BIOLINGUISTIC DIVERSITY

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Sadler Seminar Series

2 October 2017

DIVERSITY IN CRISIS

- Current species extinctions (plant and animal) c. 1000 times faster than historical rates (Mace et al 2005)
- 50-90% of the world's languages faced with extinction in the next century (Nettle & Romaine 2000)

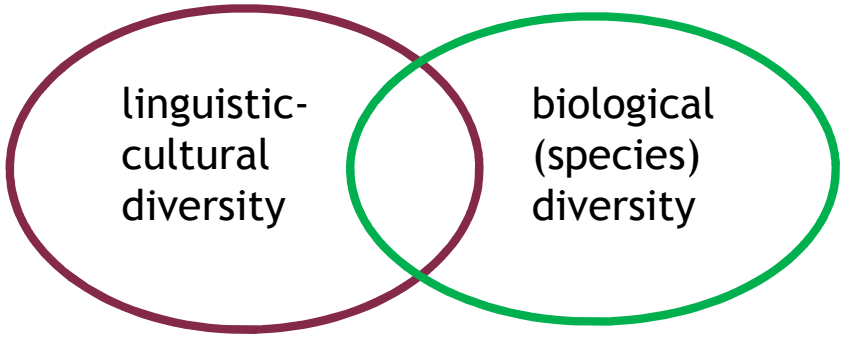
DIVERSITY IN CRISIS

- Sutherland (2003) calculates statistics for endangerment in birds and for languages
- The world's languages are more threatened
- 1.9% of mammals face a 'critical' threat, compared to 7.1% of languages
- Higher language density is linked with more endangered species for each region

Australia

- originally c. 260 indigenous languages
- 100 already extinct; 100 nearly extinct
- less than 20 are being acquired by children
- only 30,000 native speakers remain

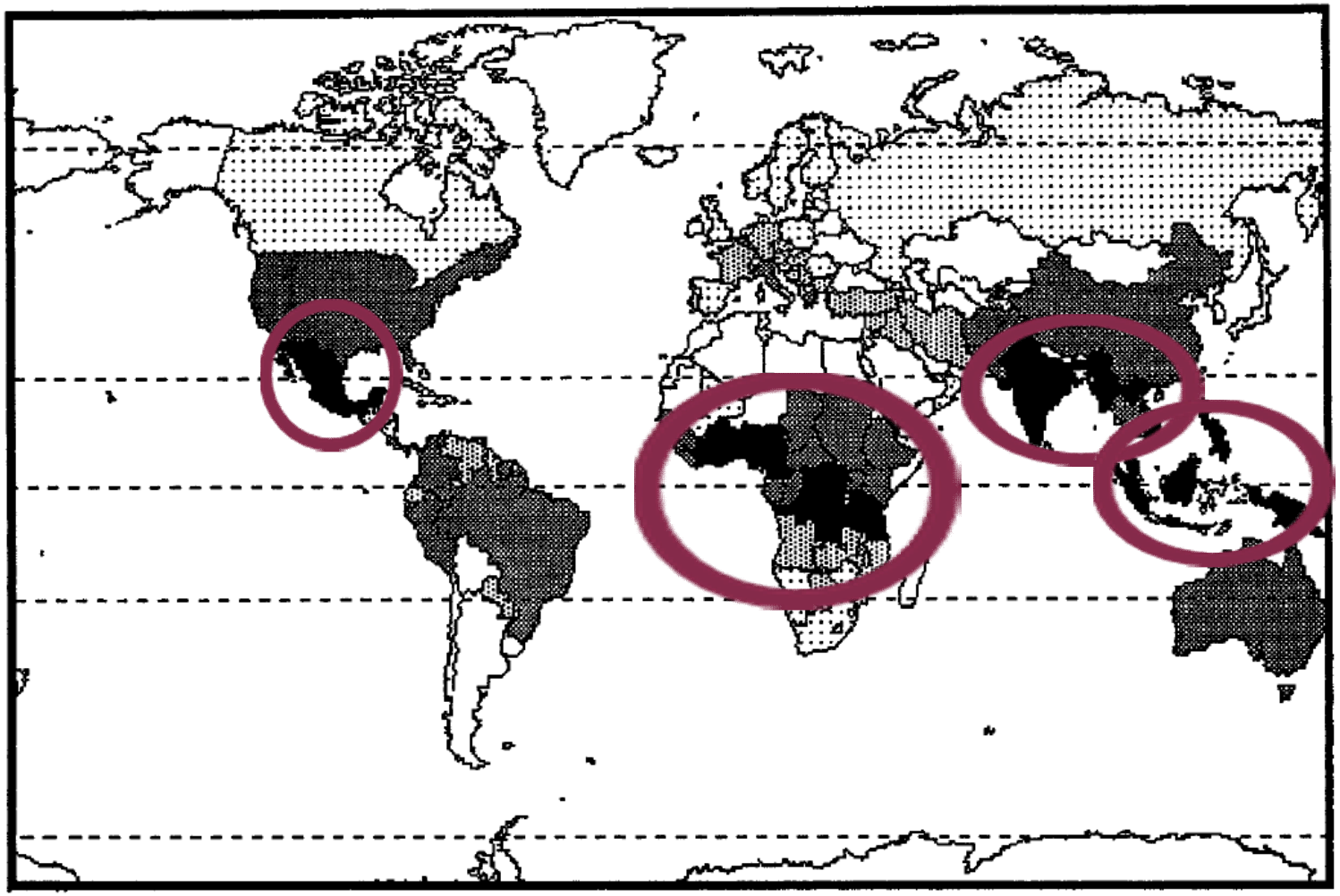
- High numbers of extinct/moribund languages in North America, Siberia



