

# Current Comments<sup>®</sup>

EUGENE GARFIELD

INSTITUTE FOR SCIENTIFIC INFORMATION<sup>®</sup>  
3501 MARKET ST. PHILADELPHIA, PA 19104

## **Focus On: Global Change—A New Current-Awareness Service Tracking the Health of Planet Earth**

Number 14

April 2, 1990

*Focus On: Global Change*<sup>™</sup>, a new current-awareness product, is discussed. The topic of "global change," pertaining in general to the effects of human activity on the environment, is examined. Indicators of the intensity and variety of research in this area are also briefly reviewed. Delivered on floppy disk, *Focus On: Global Change* provides access to the most recently published, multidisciplinary literature pertaining to global environmental change. Like *Current Contents on Diskette*<sup>®</sup>, *Focus On: Global Change* permits users to browse article listings, to create and reuse custom searches, and to format and print requests to authors for reprints with no additional keying of data.

Last summer, in an essay honoring the Florida Everglades historian and activist Marjory Stoneman Douglas, we noted that concern for the environment has in recent years become a matter of international priority.<sup>1</sup> Deforestation, toxic waste, and global warming are but a few examples of topics that have received considerable coverage in the popular press.

Not coincidentally, the topic of "global change"—a broad and evolving term referring to the myriad ways in which human activity is affecting our planet—has elicited a sense of interest and urgency in governmental and scientific circles as well. In the US, for example, as was reported in *The Scientist*<sup>®</sup>, the federal government has earmarked \$664 million for research into global change, a nearly fivefold increase over the 1989 allotment.<sup>2</sup> Furthermore, at its 1990 annual meeting, conducted in February in New Orleans, Louisiana, the American Association for the Advancement of Science conducted a lengthy series of sessions under the heading "Global Change." General topics under examination included "Population," "Climate," "Oceans, Rivers, Coasts," "Tropical Forests," "Ecology; Biological Diversity," "Agriculture; Food," and "Environmental Concerns."<sup>3</sup>

ISI<sup>®</sup> data also reflect the intensity of current research interest in the complex array of forces that are changing our planet. Ta-

ble 1 is a selection of 1988 research fronts related to global change. One of these fronts, "Global climate changes associated with ozone levels, atmospheric hydrocarbons, and CO<sub>2</sub> levels" (#88-0003), indicates a particularly high level of activity, with 56 papers in its core and over 440 citing documents. We devoted a 1988 essay to ozone-layer depletion and its consequences.<sup>4</sup>

The other research fronts in Table 1 demonstrate the broad range of research activity and issues pertaining to global change, including acid rain, wetland ecosystems, the Third World environment, forest decline, and agricultural and environmental policy in the US and abroad.

The problem for researchers, administrators, policymakers, educators, and others involved in global change is as follows: Given the broad, diffuse, and multidisciplinary nature of research pertaining to this topic, and the speed with which new information is appearing on many different fronts, how does one stay current? The answer, we believe, lies in ISI's newest current-awareness product: *Focus On: Global Change*<sup>™</sup>, launched in March.

A biweekly service delivered on floppy disk, *Focus On: Global Change* is similar in format and operation to *Current Contents on Diskette*<sup>®</sup> (*CC-on-Diskette*<sup>™</sup>), providing immediate access to the most recently published literature. In fact, users of *CC-on-*

**Table 1: Selected 1988 *SCT*<sup>®</sup>/*SST*<sup>®</sup> research fronts relating to the influence of human activity on changes in the biosphere. A = research-front number. B = research-front name. C = number of citing papers. D = number of core papers.**

A	B	C	D
88-0003	Global climate changes associated with ozone levels, atmospheric hydrocarbons, and CO <sub>2</sub> levels	441	56
88-0642	Environmental impacts on wetland ecosystems	69	6
88-0983	Scientific basis for the greenhouse effect	151	20
88-1794	Environmental policy in UK and US	32	4
88-1898	Lead, cadmium, mercury, and other heavy metals in aquatic systems	38	6
88-2236	Environmental dispute resolution	30	4
88-2480	Resource depletion, land use decisions, and ecological theory	117	19
88-2725	Human impact on Third World environment	16	2
88-2966	Effect of demography and technology on ecological policy	28	2
88-3249	Dissolved Al, Cd, Co, Cu, Mn, and Ni in surface waters and phytoplankton productivity	71	5
88-3847	Acid rain around the world	30	2
88-4337	Global biological consequences of nuclear war and nuclear winter	33	4
88-4414	Environmental carcinogens	31	2
88-4762	Scientific assessments and regulatory alternatives of species conservation	31	4
88-4763	Agricultural policy research	24	3
88-4867	Water-use characteristics around the world	38	5
88-4978	International forest conservation	12	2
88-5846	Rural depopulation and counterurbanization	32	6
88-6848	Slash-and-burn agriculture and ecological implications	15	2
88-7190	Biospherical ecology	18	2
88-7485	Causes and consequences of contemporary forest decline	32	3
88-7720	The role of ecology in planning	17	2

