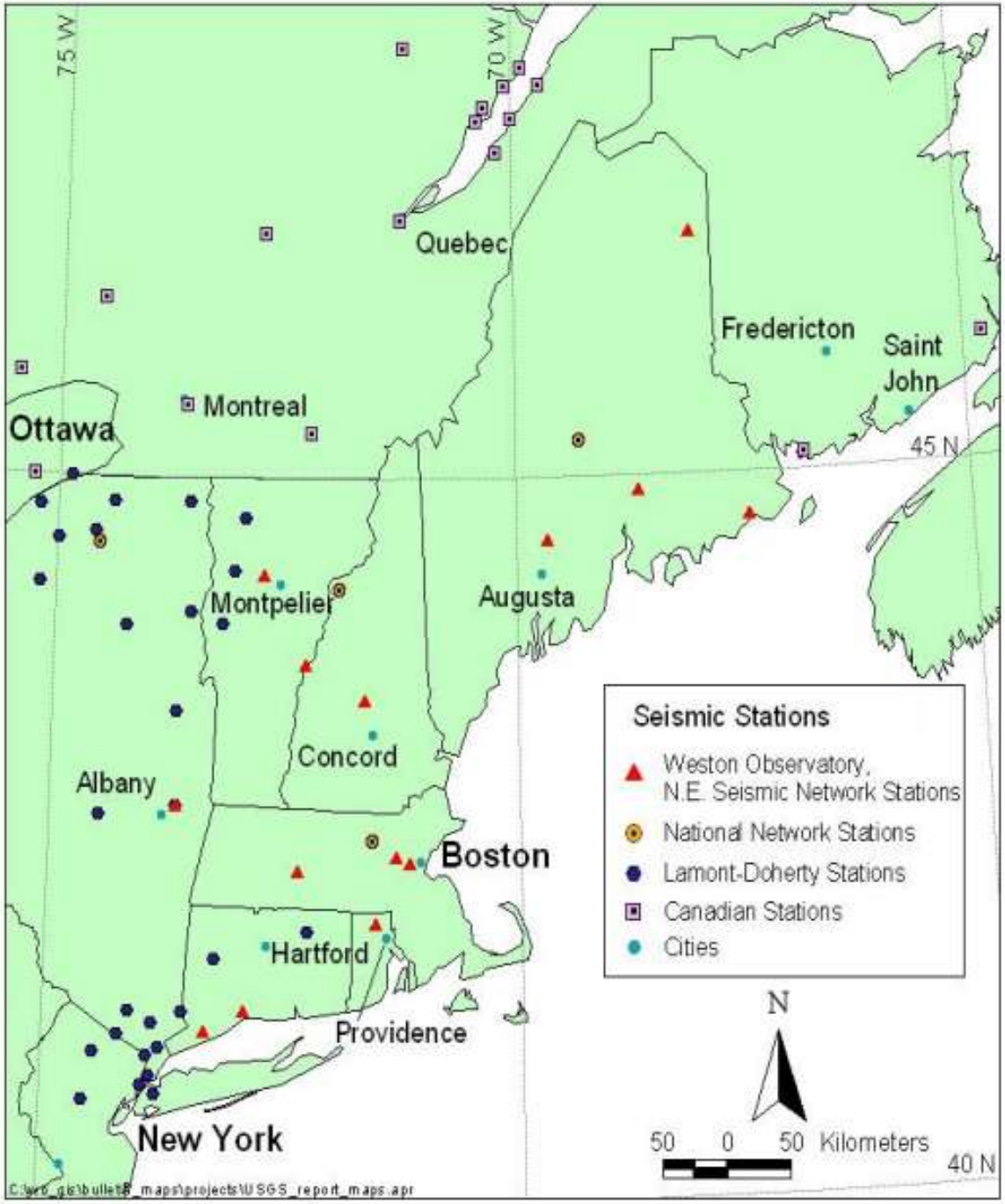
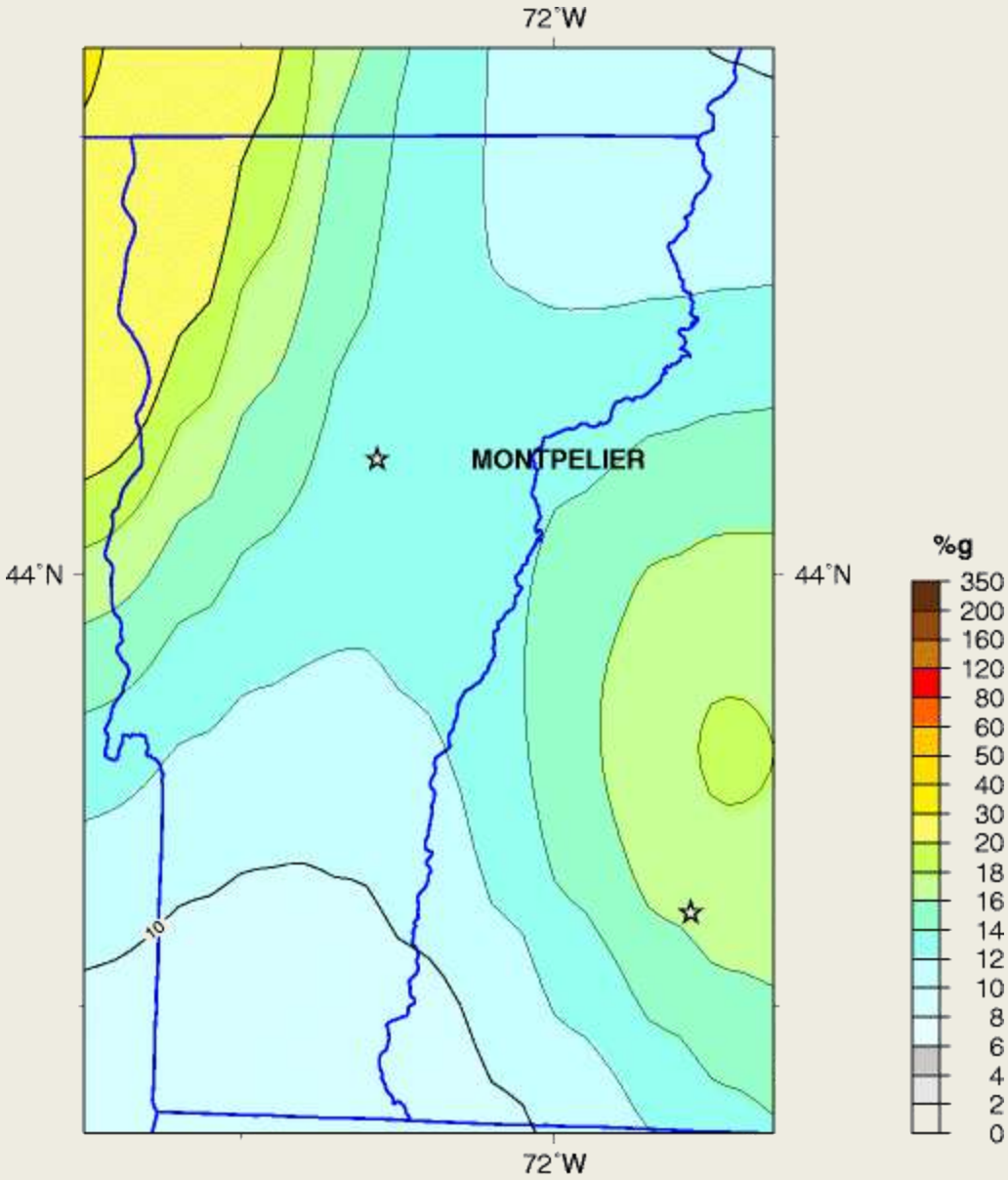
Intelligent animals look up.