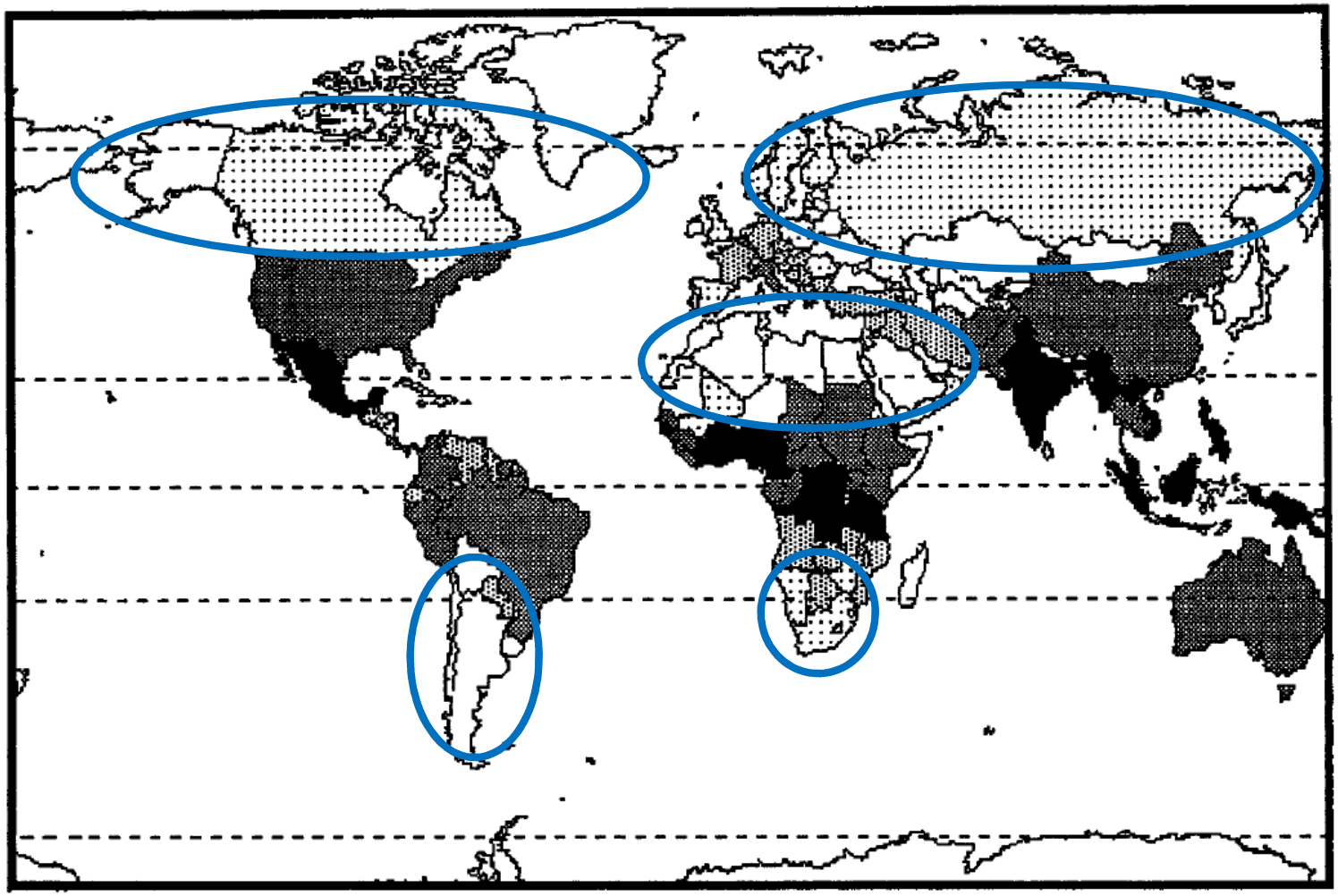
How can we quantify the link?

