National Park Service
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Natural Resource Program Center

2010 Communication Evaluation Survey

Great Lakes Inventory and Monitoring Network

Natural Resource Technical Report NPS/GLKN/NRTR—2011/425



ON THE COVER
A member of the Great Lakes Network vegetation monitoring crew learns how bad things can happen when communication between the Network office and the parks fails or does not exist. (See the Acknowledgements for more information.)
Photograph by: Suzanne Sanders, Great Lakes Inventory and Monitoring Network.

2010 Communication Evaluation Survey

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Natural Resource Technical Report NPS/GLKN/NRTR—2011/425

Ted Gostomski

National Park Service
2800 Lakeshore Drive East, Suite D
Ashland, Wisconsin 54806

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U.S. Department of the Interior
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All manuscripts in the series receive the appropriate level of peer review to ensure that the information is scientifically credible, technically accurate, appropriately written for the intended audience, and designed and published in a professional manner.

This report received informal peer review by subject-matter experts who were not directly involved in the collection, analysis, or reporting of the data.

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This report is available from the Great Lakes Inventory and Monitoring Network website (http://science.nature.nps.gov/im/units/GLKN/reportpubs.cfm) and the Natural Resource Publications Management website (http://www.nature.nps.gov/publications/NRPM).

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Abstract

There are relatively few good examples within the National Park Service of how to evaluate the efficacy and appropriateness of environmental education. Yet for education to be done well, we must evaluate what we do and how we do it, and then use that feedback to continually update and improve our products. This report summarizes the results of a communications evaluation survey conducted by the Great Lakes Inventory and Monitoring Network during the Fall of 2010. A one-page, six-question survey was e-mailed to all employees with government e-mail addresses in the nine Great Lakes Network parks. The purpose of this evaluation was to learn (a) if park staff are aware of the monitoring programs conducted by Network staff in their parks, and if they are aware, (b) how they hear about the Network and its monitoring programs. Third, the evaluation was conducted to determine the usefulness of the Network's current suite of printed products to interpreters and other internal audiences in the nine Network parks. Seventy-three of 596 employees contacted returned a completed survey form (return rate = 12.25%). Just under one-quarter (22%) of respondents were unaware of the Network monitoring programs being conducted in their parks. Those who were unaware of the I&M program were primarily from maintenance and protection divisions. All natural resource management staff were familiar with Network programs. Most employees hear about the Network through e-mail, but the products being used by park staff varied depending on which division they work for. Across all divisions, the Network newsletter (*The Current*) and Resource Briefs for the individual monitoring programs were used most often. Technical reports were universally used by Resource Management staff, were used a little less by staff in the Administration and Protection/LE divisions, but were seldom used by employees in Interpretation and Maintenance divisions. However, these results need to be viewed with some caution because circulation within a park, and hence availability of these products, is not necessarily equal. No suggestions were made to drop any of the communication products currently being used. Suggestions to send e-mail to parks' "All Employee" lists instead of just Resource Management or Interpretation staff will be considered. Interest in specific resource issues such as fire will be addressed through the development of specialized Resource Briefs. Break-downs in communication between the Network and front-line and seasonal employees will be addressed collaboratively with park contacts and by making the web site more prominently known and relied on.

Acknowledgements

I owe a big debt of gratitude to Clayton Russell, professor of Outdoor Education and Environmental Education at Northland College in Ashland, Wisconsin. He was the first to show me the importance of evaluating outreach programs and then using those data to continually improve on delivery and content. I also appreciate the time and thoughtful discussions shared with me by interpretive staff in the Great Lakes Network parks and by my counterparts and colleagues in the I&M program and at the NPS Office of Education and Outreach. My deepest gratitude goes out to all of the park staff who responded to this survey. Most people seem happy with what we are doing and are as enthusiastic about it as we are here at the Network office. Thank you for your kind words and congratulatory remarks. A number of people responded without knowing who we are, and they are the ones to whom I am especially grateful because each of them took the time to submit a survey even when the survey itself was their first indication that the Great Lakes Inventory and Monitoring Network exists. Al Kirschbaum, Joan Elias, David VanderMeulen, Bill Route, Andrea Atkinson, Linda Mutch, and Megan Nortrup lent critical eyes to early drafts of this report, and I appreciate their time and constructive comments. Finally, it is important to say that the photo on the cover of this report was staged, but it began as a very real incident. Thanks to Ranger Jim Dal Sasso at Sleeping Bear Dunes National Lakeshore for his good humor with our vegetation monitoring crew — after confirming their identities and their purpose on the park's back roads.

Introduction

Helping national parks create a solid base of scientific knowledge on which to base management decisions is the primary goal of the National Park Service Inventory and Monitoring program (NPS I&M) (Fancy et al. 2009). To meet this goal, the production of data sets and technical reports for resource managers is an implicit requirement. That is one audience we provide for very well. But sharing knowledge applies to all levels of park management and operations and to the general public. Superintendents need a basic understanding of what issues are most important in relation to protecting the natural resources of their parks. Maintenance, protection, and interpretive staff should have the most up-to-date information about park resources so they can accurately and appropriately talk about them with the public.

