

Scientific Grey Literature in a Digital Age:

Measuring its Use and Influence
in an Evolving Information
Economy

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Three Main Messages

1. Important to understand the influence of scientific information.
2. Citation analysis traditionally relies on data from Web of Science. This is not a comprehensive citation source, especially for grey literature.
3. Working towards a more complete metric for understanding the influence of grey literature by consulting multiple citation sources.

The State of Scientific Publishing

More scientific information

- Includes individual scientists as well as entire institutions
- Largely attributable to:
 - Computerization of printing process
 - Publishing cycle (submission of articles, refereeing, and publication) now online

Theilwall, M. (2008)

The State of Scientific Publishing

Two distinct types of scientific publication:

- Peer-reviewed, commercial literature, (eg. *Nature*, *Science*, *Marine Policy*)
- Grey literature
 - published outside of peer-reviewed journals and includes “reports, preprints, [...] theses and dissertations, conference proceedings, technical specifications and standards, trade literature, etc.”

Reitz, J.M. (2007).

Information is abundant and accessible, but,
does that mean anyone pays attention?

How can influence of scientific information be measured?

Citation Analysis

Traditionally based on Thomson Reuter's
Web of Science database

ISI Web of KnowledgeSM *Take the next step* 

All Databases | **Select a Database** | Web of Science | Additional Resources

Search | Cited Reference Search | Advanced Search | Search History | Marked List (0)

Web of Science[®]

Cited Reference Search. Find the articles that cite a person's work.

Step 1: Enter the author's name, the work's source, and/or publication year.

Cited Author:
Example: O'Brian C OR OBrian C**

Cited Work:
Example: J Comput Appl Math
journal abbreviation list*

Cited Year(s)
Example: 1943 or 1943-1945

Case Study



GESAMP

Joint Group of Experts on the
Scientific Aspects of Marine
Environmental Protection

Science for Sustainable Oceans

Latest News

- ➔ **Monaco Declaration**
From 6 to 9 October 2008, the
second international...

