

Web Statistics:

You Got Questions, We Got Numbers

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National Ocean Service
National Oceanic and Atmospheric Administration

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A M E R I C A ' S O C E A N S A N D C O A S T S
S A F E , H E A L T H Y , A N D P R O D U C T I V E



What does your site look like

To the Business Owner (i.e., Dept. Chair, Agency Chief, etc.)



What does your site look like

To the content provider (Web master, project director, etc.)



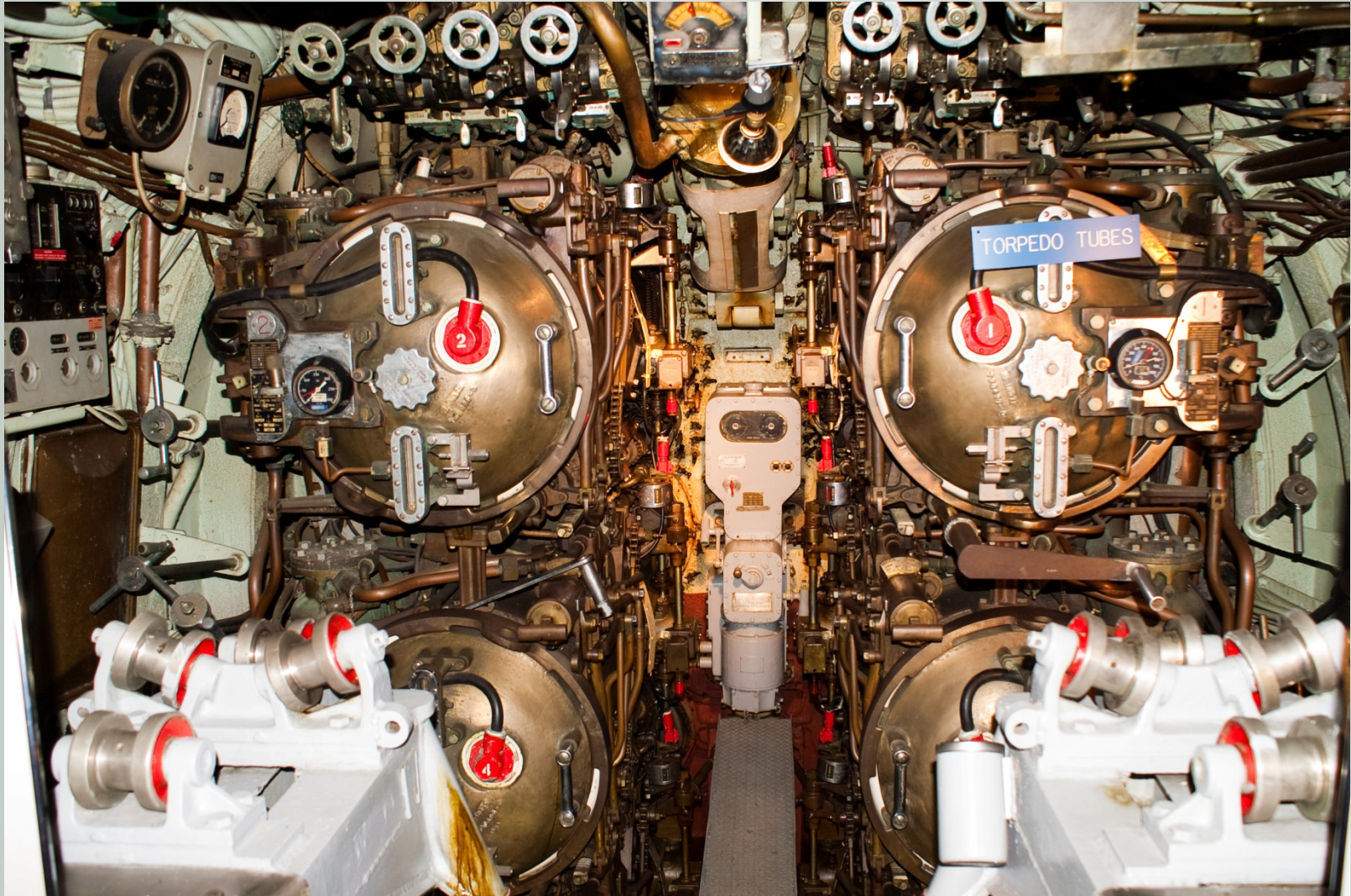
What does your site look like

To the System Administrator (Sysadmin, IT guy, etc.)



What does your site look like

To the visitor (public, users, constituents, etc.)



What metrics do people want?

- Business owners: how many people visited
- Content providers: page views, attention to new content
- Researchers: who is visiting, and for what purpose
- Technical personnel: bandwidth utilization, site stability

What metrics should you want?

- Business owners: page view trends, directory view trends, bandwidth trends
- Content providers: directory view trends, structural errors, missing content
- Researchers: content view trends, qualitative survey results
- Technical personnel: bandwidth utilization, site stability, attacks

What metrics does public want?

Public doesn't care about metrics. The public (i.e., *everybody* not involved in paying for, supervising, maintaining or providing content to the site) wants the right answer, now.

They don't care about your awards, your past accomplishments, your staff, your building – they just want answers.

What does a Web server log?

- Date and time
- What you request
- Where you came from
- Browser type
- Bytes transferred
- Numeric address (sorta) of your computer
- Status code (success, various types of failure)

What is not logged

- Visitor name, age, gender, etc.
- What visitor was looking for
- Did visitor find it?
- Was visitor satisfied with what was found?
- Do visitor *trust* what was found?
- How will visitor use what was found?
- Do visitor have more confidence in some other site?

First, you need to be found

- SINI Planning Committee sites:
- Creative Computing Solutions, Inc.: 262 URLs, 3 not found
- GE Health Care, 283 URLs, 4 not found
- Gugerty Consulting, 17 URLs, 0 not found
- St. John Fisher School of Nursing, 127 URLs, 0 not found
- Maryland School of Nursing, 1571 URLs, 36 not found
- Siemens Medical Solution: 1 URL (a redirect)
- McKesson, Aurora, IMIA: unable to get useful results (recursive loops)
- Two sites of mine:
 - 4212 URLs, 2 not found
 - 9548 URLs, 6 not found

Good metrics require title tags

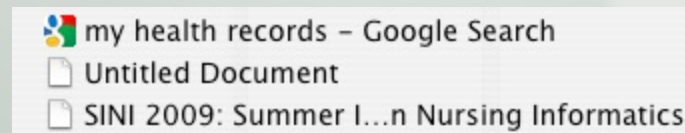
SINI title tag at top of browser window, and in tab



HTML code for title tag

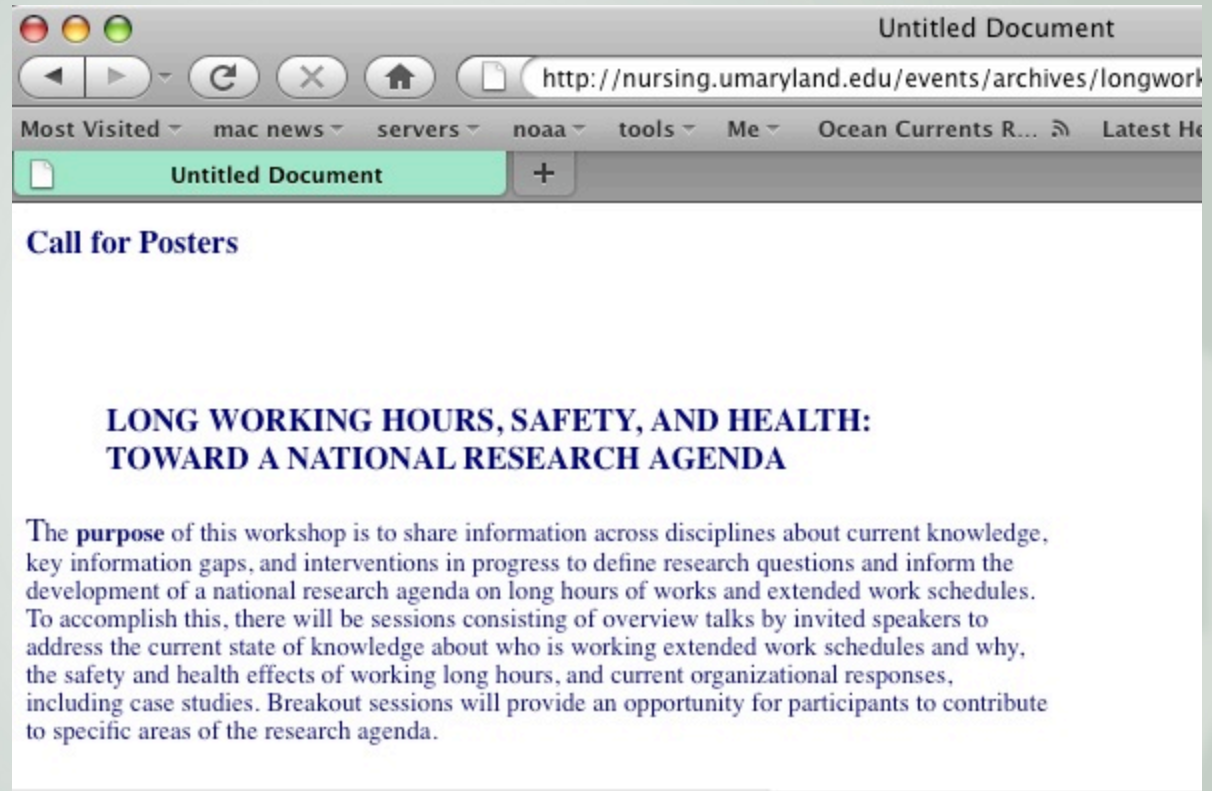
```
<html>
<head>
<title>SINI 2009: Summer Institute in Nursing Informatics</title>
<meta HTTP-EQUIV="Content-Type" CONTENT="text/html; charset=iso-8859-1">
<style TYPE="text/css" MEDIA="screen">
@import "scripts/002.css";
</style>
```

