

The New Zealand Baseline Atmospheric Programme at Baring Head

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Note

From 1 July 1992 the authors and all New Zealand atmospheric research will be part of a new crown research institute whose name is expected to be

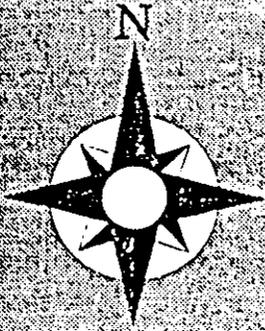
New Zealand National Institute of Atmosphere and Water

Requirements for Baseline Monitoring

1. Know what you are going to measure and why
careful choice of site and instrumentation
2. Be able to select relevant parts of data records
*wind trajectories should be available,
measure different species identifying air source region*
3. Use consistent high quality measurement techniques
*changes in data should be due to changes in the real
world, not to instrumentation or techniques*
4. Regular quality assurance and network intercalibration
must be able to prove to others that the data is correct
5. Regular analysis and interpretation of data
*must demonstrate that the data achieves objective 1,
eg through use of data in modelling programs*

Sampling site location

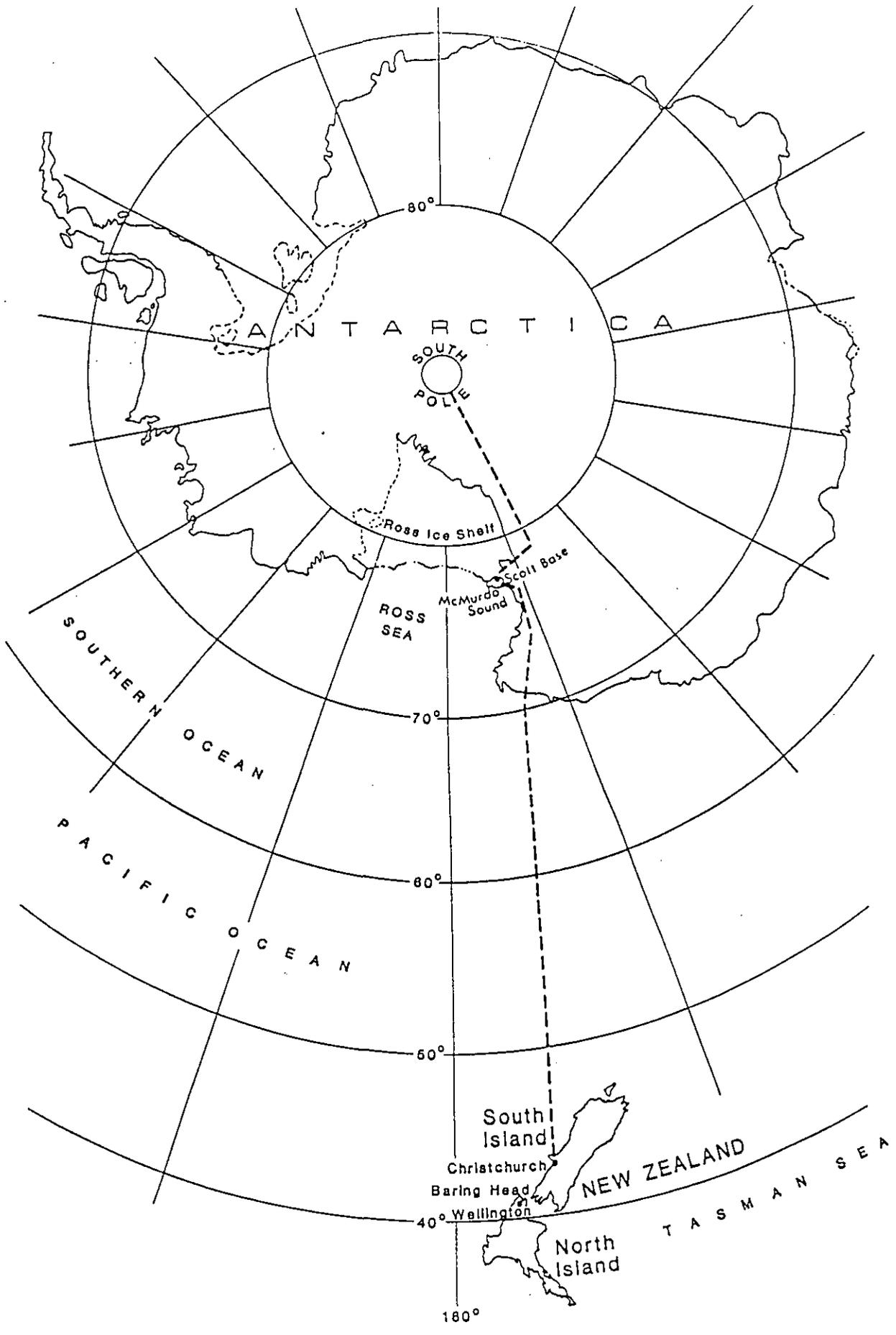