The National Park System Advisory Board (2009) stated that the NPS must encourage pubic support of resource protection because it is the broader public who will decide the fate of the park's resources. Scientific findings are only useful and can only be engaged with if they are accessible. Making our findings broadly accessible allows the National Park Service to take advantage of a unique opportunity to improve scientific literacy in the nation and to help foster a national stewardship ethic (Earle et al. 2009). Colwell et al. (2009) noted that knowledge and outreach offer the national parks' best protection, and Soukup (2007) went further in saying that monitoring results, when combined with an effective education program, can help to address larger quality-of-life issues that affect communities around the parks and the environmental health of the nation. Yet, the National Park Service typically fails to capture, assess, and diffuse knowledge of field-based innovations, despite the fact that the rapid sharing of knowledge – and good ideas – ranks as a key management asset (National Parks Second Century Commission 2009, p. 34). To engage internal and external audiences beyond resource managers, it is incumbent upon us to present our data and conclusions in other formats beyond the technical reports.

To this end, two goals of the Great Lakes Inventory and Monitoring Network's communication plan (Gostomski 2009) are to ensure that park natural resource managers and superintendents feel well-informed about the progress and current results of Network monitoring programs. Another goal states that park interpreters will be aware of the I&M program's work in their parks, and that they will have some of the tools they need to share with the public information about and findings from Network monitoring programs. These goals are to be achieved using a variety of communication types (Gostomski 2009). The Great Lakes I&M Network office currently provides the nine Network parks with a suite of products that includes printed materials, presentations, and e-mail and online items (Table 1).

We can only know if our data and information are being presented properly if we evaluate our delivery methods. To do this, I looked to the interpretive division for guidance on how they evaluate their publications and programs, but I found that program evaluation has not been a standard component of the National Park Service interpretive function. Indeed, the National Park Service Education Council noted that there is "very little scientifically valid information about the direct outcomes and impact of interpretation and education programs" (NPSEC 2006, p. 6). Though progress is being made (NPSEC 2006: p. 9, Jackson et al. 2009), it is difficult to find proven guidance for evaluating the effectiveness of communications products and activities,

especially for a science-oriented program such as the Great Lakes Inventory and Monitoring Network. This problem is not unique to the National Park Service though, as standard and widely accepted guidelines for communications evaluation have not existed in either the for-profit or nonprofit worlds (CCMC 2004).

Evaluating the impact of outreach and education programs is necessary because the data inform decisions about which programs or products should be enhanced and which should be discontinued; the data can reveal if something is useful and truly informative or if it sits on a shelf and never reaches the necessary audience (Ernst et al. 2009). Thus, the Great Lakes Network communications plan also calls for evaluating the effectiveness and usefulness of our communications products through impromptu personal interviews with park staff during regular visits to parks, and by conducting at least one structured survey of park staff on a regular basis (Gostomski 2009). The latter was carried out in the fall of 2010.

The purpose of this evaluation was (a) to learn if park staff are aware of the monitoring programs conducted by Network staff in their parks, (b) if they are aware, how they hear about the Network and its monitoring programs, and (c) to determine the usefulness of the Network's current suite of printed products to interpreters and other internal audiences in the nine Network parks.

Table 1. Communication products currently provided to Network parks by the Great Lakes I&M Network office.

Media Type	Product	Distribution
Written	Annual data summary reports (Natural Resource Technical Reports and Natural Resource Data Summaries)	Produced annually for each Vital Sign monitored during the previous year.
	Analysis and synthesis reports (NRTR)	Frequency depends on the given Vital Sign, but at least every 10 years.
	Resource Briefs	Annually as needed, or when requested. Usually provided to parks by 1 April. Posted online, and print copies sent to each park for distribution to staff and public.
	Site Bulletin ("Is there a doctor in the park?")	One site bulletin distributed to parks in 2008.
	The Current (newsletter)	April (preview of field season) and October (summary of field season). Posted online, and print copies sent to each park for distribution to staff and public.

Table 1. Communication products currently provided to Network parks by the Great Lakes I&M Network office (continued).

Media Type	Product	Distribution
Written	Articles in park newspapers	Parks are solicited for interest. Articles have appeared in five park papers between 2008 and 2010.
Presentations	All-staff meetings or seasonal orientation	By request, primarily late May to early June, but could be at any time of year.
	Park lecture series (public)	By request, though parks are solicited for interest. Given primarily June-August, but possibly at other times of year. Five presentations made in four parks, 2009-2010.
Electronic	"News for Parks" list-service (e-mail sent to a select and voluntary list of resource managers, interpreters, superintendents, and other interested staff and partners. Articles concerned with state, regional, and national natural resource issues relevant to Network parks.	Approximately twice a month, depending on "news load."
	Network website (http://science.nature.nps.gov/im/units/glkn/)	All reports, Resource Briefs, newsletters, and plans are available on this site.

