

BEFORE THE HEARINGS COMMITTEE

IN THE MATTER

**of hearings on
submissions concerning
the proposed One Plan
notified by the
Manawatu-Wanganui
Regional Council**

**SECTION 42A REPORT OF JOHN DYMOND
ON BEHALF OF HORIZONS REGIONAL COUNCIL**

1. INTRODUCTION

My qualifications/experience

1. **Full name:** Dr John Robert Dymond
Present position: Scientist
Present employer: Landcare Research
Present work address: Private Bag 11052, Palmerston North

Academic qualifications:

B.Sc. (1st class hon.), University of Canterbury (physics), 1978.
M.Sc., University of London (remote sensing), 1988.
D.Sc., University of Canterbury, 2006.

Years as a practising researcher: 30 years

Honours/distinctions/membership of societies, institutions, committees:

National Junior Scholarship, 1972.
ESCAP travel award to Malaysia, 1984.
Hon Associate Lecturer, Soil Science Dept, Massey University (1989- 1997).
French Government travel award to SPT, Tahiti, 1990.
MoRST ISAT travel award to USDA, Tucson, Arizona, 1997.
Manaaki Tangata Fellowship and France/New Zealand Cultural Agreement Scholarship, 1999.
Adjunct professor, University of Michigan (2007-).

Professional positions held:

| | |
|--------------|------------------------------------------------------------------------------------------------------------|
| 1992-present | Scientist, Landcare Research, environmental monitoring and modelling |
| 1988-92 | Scientist, DSIR Land Resources, remote sensing |
| 1983-87 | Scientist, Soil Conservation Centre, Ministry of Works and Development, remote sensing research. |
| 1978-82 | Team leader hydrology, Soil Conservation Centre, Ministry of Works and Development, hydrological research. |

Present research speciality: Environmental monitoring and modelling

2. I have read the Environment Court's practice note 'Expert Witnesses – Code of Conduct' and agree to comply with it.

My role in One Plan

3. I have not been directly involved in the development of the One Plan, however I have undertaken research and reporting in relation to accelerated erosion and highly erodible land which has informed the One Plan.

Scope of evidence

4. My evidence will briefly summarise the investigative work and reports I have undertaken in relation to land erosion and its effects. My evidence will be focussed on that work and any relationships between that work and other matters relevant to the One Plan will be addressed in the evidence of others.

2. EXECUTIVE SUMMARY OF EVIDENCE

5. I have authored the following publications:

(i) Dymond, J.R., Ausseil, A-G., Shepherd, J.D., Buettner, L. (2006). Validation of a region-wide landslide risk model. *Geomorphology*, 74, pp 70-79.

(ii) Dymond, J., Shepherd, J. (2006). Highly erodible land in the Manawatu/Wanganui region. Landcare Research contract report 0607/027 (September 2006). 10pp.

and co-authored the publication:

(iii) Schierlitz, C., Dymond, J., Shepherd, J. (2006). Erosion/sedimentation in the Manawatu catchment associated with scenarios of whole farm plans. Landcare Research contract report LC0607/028. 10 pp.

6. Publication (i) explains the definition of highly erodible land, that is, land with the potential for severe erosion if it does not have protective woody vegetation. The landslides in the 2004 February storm event were mapped by satellite and it was found that under forest there were fewer landslides than under pasture by an order of magnitude.

7. Publication (ii) finalises the definition of highly erodible land (by adding in earthflow and gully erosion to landslide erosion) and calculates the area of highly erodible land without protective woody vegetation in the major catchments of the Manawatu-Wanganui region. The definition of highly erodible land is suitable for mapping at 1:50,000 scale and is useful for prioritising farms for implementation of whole farm plans. The 2 220 000 hectares of the Manawatu-Wanganui region contains 273 000 hectares of highly erodible land without protective woody vegetation, i.e. 12.3% of the region. The areas of highly erodible land without protective woody vegetation in each of the main river catchments are: Wanganui 95 000 ha; Whangaehu 42 000 ha; Turakina 27 000 ha; Rangitikei 35 000; and the Manawatu 39 000 ha.

8. Publication (iii) estimated that if whole farm plans were implemented on 500 farms with the most highly erodible land in the Manawatu catchment (out of a total of 5000 farms), then the sediment yield in the Manawatu river would be reduced from 3.8 to 2.0 million tonnes of sediment per year.

John Dymond
June 2008