BIOLINGUISTIC DIVERSITY

- Correlation between biological (species) diversity and linguistic diversity by geographical region
- Nettle (1998) and (1999)
- Gorenflo et al (2012)



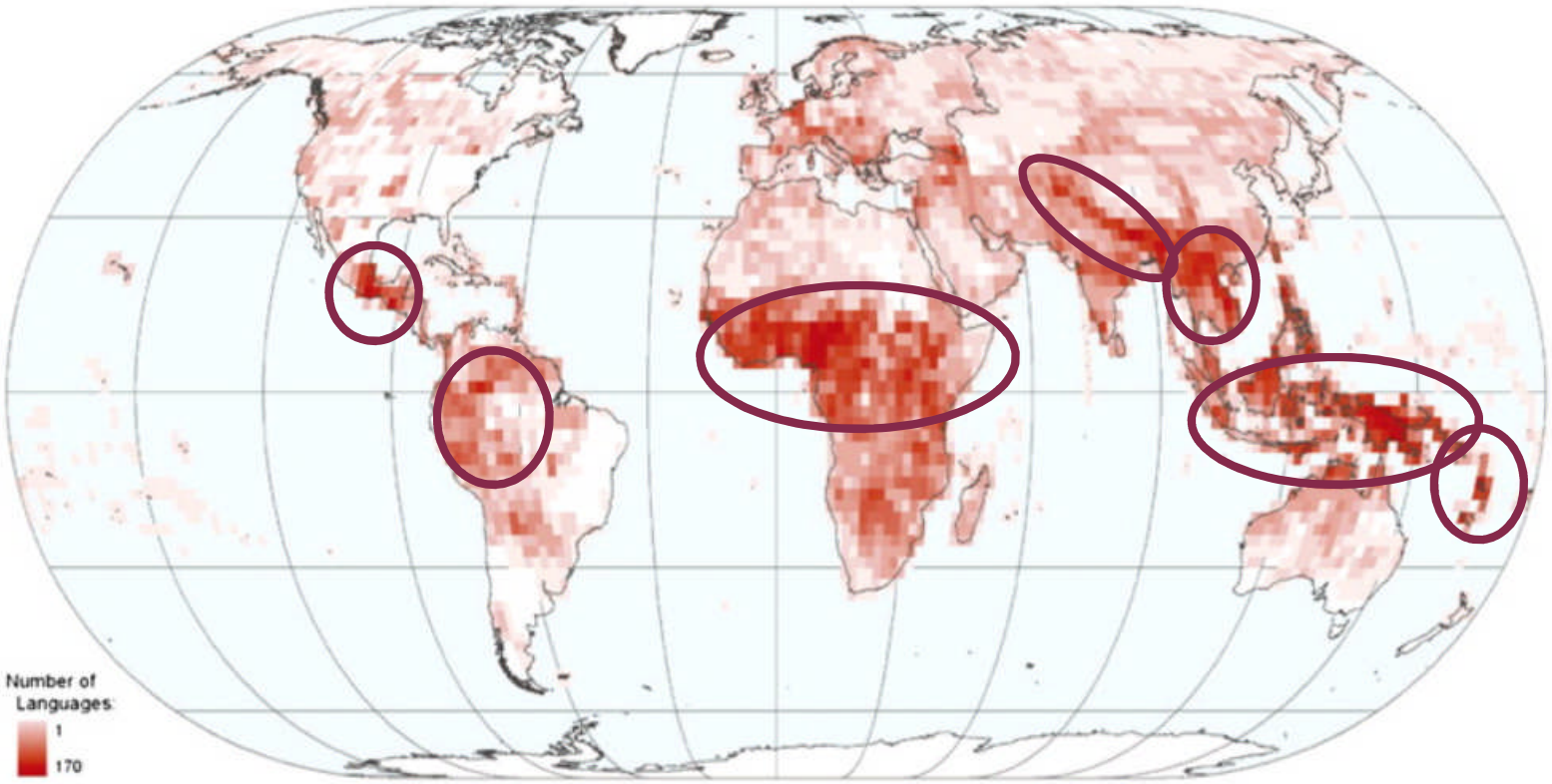
Source: Nettle (1998)



