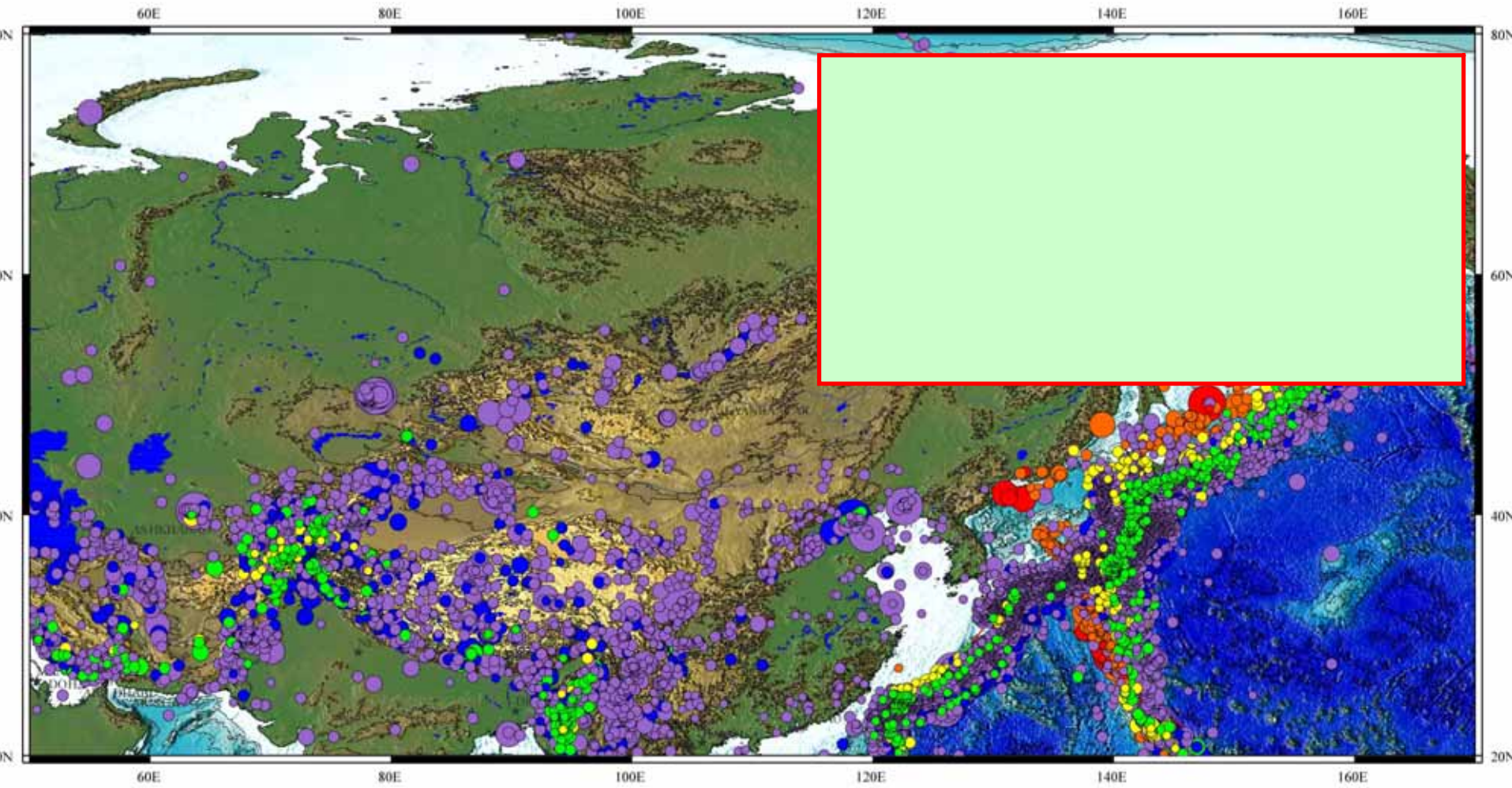


A photograph of a butterfly with dark wings and orange markings resting on a plant with small red berries. The background is a dense field of similar plants. The text is overlaid in the center.

**Conversion tectonics and crustal structure
around Magadan-Kolymsoe region, Far East,
Russia, from deep seismic exploration**

2009 9 5



Legend:

