



San Francisco Bay Area Network Natural Resources Communication Strategy

Natural Resource Report NPS/SFAN/NRR—2009/169



ON THE COVER

View of the Golden Gate Bridge and Fort Point National Historic Site
Photograph courtesy of the Golden Gate National Recreation Area

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Executive Summary

Important scientific information comes from a number of sources in the San Francisco Bay Area Network (SFAN) of the National Park Service (NPS), including the Inventory & Monitoring (I&M) Program, the Pacific Coast Science and Learning Center (PCSLC), park natural resource professionals, and academic researchers. Yet, more often than not, this information is presented in a way that is too technical to be useful to many audiences. In most cases, natural resources staff members do not have the time or resources to produce clearly synthesized outreach materials, and those who try are faced with the daunting task of communicating with an incredibly large, diverse, and dispersed audience of cross-divisional NPS employees, partner groups, and the public.

Park and partner group staff members were surveyed about current communications practices, preferred information sources, and obstacles to getting adequate information. Their responses revealed that information needs are similar among people in a particular division or group regardless of where they work. For example, superintendents want highly synthesized, distilled information with a clear link to management issues. Natural resources staff tend to need information at a greater level of technical depth but only on the particular topics they specialize in. On the other hand, interpreters and communicators need information on a broad range of topics, but not in great detail. Law enforcement officers are most interested in information related to regulations that they are responsible for enforcing. Finally, partner groups want information written in lay-terms about a variety of topics that are appropriate to share with the public.

The surveys also provided insights into how natural resources information is currently being communicated and how information sharing can be improved. By far, the primary means for getting information is personal communication—including at meetings, through conversations with coworkers, and/or knowing who to call with questions. Many respondents had not heard of the existing NPS information sources they were being asked to evaluate. Most find that it is hard to find information when they need it because it is scattered among various websites and is often kept on local network drives. Partners find it particularly difficult to access NPS information. To help resolve these issues, a majority of respondents asked for a one-stop-shop website that includes a wide variety of information organized by subject, has a good search engine, and presents information at several levels of technical depth. Other recommended changes include:

- Increase the distribution and awareness of existing resources
- Provide contact lists so people know who to call when they have a question
- Encourage opportunities for personal communication such as meetings and field trips
- Produce more concise briefings, factsheets, and newsletters with visuals
- Expand the Parks for Science newsletter to be a network-wide resource
- Expand and reorganize the I&M monthly update
- Include executive summaries on all annual reports
- Produce an annual report card or status update
- Develop a Power Point road show describing what SFAN is
- Hold an annual science symposium
- Re-start the GOGA brown bag lunch series

Acknowledgments

Many people contributed to this strategy: Sharon Farrell and the Golden Gate National Parks Conservancy extended support and partnership, Marcus Koenen, Jessica Luo, and Ben Becker provided guidance and feedback, and many National Park Service and partner staff members generously gave their time to participate in the interviews and fill out the questionnaires upon which this strategy is based.

Chapter 1- Project Background and Need

The Challenge

Important scientific information comes from a number of sources in the San Francisco Bay Area Network (SFAN) of the National Park Service (NPS), including the Inventory & Monitoring (I&M) Program, the Pacific Coast Science and Learning Center (PCSLC), park natural resource professionals, and academic researchers. This information addresses critical research questions, reports new findings, tracks the status and trends of resources, and describes the results of restoration efforts. Although this wealth of information is necessary to support outreach, interpretation, and management efforts such as General Management Plans, Resource Stewardship Strategies, Natural Resource Condition Assessments, Fire Management Plans, environmental compliance, etc..., there is no comprehensive strategy for how to get it to those who need it in a format that is useful to them.

Often, scientific data are presented by natural resources staff in a way that is too technical to be useful to many audiences. A shortage of time and resources makes it difficult to produce clearly synthesized communications materials—a challenge that is further compounded by the need to find appropriate methods to communicate effectively with an incredibly large and diverse audience dispersed across the five network parks:

- Point Reyes National Seashore (PORE)
- Golden Gate National Recreation Area (GOGA)
- Pinnacles National Monument (PINN)
- John Muir National Historic Site (JOMU)
- Eugene O'Neill National Historic Site (EUON)

These parks span five San Francisco Bay area counties, and each encompasses unique ecological and cultural resources, a varied set of goals, and a diverse population of park visitors. Internal NPS and partner audiences also represent a wide variety of interests, information needs, and levels of expertise, including:

- A range of local, regional, and national NPS staff, including: park planners, public affairs officers, and senior staff
- Various NPS divisions such as cultural resources, interpretation, law enforcement, maintenance, and natural resources
- NPS volunteers and seasonal employees
- Partner organizations involved in education and stewardship including (but not limited to): Golden Gate National Parks Conservancy, Golden Gate Raptor Observatory, Headlands Institute, Marin Headlands YMCA, Bay Area Discovery Museum, Slide Ranch, Presidio Trust, Point Reyes Bird Observatory (PRBO) Conservation Science, and Point Reyes National Seashore Association

In 2006, SFAN held a science communications workshop to learn how to more effectively communicate with its audiences. During the workshop it became clear that while there were a number of existing communication products, the network did not have a strategic or organized approach to sharing natural resources information. A workgroup of interpretive and natural

resources staff members convened to discuss ways to improve this approach. They recognized that the first step was to understand how information is currently being shared, obstacles to getting sufficient information, what kind of information people want, and in what format they prefer to get it in. This plan addresses these questions and makes recommendations for a more strategic, integrated, and effective science communication program.

Chapter 2 - Approach and Summary Results

The Approach

The I&M Program and the Golden Gate National Parks Conservancy (GGNPC) partnered to develop a natural resources communication strategy based on input from NPS staff and partners. The project began with familiarization and scoping of SFAN natural resource programs, the flow of natural resource information (Figure 1), and current communication efforts. A cross section of NPS staff and partner groups was then surveyed through a combination of interviews and questionnaires (Appendix A). Participants were asked about their natural resource information needs and preferences including content (Appendix E) and format, challenges to getting sufficient information, and the effectiveness of existing information sources.

Their responses were then used to develop the following strategy to effectively disseminate natural resource information to NPS and partner audiences over the next five years. The strategy both evaluates existing communications methods and identifies new messages, products, and strategies to facilitate communication among SFAN park staff and partner groups.

Every attempt was made to make recommendations that leverage and improve upon existing efforts rather than create new responsibilities for already busy staff members; however, full implementation will likely require the hiring of an additional person to help produce communications materials, coordinate information gathering and sharing, and maintain the currency of information sources. Ideally, this position would be shared by the network parks, programs, and partner groups.

Familiarization & Scoping

The project began with developing an understanding of the focus of NPS scientific programs, including the I&M Program, PCSLC, Fire Program, Exotic Plant Management Team (EPMT), and individual park natural resource programs.

Network Programs

Inventory & Monitoring Program (I&M)

As part of the National Park Service's effort to improve park management through greater reliance on scientific knowledge, the I&M Program collects, organizes, and presents natural resource data in ways that are appropriate for a variety of audiences (Fancy et al. 2009). The primary goals of the program are to:

- inventory the natural resources under National Park Service stewardship to determine their nature and status;
- monitor park ecosystems to better understand their dynamic nature and condition and to provide reference points for comparisons with other, altered environments;
- establish natural resource inventory and monitoring as a standard practice throughout the National Park system that transcends traditional program, activity, and funding boundaries;
- integrate natural resource inventory and monitoring information into National Park Service planning, management, and decision making;

- share National Park Service accomplishments and information with other natural resource organizations and form partnerships for attaining common goals and objectives.

Pacific Coast Science and Learning Center (PCSLC)

The PCSLC is one of 20 National Park Service Research Learning Centers in the country. The Center leverages existing facilities and the skills of researchers and National Park Service education specialists to share scientific information for park management and public education. They also facilitate the use of parks for scientific inquiry, support science-informed decision-making, and promote resource stewardship through partnerships.

Fire Program

The Golden Gate National Recreation Area's Office of Fire Management serves all SFAN parks. The mission of this program is to manage fire in such a way as to retain its beneficial effects in the ecosystem while protecting resources, property, and lives. They also work to refine fire management practices through research and monitoring, and to foster informed public participation in fire management activities.

Exotic Plant Management Team (EPMT)

The California EPMT is based in Point Reyes National Seashore. While they once served as a “swat team,” working on invasive plant management at 14 different parks across the state, they have now shifted their focus to sponsoring invasive plant removal programs in these parks to better leverage their limited resources.

Network Parks

All five network parks are considered in this strategy. The focus of each park is described below.

Golden Gate National Recreation Area (GOGA)

The Golden Gate National Recreation Area (GOGA) was established to preserve the natural, historic, scenic, and recreational values of a number of sites in the Bay area. GOGA consists of approximately 34 sites spread across Marin, San Francisco, and San Mateo Counties. The sheer diversity and quantity of natural resources represented by these sites and their disparate locations present special management and communications challenges. Park partners include, but are not limited to, the Golden Gate National Parks Conservancy (GGNPC), Golden Gate Raptor Observatory, Presidio Trust, Marin Headlands YMCA, Headlands Institute, Bay Area Discovery Museum, and Slide Ranch.

Point Reyes National Seashore (PORE)

Point Reyes is the only National Seashore in the western United States. It was established to protect the seashore for recreational, educational, historic preservation, interpretation, and scientific research opportunities. It is also home to a unique and diverse array of resources, including a marine conservation area, a wilderness area, historic dairy ranches, and several endangered and/or charismatic species such as endangered coho salmon and northern spotted owls, sea lions and tule elk. Park partners include, but are not limited to, the Point Reyes National Seashore Association and the PRBO Conservation Science.

Pinnacles National Monument (PINN)

Pinnacles National Monument was established in 1908 to protect the unique rock formations of the area, but has been expanded over the years to its current range of about 26,000 acres. The park is also known for its other geologic features such as talus caves and evidence of tectonic plate movement. Notable natural resources present in the park include the endangered California condor, threatened California red-legged frogs and tiger salamanders, bats, and the highest known diversity of bee species per unit area anywhere in the world. Park partners include, but are not limited to, Friends of Pinnacles.

John Muir National Historic Site (JOMU)

The John Muir National Historic Site preserves the Victorian home and a small portion of the original land owned by the well-known conservationist. The home is surrounded by landscaping, almost nine acres of fruit orchards, and 326 acres of oak woodland. While the focus of the park is preservation of these historic cultural resources, the I&M Program has inventoried park natural resources including bats, birds, butterflies, and plants.

Eugene O'Neill National Historic Site (EUON)

America's only Nobel Prize winning playwright, Eugene O'Neill, made his home in the San Francisco Bay Area. Tao House was where he wrote his last plays including: The Iceman Cometh, Long Day's Journey Into Night, and A Moon for the Misbegotten. While primarily a cultural resource, the 13-acre site has hiking trails and is a popular bird watching spot.

Information Users, Flow, and Preferred Sources

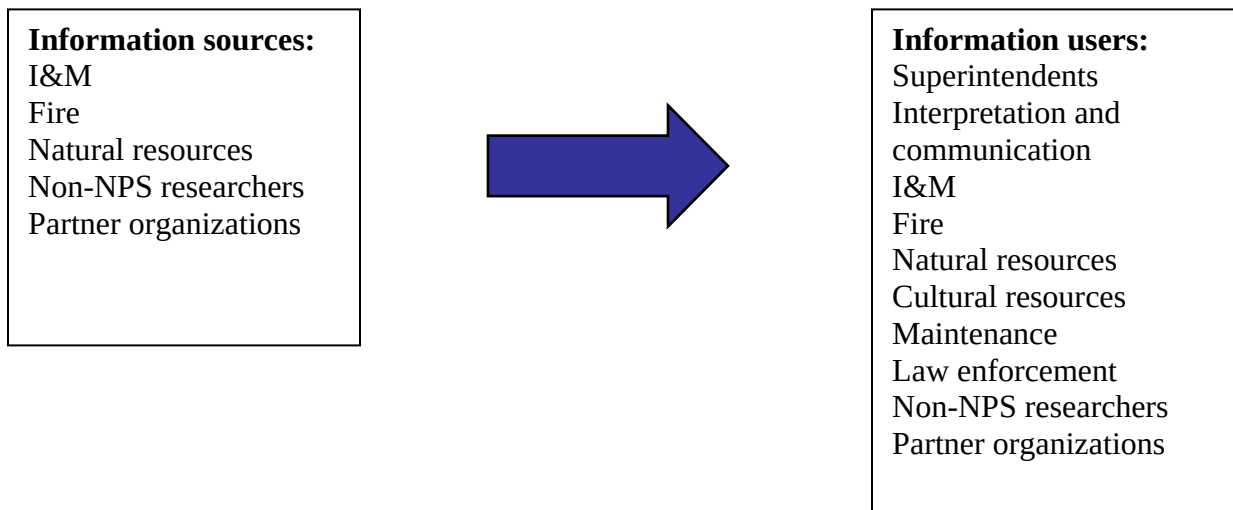


Figure 1. Natural Resources Information Sources and Users

NPS Participants:

Internal NPS stakeholders who contributed to the development of this strategy include (number of individuals in parentheses) superintendents (4); interpretation, communication; and education staff (17); natural resources staff (23); and law enforcement staff (3). No one from the Maintenance Division was able to participate.

Partner Participants:

Partner groups who provided input to the plan include: Golden Gate National Parks Conservancy (5), Golden Gate Raptor Observatory (1), Presidio Trust (3), PRBO Conservation Science (1), Point Reyes National Seashore Association (2), Headlands Institute (1), Bay Area Discovery Museum (1), Slide Ranch (1), and the Marin Headlands YMCA (1).

All participants were asked about their information needs and preferences, and how they currently get natural resources information. They were also given the list of existing sources below, asked if they had ever used them, and if so, to rank their effectiveness on a scale of 1 (not effective) to 5 (very effective).

- I&M Website
- PCSLC Website
- Fire Program Website
- Park-based Nature and Science Websites (Internet)
- Park Intranet Sites
- I&M Monthly E-mail Update
- PCSLC Parks for Science Newsletter
- Project Specific Electronic Updates
 - Coho Salmon Updates
 - Snowy Plover Updates
 - Harbor Seal and Elephant Seal Updates
 - Raptor Updates (PINN)
- Project Specific Annual Reports (which ones)
- Project Specific two-page Executive Briefings (Research Project Summaries)
- Brown Bag Series (PORE)
- Brown Bag Series (GOGA)
- Audio Stories
- Other (Please list)

These scores were then averaged: a score of 4–5 was considered very effective, 2.5–3 moderately effective, and 1–2.4 ineffective. Similarly, participants were asked to rank their familiarity with the natural resource programs in SFAN on a scale of 1 to 5 (see Appendix A for the complete survey).

Summary Results

By far, the primary means for sharing information is personal communication—including at meetings, through conversations with coworkers, and/or knowing who to call with questions. Many respondents had not heard of the existing information sources from the list above that they were being asked to evaluate. Most find that it is hard to get information when they need it because it is scattered among various websites and is often kept on network drives. Partners find it particularly difficult to access NPS information sources. To help resolve these issues a majority of respondents asked for a one-stop-shop website with a wide variety of information organized by subject, a good search engine, and information presented at several levels of technical depth.

While the different parks face unique challenges and opportunities, surveys revealed that information needs are similar among people in a particular division or group regardless of what

park they work in. For example, superintendents want highly synthesized, distilled information with a clear link to management issues. Natural resource staff members tend to need information at a greater level of technical depth but only on the particular topics they specialize in. Interpreters and communicators on the other hand need information on a broad range of topics, but not in great detail. Law enforcement staff are most interested in information related to regulations that they are responsible for enforcing. Finally, partner groups want information written in lay-terms about a variety of topics that are of interest to their members and are appropriate to share with the public.

In addition to the general results above, highlights of the responses for each group are summarized below. Detailed summaries are in Appendix C. A diagram outlining the current flow of information and improvements in audience outreach as a result of the recommendations in this strategy immediately follows this section (Figure 2).

