

TENTH ANNIVERSARY SURVEY ARTICLE

The first decade of *Ecological Economics*

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Abstract

This issue marks the 10th anniversary of the publication of *Ecological Economics*. As we begin our second decade, it is an appropriate time to look back and assess what we have done over the first decade, and to set the course for the next one. Have we met the goals we set for ourselves 10 years ago? If not, what can we do to improve? This paper reiterates the goals of *Ecological Economics*, discusses our editorial policy and agenda, provides an assessment of what we have published in the first decade (including some quantitative information), and suggests some future directions. © 1999 Elsevier Science B.V. All rights reserved.

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1. Aims and scope

We began publication of this journal 10 years ago with the following opening paragraph in the lead article (Costanza 1989):

‘Ecological Economics addresses the relationships between ecosystems and economic systems in the broadest sense. These relationships are the locus of many of our most pressing current problems (i.e. sustainability, acid rain, global warming, species extinction, wealth distribution) but they are not well covered by any existing discipline. Environmental and resource economics, as it is currently practiced, covers only the application of neo-classical economics to environmental and resource problems. Ecol-

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ogy, as it is currently practiced, sometimes deals with human impacts on ecosystems, but the more common tendency is to stick to ‘natural’ systems. *Ecological Economics* aims to extend these modest areas of overlap. It will include neoclassical environmental economics and ecological impact studies as subsets, but will also encourage new ways to think about the linkages between ecological and economic systems.’

In order to achieve these goals, we identified several important characteristics that the journal should have. They include:

1.1. *Transdisciplinarity*

Ecological economics does not conceive of itself as a mutually exclusive alternative to any existing discipline. Rather, it attempts to create an intellectual culture where the boundaries between disciplines can be transcended and where problems and questions can be addressed in an integrated way, consistent with their real complexity.

1.2. *Substantive discussion rather than confrontational debate*

Ecological economics attempts to move beyond the ‘argument culture’ (Tannen 1998; Costanza 1998) which casts even the most complex problems as polar opposites to be argued as win–lose confrontational debates. Rather, ecological economics acknowledges the complexity of the problems and tries to find ways to foster more substantive discussion.

1.3. *Conceptually pluralistic*

Because of the complexity of the problems, there is no one mutually agreed upon ‘right’ approach, model, or paradigm. Like the blind men and the elephant, our limited set of perceptual tools can only touch pieces of the system, and can produce distorted results if they are not sufficiently integrated with alternative approaches, models, and paradigms.

1.4. *Focus on problems*

Solving important problems is the first priority. Specific methodologies should serve this goal. We are not interested in developing elegant methodologies for their own sake, nor in applying them to problems for which they are not appropriate. Likewise, we try to avoid ‘methodological chauvinism’—the ruling out of certain methods simply because they are not the newest or the most sophisticated or the most popular. Methods are judged by their ability to usefully address the problem at hand.

2. **Editorial policy**

Since *Ecological Economics* is transdisciplinary, our policy has been to try to send all papers to reviewers from a range of different disciplines, including ‘natural scientists’ and ‘social scientists’. We expected (and our experience has confirmed) that we would often receive conflicting reviews from the ‘natural scientists’ and the ‘social scientists.’ The ‘negative’ review in these cases is not necessarily taken as damning, but rather (if the other reviews are sufficiently positive) is used to inform the author of the problems his or her work causes with the other ‘camp’ so that to the extent possible they can be addressed. This has sometimes been frustrating for reviewers who occasionally see papers they had rejected appear in print. However, our philosophy has been that if we only publish papers on which there is already universal consensus, we will miss many new and interesting (but potentially controversial) ideas. Acknowledging this situation, we have now started to send the negative reviewer more complete documentation about the decision so they can understand our reasoning, and to invite them to write a commentary to appear in the same issue as the paper.