BARING HEAD NEW ZEALAND

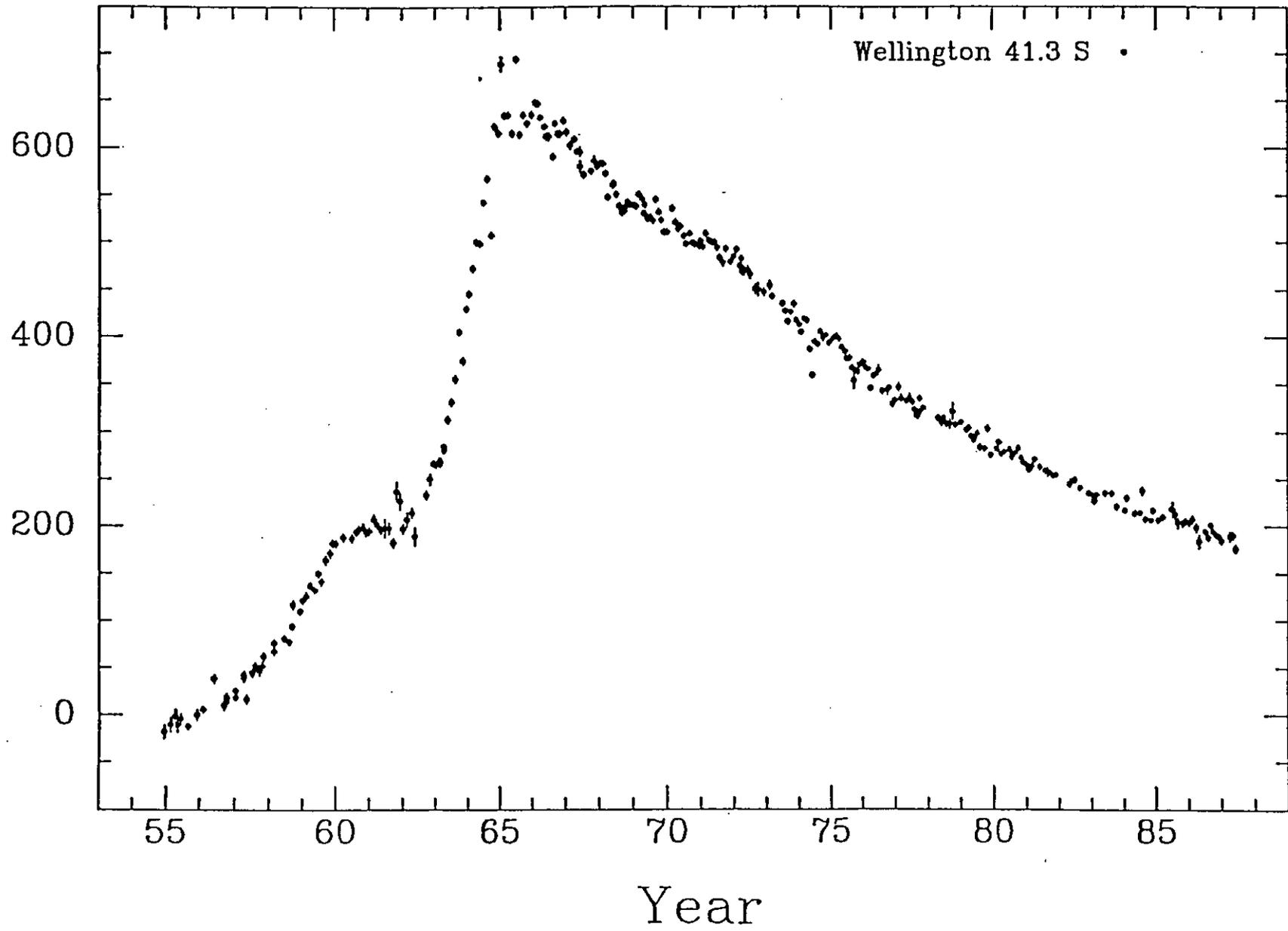


Sampling location
Sampling site
DSIR Laboratory

DSIR
Lower Hutt
Laboratory

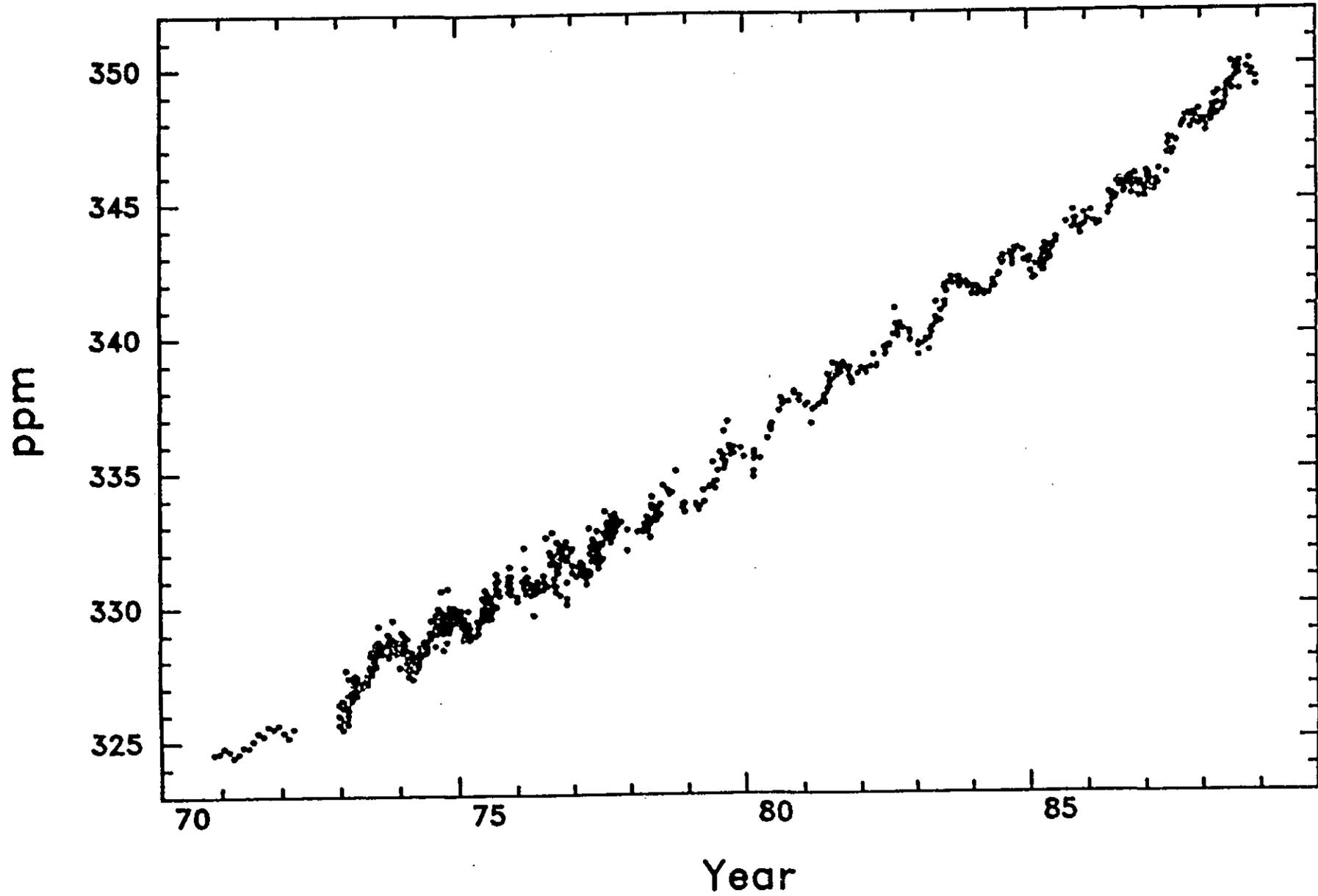
typical wind
trajectories from
S and SE





Carbon dioxide concentration for Baring Head southerly winds

— 69 —



Baring Head Programme as at 1992

Species	samples/yr	Start	Method	Agency
$^{14}\text{CO}_2$	12	1954 ¹	beta counting	DSIR
CO_2	continuous	1970	NDIR	DSIR/SIO
Tritium (HTO)	52	1974 ²	beta counting	U Miami
CO_2	25	1977	flask/NDIR	SIO
$^{13}\text{CO}_2$	25	1985	mass spec	SIO/U Gron
