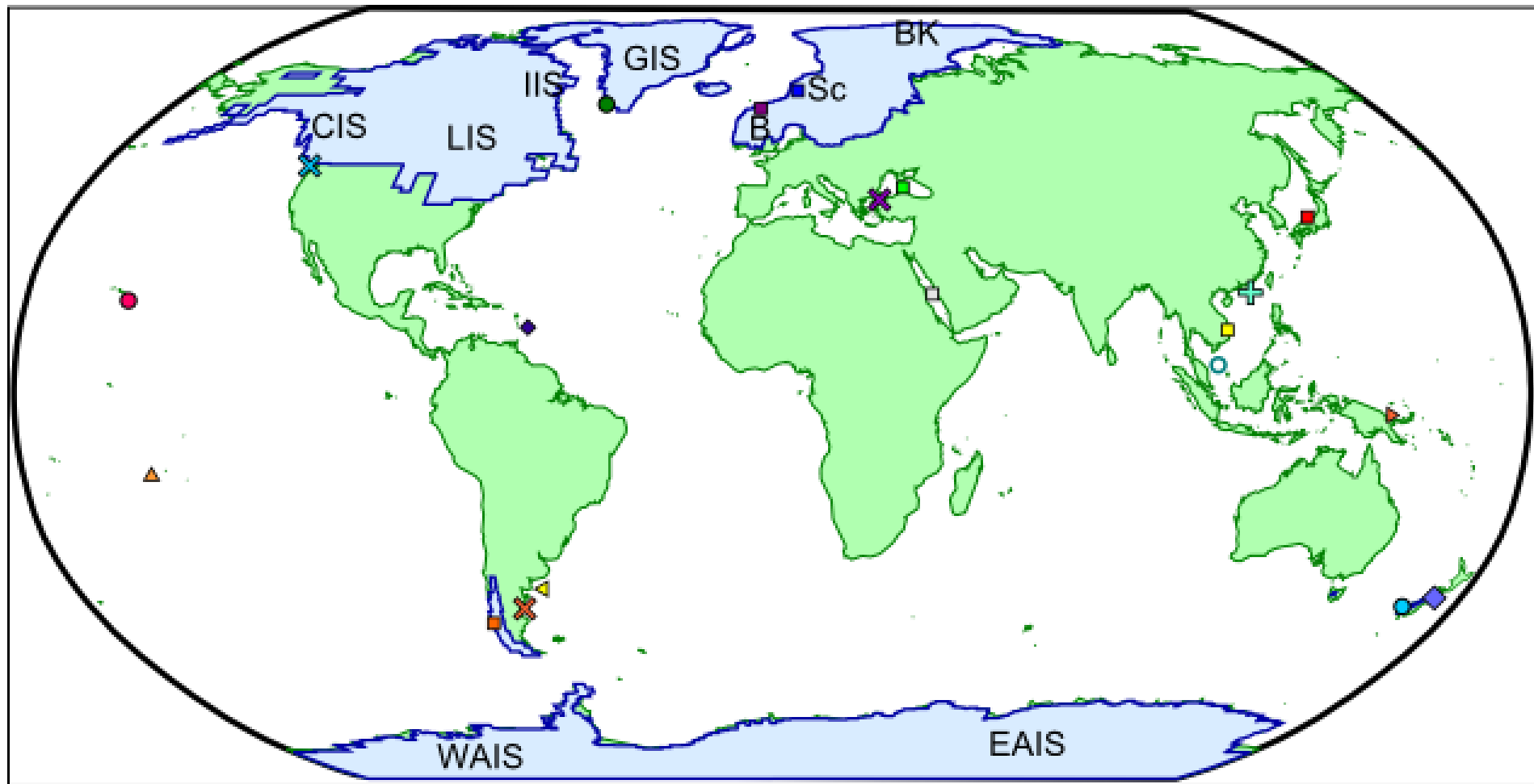


Paleoenvironments and post-glacial sea level rise in Fiordland



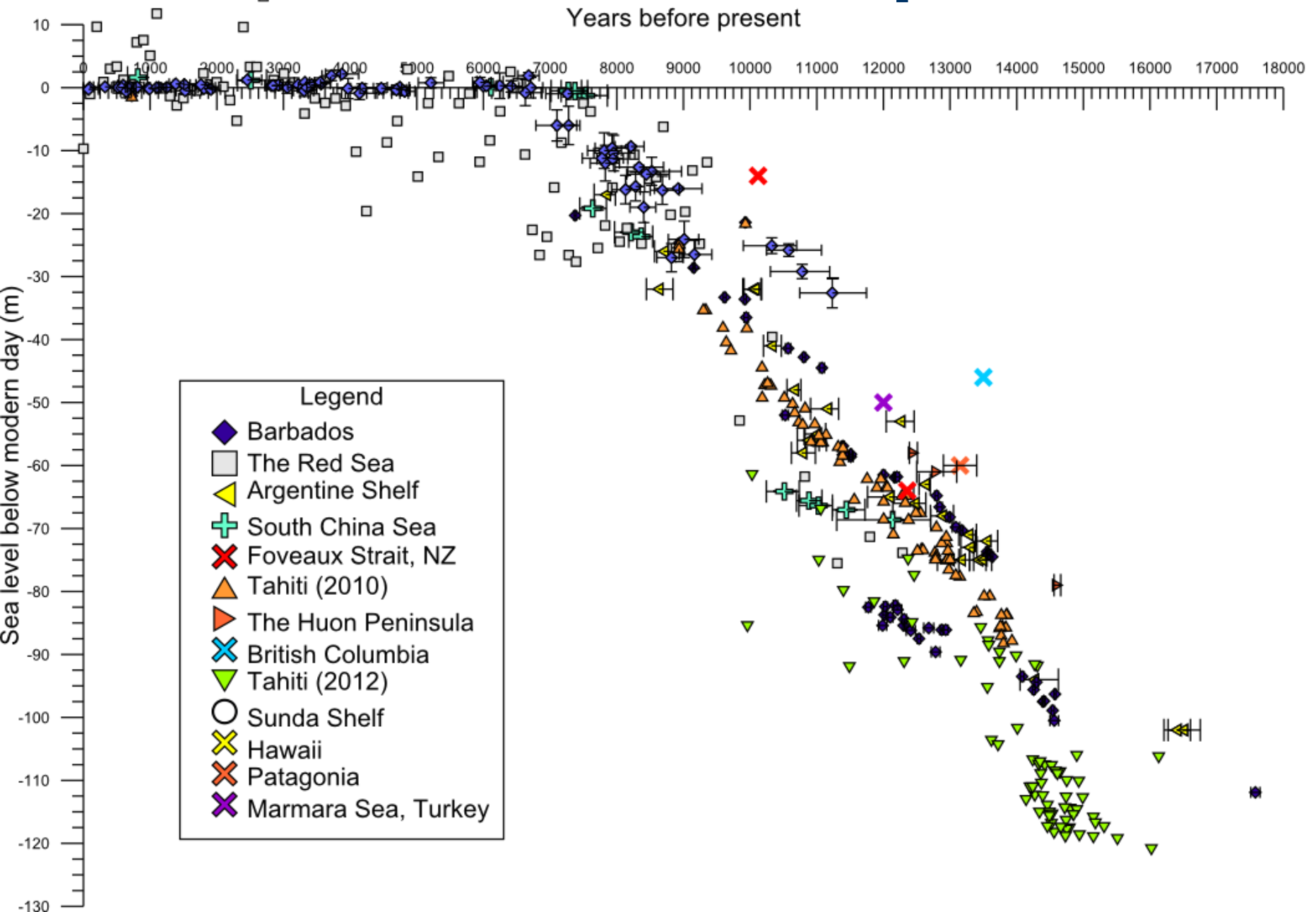
Erin Diabola MSc thesis

Last Glacial Maximum: ~20 ka



Ice sheets across northern Europe, North America and Antarctica
with extended alpine glaciers at mid-latitudes
Sea level lower by ~120 m