Title tag is default bookmark entry

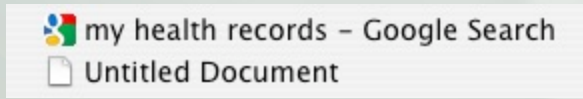


Good metrics require title tags

Untitled pages are much harder to index, and far lower in search results, if they rank at all.



Bookmarks for untitled pages make no sense



Not so good title tags: Part I

- [CCSi Project Details](#)
 - [CCSi Success Stories - Printer Friendly](#)
- [CCSi Project Details](#)
 - [CCSi Success Stories - Printer Friendly](#)
- [CCSi Project Details](#)
 - [CCSi Success Stories - Printer Friendly](#)
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- [CCSi Project Details](#)
 - [CCSi Success Stories - Printer Friendly](#)
- [CCSi Project Details](#)
 - [CCSi Success Stories - Printer Friendly](#)

- [Page 1](#)
- [About us](#)
- [CISIES Administrations](#)
- [Downloads](#)
- [Resources](#)

- [GE Healthcare-Product Technology -Healthcare Information Technology](#)
 - [GE Healthcare-Product Features -Centricity RIS](#)
 - [GE Healthcare-Product Specifications-Healthcare Information Technology](#)
 - [GE Healthcare-Product Specifications-Healthcare Information Technology](#)
 - [GE Healthcare-Product Specifications-Healthcare Information Technology](#)
 - [GE Healthcare-Product Specifications-Healthcare Information Technology](#)
 - [GE Healthcare-Product Specifications-Healthcare Information Technology](#)
 - [GE Healthcare-Product Technology-Healthcare Information Technology](#)
 - [GE Healthcare-Product Technology-Healthcare Information Technology](#)
 - [GE Healthcare-Product Technology-Healthcare Information Technology](#)

Not so good title tags: Part II

- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)
- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)
- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)
- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)
- [Environmental Excellence: Promoting Healthy Patients, Employees, and Communities in Maryland](#)

- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)
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- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)
- [University of Maryland School of Nursing News](#)



What's wrong with these tags?

- [Susan Antol - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Tonya Appleby - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [R. Barker Bausell - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Kay Blum - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Rebecca Brotemarkle - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Blanche Brown - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Marjorie Buchanan - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Charon Burda - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Karen Clark - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Laurie Conway - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Joan M. Davenport - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Barbara A. Dobish - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Susan G. Dorsey - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Elizabeth Duckham - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)

Good metrics require structure

[The University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)

- [Site Map - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
 - [About this Website - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [About this Web site - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
 - [About this Website - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
 - [Office of the Webmaster - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [The University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [About the University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
 - [More About the University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
 - [The School and Its Community - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
 - [More About the University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [Welcome from the Dean - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
- [News and Press Releases - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
 - [News and Press Releases - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
 - [University of Maryland School of Nursing News](#)
 - [University of Maryland School of Nursing News](#)
 - [University of Maryland School of Nursing News](#)
 - [Document Moved](#)
 - [DNP Program - University of Maryland School of Nursing - Education | Research | Community Service | Public Health | Hospital](#)
 - [University of Maryland School of Nursing News](#)
 - [University of Maryland School of Nursing News](#)
 - [University of Maryland School of Nursing News](#)
 - [University of Maryland School of Nursing News](#)
 - [University of Maryland School of Nursing News](#)

Good structure permits varied metrics

| Time | Referrers | Content | Visitors | Visits | Problems |
|--------------------------------|--------------------------------|--------------------------------|------------------------------|-------------------------------|---------------------------------|
| Hourly | Domains | Pages | Countries | Entry Point | Bad Links |
| Daily | Referrers | Downloads | Visitors | Exit Point | Failed Refers |
| Weekly | Search Engines | Graphics | Browsers | 1 Page Visits | Gaps in Service |
| Monthly | Search Words | Other Requests | Computers | Steps | Hijacking |
| Quarterly | Search Phrases | All Requests | Robots | X per Y | Failed Requests |
| Yearly | To/From | by Group | Auth Users | Recent | Explanations |
| Cyclic Totals | | by Directory | | Duration | Least Requested |
| | | by Type | | View Time | Reloads |
| General | Bandwidth | Paths | Custom | Details | |
| Overview | Peak | by Source | Ref. Domains | Log Fields | |
| Program Status | by Request | by Destination | | Local Search | |
| Servers | by Directory | Paths | | Domains | |
| | by Type | | | | |
| | Transfers | | | | |

Metrics for business owners

Time

[Hourly](#)
[Daily](#)
[Weekly](#)
[Monthly](#)
[Quarterly](#)
[Yearly](#)
[Cyclic Totals](#)

Referrers

[Domains](#)
[Referrers](#)
[Search Engines](#)
[Search Words](#)
[Search Phrases](#)
[To/From](#)

Content

[Pages](#)
[Downloads](#)
[Graphics](#)
[Other Requests](#)
[All Requests](#)
[by Group](#)
[by Directory](#)
[by Type](#)

Visitors

[Countries](#)
[Visitors](#)
[Browsers](#)
[Computers](#)
[Robots](#)
[Auth Users](#)

Visits

[Entry Point](#)
[Exit Point](#)
[1 Page Visits](#)
[Steps](#)
[X per Y](#)
[Recent](#)
[Duration](#)
[View Time](#)

Problems

[Bad Links](#)
[Failed Refers](#)
[Gaps in Service](#)
[Hijacking](#)
[Failed Requests](#)
[Explanations](#)
[Least Requested](#)
[Reloads](#)

General

[Overview](#)
[Program Status](#)
[Servers](#)

Bandwidth

[Peak](#)
[by Request](#)
[by Directory](#)
[by Type](#)
[Transfers](#)

Paths

[by Source](#)
[by Destination](#)
[Paths](#)

Custom

[Ref. Domains](#)

Details

[Log Fields](#)
[Local Search](#)
[Domains](#)

Metrics for content providers

Time

[Hourly](#)
[Daily](#)
[Weekly](#)
[Monthly](#)
[Quarterly](#)
[Yearly](#)
[Cyclic Totals](#)

Referrers

[Domains](#)
[Referrers](#)
[Search Engines](#)
[Search Words](#)
[Search Phrases](#)
[To/From](#)

Content

[Pages](#)
[Downloads](#)
[Graphics](#)
[Other Requests](#)
[All Requests](#)
[by Group](#)
[by Directory](#)
[by Type](#)

Visitors

[Countries](#)
[Visitors](#)
[Browsers](#)
[Computers](#)
[Robots](#)
[Auth Users](#)

Visits

[Entry Point](#)
[Exit Point](#)
[1 Page Visits](#)
[Steps](#)
[X per Y](#)
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[Duration](#)
[View Time](#)

Problems

[Bad Links](#)
[Failed Refers](#)
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[Reloads](#)

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Bandwidth

[Peak](#)
[by Request](#)
[by Directory](#)
[by Type](#)
[Transfers](#)

Paths

[by Source](#)
[by Destination](#)
[Paths](#)

Custom

[Ref. Domains](#)

Details

[Log Fields](#)
[Local Search](#)
[Domains](#)

Metrics for researchers

Time

[Hourly](#)
[Daily](#)
[Weekly](#)
[Monthly](#)
[Quarterly](#)
[Yearly](#)
[Cyclic Totals](#)

Referrers

[Domains](#)
[Referrers](#)
[Search Engines](#)
[Search Words](#)
[Search Phrases](#)
[To/From](#)

Content

[Pages](#)
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[Graphics](#)
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Visitors

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[Entry Point](#)
[Exit Point](#)
[1 Page Visits](#)
[Steps](#)
[X per Y](#)
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[Duration](#)
[View Time](#)

Problems

[Bad Links](#)
[Failed Refers](#)
[Gaps in Service](#)
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[Peak](#)
[by Request](#)
[by Directory](#)
[by Type](#)
[Transfers](#)

Paths

[by Source](#)
[by Destination](#)
[Paths](#)

Custom

[Ref. Domains](#)