Source: Nettle (1998)

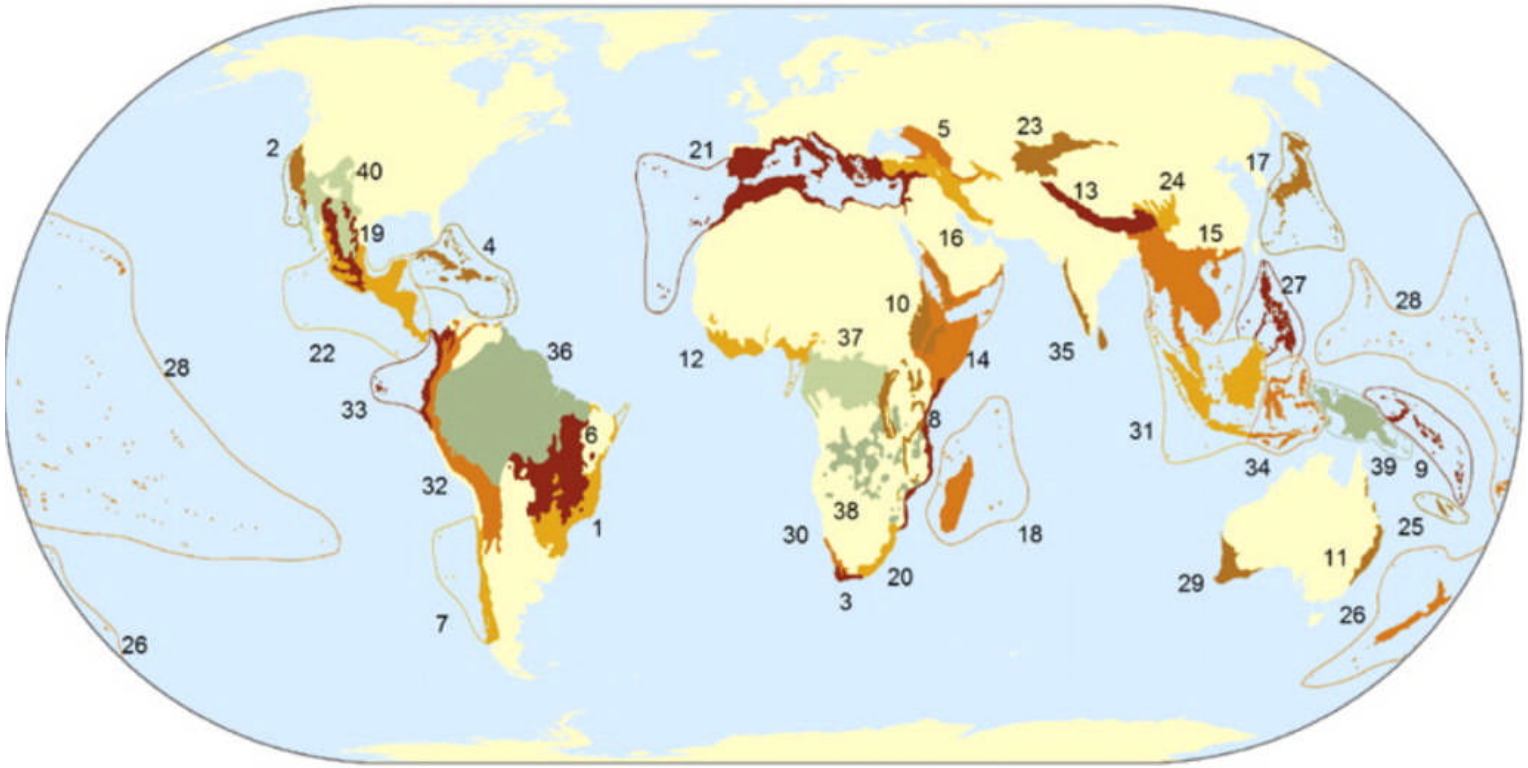
WHY?