Methods

Timeline

Surveys were distributed by e-mail on 8 September 2010 using the "All Employees" lists for the nine Network parks – Sleeping Bear Dunes National Lakeshore, Pictured Rocks National Lakeshore, Isle Royale National Park, Indiana Dunes National Lakeshore, Voyageurs National Park, Grand Portage National Monument, Mississippi National River and Recreation Area, Apostle Islands National Lakeshore, and St. Croix National Scenic Riverway. This list was composed of 596 people. The e-mail was also sent to Network staff and select Midwest Region staff so they would be aware that the evaluation was taking place. The deadline for returns was 15 October 2010, giving 26 working days to complete and return the survey. Reminder e-mails were sent on 4 October and 12 October.

In the interest of gathering as much feedback as possible, the initial e-mail and both reminder messages clearly stated, "I will continue to accept (and use) evaluations [returned] after [15 October] if you absolutely cannot get to it before the October deadline." As of this writing, three surveys have arrived since the closing date, and they have been entered in the evaluation database. The information they contain will help guide future communication efforts by the Great Lakes Network office. However, for the purposes of this summary report, I have used only the responses that were received within the stated timeline.

The survey

There were six questions on the survey, the first two of which required answers from all respondents. Question 1 had two parts and was intended to identify the employment status of the respondent and what division they worked for. Answers to this question, combined with the identification of the park in which the respondent worked, formed the metadata for the rest of the survey.

Park (optional)

1. In what capacity do you work for the park? (*Seasonal, Permanent, Volunteer, Other*)
   What division? (*Administration, Interpretation, Maintenance, Protection/Law Enforcement, Resource Management*)

2. Are you aware of the monitoring programs carried out by Network staff in your park? (*Yes No*)

Respondents answering "no" to question 2 were asked to stop there and submit their survey, as they would be unable to answer any other questions.

3. How do you hear about the Network's monitoring programs in your park? (select all that apply)
   - *e-mail*
   - *Presentation by Network staff*
   - *Mentioned in a staff meeting*
   - *Publication sent around*
   - *Other*

4. Which of the following do you use, and how often?
   Natural Resource Technical Reports (NRTR/NRR)
   Annual Reports for Network monitoring programs
   Resource Briefs for Network monitoring programs
   Network newsletter, The Current
   "News for Parks" e-mails
   Great Lakes Network website

Respondents were asked to "rate" each of the media in question 4 using the following ordinal scale:

1. I read these and file for future reference
2. I read and circulate these to other park staff
3. I don't read these, but I circulate them to other park staff
4. I never use these, and I don't send them to anyone else
5. I never use this/these

The last two questions required qualitative answers.

5. Of the publications you have seen, do you receive them often enough that they are timely and useful? If not, when do you think would be a better time to send them out, or how often should they come out?

6. Are there other types of communications products you think should be added? Any you think we should drop or significantly modify?

Respondents could return surveys by postal mail to the Great Lakes Network office, or they could send it as an e-mail attachment. Obviously, surveys returned by e-mail did not have the same anonymity as did those returned by postal mail, but personal names were *not* attached to any of the collected data, regardless of return method. Park names, though optional, were voluntarily provided on the form by most respondents.

Analysis and summary

Survey results were analyzed and summarized as a pooled total and as sub-sets according to employment status (Permanent *vs*. Seasonal) and division (Administration, Interpretation, Maintenance, Protection/Law Enforcement, Resource Management). Some summaries were made according to park.

Only those answering "yes" to question 2 (are you aware of the monitoring programs carried out by Network staff in your park?) were included in analyses for the rest of the survey. Thus, the sample size for questions 3 through 6 declined from 73 total respondents to 57 respondents familiar with the work of the GLKN in their parks.

Ordinal data (rankings) in question 4 were summarized by calculating the mode, or most common response.

Results

The majority of surveys (81%) were returned as e-mail attachments. Nine surveys were returned by postal mail, one of which was sent to the Midwest Region office instead of the Great Lakes Network office. In total, 73 people completed the survey for a return rate of 12.25% (Table 2).

Table 2. Response rate for GLKN communication evaluation survey, 2010.

Total Staff Contacted	596
Total Number of Responses	73
Return Rate	12.25%

Respondent demographics

Based on the total number of responses (73), the highest number of returns came from Isle Royale (ISRO), with 15 staff members comprising 21% of the total responses (Table 3). Fewer than 10 people responded from six of the parks, but that translated to less than 10% of the total for three of those six – Grand Portage (GRPO), Pictured Rocks (PIRO), and Sleeping Bear Dunes (SLBE). The fewest responses (4, or 5% of the total) came from Sleeping Bear Dunes (SLBE).

Table 3. Number of respondents per park and the proportions of each relative to the total number of responses (n=73).