Global sea level rise post-LGM



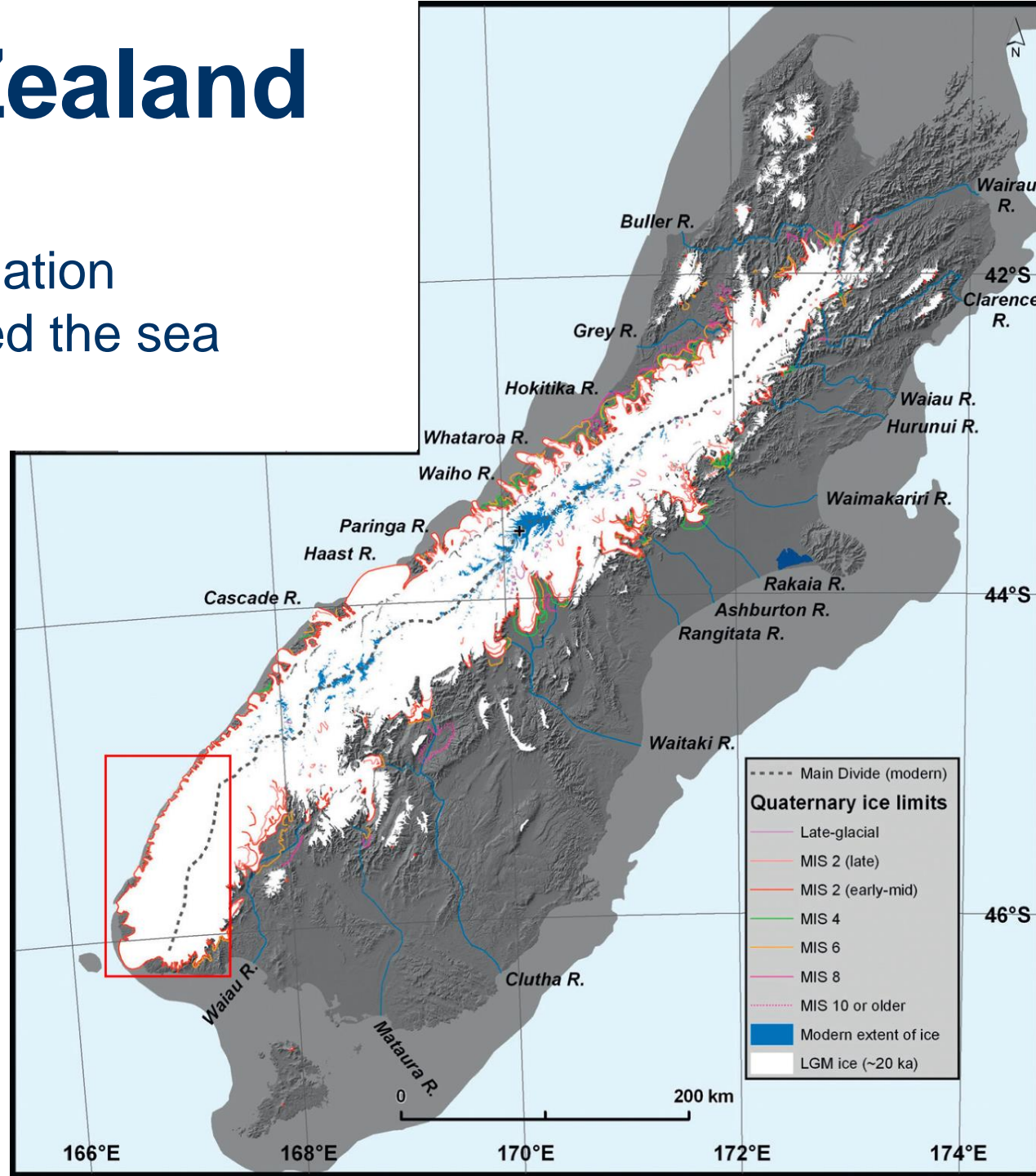
LGM New Zealand

Larger landmass
Extensive alpine glaciation
Some glaciers reached the sea

Cold, arid climate
with extensive
grasslands



map from Barrell (2011)