Superintendents:

- Need information on an issue-by-issue basis with a clear link to management and planning
- Prefer highly distilled, concise summaries with graphics and links to more information
- Appreciate timely information and trend data to help understand and respond to an issue

Natural Resources:

Chiefs and Program Leads

- Prefer information presented in a highly distilled and succinct way
- Want to know the broader context for data and to understand trends
- Like the interactive nature of brown bag presentations

Program Staff

- Need information at a much greater technical depth on a narrower range of topics than other groups
- Like information sources that are easy to find, brief enough to be digestible, and include links more information
- Have mixed feelings about the effectiveness of park websites, but agree that they could be improved by making the information easier to find and providing multiple levels of technical depth

Interpretation and Education:

Chiefs

- Prefer to get information in an easily digestible format like executive summaries with a link to more information
- Need timely information that is appropriate for external audiences
- Often have to go look for information they need, but would prefer it came to them

Program Staff

- Receive highly variable amounts of information—some staff feel very well informed while others get very little information

- Like concise, non-technical summaries on topics that they can use in presentations to the public
- Want to help natural resources staff with product development

Communications:

Public Information Officers

- Need attention-getting highlights in a one or two-page format with graphics and a link to more information
- Find tiered information most useful
- Tend to be more reactive to media inquiries than proactively putting out information, but would like to target reporters more often

PCSLC Staff

- Prefer sources that are well populated, short, up-to-date, and that are easy to find and navigate
- Would like to improve the content and navigation of the PSCLC website
- Think that maybe the intended audience for the Parks for Science newsletter should be expanded beyond high school students to include a range of park staff and partners

Communications Liaison

- Thinks the information on the GOGA common drive is generally poorly organized and labeled
- Finds that in many cases if you want information you have to track down a person to ask
- Thinks the biggest challenge for GOGA is that parks are so far apart and some lack internet and e-mail access

Law Enforcement:

- Need to be able to access basic information quickly
- Want to know how information relates to regulations that they are responsible for enforcing
- Do not use e-mail and websites as often as other divisions because officers are often away from their desks

Partners:

GGNPC

- Prefer information sources that are written in a straightforward, non-technical way, are easy to find and navigate, and have bullets with links to more information
- Often do not know that resources exist or cannot access them as non-NPS employees—including most of the sites listed on the survey
- Want to know what information can or should be shared with the public

Presidio Trust

- Like information sources that are well populated and allow users to add and exchange information such as tools, maps, and project summaries
- Think that the GOGA website could be better organized and populated

- Feel that if there is a project going on in the Presidio they are probably already aware of it, but information about what is happening at other parks can be hard to find

PRNSA

- Want non-technical information that can be disseminated to the public
- Find that not being part of NPS makes it hard to know about projects other than those PRNSA is directly involved in
- Would like more detail and specificity in sources like the PORE website and e-mail updates

Other Partners

- Use select information that relates directly to their geographic location or things that are of special interest to their audiences (often students) such as “charismatic megafauna”
- Find access to information to be the biggest challenge—not getting updates, not having access to park drives or networks, and not even knowing what exists
- Think that the information that does come to them is often too long and technical, and would be more useful if it were written in lay terms

Figure 2 outlines the current flow of information and improvements in audience outreach as a result of the recommendations in this strategy.

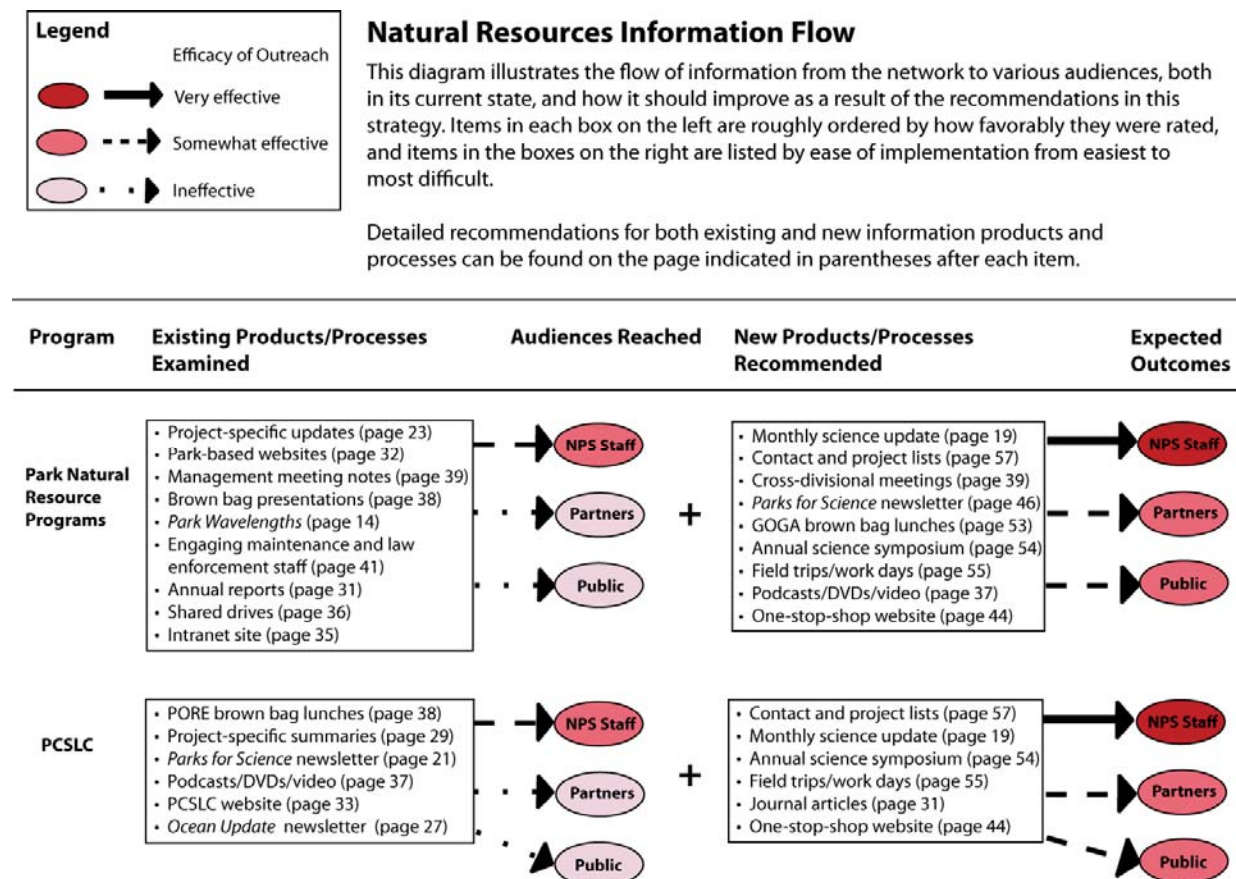


Figure 2. Natural Resources Information Flow Chart.

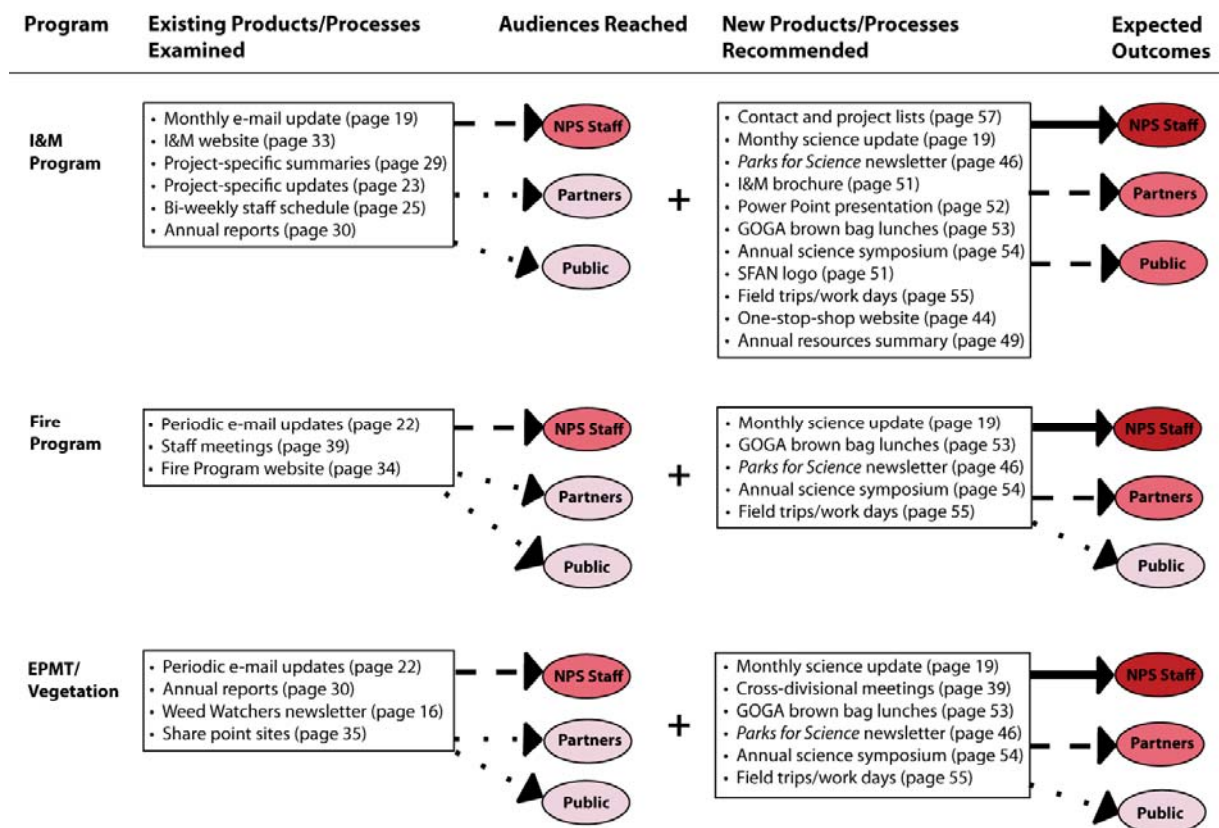


Figure 2. Natural Resources Information Flow Chart (continued).

Chapter 3 - Evaluation of Existing NPS Information Sources

Participants were asked to describe how they currently get natural resource information. They were also given a list of existing NPS information sources and asked to evaluate how familiar they are with these sources and how effective they find them. The following pages list these natural resource information sources, their intended audience, comments from respondents, and recommendations for improvements. While this list provides a fairly comprehensive overview of the information sources mentioned by participants or found during background research for this project, it may not be all-inclusive.

Some common themes about the current state of natural resource information sharing emerged during NPS staff and partner surveys. These include:

- Personal communication is currently the primary source of information for most NPS staff members and partners. There need to be more opportunities to meet and share information such as annual symposia, brown bags, cross-divisional staff meetings, trainings, field trips, and workdays.
- Many respondents had never heard of the existing information sources listed on the survey so publicizing and distributing these sources more broadly should be a top priority.
- Information is scattered on park network or hard drives, websites, in filing cabinets, and other places that can be difficult to access and are not easily searchable.
- E-mail updates and newsletters are often only sent out within a particular park or to a limited distribution list, and not network-wide or to partners.
- Partners lack access to NPS information because they are not on these distribution lists and cannot access NPS drives or intranet sites.
- Finding time to locate, read, and digest information is a challenge. There needs to be a single searchable, well-organized repository of information where staff and partners know they can get information when they need it.
- For most audiences, there is too much data and not enough synthesis. Information needs to be available at multiple levels of technical depth and detail.
- Both interpretive and natural resources staff recognize the tremendous untapped potential they have to help each other. Interpretive staff can help natural resources staff with product development, and natural resources staff can help them better understand the resources they are interpreting.

Specific recommendations for improvements to existing information sources follow. Recommendations grouped by park and program can be found in Chapter 5.

Newsletters

Park Wavelengths

Description	Bi-weekly e-mail newsletter with a variety of news and items of interest for PORE
Audiences	External audiences (e.g. printed in <i>West Marin Citizen</i> and posted on the park website), some but not all PORE staff, and also forwarded to a GGNPC staff member who then forwards it internally
Comments	Although this is mainly intended for external audiences, several staff members at PORE mentioned this as a source of information but noted it could have more natural resource stories. Because it is written for a lay audience, it focuses on highlights and not information at any technical depth.
Recommendations	• Continue with modifications • Use highly distilled information from I&M and natural resources staff through e-mail, at weekly staff meetings, or from project summaries or abstracts to add more science-based stories and increase awareness of the work of these programs • Expanded distribution to all interested SFAN staff and partners • Include a link to subscribe in the contact list for existing communication sources (see page 67) and on websites, newsletters, presentations, etc... • This broader subscription list will also inform the contact list that PORE staff are working on developing for periodic updates
Staffing/Materials/Costs	Loretta Farley would be responsible for incorporating additional natural resources-based items and adding people to the distribution list. Aside from minimal staff time described above, this will require no significant new costs or materials.
Contact	Loretta Farley, Loretta_Farley@nps.gov , (415) 464-5140 http://www.nps.gov/pore/parknews/parkwavelengths_0805.htm

Sample Park Wavelengths E-mail

From: Loretta_Farley@nps.gov Sent: Tue 11/4/2008 4:01 PM
To: [John A Dell'Oso@nps.gov](mailto:John_A_Dell'Oso@nps.gov)
Subject: Park Wavelengths

A lesser-known meteor shower, the Taurid meteors, is present November 5-12. They are not known for the multitude of falling stars (5-8 per hour) but for some really big ones – fireballs after midnight. The full moon rises on November 12 with some afternoon daylight low tides for exploring tidepools:

Tuesday, November 11 3:25 pm -0.6
Wednesday, November 12 4:08 pm -1.2

Surveys are beginning for coho salmon and steelhead trout in local streams following the first heavy rains of the year. The fish have been massing in Tomales Bay waiting for the first flush of freshwater out of the creeks to begin their travels up the watershed. No numbers yet.

If you haven't seen the new boardwalk at Abbots Lagoon it is well worth a stroll for good winter birding - the usual suspects grebes, terns, all kinds of sea ducks are plentiful.

Annual request from the trail crew as we enter the winter season: Please report downed trees to park visitor centers or by phone (415) 464-5137. To assist a quicker response, the following information is needed: the type of tree (bay, oak, fir, etc.) the diameter of the tree, (how big around); a good location description; and whether a hiker or horseback rider can get around it.

Boaters be advised that the restrooms on Tomales Beach are closed for the winter; the service road becomes too muddy for them to be reached for pumping and cleaning. They typically re-open the weekend before Memorial Day in the spring. Marshall Beach restrooms remain open throughout the year.

West Marin children's artwork abounds in the park with a display of raccoon drawings at Bear Valley Visitor Center from Inverness School along with ceramic bird nests from Papermill Creek and Shoreline Acres Preschools. New specialized displays for kids on the Earthquake Trail include artwork completed by West Marin School upper graders.

All park visitor centers are open on Tuesday, November 11, Veterans Day.

Mark your calendars: "A Conversation On Sharks" is slated for November 20 from 7:00 pm to 9:00 pm at the Dance Palace Community Center with Ron Elliot and Scot Anderson; interesting footage from the Farallon Islands. Free and open to the public as part of the ongoing ocean education outreach program.

Weed Watchers What's SNOO in the Park

Description	Monthly newsletter for GOGA that reports what invasive plant species have been found and where
Audiences	Sent to NPS and GGNPC staff who work with vegetation in some capacity
Comments	Only one person mentioned this as a good source, but noted that it should not be the only place people get this valuable information.
Recommendations	• Continue for now with modifications • While this information is important and interesting to vegetation staff, it could be made more appealing and relevant to a broader audience by doing the following: ○ Include a section in the beginning that highlights a “species of the month,” particularly newsworthy findings, and/or action items or events that readers might want to know about ○ Provide a map of the subwatersheds described in the newsletter to give readers a clearer sense of where these populations are in the parks ○ Organize the information by area and include a reference to these locations on the map ○ Include select photos to call out particular species of concern or new invasions ○ Consider expanding the scope beyond the Early Detection Program to include other vegetation-related information • Post on Weed Watchers website (http://science.nature.nps.gov/im/units/sfan/vital_signs/Invasives/weed_watchers.cfm) • Include a link in the I&M monthly update when a new newsletter is posted • E-mail an issue to GOGA interpretive and maintenance supervisors, and all GOGA park partners and ask if they are interested in being added to the distribution list • When/if a new web-based central repository for information is created (see page 45), consider discontinuing this update and instead posting it on the web and sending out a notice when a new edition is available
Staffing/Materials/	No change
Costs	
Contact	Jenn Jordan, Jenn_Jordan@nps.gov , (415) 331-5023



What **SNOO** in the Park?

Golden Gate Weed Watchers Invasive Species Early Detection

Significant **N**ew **O**bservations and **O**ccurrences

August 2008

Importance of Early Detection of Invasive Species

Aggressive non-native plants threaten to change the landscape of our national parks. These plants can alter entire ecosystems, reducing habitat for the unique plants and animals of the San Francisco Bay Area in the very places set aside to protect them. Often, by the time a plant is noticed as a problem it has spread throughout an area. The Weed Watchers help patrol the park for some of the newest invaders—and find them when they can still be prevented from becoming a permanent part of the landscape.

August was once again a very productive month for the Weed Watcher Program. Unfortunately all of our interns had to go back to school this month, but not before putting in many hours out on the trails surveying and treating our priority species.

The Weed Watchers left the trails to do a road survey along the entire one-way portion of **Conzleman Road**. This survey went through **Subwatershed 1-2**, where several patches of **tocalote** (*Centaurea melitensis*), one patch of **thoroughwort** (*Ageratina adenophora*), and one patch of **kikuyu grass** (*Pennisetum clandestinum*) were mapped.

Parts of **Old Bunker Road Trail** and the **Coastal Trail** were surveyed in August. In **Subwatershed 7-1**, six separate patches of **licorice plant** (*Helichrysum petiolare*) were mapped. **Pennyroyal** (*Mentha pulegium*) was the only previously unmapped high priority plant that was found in **Subwatershed 7-2**.

The Weed Watchers returned to the **Bobcat Cut-off trail** in August to finish a survey started in July. In **Subwatershed 7-10** a small patch of **thoroughwort** that had not previously been mapped was recorded in GeoWeed. **Licorice plant** and **capeweed** (*Arctotheca calendula*) were discovered and mapped in **Subwatershed 7-9**. In **Subwatershed 8-6** several Priority 1 and Priority 2 species were mapped, including three patches of **capeweed**, two patches of **pennyroyal**, and one patch of **English Ivy** (*Hedera helix*). Two patches of **Scotch broom** (*Cytisus scoparius*) and one patch of **purple foxglove** (*Digitalis purpurea*) were also mapped as well as manually treated.