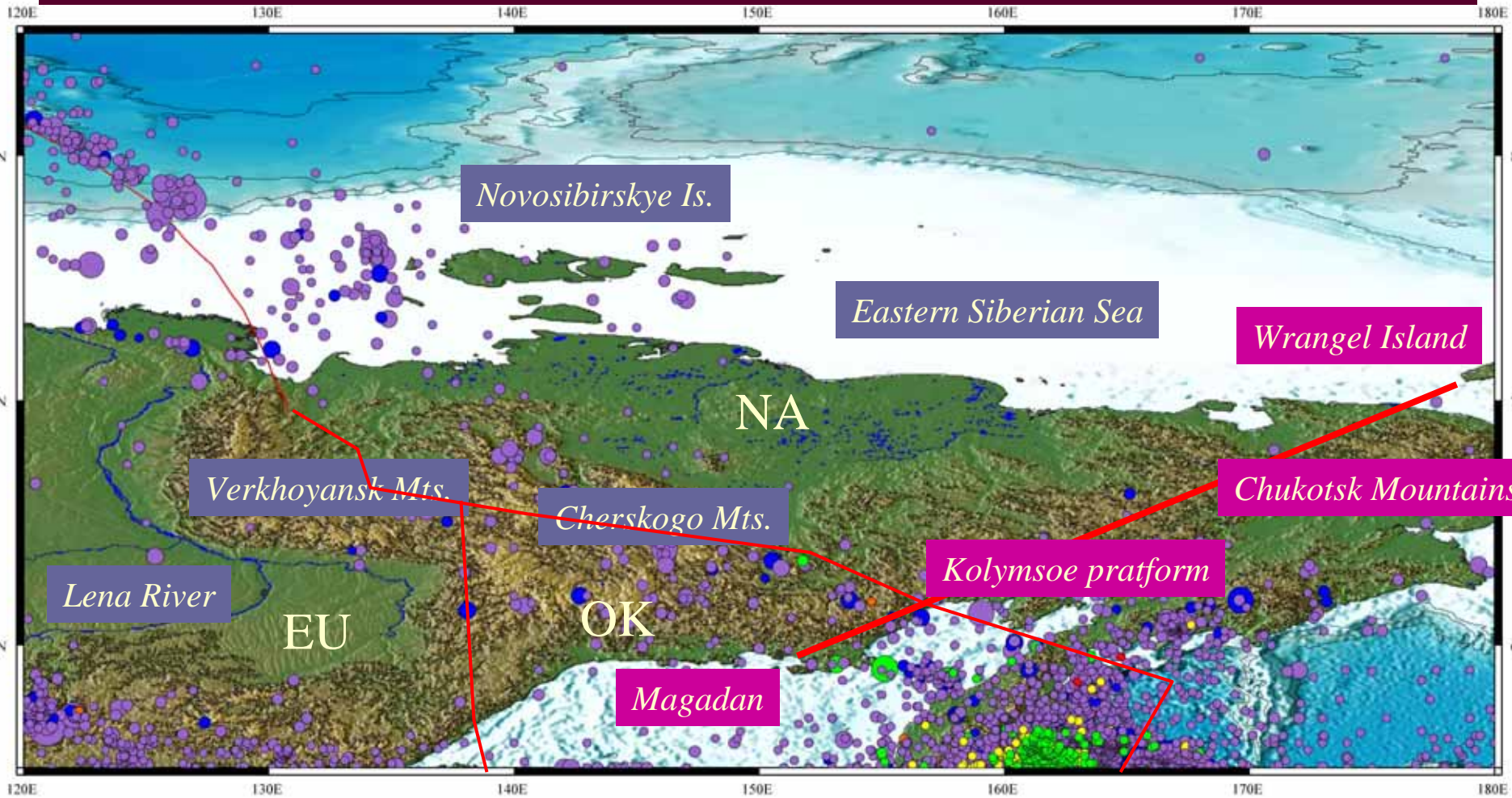


< 4 (19941) 4-4.9 (6029) 5-5.9 (1510) 6-6.9 (204) >= 7 (39)



*Seismicity
ISCCD*

Deep Seismic Profile; Magadan-Kolymsoe region



Legend:



< 4 (3182) 4-4.9 (1490) 5-5.9 (324) 6-6.9 (41) >= 7 (8)