Enter



IMO



FAO



UNESCO



IOC



WMO



UNIDO



IAEA

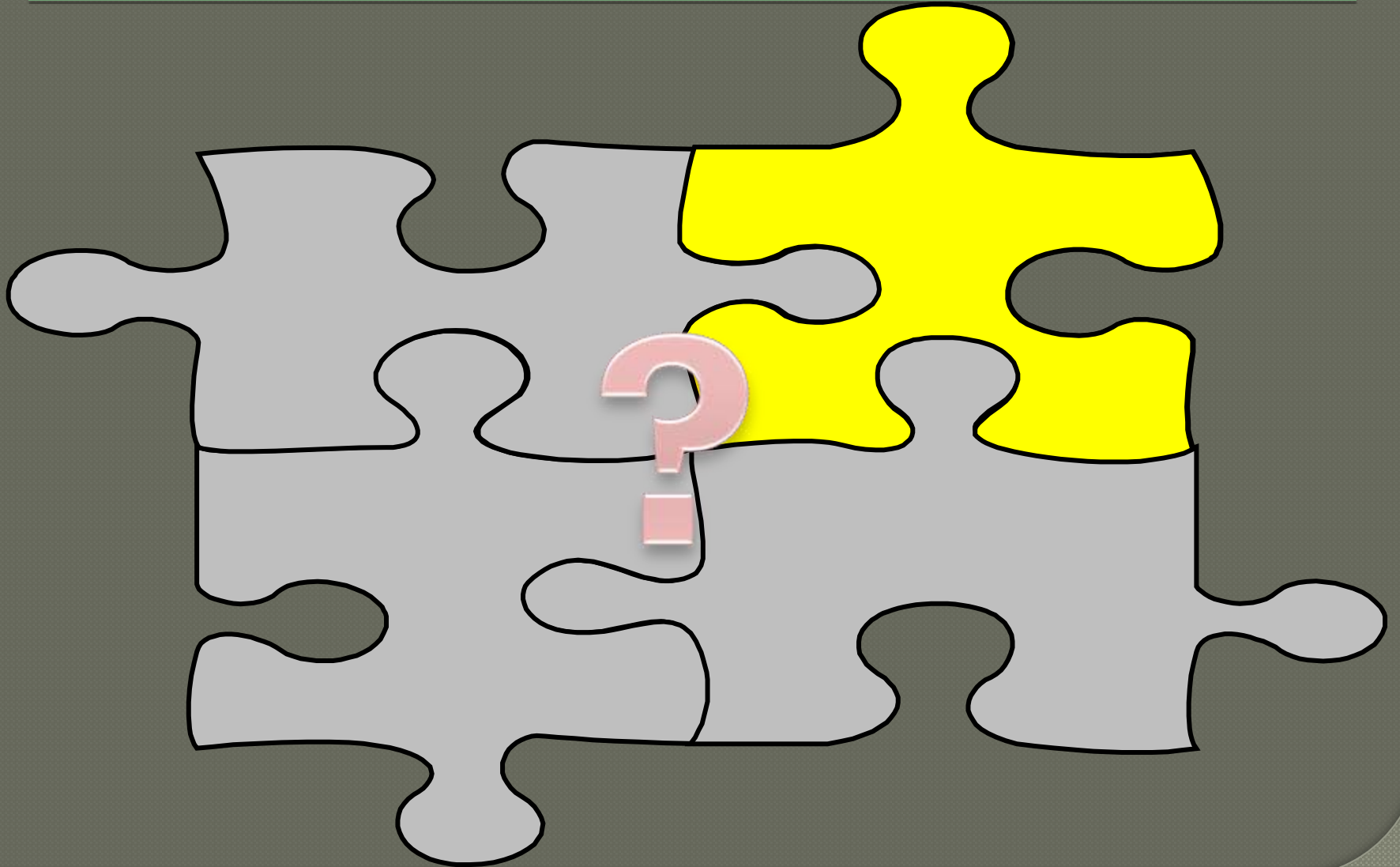


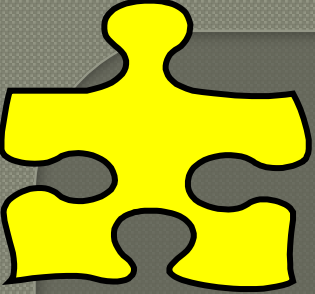
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