On one of his last hikes as an intern, Zach surveyed the **Bobcat Trail** from Wolfback Ridge down to the Miwok Trail junction. While he found several patches of previously mapped **capeweed**, **Scotch broom** and **Portuguese broom** (*Cytisus striatus*) were the only new

infestations that he found. **Scotch broom** was mapped in **Subwatersheds 8-3, 8-4, and 8-5**. **Portuguese broom** was only found and mapped in **Subwatershed 8-5**.

The Weed Watcher Interns started the month off by surveying priority sections of the **Fox Trail** and the **Coastal Trail**. In **Subwatershed 10-2** one patch of **capeweed**, one patch of **pennyroyal** and one patch of **licorice plant** were mapped. Along the Fox Trail in **Subwatershed 11-2** one patch of **licorice plant** and some **pennyroyal** was mapped. **Licorice plant** and **Singleseed hawthorn** (*Crataegus monogyna*) were also mapped in **Subwatershed 11-3** along these trails.

Subwatersheds 11-11 and 11-4 were surveyed along the **Tennessee Valley trail** from the nursery and then following the **Coastal Trail** south to Wolf Ridge. No Priority 1 species were found in either watershed. The Weed Watchers did find and map **pennyroyal** in **Subwatershed 11-4**.

The Weed Watchers ventured back to **Muir Woods** in August to do a survey of the main trails starting from the Visitor Center. **English holly** (*Ilex aquifolium*) was the only Priority 1 species found. In **Subwatershed 12-5**, one small patch of **Himalayan blackberry** (*Rubus discolor*) was mapped along with a few small **English ivy** plants that were also hand pulled. A few more **English ivy** plants were mapped and pulled in **Subwatershed 12-3**.

The **Green Gulch** and **Coyote Ridge Trails** through **Subwatershed 12-8** need some attention after all of the high priority species that were found here. Seven separate occurrences of **capeweed** were mapped, along with one patch of **Scotch broom**, two patches of **kikuyu grass**, and two patches of **pennyroyal**. The Weed Watchers also mapped three patches of **licorice plant**, but were able to manually treat two of them while they were out there.

On August 9, the Weed Watchers headed out to **Dias Ridge** to survey the trails in **Subwatershed 12-9**. Three large patches of **licorice plant** were spotted about 100 m from the trail. Two patches of **pennyroyal** were also mapped along the trail.

A brief survey was conducted through **Subwatershed 13-1** along the **Miwok trail**. Many patches of **licorice plant** had already been mapped here, but the Weed Watchers found and mapped one new patch. Several **purple foxglove** plants were found and quickly removed along the trail.

Subwatershed 13-6 was not formally surveyed in August, but while on a survey along the Marincello Trail, a large **licorice plant** was spotted from several hundred yards away on a hillside in 13-6.

Once again the interns joined IPP this month. They helped to remove and map **French broom** (*Genista monspessulana*) and map two occurrences of **licorice plant** in **Subwatershed 16-1**.

The Weed Watcher Interns returned to **Stinson Gulch** to survey **Willow Camp Trail** in **Subwatershed 16-3**. This area is known to have a large infestation of **oblong spurge** (*Euphorbia oblongata*), so the interns focused on mapping isolated patches, which ended up being only one patch of **oblong spurge**. They also mapped one patch of **thoroughwort** along the trail.

The Weed Watchers spent a nice hot day down at Sweeney Ridge surveying the **Sweeney Ridge Trail**. Both **ox-eye daisy** (*Leucanthemum vulgare*) and **tocalote** were found scattered

along the trail in **Subwatersheds 19-2** and **28-3**. A small patch (about 10 m²) of **Bermuda grass** (*Cynodon dactylon*) was mapped along the trail at the bottom of a seep in **Subwatershed 19-2**.

To finish off Steve and Dearbhail's internships, the Weed Watchers went on a survey around **Fort Funston**. While many non-native dog species were seen, no Priority 1 plants were found. The interns did map many patches of **European searocket** (*Cakile maritima*) and a few occurrences of **panic veldtgrass** (*Ehrharta erecta*) while hiking through the dunes.

If anyone would like more information or maps please contact Jen at 331-5023 or Jenn_Jordan@nps.gov.

I&M Program Monthly Update

Description	Monthly e-mail update on items of interest from the I&M Program
Audiences	Distribution includes some network staff and park partners
Comments	Many I&M staff members were familiar with this update and used it as a source of information.
Recommendations	• Continue with modifications • Expand scope to include science and natural resources items from programs other than I&M • Rename to Bay Area National Park Science Monthly Update • Minimize text and bullet information as much as possible • Keep links to more detailed websites or reports • Continue to include one or two pictures and graphs per issue • Get material for the update from the I&M staff schedule and Program Manager's personal knowledge, and by soliciting them from park natural resources staff • Announce the new format in the subject line of the e-mail that goes out with it • Expand the distribution to all SFAN staff and partners but include an unsubscribe option so people can opt out of receiving it—new employees can ask to be added when they receive the list of existing information sources at their new employee orientation • Reorganize information under the broad headings outlined below and shown in the attached example ○ Headings are intentionally broad so that it is likely that there will be something to report for each one every month ○ Organizing the information in this manner helps communicate that this is not a compilation of random information, but rather a way to find out quickly if there is any new information on a particular topic or not Wildlife: pinnipeds, fish, raptors, birds, amphibians and reptiles, insects, bats Vegetation: early detection, Weed Watchers, plant communities, rare plants Physical Resources: climate/weather, air and water quality, stream flow, wetland and riparian habitat, landscape dynamics, geology, paleontology, surveys and mapping Announcements: new employees, meetings and symposia, website updates, communications activities
Staffing/Materials/	HTML template provided, no new materials or additional costs required
Costs	
Contact	Marcus Koenen, Marcus_Koenen@nps.gov , (415) 331-5734

Sample of the New Format for the Bay Area National Park Science Monthly Update

Email not displaying correctly? [View it in your browser.](#)

San Francisco Bay Network Bay Area National Park Science Monthly Update

Date and Year

In This Edition:

Wildlife

- Summary of Snowy Plover Monitoring at GOGA
- Coho Salmon Monitoring Update
- Results of 2008 Harbor Seal Monitoring at GOGA and PORE

Vegetation

- Weed Watcher Program Growing- Volunteers Needed

Physical Resources

- Status of PORE Water Quality Monitoring

Announcements

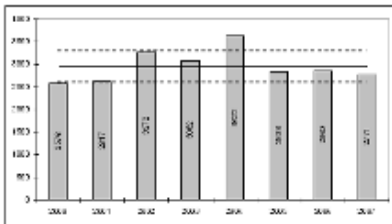
- Thank you to Volunteers
- Science Communication Strategy Under Development

Wildlife

- A two-page summary of the issues involved in protecting endangered western snowy plovers on popular urban beaches, and some of the results of the monitoring program at Ocean Beach and Crissy Field, is now available at: http://science.nature.nps.gov/inunits/stan/vital_signs/snowy_plover/snowy_plover.cfm
- The summer/fall juvenile coho and steelhead monitoring program has started on Redwood and Olema Creeks. Up to three volunteers are needed every Tuesday and Thursday until mid October from 9:00 AM to 3:00 PM. Please contact Michael_Reichmuth@nps.gov for more details or to schedule a time to volunteer.
- The recently completed Harbor Seal monitoring report discusses trends in the harbor seal populations (population size and pupal to multiple sizes) at GOGA and PORE.

The number of juvenile seals has been stable for the last three years, which points to a stable population. The population size varies by site, the most common are Clements, Angier, Miller, and Smith Creeks.

The full report has been peer-reviewed and is available to the public on the SFAN Internet site: http://science.nps.gov/inunits/stan/vital_signs/harbor_seal/harbor_seal.cfm



Year	Maximum Number of Adults/Immatures
2008	1400
2009	1800
2010	2100
2011	2000
2012	2200
2013	2000
2014	2000
2015	2000
2016	2000
2017	2000

Figure 1. Maximum number of harbor seal adults/immatures during the breeding season (March-May) at Marin County locations. The solid line on the graph represents the mean maximum number of adults from 2010-2017. The dashed line represents the maximum maximum from 2010-2017.

Vegetation

- Growing numbers of Weed Watchers have been patrolling national park trails in San Mateo, San Francisco, and Marin Counties, finding and mapping weeds as they first invade and helping to protect unique park resources, but more help is always needed.

Attend a training to learn how to recognize and report invasive plants, and then attend regularly scheduled Thursday walks or adopt a corner of the park and Weed Watch on your own time. For more information on training, the Thursday walks, contact Jennifer Jordan, (415) 331-5023 or jenn_jordan@nps.gov.

More information on the program is also available at: http://www1.nature.nps.gov/inunits/stan/vital_signs/invasives/weed_watchers.cfm

Physical Resources

- The U.S. Geological Survey just released the final report on baseline water-quality levels of pesticides at 10 creeks in the Golden Gate National Recreation Area and the Presidio of San Francisco.

Samples taken from surface-water and bed-sediment samples during February, April, and July 2006 had low concentrations of pesticides, but they also contained herbicides, insecticides, and fungicides. This information will help National Park Service managers assess the water quality of these creeks and provide a reference point for future sampling.

The full report is available at: http://science.nature.nps.gov/inunits/stan/vital_signs/water_quality/water_quality.cfm or for more information contact Jennie Skancke at jennie_skancke@nps.gov or 415-464-5122.

Announcements

- This year, volunteers for the fish, harbor seal, invasive plant species, and spotted owl
- This year, the volunteers for the fish, harbor seal, invasive plant species, and spotted owl monitoring programs contributed over 2,442 hours of their time. Volunteers make a huge contribution by helping us find out what our resources are like today. Their presence also makes for a safer and more enjoyable work environment. Many thanks!
- The ISM Program and the Golden Gate National Park Community have partnered to develop a science communication plan to make awareness of the natural resources information available at SFAN, and how to use it, more visible to the public. NPS program and park partner. The plan will be completed by the end of the year. For more information contact Michele O'Brien at michele_o'brien@nps.gov or (415) 331-2879



Volunteer Dick Ingelster counting seeds on Drakes Estero (photo courtesy of Judy Eubank)

These Monthly Program Updates can be downloaded from the SFAN website: http://science.nature.nps.gov/inunits/stan/vital_signs/updates/. If you are an ISM Program staff, updates are available at: http://science.nature.nps.gov/inunits/stan/vital_signs/updates/

The San Francisco Bay Area National Park Inventory and Monitoring Program tracks the status and trends of the region's natural resources in order to improve park management through greater reliance on scientific knowledge. If there is an ISM topic that you could do more information on, or if you have other ideas on ways to improve these updates we can't hear them good. Please send your comments to Maria Roman at maria_roman@nps.gov or (415) 331-6739.

Parks for Science

Description	Six-page newsletter with short articles about science and research in network parks
Audiences	Mostly high school students, but it is also read by some SFAN staff and partners
Comments	The production timeline for this newsletter has been irregular. Not many staff members or partners were familiar with this publication, but those that were found it a somewhat useful source of information. Some noted that it was sometimes a bit too PORE-centric and that the audience should be broadened.
Recommendations	• Continue with modifications • Follow a more consistent production schedule to help this newsletter become a more reliable source of information • Increase distribution and outreach about its existence among network staff and partner groups—especially those who work with schoolchildren • Make it a network-wide newsletter for what is going on in the parks by changing the tone, layout, and content to be appropriate for a slightly less lay audience and more interesting to a broader array of readers (See detailed description and example on page 48)
Staffing/Materials/Costs	Costs will vary depending on whether the newsletter stays largely as is, or is expanded. In either scenario, the PCSLC would work with other programs, divisions, and partners to obtain content, but would still be responsible for editing, layout, and distribution.
Contact	Jessica Luo, jessica_luo@partner.nps.gov , (415) 464-5132

E-mail Updates

Vegetation E-mail Updates

Description	Sporadic all-employee e-mails on vegetation-related items of interest
Audiences	Park staff, volunteers, and interested members of the public that are on the mailing lists of the individuals sending them out
Comments	These updates are well liked and useful.
Recommendations	• Continue as is • Collaborate with the Fire Program to include relevant vegetation-related information in their communications and vice versa—especially the effects of sudden oak death on fire regimes • Send to park interpretive and maintenance supervisors, and park partners and ask if they are interested in being on the distribution list
Staffing/Materials/Costs	No change
Contacts	Ellen Hamingson, Ellen_Hamingson@nps.gov , (415) 464-5196 Bobbi Simpson, Bobbi_Simpson@nps.gov , (415) 464-5294

Fire Program Updates

Description	Periodic e-mails about fire-related issues
Audiences	PORE and GOGA employees, community groups, and fire safe council (audience varies based on content)
Comments	Many people receive these updates and think that they are a valuable source of information.
Recommendations	• Continue as is • Expand distribution list to include partner groups • Collaborate with vegetation staff to include relevant fire-related information in their communications and vice versa—especially the effects of sudden oak death on fire regimes • Send to park interpretive and maintenance supervisors, and park partners and ask if they are interested in being on the distribution list
Staffing/Materials/Costs	No change
Contact	Jennifer Chapman, Jennifer_Chapman@nps.gov , (415) 464-5133

Project-Specific Electronic Updates

Description	Periodic e-mail updates on particular monitoring programs (snowy plovers, harbor and elephant seals, coho salmon, and raptors)
Audiences	NPS staff and volunteers (the audience may be limited by the specificity of the topics)
Comments	Most respondents had never used or heard of these updates, but many of those who had found them useful
Recommendations	• Continue with modifications • Provide the take home message for the update at the very beginning so the reader understands why the information is important • Include context to explain the relevance of what is being reported and make issues appealing to a broader audience • Expand the distribution to all SFAN staff and partners but include an unsubscribe option so people can opt out of receiving it—new employees can ask to be added when they receive the list of existing information sources at their new employee orientation • Post on park and I&M websites • Include the information in the new natural resources monthly update (see page 18)
Staffing/Materials/Costs	No change except staff time to expand distribution and post on the web
Contact	Varies depending on topic

Sample Plover Update from Summer 2008



Snowy Plover pair PRNS 2008 photo by K. Peterlein

Plover News as of July 18, 2008

Snowy Plovers along the entire coast of California have suffered huge losses this summer and it looks like we are going to end our season with lower numbers than we have experienced in many years. With weather, and other environmental factors changing as they are, plovers are really struggling. Let's continue getting the word out and helping in any way we can to insure the survival of this resource.

Thanks,

Eric Stearns - outreach and education coordinator

Kate Peterlein – Western Snowy Plover recovery biologist

Nest success

21 nests found

7 hatched

10 failed (predation/wind/tide/unknown)

4 are being incubated (11eggs)

Eggs

55 eggs laid

21 hatched (38%)

23 failed (predation/wind/tide/unknown)

11 incubating

Chicks

21 hatched

17 died (80%)

3 brooding (being raised by father)

1 fledged (survived to 28 days)

I&M Program Biweekly Staff Schedule

Description	Bi-weekly update on I&M staff activities
Audiences	Sent to network superintendents and chiefs of natural resources
Comments	While this staff schedule is not widely used or distributed, it was noted by at least one respondent as a good way to get a quick update on what people are working on.
Recommendations	• Continue as is • Make more widely available to those interested by posting it on the SFAN intranet site
Staffing/Materials/Costs	No change
Contact	Marcus Koenen, Marcus_Koenen@nps.gov , (415) 331-5734

Sample I&M Biweekly Staff Schedule

**San Francisco Bay Area Network (SFAN)
Inventory and Monitoring Program**

Bi-Weekly Staff Schedule

8/14-8/27, 2008

Upcoming Events and Deadlines

11-22 August	- Annual Leave (MO)
8 August – End Sept.	- Leave (DP)
25 August	- Starting Graduate School (HJ)

Long Range Planning

29 August	- USGS/IM Synthesis Final-proposal Due (MK)
31 August	- Draft AARWP Sections due to MK (all)
16-17 September	- MEDN 3-Year Review (MK)
10 Sept.	- TSC FY09 Budget Meeting for AARWP (MK)
6 Oct.	- Draft AARWP Due to Penny
31 Oct.	- Final AARWP due to Penny Latham (MK)
3 Nov.	- AARWP Due to Steve Fancy (MK)

Draft Protocol Deadlines

Streamfish	– 8/08 (MR, BK, MK)
Streamflow	– 9/08 (DF, MK)
SNPL (PORE)	– 1/09 (DA, MK, PRBO)
SNPL (GOGA)	– 1/09 (MK, BM, PRBO)
Landbirds	– 1/09 (MK, BM, PRBO)

Amphibian	- 5/09 (PJ)
Plant Community Change	- 5/09 (AW)
Rocky Intertidal	- 5/09 (DR, BB, DA)
Wetlands	- 6/09 (MD)

Individual Accomplishments and Planned Activities (Alphabetical Order/Duty Station)

Name	Current Projects
Dawn Adams – Network Ecologist (PORE)	Reviewing Stream Fish Protocol
Gavin Emmons – Raptor Technician (PINN)	Working on Annual Report
Erin Flynn – Americorps (PORE)	Working on Harbor Seal Annual Report
Heather Jensen – Wildlife Bio-Technician (PORE)	Completed field work and data review. Initiating Annual Report. Position converting to SCEP Intermittent. Last day on 22 August.
Paul Johnson – Network Ecologist (PINN)	Returning from AL.
Jenn Jordan – Invasive Species Technician (GOGA)	Invasives field work GOGA and PORE. Volunteer invasive hikes. Completed WhatSNOO for restoration staff.
Steve Gong, Zach Barbane, and Dearbhail Halligan	
Marcus Koenen – Network Coordinator (GOGA)	Working on SFAN Connect the Dots for each park. Working on Streamfish and Streamflow protocol. Budget Updates. USGS Proposal
Michelle O’Herron – Science Communication (GOGA); Contractor with GG National Parks Conservancy.	Annual Leave
Melissa Potter – Invasive Species Technician (PORE)	PORE Invasive work.
David Press – Lead Data Manager (GOGA)	Completed additional FOIA requests. He and Hez gave birth to Prairie on 7 August. Will be on leave until mid-late Sept.
Mike Reichmuth – Fisheries Biologist (PORE)	Annual Leave
Dale Roberts – Data Manager (PORE)	NOAA Fulmar Cruise.
Jennie Skancke – Water Quality Specialist (PORE)	WQ sampling including PRES Ongoing fieldwork Planning for sampling switch to new sites in FY09
Stephen Skartvedt – GIS Specialist (GOGA)	GIS support as needed.
Andrea Williams – Vegetation Specialist (GOGA)	Started working on AARWP Participated in conference call on 2009 Conservation Conference GIS Work to assist fish work.
Erika Williams – Interp Ranger (PINN)	Inter and Intranet changes as needed

PORE Ocean Update

Description	E-mail update about ocean-related issues that is sent out about every couple of months
Audiences	Park staff and other interested individuals and groups. It is also posted on the park website
Comments	No feedback from respondents.
Recommendations	• Continue for now with modifications • Make the distribution of this update more regular so that people know to expect it and regard it as a more regular source of information • Change layout to include color and graphic elements to break up the text and highlight key points • Expand distribution and awareness of this resource through existing information pathways such as <i>Park Wavelengths</i>, monthly natural resources update, meetings etc... • When/if a new web-based central repository for information is created (see page 45), consider discontinuing this update and instead posting it on the web and sending out a notice when a new edition is available
Staffing/Materials/Costs	No change
Contact	Jessica Luo, jessica_luo@partner.nps.gov , (415) 464-5132

Sample PORE Ocean Update from May 2008

Have you ever seen a white shark at Point Reyes? How about one feeding on seal carcasses near the headlands? Would you like to know where and how often white sharks are seen, and what they are usually seen doing? This may be useful information if you dive or surf in open water here!