*Diskette* will notice very little difference in using *Focus On: Global Change*. Unlike *CC-on-Diskette*, however, *Focus On: Global Change* is not organized by contents pages. It is organized on an article-by-article basis, rather than journal-by-journal (although, as we'll see, it is possible to browse all articles from a given journal).

*Focus On: Global Change* offers coverage of exceptional breadth and variety. The service selectively draws upon the entire ISI database—consisting of more than 7,200 journals and 6,000 multiauthored books processed annually—and automatically culls pertinent items for inclusion in each electronic "issue." Fully covered in *Focus On: Global Change* are more than 200 carefully selected publications from our existing database, augmented by 40 new titles, including research journals, popular magazines, and newsletters. Relevant books and conference proceedings, which are also covered, provide a substantial number of items in each issue.

Like *CC-on-Diskette*, which we have discussed previously,<sup>5,6</sup> *Focus On: Global Change* offers the unique advantages of computerized browsing and searching. These include fast retrieval speed and the

ability to create custom search profiles and store them for future use. Also included in *Focus On: Global Change* is one of *CC-on-Diskette*'s most time-saving and useful features: the capacity to automatically format and print *Request-A-Print*<sup>®</sup> cards for obtaining reprints from authors, as well as orders for *The Genuine Article*<sup>®</sup>, ISI's document delivery service.

*Focus On: Global Change* is the first in a projected series of *Focus On* products designed to offer comprehensive, multidisciplinary coverage of selected, fast-moving research fields.

### Global Change—A Complex Topic

The term "global change," as was recently noted by Martin F. Price, Environmental and Societal Impacts Group, National Center for Atmospheric Research, Boulder, Colorado, is an all-encompassing phrase that has been used in many ways.<sup>7</sup> Early conceptions of the term in the 1960s, for example, emphasized the political aspects of world change, such as population growth and the proliferation of nuclear weapons. Recent definitions take a more holistic approach, recognizing the links between hu-

man and natural systems, referring in general to the effects of human activity on such factors as the landscape, the atmosphere, and terrestrial and marine organisms.<sup>7</sup>

In designing this new product, we too faced the difficulty of defining and circumscribing the topic of global change. More specifically, it was necessary to determine how best to cover a very broad range of literature from a considerable variety of sources. We decided to base our coverage primarily on the environmental aspects of global change, while also taking into account the sociopolitical and economic aspects that are an undeniable part of the picture. In brief, *Focus On: Global Change* monitors the interactive physical, chemical, biological, social, economic, and political forces that are causing global environmental change.

Full journal coverage is concentrated in three areas. First: anthropogenic changes in the biosphere, with journals from agriculture, environmental sciences, forestry, wildlife, and natural resources. Second: basic science about interactive atmospheric, oceanographic, geological, and ecological processes, with journals from aquatic sciences, meteorological and atmospheric sciences, earth sciences, and ecology. And third: economic, political, and demographic forces that drive global change, with journals from business, demography, economics, energy and fuels, geography, law, planning and development, psychology, and technological change.

By means of a special selective algorithm, *Focus On: Global Change* also retrieves articles and book chapters from our entire database—specifically, items pertaining to habitat destruction and extinction, climate change, conservation and depletion of non-renewable natural resources, waste and toxics, demography and public health, and environmental economics and politics.

With its carefully chosen base of fully covered journals, combined with broad, varied selective coverage and the special augmentation of journals, magazines, and newsletters, *Focus On: Global Change* is unique among our current-awareness products. For scientists, librarians and information specialists, research administrators, product planners, marketing researchers, policy formu-

lators, funding decision-makers, and environmental activists, *Focus On: Global Change* represents an extremely efficient, cost-effective means of staying current in a complex, fast-moving area. It is similar to *ASCA*<sup>®</sup>, ISI's literature alerting service that provides, in print form, a customized listing of pertinent articles based on informational requirements specified by the customer. *ASCA* and *ASCATOPICS*<sup>®</sup>, incidentally, were recently combined under a new name—becoming *Research Alert*<sup>™</sup>. In a forthcoming essay, we will discuss this product and some of the refinements that accompany the new name.

