

# PREFACE

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Following the 1985 "Villach Statement" on the role of carbon dioxide and other greenhouse gases in global climate change, the Australian Commonwealth Government's Commission for the Future, in association with the CSIRO Division of Atmospheric Research, established an Australia-wide Greenhouse Project focussed on planning for climate change. This project was designed to encourage the Australian scientific community to consider more actively the likely impact of greenhouse-induced climate changes predicted by recent atmospheric research, and resulted in an interdisciplinary conference entitled "Greenhouse 87: Planning for Climate Change" (Pearman 1988a). Each participant in this conference was provided with a "best estimate to date scenario" for climate change in Australia over the next 30 to 50 years and asked to prepare a paper outlining what might happen in his or her area of interest if the changes in the scenario did occur. These collected papers, together with the scenario upon which they were based, were subsequently published by the CSIRO in a volume entitled *Greenhouse: Planning for Climate Change* (Pearman 1988b).

Both the 1987 conference, and a follow-up conference held in 1988, were attended by several staff of the Fisheries Research Institute (NSW Agriculture and Fisheries) who began to consider the possible effects of greenhouse-induced climate change on fisheries and fish habitats in New South Wales. As a result, the Director of the Institute, Dr R. Kearney, suggested that the Institute organise a seminar on this subject at which staff members could present their ideas on the effects such predicted climatic changes may have on the particular fish species, fish habitats or fisheries about which they had specialist knowledge or upon which they were currently working. This seminar was subsequently convened by the author and held in May 1989, each participant being issued with a copy of the CSIRO's 1987 climate change scenario upon which to base predictions. A summary of the scenario used is given on the following page.

Overview papers, largely based on the predictions resulting from this seminar, were subsequently presented by the author to the Mid North Coast Group of the Australian Institution of Engineers at Port Macquarie in June 1989 and to representatives of the New South Wales commercial fishing industry under the auspices of Ocean Watch in Sydney in November 1989. Based on much of the above material, an internal position paper on fisheries-related aspects was prepared for the Department's Greenhouse Working Party in March-April 1990 (summarized in Richardson & Pollard, this volume).

The idea of publishing the information resulting from the Fisheries Research Institute's Greenhouse seminar as a special issue of *Wetlands* was originally suggested by the then Acting Deputy Director of the Institute, Rob Williams, and subsequently developed by the author to include not only papers presented at this seminar but also additional contributions.

In this special issue this author's original general introduction to the greenhouse effect, its causes and its potential climatic consequences, which was presented at the Fisheries Research Institute seminar, has been replaced by a more up to date summary account by Professor A. Henderson-Sellers of Macquarie University (for a more detailed popular account see Henderson-Sellers & Blong 1989); otherwise most of the contributions from this seminar are included in this volume.

This special issue includes several papers on predicted effects on coastal wetlands, followed by a number of papers on predicted effects on fish, fish habitats and fisheries, commencing with inland and progressing to offshore areas, and concludes with a region by region summary for New South Wales and the position papers of two professional societies on the coastal implications of the Greenhouse effect.

Although predictions based on more recent research may modify various aspects of the CSIRO's 1987 best estimate scenario (e.g. sea level rises may be towards the lower rather than the higher end of the ranges then predicted - see Bryant, this volume), the original scenario is presented below, as it is the scenario upon which most of the predictions made in the subsequent papers were based. This scenario was set out for the year 2030 as it is expected that by then the equivalent carbon dioxide concentration in the atmosphere will have doubled over its pre-industrial level as a result of human activity (Pittock 1988, Henderson-Sellers & Blong 1989).

## REFERENCES

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- Pittock, A.B. (1988). Actual and anticipated changes in Australia's climate. In: G.I. Pearman (ed.) *Greenhouse: Planning for Climate Change*. CSIRO, Melbourne, pp 35-51.