Ones that wish to procreate and to take their place in longevity with a thick fossil record…. also look down. Anon

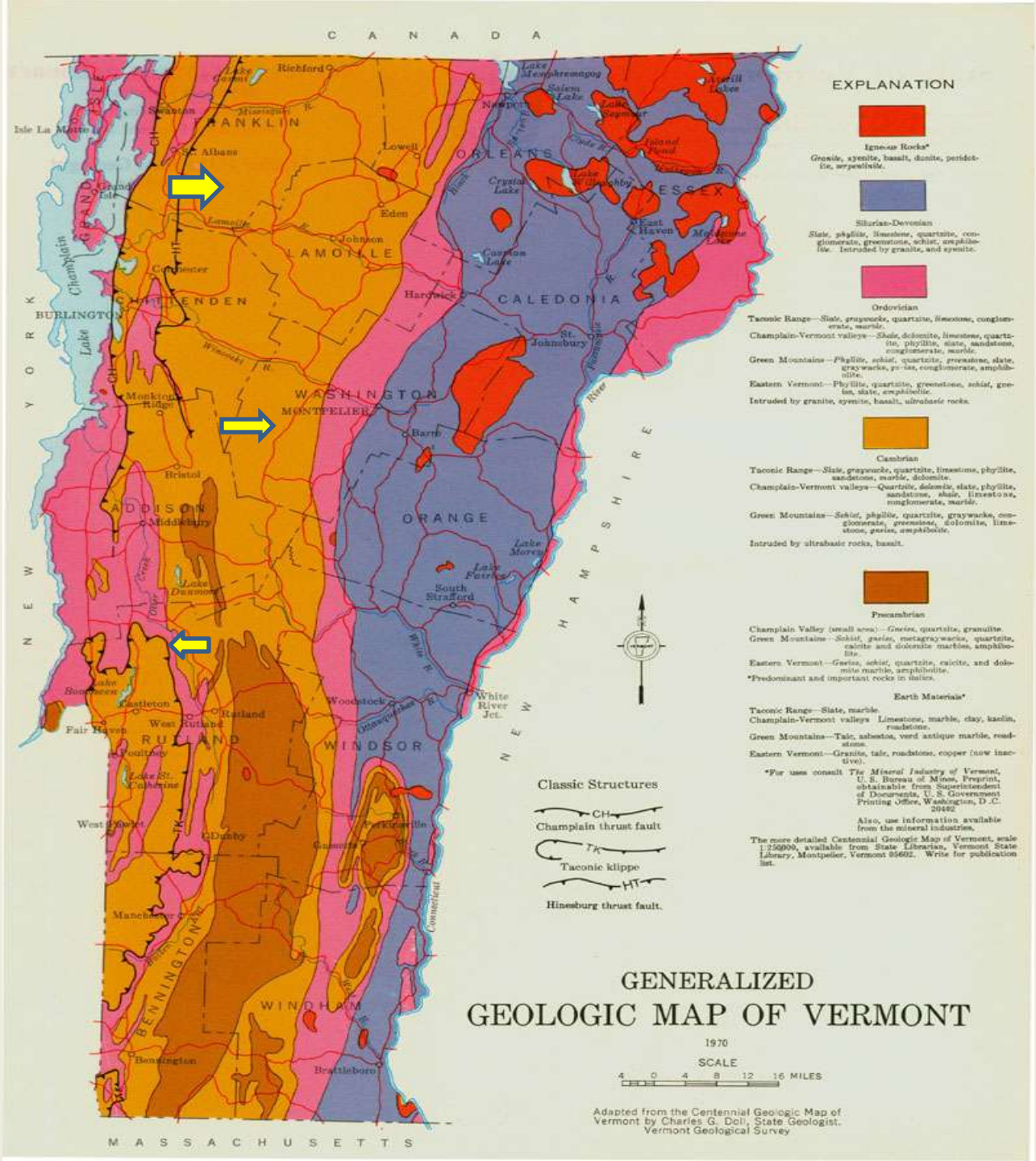
This Power Point indicates the risks on the East Coast of the United States and Southern Quebec province. This work has been added to the site because of the lack of media coverage of the recent Virginia earthquake. Multiple resources that are covered here are necessary to complete what is known scientifically, which is not much. In general, the lack of ready information leaves the general public unaware and uninformed.

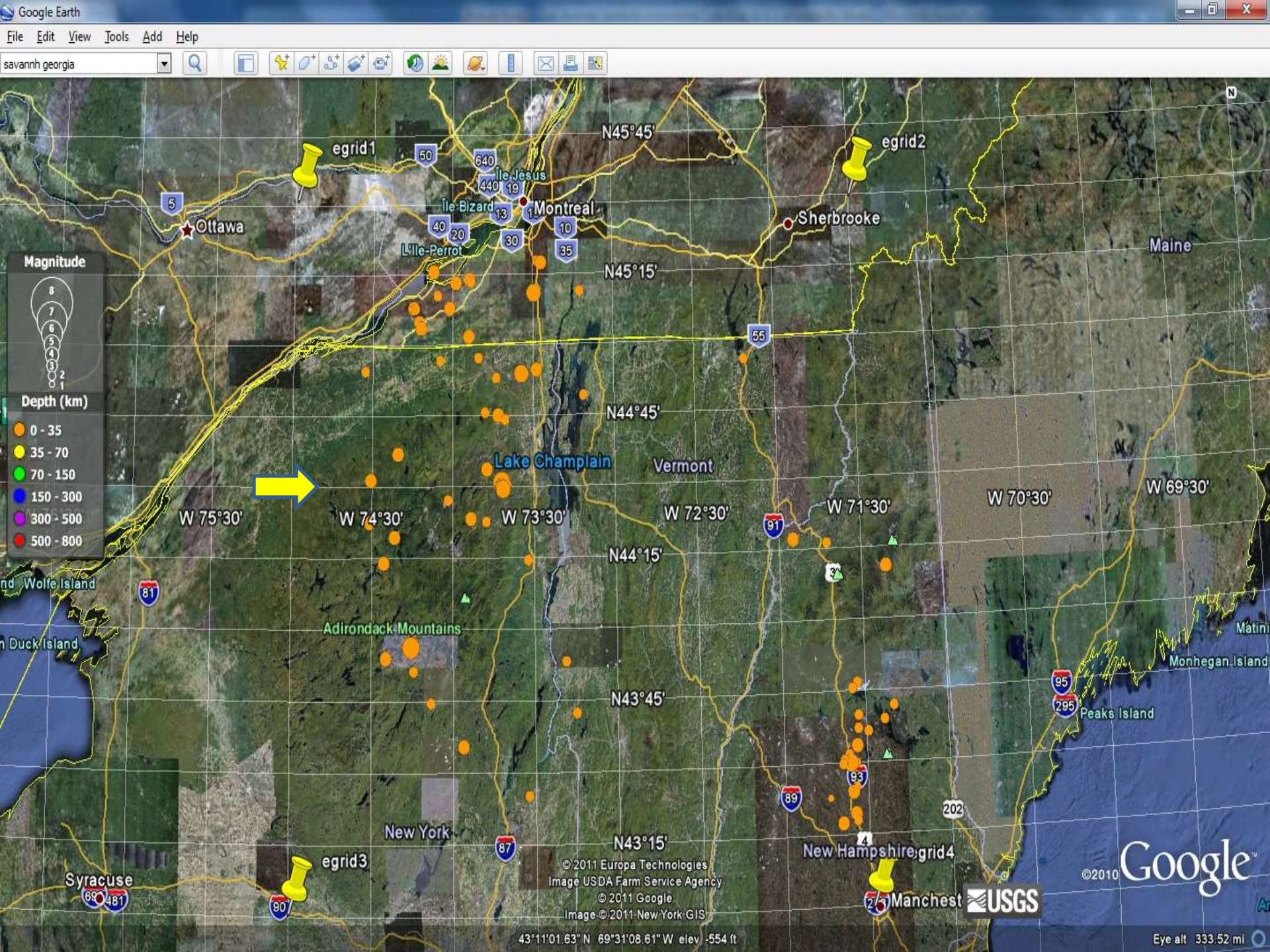

75 W
70 W
Quebec
Fredericton
Saint John
Montreal
Ottawa
45 N
Montpelier
Augusta
Concord
Albany
Boston
Hartford
Providence
New York
40 N
Seismic Stations
Weston Observatory, N.E. Seismic Network Stations
National Network Stations
Lamont-Doherty Stations
Canadian Stations
Cities
N
50 0 50 Kilometers