New Zealand sea level curve

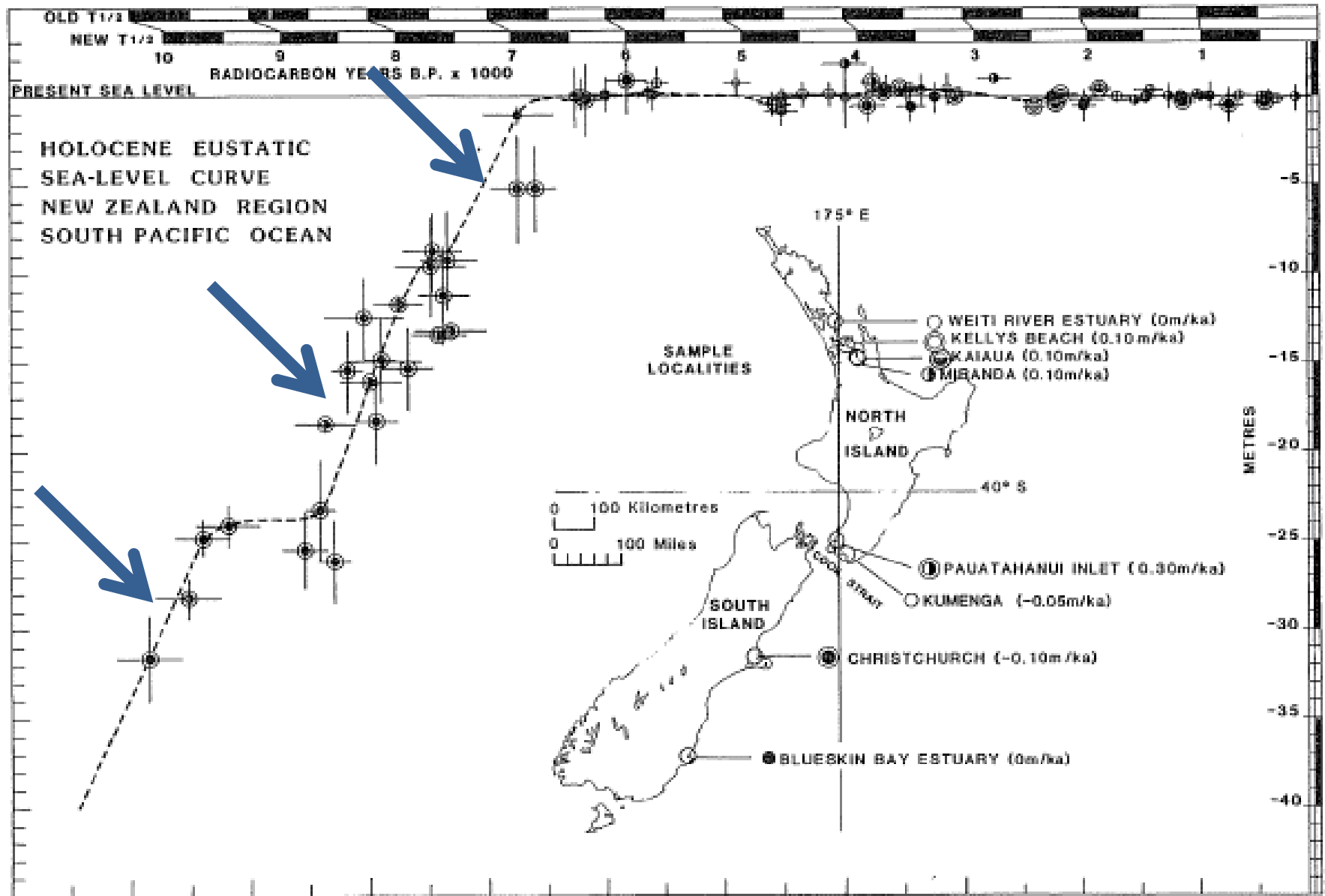
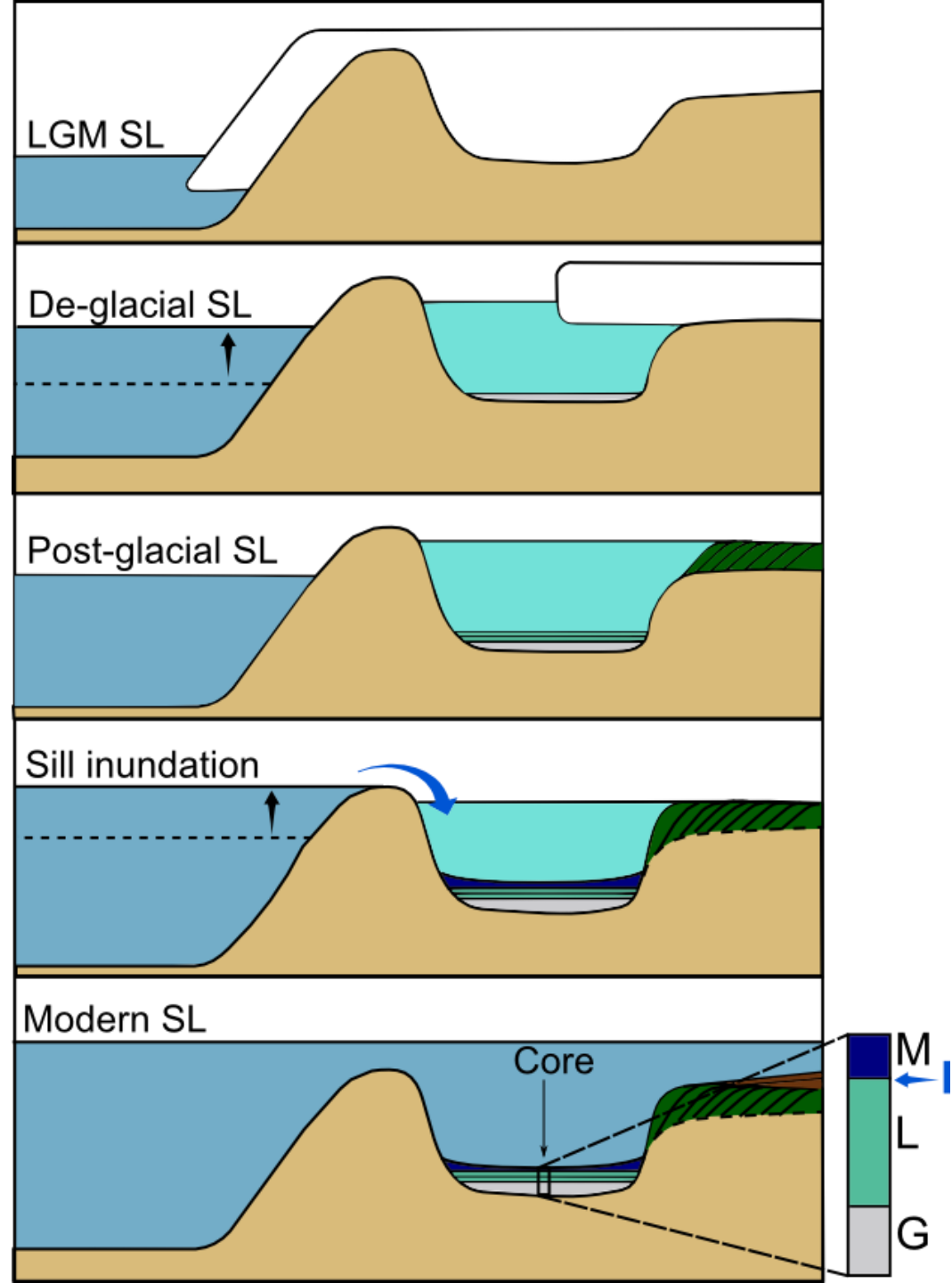


Figure from Gibb (1986).