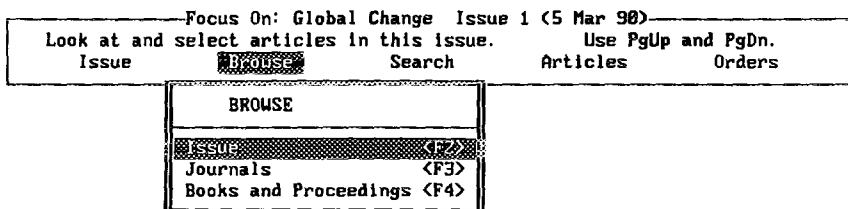
### Browsing and Searching

As mentioned above, in using *Focus On: Global Change*, you can browse through the articles in an issue as well as create your own search profiles. For purposes of demonstration, this essay employs illustrations of screens from the IBM PC/NEC 9800 computer versions of *Focus On: Global Change*; the product is also available for the Apple Macintosh.

The sample screen in Figure 1 shows the main menu options. The first of these, "Issue," allows you to load each new data diskette containing the latest issue's information. Once you have loaded a new issue, you are ready to select the "Browse" option, which is highlighted in Figure 1. As can be seen from the pull-down menu, this gives you the choice of browsing all the articles in the entire issue (via the "Issue" option highlighted in the menu). Selecting this "Issue" option will let you browse sequentially through each item in the issue. By selecting the "Journals" option, however, it is easy to browse all items from a particular journal. The next option, "Books and Proceedings," as is clear from its name, lets you browse book contents and conference proceedings.

Figure 2 shows the display of a typical item as seen in "Browse" mode, showing an article by P. Koskimies from *Annales Zoologici Fennici*. This figure demonstrates the tagged fields (such as "Author," "Title," "Journal," "Discipline," and "Address") that feature, in each case, the pertinent information for the Koskimies paper. The status line at the bottom shows

Figure 1: Main menu for *Focus On: Global Change*™.



that this is the 276th of 902 publications for this particular issue.

In addition to viewing screens for individual articles showing complete bibliographic information, you also have the option of selecting a simpler author-title display, as in Figure 3. Here, an article by A. Nakajima is highlighted. Selecting between the full-record and author-title displays is done via the "View" option at the bottom of the screen in Figure 3 (more about these options below).

The next main menu option, "Search," allows you to perform custom searches for specific title words, phrases, author names, document types, and author addresses. For each of these fields, extensive dictionaries can be called up on screen, showing all items in that issue for a given field. These dictionaries are highly useful, not only for checking if specific items are contained in a given issue, but for verifying spellings and other variations. Figure 4 shows a sample search profile. Here, a portion of the author dictionary is displayed.

As with *CC-on-Diskette*, the number of hits for each query is displayed immediately. Query 2 in Figure 4 demonstrates the truncation symbol "\*" which will retrieve all variations on a given title word. In this case, the truncated query "warm\*" has produced three hits. The resulting items might feature such words as "warming" or "warmth" in their titles. Boolean operators, such as "AND," "OR," and "NOT," can also be used to refine search statements. Using the "Set Number" field, it is possible to combine fields of different types ("Author" and "Journal," for example, to search for all papers by a given author appearing in a specified journal). In the case of Figure 4, Queries 1 and 2 have been combined, producing three items with the words "warm\*" or "global" in their titles.

Query 4 in Figure 4 demonstrates the ability to search by address or institution. In this case, a search is being made for articles from the Argonne National Laboratory, Illinois. Four hits result from this query. Profiles, in all, can include up to 75 complex queries.

Figure 2: Display of full record in "Browse" mode.