1962, 04 10 - Vermont - M 4.2



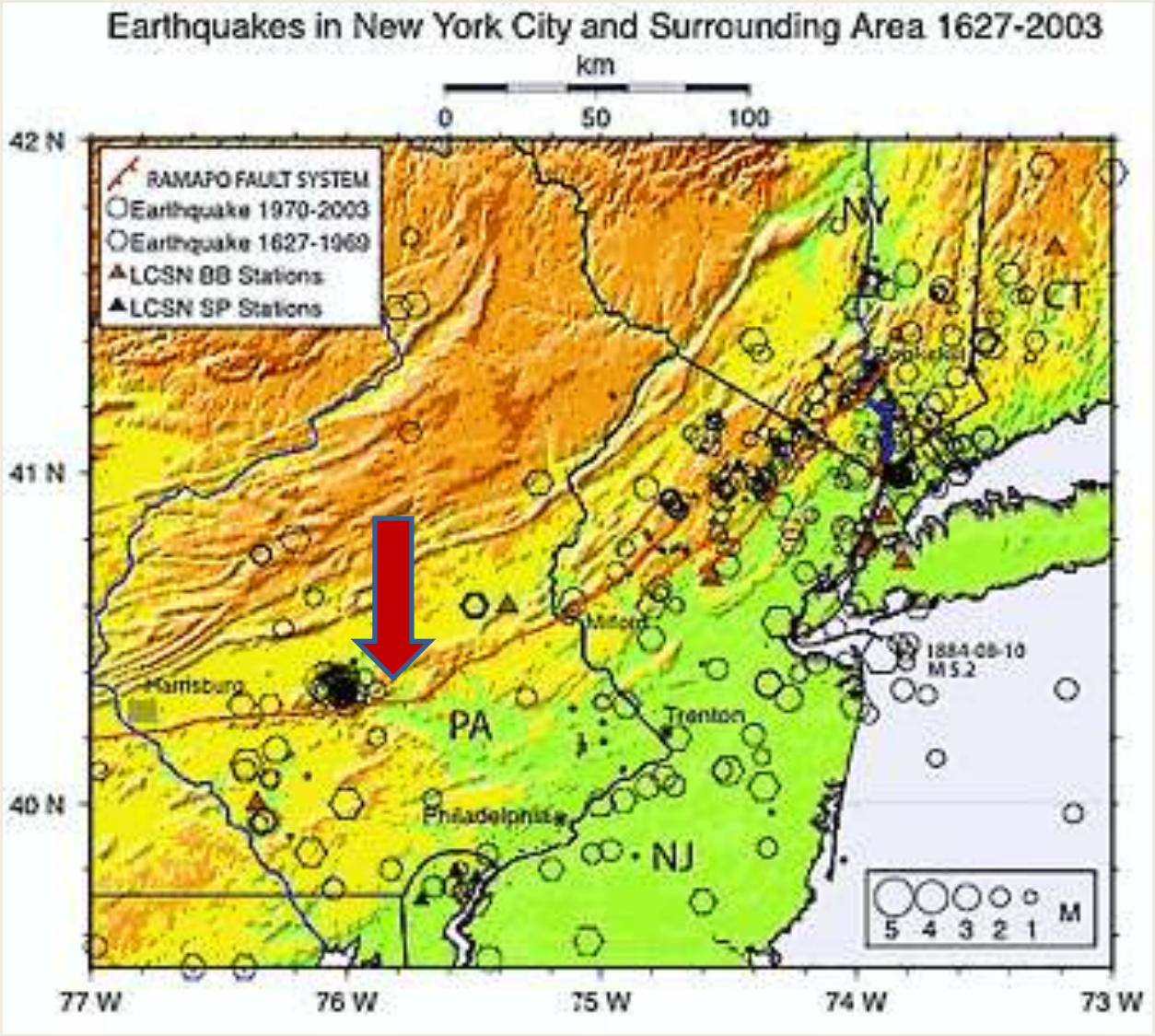
Peak Acceleration (%g) with 2% Probability of Exceedance in 50 Years
site: NEHRP B-C boundary
National Seismic Hazard Mapping Project (2008)


C A N A D A
EXPLANATION
Igneous Rocks*
Granite, syenite, basalt, dunite, peridotite, serpentinite.
Silurian-Devonian
Slate, phyllite, limestone, quartzite, conglomerate, greenstone, schist, amphibolite. Intruded by granite, and syenite.
Ordovician
Taconic Range—Slate, graywacke, quartzite, limestone, conglomerate, marble.
Champlain-Vermont valleys—Shale, dolomite, limestone, quartzite, phyllite, slate, sandstone, conglomerate, marble.
Green Mountains—Phyllite, schist, quartzite, greenstone, slate, graywacke, gneiss, conglomerate, amphibolite.
Eastern Vermont—Phyllite, quartzite, greenstone, schist, gneiss, slate, amphibolite.
Intruded by granite, syenite, basalt, ultrabasic rocks.
Cambrian
Taconic Range—Slate, graywacke, quartzite, limestone, phyllite, sandstone, marble, dolomite.
Champlain-Vermont valleys—Quartzite, dolomite, slate, phyllite, sandstone, shale, limestone, conglomerate, marble.
Green Mountains—Schist, phyllite, quartzite, graywacke, conglomerate, greenstone, dolomite, limestone, gneiss, amphibolite.
Intruded by ultrabasic rocks, basalt.
Precambrian
Champlain Valley (small area)—Gneiss, quartzite, granulite.
Green Mountains—Schist, gneiss, metagraywacke, quartzite, calcite and dolomite marbles, amphibolite.
Eastern Vermont—Gneiss, schist, quartzite, calcite, and dolomite marble, amphibolite.
*Predominant and important rocks in italics.
Earth Materials*
Taconic Range—Slate, marble.
Champlain-Vermont valleys—Limestone, marble, clay, kaolin, roadstone.
Green Mountains—Talc, asbestos, verd antique marble, roadstone.
Eastern Vermont—Granite, talc, roadstone, copper (now inactive).
*For uses consult The Mineral Industry of Vermont, U. S. Bureau of Mines, Preprint, obtainable from Superintendent of Documents, U. S. Government Printing Office, Washington, D.C. 20402
Also, use information available from the mineral industries.
The more detailed Centennial Geologic Map of Vermont, scale 1:250000, available from State Librarian, Vermont State Library, Montpelier, Vermont 05602. Write for publication list.
Classic Structures
CH
Champlain thrust fault
TK
Taconic klippe
HT
Hinesburg thrust fault.
GENERALIZED
GEOLOGIC MAP OF VERMONT
1970
SCALE
4 0 4 8 12 16 MILES
Adapted from the Centennial Geologic Map of Vermont by Charles G. Doll, State Geologist. Vermont Geological Survey
M A S S A C H U S E T T S
N E W Y O R K
N E W H A M P S H I R E
FRANKLIN
GRAND ISLE
CHITTENDEN
BURLINGTON
LAMOILLE
WASHINGTON
MONTPELIER
ORLEANS
ESSEX
CALEDONIA
ORANGE
ADDISON
RUTLAND
WINDSOR
WINDHAM
BENNINGTON
Lake Champlain
Isle La Motte
Richford
Lake Memphremagog
Newport
Lowell
Albans
Eden
Johnson
Hardwick
St. Johnsbury
Barre
Bristol
Middlebury
Lake Dunmore
South Strafford
Lake Morey
Lake Fairlee
White River Jct.
Woodstock
Castleton
Rutland
West Rutland
Fair Haven
Poultney
Lake St. Catherine
West Dover
Dover
Dummerston
Brattleboro
Bennington
Manchester
Connecticut R.
Missisquoi R.
Lamoille R.
Winooski R.
White R.
Ottauquechee R.
Passumpsic R.
Clyde R.
Black R.
Otter Creek


Google Earth
File Edit View Tools Add Help
savannh georgia
egrid1
egrid2
egrid3
egrid4
Ottawa
Montreal
Sherbrooke
Île Jésus
Île-Bizard
L'Île-Perrot
Maine
Vermont
Lake Champlain
Adirondack Mountains
New York
New Hampshire
Wolfe Island
Duck Island
Monhegan Island
Peaks Island
Syracuse
Manchest
N45°45'
N45°15'
N44°45'
N44°15'
N43°45'
N43°15'
W 75°30'
W 74°30'
W 73°30'
W 72°30'
W 71°30'
W 70°30'
W 69°30'
Magnitude
Depth (km)
0 - 35
35 - 70
70 - 150
150 - 300
300 - 500
500 - 800
© 2011 Europa Technologies
Image USDA Farm Service Agency
© 2011 Google
Image © 2011 New York GIS
©2010 Google
USGS
43°11'01.63" N 69°31'08.61" W elev -554 ft
Eye alt 333.52 mi

On January 29, 1952, a local shock near Burlington Vermont affected an area of about 130 square kilometers. Minor damage included cracks in pavement, basement walls, and a city gas main (MM VI). Ground cracks about 3 kilometers long and 4.5 meters apart were observed in the North End. A moderately strong earthquake in the Rutland area about 1 year later caused only MM V effects. Houses trembled, some furniture was moved, knicknacks fell, and other small objects were disturbed at Brandon and Rutland from the March 31, 1953, tremor. Rattling of dishes and windows were observed at other communities in the nearby region. The tremor was also felt in northern Washington County, New York.