Since *Ecological Economics* tries to foster substantive discussion rather than confrontational debate, we have published several ‘special issues’ aimed at exploring several aspects of an issue in a coordinated way, and several invited fora aimed at discussing controversial issues from a range of

perspectives. In the first 10 years we have published special issues on Trade and the Environment (vol. 9, no. 1, 1994), Land Use Dynamics in the Brazilian Amazon (vol. 18, no. 1, 1996), Women, Ecology, and Economics (vol. 20, no. 2, 1997), Biodiversity (vol. 22, no. 1, 1997), The Contribution of Nicholas Georgescu-Roegen (vol. 22, no. 3, 1997), Ecological Economics in Australia and New Zealand (vol. 23, no. 2, 1997), Economics, Ethics, and Environment (vol. 24, nos. 2 & 3, 1998), and The Environmental Kuznets Curve (vol. 25, no. 2, 1998). More recently, we have begun to publish invited fora (a series of invited commentaries around a core paper) on: Issues in Ecosystem Valuation (vol. 14, no. 2, 1995), Economic Growth, Carrying Capacity, and the Environment (vol. 15, no. 2, 1995), and The Value of Ecosystem Services (vol. 25, no. 1, 1998). Proposals for special issues and fora are always welcome, as are any other ideas on how to improve the discussion.

Since *Ecological Economics* supports conceptual pluralism, one should expect to find a wide range of approaches and ideas in the journal, rather

than a coherent and consistent single point of view. This has also caused some consternation among those who feel that our goal should be to stake out some new and unique territory, rather than overlapping with existing approaches. In fact, as the opening paragraph in this article indicates, our goal is to do both. We aim to use existing approaches where appropriate and develop new ones where appropriate, remembering that a closer approximation to the truth probably lies at the intersection of these various approaches.

Finally, since *Ecological Economics* is problem-focused, one should expect to find interesting and important problems addressed using a range of different tools and techniques.

3. What have we published?

A total of 518 articles have been published in the journal in its first 10 years (a comprehensive index covering these 10 years will be provided in the last issue of 1999, 31(3)). The following is a

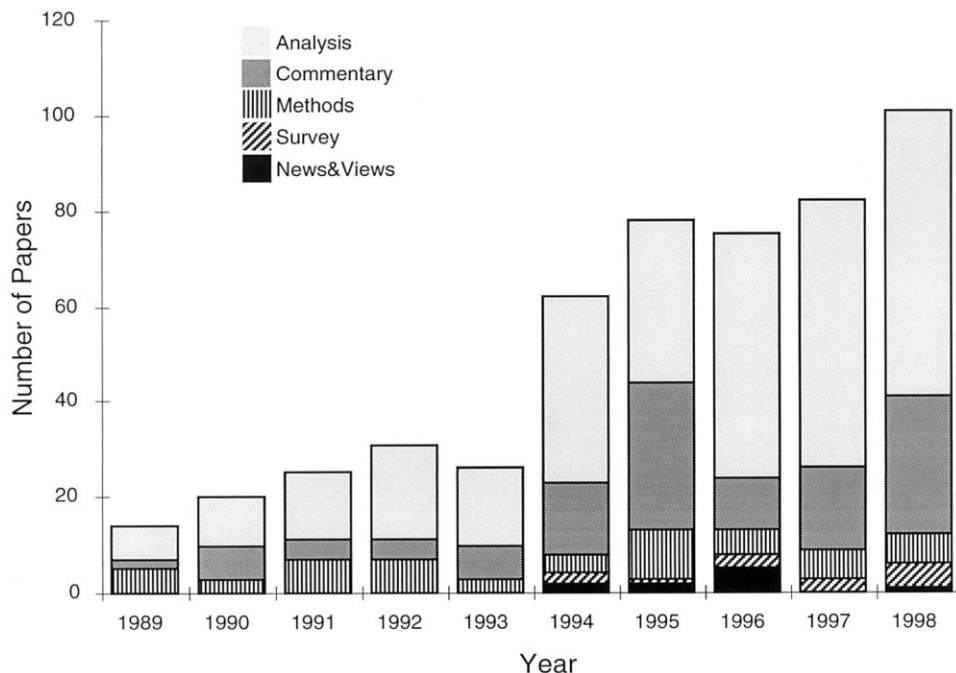


Fig. 1. Total number of papers published, by type and year.