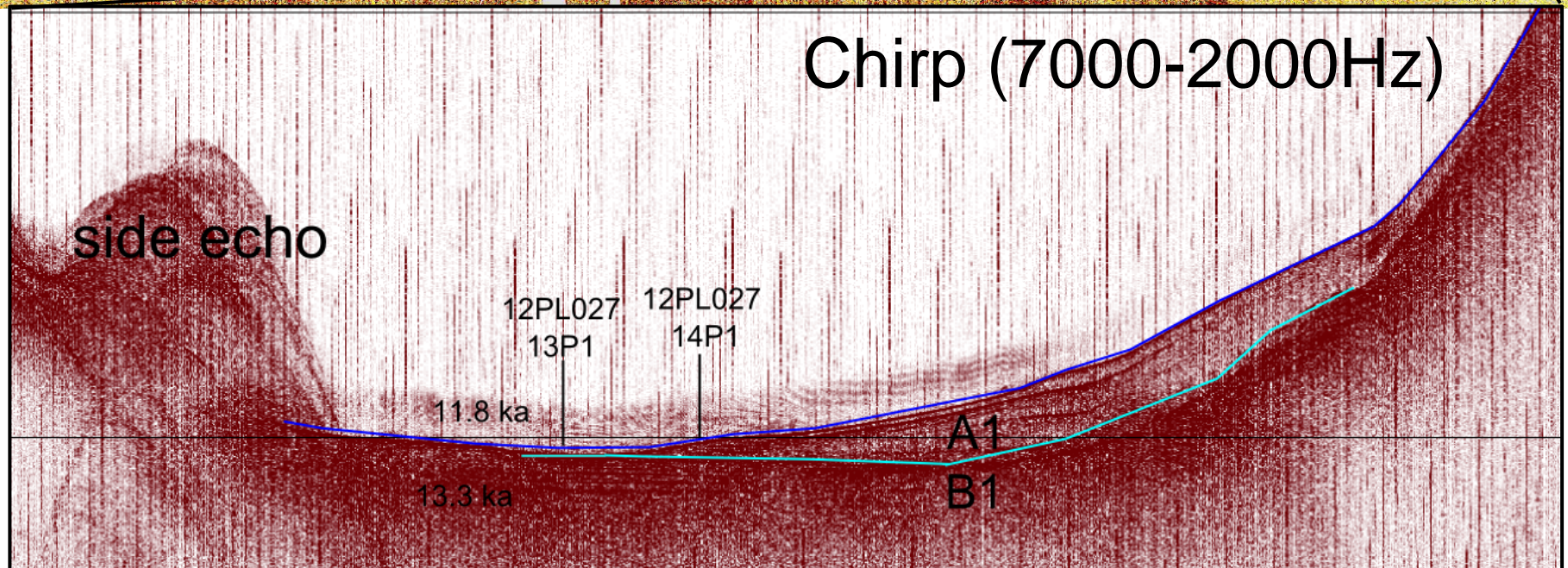
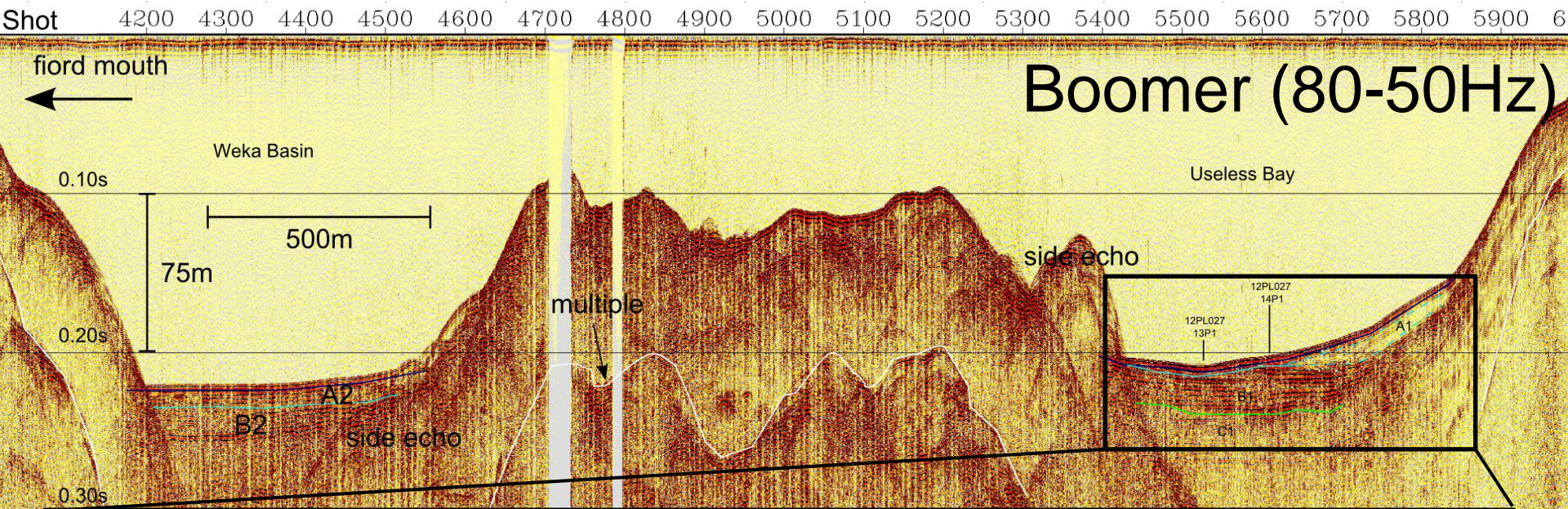
Fiordland