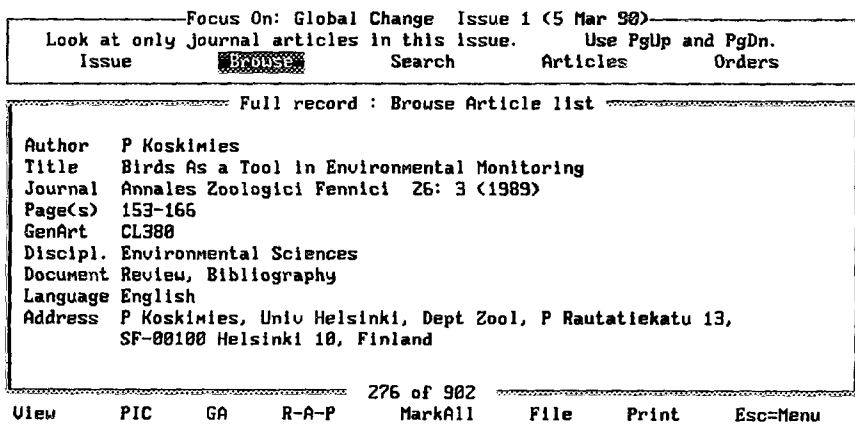


Figure 3: Author-title display of record in "Browse" mode.

```

Focus On: Global Change Issue 1 (5 Mar 90)
Look at only journal articles in this issue. Use PgUp and PgDn.
Issue      BROWSE      Search      Articles      Orders
-----
Author-Title : Browse Article list
-----
Name/Title A      Recovery and Removal of Uranium by Using Plant Roots
Barregard, L      Mortality and Cancer Incidence in Chlor-Alkali Workers Ex...
James, F          Toxic-Substances and Mental-Retardation Neurobehavioral T...
Devi, PU         Chemical Protectors - Their Potential Application Against...
Rosen, DC        Public-Health and the Environment
Yong, RN         Application of Electric Polarization to Contaminant Detec...
Blakemore, M     Building Databases for Global Monitoring, by H. Mounsey, ...
Mckusick, BC     Procedure for Cyanide Waste
Keuzenkamp, K    Dutch Policy on Cleanup of Contaminated Soil
Grill, E         Toxic Heavy-Metal Tolerance of Flora
Rodriguez, F     The Prospects for Biodegradable Plastics
Hooke, RL        Austdalsbreen, Norway - Expected Reaction to a 40-M Incre...
Grundlingh, ML   Bottom Currents at the Entrance to False Bay, South-Africa
Lesser, UM       Ozone Effects on Agricultural Crops - Statistical Methodo...
Webb, E          On Mid-Hoxnian Deforestation
Nigam, R         Paleoclimatic Implication of Size Variation in Orbulina-U...
-----
                          356 of 902
View      PIC      GA      R-A-P      MarkAll      File      Print      Esc=Menu
  
```

The commands at the bottom of Figure 4 assist in preparing profiles. "Alt-Fields," for example, allows you to switch from, say, the "Title" field to the "Author" field. "Alt-Dictionary" lets you summon the on-screen dictionaries. The rest of these options, respectively, help you print, save a given profile, clear a profile (should you choose to start over), or run a profile that you have saved previously and wish to run on a new issue. This last feature is similar to that offered in the software for the CD-ROM editions of the *Science Citation Index*<sup>®</sup> and *Social Sciences Citation Index*<sup>®</sup> 8,9

After "Search," the next main option at the top of the screen, "Articles," lets you examine your research results. Figure 5 shows the display for an article by G.H. Kats from *Energy Policy*. As is indicated in the middle of the screen at the bottom, this is the first of three records resulting from a specific search query. As with the display in "Browse" mode, you have the option of seeing the complete bibliographic record for each item or using the "View" command to select an abbreviated author-title display of multiple items.

Along with "View," the other options at the bottom of Figure 5 represent useful

features for saving, exporting, and printing records; these functions, for the most part, are familiar from *CC-on-Diskette*. "PIC," for example, will automatically save the highlighted item to your "personal interest checklist," a customized list to which you can add or subtract records as you choose. The next option, "GA," will save items to the "Genuine Article" list (each item is furnished with an order number for *The Genuine Article*, as can be seen from the display in Figure 5). Items on this list can then be formatted automatically into requests for ISI's document delivery service.

Similarly, the "R-A-P" option will add articles to the *Request-A-Print* list. With special printer forms available from ISI, and with no further keying or writing of article titles, names, or addresses on your part, *Focus On: Global Change* will automatically format and print out *Request-A-Print* cards for the selected articles. When the form emerges from the printer, you need only tear along a few perforated lines, attach the author's address to the resulting postcard, affix postage, and drop it in the mail to the author. According to many customer responses that we've received, this feature has proved a godsend to users of *CC-on-Diskette* (or, in many cases, their assistants), who

Figure 4: Sample search profile.

Focus On: Global Change Issue 1 (5 Mar 98)

Enter and execute queries. Press <F5> to view results.			
Issue	Browse	Search	Articles
Orders			

Search Session

Query	Hits	Field	Search Statement	Hits	Authors
1	10	Title	GLOBAL	1	PERSHAGEN, G
2	4	Title	WARM*	1	PERSSON, G
3	3	Set_No.	1 AND 2	1	PERSSON, L
4	4	Address	ARGONNE	1	PERTTU, K
5	2	Author	SAMUELS, PG	4	PERTTU, KL
6		Author	PERRY	1	PETERSON, CD
				1	PETERSSON, G
				1	PETROLL, H
				1	PETROVIC, AM
				1	PETTY, JA
				1	PEZESHKI, SR
				2	PFEFFER, JT
				1	PFEFFER, RL

Alt-Fields Alt-Dictionary Alt-Print Alt-Save Alt-Clear Alt-Run Profile

previously had to fill out scores of reprint requests by hand.