Scot Anderson, Ben Becker and Sarah Allen published an article in the January 2008 edition of *California Fish and Game* on observational sightings of white sharks at Point Reyes National Seashore (PRNS) over 23 years and decoy surveys over 11 years.

Where are they seen? Most observations were clustered in three areas: Point Reyes Headlands, McClures Rock, and Tomales Point. White sharks are mostly seen close to shore, in water depths from 5m to 30m. This is likely because they need to keep sight of the surface where they capture their prey.



When are they seen? White sharks are observed at PRNS most frequently in the late summer and fall (August, September, October), which coincides with the seasonal peaks of pinnipeds: California sea lions congregate in the area when males migrate north in the fall, and northern elephant seals juveniles haul out in the fall. When Scot Anderson used decoys to track the frequency of white shark

appearances, he found that they were seen approximately once every 6 hours at PRNS! However, this frequency is still less than the frequency in which they are sighted at the Southern Farallon Island: once every 1.9 hours.

A white shark is seen here feeding on a seal just off shore. Photo credit: S. Anderson, 2007.

What do they eat? At Point Reyes National Seashore, white sharks prey on pinnipeds that congregate onshore and they also scavenge on marine mammal carcasses (especially whales). At the Farallones and Año Nuevo, the pinniped population that white sharks primarily feed on are the northern elephant seals. However, this is not what Scot Anderson found at Point Reyes—the white sharks here seem to be feeding mostly on harbor seals and California sea lions.

White sharks also scavenge off of marine mammal carcasses. Large dead marine mammals such as sperm whales, baleen whales, and northern elephant seals can leave an odor trail that can be carried for many kilometers. White sharks can track these “odor corridors” and follow them to the source. In 2004, when a dead sperm whale drifted to PRNS, as many as four white sharks came to feed on the carcass at one time. A large white shark (~943 kg) can survive up to 45 days after feeding on 30 kg of blubber from a dead cetacean!

Should I be concerned about attacks on humans? There has been five human attacks by white sharks at PRNS over 23 years, all of which occurred in the fall season close to shore in water <10 m deep. All the victims survived. Those highest at risk appear to be people who dive for abalone, spearfish, or surf in open water in or near areas where sharks have been sighted, or near seal colonies. Please be careful, and report any white shark attacks to a park ranger (415-464-5170).

If you would like more information on white sharks at Point Reyes, Scot Anderson can be reached at sharkman1137@mac.com

Briefings and Summaries

Project Specific Two-Page Executive Briefings (Research Project Summaries)

Description	Two-page summaries of research, inventory, and monitoring projects in the parks
Audiences	Park staff and interested public and partner groups
Comments	Not all respondents had seen these summaries, but those who were familiar with them liked that they provide a concise explanation of programs and projects. Distribution needs to be improved both internally and to the public. There also needs to be a process for updating them more regularly and easily.
Recommendations	• Continue with modifications • Because the demand for synthesized information is high, do more of these kinds of publications • Emphasize graphics that present data and describe relationships like photographs, charts, graphs, and/or conceptual diagrams • Establish a schedule for science communications interns to review the currency of existing briefings every two to three years and update content as needed • When/if a new web-based central repository for information is created (see page 45) these can be posted there to improve access • To increase awareness in the meantime, send out a list of available summaries with web links to the .pdf versions network-wide and to partner groups
Staffing/Materials/Costs	Cost of staff time to produce new summaries and update old ones is included in the existing scope of work for science communications interns. One additional day of an intern's time to create and send out a list of available summaries with links: \$50
Contacts	Marcus Koenen, Marcus_Koenen@nps.gov, (415) 331-5734 (I&M topics) Jessica Luo, jessica_luo@partner.nps.gov, (415) 464-5132 (other topics)

Reports

Annual Reports

Description	Annual reports on inventory, monitoring, or restoration projects
Audiences	NPS staff
Comments	These reports are a good source of detailed technical information for those who need greater detail, but they are too technical and long for most staff members and partners.
Recommendations	• Continue with modifications • Require the author to include an abstract or executive summary and bulleted public interest highlights to provide multiple levels of technical depth with minimal amount of extra work • Make these abstracts and bulleted summaries available as background for NPS staff and partners • Post the abstract separately in an easy to find location on the web or intranet and send an announcement directly to relevant interpretive, public relations, and partner staff in the park
Staffing/Materials/Costs	No change
Contact	Varies depending on topic

Journal Articles

Academic Journal Articles

Description	Published research articles from a variety of academic journals
Audiences	Primarily NPS natural resources staff but also partners
Comments	Journal articles are important sources of information for some natural resources staff, but can be hard to get without a subscription. The NPS regional library has a two-week lag time on getting resources. Furthermore, staff members cannot perform the library search themselves they have to request one be done for them. There needs to be an internal, web-based repository for articles with a searchable database.
Recommendations	• Continue for now • Improve access to journal articles for staff who want them • Make better use of NatureBib http://science.nature.nps.gov/im/apps/nrbib/, an existing NPS internet-based searchable catalog. Currently users have to obtain a login, but NatureBib is being redesigned so that it will be publicly accessible • Send out periodic updates when new literature is posted and provide links on appropriate websites • Create a location on the current park websites, or the new one-stop-shop website (see page 45) to feature journal articles, especially those written by staff members
Staffing/Materials/Costs	A communications person hired to populate and maintain the new website (see page 45) could also help collect and catalog references. The cost of this person's time remains to be determined.
Contact	Ben Becker, Ben_Becker@nps.gov , (415) 464-5247

Websites/Intranet

Park-Based Websites

Description	Publicly accessible websites on nature and science for every park: http://www.nps.gov/goga , http://www.nps.gov/pore , http://www.nps.gov/pinn
Audiences	Public, partners, and NPS staff
Comments	Respondents had mixed feelings about the effectiveness of the park websites as a source of natural resources information, noting issues with quality, quantity, and tiering. Some natural resources staff noted a lack of information at any real technical depth. Other respondents said that the organization of the sites made it hard to find the information they needed, and that a Google search was often quicker.
Recommendations	• Continue with modifications • Improve links to outside sources (e.g. other network parks, SFAN website, partners) to provide a broader context and make these sites starting places for an information search rather than end points. • Add briefings, fact sheets, reports, graphs, photos etc... to incorporate as many levels of information as possible • Send an e-mail notification when new information is posted to let people know it is there and remind them that the site is an active and current source • The proposed new web-based central repository for information (see page 45) will alleviate some of these issues by providing information at different levels of detail and depth in a more organized fashion, and these sites may no longer be needed to serve that function
Staffing/Materials/Costs	Staff responsible for each park's website are listed below. Additions to the websites would need to be added to their workload and the cost for their hourly rate would vary. The decision about how much effort to put into improving these sites will have to be considered in light of if and how soon the new site will be online.
Contacts	Aleutia Scott, Aleutia_Scott@nps.gov, (415) 561-4859 (for GOGA) Chris Lish Chris_Lish@nps.gov, (415) 464-5136 (for PORE) Erika Williams, Erika_Williams@nps.gov, (559) 565-3729 and Michael Rupp, Michael_Rupp@nps.gov, (831) 389-4486 (for PINN)

I&M Website

Description	Website for the SFAN I&M Program with both inter and intranet capacity: http://science.nature.nps.gov/im/units/sfan/index.cfm
Audiences	Mostly I&M staff, but also available to other NPS staff, public, and partners
Comments	The I&M website is generally seen as a good place to go for certain kinds of information like reports, but it is not an exhaustive source of information on any given topic.
Recommendations	• Continue with modifications • Add more technical information like data, maps, and reports that may currently only be stored on network drives to improve access to these sources and create more tiers of information • Improve links to outside sources (e.g. other network parks websites, partners) • When/if a new centralized website is created (see page 45) there will be significant overlap with the I&M website and users should be redirected to the new site • The intranet portion of the website may need to be expanded in the event that it is not possible to set up a secure section for the new website
Staffing/Materials/Costs	Staff time will be required to find and post additional information, and the cost will vary depending on the amount of time it takes and the person's hourly rate. The decision about how much effort to put into improving this site will have to be considered in light of if and how soon the new site will be online; however, collecting this information now will reduce the amount of time needed by the person responsible for populating the new website.
Contact	Marcus Koenen, Marcus_Koenen@nps.gov , (415) 331-5734 Erika Williams, Erika_Williams@nps.gov , (559) 565-3729

PCSLC Website

Description	A basic website on science and research by PORE and the PCSLC: http://www.nps.gov/pore/parkmgmt/pcslc.htm
Audiences	Public, researchers, schools, partners, and NPS staff
Comments	Respondents thought that both the quantity and quality of the site's content could be improved. They also noted that while the PCSLC is supposed to be a network-wide program, the focus seems to be mainly on PORE.
Recommendations	• Continue for now • Consolidate, shorten, and reorganize information on the home page so that it reflects the headings on top, has a more logical flow, and it is easier to understand how the different components of what the Center does fit together • Organize research project summaries by topic rather than by date • Populate the "Science and Research" page with information about past and current projects being conducted by NPS and non-NPS scientists • Include more information about, and links to, other network parks. • Make the intern blog appealing to a broader audience while still keeping it science-related by providing context and a clear "so-what" message • Consider renaming the blog so that staff who are not interns feel that they can post information there • Any new web-based central repository for information that is (see page 45) will take the place of this site
Staffing/Materials/Costs	Staff time will be needed to find, post, and organize the presentation of information. The decision about how much effort to put into improving this site will have to be considered in light of if and how soon the new site will be online.
Contacts	Jessica Luo, jessica_luo@partner.nps.gov , (415) 464-5132 Ben Becker, Ben_Becker@nps.gov , (415) 464-5247

Fire Program Website

Description	Website for the Fire Program: http://www.nps.gov/goga/parkmgmt/firemanagement.htm
Audiences	Public, partners, and NPS staff
Comments	Many respondents had not heard of the site, but those who had rated it favorably.
Recommendations	• Continue as is • Publicize the existence of this site and the Fire Program through links to other park and partner group websites, newsletter articles, and I&M updates so that more people are aware that they are a resource
Staffing/Materials/Costs	Staff time will be needed to create content for newsletters or website links. The cost will vary depending on the amount of staff time and their hourly rate.
Contact	Jennifer Chapman, Jennifer_Chapman@nps.gov , (415) 464-5133

Individual Park Intranet Sites

Description	Intranet websites for PORE, GOGA, and PINN
Audiences	NPS staff only
Comments	In general, park intranet sites lack natural resources information, and are mostly used for administrative purposes. It was noted that the intranet sites have the potential to inform park staff about a variety of topics, but that they are not used that way. Content is not updated regularly or linked to related sources.
Recommendations	• Continue as is for now • If the web-based central information repository (see page 45) does not have a secure intranet component, then these sites may be used as an alternative if the infrastructure can be increased enough to accommodate the additional load.
Staffing/Materials/Costs	There will be no change in costs as long as the new site is established and has an intranet component. If not, then it would take significant staff time to organize, collect, create, and post content to make this an effective way to share natural resource information. Cost of time to accomplish that would vary.
Contacts	Bill Jones, Bill_Jones@nps.gov , 415 561-4713 (for GOGA) Aimee Davis, Aimee_Davis@nps.gov , 415 464-5123 and Jeni Fiske, Jeni_Fiske@nps.gov , 415 464-5174 (for PORE) Erika Williams, Erika_Williams@nps.gov , (559) 565-3729 and Michael Rupp, Michael_Rupp@nps.gov , (831) 389-4486 (for PINN)

Share Point Sites

Description	Websites set up for topical information sharing and discussions
Audiences	NPS staff only
Comments	There are a few topical share point sites such as interpretation, EPMT, and climate change that are not very well populated and do not seem to be heavily used. Most respondents did not mention these sites as a source of information.
Recommendations	• Continue as is for now • If the web-based central repository does not have a secure intranet component, then setting up a share point site might be an alternative for some programs
Staffing/Materials/Costs	No change
Contact	Varies depending on topic

Shared Drives

Description	Network drives where files can be saved and shared
Audiences	NPS staff only
Comments	Shared drives or network drives are where much of the existing natural resource information resides. While it is a relatively easy place to save things, it is a very inefficient way to share information. File organization differs among people, groups, and offices making it hard to know where things are. Additionally, multiple servers at different locations and for different divisions lead to multiple copies of a single document, which can be confusing. Moreover, it is impossible for partners or staff at other parks without access to the drive to get this information or to know that it exists.
Recommendations	• Ideally, reports, briefings, and other information should be kept on either an intranet site or a website with a secure intranet section. • Discontinue as a primary way of sharing natural resource information if/when such an alternate system is implemented.
Staffing/Materials/Costs	No change
Contact	N/A

Audio and Visual Media

Podcasts/DVDs/Audio Stories

Description	PORE and PCSLC-produced audiovisual communication tools such as the <i>Science Behind the Scenery</i> DVD, podcasts, and video
Audiences	Mainly for the public, but also for staff and partners
Comments	Very few staff members were familiar with these, but those who had seen them rated them very favorably and thought there should be more.
Recommendations	• Continue as is • The PCSLC is already planning to do more of these kinds of multimedia pieces at PORE, but should also consider doing ones for GOGA and PINN • Publicize their existence by posting on park websites' home pages, announcing them at brown bags and meetings, including in I&M update, newsletters, and in e-mails to staff and partners • Partners can possibly also post these more widely on sites such as www.YouTube.com
Staffing/Materials/Costs	Video Podcasts: Approximately \$8,000 for an intern to make two or three in six months (This includes salary and production costs, but the cost of additional staff time to manage an intern will vary) Video Podcasts: Approximately \$13,500 to produce one professionally in one month
Contact	Jessica Luo, jessica_luo@partner.nps.gov , (415) 464-5132

Brown Bag Presentations

Description	Presentations by outside researchers on various topics during the lunch hour at PORE
Audiences	Mostly NPS staff, also some partners or outside researchers
Comments	This brown bag series is very popular with those who have participated in them. Interpretive staff members are often unable to attend because of other commitments.
Recommendations	• Continue as is • Use web conferencing, post video, podcasts, and/or slides on the web to share the presentation with those who cannot attend in person • Publicize the existence of these recorded presentations through e-mail, newsletters, and at meetings (especially to interpretive staff) • Refer to Appendix E for ideas for topics that staff would like to learn more about
Staffing/Materials/Costs	Web conferencing cost: \$0.33/minute (WebEx) or free to use Sametime (NPS only, http://np013denver.nps.gov/) Podcasts: approximately \$100 each for an intern to produce Posting on the internet: minimal staff time costs
Contact	Ben Becker, Ben_Becker@nps.gov , (415) 464-5247