Park	No. of Respondents	% of Total Responses
Isle Royale NP (ISRO)	15	21
Indiana Dunes NL (INDU)	10	14
St. Croix NSR (SACN)	10	14
Apostle Islands NL (APIS)	8	11
Mississippi NRRA (MISS)	8	11
Voyageurs NP (VOYA)	7	10
Grand Portage NM (GRPO)	6	8
Pictured Rocks NL (PIRO)	5	7
Sleeping Bear Dunes NL (SLBE)	4	5

The park response rates were distributed much differently when the number of respondents per park was compared to the total number of people on each park's "All Employees" e-mail list (Table 4). Distributed in this way, two of the parks with the fewest total respondents (GRPO and

PIRO) jump to the top because of the relatively small number of people employed at each. Though only six of GRPO's staff responded, that is 46% of the total staff on GRPO's "All Employees" e-mail list. Similarly, PIRO's five responding staff members comprise 24% of that park's "All Employees" e-mail list. Apostle Islands (APIS) and SLBE are the only parks whose status does not change under this analysis (Table 4).

Table 4. Number of respondents per park, the number of staff on each park's "All Employees" e-mail list, and the percentage of respondents relative to the staff mailing list.

Park	No. of Respondents	No. of Staff on e-mail List	% of Listed Staff Responding
GRPO	6	13	46
PIRO	5	21	24
MISS	8	46	17
APIS	8	48	17
ISRO	15	99	15
SACN	10	67	15
INDU	10	102	10
VOYA	7	73	10
SLBE	4	127	3

Most of the respondents (73%) were Permanent employees (Table 5), which was expected given that Seasonal staff, though they are assigned an NPS e-mail address, do not always have access to it, and because most Seasonal staff members are gone by October when the survey was conducted. Among the three respondents who identified themselves as "Other," two were Term employees. The third did not specifically identify his/her employment status.

Table 5. Number of respondents by employment status, and the proportion of each relative to the total number of responses (n=73).

Employment Status	No. of Respondents	% of Total Responses
Permanent	53	73
Seasonal	17	23
Other	3	4
Volunteer	0	0

Forty percent (40%) of the total responses came from Resource Management staff, while 25% of the respondents were Interpretation staff (Table 6). A park superintendent and wildland fire managers were among those in the "Other" category. Of the nine parks, only Isle Royale was represented by at least one respondent in each division. Grand Portage, Pictured Rocks, and Voyageurs were each represented by all but one division (no Maintenance staff responded from any of these three).

Table 6. Number of respondents by division, and the proportion of each relative to the total number of responses (n=73).

Division	No. of Respondents	% of Total Responses
Resource Management	29	40
Interpretation	18	25
Protection/Law Enforcement	9	12
Administration	7	10
Maintenance	6	8
Other	3	4
Not identified	1	1

2. Are you aware of the monitoring programs carried out by Network staff in your park?

This key question created the final sample size for the remainder of the survey. Sixteen of the 73 respondents (22%) said that they were unaware of monitoring programs being conducted by Network staff in their parks (Figure 1.)

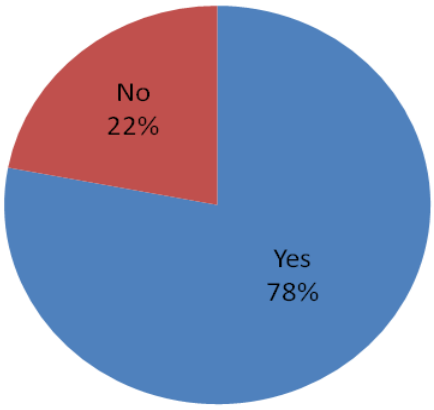
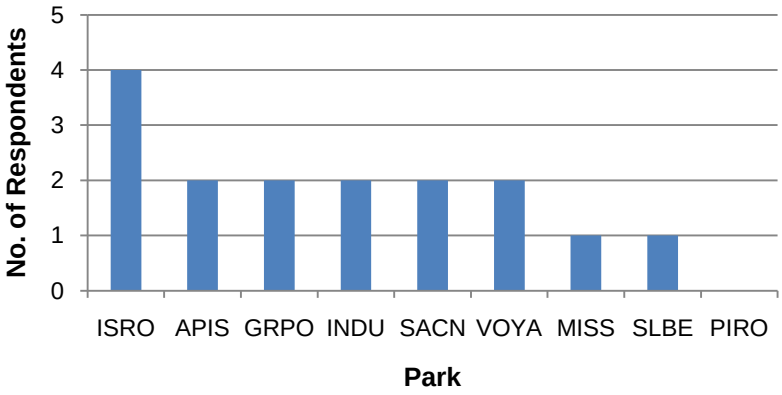


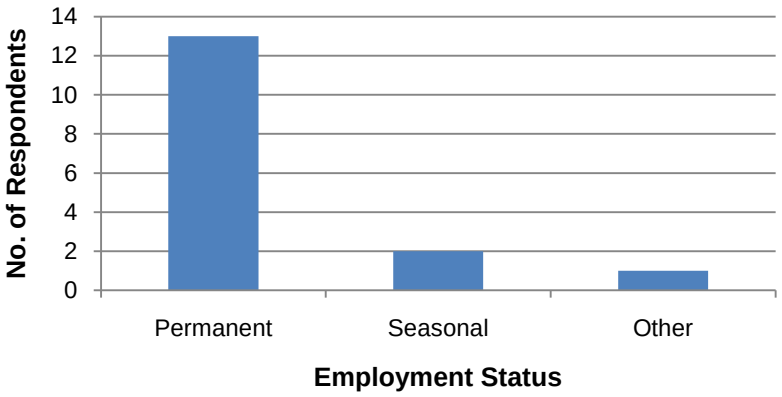
Figure 1. Percentage of respondents (n=73) who said they were unaware of the monitoring programs being carried out by Network staff in their parks.