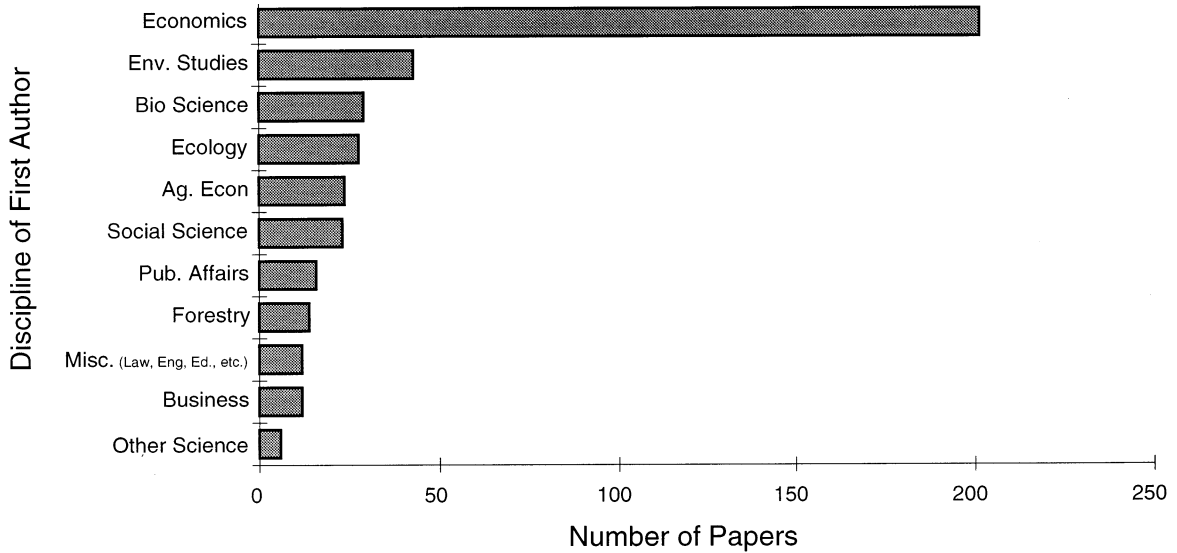


Fig. 2. Number of papers published by discipline of first author.

summary of some of the characteristics of those articles. The articles have been extremely diverse and difficult to categorize, and the statistics we have assembled give only a cursory picture of what has been a very rich collection of ideas. To get the full picture, one must obviously subscribe to (and read) the journal.

Fig. 1 shows the breakdown of the articles by year and by type of article (analysis, commentary, methods, survey, and news and views). The steady growth in the number of articles over the years is evident, from 17 in 1989 to 100 in 1998. Over this time period, our rejection rate has remained fairly steady at ~61%. The distribution by type of article has shifted to include more 'survey' and 'news and views' articles in the last few years, with the relative proportions of 'analysis', 'commentary', and 'methods' papers remaining about the same (with the exception of 1995, which had a much higher than average proportion of 'commentary' pieces).

Fig. 2 shows the disciplinary 'home' of the first authors of the papers (to the extent which we could determine this from their institutional affiliations). Almost half of the articles had economists or agricultural economists as first authors. The remaining articles' first authorship was split

among a range of natural and social science disciplines. Since one of our goals for the journal is a 'balanced' participation by the natural and social sciences, one could argue that this data indicates a problematic bias toward economists. To some extent this is true, but one must also consider the relative number of economists versus ecologists in the population as a whole. The number of professional economists far exceeds the number of professional ecologists (in some estimates by as much as 100 to 1) so it should come as no surprise that more economists show up as first authors. On a 'per capita' basis, the contribution of ecologists

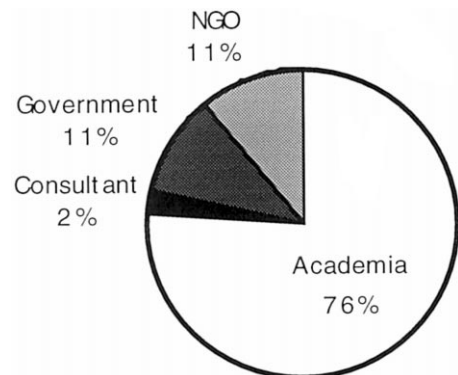


Fig. 3. Sectoral affiliation of first author.