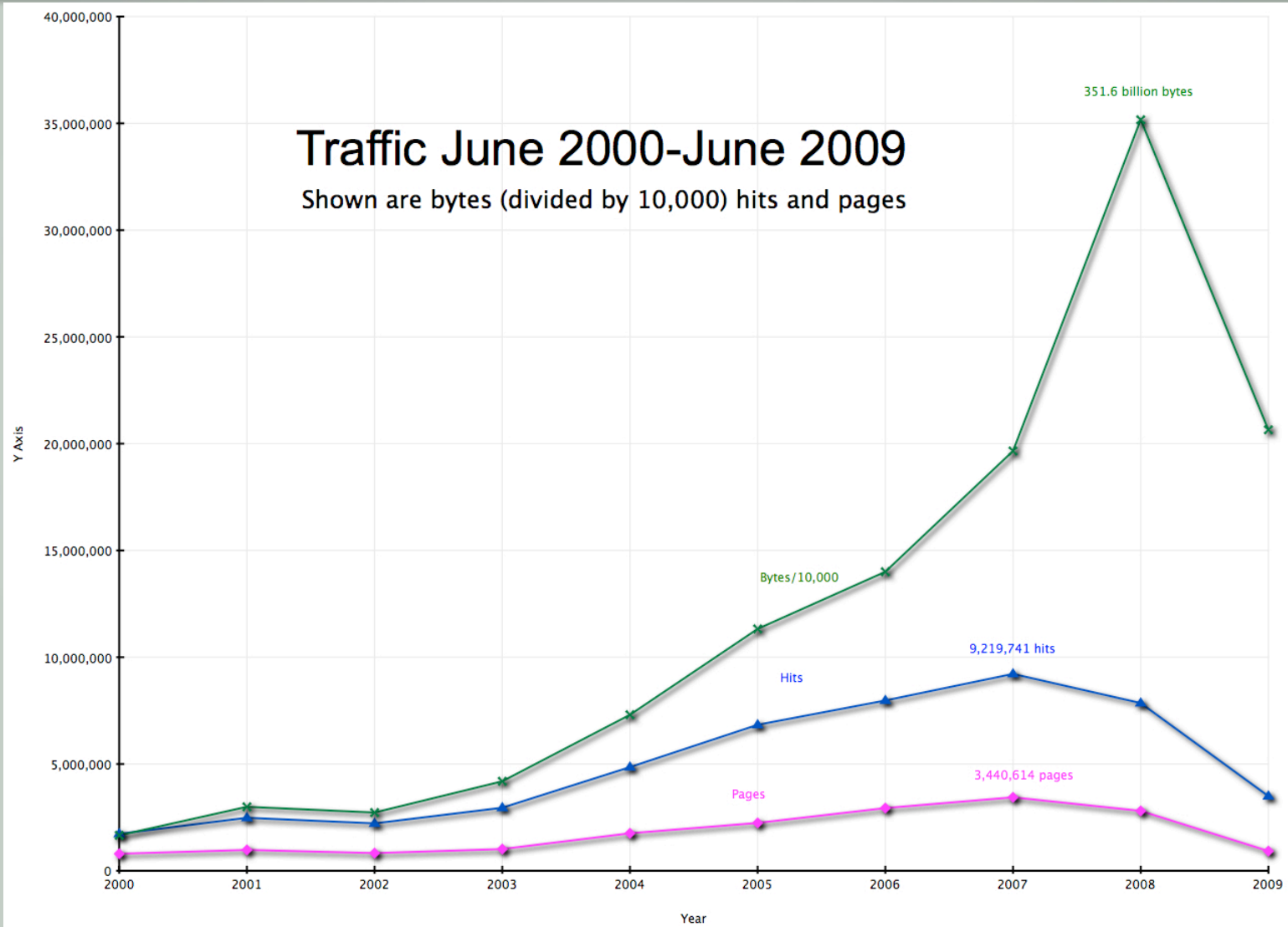
Details

[Log Fields](#)
[Local Search](#)
[Domains](#)

Metrics for technical specialists

| Time | Referrers | Content | Visitors | Visits | Problems |
|--------------------------------|--------------------------------|--------------------------------|------------------------------|-------------------------------|---------------------------------|
| Hourly | Domains | Pages | Countries | Entry Point | Bad Links |
| Daily | Referrers | Downloads | Visitors | Exit Point | Failed Refers |
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| Program Status | by Request | by Destination | | Local Search | |
| Servers | by Directory | Paths | | Domains | |
| | by Type | | | | |
| | Transfers | | | | |

Classic metrics: hits, pages, bytes



Classic metrics: visitors

Which second level domains did the most requests come from?

| <u>Second Level Domain ?</u> | <u>% of Pages ?</u> | <u>Pages ?</u> | <u>Hits ?</u> | <u>GigaBytes ?</u> |
|------------------------------|---------------------|----------------|---------------|--------------------|
| googlebot.com | 15.94% | 866,239 | 1,061,535 | 45.0G |
| (Unknown) | 13.50% | 733,590 | 7,775,799 | 172.4G |
| other.yahoo.net | 10.02% | 544,894 | 680,609 | 194.4G |
| noaa.gov | 5.57% | 302,512 | 832,016 | 31.2G |
| searchme.com | 3.04% | 165,367 | 168,047 | 2.6G |
| comcast.net | 2.82% | 153,120 | 2,521,819 | 67.5G |
| search.msn.com | 2.74% | 149,179 | 173,742 | 13.8G |
| verizon.net | 2.29% | 124,643 | 1,366,233 | 48.5G |
| rr.com | 2.23% | 121,309 | 1,747,224 | 42.0G |
| ask.com | 1.60% | 87,055 | 338,758 | 4.6G |
| cuill.com | 1.57% | 85,155 | 112,733 | 1.8G |
| attens.net | 1.03% | 55,951 | 62,194 | 0.8G |
| sbcglobal.net | 0.94% | 51,063 | 770,388 | 19.4G |
| dotnetdotcom.org | 0.93% | 50,323 | 51,195 | 0.5G |
| cox.net | 0.85% | 46,078 | 766,503 | 18.4G |

Classic metrics: top-level domains

Which top level domains did the most requests come from?

Most top level domains correspond to a single country but some of the common ones, such as .net and .com, are used internationally.

| Top Level Domain ? | Description ? | % of Pages ? | Pages ? | Hits ? | GigaBytes ? |
|--------------------|-------------------------------|--------------|-----------|------------|-------------|
| com | Commercial, frequently U.S. | 36.70% | 1,995,118 | 7,982,607 | 222.2G |
| net | Network Providers | 27.59% | 1,499,622 | 12,955,019 | 508.1G |
| (Unknown) | Numeric IP Address | 13.50% | 733,590 | 7,775,799 | 172.4G |
| gov | U.S. Federal Government | 6.10% | 331,841 | 1,035,304 | 36.1G |
| org | Organizations, mostly U.S. | 1.60% | 87,174 | 568,777 | 11.3G |
| edu | U.S. Educational Institutions | 1.57% | 85,282 | 1,133,420 | 25.1G |
| us | United States | 1.31% | 71,345 | 1,051,072 | 23.8G |
| hu | Hungary | 0.85% | 46,157 | 181,876 | 18.4G |
| gbl | Unknown | 0.79% | 43,137 | 50,063 | 3.0G |
| ca | Canada | 0.77% | 42,068 | 576,930 | 13.5G |
| jp | Japan | 0.66% | 35,819 | 262,269 | 12.1G |
| uk | United Kingdom | 0.60% | 32,570 | 432,103 | 9.7G |
| au | Australia | 0.59% | 32,197 | 442,100 | 9.2G |

Classic metrics: pages

How often have pages been requested each of the last fourteen months?

| Request ? | Pages ? | Dec 2008 | Nov 2008 | Oct 2008 | Sep 2008 | Aug 2008 | Jul 2008 | Jun 2008 |
|---|---------|----------|----------|----------|----------|----------|----------|----------|
| / | 923,141 | 55,369 | 57,231 | 73,743 | 86,422 | 76,499 | 63,706 | 174,900 |
| /websites/retiredsites/supp_sotc_retired.html | 118,188 | 2,897 | 3,004 | 3,282 | 2,724 | 3,980 | 4,076 | 4,054 |
| /robots.txt | 109,506 | 11,903 | 8,640 | 13,831 | 9,312 | 8,239 | 8,448 | 8,062 |
| /dataexplorer/ | 102,798 | 7,536 | 6,721 | 8,397 | 8,227 | 8,875 | 9,335 | 9,904 |
| /education/ | 80,597 | 5,782 | 7,003 | 8,487 | 7,667 | 6,511 | 7,087 | 7,855 |
| /websites/retiredsites/supp_SSEretired.html | 37,066 | 2,537 | 2,463 | 2,376 | 2,107 | 3,391 | 3,506 | 3,575 |
| /education/kits/tides/ | 35,519 | 2,069 | 2,844 | 4,160 | 2,909 | 1,565 | 2,026 | 2,404 |
| /topics/navops/marinenav/ | 34,364 | 2,164 | 2,542 | 2,651 | 3,493 | 3,434 | 3,515 | 3,077 |
| /education/kits/corals/ | 32,412 | 2,597 | 3,143 | 3,365 | 2,220 | 1,743 | 2,077 | 2,565 |
| /education/kits/tides/tides01_intro.html | 30,421 | 1,711 | 2,363 | 3,683 | 3,069 | 1,149 | 1,320 | 1,630 |
| /education/kits/tides/tides06_variations.html | 27,784 | 1,501 | 1,949 | 3,145 | 2,641 | 1,074 | 1,336 | 2,003 |