- Link between human social-economic networks and “ecological risk”?
- Western colonisation of temperate zones rather than tropics?
- Other historical factors (e.g. late settlement)



Source: Gorenflo et al 2012

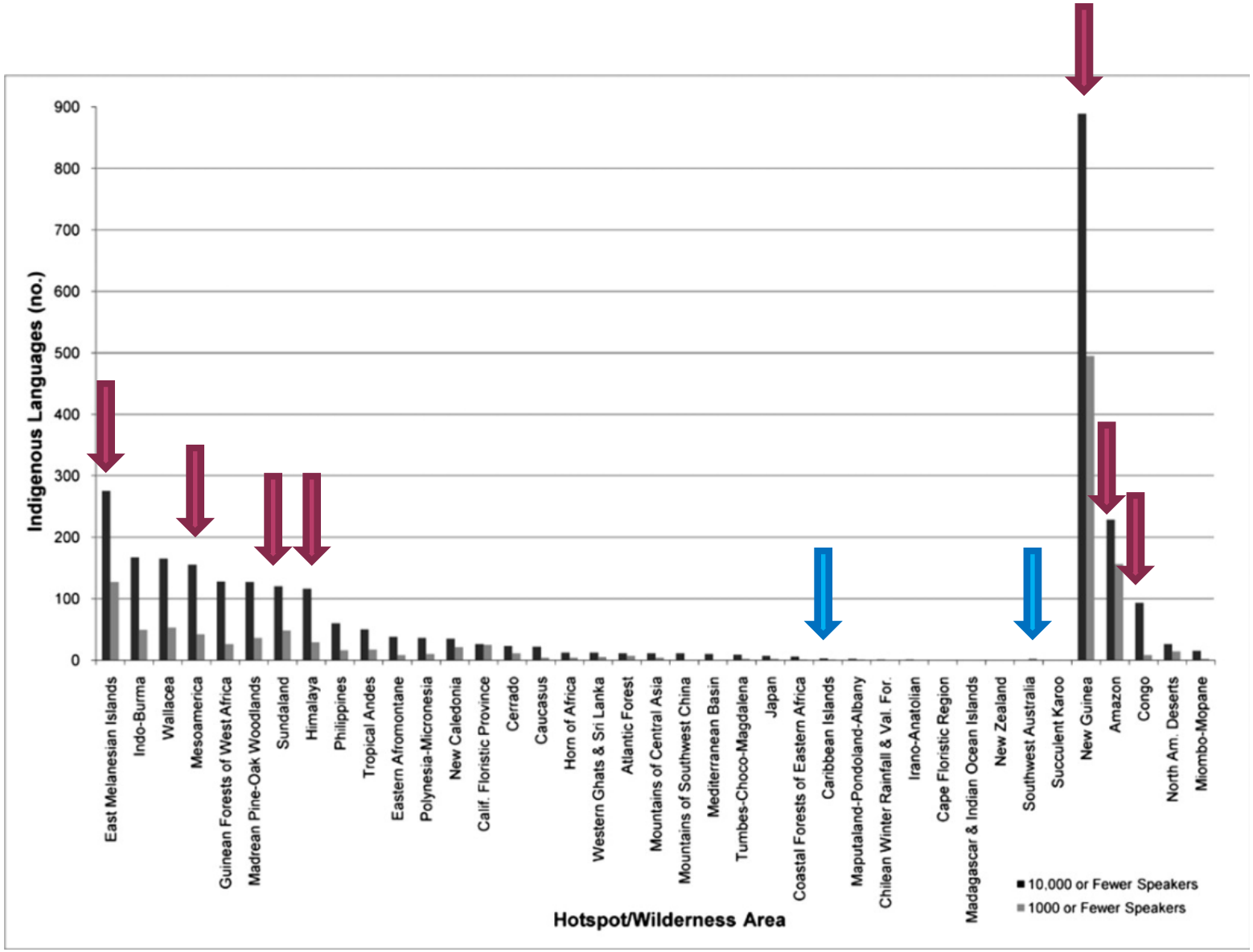
Endemic languages only



Source: Gorenflo et al 2012

1. Regions 1-35: Biodiversity hotspots characterized by "exceptionally high occurrences of endemic species and by loss of at least 70% of natural habitat"
2. Regions 36-40: High biodiversity wilderness areas which have lost less than 30% or less of their natural habitat