Table 1
Number of papers published by country of residence of first author^a

Country	Number of papers	Percent of total papers (%)	Population (millions)	Papers/million people
USA	240	46.33	263	0.91
UK	42	8.11	58	0.72
Australia	33	6.37	18	1.83
The Netherlands	27	5.21	16	1.69
Canada	26	5.02	30	0.87
Sweden	23	4.44	9	2.56
Germany	22	4.25	82	0.27
France	12	2.32	58	0.21
New Zealand	9	1.74	4	2.25
Switzerland	9	1.74	7	1.29
Italy	8	1.54	57	0.14
India	7	1.35	936	0.01
Israel	6	1.16	6	1.00
Norway	6	1.16	4	1.50
Brazil	5	0.97	162	0.03
Austria	4	0.77	8	0.50
Spain	4	0.77	40	0.10
Denmark	3	0.58	5	0.60
Finland	3	0.58	5	0.60

^a Two papers: Argentina, Costa Rica, Mexico; One paper: Bangladesh, Bermuda, Chile, Czech Republic, Estonia, Greece, Iceland, Sri Lanka, Thailand, Zaire.

and other natural scientists is more than representative, and it is therefore difficult to say whether the current rates of participation are ‘balanced’ or not. We will, however, continue to encourage more participation by ecologists and other natural scientists.

Another of our goals was to achieve a ‘balanced’ participation between academics and practitioners. Fig. 3 shows that the vast majority of first authors were from academia (76%), with the remainder from NGO’s (11%), Government (11%), and Private Consultants (2%). This ratio partly reflects the much higher rewards and other incentives for academics to publish, compared to NGO, government, and private researchers. Again, how we define ‘balanced’ is problematic in itself and it is not clear whether the current rates are balanced or not.

This difficulty in determining balance is further pointed out by statistics on the country of residence of the first authors of papers. This data is shown in Table 1, with the total number of papers, the percentage of the total, the population of the country, and the number of papers per capita

for each country. While the US clearly dominates the total number of papers (240 or 46% of all papers), it is only in the middle of the pack in terms of papers per million inhabitants (0.91). Sweden leads this statistic with 2.56 papers per million inhabitants, followed by New Zealand (2.25), Australia (1.83), the Netherlands (1.69), Norway (1.50), and Switzerland (1.29). The ‘dominance’ of the US thus mainly reflects its much larger population rather than higher participation rates. Taken together, Europe contributed 165 papers compared to 240 from the US.

As mentioned above, another goal of the journal is to encourage transdisciplinary research. Although individual authors can (and do) pursue transdisciplinary research on their own, another indicator is the number of multi-authored papers, and in particular the number of multi-authored papers where the authors are from different disciplines. These statistics are plotted by year in Fig. 4. Multi-authored papers have averaged ~45%, and interdisciplinary multi-authored papers have averaged ~20% of all papers. While this may

seem like a low proportion, it is certainly a strong showing compared to standard disciplinary journals.

Finally, Figs. 5 and 6 show the distribution of papers by topic. Fig. 5 shows the total number of papers published in each topic category, while Fig. 6 shows the way this distribution has changed over time. The four most prevalent topics overall have been: (1) environmental policy and management; (2) sustainable development; (3) valuation; and (4) new paradigms, accounting between them for almost half of the papers. The remaining papers are spread over a broad range of topics. Fig. 6 shows that many of these topics are beginning to show up only in the last 5 years, including sustainable forestry and fisheries, indicators, and trade and environment issues. The data clearly indicate, however, that no one issue or set of issues dominates the agenda.