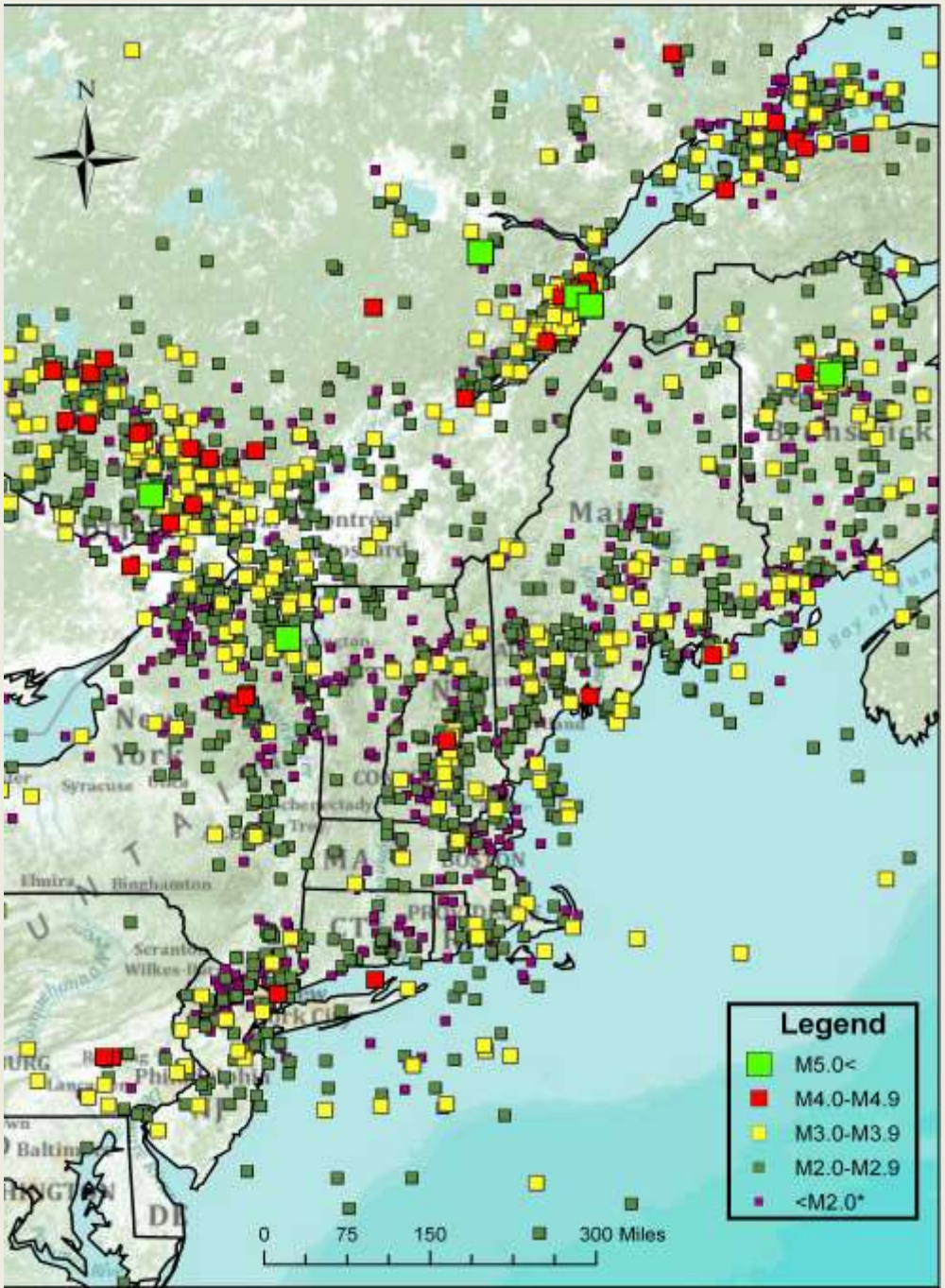
Another local shock at Burlington occurred on February 2, 1955. Houses shook, windows and dishes rattled, and many thought their oil burners had blown up (MM V). A large ground crack was seen in the North Burlington area.


Earthquakes in New York City and Surrounding Area 1627-2003
km
0
50
100
RAMAPO FAULT SYSTEM
Earthquake 1970-2003
Earthquake 1627-1969
LCSN BB Stations
LCSN SP Stations
NY
CT
PA
NJ
Harrisburg
Trenton
Philadelphia
1884-08-10
M 5.2
M
5 4 3 2 1
42 N
41 N
40 N
77 W
76 W
75 W
74 W
73 W

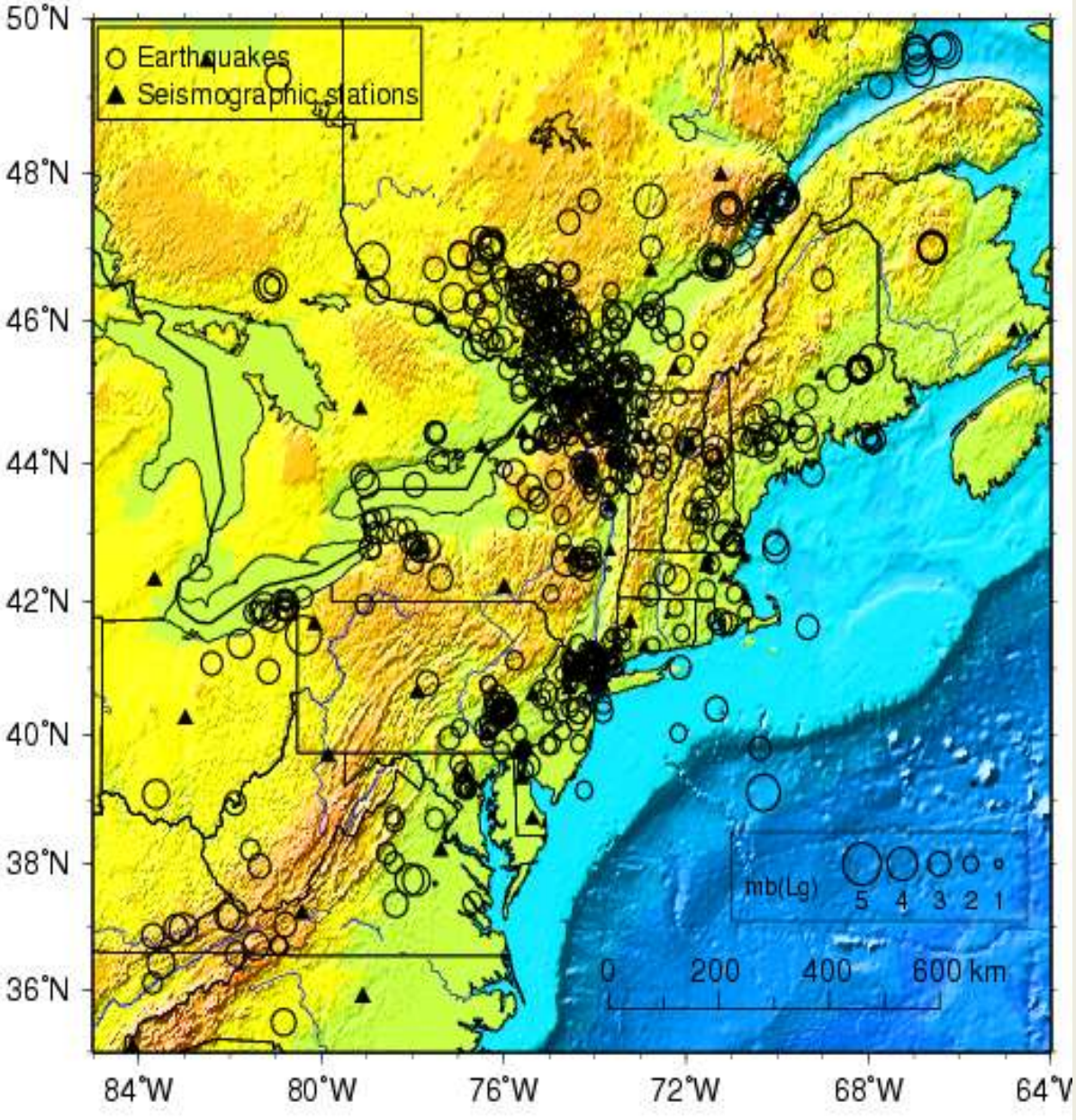
"We can say with some degree of confidence that earthquakes will continue to occur in the East. As for the "when" and "where", however, only many more years of monitoring and research will yield some discernible pattern--if indeed there even is one. In spite of our not having found "the answer", we must recognize that, if we are not up front about the limitations of our present state of knowledge about eastern earthquakes, the public (and policy makers) will continue to focus on questions about "the nearest fault."