The "File" option allows you to export files to a database-management system. You can select from a variety of formats, including a comma-delimited style, as well as the formats of Medline and Dialog. Printing of items, as you might expect, is accomplished with the "Print" option.

### More to Come

Earlier we mentioned *ASCA*, the SDI (selective dissemination of information) service that ISI has offered for about 20 years. Those *Current Contents*<sup>®</sup> readers familiar with this service can regard the *Focus On* series as the electronic delivery of a group of topics formerly available only in print

Figure 5: Full-record display of search results.

Focus On: Global Change Issue 1 (5 Mar 98)

View search results & select articles. Press <F9> for Search Session.			
Issue	Browse	Search	Articles
Orders			

Full record : Search Results (Set #3)

Author	GH Kats
Title	Slowing Global Warming and Sustaining Development - The Promise of Energy Efficiency
Journal	Energy Policy 18: 1 (JAN-FEB 1998)
Page(s)	25-33
GenArt	CMZ15
Discipl.	Energy & Fuels
Document	Article
Language	English
Address	GH Kats, 58 Ave 31 Decembre, CH-1207 Geneva, Switzerland

1 of 3

View	PIC	GA	R-A-P	MarkAll	File	Print	Esc-Menu
------	-----	----	-------	---------	------	-------	----------

form. Using your PC with *Focus On: Global Change*, you can view and selectively store hits each week in your personal database without further keying. In this way we are able to deliver more information in a cost-effective manner.

As noted above, *Focus On: Global Change* is only the initial offering in a projected *Focus On* series, the first of several such multidisciplinary reference tools that will address key current issues. It seems certain that, during the 1990s, concern for the environment will achieve still more prominence on the national and international agendas. It is fitting, therefore, that we begin this decade with a service devoted exclusively

to understanding how humankind's activities have affected and damaged the health of our world. One hopes that, given a dedicated spirit of cooperation that crosses disciplinary as well as national boundaries, the damage can be reversed in time.

\* \* \* \* \*

*My thanks to Helen Atkins, Kathy Barna, Christopher King, Kathleen O'Donnell, Stephanie Ardito Quinzer, Gary Schwartz, and Jacqueline Trolley for their help in the preparation of this essay.*

©1990 ISI

#### REFERENCES

1. Garfield E. In honor of Marjory Stoneman Douglas, guardian of the Everglades. *Current Contents* (33):3-8, 14 August 1989.
2. Pennisi E. 1990 budget preserves healthy increase for global climate change research. *The Scientist* 4(1):2; 13; 31, 8 January 1990.
3. Games M D, comp. *AAAS Annual Meeting. Abstracts of papers*, 15-20 February 1990, New Orleans, LA. Washington, DC: American Association for the Advancement of Science, 1989. 188 p.
4. Garfield E. Ozone-layer depletion: its consequences, the causal debate, and international cooperation. *Current Contents* (6):3-13, 8 February 1988.
5. -----, Introducing *Current Contents on Diskette*: electronic browsing comes of age. *Current Contents* (39):3-8, 26 September 1988.
6. -----, *Current Contents on Diskette* for the IBM PC: on a screen near you, electronic browsing, searching, and retrieval and expanded coverage. *Current Contents* (49):3-9, 5 December 1988.
7. Price M F. glö'bel chänj. *Environment* 31(8):18-20; 42-4, October 1989.
8. Garfield E. Announcing the *SCI Compact Disc Edition*: CD-ROM gigabyte storage technology, novel software, and bibliographic coupling make desktop research and discovery a reality. *Current Contents* (22):3-13, 30 May 1988.
9. -----, Expanding the searching power of CD-ROM: ISI's new *Social Sciences Citation Index Compact Disc Edition* is compatible with the *Science Citation Index* on compact disc; new software streamlines searching. *Current Contents* (37):3-10, 11 September 1989.

*Focus On: Global Change*™ is available on floppy disk for IBM and compatibles, Apple Macintosh, and NEC 9800 computers. Potential subscribers can arrange to examine *Focus On: Global Change* on a risk-free, trial-review basis by contacting: Institute for Scientific Information®, 3501 Market Street, Philadelphia, PA 19104. Telephone: 1-800-336-4474 or, from outside the US and Canada, 1-215-386-0100, extension 1483.