The greatest number of respondents unfamiliar with the Network worked on Isle Royale in particular or in Maintenance or Protection/Law Enforcement generally (Figure 2). All respondents from Resource Management in general and Pictured Rocks in particular were familiar with the Network.

(a)



(b)



(c)

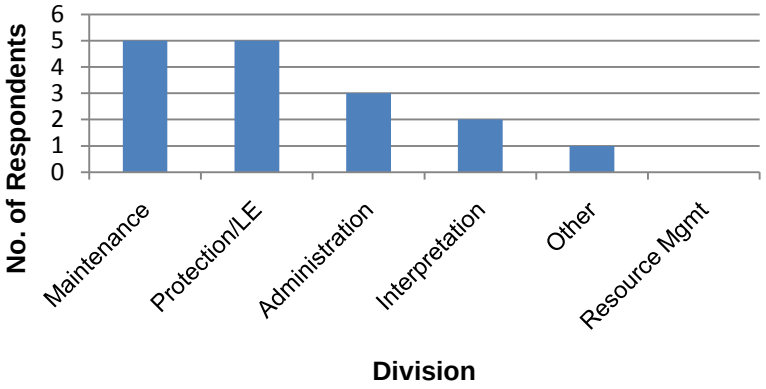


Figure 2. Number of respondents unaware of Network monitoring programs in their parks, by park (a), employment status (b), and division (c). Note the different scales on the Y axis (No. of Respondents).

3. How do you hear about the Network's monitoring programs in your park?

Only those answering "yes" to question 2 were included in further analyses, so the sample size for this and subsequent questions declined from 73 total respondents to 57 respondents familiar with the work of the GLKN in their parks.

Given a list of methods to choose from, respondents said communication by e-mail is the most common method by which they hear about the Network and its monitoring programs (Table 7). Network publications and presentations made by Network staff were equally cited as the second-most common method by which park staff hear about the Network.

Table 7. Methods by which park staff hear about Network monitoring programs in their parks (n=57).

Method of Communication	No. of Respondents
e-mail	31
Presentation by Network staff	27
Publication	27
Mentioned in a staff meeting	23
Other	22

In contrast to Permanent staff, most Seasonal staff indicated that they hear about the Network in "Other" ways (Table 8). Written comments provided by 22 respondents (Permanent and Seasonal staff combined) in response to this question revealed that the majority of park staff who hear about us in "Other" ways do so through some sort of personal contact with Network staff

Table 8. Methods by which park staff, according to employment status, hear about Network monitoring programs in their parks (n=57).

Status	e-mail	Presentation by Network staff	Mentioned in a staff meeting	Publication	Other
Permanent	27	22	17	21	11
Seasonal	3	4	5	5	10
Other	1	1	1	1	1

while the latter are at the parks (Figure 3). More than half (55%) of the written comments indicated that respondents met Network staff because of shared office space at the park or in some other informal setting. Another 20% said they assisted Network staff with field work.

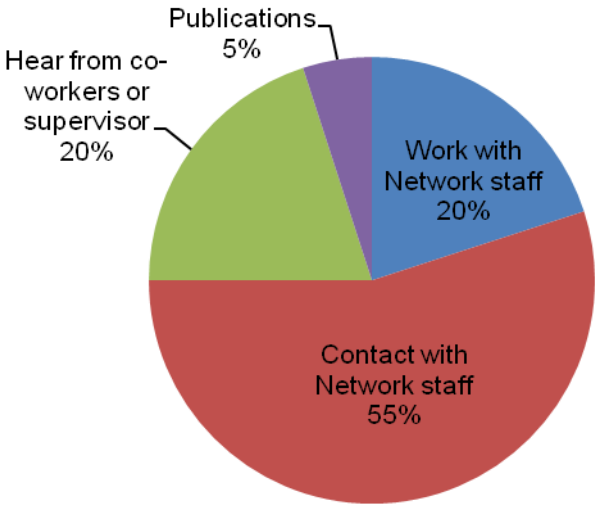


Figure 3. General themes of comments written in response to question 3 that clarified the "Other" ways in which park staff learned of the Network's presence in their parks (n=22).

In addition to the comments above, some park staff said they did not hear about specific monitoring projects, or they may have heard of them but never heard results. Some respondents indicated that they hear about the Network through their park resource management staff. Analysis of communication methods by division revealed little, as responses were scattered across the methods spectrum.