Meetings

Management Team Meeting Notes

Description	Meeting minutes from weekly PORE and GOGA senior staff meetings
Audiences	PORE and GOGA staff
Comments	Meeting notes from the weekly senior staff meetings at GOGA and PORE are valuable sources of information for some NPS staff.
Recommendations	• Continue as is • Expand the distribution to all SFAN staff and partners but include an unsubscribe option so people can opt out of receiving it—new employees can ask to be added when they receive the list of existing information sources at their new employee orientation • Distribute to park-specific partner groups as well
Staffing/Materials/Costs	No change
Contact	Ann Nelson, Ann_Nelson@nps.gov (415) 464-5120 (for PORE) Lori Furtado, Lori_Furtado@nps.gov , 415 561-4720 (for GOGA)

Planning Group, Fire, and Resource Management Meetings

Description	Various staff meetings held as needed
Audiences	Mostly NPS staff
Comments	Respondents like meetings for sharing information and building the personal relationships that are so key to communication in the network. For example, GOGA staff in the headlands used to have weekly all division staff meetings where in 30 minutes everyone gave an update on what they were doing. These meetings no longer take place due to leadership and personnel changes.
Recommendations	• Continue with modifications • At least occasionally make existing meetings cross-divisional or have presenters from other divisions or partner organizations to help facilitate communication and build relationships • Make a special effort to include interpretive staff when appropriate • Use web or phone conferencing to allow for broader participation if interest in the meeting topic is sufficiently high
Staffing/Materials/Costs	The individuals who currently hold these meetings will be responsible for inviting people from other divisions and partner groups. Division chiefs and park superintendents can communicate to staff that this kind of cross-divisional communication is a priority. Cost of travel: \$0.13 - \$0.60/ mile depending on availability of a government vehicle Toll on Golden Gate Bridge: \$5.00-\$6.00 Web conferencing cost: \$0.33/minute (WebEx) or free to use Sametime (NPS only, http://np013denver.nps.gov/)
Contact	Varies depending on park and division

Trainings

Maintenance Staff

Description	Trainings and workdays with natural resources and maintenance staff
Audiences	Maintenance and natural resources staff
Comments	The working relationship between natural resources and maintenance staff could be improved. Existing events such as training on early detection of invasive species and proper tool cleaning, and workdays where natural resources staff and partners help maintenance with projects at Alcatraz are very effective and should be expanded. These kinds of events need to be repeated often due to high staff turnover, but are key to building relationships between divisions.
Recommendations	• Continue with modifications • Invite interpretive staff • Present at the week-long annual maintenance training in February on relevant natural resources information and solicit input on what information maintenance staff need and in what format • Natural resources staff should increase participation in the Alcatraz workday that maintenance holds every October • Division chiefs and park superintendents may need to encourage participation these events, especially in the beginning
Staffing/Materials/Costs	Staff time will be required to participate in and travel to these events and meetings. The cost of this time will vary.
Contacts	Dave Dusterhoff, ddusterhoff@parksconservancy.org , (415) 561-3058 (GGNPC) Dan Collman, Dan_Collman@nps.gov , (415) 561-2819 (maintenance) Tanya Baxter, Tanya_Baxter@nps.gov , (415) 331-0732 (vegetation)

Law Enforcement Staff

Description	Presentation and training on relevant natural and cultural resource topics with PINN law enforcement every 5 th week
Audiences	Law enforcement and natural resources staff
Comments	A few natural resources staff noted that high law enforcement staff turnover in the past 10 years has made it hard to maintain working relationships and communication. Participants from the Law Enforcement Division indicated that trainings and presentations might be a good way to get information to them. These trainings have been very successful at PINN.
Recommendations	• Continue with modifications • Hold similar trainings at GOGA and PORE • Include interpretive staff
Staffing/Materials/Costs	Each park's natural resources division chief will have to be responsible for scheduling, or delegate that task to someone on their staff. Staff time will be also be required to plan for and attend the trainings. The costs of this time will vary.
Contact	Denise Louie, Denise_Louie@nps.gov , (831)389-4486 x222 (PINN) Bill Shook , William_Shook@nps.gov , (415) 464-5188 (PORE) Daphne Hatch, Daphne_Hatch@nps.gov , (415) 331-0744 (GOGA)

Chapter 4 - New Product Recommendations

In addition to the improvements to existing information sources described in the previous section, several new communications products and processes should be developed as a part of a comprehensive and effective approach to internal natural resources communication. These new items are described in the following pages, including key messages, costs, and evaluation criteria. Recommendations grouped by park and program can be found in Chapter 5.

Website

One-Stop-Shop Website

Description

The number one request from respondents was a one-stop-shop website for natural resources information. The PCSLC is planning on creating a new website modeled after the Greater Yellowstone Science and Learning Center's site (<http://www.greateryellowstonescience.org/>) that could meet many of the needs identified by participants:

- Information organized by subject and not by park
- Tiered information so users can get as much or as little detail and technical depth as they need
- The ability for staff to post reports, summaries, updates, photos, maps, geographically referenced observations etc...could be partly modeled after <http://www.calflora.org/>—an interactive storage base for photos and information
- Has links to newsletters, e-mail updates, and other information sources, as well as relevant pages on partner sites including GGNPC and PRNSA
- Utilizes the ability of partner sites to use tools like YouTube and RSS feeds that NPS cannot
- Includes a voluntary personnel section that provides more information about staff members
- Has intranet capacity so that it can house information that is not appropriate for public distribution and a place to post questions to be answered by other staff
- If it is not possible to have a secure section of this site, then the existing intranet, share point sites, and/or Nature Bib could be used to meet this need

Importance

Currently, information is often shared on network drives, which have no standardized filing system and can be hard to navigate, or is e-mailed as an attachment, which clogs up the parks' already

limited bandwidth. Existing park websites present varying degrees of natural resources information organized by, and limited to, a specific park.

Several respondents noted that they would rather not be inundated with e-mail updates and newsletters on topics they may or may not have a need for. They would much rather have a one-stop-shop, web-based repository of information where they know they can go find what they are looking for when they need it. This would also alleviate the need to know who to ask for information, and would make information more widely available, especially to park partners.

Key Messages

Information about the a tremendous wealth of cultural and natural resources in the National Parks of the San Francisco Bay and the great work of park staff and partners is available in a well organized, multi-tiered, and dynamic format to anyone who is interested.

Target Audiences

All NPS staff, partner groups, and the public

Distribution

Send out very brief bulleted updates about the website, especially in the beginning to remind staff that it exists as a resource, and what new information has been added. The URL for the site should be included on every piece of printed and digital material distributed by the network parks.

Materials/Staffing/Costs

- In the beginning, PCSLC staff will need to work with other park programs and partners to get buy-in. Staff time will also be required later on to present the new site to create enthusiasm, encourage broad use, and demonstrate how to navigate and add content: **salary and travel costs will vary.**
- The Greater Yellowstone Science and Learning Center has offered the framework template used for their website: **free.**
- A full-time staff person will be needed to populate the site, produce new content, and then maintain the site once it is established. May have to be part-time depending on funding: **cost will vary, but should be shared by PCSLC, I&M, and the network parks and partners.**
- Server space can be shared with Greater Yellowstone Network: **\$3,000-\$4,000 per year.**
- **Note:** Learning Centers at Glacier National Park, Great Smokies National Park, Southern California, and the Pacific Northwest are interested in using the Yellowstone

template, so there may be opportunity to share costs, experience, and materials.

Timeline

Year 1- Secure funding , server space, and staff, select topics to begin content development, begin to populate the website

Year 2 - Continue to populate site and present to park staff and partners

Years 3-5 - On going site maintenance and content creation

Evaluation

- Tracking number of users and pages visited to see site usage and most popular pages
 - Feedback during presentations and from website users
-

Print and Electronic Media

Newsletter

Description

A six- to eight-page, quarterly (or biennial), network-wide newsletter distributed primarily through e-mail and the web. A limited number of hard copies will be stocked at visitor centers and sent out by mail.

Rather than duplicate efforts, this newsletter can be a modification and expansion on the existing *Parks for Science* newsletter produced by the PCSLC. *Parks for Science* is currently geared toward high school students, but a number of respondents noted that if it were slightly less lay-audience oriented it would appeal to a broader range of park staff. The tone and content still needs to be understandable and interesting to non-scientist staff and partners.

To further expand the potential audience and facilitate communication among different park divisions and partners, the newsletter should include articles by (or interviews with) a diversity of programs, including: the PCSLC, I&M Program, Fire Program, park maintenance, law enforcement, interpretation, natural and cultural resources, and park partner organizations. While the I&M program and other staff can help get content, the final editing, layout, and printing would still be done by the PCSLC.

To create some cohesion in each issue, a majority of the articles should relate to a similar broad theme such as marine resources, new inventories or research findings, park milestones and anniversaries, climate change, etc... The distilled “so what?” message needs to be in the front of each piece, with more in-depth information included afterwards. A one-page featured park resource or critical issue page can also be used as a stand-alone briefing. Conceptual diagrams, photos, graphs, and charts should be used liberally.

The following examples of newsletters from other parks or park partners are included as examples on the enclosed CD.

GOGA Fire Program: Community newsletter that does a good job of presenting key information right up front, then providing more detail later.

Upwelling: The Gulf of the Farallones' web-based newsletter with great photos, nice personality, good readability, and simple design.
http://www.farallones.org/e_newsletter/index.php

The Midden: The web-based, biennial newsletter from the Great Basin National Park has the tone and breadth of topics to appeal to a variety of audiences.

<http://www.nps.gov/grba/parknews/midden.htm>

Gateways: very attractive quarterly newsletter from the GGNPC with tips on enjoying the parks, features on community members, updates on site improvements, and beautiful photography.
<http://72.5.117.155/about/newsletters.asp>

Target Audiences	NPS staff, partners, and interested public
Key Messages	The national parks of the San Francisco Bay area and their partners are doing a myriad of interesting and important things. The collaborative and inclusive nature of the Bay area network of parks allows for network-wide publications like this where these activities can be showcased.
Importance	Providing a single, network-wide source for highly distilled information on topics of interest
Distribution	E-mail, posted on website, limited hardcopies available at visitor centers or mailed
Materials/Staffing/Costs	Staff time will be needed to review template and make modifications: costs will vary. The cost of PCSLC staff and intern time to obtain and edit articles: cost will vary, but will likely be about the same current costs. InDesign template: provided on CD Examples of other newsletters: included on CD Photos and graphics: free from staff and partners Printing for 800 full-color, semi-gloss copies: \$2,000
Timeline	0-6 Months – The next issue of <i>Parks for Science</i> could be produced using this model.
Evaluation	• Comments from staff and partners • Include an e-mail contact on the newsletter for feedback

4 Parks for Science

4 Parks for Science

Parks for Science 3

Annual State of the Resources Update

Description	An annual electronic update on the state of select resources in the park, accomplishments in monitoring or restoration, trends, issues, future plans, etc.
Target Audiences	Park staff, partners, and the public
Key Messages	The Inventory and Monitoring Program is tracking the health of key natural resources in Bay Area parks.
Importance	Many respondents want to know more about the general state of resources in the parks. For the vital signs that I&M is monitoring, these rankings are already presented in a table at the end of the annual report; however, many of the resource ratings in the annual report are still “TBD”. The debate about what can safely be said about the status or trends of resources is on-going. If some agreement can be reached, then this information would be valuable to a variety of audiences if it is presented in an attractive, user-friendly manner that can be distributed as a stand-alone document and posted on the web. It should also include conceptual diagrams and other graphics that illustrate trends and the relationships among resources. Eventually, it should be incorporated in the new website in a more interactive manner where a user can click on the icon for a vital sign and learn more (see example at http://www.eco-check.org/reportcard/chesapeake/2007/).
Distribution	Post on the website and send e-mail notification to all staff and partners
Materials/Staffing/Costs	Template: Mock-up of a possible idea for the report layout provided on CD The cost of staff time to decide to go forward with this idea, agree on a design, create new template: cost will vary based on hourly rate. Staff time will be needed to populate the update with new data each year: cost will vary based on hourly rate. Printing costs: distribution should primarily be electronic, but printing for 800 full-color, semi-gloss copies: \$2,000
Timeline	Year 1-2 - Decide whether to go ahead with producing an annual state of the resources report, and if so create the final template based on the mock-up provided. Years 3-5: Annual production of the update
Evaluation	• Include an e-mail contact for feedback at the end of the report

I&M Brochure

Description	A brochure describing the science activities that take place in the network
Target Audiences	NPS staff, partners, public
Key Messages	There is a tremendous amount of research, monitoring, and restoration taking place in network parks. Concise summaries of this information are available to staff and the public.
Importance	This brochure will make science activities in the network parks more widely known, and let people know where to get more information.
Distribution	E-mail, websites, hand out at meetings, at make available at visitor centers
Materials/Staffing/Costs	This brochure is currently under development, GOGA is doing final layout and paying for printing. Two days of an intern's time will be needed to periodically update content: \$50/day .
Timeline	0-6 months – brochure design complete Every 2-3 years - update of content
Evaluation	• Solicit feedback from park staff and partners during development • Provide a contact link for comments at the end of the brochure

SFAN Logo

Description	A logo that represents the San Francisco Bay Area Network
Target Audiences	NPS staff, partners, public
Key Messages	The logo concept above reflects the idea that the San Francisco Bay Area Network is highly collaborative and links the disparate people, parks, and natural resources of the numerous parks in the area.
Importance	The Golden Gate Bridge was chosen because it is an immediately recognizable icon of the Bay Area, it embodies the idea of creating linkages, and it literally links the various parks of GOGA and the northern and southern parks of the Bay Area.
Distribution	Include on print and digital media from the network
Materials/Staffing/Costs	Logo concept mock-up: provided on CD The cost of additional staff time to evaluate the idea of having a logo, create other designs if necessary, and finalize the chosen logo: cost of this will vary depending on how long it takes to find an idea that everyone can agree on, and hourly rate of the person who creates the final version.
Timeline	0-12 months – evaluate logo and agree on final design
Evaluation	• Meeting to evaluate the need for a logo and develop and evaluate possible logos • Approval from the I&M Steering Committee

Sample SFAN Logo



Power Point Presentation

Description	A presentation describing the various programs and partners that make up the network and where to get more information
Target Audiences	NPS staff, partner groups, interested public
Key Messages	There is an impressive array of groups working for or with NPS in the Bay Area, but they are often regarded separately and not as a collection of linked efforts. It can also be confusing, especially to outside groups, what each program does and how they fit in to the bigger picture.
Importance	This Power Point presentation lays out a template for how to explain these resources and relationships and can be modified to suit the needs of the audience and presenter. It can also be used to provide context when/if presenting the new one-stop-shop website.
Distribution	Present at meetings, symposia, and conferences
Materials/Staffing/Costs	Template: provided on CD In some cases, higher resolution photos will be needed: free from staff. The cost of staff time to review template presentation and agree on final version: costs will vary. Staff time costs for presentation (30 minutes): cost will vary.
Timeline	0-6 months - refine and agree on template Annually (or as needed) - update template
Evaluation	• Feedback and questions at presentations

Presentations and Meetings

Brown Bags (GOGA)

Description	Monthly lunch hour presentations by NPS and academic researchers. The brown bag series at PORE is widely liked and well attended. PINN and GOGA have done similar brown bag series that were under-attended due to challenges picking a time and topic that worked for a quorum of staff members and finding a convenient location. Using a more central location such as Ft. Mason will help increase attendance. A regular schedule will help people remember that on a particular day of the month there is a brown bag. The first few presentations should be on particularly “hot” topics to create interest. Respondents identified topics that they want to know more about (Appendix E) including, sudden oak death and its relationship to fire, climate change, the success or failure of restoration projects, the status of endangered species in the park, and the long-term effects of the Cosco Busan oil spill among others. Make presentations available via web conferencing, or posted on the website in video, podcasts, or audio and Power Point slides for those who cannot attend.
Importance	Many respondents selected brown bag presentations as a preferred mechanism for getting information. While they recognized the challenges in picking a time, place, and topic that will draw enough people, most felt that it was definitely worth trying to make these work at GOGA.
Target Audiences	Mostly NPS natural resources staff but also partners or academic researchers
Key Messages	NPS and academic researchers are learning new and interesting things about the natural and cultural resources in the park. Attending a brown bag presentation is a fun and interactive way to learn more about this important work.
Distribution	Get the word out by e-mail, announcements at staff meetings, in newsletters and updates

Materials/Staffing/Costs	Staff time will be needed to select location and date and secure presenters. Web conferencing cost: \$0.33/minute (WebEx) or free to use Sametime (NPS only, http://np013denver.nps.gov/) Podcasts: approximately \$100 for an intern to make one
Timeline	0-6 months - Evaluate success based on attendance and audience feedback, and decide whether to continue
Evaluation	• Attendance will be an important measure of success • Solicit feedback from attendees verbally or through a short survey

Science Symposium

Description

A network-wide or regional annual symposium on science in the parks lasting one to two days, and including a mix of topics to draw a broad audience.

Format the symposium like a professional conference with 20-minute presentations and plenty of time for both formal question and answer sessions, and informal discussions during breaks. It would be helpful to have interpretive staff help moderate discussions.

January-March is the best time for many staff members because fieldwork and park visitors decrease. Because network parks are so dispersed, location can be an issue. Parks can take turns hosting, or a somewhat central location in or near San Francisco should be used.

Record presentations and post on the web or share via web conference for those without the time or funds to attend in person. At a minimum, post presentation slides on the web.

Participants suggested the following examples of other successful symposia they have attended. Sample agendas and contact information are provided on the enclosed CD.

