

Appendix 1 General Reading

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Case Studies ([Index](#))

- **The Environmental Case: Translating Values into Policy** (JA Layzer – 2002, CQ Press) uses a dozen cases to examine how legal, political, and public pressures interact in resource management. Case studies range from point source pollution (e.g. Rocky Flats) to wildlife preservation (e.g. Northern spotted owl).
- **In the Chamber of Risks: Understanding Risk Controversies** (William Leiss - 2001, McGill-Queen's University Press) covers public involvement in risk management, with an emphasis on Canadian policy issues such as nuclear power and pulp mill effluents.
- **The Wisdom of the Spottel Owl** (SL Yaffee - 1994, Island Press) offers a detailed chronology of forestry-related policy and implementation in the Pacific Northwest up to the mid-1990s, drawing on extensive interviews with participants from all sides of the debate.
- **Pitfalls of Decision Analysis** discusses the Ford Pinto and other classic failures of judgment. (D von Winterfeldt - 1993, in *Analyzing and Aiding Decision Processes*, Humphreys et al., North-Holland Publishing Company).
- **The Uses of Ecology: Lake Washington and Beyond** (WT Edmondson - 1991, University of Washington Press) uses several case studies to show how basic research can feed into policy processes, and what an "egghead ecologist" (p. xiii) can expect to encounter along the way. Ch. 15 discusses differences between scientific debate and legal deliberations, and provides some guidance on sorting through conflicting expert testimony.
- **Great Planning Disasters** (P Hall – 1982, University of California Press) describes seven case studies related to urban planning, including London airport expansion, the supersonic Concorde, Sydney's Opera House, and San Francisco's rapid transit system. Hall distills the lessons from these large-scale planning processes into what he calls "a pathology of planning", and analyzes the interactions of three groups: the community, the public service, and the politicians. (More detail in our [Chapter 3](#))
- **Hunters and Bureaucrats** (P Nadasdy – 2003, University of British Columbia Press) takes a critical look at the interaction between aboriginal groups and government agencies in wildlife management, using sheep hunting in the Yukon as a case study. Much of the discussion revolves around different forms of knowledge and the inherent power structures in participatory processes.

- **The Paradoxes of Transparency: Science and the Ecosystem Approach to Fisheries Management in Europe** (DC Wilson – 2009, Amsterdam University Press) deals with the development of scientific advice and its role in policy, based on extensive interviews with scientists of the *International Council for the Exploration of the Sea* (ICES) .

Probability, uncertainty, and risk ([Index](#))

- **The Empire of chance: How Probability Changed Science and Everyday Life** (G Gigerenzer et al.– 1989, Cambridge University Press) describes the evolution of probabilistic thinking and explains current applications from biology to law and sports.
- **Reckoning with Risk** (G Gigerenzer - 2002, Penguin Books) shows how to interpret risk-related information with a focus on individual medical choices, such as diagnostic tests and preventive treatments.
- **Innumeracy: Mathematical Illiteracy and its Consequences** (JA Paulos - 2001, Hill and Wang) uses a wide range of examples, from baseball to lotteries, to illustrate statistical principles (e.g. law of large numbers, correlations, skewed distributions).
- **Canadian Marine Fisheries in a Changing and Uncertain World** (deYoung et al. – 1999, NRC Research Press) has a chapter on risk and uncertainty in the context of fisheries management, with a comprehensive discussion of tools for risk management.
- The **British Medical Journal** had a theme issue dedicated to risk communication, with many practical tips and illustrative examples. Especially noteworthy are the articles by Paling, Gigerenzer and Edwards, and the illustrative examples submitted by practicing physicians. Go to bmj.bmjournals.com/content/vol327/issue7417/ (Note: In these articles the term risk generally refers to probability, not to expected loss. See our [Chapter 4](#) for the difference between the two definitions.)

Ecological Analysis / Simulation ([Index](#))

- **Science and Limnology** (FH Rigler and RH Peters - 1995, Ecology Institute Germany) is a far-reaching and non-technical set of essays discussing everything from historical patterns in the growth of science to practical advice for shaping alternative hypotheses.
- **The Ecological Detective: Confronting Models with Data** (R Hilborn and M Mangel – 1997, Princeton University Press) is a more focused, and more technical, textbook for applied model building, but covers a lot of the same practical challenges as *Science and Limnology*.
- **Use and Abuse of Fishery Models** (JT Schnute and LJ Richards - 2001, Can. J. Fish. Aquat. Sc. 58:10-17) provides a practitioners' perspective on the evolution of simulation models and their role in planning processes.
- **A Machine to Foretell the Future?** (EF Schumacher - 1975, in *Small is Beautiful: A study of economics as if people mattered*, Sphere Book Ltd.) is a philosophical commentary on predictability from the first dawn of computer-based modelling, and introduces a useful set of categories to distinguish different types of models (listed in our [Chapter 8](#))

Scientific writing for a diverse audience ([Index](#))

- **The Panda's Thumb - More Reflections in Natural History** (SJ Gould – 1980, WW Norton & Co.) contains 31 short essays related to evolution, with a recurring theme of tracing the changing interpretation of biological observations.
- **The Ascent of Man** (J Bronowski - 1973, Little, Brown & Co.) covers milestones of science in their historical and social context, humanized with much biographical detail and personal observation. In a 1970s version of multimedia, this book is actually the transcript of a 13-part BBC documentary, which has now found its way onto Youtube (in HD, and with multi-lingual subtitles!).