4. Which of the following do you use and how often?

Resource Briefs and the Network newsletter, *The Current*, are the forms of communication most used (and circulated) by all the respondents (Table 9). However, these overall results masked nuances of how employment status and division influence what items are used. Permanent staff find all of our products equally useful, while Seasonal staff are not using any of the products we distribute (Table 10).

Table 9. Network communication products used by park staff (n=57). Numbers represent the calculated mode for each product. 1 = Use and file; 2 = Use and circulate; 3 = Don't use but do circulate; 4 = Don't use and don't circulate; 5 = Never use.

Technical Reports	Annual Reports	Resource Briefs	Newsletter	"News for Parks" e-mail
5	5	2	2	5

Table 10. Network communication products used by staff, according to employment status (n=57). Except for the "Other" category (n=2), numbers represent the calculated mode for each product. 1 = Use and file; 2 = Use and circulate; 3 = Don't use but do circulate; 4 = Don't use and don't circulate; 5 = Never use.

Status	Technical Reports	Annual Reports	Resource Briefs	Newsletter	"News for Parks" e-mail
Permanent	2	1	2	2	2
Seasonal	5	5	5	5	5
Other	2/1	2/1	2/2	2/1	2/1

Similarly, those in Resource Management and Administration are using everything the Network produces, while those in Maintenance apparently are not seeing anything we produce and distribute (Table 11). Interestingly, Protection/Law Enforcement staff reported using and circulating everything the Network distributes (Table 11). Anecdotal evidence suggests that there are at least a few Protection/Law Enforcement employees who have a personal interest in resource management and will seek out information produced by the park or the Network (David VanderMeulen, personal communication).

Table 11. Network communication products used by park staff, according to division (n=57). Numbers represent the calculated mode for each product. 1 = Use and file; 2 = Use and circulate; 3 = Don't use but do circulate; 4 = Don't use and don't circulate; 5 = Never use.

Division	Technical Reports	Annual Reports	Resource Briefs	Newsletter	"News for Parks" e-mail
Administration	2	2	2	2	2
Interpretation	5	5	2	2	5
Maintenance	5	5	5	5	5
Protection/LE	2	2	2	2	2
Resource Mgmt	1	1	2	1	1
Other	-	-	-	2	-

Notable written comments regarding which products park staff are using are listed in Table 12. Resource Briefs and the newsletter are among the most-commented-on items, though there are indications that not everything sent to points of contact at the parks is making it out into the other divisions. There is also some indication that our website could be more user-friendly.

Table 12. Notable comments submitted by park staff in response to what communication products they use.

• I read everything the Network distributes … The newsletter is great.
• Have never seen or heard of the reports or Resource Briefs, but would like to see them.
• … many of these reports and publications are not made easily/readily available to our division [Interpretation].
• Just read the website.
• I may remember having seen [Resource Briefs] occasionally.
• I have looked [at the website] on occasion, but do not do regularly/not sure how best to make it work for me to quickly get information. I have tried to find reports but did not know all the places to look to retrieve it.
• Resource briefs are "the only [publication] I ever see."

5. Are publications timely and useful? 6. Are there other types of communications products you think should be added? Any you think we should drop or significantly modify?

Qualitative data collected for questions 5 and 6 were wide-ranging. No one suggested any changes to our current product portfolio, nor was it suggested that anything be discontinued. Favored items and suggestions for things to add could be collapsed into 16 categories (Table 13).

Table 13. General categories for comments regarding favored items or suggestions for things to add, in answer to questions 5 and 6.

Favored or Suggested Item	No. of Comments
e-mail	9
Newsletter	9
Briefs	8
Annual reports	4
All Employee e-mail	3
News for Parks [e-mail}	3
Meetings	2
Monthly newsletter/update	2
Presentations	2
Website	2
Brochures, database, press release, summary report, Unigrid (site bulletin or brochure), webcasts	1 comment each

Some of the comments suggesting items we should produce and distribute were for items we are already producing and distributing, such as a brochure, Resource Briefs, annual and summary reports, and a "Unigrid" product (a generic NPS term for a site bulletin or brochure); the Network distributed a site bulletin ("Is There a Doctor In the Park?") in 2009.

Some of the comments received in response to questions 5 and 6 are shown below. Highlighting these particular comments is valuable because they provide insights on how communication is working within a park (i.e., are Network products being distributed as intended?), the effectiveness of the Network's communication efforts (are we producing items that are useful?), or because they point out issues that we need to address.

Timely and useful?

- The publications I've seen have been very useful. They would be good to have to provide to seasonal staff at the beginning of the season.
- I am not aware of the publications [and] how they relate to park/my work.
- I have never received them. How are they usually distributed?
- I don't receive any of the … publications.
- I do not receive any of the [publications], nor have I heard of them.
- The publications I do receive are very useful and I do get them in a timely fashion. … I have not however seen several of the publications mentioned.
- I have never seen any publications from the Great Lakes Network that benefit the wildland fire programs I manage.
- The "News for Parks" e-mails are the timeliest and I find them quite useful for staying aware of issues affecting not only our park but others in the network.
- [Publications] should be made available to us in a written form and filed into a library of some sort.
- [I] am forwarded e-mail links by the biological science technician or provided with publications upon request.
- Maybe a monthly newsletter would help.
- Timing should coincide with beginning and end of field season.
- Anything we can get early in the season (May and June) is very helpful for training our seasonal staff.
- As a seasonal, toward the beginning of each season would be the most appropriate time for me to become familiar with what happens at the network office.
- I don't feel efforts are integrated. You do your stuff, we do our stuff, and there is little partnering. Data you collect is not "easily" collected.
- I don't really see the publications.
- Outreach to the press on the eagle contaminants issue (including the tie to local students) has been particularly outstanding.