Better that we guide them to ask us more relevant questions,
such as the probability of exceeding a given amount of ground motion at a given site--the kinds of questions that we can responsibly answer. "
https://www2.bc.edu/~kafka/my_opinion.html

Weston Observatory, New England Earthquake Maps, Northeast Seismicity, 1975-2011



Earthquakes Recorded by LCSN, 1990-2003



Larry Becker	(802) 241-3496 laurence.becker@state.vt.us

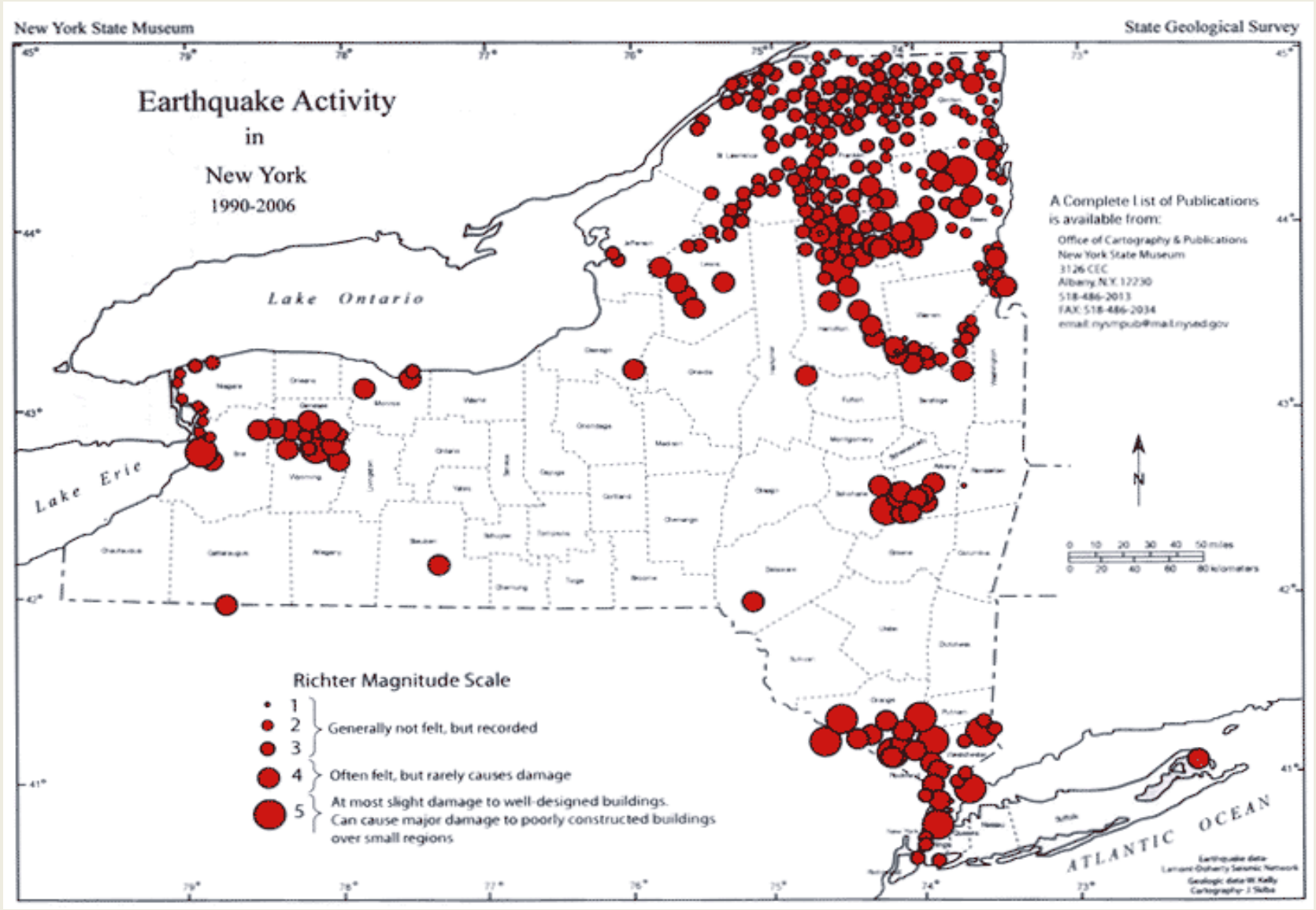
http://www.nesec.org/hazards/earthquakes_NY.cfm

http://www.nesec.org/hazards/earthquakes_VT.cfm

http://www.ldeo.columbia.edu/LCSN/eus.html

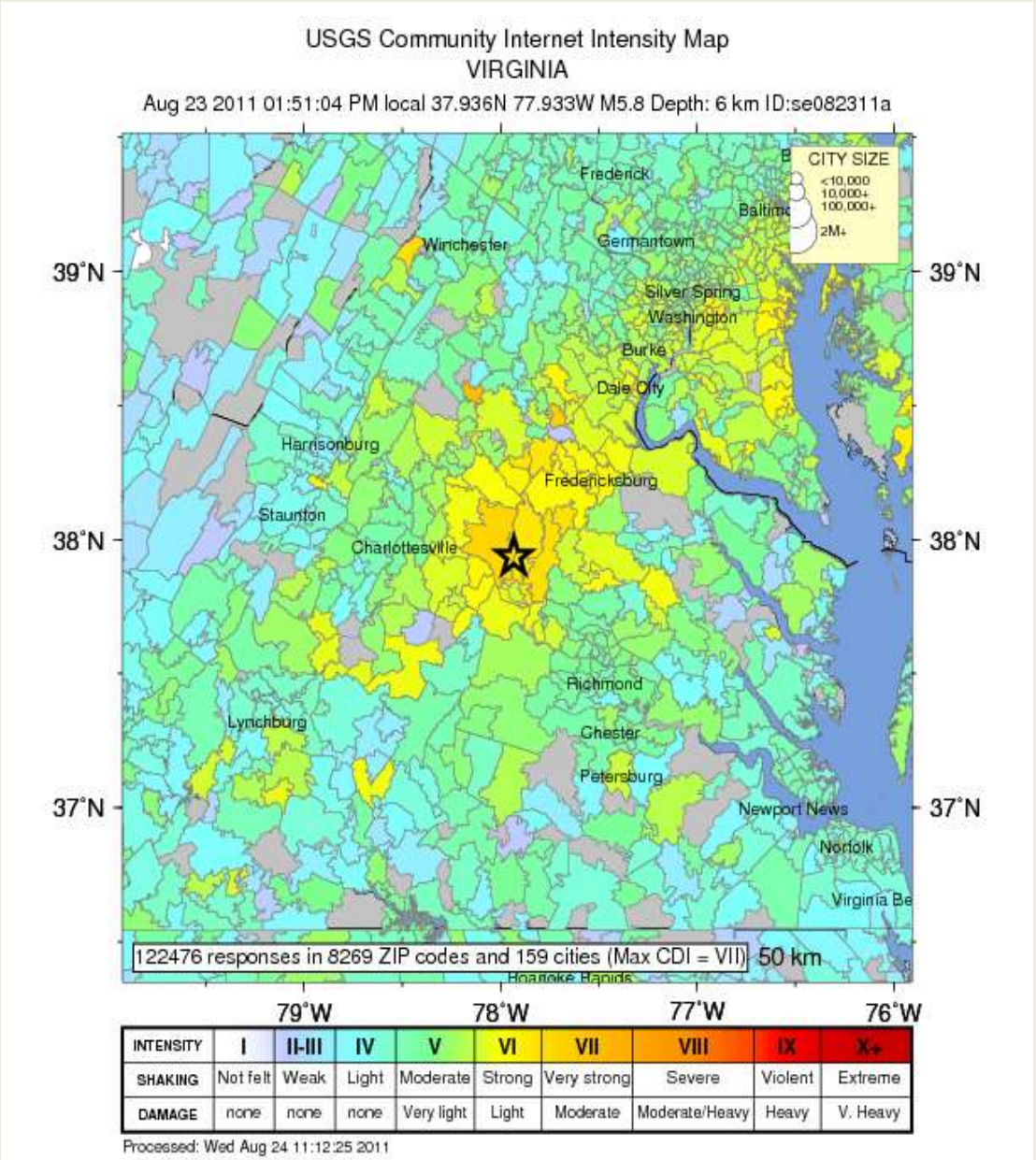
http://www.bc.edu/research/westonobservatory/northeast.html