4. Have we accomplished our goals?

While these statistics certainly do not convey the whole picture, they do indicate that at least some of our goals for the journal have been met. The steadily increasing number of submissions shows the growing interest in the field. The journal has achieved a high 'impact factor' (Costanza 1996) indicating that it is being read and cited widely. The range of authors from different disciplines, sectors, and countries who have contributed to the journal is impressive, although deciding whether the contributions have been 'balanced' is a bit problematic. The number of interdisciplinary contributions has been significant (~20%) but not overwhelming. The range of topics covered has been very broad and consistent with the journal's desired scope, and no one set of issues has dominated the agenda.

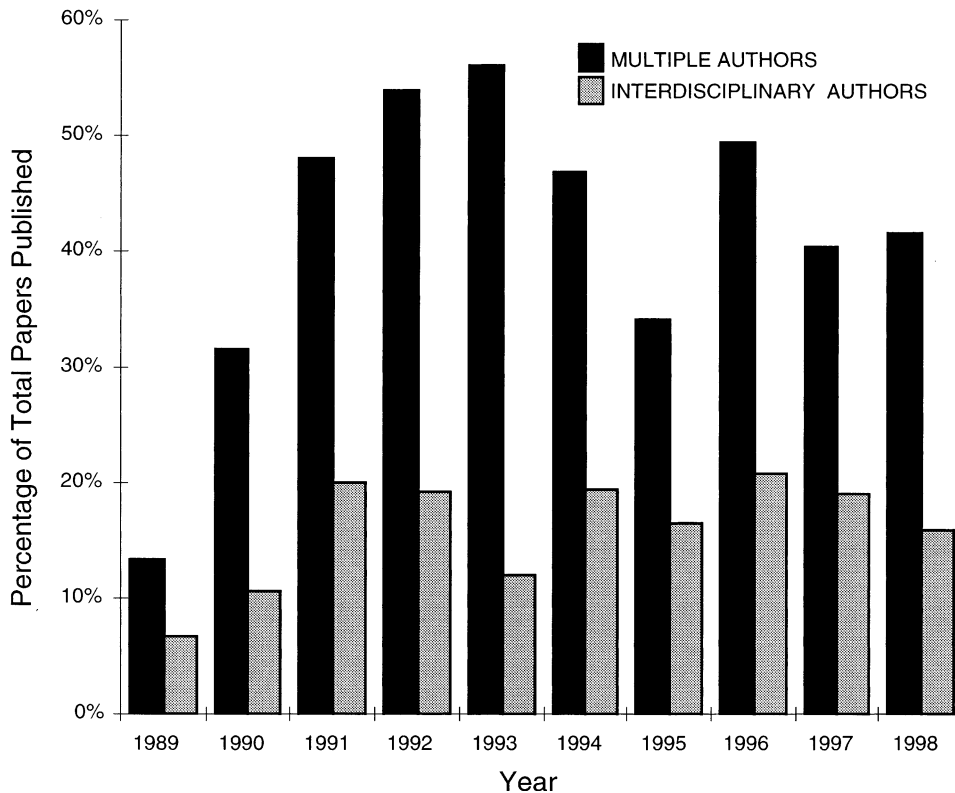


Fig. 4. Percentage of total papers published by multiple authors, and by interdisciplinary multiple authors by year.