- A monthly update could be useful. I would be interested in knowing on a regular basis what has been found and what is going on with the project.
- Send all-employee e-mails a few times each season so everyone (not just resource management) is aware of the projects.
- I'm not sure that annual reports for the vital signs are critical – I don't know what the current schedule is, but putting out vital sign summary reports every two – three years seems often enough to me.

Any products we should add, drop, or modify?

- I don't think you need any more things coming out – you are doing quite a bit now.
- Current mix seems good … Briefs and newsletters help advertise the program and keep it current in the minds of other divisions.
- E-mails related to park-specific activities and findings along with what you would like us to make sure the public is aware of would be helpful. Any way to help the interpretive division know more.
- You provide a great resource and it is well known in our park where to go for this type of information.
- I don't use your website, so I don't know how much information is on it, but any reports or information you could post on the site would be very helpful for our staff to use when putting together programs.
- … enjoy the newsletter and the Resource Briefs that are park-specific. I'm not as familiar with the longer, more detailed reports.
- Particularly enjoy the "News for Parks" e-mails. I find the annual reports and resource briefs very useful and I refer to the website periodically.
- Prefer short and frequent e-mails with bullets or summaries.
- I read the "all employee" e-mails when I think that it will pertain to myself or my employees.
- Personal contact is best, yet very difficult to arrange.
- I think meetings would be most appropriate to somehow open channels between the parks and the network office staff …
- I think the Resource Briefs are the best bang for the buck, but the newsletter is good too.
- I think what you're doing to communicate findings to park staff members is great. If you ever want to reach students, you might consider posting some short webcasts of I&M staff and partners ...in the field, [talk about goals, why they enjoy job].
- If we could develop a few attractive brochures for park visitors that would be great.
- Minimally, I would like to see a report at the end of the season, as to what has been accomplished/learned and why it is important. Currently, most of what I learn about the Network's efforts comes directly from Network employees…during boat transport.
- More newsletters! Maybe more often, but each one shorter?

- Maybe an e-mail to All ISRO staff that [the] newsletter or whatever is coming out with Isle Royale news. A brief on the actual work done out here … before it's done so I can communicate to the visitor what the folks are doing with some level of information. … Also timely communication and actual names of the staff working in the field before each cycle of a project schedule …
- [Network staff] should … be identifiable as park employees when doing work in the field … [and] … be able to answer a few public questions when seen.
- I enjoy *The Current*. It is a well done publication. I also like the presentations given by I&M Network staff when they are at Voyageurs. Keep up the good work.
- Other than [*The*] *Current,* I do not know of other products.
- The I&M is useful as it is databased and able to be accessed.
- Semi-annual briefings via e-mail to All Employees describing projects and progress would do more to inform field staff (esp. Maintenance) what it's all about than any publication would.
- Short capstone summaries of major findings sent out semi-annually would be useful. I think that the I&M reps at each park might take a more active role in communicating the information relevant for each park.
- Stop clogging my e-mail with trivial stories. If I want news I can seek it out. I don't get paid to read news articles.
- Would like to see fire ecology research conducted. When one visits most other I&M Networks' websites, fire ecology is a prominent part of their research. What would be wrong with moving toward that goal in the Great Lakes Network?
- I do not know if my lack of information is due to my park's communication of these activities to Fire or Fire management['s communication] to my level, or if it is the network's need to communicate to the park. I would be open to suggestions on how to stay in the know about what I&M is doing. I recommend E-mails with links [to] your information.

Conclusions

Methods and response

The population of 596 people on the All Employees e-mail list fits what is the generally recommended *sample size* (not population size) for most major mail polls (400-500) and exceeds what is the recommended sample for small target populations (200) (Jacobson 1999). But our sample size was 73, with only 57 of those being familiar with the Network.

A minimum response rate for mail (including e-mail) surveys is reportedly 30% if no reminders are sent, and the rate should reach 60% when follow-up and reminder mailings are sent (Jacobson 1999). Two reminders were issued for this survey, so a sample size of 234 respondents (39% response rate) was necessary to achieve a 5% margin of error and 95% confidence level in our results. With the sample size of 73 that we achieved, margin of error rose to 10.75% (Raosoft 2004). Though the margin of error was much higher than desired, the information gleaned from the survey still gives a sense of what is working and what is not, and it points out gaps to be addressed.

What formats seem to be working?