In New York

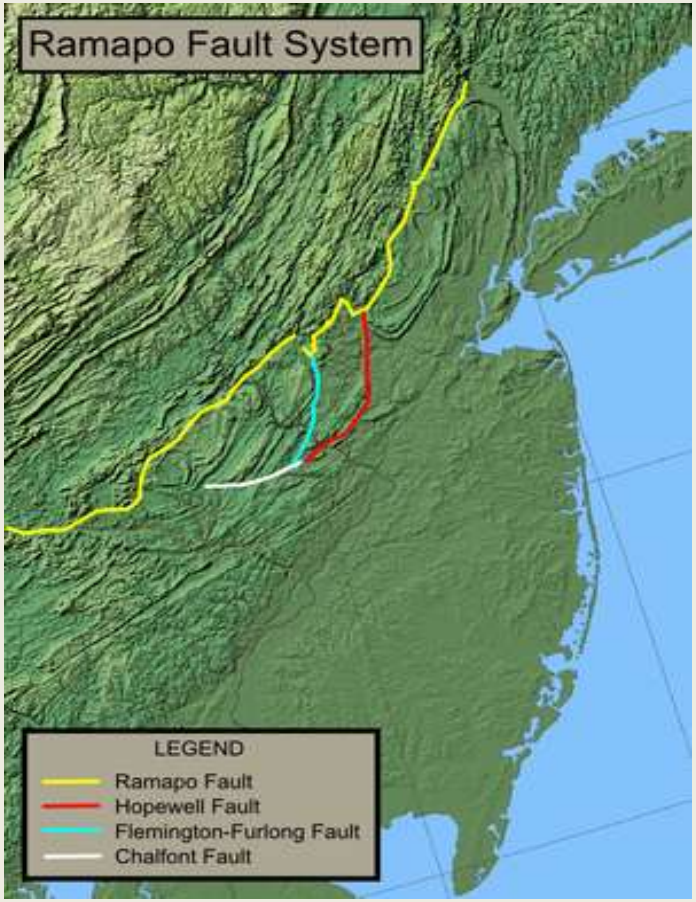

New York State Museum
State Geological Survey
Earthquake Activity
in
New York
1990-2006
Lake Ontario
Lake Erie
A Complete List of Publications
is available from:
Office of Cartography & Publications
New York State Museum
3126 CEC
Albany, N.Y. 12230
518-486-2013
FAX: 518-486-2034
email: nysmpub@mail.nysed.gov
N
0 10 20 30 40 50 miles
0 20 40 60 80 kilometers
Richter Magnitude Scale
1
2
3
Generally not felt, but recorded
4
Often felt, but rarely causes damage
5
At most slight damage to well-designed buildings.
Can cause major damage to poorly constructed buildings
over small regions
ATLANTIC OCEAN

"For example, seismologists from the Lamont-Doherty Earth Observatory of Columbia University, working with equipment supplied by the U.S. Geological Survey, are currently monitoring a swarm of earthquakes near Milford, New Jersey, within one kilometer of the mapped Ramapo Fault. This study suggests that the levels of crustal stress in the Northeastern U.S. are sufficient to activate fractures associated with the Ramapo Fault System. An open question is whether these active structures will fracture in a large damaging earthquake. Damaging earthquakes have occurred in the Northeast several times in the last three centuries, indicating that this is a distinct possibility. Unfortunately, the ability to monitor potential earthquake sources with sufficient accuracy, as well as the ground motion near critical buildings and infrastructure, is compromised by the limited availability of modern instrumentation."http://www.earthinstitute.columbia.edu/news/2004/story04-30-04b.html

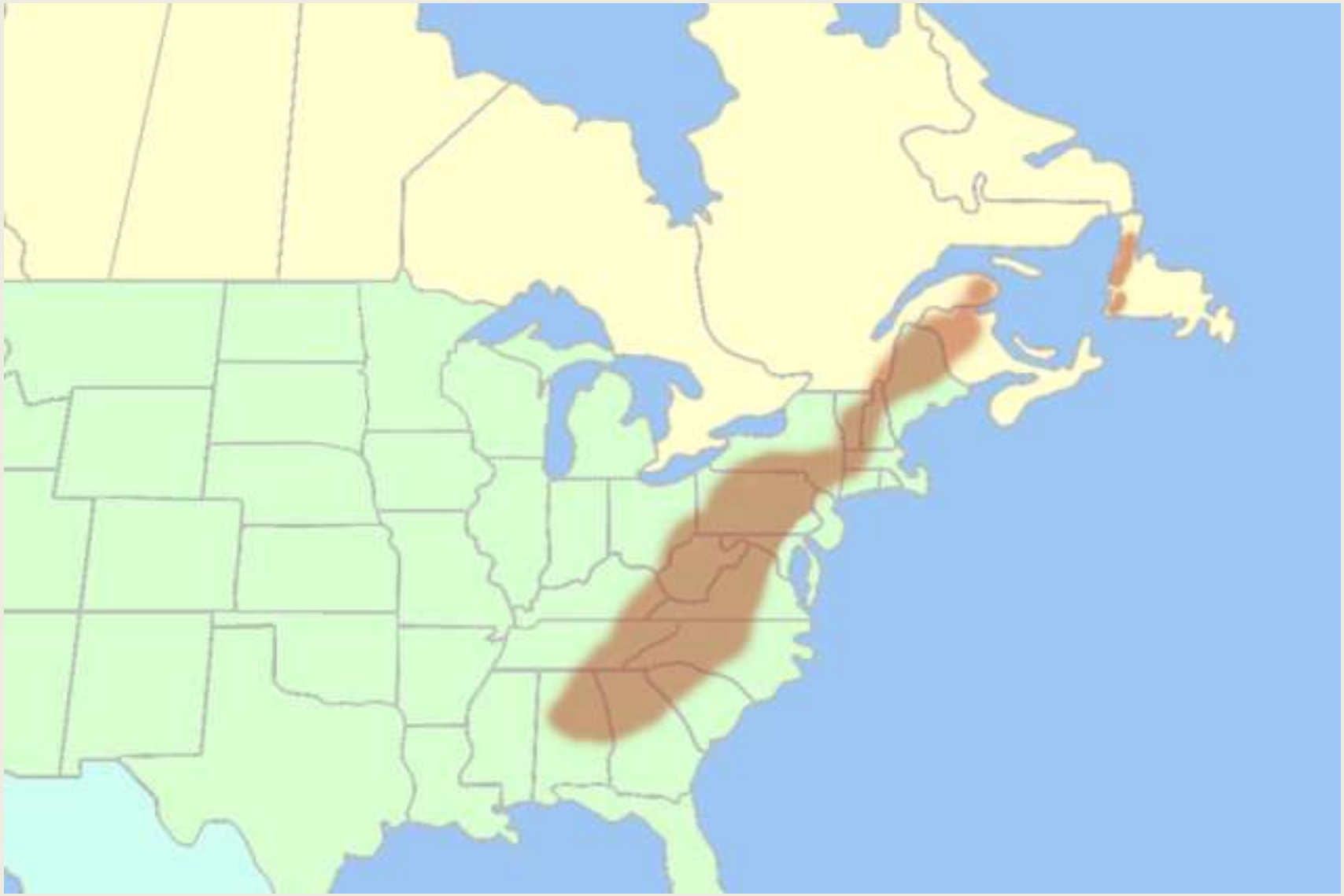
The recent VA quake and reported “feel.” The yellow, highest follows the fault line.