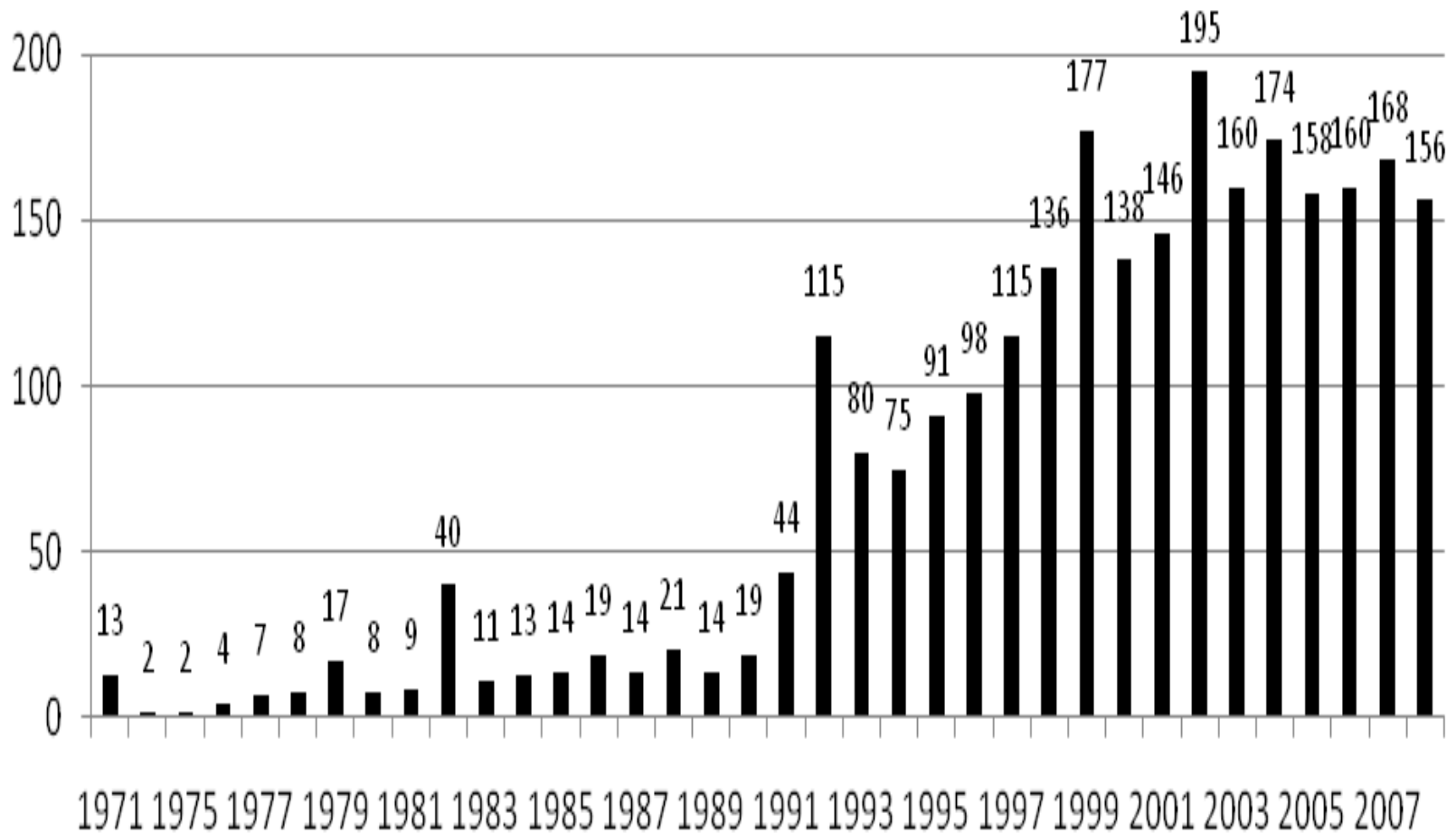
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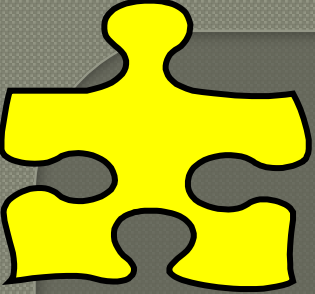
How Can the Influence of Scientific Information be Measured?