Overall, e-mail and *The Current* newsletter are the most popular forms of communication between the Network office and the parks. Resource Briefs are the most used item. It is encouraging that presentations by Network staff also ranked highly. But what is useful depends on the audience. For example, Resource Management staff reported using the technical and annual summary reports *and* filing them for later reference, while using but then passing on the Resource Briefs for others to read. Administrators and Protection/Law Enforcement staff may be interested in the technical documents, but are more likely to scan through them and pass them on.

Interpretive staff are using the Resource Briefs almost exclusively, but at least one respondent mentioned that Network monitoring information is not making its way from Resource Management to the Interpretation staff. The tendency to not circulate technical reports is understandable given the material and its intended audience, but the best scenario is for all park staff to have access to, or at least be aware of, where to find more in-depth information about Network monitoring programs. All reports are available on our web site, but we will work at making the site more user-friendly and send out periodic reminders of how to get information from the site.

We need to do a better job of announcing the availability of staff to make a presentation while working in the parks. The general schedules of field staff are published in the spring newsletter each year, but we can also send out a park-specific e-mail to all employees announcing when staff will be available and following those e-mails with a phone call to the park to inquire about their interest in having a presentation.

The popularity of the Resource Briefs can be used to create specialized items for parks. Briefs on such issues as the implications of our vegetation monitoring data for fire management, or to clarify incidents of cyanobacteria outbreaks on Isle Royale lakes are two examples we will work to implement. Other such briefs will be devised in consultation with park staff to see what issues are of greatest interest to them.

What groups do we need to better target?

When the San Francisco Bay Area I&M Network conducted a survey of NPS staff and partners regarding current communications practices, "many" respondents had not heard of the existing information sources they were being asked to evaluate (DeBacker et al. 2009). In this survey, Maintenance and Protection/Law Enforcement were the least represented divisions among the respondents. Of those who did respond, 5 of 6 Maintenance staff (83%) and 5 of 9 Protection/LE staff (55%) were unaware of the Network's monitoring programs in their parks. To remedy this, the Network will periodically distribute an e-mail notice to all park employees to let them know about the publication of newsletters and park-specific resource briefs and to make everyone aware when Network staff will be working in the park. The spring issue of *The Current* does give general information about who will be in which parks and when during the upcoming field season, but a more detailed e-mail to park staff may give more opportunity for an individual to plan for and set up a day to work with Network staff in the field.

Clearing the lines of communication

A bigger issue to address seems to be how information is disseminated once it reaches the parks. Suggestions to implement things we are already doing and specific comments regarding intra-park communication (e.g., from an interpreter, "… *many of these reports and publications are not made easily/readily available to our division*") suggest that communication products sent from the Network to points-of-contact in the parks are not always being passed on to other divisions or "front line" positions. One-quarter (25%) of respondents who provided comments mentioned that they did not know about the Network monitoring programs or were not familiar with our publications. This does not include the number of people who suggested we do things that we are already doing. North Coast and Cascades I&M Network also found that scientific information collected in the field did not always reach the public or interpretive staff. In fact, they found that it was often unclear if anyone was responsible for relaying information (DeBacker 2009).

During face-to-face meetings with park staff in 2008, points-of-contact were identified at seven of the nine parks (Gostomski 2009). All those individuals are on one or more e-mail distribution lists maintained by the Network Science Writer and are included on the mailing list to receive printed versions of *The Current* (150 copies of the Spring 2009 issue and 50 copies of the Spring 2010 issue were sent to each park). Additionally, packets of printed Resource Briefs were sent to both the Resource Management and Interpretation division chiefs (or their designees) at the start of the field season in 2009 and 2010 for distribution to staff, especially during seasonal training, and to the public. Yet, impromptu on-site evaluations of park visitor centers by the Network Science Writer between November 2009 and August 2010 (unpublished data for four parks, anecdotal data for two others) found Network publications on display in only two parks. Further, when asked, staff members at one park whose seasonal orientation had just occurred that week stated that Network monitoring programs were not mentioned during Resource Management's portion of the program and Network publications were not made available.

During the coming year, the Network Science Writer will review with each park who the point-of-contact should be and what that entails. New staff have come to some of the parks, so what was decided in 2008 may no longer apply. With two years of experience behind us, we also have

a clear idea of the publication schedule for different communications products, so we can better define what being a point-of-contact means.

It was the purpose of this evaluation to learn if park staff are aware of the monitoring programs conducted by Network staff in their parks; if they are aware, how they hear about the Network and its monitoring programs; and to determine the usefulness of the Network's current suite of printed products to interpreters and other internal audiences in the nine Network parks. A corollary of these goals is to identify where communication may be breaking down and to work with the parks to improve those channels. As stated at the outset of this report, "Knowledge and outreach offer the national parks' best protection," and the rapid sharing of knowledge is a key management asset. With data from this survey now in-hand, such improvements can be made.

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National Park Service
U.S. Department of the Interior

Natural Resource Program Center
1201 Oakridge Drive, Suite 150
Fort Collins, CO 80525

www.nature.nps.gov