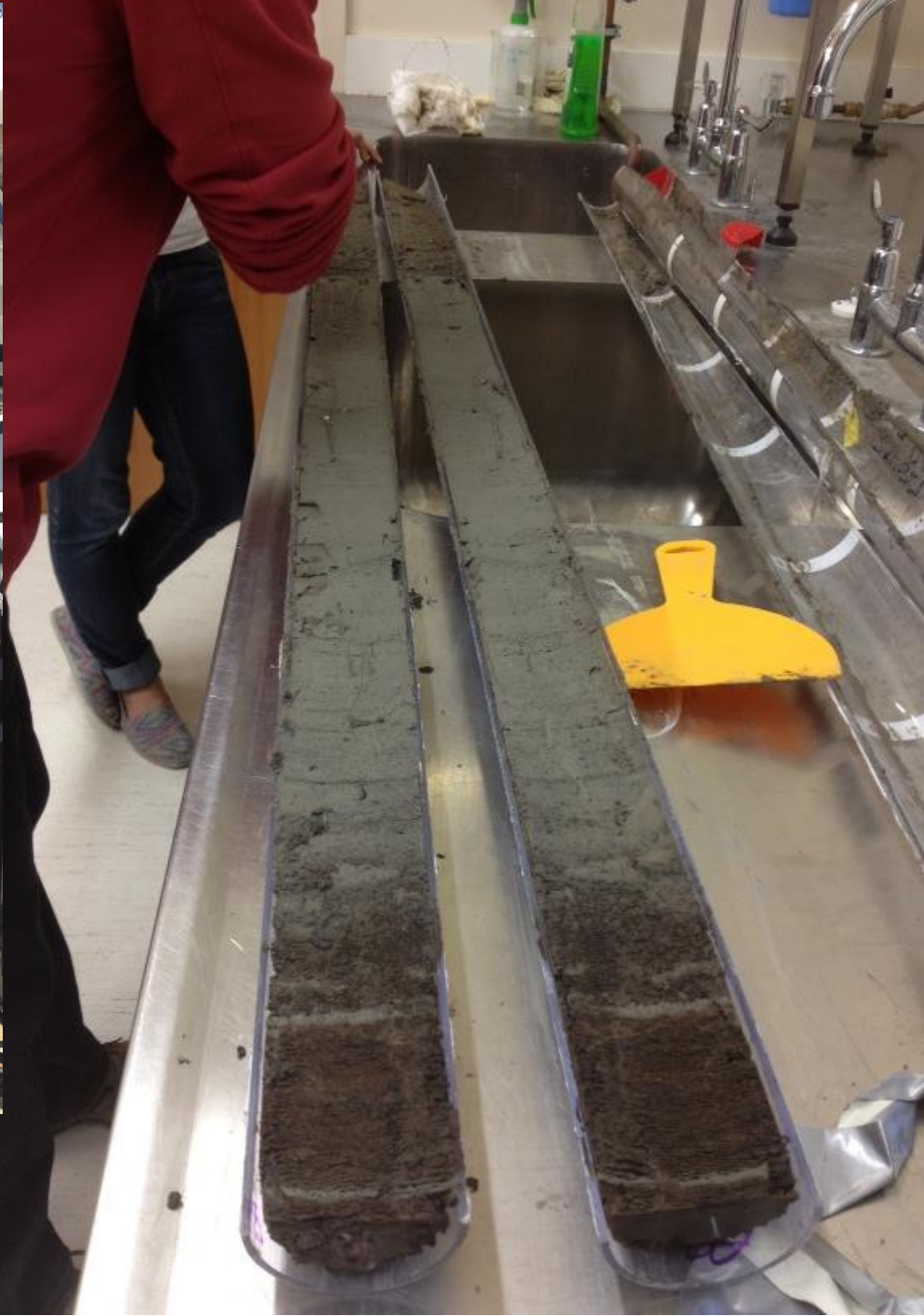


Fiordland



Methods: Seismic surveys





photos by Faye Nelson

Diatoms

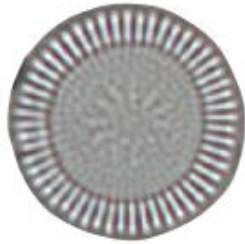
Freshwater



Tabellaria flocculosa



Cyclotella meneghiniana



C. stelligera



Luticola mutica



Fragilaria capucina



Diatomella parva



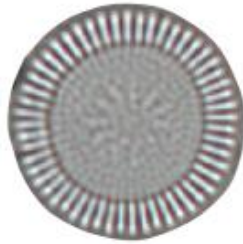
10µm

Diatoms

Freshwater



Cyclotella meneghiniana



C. stelligera



Fragilaria capucina

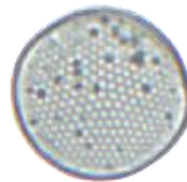


Diatomella parva



10μm

Marine



Thalassiosira eccentrica



Cocconeis scutellum

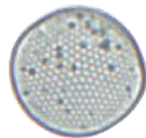


Tabellaria flocculosa



Luticola mutica

Marine



Thalassiosira eccentrica



Cocconeis scutellum

Ingression Contact

Freshwater



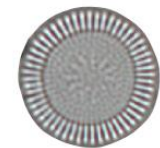
Tabellaria flocculosa



Cyclotella meneghiniana



Luticola mutica



C. stelligera



Fragilaria capucina



Diatomella parva

10µm

Marine



Thalassiosira eccentrica



Cocconeis scutellum

Radiocarbon
date above
contact

Ingression
Contact

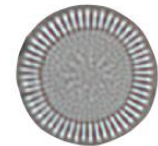
Freshwater



Tabellaria flocculosa



Cyclotella meneghiniana



C. stelligera



Fragilaria capucina



Diatomella parva

10µm



Luticola mutica

Radiocarbon
date below
contact

Fiordland sea level rise

Sill depth
from seismic and others

+

radiocarbon ages
from sediment cores
(marine and freshwater
units)