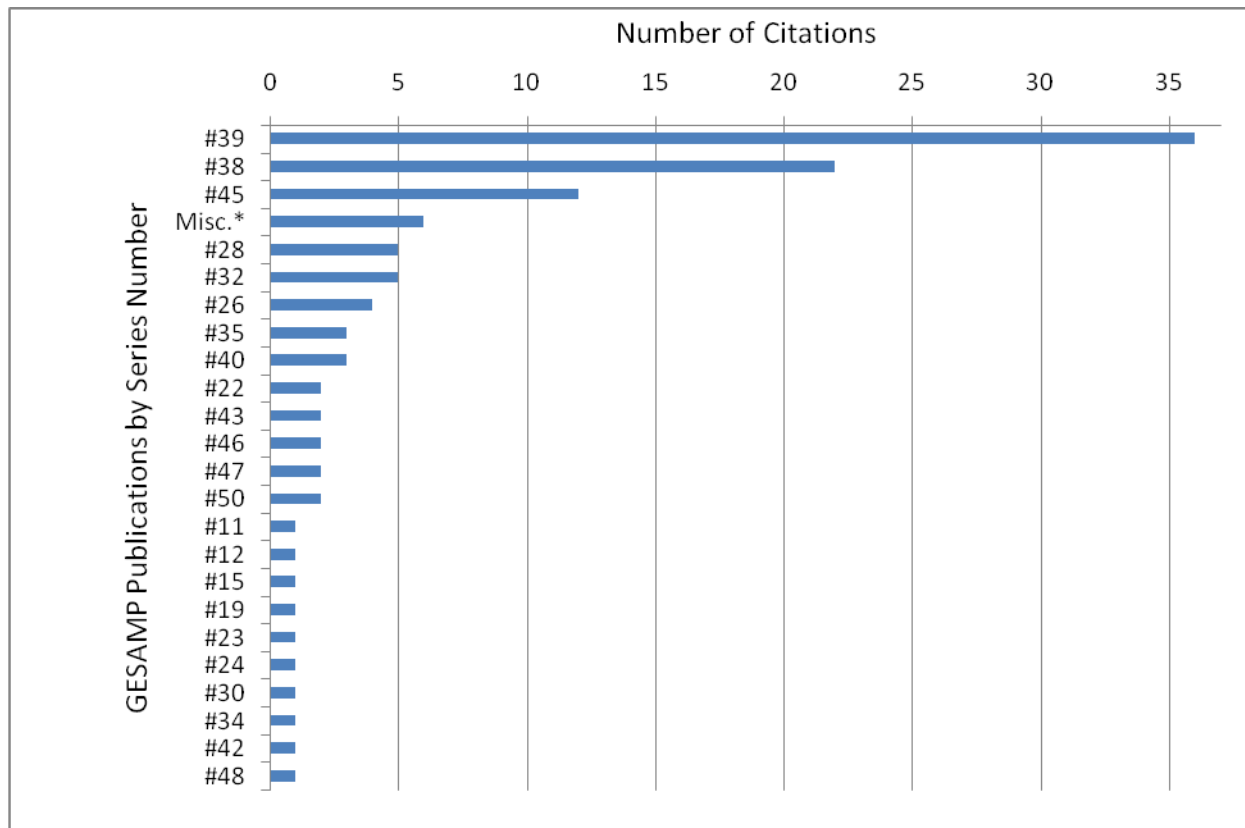
Web of Science Data



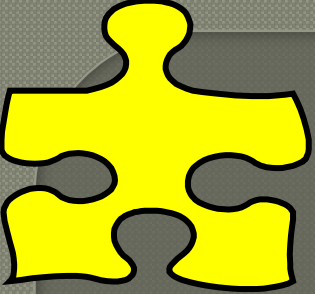


1992 Web of Science Data

Figure 2. Citations to GESAMP Publications



* Citations to GESAMP documents published outside the *Reports and Studies* series.



Web of Science Data - Journals

Table 1. GESAMP Citations by Web of Science Indexed Journals

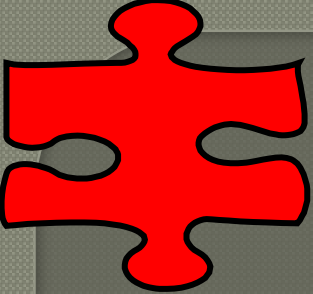
Journal Name	Citations
Marine Pollution Bulletin	275
Journal of Geophysical Research-Atmospheres	82
Marine Chemistry	78
Marine Ecology-Progress Series	74
Science of the Total Environment	70

Table 2. GESAMP Citations by Web of Science Subject Areas

Subject Name	General Category	Number of Citations
Environmental Sciences	Science	1004
Marine & Freshwater Biology	Science	690
Oceanography	Science	398
Geosciences, Interdisciplinary	Science	325
Meteorology & Atmospheric Sciences	Science	192