$^{14}\text{CH}_4$	6	1986	AMS	DSIR
^7Be	52	1987	beta counting	USDOE
$^{13}\text{CH}_4$	40	1988	mass spec	DSIR
CH_4	80	1989	GC	DSIR
^{14}CO	50	1989	AMS	DSIR
^{13}CO , C^{18}O	50	1989	mass spec	DSIR
CO	50	1989	manometric	DSIR
NMHC	continuous	1989	GC	NZMS/KFA
O_2/N_2	26	1991	mass spec	URI
O_3	continuous	1991	Dasibi	NZMS
CO	50	1991	GC	DSIR
Aerosol physics	intermittent	1991	impactor	NZMS
Aerosol chem	intermittent	1991	ion chrom	DSIR
DMS	intermittent	1991	ion chrom	U Auck

Notes

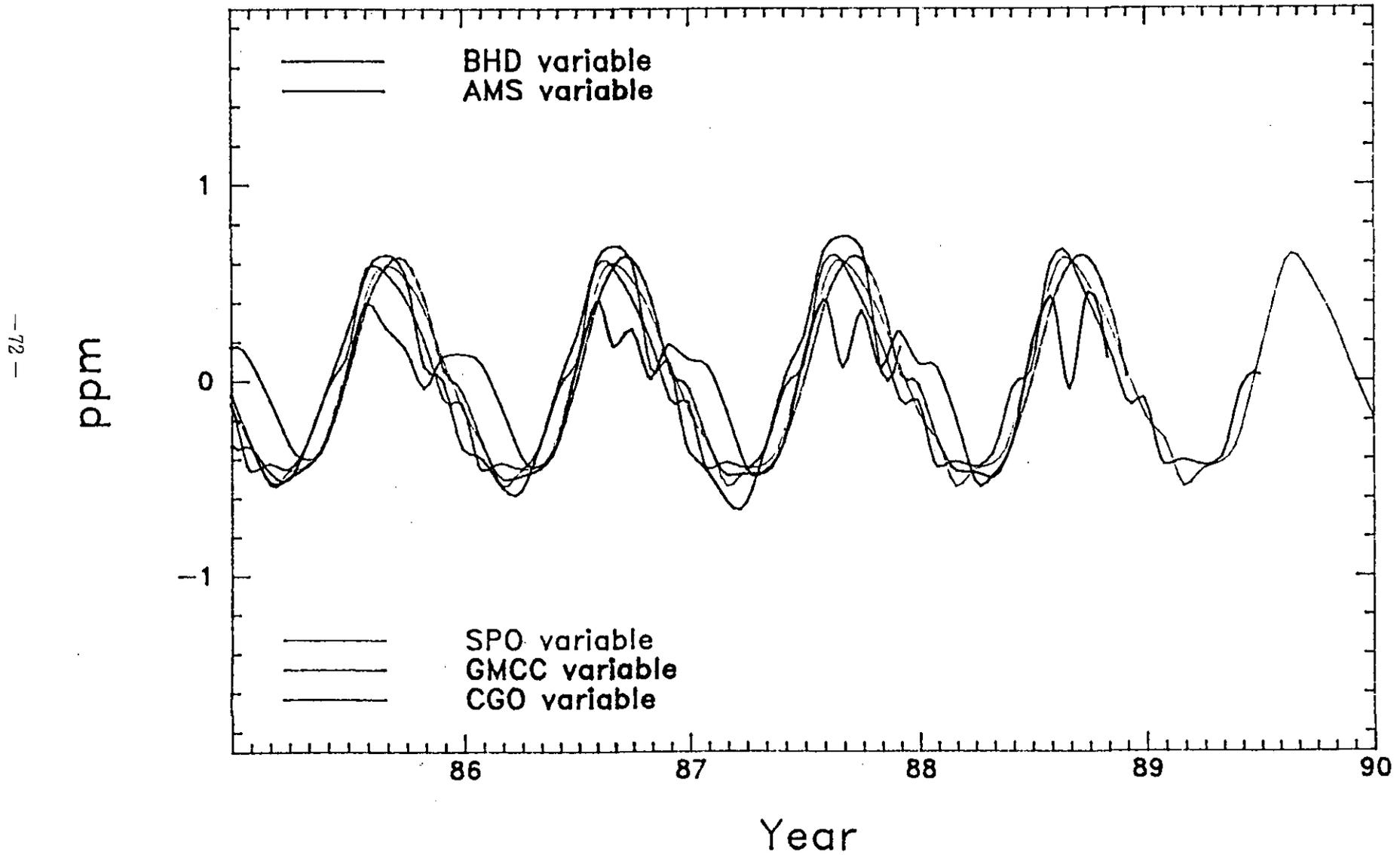
¹ at Makara site near Wellington till 1989