Classic metrics: downloads

How often have downloads been requested each of the last fourteen months?

| Request ? | Hits ? | Dec 2008 | Nov 2008 | Oct 2008 | Sep 2008 | Aug 2008 | Jul 2008 |
|--|--------|-------------|-------------|-------------|-------------|-------------|-------------|
| /programs/mb/pdfs/coastal_pop_trends_complete.pdf | 58,015 | 4,114 | 5,698 | 5,690 | 5,809 | 3,039 | 3,338 |
| /websites/retiredsites/sse_pdf/sse.pdf | 47,185 | 4,288 | 1,242 | 1,746 | 3,606 | 408 | 4,827 |
| /websites/retiredsites/sotc_pdf/POPPDF | 27,056 | 2,832 | 4,052 | 3,939 | 3,156 | 1,188 | 1,175 |
| /websites/retiredsites/sotc_pdf/hab.pdf | 15,869 | 1,363 | 1,475 | 1,860 | 1,242 | 894 | 1,224 |
| /education/for_fun/EndangeredSpeciesOrigami.pdf | 11,206 | 2,717 | 1,599 | 1,739 | 1,562 | 1,094 | 1,060 |
| /education/classroom/lessons/18_marinenav_plotcourse.pdf | 10,369 | 1,020 | 845 | 1,161 | 931 | 914 | 1,022 |
| /products/hypox_t1final.pdf | 10,350 | 1,022 | 1,740 | 1,181 | 687 | 372 | 541 |
| /products/hypox_final.pdf | 9,907 | 897 | 298 | 417 | 614 | 491 | 506 |
| /education/for_fun/BuildUnderwaterRobot.pdf | 9,677 | 1,597 | 1,558 | 1,641 | 1,807 | 1,240 | 968 |
| /education/kits/corals/lessons/coral_mgmt.pdf | 9,207 | 403 | 509 | 526 | 427 | 329 | 282 |

Classic metrics: bandwidth

How has traffic varied from month to month?

| <u>Date ?</u> | <u>Pages ?</u> | <u>Hits ?</u> | <u>Errors ?</u> | <u>Unique Hosts ?</u> | <u>MBytes ?</u> | <u>Visits ?</u> | <u>Visits ?</u> |
|----------------|----------------|---------------|-----------------|-----------------------|-----------------|-----------------|--|
| January 2008 | 289,804 | 2,040,716 | 82,736 | 49,070 | 47,886M | 150,031 | ██ |
| February 2008 | 273,044 | 1,968,856 | 54,950 | 49,445 | 48,003M | 147,171 | ██████████████████████████████████████ |
| March 2008 | 374,284 | 2,385,639 | 57,109 | 58,457 | 51,449M | 165,580 | ██ |
| April 2008 | 352,936 | 2,483,096 | 38,342 | 59,308 | 69,895M | 190,907 | ██ |
| May 2008 | 343,147 | 2,370,857 | 34,493 | 60,673 | 65,179M | 191,890 | ██ |
| June 2008 | 397,330 | 1,980,968 | 35,836 | 58,022 | 60,327M | 166,189 | ██████████████████████████████████████ |
| July 2008 | 275,592 | 1,919,432 | 27,509 | 53,297 | 56,892M | 155,934 | ██████████████████████████████████████ |
| August 2008 | 289,022 | 2,211,937 | 21,563 | 60,140 | 61,133M | 157,287 | ██████████████████████████████████████ |
| September 2008 | 344,750 | 3,125,795 | 33,899 | 77,536 | 74,654M | 183,844 | ██████████████████████████████████████ |
| October 2008 | 390,970 | 3,175,649 | 65,170 | 59,494 | 81,460M | 171,174 | ██████████████████████████████████████ |
| November 2008 | 332,555 | 3,383,588 | 42,452 | 56,334 | 75,215M | 165,643 | ██████████████████████████████████████ |
| December 2008 | 290,370 | 3,144,204 | 34,897 | 48,821 | 65,989M | 156,569 | ██████████████████████████████████████ |

Not so classic metric: directory traffic

How many requests have been made for content in each top level directory each of the last fourteen months?

| Directory ? | Hits ? | Dec 2008 | Nov 2008 | Oct 2008 | Sep 2008 | Aug 2008 | Jul 2008 |
|----------------|------------|----------|----------|----------|-----------|----------|----------|
| /siteart/ | 10,365,649 | 766,157 | 875,156 | 978,135 | 1,321,411 | 937,267 | 747,684 |
| /education/ | 7,604,943 | 561,862 | 764,635 | 918,940 | 767,222 | 433,777 | 441,089 |
| /images/ | 1,843,540 | 717,170 | 725,280 | 401,090 | 0 | 0 | 0 |
| / | 1,644,175 | 108,722 | 110,550 | 135,916 | 156,297 | 130,858 | 110,621 |
| /topics/ | 1,368,325 | 76,176 | 99,838 | 114,030 | 146,710 | 120,628 | 113,674 |
| /includes/ | 1,111,513 | 22,901 | 27,225 | 68,042 | 166,307 | 125,277 | 99,356 |
| /homeart/ | 998,714 | 46 | 106 | 53,797 | 188,838 | 136,497 | 98,335 |
| /styles/ | 911,671 | 30,971 | 35,329 | 63,216 | 130,955 | 98,526 | 81,074 |
| /js/ | 567,561 | 210,290 | 219,398 | 132,006 | 4,068 | 1,279 | 520 |
| /news/ | 563,181 | 168,379 | 144,396 | 55,141 | 23,390 | 24,171 | 24,540 |
| /dataexplorer/ | 483,764 | 29,766 | 31,654 | 35,200 | 39,871 | 40,203 | 44,241 |
| /websites/ | 472,216 | 31,944 | 30,137 | 32,223 | 33,391 | 29,551 | 33,487 |
| /programs/ | 449,499 | 30,864 | 35,906 | 43,574 | 37,211 | 32,187 | 33,698 |
| /cgi-bin/ | 386,731 | 21,407 | 21,063 | 28,830 | 30,958 | 35,424 | 34,463 |
| /css/ | 273,619 | 111,774 | 111,059 | 49,529 | 839 | 288 | 130 |
| /foresee/ | 267,714 | 181,638 | 86,076 | 0 | 0 | 0 | 0 |
| /kids/ | 189,127 | 8,548 | 11,451 | 14,109 | 32,653 | 20,026 | 11,691 |
| /about/ | 121,857 | 6,955 | 7,242 | 10,632 | 10,391 | 10,983 | 11,433 |

Not so classic metric: file type

Which file types were requested most frequently?

| Extension ? | Description ? | % of Hits ? | Hits ? | Errors ? | % of Bytes ? | GigaBytes ? |
|-------------|----------------------------|-------------|------------|----------|--------------|-------------|
| jpg | JPEG Images | 35.93% | 10,846,880 | 0 | 13.14% | 97.2G |
| gif | GIF Images | 24.79% | 7,484,108 | 0 | 2.91% | 21.6G |
| css | Cascading Style Sheets | 9.41% | 2,840,618 | 0 | 1.52% | 11.2G |
| js | JavaScript | 7.15% | 2,159,906 | 0 | 2.97% | 22.0G |
| / | Web Pages | 6.43% | 1,940,022 | 0 | 7.01% | 51.9G |
| html | HTML Pages | 6.31% | 1,903,946 | 0 | 4.47% | 33.1G |
| png | PNG Images | 3.03% | 913,768 | 0 | 0.30% | 2.2G |
| pdf | Adobe PDF Documents | 2.33% | 703,260 | 0 | 50.95% | 376.7G |
| ico | Windows Icons | 1.62% | 488,680 | 0 | 0.01% | 0.1G |
| cgi | CGI Scripts | 1.28% | 386,781 | 0 | 0.05% | 0.4G |
| xml | Extensible Markup Language | 0.39% | 118,388 | 0 | 0.43% | 3.2G |
| txt | Plain Text | 0.36% | 109,514 | 0 | 0.00% | 0.0G |
| swf | Shockwave Flash | 0.28% | 83,563 | 0 | 1.14% | 8.4G |
| PDF | Unknown | 0.25% | 75,728 | 0 | 5.93% | 43.9G |
| (None) | Unknown | 0.13% | 38,494 | 0 | 0.00% | 0.0G |
| wmv | Windows Media Video | 0.10% | 28,779 | 0 | 2.65% | 19.6G |
| mov | Quick Time Movies | 0.08% | 23,575 | 0 | 3.42% | 25.3G |
| JPG | Unknown | 0.08% | 22,922 | 0 | 0.06% | 0.5G |

Not so classic metric: bad links

Which pages refer to content which does not exist or has other errors?