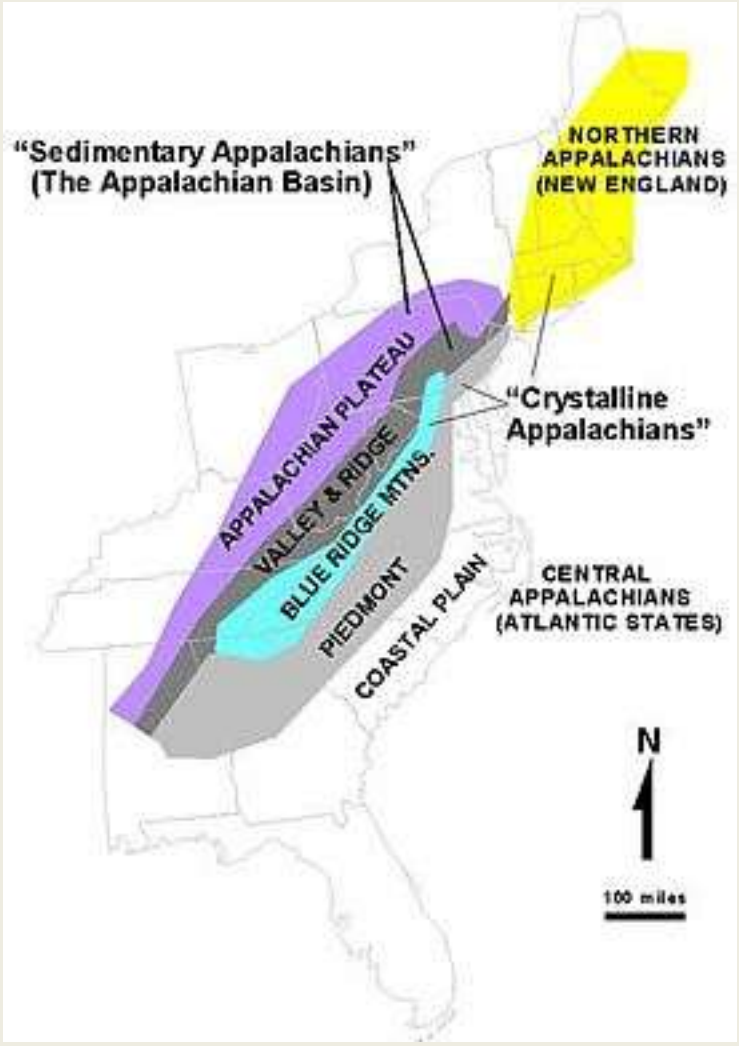


- The Ramapo Fault line System. This is connected to the Appalachian Line to the West and South

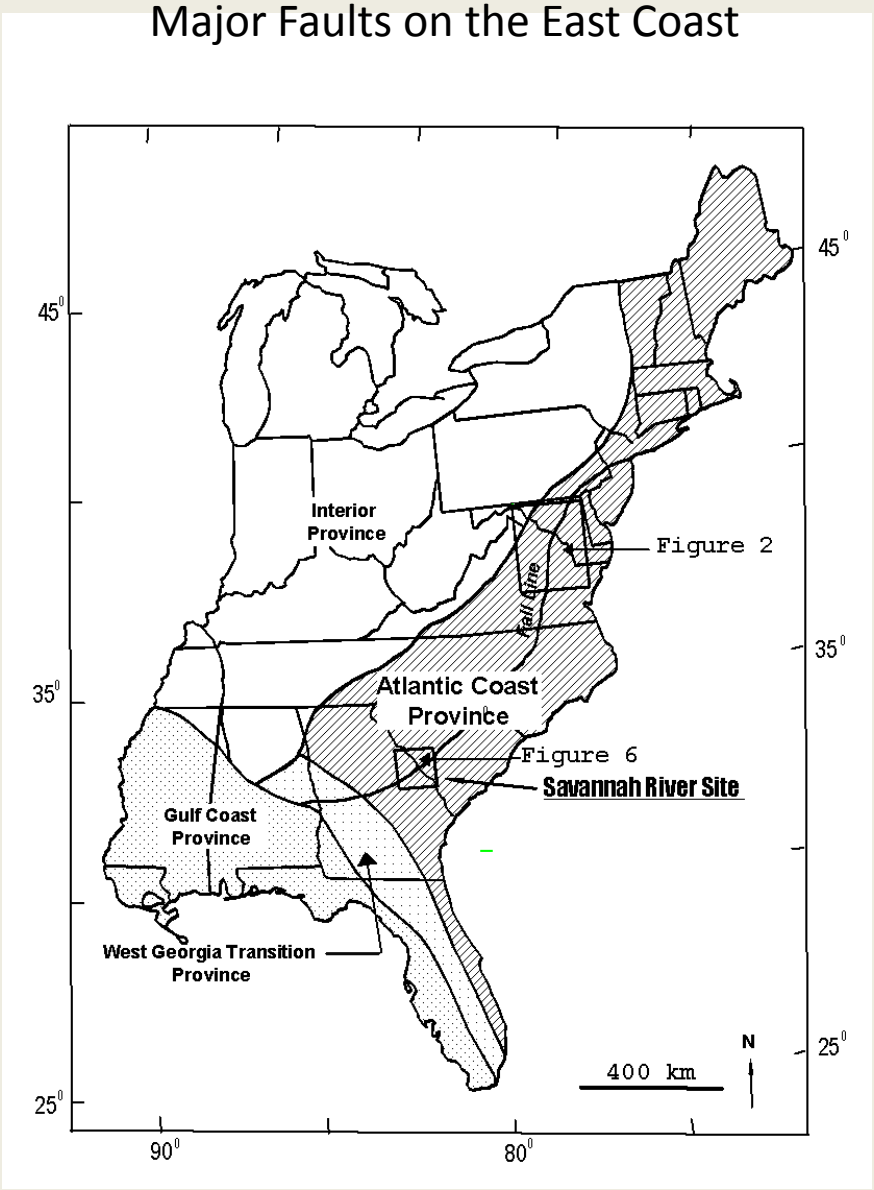


Appalachian Fault system

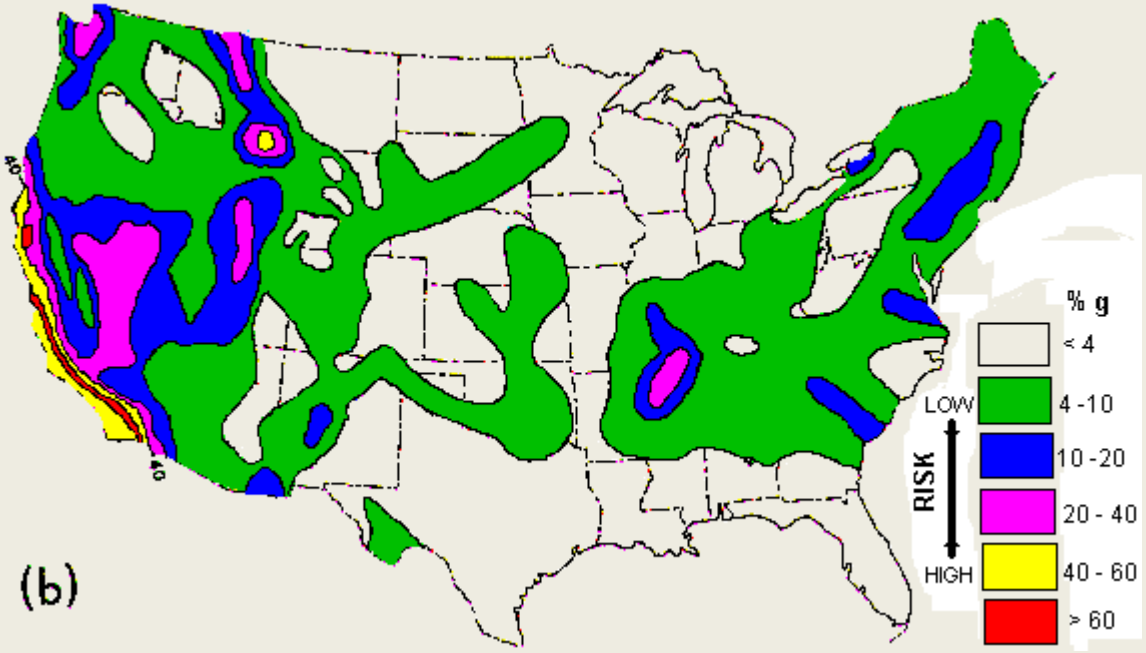



"Sedimentary Appalachians"
(The Appalachian Basin)
NORTHERN
APPALACHIANS
(NEW ENGLAND)
"Crystalline
Appalachians"
APPALACHIAN PLATEAU
VALLEY & RIDGE
BLUE RIDGE MTNS.
PIEDMONT
COASTAL PLAIN
CENTRAL
APPALACHIANS
(ATLANTIC STATES)
N
100 miles