² terminated in 1987

Abbreviations

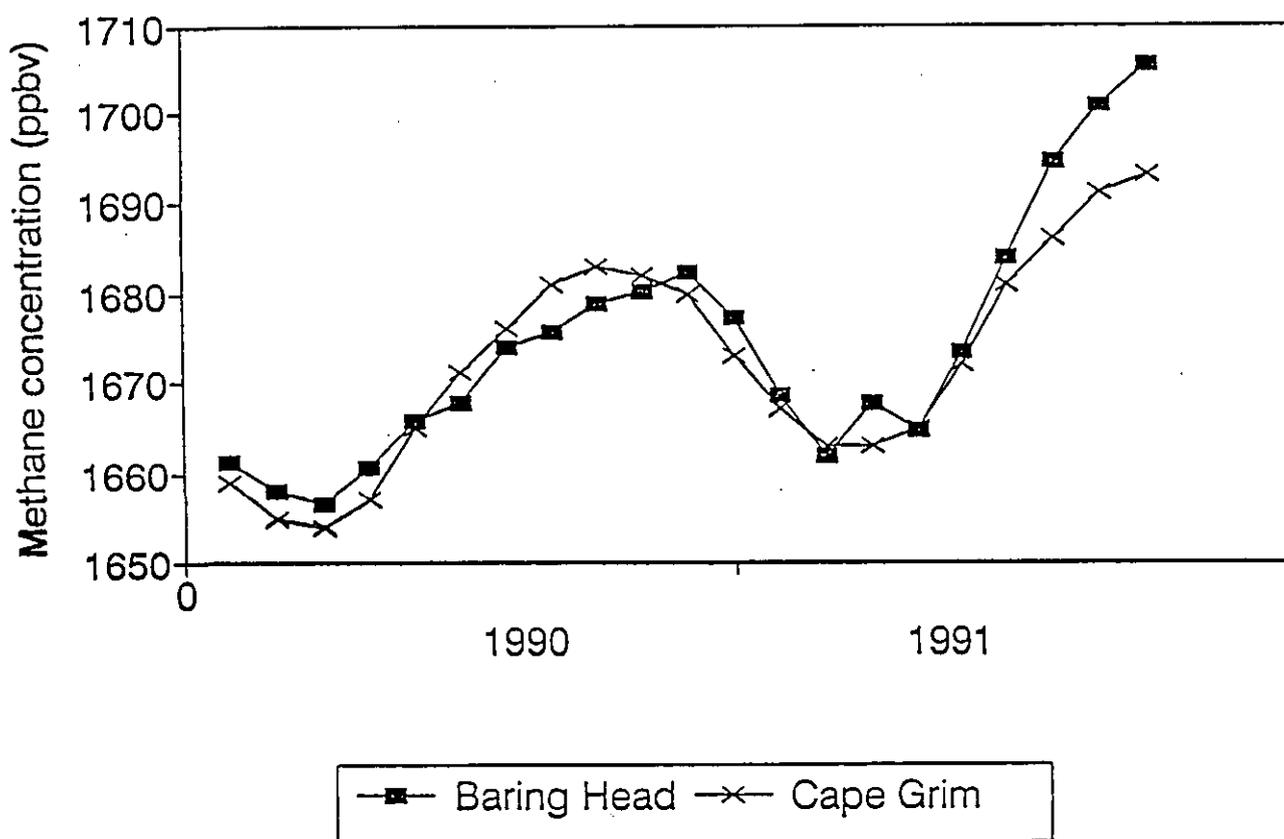
DSIR	- Department of Scientific and Industrial Research, New Zealand
KFA	- Kernforschungsanlage, Germany
NZMS	- New Zealand Meteorological Service, New Zealand
SIO	- Scripps Institution of Oceanography, USA
U Auck	- University of Auckland, New Zealand
U Gron	- University of Groningen, Netherlands
U Miami	- University of Miami, USA
URI	- University of Rhode Island, USA
USDOE	- United States Department of Energy, USA