Click on a referrer to see which requests it refers to.

| Referrer ? | Hits ? |
|--|------------------------|
| /gallery/maps/maps.html | 23,655 |
| /gallery/cultural/cultural.html | 14,931 |
| /downloads/noaa_oe.iso | 13,828 |
| /downloads/NOAA_OE2003.iso | 12,765 |
| /explorations/04titanic/ | 12,455 |
| /gallery/livingocean/livingocean_fish.html | 10,965 |
| / | 10,836 |
| /explorations/06fire/background/marianaarc/marianaarc.html | 10,695 |
| /technology/subs/alvin/alvin.html | 9,939 |
| /gallery/livingocean/livingocean_inverts.html | 9,336 |
| /gallery/livingocean/livingocean.html | 8,830 |
| /gallery/sound/sound.html | 8,397 |
| /explorations/03titanic/ | 7,158 |

Not so classic metric: hackers

| | | | |
|-----|----|----------|---|
| 0.4 | 92 | 06/30/09 | /images/cluetip_img/darrowright.gif Local refer problem: /css/jquery.cluetip.css / |
| 0.4 | 67 | 06/29/09 | /hw3.php No information available |
| 0.4 | 54 | 06/29/09 | /education/ External refer problem: http://teamssoftn.org/links.htm |
| | | | /mapfinder/products/tsheets/ External refer problem: |

| | | | |
|-----|-------|----------|--|
| 4.3 | 4,593 | 12/30/05 | /_vti_bin/owssvr.dll Possible check for support of the Microsoft IE discussion feature. |
| 4.3 | 4,567 | 12/30/05 | /MSOffice/cltreq.asp NIMDA worm |

Not so classic metric: reloads

Which requests were frequently made twice in a row in a single visit?

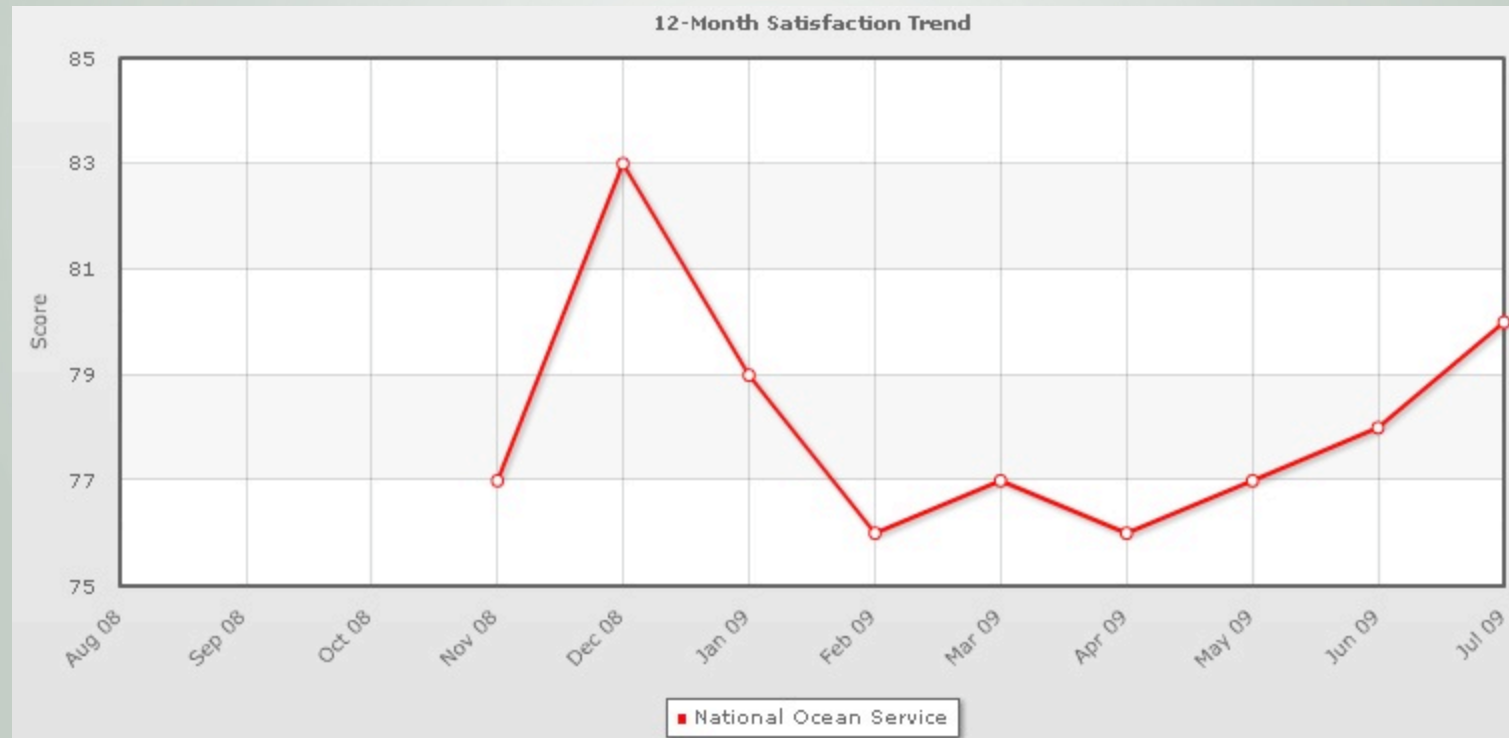
| Reloads ? | Reloads % of Hits ? | Hits ? | Errors ? | GigaBytes ? | Request ? |
|------------|---------------------------|------------|----------|-------------|---|
| 12,382,174 | 79.22% | 15,629,877 | 12 | 281.2G | /data_menu.shtml |
| 10,218,308 | 96.43% | 10,596,247 | 1,700 | 420.5G | /data_listing.shtml |
| 5,515,287 | 101.70% | 5,422,900 | 103,454 | 3.6G | /cgi-bin/PORTS_Archives/dataview.cgi |
| 2,801,780 | 87.69% | 3,195,072 | 0 | 23.2G | /ports/ports_data.shtml |
| 1,603,236 | 36.74% | 4,363,759 | 27,534 | 35.3G | /cgi-bin-mp/data_plot.cgi |
| 1,375,373 | 77.50% | 1,774,701 | 286 | 147.7G | /get_predc.shtml |
| 1,284,600 | 82.55% | 1,556,070 | 550 | 20.3G | /cgi-bin/map/odinmap.cgi |
| 1,229,700 | 90.58% | 1,357,614 | 4,610 | 7.6G | /portsscreen/services/portsconditions |
| 1,046,640 | 73.17% | 1,430,490 | 0 | 9.2G | /myports/ports.xml |
| 1,021,658 | 45.11% | 2,264,635 | 433 | 90.7G | /get_predictions.shtml |
| 990,301 | 72.18% | 1,371,911 | 0 | 92.7G | /myports/myports.xml |
| 641,403 | 54.41% | 1,178,783 | 515 | 1.0G | /cgi-bin/quicklook/quicklook_rss.cgi |
| 637,043 | 89.40% | 712,549 | 80 | 5.2G | /ports_screens/tbscreen.shtml |
| 563,005 | 74.53% | 755,374 | 78 | 5.6G | /ports_screens/hgscreen.shtml |
| 541,888 | 95.04% | 570,159 | 115 | 28.4G | /myports/data.shtml |
| 532,985 | 79.70% | 668,771 | 0 | 5.8G | /cbports/cbAllMET_inset.html |
| 509,659 | 60.39% | 844,017 | 1,621 | 14.3G | / |
| 498,317 | 85.03% | 586,057 | 122 | 3.9G | /ports_data.shtml |

Not so classic metric: phones

| | | | | |
|-------------|-------|-------|---------|------|
| iPhone | 0.29% | 7,342 | 74,333 | 0.9G |
| Linux | 0.22% | 5,650 | 67,459 | 1.1G |
| Windows 3.1 | 0.14% | 3,471 | 104,989 | 0.6G |
| Windows 95 | 0.11% | 2,805 | 7,869 | 0.1G |

Qualitative metrics: Forsee ACSI

Forsee “American Customer Satisfaction Index,”
<http://www.foreseerresults.com/>



Qualitative metrics: 30 day trend

Satisfaction Summary - National Ocean Service April 28, 2009 - July 22, 2009 N: 301

(Click on a Element name to change the data in the chart below)