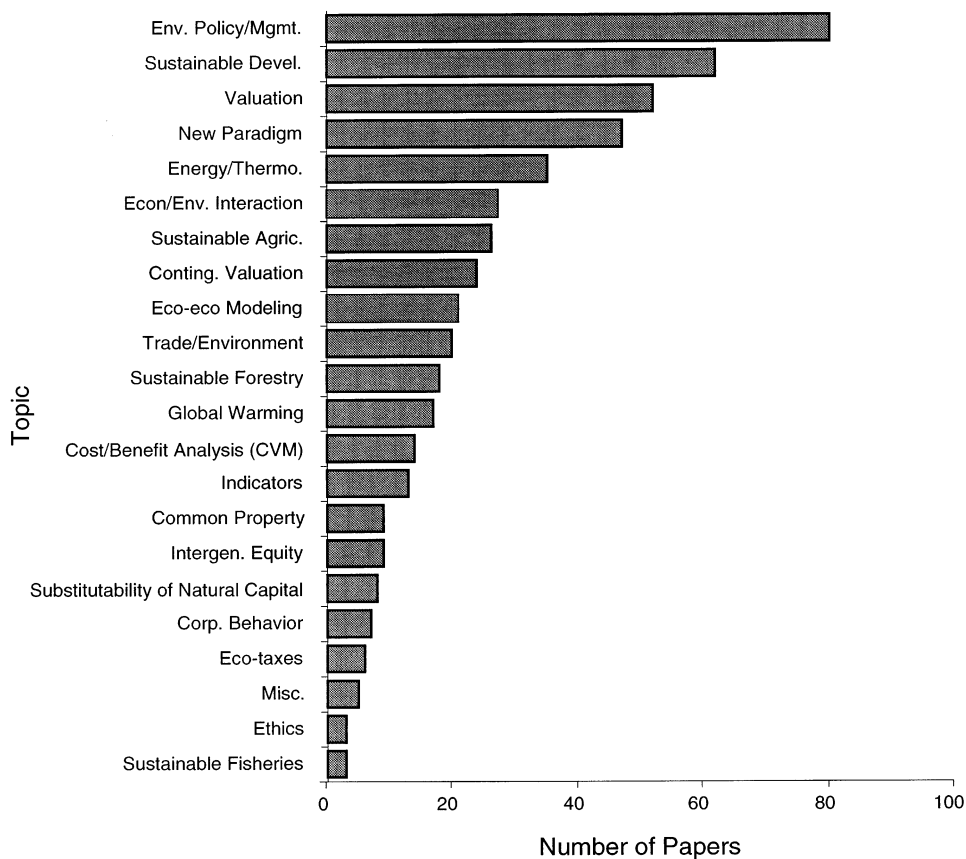


Fig. 5. Total number of papers published by topic.

Therefore, in general we can conclude that the journal has indeed achieved most of its goals. It has survived for 10 years (no small accomplishment in today's environment) and provided a unique forum for the publication and discussion of important transdisciplinary ideas that did not have a ready home before the journal came into existence. There is, of course, still room for significant improvement in many areas.

5. Future directions

In addition to the new cover you see on this issue, we are making some other important changes in the journal to begin our second decade:

1. A revised and expanded editorial board, which will be rotated more frequently, is now in place.
2. More pages (560 additional pages for 1999 compared to 1998) will be published to allow broader coverage and shorter waiting times from acceptance to publication.
3. Better production coordination with Elsevier has been implemented in order to avoid the delays and production problems of the past.
4. A series of invited survey articles will be published throughout the coming year. These survey papers will focus on topics which have occupied the journal in its first 10 years, and will concentrate on synthesizing material published in the journal.

5. In the first decade, we published eight special issues on a range of topics. More special issues on selected topics will be published in the future. Special issues currently in production include: Consumption and Environment, Ocean Governance, The Global Wetland Economic Network, and the Social Processes of Environmental Evaluation.
6. In the first decade, we published three invited fora. This has been a valuable way to foster discussion on important topics and in the future we plan to increase the frequency of invited fora.
7. An annual ‘Best Article Award’ for paper-published in the journal was begun in 1996. Initial funding for the prize was donated by Herman Daly, and the award fund has since been supplemented by contributions from other ISEE members. The winner in 1996 was Robert Ayres for his paper: ‘Limits to the growth paradigm’ (Ayres 1996). In 1997, the winner was Susan Hanna for her article ‘The new frontier of American fisheries management’ (Hanna, 1997). In 1999, we plan to award a ‘best article of the decade’ prize as well as the annual prize.

6. Final thoughts

An overview of the last 10 years would not be complete if we did not acknowledge the critical role of our editorial board and reviewers and the enormous time and effort that they expend on the journal’s behalf. We appreciate that the task of reviewing for this journal may be more difficult than for other journals because of our goal of reaching across disciplines. We are very grateful to the ever-growing list of professionals, both ISEE members and non-members alike, who take the time to read and review manuscripts.

