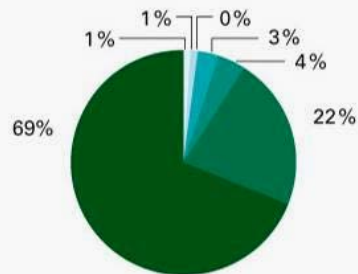


# Weather-related Natural Catastrophes 1980-2003

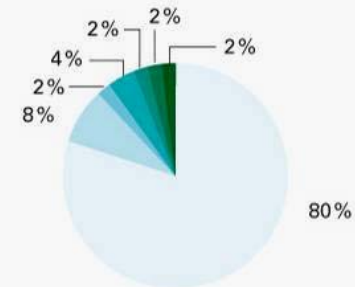
percentage distribution among insurance markets  
at various stages of development



**Economic losses: US\$ 1,000bn**



**Insured losses: US\$ 225bn**



**Fatalities: 930,000**

- 0-5 US\$
- 6-25 US\$
- 26-50 US\$
- 51-100 US\$
- 101-500 US\$
- 501-1000 US\$
- > 1000 US\$

Sachversicherungsprämie pro Kopf und Jahr  
in US\$

Quelle: MR-Economic-Research



# Event listings

## MRNatCat SERVICE

Date	Area affected	Loss Event
22-29.6.96	Mexico: SW: Guerrero, esp. Acapulco, Manzanillo, Colima	<b>Hurricane Alma</b> MR199608027 Wind speeds 160 km/h, wind gusts up to 193 km/h. lightning, heavy rain. Riverbanks burst. Houses destroyed, roads flooded, trees and power lines downed, ports closed. Injured 1, homeless 2,000 Deaths: 5 Sources: WCB, SZ, NZZ, FAZ, R, WH
29.6.-30.6.96	Mexico: SW: Guerrero, esp. Acapulco, Tecpan	<b>Hurricane Boris</b> MR199608028 Wind speeds up to 165 km/h, torrential rain, mudslides. Houses destroyed, boats damaged, roads flooded. Ports closed, air traffic affected. Telephone and electricity lines cut, injured 70, homeless: >10,000, evacuated: 60 Deaths: 4 Sources: WCB, LL, R
3.-4.7.96	Mexico: S: Chiapas, Oaxaca, Guerrero states, esp. Acapulco	<b>Tropical storm Christina</b> MR199607006 Wind gusts up to 100 km/h, storm surge, mudslides, heavy rain. Numerous ports closed along Pacific coast. 70 houses, beach huts, vehicles destroyed. Trees uprooted, communication lines cut. Homeless: 350, missing: 25 Deaths: 12 Sources: NZZ, LL, R, WH
8.-14.7.96	REGION AMERICA: United States: FL, GA, SC, NC, VA, NJ, Washington D.C., NY, Caribbean: Puerto Rico, Virgin islands	<b>Hurricane Bertha</b> MR199607000 PCS Cat No 82. Wind speeds 185 km/h, gusts up to 185 km/h, torrential rain, storm surge. 7,500 houses, mobile homes, roads, ocean piers damaged, beaches eroded. 3 mobile homes destroyed. Damage to refineries. Military jet accident. Space shuttle evacuated from seaside launchpad. Space Center closed. Touristic industry, Olympic Yachting area affected. Air and land traffic affected. Trees and power lines downed. 400,000 without electricity. Damage to corn and tobacco fields. (est. losses: US\$ 15m). Water supply affected. Est. no of claims: 80,700 (USA alone). Missing: 40, evacuated 300,000, affected: 400,000 Deaths: 10 (Caribbean & USA, 5) Economic losses: > US\$ 400,000m Insured losses: US\$ 195,000m Sources: WCB, PCS, NZZ, LL, FAZ, R, USA *today, int. inf. net, .dtp

16.04.1998

Minister Risk  
SEARCHER

- By type of event, country, timeframe, etc.
- Any country in the world
- Sorted by various criteria (date, loss values, deaths etc.)
- Useful for claims departments
- Good idea of how often? - where? - what?

# NatCatSERVICE information

can be obtained

- by contacting Munich Re directly or
- via REUTERS/FAKTIVA

Text

1 Week     3 Months  
 1 Month     6 Months

type „NATCAT“  
as a source or search term

Reuters Insurance Briefing - [Archive - Untitled]

File Edit View Communications Settings Window Options Help

Custom Search Breaking News Archive Share Prices Foreign Exchange Company Data Bulletin

Modify... Save Profile... Refresh Article << >>

7 Headlines

03Jun98	CANADA: QUICK RESPONSE AFTER THE ICE STORM. [INSDAY] (9828)
27May98	UK: MUNICHRE NATCAT - SEVERE STORM/13.5.98. [MUNIRE] (699)
23Apr98	UK: MUNICHRE NATCAT - SNOWSTORM/15.-16.4.98. [MUNIRE] (675)
23Apr98	UK: MUNICHRE NATCAT - FLOODS/9.-13.4.1998. [MUNIRE] (1189)
23Apr98	UK: MUNICHRE NATCAT - SEVERE STORM/3.4.98. [MUNIRE] (712)



# Summary

## The Munich Re NatCat*SERVICE*

### Information on natural catastrophes or loss events worldwide

- background/event description
- list of events within a given area and/or timeframe

### Expert opinion on any event

- dimension
- frequency (return period)
- loss estimates



Thank you for joining me  
on this tour of the  
**Munich Re NatCat*SERVICE***