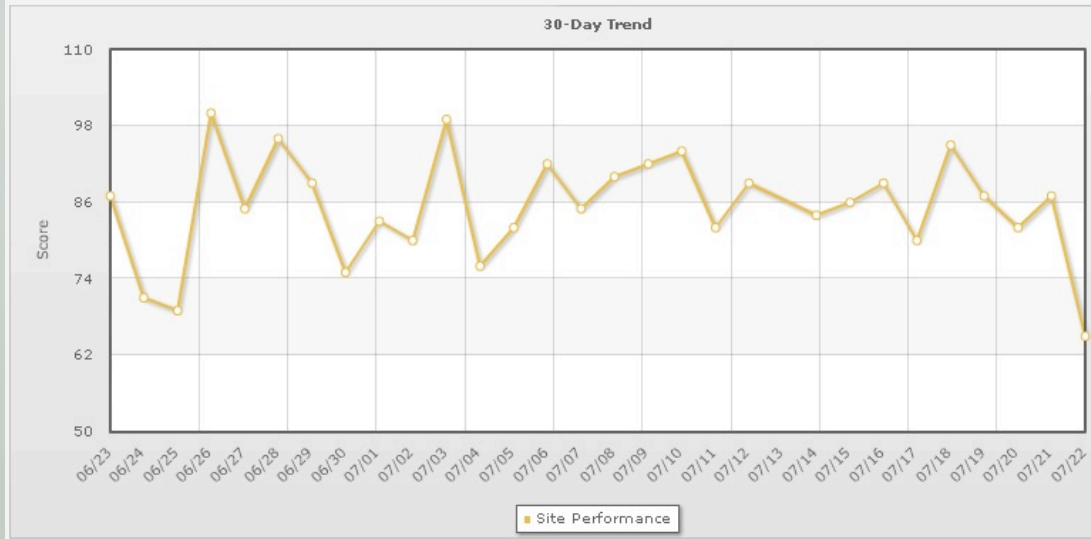
What If

| <input type="checkbox"/> | Elements | Score | Impact on C.S. |
|-------------------------------------|------------------|-------|----------------|
| <input type="checkbox"/> | Content | 85 | 0.9 |
| <input type="checkbox"/> | Look and Feel | 82 | 1.1 |
| <input type="checkbox"/> | Navigation | 75 | 1.7 |
| <input type="checkbox"/> | Search | 76 | 2.4 |
| <input checked="" type="checkbox"/> | Site Performance | 84 | 0.9 |

| <input checked="" type="checkbox"/> | Customer Satisfaction |
|-------------------------------------|-----------------------|
| | 77 |

| <input type="checkbox"/> | Impact on F.B. | Future Behaviors | Score |
|--------------------------|----------------|----------------------|-------|
| <input type="checkbox"/> | 3.9 | Likelihood to Return | 84 |
| <input type="checkbox"/> | 4.1 | Primary Resource | 78 |
| <input type="checkbox"/> | 4.0 | Recommend | 82 |

Detail Trend

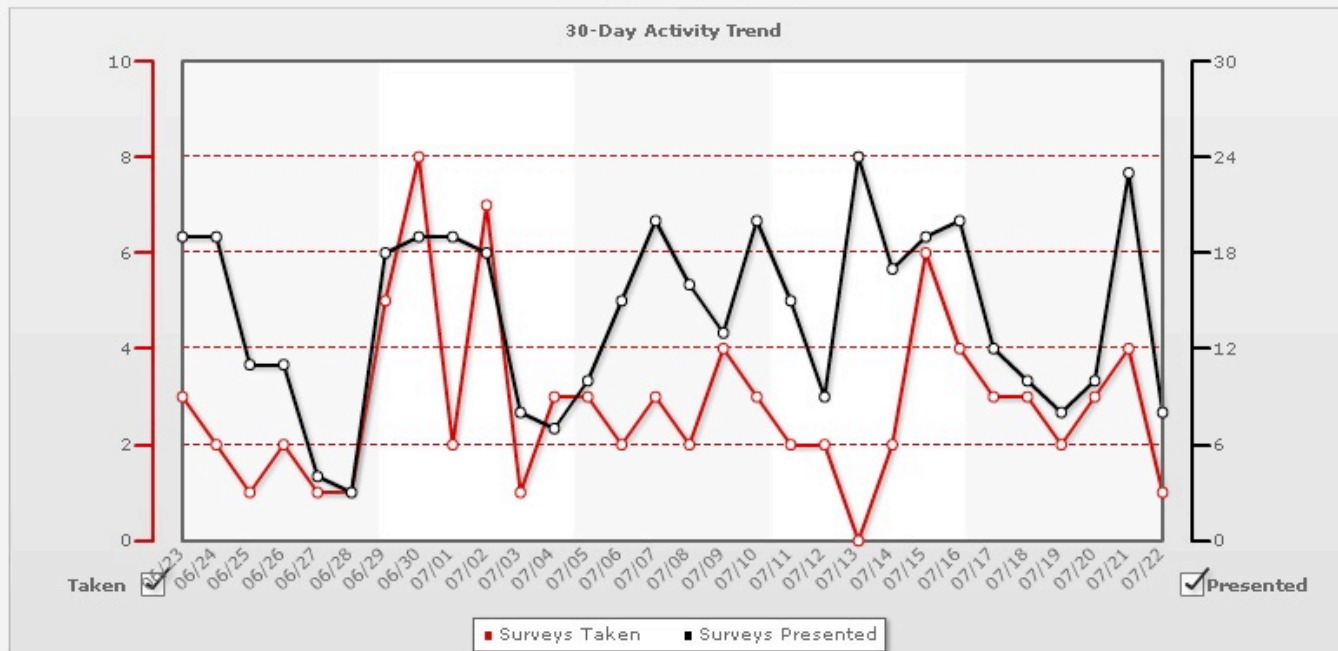


Qualitative metrics: survey rate

Activity - National Ocean Service
April 28, 2009 - July 22, 2009

| | |
|-------------------------|--------|
| Surveys Taken | 301 |
| Surveys Presented | 1,536 |
| Percentage Taken | 19.6% |
| Total Surveys Taken | 913 |
| Total Surveys Presented | 4,503 |
| Total Percentage Taken | 20.28% |

Counts Percentages



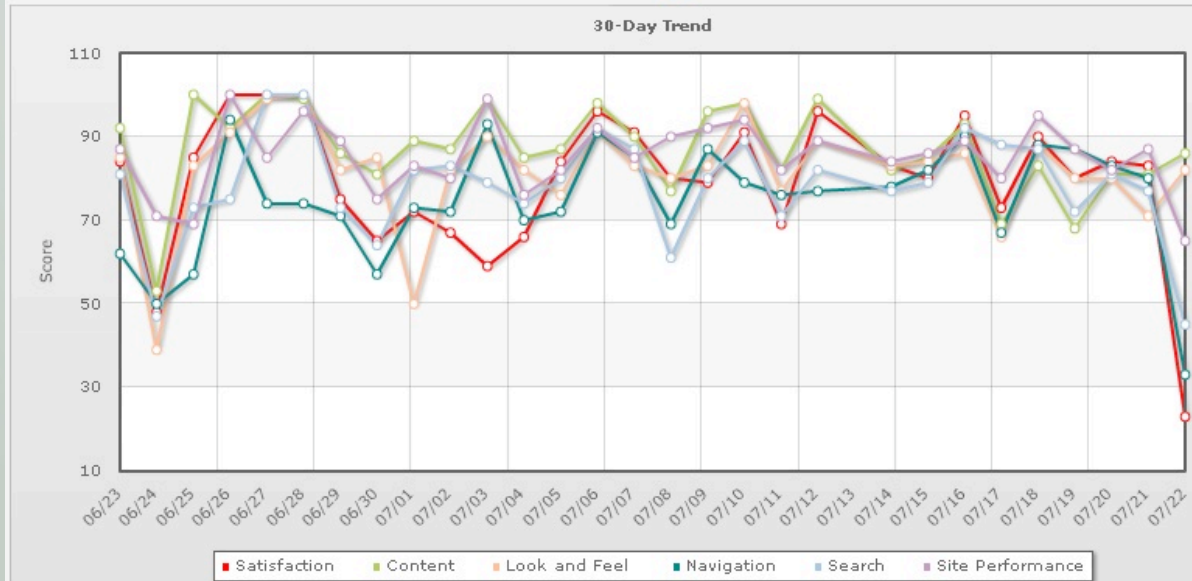
Qualitative metrics: site elements

Satisfaction Summary - National Ocean Service July 22, 2009 N: 1

(Click on a Element name to change the data in the chart below)

| <input checked="" type="checkbox"/> | Elements | Score | Impact on C.S. | <input checked="" type="checkbox"/> | Customer Satisfaction | <input type="checkbox"/> | Impact on F.B. | Future Behaviors | Score |
|-------------------------------------|------------------|-------|----------------|-------------------------------------|-----------------------|--------------------------|----------------|----------------------|-------|
| <input checked="" type="checkbox"/> | Content | 86 | NA | | 23 | <input type="checkbox"/> | NA | Likelihood to Return | 11 |
| <input checked="" type="checkbox"/> | Look and Feel | 82 | NA | | | <input type="checkbox"/> | NA | Primary Resource | 0 |
| <input checked="" type="checkbox"/> | Navigation | 33 | NA | | | <input type="checkbox"/> | NA | Recommend | 11 |
| <input checked="" type="checkbox"/> | Search | 45 | NA | | | | | | |
| <input checked="" type="checkbox"/> | Site Performance | 65 | NA | | | | | | |