Seasonal components of Austral CO₂ data

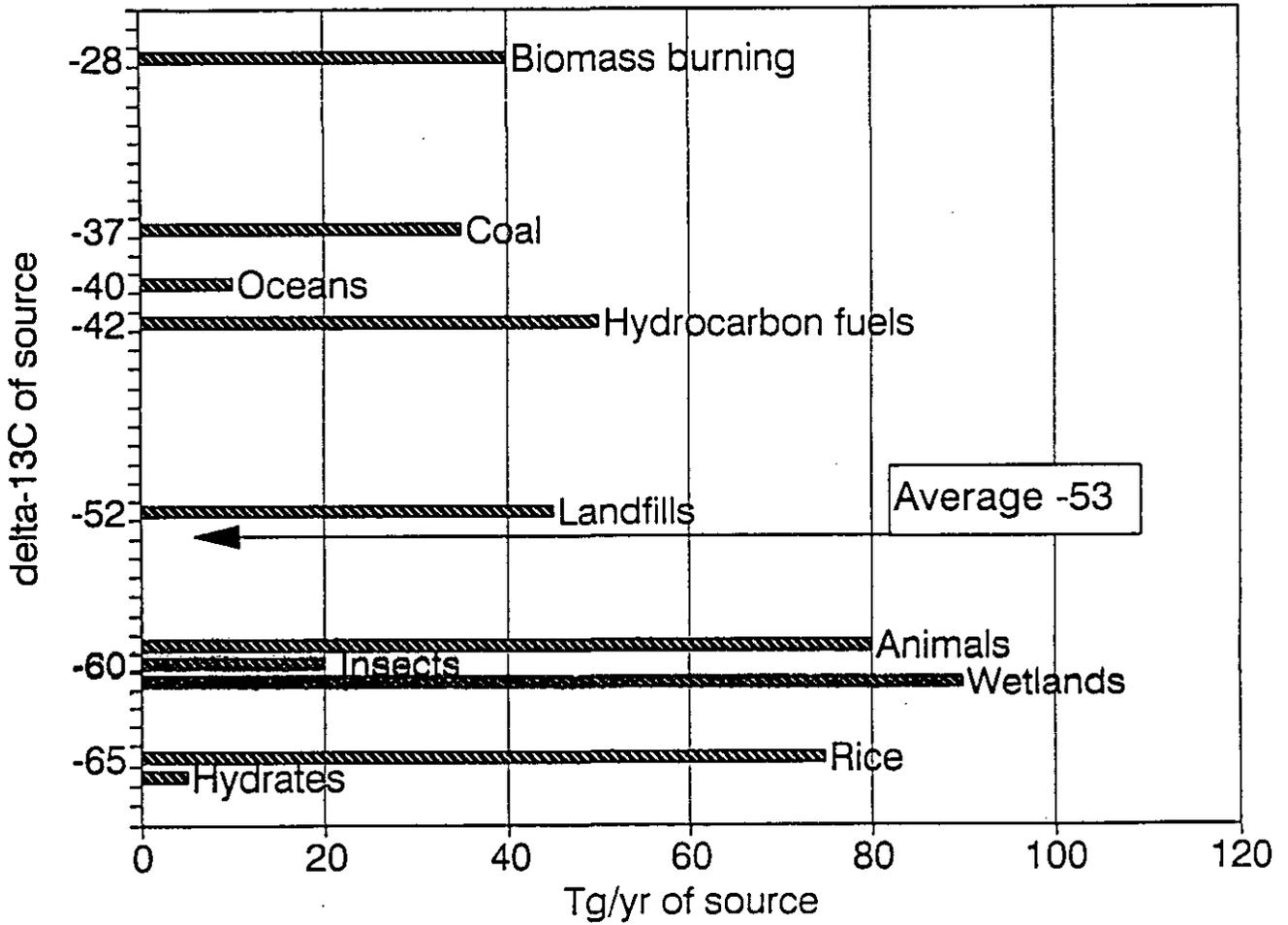


Atmospheric Methane

Monthly means Baring Head and Cape Grim



CH₄ Budget - delta-13C constraint



New Zealand CO data