East Bay Parks Stewardship Seminar: An annual one-day symposium held in the fall with presentations from natural resources staff, contractors, and non-profit organizations. Contact: Jessica Sheppard, jshephard@ebparks.org, (510) 544-2324. <http://www.ebparks.org>.

Park Educators Symposium: Annual symposium organized by all of the Marin Park Partners. Theme and presentation topics vary. Contact: Mia Monroe, mia_monroe@nps.gov, (415) 388-2596.

Regional Natural Resource Managers Meeting: These meetings occur infrequently and irregularly; however, respondents who attended said that being in the same place as other managers and scientists in the park helped build relationships and made what they do tangible and gave it context.

Importance

Symposia provide many benefits including facilitating interactions among natural resource and interpretive staff, partners, and other

groups doing similar work in the region. Many respondents noted how invaluable this kind of learning, discussion, and information exchange is.

In order to improve attendance and send a clear message about the importance of these events, several suggested that the park superintendents should make this a priority and perhaps even make attendance mandatory. It should also be included in the GGNRA/SFAN budget every year.

Superintendents who participated in this project were supportive of the idea and felt that it was important enough to put a day or two aside and get on people's calendars.

Target Audiences	Mostly NPS staff, also partners
Key Messages	Information sharing and relationship building are critical to effective resource management.
Distribution	Publicize through e-mail, announcements at staff meetings, in newsletters and in updates
Materials/Staffing/Costs	Coordination and planning primarily by I&M but also PCSLC, natural resources and interpretive staff Refreshments: cannot be paid for with government funds. Partner groups could pay for this if appropriate. Space and equipment: free facilities are available Print outs of presentations: Cost will vary based on number of copies and who the Government Printing Office contracts with (www.gpo.gov) Web conferencing cost: \$0.33/minute (WebEx) or free to use Sametime (NPS only, http://np013denver.nps.gov/) Podcasts: approximately \$200 for an intern to make one
Timeline	Year 1-5 (annually) - conference planning and post-symposium evaluation
Evaluation	• Distribute a brief feedback survey at the end of the symposium

Field Trips/Work Days

Description	Cross-divisional, park-specific field trips, site visits, or work days during a half to full day in the off-season, centered on a particular project or theme, and including managers, maintenance, law enforcement, interpretive and natural resources staff and park partners. Hold annual workdays or field trips at a different network park every year. Include a barbecue or lunch and opportunities for non-work interactions. One example of this kind of event is the on-going annual GGNPC Park Day. This event provides a perfect opportunity for staff to interact and build relationships, but is not well attended by GOGA staff.
Target Audiences	NPS staff and partners
Importance	Provides a hands-on opportunity to work at a particular site, learn about what others are doing, and provides unique opportunities for personal interactions.
Key Messages	Building relationships and goodwill among park staff and partner groups benefits everyone and is a priority.
Distribution	Announce through e-mail and at meetings
Materials/Staffing/Costs	Encouragement from superintendents and division chiefs to make these events happen and get broad participation. Staff at each park will be responsible for planning events: cost will vary. The cost of staff time and travel to get to project site: cost will vary.
Timeline	Year 1-5 (annually or biennially) - participate or hold one of these events
Evaluation	• Solicit feedback from participants at the end of the event

Contact and Project Lists

Network Staff

Description	An Excel spreadsheet listing natural resources staff from all SFAN parks including name, area of expertise, and contact information
Importance	Because so much information exchange takes place by word of mouth, many respondents asked for this kind of a list so they know who to call when they have a question.
Key Messages	NA
Target Audiences	All, but especially interpretive staff and partner groups
Distribution	Send to select person such as division supervisors in each park to distribute digital version to staff and/or post in a central location. Post on inter/intranet sites and if/when a one-stop-shop website is developed, this list can then be posted there as well. Also, distribute at new employee orientations.
Materials/Staffing/Costs	Excel template: provided on CD The cost of several hours of staff time, or a day or two of an intern's time to populate and distribute the spreadsheet: cost will vary. Time for appropriate staff at each park to post in the web: minimal cost.
Timeline	0-6 months - Populate spreadsheet Years 2-5 - update spreadsheet annually or biannually
Evaluation	• Feedback from NPS staff and partners

Non-NPS Research Projects

Description	An Excel spreadsheet listing non-NPS research projects being conducted in network parks including project location, topic, and PI contact information.
Importance	Respondents felt that they did not have a good understanding of the non-NPS research that has taken place in the parks, or where to go to learn more. Academic researchers working in the parks have to go through a permit process so there is already a complete list of all projects.
Key Messages	NA
Target Audiences	Primarily natural resources staff, but also other NPS divisions and partner groups
Distribution	Research coordinators at each park can provide these lists, post them on their website, and create an e-mail distribution list. Post on inter/intranet sites and if/when a one-stop-shop website is developed (Page 45), this list can then be posted there as well. Include in monthly natural resources update.
Materials/Staffing/Costs	A couple of hours a year of time for park research coordinators to pull this list together and post on the web: Cost will vary based on salary and time. Hilary Clark, Hilary_Clark@nps.gov, (415) 331-0729 (GOGA) Ben Becker, Ben_Becker@nps.gov, (415) 464-5247 (PORE)
Timeline	0-6 months - Populate spreadsheet Years 2-5 - update spreadsheet annually
Evaluation	• Feedback from NPS staff and partners

NPS and Partner Projects

Description	A list of location, topic, and contact for research, restoration, inventory, and monitoring projects across the network
Importance	NPS staff and partners had a sense that there is a lot going on, but felt that they do not really know exactly what is being done and by whom.
Key Messages	NA
Target Audiences	NPS staff and partner groups
Distribution	For now, post on the SFAN and individual park nature and science websites and if/when a one-stop-shop website is developed, this list can then be posted there as well. Send out an e-mail announcement when the list is posted.
Materials/Staffing/Costs	Excel template: provided on CD NPS staff and/or intern time would be required each year to compile a list of projects from annual reports and contacting appropriate individuals. Cost will vary. Cost of time for appropriate staff at each park to post in the web: minimal cost.
Timeline	Year 1 - Populate spreadsheet Years 2-5 - update spreadsheet annually or biannually
Evaluation	• Feedback from NPS staff and partners

Existing Information Sources

Description	A list of existing NPS natural resource information sources such as newsletters, updates, and websites with a link to more information or a contact to subscribe to mailing lists.
Importance	Respondents were unfamiliar with many of the existing information sources listed on the questionnaire. Several respondents requested a summary list.
Key Messages	NA
Target Audiences	NPS staff and partner groups
Distribution	E-mailed to staff and partners and distribute at new employee orientations
Materials/Staffing/Costs	Excel template: provided on CD The cost of a day of an intern's time to expand upon the list used for these surveys and add links: \$50
Timeline	0-6 months - populate spreadsheet
Evaluation	• Feedback from NPS staff and partners

Chapter 5 - Summary of Program- and Park-Specific Issues and Recommendations

Although participant responses were similar across divisions, each park and network-wide program face unique communications challenges and opportunities. A summary of these challenges, on-going planning efforts that may overlap with this strategy, and a brief description of park-specific recommendations are summarized below. Detailed descriptions of each recommendation can be found on the pages indicated in the right column.

Each park and program will need to prioritize the numerous recommendations in this strategy to have a starting point for action. To help with this prioritization, the recommendations below are divided into two broad categories: those that would be relatively easy to implement in the short-term, and those that would be longer-term commitments because they require significant changes to existing processes or additional staff time and funding.

GOGA

General Challenges:

The decentralized nature of GOGA presents significant communications challenges. Distance makes it especially hard for staff members to get to know each other, which is a significant obstacle when the primary source of information for most people is personal communication. Respondents noted that communication between natural resources, maintenance, and interpretive staff is not what it should be, and that partners also need to be engaged more. To address these overarching issues, GOGA natural resources staff should strive to proactively provide information to park partners and staff from other divisions by including them on e-mail distribution lists, and holding more trainings, presentations, and seminars to get information from natural resources to interpretive staff and partners and vice versa.

On-going Planning Activities:

A Vision for Interpretation and Education at Golden Gate: An overarching vision for outreach and interpretation in GOGA parks. While the focus of this plan is on public outreach, and it does not go as far as describing specific materials or programs, whatever interpretive efforts or products come out of this plan will need to be informed by natural resources information from the park.

Specific Recommendations:

Short-term		
Item	Recommendation Highlights	Detailed Recommendation
Monthly science update	When asked, contribute items of interest to the <i>Bay Area National Park Science Monthly Update</i> (formerly the I&M monthly update)	Page 18

Project-specific electronic updates	Include context and take-home messages to explain the relevance of what is being reported and expand distribution	Page 22
Annual reports	Require the author to include an abstract or executive summary and bulleted public interest highlights	Page 29
<i>Parks for Science</i> Newsletter	When asked, contribute articles for the expanded <i>Parks for Science</i> newsletter	Pages 20, 48
Shared drives	Discontinue as a primary way of sharing natural resource information when possible	Page 37
Management team meeting notes	Increase distribution of management team meeting notes to other network staff and partners	Page 40
Cross-divisional meetings	At least periodically, invite key partners, and interpretation and law enforcement staff to natural resources staff meetings and have natural resources staff attend meetings in other divisions	Page 41
Annual science symposium	Participate in the annual science symposium to increase information sharing and build relationships	Page 58
Long-term		
Park-based websites	Improve links to outside sources, content, and organization. Redirect traffic to the new one-stop-shop website when possible	Page 31
Intranet site	No change for now. If the web-based central information repository does not have a secure intranet component, then these sites can be used as an alternative	Page 35
Engaging maintenance staff	Present at the week-long annual maintenance training and increase participation in the annual Alcatraz workday	Page 42
Engaging law enforcement staff	Hold periodic meetings/trainings with law enforcement staff	Page 43
One-stop-shop website	Contribute to the creation of this central repository of information for the network	Page 45

Podcasts/DVDs/video	Work with the PCSLC to do these kinds of multi media pieces	Page 38
Brown bag lunches	Restart the GOGA brown bag lunch series	Page 56
Park Day	Participate in the on-going annual GGNPC Park Day	Page 60
Field trips/work days	Hold or participate in cross-divisional, park-specific field trips, site visits, or workdays	Page 60

PORE

General Challenges:

While PORE is more centralized than GOGA, it is still a large park with an abundant and diverse resource base and relatively large natural resources staff. Respondents noted that communications between natural resources and interpretive staff could be improved. Holding trainings, presentations, and seminars to get information from natural resources to interpretive staff and partners and vice versa would be valuable for building these relationships.

On-going Planning Activities:

Resource stewardship strategy: An approximately 40-page draft planning document that will take the place of the old resource management plan (NPS Draft). PORE is the regional pilot park for this kind of plan. PORE staff should use this internal science communication strategy as a reference when determining how to communicate results of these resource management actions to different audiences.

Point Reyes National Seashore Association Communications Plan: A public outreach strategy done by a consulting firm in summer 2008 (Wu 2008). Improved internal information sharing will help public relations staff provide accurate information to the public. There are also some similarities in recommendations between the public outreach strategy and this internal communications plan.

Specific Recommendations

Short-term		
Item	Recommendation Highlights	Detailed Recommendation
<i>Park Wavelengths</i>	Include more highly distilled science-based information and expand distribution through existing means	Page 12
Monthly science update	When asked, contribute items of interest to the <i>Bay Area National Park Science Monthly Update</i> (formerly the I&M monthly update)	Page 18
Project-specific electronic updates	Include context and take-home messages to explain the relevance of what is being reported and expand distribution	Page 22
Annual reports	Require the author to include an abstract or executive summary and bulleted public interest highlights	Page 29
<i>Parks for Science</i>	When asked, contribute articles for the expanded	Pages 20, 48

Newsletter	<i>Parks for Science</i> newsletter	
Shared drives	Discontinue as a primary way of sharing natural resource information when possible	Page 37
Brown bag lunches	Continue as is, but use web conferencing, post video, podcasts, and/or slides on the web to share the presentation with those who cannot attend in person	Page 39
Management team meeting notes	Increase distribution of management team meeting notes to other network staff and partners	Page 40
Cross-divisional meetings	At least periodically, invite key partners, and interpretation and law enforcement staff to natural resources staff meetings and have natural resources staff attend meetings in other divisions	Page 41
Annual science symposium	Participate in the annual science symposium to increase information sharing and build relationships	Page 58
Long-term		
Park-based websites	Improve links to outside sources, content, and organization. Redirect traffic to the new one-stop-shop website when possible	Page 31
Intranet site	No change for now. If the web-based central information repository does not have a secure intranet component, then these sites can be used as an alternative	Page 35
Engaging law enforcement staff	Hold periodic meetings/trainings with law enforcement staff	Page 43
One-stop-shop website	Contribute to the creation of this central repository of information for the network	Page 45
Field trips/work days	Hold or participate in cross-divisional, park-specific field trips, site visits, or work days	Page 60

PINN

General Challenges:

Because it is the farthest park from San Francisco, PINN staff are somewhat isolated from what is going on with the rest of the network. Increasing the use of webcasts so that staff can participate in meetings and brown bag presentations at other parks would help them become more connected. Because their staff is relatively small, they do not face the same communications challenges as some of the larger network parks. However, participants noted that communications between natural resources and interpretive staff could be better. Trainings, presentations, and seminars to get information from natural resources to interpretive staff and vice versa would help improve communication between these divisions.

Specific Recommendations:

Short-term

Item	Recommendation Highlights	Detailed Recommendation
Monthly science update	When asked, contribute items of interest to the <i>Bay Area National Park Science Monthly Update</i> (formerly the I&M monthly update)	Page 18
Project-specific electronic updates	Include context and take-home message to explain the relevance of what is being reported and expand distribution	Page 22
Annual reports	Require the author to include an abstract or executive summary and bulleted public interest highlights	Page 29
<i>Parks for Science</i> Newsletter	When asked, contribute articles for the expanded <i>Parks for Science</i> newsletter	Pages 20, 48
Shared drives	Discontinue as a primary way of sharing natural resource information when possible	Page 37
Cross-divisional meetings	At least periodically, invite key partners, and interpretation and law enforcement staff to natural resources staff meetings and have natural resources staff attend meetings in other divisions	Page 41
Annual science symposium	Participate in the annual science symposium to increase information sharing and build relationships	Page 58

Long-term

Park-based websites	Improve links to outside sources, content, and organization. Redirect traffic to the new one-stop-shop website when possible	Page 31
Intranet site	No change for now. If the web-based central information repository does not have a secure intranet component, then these sites can be used as an alternative	Page 35
One-stop-shop website	Contribute to the creation of this central repository of information for the network	Page 45
Podcasts/DVDs/video	Work with the PCSLC to do these kinds of multi media pieces for PINN	Page 38
Field trips/work days	Hold or participate in cross-divisional, park-specific field trips, site visits, or work days	Page 60

JOMU/EUON

General Challenges:

The resources at JOMU and EUON are primarily cultural, so interpretation is the focus of their very small staffs. Being in the East Bay also somewhat isolates these parks from the rest of the network. Hosting an interpreters meeting featuring topics relevant to East Bay parks would help strengthen connections with the rest of the network and provide information and materials to park staff.

Specific Recommendations:

Short-term

Item	Recommendation Highlights	Detailed Recommendation
Monthly science update	When asked, contribute items of interest to the <i>Bay Area National Park Science Monthly Update</i> (formerly the I&M monthly update)	Page 18
Project-specific two-page summaries	Work with the I&M Program to develop fact sheets for inventory and monitoring projects that have been done in these parks	Page 28
Annual science symposium	Participate in the annual science symposium to increase information sharing and build relationships	Page 58

Long-term

Park-based websites	Improve links to outside sources, content, and organization. Redirect traffic to the new one-stop-shop website when possible	Page 31
Podcasts/DVDs/video	Work with the PCSLC to do these kinds of multi-media pieces for East Bay parks	Page 38
Field trips/work days	Hold or participate in cross-divisional, park-specific field trips, site visits, or workdays	Page 60

Vegetation/ EPMT

General Challenges:

The vegetation program is small enough that communication among staff seems to work well. Finding linkages with what other programs and divisions are doing would help expand the distribution of vegetation-related information within the park and show how it is relevant to a broader audience.

Specific Recommendations:

Short-term		
Item	Recommendation Highlights	Detailed Recommendation
<i>What's Snoo in the Park</i>	Modify the organization of the <i>What's Snoo in the Park</i> newsletter	Page 14
Monthly science update	When asked, contribute items of interest to the <i>Bay Area National Park Science Monthly Update</i> (formerly the I&M monthly update)	Page 18
Vegetation e-mail updates	Expand distribution of vegetation-related e-mails to partners, and interpretive and maintenance staff	Page 21
Fire Program e-mail updates	Collaborate with the Fire Program to include relevant vegetation-related information in their communications and vice versa	Page 21
<i>Parks for Science Newsletter</i>	When asked, contribute articles for the expanded <i>Parks for Science</i> newsletter	Pages 20, 48
Annual reports	Require the author to include an abstract or executive summary and bulleted public interest highlights	Page 29
Cross-divisional meetings	At least periodically, invite key partners, interpretation, and law enforcement staff to vegetation staff meetings and have vegetation staff attend meetings in other divisions	Page 41
Annual science symposium	Participate in the annual science symposium to increase information sharing and build relationships	Page 58
Long-term		
Share Point sites	Continue for now	Page 36
Brown bag lunches	Participate in the GOGA brown bag lunch series	Page 56
Field trips/work days	Hold or participate in cross-divisional, park-specific field trips, site visits, or workdays	Page 60

Fire Program

General Challenges:

Existing communications from the Fire Program were rated very favorably, but a few minor recommendations are summarized below.