Detail Trend

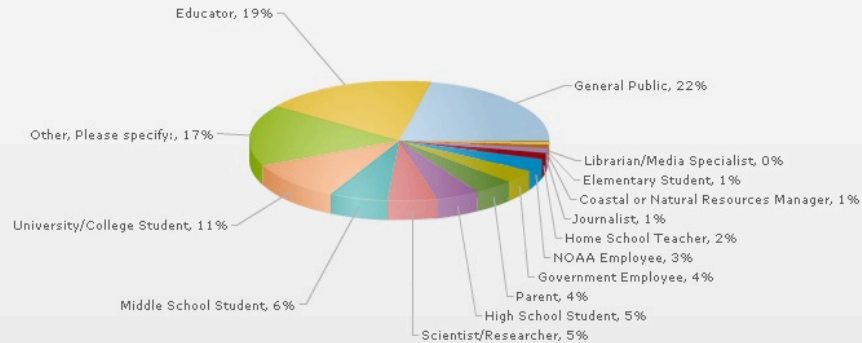


Qualitative metrics: visitor role



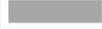




What is your role in coming to this site today?

| | | | |
|--------------------------------------|--|------------|-------------|
| General Public | | 65 | 22% |
| Educator | | 56 | 19% |
| Other, Please specify: | | 50 | 17% |
| University/College Student | | 32 | 11% |
| Middle School Student | | 19 | 6% |
| Scientist/Researcher | | 16 | 5% |
| High School Student | | 14 | 5% |
| Parent | | 13 | 4% |
| Government Employee | | 11 | 4% |
| NOAA Employee | | 10 | 3% |
| Home School Teacher | | 5 | 2% |
| Journalist | | 4 | 1% |
| Coastal or Natural Resources Manager | | 3 | 1% |
| Elementary Student | | 2 | 1% |
| Librarian/Media Specialist | | 1 | 0% |
| Total | | 301 | 100% |

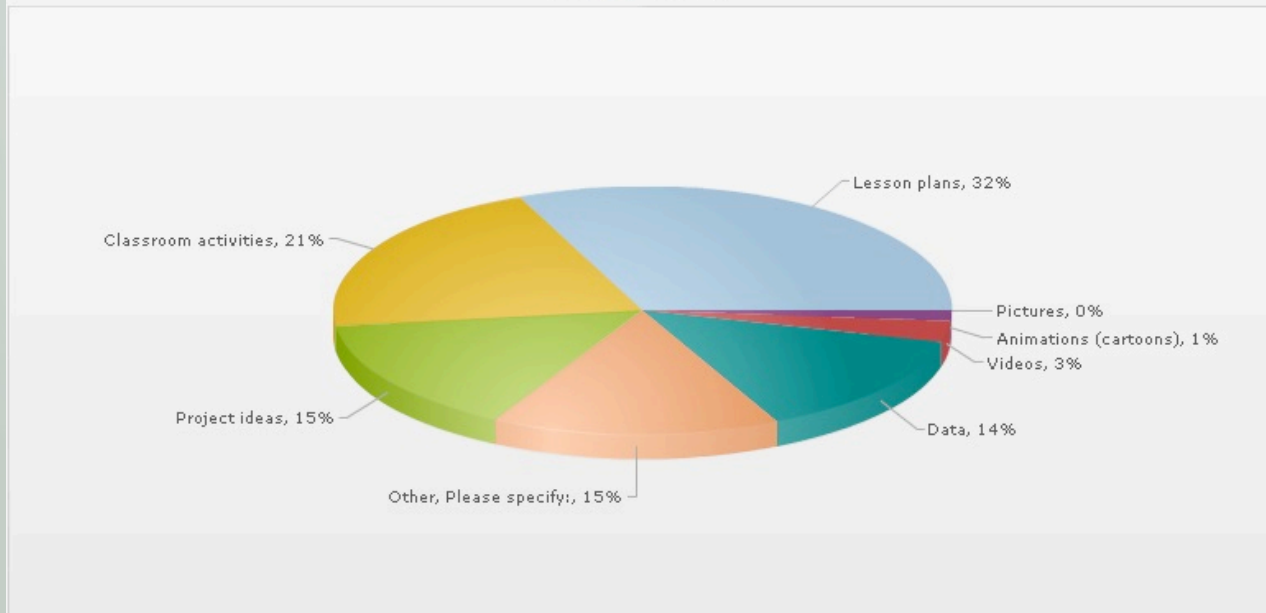
Detail Trend



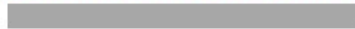




Qualitative metrics: educators

| What best describes your primary reason for visiting the site today? | | | |
|--|---|----|------|
| Lesson plans |  | 23 | 32% |
| Classroom activities |  | 15 | 21% |
| Project ideas |  | 11 | 15% |
| Other, Please specify: |  | 11 | 15% |
| Data |  | 10 | 14% |
| Videos |  | 2 | 3% |
| Animations (cartoons) |  | 1 | 1% |
| Pictures | | | |
| Total | | 73 | 100% |

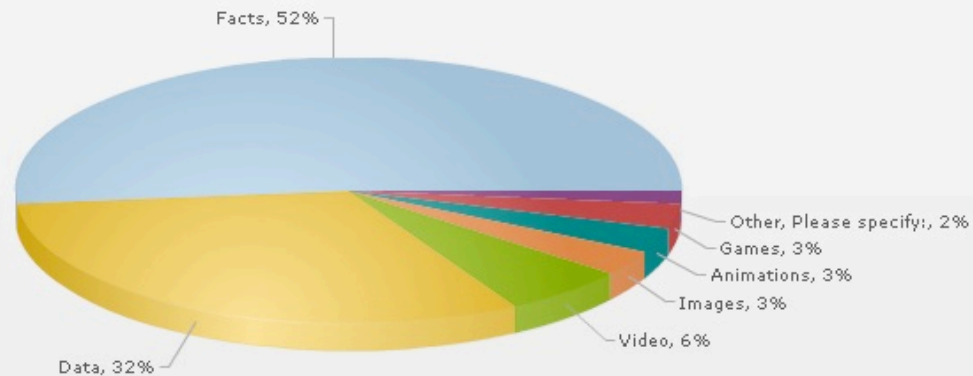
Detail Trend



Qualitative metrics: students

| What kind of information are you looking for on this site today? | | | |
|--|--|----|------|
| Facts |  | 34 | 52% |
| Data |  | 21 | 32% |
| Video |  | 4 | 6% |
| Images |  | 2 | 3% |
| Animations |  | 2 | 3% |
| Games |  | 2 | 3% |
| Other, Please specify: |  | 1 | 2% |
| Total | | 66 | 100% |

Detail Trend



Heat Maps: focus of attention

The screenshot displays the National Ocean Service (NOS) website interface. At the top, the header includes the NOAA logo and navigation links: HOME, EXPLORE, EDUCATION, NOS NOW, MULTIMEDIA, OFFICES, DATA EXPLORER, WEB SITES, ABOUT. The main content area features a large banner image of a coastal town with a text overlay: "NOAA and partners announce new guidance to help coastal and waterfront communities with smart growth alternatives." To the right, a smaller box titled "ocean FACTS" asks "What is a tsunami?" with a "(More-Facts)" link. Below the banner, there are several smaller content blocks: "AMERICA'S Oceans & Coasts" with a sub-headline "Ever wonder what it might be like to work at the National Ocean Service? Here's your chance to meet the..."; "COUNTDOWN TO WORLD MARITIME DAY" with a "11 day until World Maritime Day, October 16!" and a "Get the Widget" link; "TIDES & CHARTS" with two sub-sections: "Visit the Office of Coast Survey for digital and printable nautical charts in a variety of formats." and "Surf over to Tides Online to get current and future tide levels for locations around the United States."; and a "STAY CONNECTED" sidebar with social media icons for Fields, Podcasts, YouTube, Flickr, Facebook, and Twitter. The main content is organized into three categories: "OCEANS" (Coral Reef Conservation, International Collaboration, Marine Protected Areas, National Marine Sanctuary System, Ocean Exploration), "COASTS" (Coastal Decision Making Tools, Coastal Ecosystem Science, Coastal Zone Management, Coastal Monitoring and Observations, Contaminants in the Environment), and "CHARTING AND NAVIGATION" (Aerial Photography and Shoreline Mapping, Global Positioning, Height Modernization, Hydrographic Surveying, Marine Navigation). At the bottom, there are sections for "NOAA Sites", "NOS Program Offices", "NOS Headquarters", and "Site Links". A footer contains the date "Revised September 30, 2009" and various links for questions, comments, contact, report error, disclaimer, about the site, and user survey.



Heat maps (cont.)

The screenshot shows the NOAA website homepage. At the top, it features the NOAA logo and the text "U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION". To the right, there are links for "NOS" and "NOAA", a search bar, and a "search" button. Below this is a large banner with the text "NATIONAL OCEAN SERVICE". A navigation menu includes "HOME", "EXPLORE", "EDUCATION", "NOS NOW", "MULTIMEDIA", "OFFICES", "DATA EXPLORER", "WEB SITES", and "ABOUT".