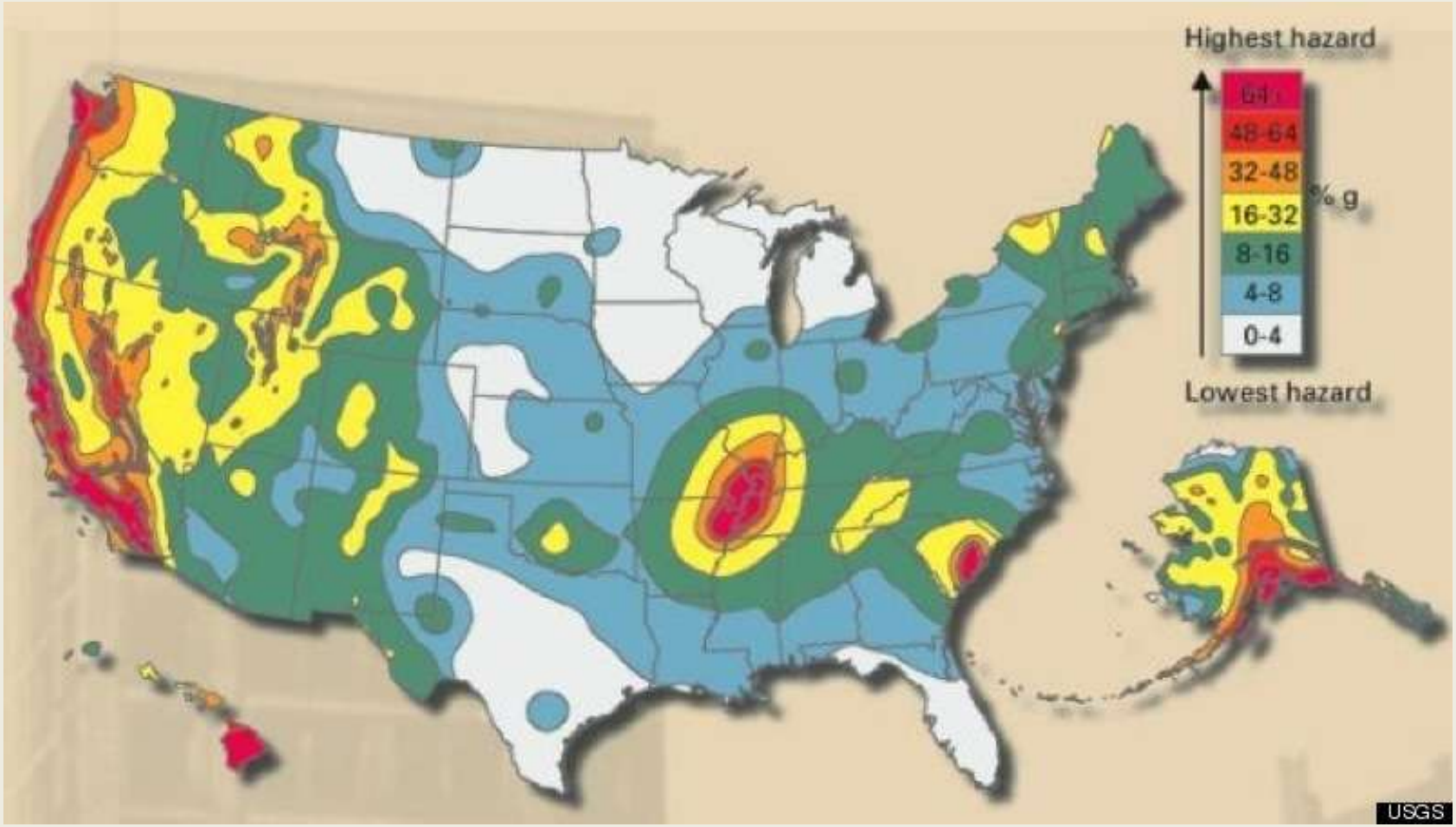
Major Faults on the East Coast



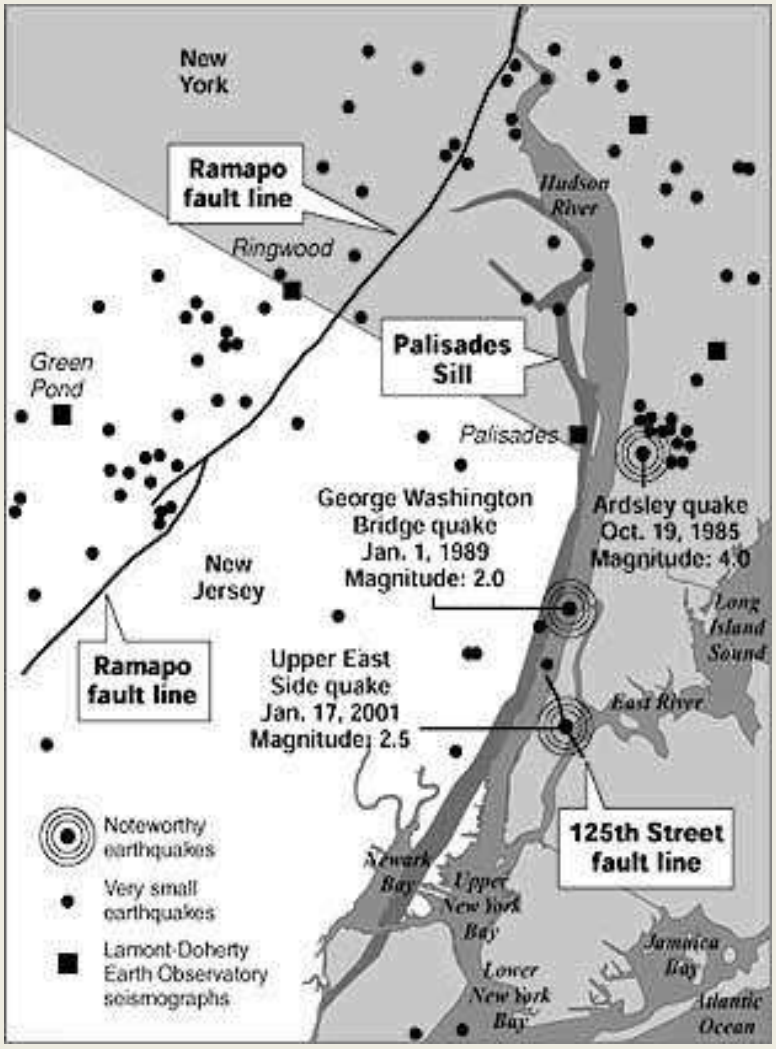
Earthquake Risks



Earthquake risks USGS. Updated as “needed.” One can see where the green is, right over the Virginia quake. That was blue until 2 days ago



Earthquake New York



This was a while ago...imagine it now.

The policy makers are doing their very best to minimize the recent Virginia quake and aftershocks in the press. This is (we guess) because were they to tell the whole story, anyone intelligent would leave both D.C. and the N.Y. boroughs. Besides Norfolk, the entire Chesapeake Bay area is undermined (silt) as is the honeycomb of tunnels, gas lines etc. below N.Y. and the silt base that is N.J.

Look down.

Larry Becker	(802) 241-3496 laurence.becker@state.vt.us

http://www.nesec.org/hazards/earthquakes_NY.cfm

http://www.nesec.org/hazards/earthquakes_VT.cfm

http://www.ldeo.columbia.edu/LCSN/eus.html

http://www.bc.edu/research/westonobservatory/northeast.html

National Spatial Data Infrastructure
Partnership Office (Liason for: NY)
U.S. Geological Survey
425 Jordan Road
Troy, NY 12180
Phone: (518) 285-5619