We are pleased with what has been accomplished in the journal over the last decade, and we’re looking forward to the next. Participate with us by submitting your articles, by commenting on what has been published with letters to the

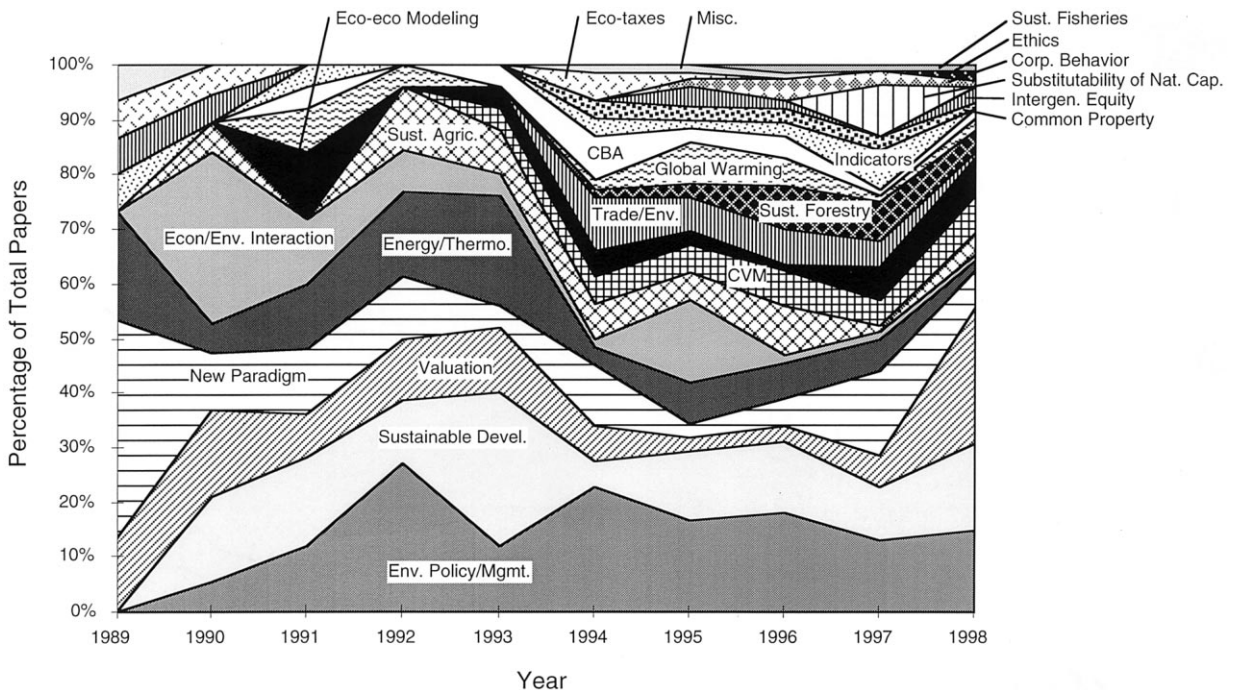


Fig. 6. Percentage of papers published by topic and year.

editor, by proposing special issues and fora, or by inventing new and better ways to enhance substantive discussion in *Ecological Economics*.

References

- Ayres, R.U., 1996. Limits to the growth paradigm. *Ecol. Econ.* 19, 117–134.
- Costanza, R., 1989. What is ecological economics? *Ecol. Econ.* 1, 1–7.
- Costanza, R., 1996. The impact of ecological economics. *Ecol. Econ.* 19, 1–2.
- Costanza, R., 1998. Beyond the argument culture. *Ecol. Econ.* 27, 113–114.
- Hanna, S.S., 1997. The new frontier of American fisheries governance. *Ecol. Econ.* 20, 221–234.
- Tannen, D. 1998. *The argument culture: moving from debate to dialogue*. Random House, New York, pp. 348.