Specific Recommendations:

Short-term

Item	Recommendation Highlights	Detailed Recommendation
Monthly science update	When asked, contribute items of interest to the <i>Bay Area National Park Science Monthly Update</i> (formerly the I&M monthly update)	Page 18
<i>Parks for Science</i> Newsletter	When asked, contribute articles for the expanded <i>Parks for Science</i> newsletter	Pages 20, 48
Fire Program e-mail updates	Collaborate with vegetation staff to include relevant fire-related information (especially sudden oak death) in their communications and vice versa	Page 21
Fire Program website	Publicize the existence of this site and the program so that more people are aware that they are a resource	Page 34
Cross-divisional meetings	At least periodically, invite key partners, and interpretation and law enforcement staff to Fire Program meetings and have Fire Program staff attend meetings in other divisions	Page 41
Annual science symposium	Participate in the annual science symposium to increase information sharing and build relationships	Page 58

Long-term

Brown bag lunches	Participate in the GOGA brown bag lunch series	Page 56
Field trips/work days	Hold or participate in cross-divisional, park-specific field trips, site visits, or work days	Page 60

I&M Program

General Challenges:

Information about the work that I&M is doing is not being disseminated as widely as it should. Because it is in the unique position of working in every park in the network, the I&M Program faces the challenge of finding ways to communicate a large amount of information to a wide variety of end users who all want it in slightly different formats. It also has the unique opportunity to connect multiple parks, divisions, and partner groups.

Specific Recommendations:

Short-term

Item	Recommendation Highlights	Detailed Recommendation
Monthly science update	Modify the current I&M monthly update to be a broader <i>Bay Area National Park Science Monthly Update</i>	Page 18
Project-specific electronic updates	Include context and take-home messages to explain the relevance of what is being reported and expand distribution	Page 22
Biweekly Staff Schedule	Make more widely available to those who are interested	Page 24
Project-specific two-page summaries	Do more of these kinds of synthesized publications. Keep old ones current, and increase distribution	Page 28
<i>Parks for Science</i> Newsletter	When asked, contribute articles for the expanded <i>Parks for Science</i> newsletter	Pages 20, 48
Annual reports	Require the author to include an abstract or executive summary and bulleted public interest highlights	Page 29
Shared drives	Discontinue as a primary way of sharing natural resource information when possible	Page 39
Annual science symposium	Hold an annual science symposium to increase information sharing and build relationships	Page 58
Contact and project lists	Create and/or contribute to contact and project lists	Pages 61-64

Long-term

I&M website	Add more technical information like data, maps, and reports. Redirect traffic to the new one-stop-shop website when possible	Page 32
One-stop-shop website	Contribute to the creation of this central repository of information for the network	Page 45
Annual state of the resources report	Present the rankings of monitored vital signs listed in the annual report in a visually appealing state of the resources report	Page 51
I&M brochure	Produce brochure describing the science activities that take place in the network	Page 53
SFAN Logo	Create a logo that reflects the idea that the San Francisco Bay Area Network is highly collaborative and links the disparate people, parks, and natural resources of the numerous parks in the area	Page 54
Power Point presentation	Develop a Power Point presentation that can be used inform parks about what I&M is and how the network works	Page 55
Brown bag lunches	Restart the GOGA brown bag lunch series	Page 56
Field trips/work days	Hold or participate in cross-divisional, park-specific field trips, site visits, or workdays	Page 60

PCSLC

General Challenges:

The PCSLC manages to do an impressive amount of work and produce a wide variety of outreach materials with a very small staff. However, one of the primary comments from respondents about the PCSLC was that they need to engage parks other than PORE to identify projects that can then be developed at the center. In addition, many people were unaware of what PCSLC does besides coordinate academic research indicating that they need to do more to describe and promote the full scope of their work.

On-going planning activities:

All-taxa Biodiversity Inventory: Being led by PCSLC, this inventory will have a marine emphasis and should be used to guide management decisions and help interpretive staff. Products described in this plan can be used to help communicate the results of this inventory.

Specific Recommendations:

Short-term		
Item	Recommendation Highlights	Detailed Recommendation
Monthly science update	When asked, contribute items of interest to the <i>Bay Area National Park Science Monthly Update</i> (formerly the I&M monthly update)	Page 18
Parks for Science Newsletter	Follow a more consistent production schedule and modify tone, layout, and content to make it a network-wide newsletter	Pages 20, 48
PORE Ocean Update	Make the distribution more regular, modify layout, and expand distribution	Page 26
Project-specific two-page summaries	Do more of these kinds of synthesized publications. Keep old ones current, and increase distribution	Page 28
Shared drives	Discontinue as a primary way of sharing natural resource information when possible	Page 37
Annual science symposium	Participate in the annual science symposium to increase information sharing and build relationships	Page 58
Contact and project lists	Create and/or contribute to contact and project lists	Pages 61-64

Long-term		
Guide for Scientists	Distribute the guide for scientists to all non-NPS researchers working in the parks	Appendix D
Journal Articles	Improve access to journal articles for staff who want them	Page 30
PCSLC website	Improve content and organization of information, discontinue when new one-stop-shop website is available	Page 33
Podcasts/DVDs/video	The PCSLC is already planning to do more of these kinds of multi media pieces at PORE, but should also consider doing them with GOGA, PINN, and JOMU	Page 38
One-stop-shop website	Create a central repository for a variety of information organized by topic for the network	Page 45
Field trips/work days	Hold or participate in cross-divisional, park-specific field trips, site visits, or workdays	Page 60

Chapter 6 - Conclusions and Next Steps

The San Francisco Bay Area Network currently shares natural resources information through a variety of avenues. Interviews with park and partner group staff members provided valuable feedback about how effective these sources are, and revealed a number of ways to improve information sharing across the network. Some particularly interesting insights gained from these interviews include:

- Information needs are similar among people in a particular division or group, no matter what park they work in.
- Information is often presented in a way that is too technical to be useful to many audiences.
- By far, the primary means for sharing information is personal communication.
- Many respondents had not heard of the existing sources.
- Most find that it is hard to get information when they need it because it is scattered among various websites or kept on network drives.
- Partners find it particularly difficult to access NPS information.
- A majority of respondents asked for a one-stop-shop website with a wide variety of information organized by subject, a good search engine, and information presented at several levels of technical depth.

Staff from the I&M Program and the PCSLC have begun implementing some of the plan's recommendations. Currently, part-time staff and interns play a large role in assisting and leading these science communication efforts. Continued implementation will require sustained funding for these positions. The plan has also been presented to staff members across the network who will implement park-specific recommendations as they are able.

Literature Cited

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- NPS. Draft. Point Reyes National Seashore Resource Stewardship Strategy v. 2.1. Dept. of Interior, National Park Service, Point Reyes National Seashore, Point Reyes Station, California, USA.
- Wu, S., and J. Dixon. 2008. Point Reyes National Seashore Association Communications Plan. Resource Media.

Appendix A - Information Producer/User Survey

(This version of the survey was given to staff who both produce and use natural resources information.)

- 1) What communication materials are you currently producing?
 - a) What audiences are you targeting?
 - b) What critical information or important stories are you communicating?
 - c) How do you think the audience is using this information?
 - d) Have you experienced any disconnect between the intended use of your communication materials and their actual use?
 - e) Have you received any feedback (positive or negative) from audience members?
- 2) Are you planning on other or new communication products over the next 1-5 years?
 - a) Please describe them.
 - b) Will these target a new audience?
 - c) What new information or important stories will you communicate?
 - d) How do you intend for the audience to use this new information?
- 3) Do you use information about SFAN's natural resources in your job?
- 4) Are you familiar with the following natural resource programs?

1 (not familiar).....5 (very familiar)

Pacific Coast Science and Learning Center (PCSLC)
Inventory and Monitoring Program (I&M)
NPS Fire Program
Pinnacles Natural Resource Program
PORE Natural Resource Program
GOGA Natural Resource Program
JOMU Natural Resource Program

- 5) Where and how are you currently getting information about natural resources in SFAN?
- 6) Have you used any of the following sources for information? Please also rate how effective each on is (scale of 1-5) at providing you with the information you need.
1 (not effective).....5(effective); NA (have not used it)

SFAN Website
 PCSLC Website
 Fire Program Website
 Park-based Nature and Science Websites (Internet)
 Park Intranet Sites
 SFAN I&M Monthly E-mail Update
 PCSLC *Parks for Science* Newsletter
 Project Specific Electronic Updates
 Coho Salmon Updates
 Snowy Plover Updates
 Harbor Seal and Elephant Seal Updates
 Raptor Updates (PINN)
 Project Specific Annual Reports (which ones)
 Project Specific two-page Executive Briefings (Research Project Summaries)
 Brown Bag Series (PORE)
 Brown Bag Series (GOGA)
 Audio Stories
 Other (Please list)

- 7) Describe what could be done to enhance the information sites that you listed as ineffective?
- 8) What do you like about the information sites that you listed as effective?
- 9) Are there existing research projects or additional topics you would like to have information on?
- 10) How would you prefer to get this information? Highlight the top three that apply.

Annual symposia
 Presentations (please indicate preferred frequency and setting, e.g. monthly brown bag lunches, weekly staff meetings)
 Web conferences
 Website
 Newsletters
 Factsheets

Brochures

Periodic reports (e.g. annual, monthly)

Journal articles

Other (please elaborate)

Appendix B - Information Users Survey

(This version of the survey was given to staff who use natural resource information but do not produce it themselves.)

1. Do you use information about SFAN's natural resources in your job?
2. Are you familiar with the following natural resource programs?

1 (not familiar).....5 (very familiar)

Pacific Coast Science and Learning Center (PCSLC)
Inventory and Monitoring Program (I&M)
NPS Fire Program
Pinnacles Natural Resource Program
PORE Natural Resource Program
GOGA Natural Resource Program
JOMU Natural Resource Program

3. Where and how are you currently getting information about natural resources in SFAN?
4. What are the biggest challenges that you experience in getting sufficient information about SFAN natural resources?
5. Have you used any of the following sources for information? Please also rate how effective each one is (scale of 1-5) at providing you with the information you need.

1 (not effective).....5(effective); NA (have not used it)

SFAN Website
PCSLC Website
Fire Program Website
Park-based Nature and Science Websites (Internet)
Park Intranet Sites
SFAN I&M Monthly E-mail Update
PCSLC *Parks for Science* Newsletter
Project Specific Electronic
 Coho Salmon Updates
 Snowy Plover Updates
 Harbor Seal and Elephant Seal Updates
 Raptor Updates (PINN)
Project Specific Annual Reports (which ones)
Project Specific two-page Executive Briefings (Research Project Summaries)
Brown Bag Series (PORE)
Brown Bag Series (GOGA)
Audio Stories-need
Other (Please list)

6. Describe what could be done to enhance the information sites that you listed as not effective?
7. What do you like about the information sites that you listed as effective?
8. Are there existing research projects or additional topics you would like to have information on?
9. How would you prefer to get this information? Highlight the top three that apply.

Annual symposia

Presentations (please indicate preferred frequency and setting, e.g. monthly brown bag lunches, weekly staff meetings) Web conferences

Website

Newsletters

Factsheets

Brochures

Periodic reports (e.g. annual, monthly)

Journal articles

Other (please elaborate)

Appendix C - Detailed Summaries of Survey Responses

Park Superintendents (4: GOGA, PORE, PINN, JOMU):

Park superintendents use information about SFAN's natural resources on an issue-by-issue basis for management and planning. All superintendents said that they get most of their information by word of mouth, and also sometimes through e-mail. They are most familiar with the natural resource programs in their own parks, and have a strong familiarity with the Fire and I&M Programs, and some familiarity with the PCSLC.

In general, park superintendents prefer information sources that are easy to find, access, and read. They present concise, well-written summaries and include graphics, and photos. Because their information needs are largely issue-based, timeliness is important and trend data is useful for helping them understand and respond to an issue.

Their biggest challenge is getting information, getting it in a format that is useful for management (i.e. with the clear message: "here is the data and here is how we might want to use it for management"), and then having the time to read it. They need to be able to find information when they are looking for it, and they have been frustrated that that is sometimes difficult to do. It would be helpful if existing websites had improved search engines, and other forms of communication included executive summaries and/or bulleted highlights with links to more information.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Superintendents	Personal contact: • conversations • at meetings like resource management, superintendant's network, or with chiefs of natural resources E-mail: • Fire Program updates • I&M updates • harbor seal or spotted owl updates	Most sources were only used by one or two respondents and many were not used at all. Very Effective: • park-based websites • <i>Parks for Science</i> newsletter • I&M monthly e-mail update • project specific two-page executive briefings • brown bag series (PORE) • project specific electronic updates (all) Moderately Effective: • PCSLC and Fire Program websites • park intranet • project specific annual reports	• e-mail with bullets and links to more layers of information • newsletters • factsheets • website • brochures • network-wide annual symposium • presentations at senior staff meetings • issue-based briefings

Natural Resources (23: 7 GOGA, 13 PORE, 3 PINN)

Chief and Program Leads (4: 1 GOGA, 2 PORE, 1 PINN)

While personal communication is the primary source of information and e-mail updates and websites are also sometimes used. These respondents are all very familiar with all the natural resource programs in the network except JOMU.

Finding time to process information is a challenge, so sources that are focused, succinct, and include highlights are best. Having a clear sense of context and a description of trends is also important. Messages that include how information is related to other issues in the park, how people can get involved, why people should care, and have imagery are the most compelling.

Challenges include being overwhelmed by too much content and too many disparate sources of information. They feel that the network needs a one-stop-shop internet/intranet page with a robust search engine that is broadly advertized so that staff know it is there and understand why they would want to use it. More executive briefings would also be helpful, but the content needs to be fact checked by a project lead and should include substantive information like data and trends. Brown bag presentations are also well liked.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Natural Resources: Chiefs and Program Leads	Personal communication (primary): • conversations • at meetings • steering committees • workgroups Also: • I&M update • issue-based e-mail updates • websites	Very Effective: • audio stories • <i>Parks for Science</i> newsletter • project specific annual reports (raptors, water quality, vegetation) • two-page executive briefings • coho salmon and raptor updates • GOGA Educators Symposium • <i>Park Wavelengths</i> newsletter • Inside NPS intranet Moderately Effective: • I&M monthly e-mail update • SFAN, PCSLC, and Fire Program websites • park intranet sites • snowy plover, harbor seal and elephant seal updates • brown bag series (PORE)	• websites • newsletters • factsheets To a lesser degree: • brief e-mail updates with links to more information • briefing papers • monthly brown bag presentations • conferences (not web-based) • journal articles • weekly meetings • network-wide annual symposia • audio stories • intranet sites

Fire (1: PORE)

The Fire Program staff member interviewed primarily gets her information from direct interaction (e.g. conversations, e-mails) with subject matter experts, and at meetings. Other sources of information include e-mails, websites, and brown bag presentations. She is moderately to very familiar with all natural resource programs in the network.

In general, information sources that are brief, bring out key points, and have visuals like pictures, video, graphs, and maps are most useful for getting the highlights. Longer reports are a better source for in-depth information, but they need to include an abstract so that there are multiple levels of information available.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Natural Resources: Fire	• direct interaction with subject matter experts (primary source) • planning, fire, and resource management meetings • PORE senior park managers meeting minutes • all-employee e-mails • I&M monthly update • websites • brown bag presentations	Very effective: • SFAN, PCSLC, Fire Program, and park-based websites • brown bag series (PORE) Moderately effective: • park intranet • I&M monthly e-mail update • <i>Parks for Science</i> newsletter • two-page executive briefings Other: • Science Behind the Scenery DVD	• presentations • factsheets • briefings • abstracts of journal articles • periodic reports that are “in bullets not paragraphs” • pictures, video, graphs and maps • longer reports with an abstract

Vegetation (6: 3 PORE, 3 GOGA)

Vegetation natural resources staff get their information mostly from personal communication, but also from websites, e-mail updates, and presentations. GOGA staff are most familiar with GOGA, I&M, Fire, and (slightly less) PORE Natural Resource Programs, while PORE staff are most familiar with the PORE, GOGA, I&M, and Fire Programs and the PCSLC.

In general, sources that are most useful are well organized, current, and easy to navigate. Some respondents wanted more depth of information like maps and data, while others prefer information that is more distilled and to the point. Most agree that existing sources could be improved by making it the information easier to find and providing multiple levels of technical depth.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Natural Resources: Vegetation	Personal communication (primary source): • e-mail • conference calls • meetings • project collaboration Also: • websites • I&M monthly update • brown bag presentations	Very Effective: • park intranet • two-page executive briefings • brown bag series (PORE) • project specific electronic updates (harbor seal and elephant seal) • annual reports • Fire Program website • I&M monthly e-mail update Moderately effective: • coho salmon and snowy plover updates • <i>Parks for Science</i> Newsletter • SFAN, PCSLC, and park-based websites Ineffective: • raptor updates • brown bag series (GOGA)	• monthly brown bag presentations • presentations before a regularly scheduled meeting or at an all-employee meeting or training • network-wide annual symposium • periodic reports (frequency depending on urgency of the topic) • factsheets • short e-mail updates with bullets, graphics, and a link to more information on a centralized location To a lesser degree: • executive briefings • websites • web conferences • journal articles

Water and Wetlands (5: 1 GOGA, 4 PORE)

The primary source of information for all these staff members is personal contact, and they generally know who to ask when they have a question. Steering committees, workshops, and meetings are also opportunities for personal interaction. Additionally, files shared on network drives, ftp sites, park websites, and non-NPS websites are also sometimes used. Two respondents are moderately to very familiar with all of the natural resource programs in the network. Others are most familiar with those at their home park (PORE), I&M, GOGA, and PCSLC.