Web of
Science



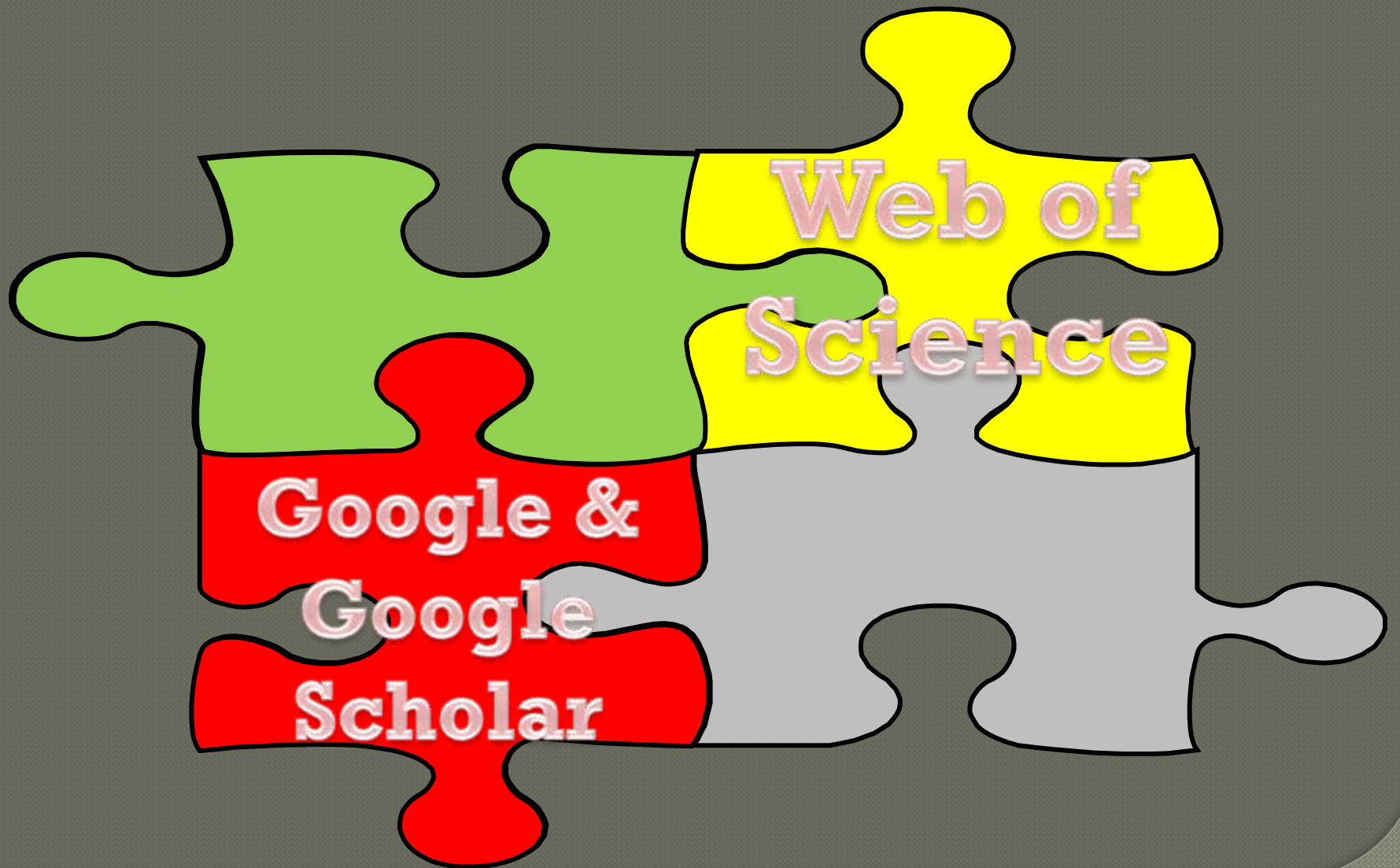
Google Scholar

Table 3. Citations to GESAMP Reports from Google Scholar

Report Number	Results Collected	Unique Results	Perfunctory Results
38	47	9	0
32	47	9	0
39	139	55	0
50	57	27	0
61	62	39	0
6	28	16	1
57	50	18	1
28	19	9	0
71	85	52	1
58	53	26	0
Total	587	260	3

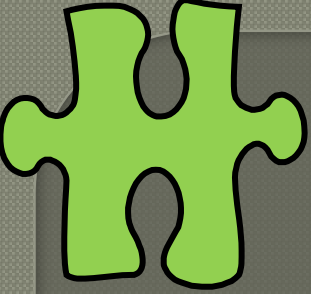
Table 4. Citations to GESAMP Reports from Google

Report Number	Results Collected	Unique Results	Influential Citations	Perfunctory Citations
38	29	24	16	8
32	38	24	10	14
39	89	83	72	11
50	43	35	16	19
61	52	45	31	14
6	31	27	15	12
57	42	33	25	8
28	18	16	7	9
71	95	87	72	15
58	29	26	19	7
Totals	466	400	283	117



Web of
Science

Google &
Google
Scholar



Web Links / Online

Google [Advanced Search](#)
[Preferences](#)

Search: the web pages from Canada

Web [Show options...](#)

[Thematic Resources - Coastal Management - Fact Sheet - OIP Ocean ...](#)
Importance of coastal zones to humans. © CREATAS 1. The total length of the world's coastlines is about 504000 km, enough to circle the Equator 12 times. ...
[www.webmastermdp.com.ar/thematic-resources.php?cat_id=3&subcat_id=5&item_id=23 - 41k](#)
- [Cached](#) - [Similar pages](#)

[Porqué comunicarse con el Océano - Qué podemos hacer? - OIP Ocean ...](#)
LO ESENCIAL. © NAUSICAA JMO 2006 Pueden...
es importante. Una combinación de los esfuerzos
[www.webmastermdp.com.ar/que-podemos-hacer...](#)

[Recursos Temáticos - Gobernación - Fue...](#)
Informes y documentos: © CAREM Senegal • GE...
Aspects of Marine Environmental Protection) Rep...
[www.webmastermdp.com.ar/recursos-tematicos...](#)
- [Cached](#) - [Similar pages](#)

Table 5. Google Link Search Results

	# of Links
UN Sources (13 links)	
FAO, UNEP, WMO, etc.	9
GESAMP	4
Non-UN Sources (6 links)	
European Commission	1
Oceanographic Center	1
Environmental Directories	1
Peri-urban mangrove forests as filters and potential phytoremediators of domestic sewage in East Africa	1
Conservation International	1
Large Marine Ecosystems of the World	1
Total	19

**Web
Links**

**Web of
Science**

**Google &
Google
Scholar**

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Acknowledgements & References

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Environmental Information: Influence on Decision Making

Social Sciences and Humanities Research Council of Canada.

References

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