- Weak positive geographic correlation between linguistic and species diversity
- Stronger correlation for regions with endangered amphibians
- Languages with <10,000 speakers most at risk



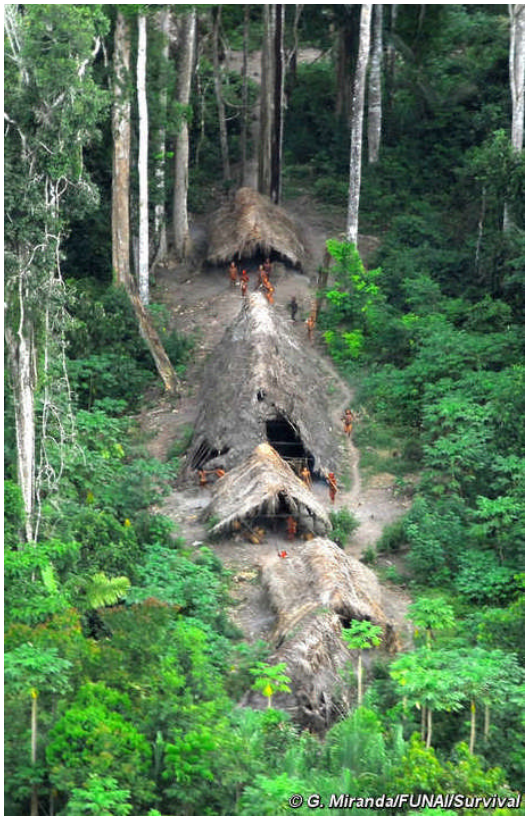
Source: Gorenflo et al 2012

BORNEO

- Very high bio- and linguistic diversity
- 50% of forests lost, mostly in last 30 years
- 850,000 hectares lost every year
- Tropical hardwoods and palm oil

The Penan of Sarawak

AMAZON



- Historically urbanised and more thickly settled (Mann 2005)
- c. 375 languages with less than 10,000 speakers
- At least 100 uncontacted tribes (FUNAI)

AMAZON

- Hixkaryána (550 speakers) OVS basic word order (Derbyshire 1979)
- Apurinã (Brazil, 4,000 speakers) has an OSV word order:

  anana nota apa

  pineapple I fetch

  'I fetch a pineapple' (Pereltsvaig 2012:199)

AMAZON

- Pirahã
- Brazil, 350 speakers
- Claimed to lack numerals, colour terms, quantifiers, and syntactic recursion (Everett 2005)

AMAZON

- Risks: deforestation, mining, degradation
- President Michel Temer has cut Funai's budget; opening reserves to mining and other interests
- Reported massacres of uncontacted peoples in Javari valley by gold prospectors

MELANESIA


Northern Mariana Islands
Micronesia
Hawaii
Asia
Guam
Marshall Islands
Palau
Federated States of Micronesia
North Pacific Ocean
Equator
Kirabati
Papua New Guinea
Nauru
South Pacific Ocean
West Papua
Solomon Islands
Tuvalu
Tokelau
Wallis & Futuna
Samoa
American Samoa
Melanesia
Vanuatu
Tonga
Cook Islands
Fiji
Niue
French Polynesia
New Caledonia
Tropic of Capricorn
Australia
Polynesia
Pitcairn Islands
Easter Island
Australasia
New Zealand
0
1,500 mi
0
1,500 km

MELANESIA

- A biodiversity hotspot
- Includes New Guinea
- Vanuatu has highest rate of linguistic diversity per capita in the world
- 106 languages spoken by 240,000 inhabitants
- Solomon islands
- At risk from climate change: storms, sea level rise, rainfall, salinification

STEWARDSHIP

- Solomons and Vanuatu: land owned at family/village level, resistance to nontraditional land use
- Nepstad et al (2006): satellite study of Amazon shows that indigenous lands inhibit deforestation (logging, fire), no correlation with population size

“Certain cultural systems and practices, represented by speakers of particular indigenous and nonmigrant languages, tend to be compatible with high biodiversity” (Gorenflo et al 2012)


Industrialised global economy
Environmental degradation; climate change
Social and economic inequality

CONSERVING DIVERSITY

- A variety of processes created the map, but similar forces are driving current threats to diversity
- Global industrialised economy as an extension of Western colonialism
- Indigenous people as environmental stewards
- Remaining hotspots need to be a conservation priority – focus on species diversity will benefit cultural and linguistic diversity