=

sea level curve



Fiordland sea level rise

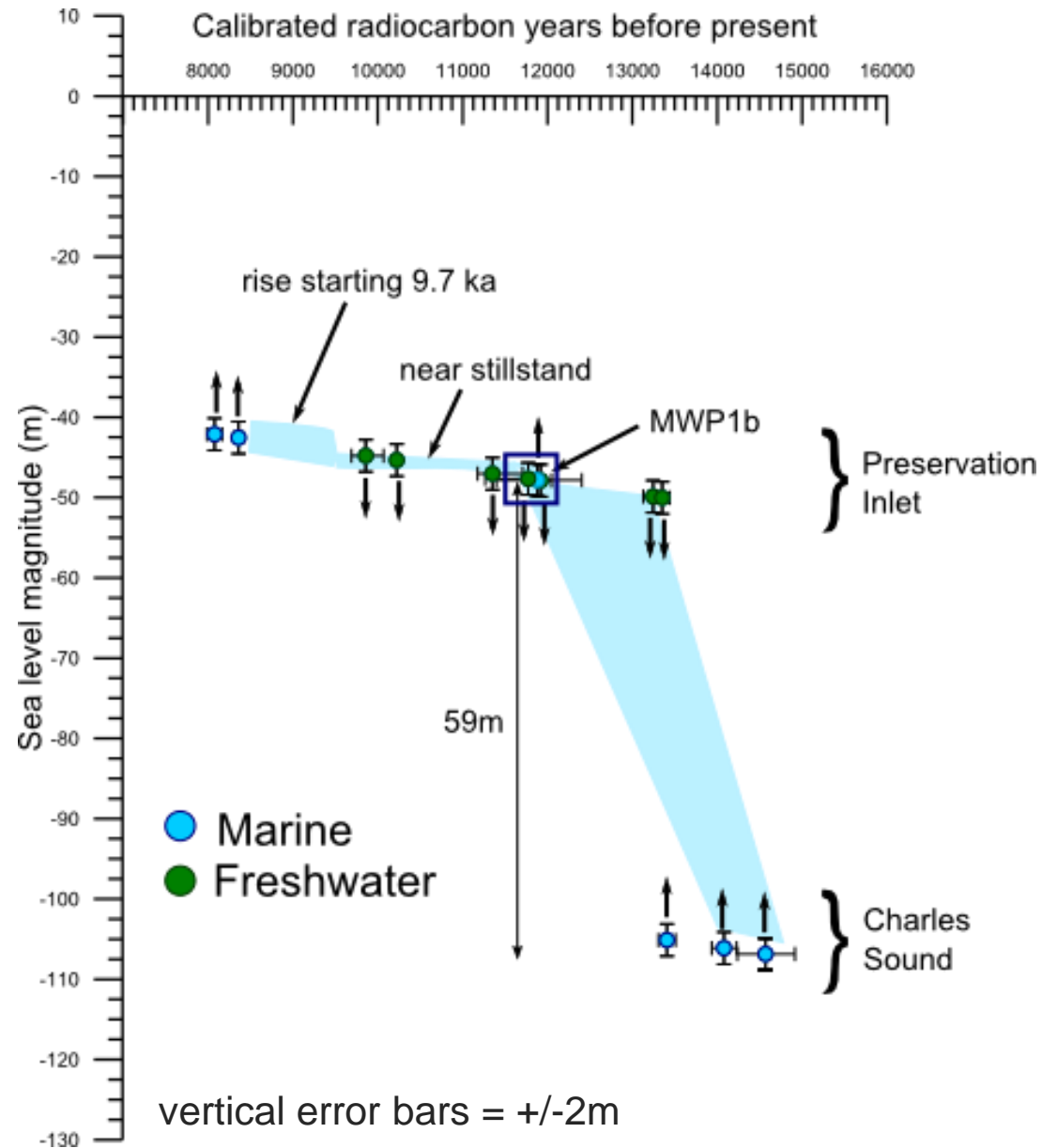
Sill depth
from seismic and others

+

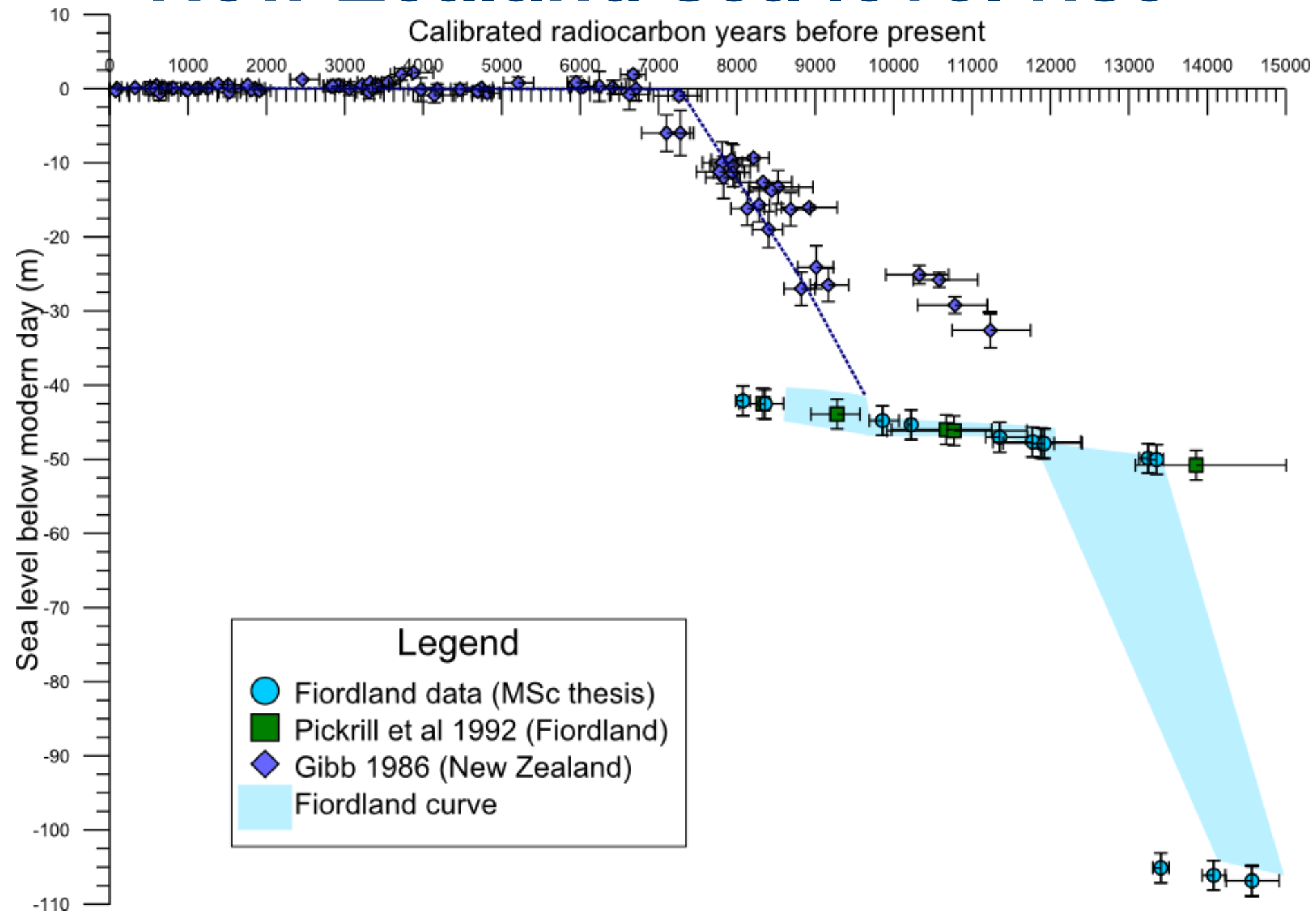
radiocarbon ages
from sediment cores
(marine and freshwater
units)

=

sea level curve



New Zealand sea level rise



New Zealand sea level rise

