

The CSIRO (Australia) Atmospheric CO₂ Monitoring Program

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Tables 1–3 summarise data obtained from air samples collected from government and commercial aircraft. A full description of the sampling, measurement and data processing procedures is given by Beardsmore *et al.* (1978).

The data have been corrected for the appropriate carrier gas errors and are expressed in the WMO 1974 CO₂ Calibration Scale.

Table 1 summarises the concentrations observed in air samples collected over South Eastern Australia, primarily over Bass Strait between the Australian mainland and Tasmania. In any one month, samples may be collected on 1 to 4 separate days.

The data in Table 2 represent both upper tropospheric and lower stratospheric samples collected mainly on flights between Australia and New Zealand. No attempt has been made to distinguish between data of tropospheric or stratospheric origin even though during the summer, tropospheric concentrations may exceed lower stratospheric concentrations by 2–3 ppmv.

The data in Table 3 represent only upper tropospheric samples obtained at the rate of one per flight. Thus the number in parentheses also represents the number of days on which samples were obtained.

REFERENCES

- Beardsmore, D.J., Pearman, G.I., Fraser, P.J.B. and O'Toole, J.G., (1978). The CSIRO (Australia) atmospheric carbon dioxide monitoring program: The first six years of data. CSIRO Division of Atmospheric Physics, Technical Paper No. 35.
- Pearman, G.I. and Garratt, J.R., (1973). Space and time variations of tropospheric carbon dioxide in the southern hemisphere. *Tellus*, 25 (3), 309–311.

Table 1. Monthly means of CO₂ concentration and number of samples () in the mid-troposphere (3.5–5.5 km) over South Eastern Australia. Concentrations are expressed in terms of the WMO 1974 CO₂ Calibration Scale.

Month	Year						
	1972	1973	1974	1975	1976	1977	1978
January	–	327.5 (10)	329.1 (24)	329.0 (10)	330.5 (27)	331.6 (9)	333.5 (7)
February	–	327.6 (11)	327.9 (8)	329.2 (9)	330.1 (28)	331.8 (29)	333.5 (22)
March	327.0 (4)	327.3 (15)	327.2 (4)	329.2 (33)	329.6 (30)	331.9 (21)	334.0 (11)
April	325.9 (16)	327.4 (27)	328.1 (15)	329.1 (19)	329.6 (27)	331.9 (18)	333.5 (1)
May	326.1 (35)	328.2 (18)	328.2 (19)	329.4 (18)	330.0 (26)	331.3 (12)	333.9 (17)
June	326.5 (15)	328.4 (26)	328.8 (19)	329.6 (12)	330.4 (14)	332.3 (3)	333.5 (7)
July	327.1 (22)	329.2 (24)	328.5 (27)	329.9 (26)	331.0 (16)	333.6 (8)	334.2 (10)
August	327.2 (16)	328.7 (37)	329.0 (14)	330.6 (17)	331.2 (20)	332.9 (6)	334.1 (6)
September	327.4 (12)	328.6 (8)	329.8 (10)	330.8 (18)	331.4 (8)	333.2 (7)	333.7 (12)
October	328.0 (16)	329.2 (32)	329.2 (44)	331.0 (19)	331.5 (22)	333.8 (23)	334.8 (7)
November	327.8 (21)	329.0 (10)	329.2 (26)	330.7 (19)	331.6 (37)	333.5 (8)	334.7 (5)
December	328.0 (26)	329.0 (12)	329.1 (25)	330.8 (23)	332.0 (9)	333.8 (21)	334.3 (6)

Table 2. Seasonal means of CO₂ concentrations and number of samples (n) in the upper troposphere and lower stratosphere (above 9 km) over Southeastern Australia and the Tasman Sea. Concentrations are expressed in terms of the WMO 1974 CO₂ Calibration Scale.

Season	Year						
	1971-72	1972-73	1973-74	1974-75	1975-76	1976-77	1977-78
Summer (Dec, Jan, Feb)	—	327.5 (43)	328.7 (8)	329.1 (32)	330.1 (25)	331.5 (23)	333.2 (13)
Autumn (Mar, Apr, May)	327.3 (6)	328.0 (21)	328.0 (20)	329.3 (32)	330.2 (19)	332.5 (29)	333.4 (21)
Winter (June, July, Aug)	327.4 (19)	329.3 (28)	329.5 (20)	331.2 (11)	331.5 (14)	333.7 (36)	334.3 (4)
Spring (Sept, Oct, Nov)	327.3 (23)	328.9 (18)	330.0 (29)	330.9 (27)	331.2 (24)	333.5 (25)	335.6 (2)

Table 3. Seasonal means of CO₂ concentration and number of samples () in the upper troposphere (above 8.5 km) over (i) the Great Australian Bight and (ii) subtropical Australia and the Indian Ocean (15°–25°S). Concentrations are expressed in terms of WMO 1974 CO₂ Calibration Scale.

Season	Year						
	1971–72	1972–73	1973–74	1974–75	1975–76	1976–77	1977–78
(i) Great Australian Bight							
Summer (Dec, Jan, Feb)	–	–	328.0 (7)	329.0 (7)	329.3 (8)	331.4 (11)	332.2 (1)
Autumn (Mar, Apr, May)	–	–	326.7 (3)	328.8 (5)	329.5 (7)	331.4 (6)	333.1 (4)
Winter (June, July, Aug)	–	–	328.4 (4)	329.9 (6)	331.2 (4)	333.4 (5)	334.6 (6)
Spring (Sept, Oct, Nov)	–	–	329.8 (4)	329.7 (5)	331.1 (1)	332.7 (4)	335.0 (5)
(ii) Subtropical Australia and Indian Ocean							
Summer (Dec, Jan, Feb)	–	–	–	–	331.8 (1)	–	–
Autumn (Mar, Apr, May)	–	–	–	–	–	331.4 (5)	334.2 (1)
Winter (June, July, Aug)	–	–	–	330.3 (2)	–	334.0 (3)	334.2 (5)
Spring (Sept, Oct, Nov)	–	–	–	–	–	333.3 (4)	–