The main content area features a large video player showing a street scene. Below the video, the text reads: "NOAA and partners announce new guidance to help coastal and waterfront communities with [smart growth](#) alternatives." To the right of the video is a "ocean FACTS" section with the heading "What is a tsunami?" and a "(More Facts)" link.

At the bottom, there are four main sections: "AMERICA'S Oceans & Coasts" with the tagline "safe, healthy, and productive" and an image of people; "COUNTDOWN TO WORLD MARITIME DAY" with a nautical chart and the text "-11 day until World Maritime Day, October 16!"; "TIDES & CHARTS" with a globe icon and text about digital and print nautical charts; and a "STAY CONNECTED" sidebar with social media icons for Feeds, Podcasts, YouTube, Flickr, Facebook, and Twitter.

Heat maps (cont.)

The screenshot shows a navigation menu for NOAA's Oceans and Coasts website. At the top right, there is a yellow 'OVERLAY' button with a gear icon. Below this are three horizontal rows of heat map thumbnails, each with a left and right arrow. The first row contains: Coral Reef Conservation, International Collaboration, Marine Protected Areas, National Marine Sanctuary System, and Ocean Exploration. The second row is titled 'COASTS' and contains: Coastal Decision-making Tools, Coastal Ecosystem Science, Coastal Zone Management, Coastal Monitoring and Observations, and Contaminants in the Environment. The third row is titled 'CHARTING AND NAVIGATION' and contains: Aerial Photography and Shoreline Mapping, Global Positioning, Height Modernization, Hydrographic Surveying, and Marine Navigation. Below the thumbnails is a dark banner with the text 'AMERICA'S OCEANS AND COASTS: SAFE, HEALTHY, AND PRODUCTIVE'. At the bottom, there are four columns of links: NOAA Sites, NOS Program Offices, NOS Headquarters, and Site Links. The Site Links column includes social media icons for RSS, Twitter, and Facebook.

OVERLAY

COASTS

CHARTING AND NAVIGATION

AMERICA'S OCEANS AND COASTS: SAFE, HEALTHY, AND PRODUCTIVE

| NOAA Sites | NOS Program Offices | NOS Headquarters | Site Links |
|--|--|---|---|
| National Oceanic and Atmospheric Administration | Center for Operational Oceanographic Products and Services | For NOS Employees | Home |
| National Environmental Satellite, Data & Information Service | National Centers for Coastal Ocean Science | Equal Employment Opportunity and Diversity Programs | Site Map |
| National Marine Fisheries Service | NOAA Coastal Services Center | Integrated Ocean Observing System Program | Acknowledgments |
| National Weather Service | National Geodetic Survey | International Ocean Observing System Program | Information Quality |
| NOAA Research | Office of Coast Survey | International Program Office | Freedom of Information Quality Act (FOIA) |
| NOAA Library | Office of National Marine Sanctuaries | Management and Budget Office | Privacy Policy |
| NOAAWatch | Office of Ocean and Coastal Resource Management | |  |
| NOAA Catalog | | |  |
| | | |  |
| | | |  |
| | | |  |
| | | |  |
| | | |  |
| | | |  |

Heat maps (cont.)

The screenshot shows the NOAA Ocean Service website with a 'Top 15 Referrers' overlay on the left. The website header includes 'ATMOSPHERIC ADMINISTRATION', 'NOS', 'NOAA', and a search bar. The main navigation bar lists 'HOME', 'MULTIMEDIA', 'OFFICES', 'DATA EXPLORER', 'WEB SITES', and 'ABOUT'. Below the navigation bar are four featured images: 'Biology', 'Transportation', 'Health', and 'Ocean Observation'. The 'Health' image is highlighted with a heatmap overlay. The heatmap shows a concentration of red and orange dots over the 'Health' image, indicating high engagement. Below the heatmap, a list of questions is displayed, with the word 'Health' in green text above them. The questions are: 'How do corals benefit the economy?', 'In what types of water do corals live?', 'How do coral reefs protect lives and property?', 'What species live in and around coral reefs?', 'What is a coral reef made of?', 'What can I do to protect coral reefs?', 'What are phytoplankton?', 'What percentage of life is estimated to be in the ocean?', 'What is an estuary?', 'What is the biggest source of ocean pollution?', 'What do coral reefs have to do with medicine?', 'What is a red tide?', 'Why do Harmful Algal Blooms occur?', 'What is a dead zone?', 'What is marine debris?', 'Can marine debris degrade on its own in the environment?', and 'What does peanut butter have to do with the ocean?'.

| Name | Amount |
|-----------------------|--------|
| Direct | 318 |
| oceanservice.noaa.gov | 135 |
| google.com | 106 |
| bing.com | 47 |
| search.yahoo.com | 28 |
| usasearch.gov | 11 |
| google.com.au | 8 |
| google.co.uk | 7 |
| dogpile.com | 3 |
| goodsearch.com | 2 |
| search.viewpoint.com | 2 |
| search.aol.com | 1 |
| cf23.usasearch.gov | 1 |
| Other | 2 |
| Total | 671 |

Health

How do corals benefit the economy?
In what types of water do corals live?
How do coral reefs protect lives and property?
What species live in and around coral reefs?
What is a coral reef made of?
What can I do to protect coral reefs?
What are phytoplankton?
What percentage of life is estimated to be in the ocean?
What is an estuary?

What is the biggest source of ocean pollution?
What do coral reefs have to do with medicine?
What is a red tide?
Why do Harmful Algal Blooms occur?
What is a dead zone?
What is marine debris?
Can marine debris degrade on its own in the environment?
What does peanut butter have to do with the ocean?

Heat maps (cont.)

| IDENTIFIED UNIDENTIFIED BOTH | | Export Lists as CSV | |
|---|-------|---------------------|---------|
| ELEMENT | TYPE | CLICKS | PERCENT |
| Ocean Life | IMG | 51 | 6.9% |
| What is the biggest source of ocean ... | A | 35 | 4.7% |
| geology | IMG | 28 | 3.8% |
| Why is the ocean salty? | A | 27 | 3.7% |
| How do corals benefit the economy? | A | 20 | 2.7% |
| What does peanut butter have to do w... | A | 18 | 2.4% |
| Health | IMG | 16 | 2.2% |
| Why is the ocean blue? | A | 15 | 2.0% |
| What is the biggest fish in the ocea... | A | 15 | 2.0% |
| What percentage of life is estimated... | A | 14 | 1.9% |
| Can humans drink seawater? | A | 13 | 1.8% |
| Ocean Observation | IMG | 12 | 1.6% |
| query/ | INPUT | 12 | 1.6% |
| Can the ocean freeze? | A | 12 | 1.6% |
| How deep is the ocean? | A | 12 | 1.6% |
| What are the Seven Seas? | A | 11 | 1.5% |
| transportation | IMG | 11 | 1.5% |
| What is the largest living structure... | A | 10 | 1.4% |
| What is a rogue wave? | A | 10 | 1.4% |
| How much water is in the ocean? | A | 10 | 1.4% |
| Do sharks eat people? | A | 9 | 1.2% |
| How many oceans are there? | A | 9 | 1.2% |
| What are tides? | A | 9 | 1.2% |
| What can I do to protect coral reefs... | A | 9 | 1.2% |
| What can the ocean teach us about li... | A | 8 | 1.1% |
| Why do we have an ocean? | A | 8 | 1.1% |
| What is the largest ocean basin on E... | A | 7 | 0.9% |

Other metrics

- Heat maps can show which parts of a page attract attention
- Analysis of search terms used can tell you what vocabulary your visitors use to find you
- Google Trends (<http://www.google.com/trends>) can be used to compare search terms

Known users: a problem

Gathering metrics on anonymous users, from a public Web site, is easy. You may never know the identity of your visitors, but there are no restrictions on use of the data. This is not the case for sites with logins.

- If a visitor must log in, there is a presumption that you will safeguard their credentials. Failure to do so is considered negligence.
- Federal sites must deal with Privacy Act restrictions, HIPAA restrictions, and restrictions on experimenting with human subjects.

Known users: a problem (cont.)

- Metrics from known users are difficult to sanitize
- **Costs of safeguarding private information from known users may exceed all other research costs.**
- Tracing just one user through a Web site may generate more pages of statistics than there are pages in the Web site.

Credits

- Site maps generated from SINI Planning Committee institutions:
<http://nursing.umaryland.edu/sini/committee.htm>
- Qualitative metrics from ForeSee Results,
<http://www.foreseeresults.com/>
- Site statistic examples from National Ocean Service,
<http://oceanservice.noaa.gov>, and related sites.
- Statistical examples generated with Summary,
<http://summary.net>
- Multi-year hits, pages, bandwidth example from Washington Apple Pi, <http://www.wap.org/>
- Heat maps: <http://crazyegg.com/>

Contact

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Lawrence.charters@noaa.gov