ISCCD



Seismicity
ISCCD

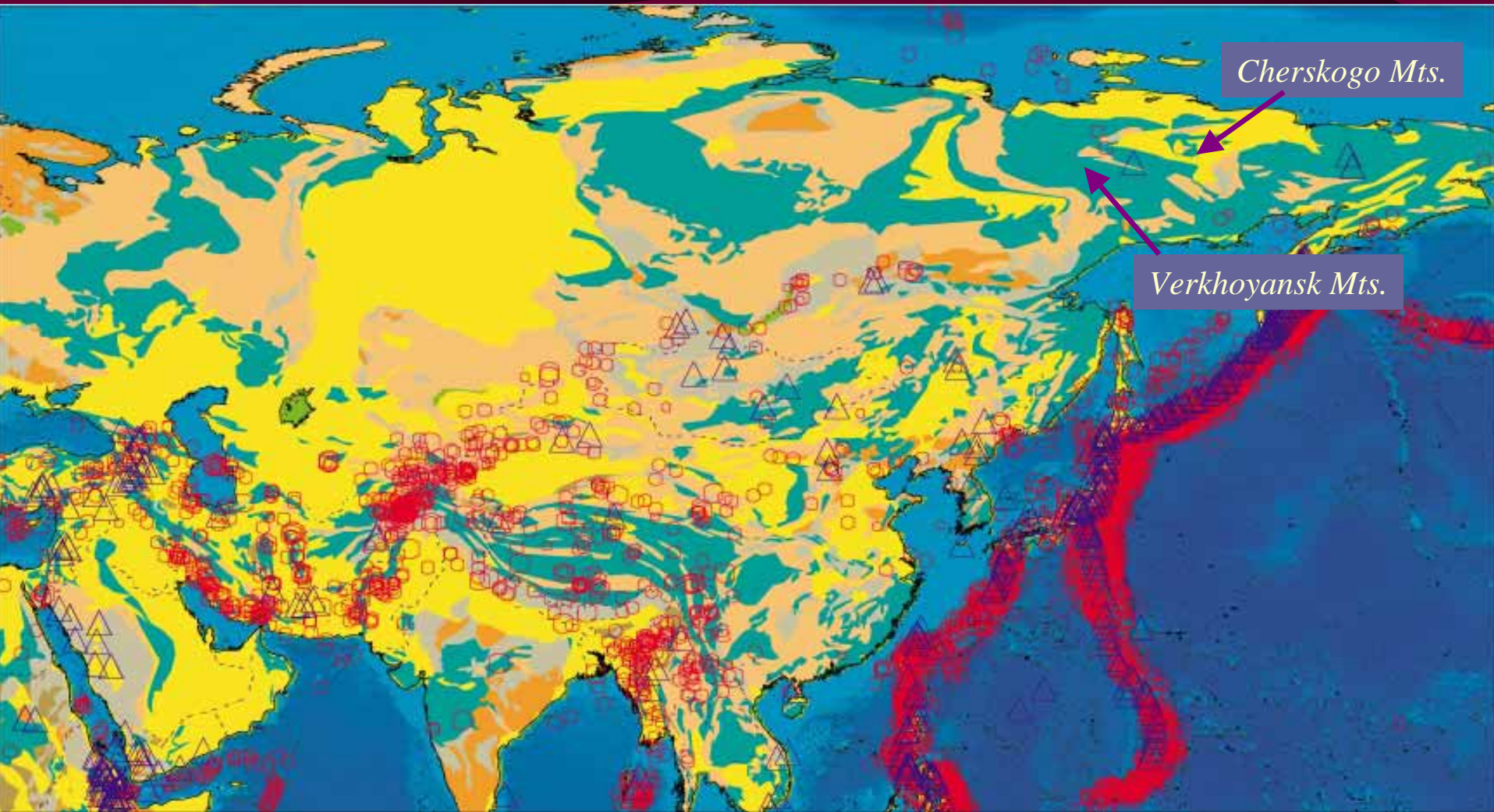
DSS in Magadan-Kolymsoe region

1. Investigate crustal structure and convergence tectonics of the Kolymsoe platform - Chukotsk Peninsula.
2. Total profiles are 2,000km, divided into several short-sections. Start from Okhotsk Sea margin, Kolymsoe platform, Chukotsk Mountains, Chukotsk Sea, terminate at the Wrangel Island.
3. Started from 2001 summer season, few years plan around IPY.

Plate Tectonic Setting

1. Cross plate boundary between Okhotsk Plate (OK) and North America Plate (NA).
2. Western part; a triple junction between the Eurasia Plate (EU) and the above two plates.
3. Southern part of profile, the OK is undergoing deformation as it is compressed as a result of the convergence of NA and EU.
4. Northern plate boundary between NA and EU has an extensional activity, associated with Moma rift system, and Kolyma River basin.

Geology + Seismicity, Volcanoes



After Cornell Database; World geology, ISC Seismicity + Volcanoes

Scientific Targets

1. Define crustal velocity structure of the Kolymsoe pratform - Chukotsk Peninsula region.
2. Detect the plate boundary between Okhotsk Plate (OK) and North America Plate (NA).
3. Compare the crustal thickness with those derived from travel-time inversion using local natural events, which has a variation in 36-40 km in southern profile (Mackey, et al., 1998).
4. Find the 'crustal roots' associated with Mesozoic collision (exposed in not only mountain area) between geological micro-continents.
5. Define the crustal structure and deformation associated with the origin of high seismicity among the OK.
6. Detect remnant subducted slabs of the Kula plate in upper mantle beneath the Chukotsk Peninsula, as suggested from local seismic tomography.

Observation system

Seismic Sources

1. Dynamite explosives (total 6 tons) at the both ends of each profile.
2. Several shots by vibrator (40 tons weight) in the middle part of each survey line.



Geophones, Recorders

1. RAS-a; Independent stations consists of triggered type data-loggers with short period seismometers (number of 20-30).
2. RAS-b; Some parts of the stations are multi-channel geophones to obtain coherent signals by stacking waves.
3. NIPR; Independent stations by 16bit data-loggers with short period seismometers (number of 20-150).