In general, an effective information source is easy to find and brief enough to be digestible while still covering key information. These natural resources staff sometimes need more technical depth or detail than the sources listed on the survey are intended to provide, but this varies depending on the topic. Some felt that the park and I&M websites are well crafted and easily accessible, while others said that the web was not effective because it lacked technical depth like maps or information about species and habitat distribution. Most agree that the utility of these websites could be improved with links to outside sources to provide a broader context, e-mail notification when new information is posted, and multiple levels of information to meet the need for different degrees of detail and technical depth.

Division/ Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Water and Wetlands	Personal contact • steering committees • workshops, and other meetings Also: • files shared on the network or ftp site • websites • non-SFAN sources: • NPS geology and water division in Denver • NPS regional library in Seattle • NOAA weather and tides • cooperating agencies like USGS, FWS, USACE, academic institutions, regulatory sites, USGS stream gauge information, webcam at PORE light house	Respondents were unfamiliar with many of the sites on the list. Very Effective: • brown bag series (PORE and GOGA) • project-specific updates (snowy plover) • harbor seal and elephant seal) • PCSLC website Moderately Effective: • park-based and SFAN websites • coho salmon updates • two-page executive briefings • I&M monthly e-mail update • <i>Parks for Science</i> Newsletter • park intranet sites	• brown bags (very popular) • network-wide annual symposium (perhaps even including non-NPS natural areas) • e-mailed newsletters or factsheets with very short bullets and links to more information • on-site staff meetings • web conferences/teleconferences • website • periodic reports (annual or monthly depending on need)

Wildlife (7: 2 GOGA, 3 PORE, 2 PINN)

While these staff members all responded that they use natural resource information, a couple noted that due to the narrow focus of their jobs they only use a small subset of the information that is directly related to what they do. By far, the most common source of information is personal contact. Meeting notes, the weekly I&M call, and the I&M website were also popular information sources. Two of the seven respondents are moderately to very familiar with all the natural resource programs in SFAN. Everyone else is moderately to very familiar with the I&M Program and the programs in their own parks, and less so with others.

In general, useful sources provide access to data summaries and analyses in a way that is easy to find specific information. Brown bag presentations are very well liked, and executive briefings and summaries with links to longer abstracts and reports are also good sources. One respondent noted that she often needs information at more depth than many of the sources listed on the survey are meant to provide. Several people said the I&M and park-based websites are well organized, populated, and provide a broader audience with access to information. Another felt that the GOGA site in particular is not very good, and that it should be more interactive and include reports and briefings. Several noted that the I&M website is very difficult to navigate and does not come up on Google searches with key words that should work (e.g. “SFAN spotted owl”). Furthermore, the site is difficult to find unless you have the web address on hand. As one respondent noted, “A lot effort was put into developing the information on the website and its disappointing when you can’t share this with the public.”

Division/ Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Wildlife	Personal contact (primary): • phone call or e-mail when they have a specific question • conversations with staff • at meetings Also: • meeting notes • weekly I&M call • I&M website • reports and journal articles • I&M retreats	Very Effective: • two-page executive briefings • project specific annual reports (spotted owl, elephant and harbor seal, coho salmon, raptors) • project specific electronic updates (coho salmon, raptor snowy plover , harbor seal and elephant seal) • <i>Parks for Science</i> Newsletter • brown bag series (PORE) • I&M monthly e-mail update • SFAN website Moderately Effective: • PCSLC and park-based websites • audio stories	• annual symposia • websites • periodic reports with the frequency depending on the subject and the need • journal articles • brief fact sheets with links to more information • brown bags presentations To a lesser extent: • brochures • trainings • web conferences

Interpretation and Education (17: 10 GOGA, 4 PORE, 1 PINN, 2 JOMU/EUON)

Chiefs of Interpretation (3: 1 GOGA, 1 PORE, 1 PINN)

Chiefs of Interpretation get their information from personal communication and e-mail updates. They are most familiar with the natural resources programs at the parks where they work, the I&M Program, Fire Program and the PCSLC.

They prefer to get information in an easily digestible format like executive summaries with a link to more information. Timely information that is appropriate for external audiences is best. The biggest challenge in getting sufficient information is having the time to read, absorb, and ponder what they get and to talk to interpretive staff about gaps in resource knowledge. In addition, they often have to go look for the information they need although they would prefer it came to them. One respondent felt that he did not have a challenge getting adequate information because he knows who to call when he has a question, but believes that there may be things going on that he is unaware of.

Division/ Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Interpretation and Education: Chiefs of Interpretation	• I&M update • raptor report and condor program updates • senior staff meetings • project review teams • articles and the web • talking to staff	Most of these rankings reflect the opinions of the one staff member who was much more familiar with the listed information sources. Very Effective: • PCSLC and park-based websites • park intranet sites • project specific electronic updates (coho salmon, snowy plover, harbor seal and elephant seal , raptor) • I&M monthly e-mail update • <i>Parks for Science</i> newsletter • project specific annual reports • audio stories Moderately Effective: • Fire Program website • two-page executive briefings • brown bag series (PORE)	• park-specific annual symposia • presentations at Ft. Mason. • digital newsletters/factsheets/periodic reports with highly distilled and synthesized information that can be shared with the public • brochures • web conferences • websites • a share point site or discussion database • a clearing house where information is organized by subject with a notice when new information is posted

Interpretive Staff (9: 6 GOGA, 1 PORE, 1 JOMU, 1 JOMU/EUON)

GOGA and PORE interpretive staff frequently use natural resource information from their home park. At JOMU and EUON, this is not the case as the resource is primarily cultural. The level of information interpretive staff gets varies widely. In general, GOGA interpretive staff get their information from personal communication, written materials, and websites. JOMU/EUON staff do not get much information other than occasional e-mail updates. The PORE interpretive staff member who participated in this project gets information from a variety of sources. GOGA and PORE staff are most familiar with the PCSLC, I&M, Fire and GOGA Natural Resource Programs. JOMU/EUON staff are most familiar with I&M, Fire, and GOGA Natural Resource Programs.

Effective information sources are concise, written in non-technical terms, and have links to more information. Interpretive staff need information that they can use with the public, and that help them deal with issues that they will be asked about because they are in the news or are highly visible in the park. At locations with limited internet connectivity, things that come in a small file size and/or can be posted on a bulletin board are best. The biggest challenges to getting sufficient natural resources information is having the time to find, read, and digest information. Interpretive staff have limited personnel resources and do not have the time to go looking for information or go out into the field; however, they would like more contact with natural resource staff. Access to information is limited by poor or nonexistent internet access at some sites, not being on various mailing lists, and not knowing about what is going on or who to ask for more information.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Interpretation and Education: Interpretive Staff	GOGA: • talking to natural resources staff, supervisors, GGNPC nursery staff • I&M updates • coho updates • SFAN and park websites PORE: • brown bag presentations • asking staff specific questions • various e-mail updates • management team meeting notes	These rankings reflect the responses of the few who were familiar with these sources. Very Effective: • brown bag series (PORE) • audio stories • park intranet sites • I&M monthly e-mail update • project specific annual reports (coho) • project specific electronic updates (all) • <i>Parks for Science</i> newsletter	• annual symposia including the educator's symposium • presentations, especially from natural resources staff (maybe two or three times a year) • newsletters (e-mail or hardcopy) • factsheets • periodic reports • journal articles • websites • e-mailed listings of all new sources

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
	JOMU/EUON: • I&M update • newsletters • occasional e-mails	• <i>Naturally Speaking</i> • <i>Parks Science</i> (national Level) Moderately Effective: • brown bag series (GOGA) • park-based websites	• e-mail updates with well written subject lines

Public Information Officers (2: GOGA)

The two public information officers interviewed for this project both use information about SFAN's natural resources. They primarily get their information from personal contact, but also from e-mails, newsletters, and briefings. They are most familiar with the Fire, I&M, and GOGA Natural Resources Programs, and least familiar with the PCSLC and the natural resource programs of the other parks in the network.

Getting information is not a problem, but getting too much information in too much detail is. Reports and even briefings are too technical to help with the media and the public. What they need instead are regular, attention-getting highlights about hot topics in a one- or two-page format with graphics and a link to more information. Information sources are not effective if the information is not tiered.

Political issues take up a lot of their time so they tend to be more reactive to media inquiries than proactively putting information out, but they would like to know about things in advance so they can target reporters. Because they are responding to what is hot in the media, they deal with a few specific key topics per year such as climate change and the Big Year. There is currently no real strategy for coming up with these topics, but they would like to work with the natural resources staff to choose them in the future.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Interpretation and Education: Public Information Officers	• personal contacts (primary) • e-mail • newsletters • briefings • senior staff meetings • project reviews	Many of the existing sources of information were not used. Very Effective: • project specific electronic updates (snowy plover, harbor seal and elephant seal, and raptor) • two-page executive briefings Moderately Effective: • I&M monthly e-mail update Ineffective: • park-based websites • Fire Program website	• <u>very brief</u> e-mail updates • the website, if it were beefed up substantially and had tiered information, factsheets, and an annual report on resources (like <i>Golden Gate Connections</i>) • getting together with natural resources staff (maybe even in the field), or at a special presentation at the senior staff meetings • network-wide annual symposia including other nearby protected areas (e.g. state, local) • monthly brown bags

PCSLC (2)

Pacific Coast Science and Learning Center staff are currently getting natural resources information by word of mouth from people they have working relationships with and from a variety of e-mail updates. They are most familiar with their own program, the natural resource programs at PORE and GOGA, and the I&M Program.

In general, an effective information source is one that is well-populated, short, up-to-date, easy to find and navigate, and has information that is of interest. They noted that improvements could be made to the content and navigation of the PSCLC website, and the level and tone of the *Parks for Science* newsletter.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Interpretation and Education: PCSLC	• Personal contact with managers and staff, working relationships (collaborators, meetings) also some e-mail • monthly I&M update, plover update • <i>Park Wavelengths</i>	Very Effective: audio stories brown bag series (PORE) two-page executive briefings I&M monthly e-mail update park-based websites Moderately Effective: PORE intranet site <i>Parks for Science</i> Newsletter Project specific electronic updates (coho salmon, snowy plovers, harbor seal and elephant seal, raptor) PCSLC website Ineffective: brown bag series (GOGA)	• brown bag lunches • website • distilled information with graphs, tables, and with link to more info or longer report • factsheets posted on the web • journal articles • network-wide annual symposia (ideally two days with both presentations and posters) • informal brown bags every two weeks • monthly periodic reports

Communications Liaison (1 GOGA)

One NPS staff member who serves as a liaison between the Interpretation and Natural Resources Divisions at GOGA also participated in this project. She currently gets natural resources information primarily through personal contact with people she happens to be talking to or by knowing who to ask when she has a question. She also gets information from e-mail, meeting notes and newsletters. She is familiar with all the natural resource programs, but mostly with PCSLC, I&M, GOGA, and PORE.

She uses the GOGA common drive as a source of information, but noted that is very poorly organized and labeled so she often has to track down people and ask them where things are. Otherwise, the biggest challenge she has to getting the information she needs is the decentralized nature of GOGA with different parks being so far apart and some lacking internet and e-mail access.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Interpretation and Education : Communications Liaison	• personal contact (main source) • e-mail • I&M update • notes from the monthly senior staff meeting • <i>Naturally Speaking</i>	The respondent had not used most of the listed sources. Very Effective: • SFAN, PCSLC, and park-based websites • I&M monthly e-mail update • <i>Parks for Science</i> newsletter • two-page executive briefings Ineffective: • park intranet sites	• e-mail with bulleted links to more information • websites with multiple tiers of information • presentations

Law Enforcement (3: 2 GOGA, 1 PORE)

Law enforcement staff use natural resource information that relates directly to things that they are responsible for enforcing, like citing someone for damage to mission blue butterfly habitat or restrictions to protect harbor seals or plovers. They get their information through conversations and e-mail, but e-mail is not as frequently used by law enforcement as some other divisions because staff are often away from their desks. Staff are moderately familiar with the Fire and I&M Programs and the natural resource program in their own park.

Information sources that provide quick and easy access to basic information are preferred. The biggest challenge to getting natural resource information is having time to go find the right person to ask for information. Overall, they do not feel that they have a challenge getting sufficient natural resources information because they do not have much opportunity for interpretive contact with visitors in their role as police.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Law Enforcement Staff	personal contact with resource managers	Respondents had not heard of or had never used many of the sources listed. Moderately Effective: - Fire Program website - park intranet sites - project specific electronic updates (coho salmon snowy plover harbor seal and elephant seal) Ineffective: <i>Parks for Science</i> newsletter - project specific annual reports - two-page executive briefings - brown bag series - audio stories	- personal contact - e-mail with a link to a website - bulletin board at GOGA

Partners (16)

GGNPC (5):

The three Conservancy staff that use information about park natural resources get it from the web, e-mail updates, newsletters, park planning meetings, or by seeking out NPS staff when they have questions. They share information about what the Conservancy is doing through quarterly internal updates, notification e-mails before projects, and through close contact with NPS public affairs. Respondents are most familiar with the GOGA and PORE Natural Resource Programs and the I&M Program, although one person is not familiar with any of the natural resource programs in the network.

In general, Conservancy staff prefer information sources that are written in a straightforward, non-technical way, are easy to find and navigate, and are concise but have links to more information. Websites are a popular information source because they are accessible to people outside of NPS, but their utility could be improved with links to related pages on park partners' websites.

The biggest challenge to getting sufficient information is not knowing that resources exist and/or not being able to access them as non-NPS employees—including most of the sources listed on the survey. Information finds its way to them through personal communication or if someone from NPS happens to forward it along, but they would like a way to get on distribution lists for things like newsletters, e-mail updates, and meeting notes. For public relations purposes, figuring out what information should be shared with the public is sometimes challenging. Hot issues in the park can change rapidly so it can be hard to get a clear picture of what is going on and how priorities may have shifted along the way.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Partners: GGNPC	• websites • e-mail updates • newsletters • park planning meetings • conversations with NPS staff • occasional NPS updates forwarded from other people in the Conservancy • outside sources such as Calflora, non-NPS websites, and other park user groups and professional organizations	Respondents had not heard of or had never used many of the sources listed. Very Effective: • SFAN and PCSLC website • project specific electronic updates (coho salmon, snowy plover, raptor) Moderately Effective: • park-based and Fire Program websites	• websites (first choice by far) • factsheets • brochures • e-mail updates • podcasts • other public-friendly media • quarterly, half day presentations • periodic reports • journal articles

Presidio Trust (3: 2 Trust staff, 1 NPS employee who is a liaison with the Trust):

When asked if they use natural resource information in their jobs, Presidio Trust staff responses ranged from “no,” to a weak “yes,” to “all the time.” They get their information primarily from talking to coworkers and they usually know who to ask when they have a question. They also get information when it is forwarded by colleagues, from e-mail updates, and from non-NPS sources like the Calflora website. Those who use natural resource information are most familiar with the I&M Program, Fire Program and GOGA Natural Resources Program.

In general, sources are useful when they are well populated and interactive. One staff member felt that the park website was not well organized or populated and that it is not set up in a way where users can go find an answer to their questions. A central place for the network to exchange information (e.g. data, maps, project descriptions) and where staff can add information would alleviate that problem. Because they only work in the Presidio, they feel that if there is a project going on they are probably already aware of it; however, knowing what is happening in other parks or other parts of GOGA can be difficult.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Partners: Presidio Trust	- informal updates or things that colleagues pass along that are of interest - talking to coworkers - I&M update - Fire Program updates - non-NPS sources like the Calflora website	Only one staff member was familiar with any of the listed sources. Moderately Effective: - monthly I&M update Ineffective: - park website - intranet	- network-wide annual symposium - charrettes on specific topics - one- page, digital factsheets - journal articles - an internal, web-based repository for summaries with a searchable database - brown bags in a more convenient location than the headlands or PORE

PRNSA (2):

PRNSA staff do not often use natural resource information, or if they do then only very minimally. They learn about what is going on in the park by talking to PORE staff, but noted that it can be difficult to get a hold of busy employees who have the information they need. The PORE website is their other primary source of information. They are most familiar with the natural resource program at PORE and much less so with the other network programs.

In general, PRNSA staff want non-technical information that can be disseminated to the public or incorporated in their reports. They find that not being part of NPS makes it hard to know about NPS projects other than those PRNSA is directly involved in. A lack of specificity in the PORE website and snowy plover updates was also noted as challenge to getting information about exactly where one can and cannot go within the park.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Partners: PRNSA	• talking to PORE staff • PORE website	Respondents were not familiar with most of the sites listed. Very Effective: • PORE brown bag series • <i>Parks for Science</i> newsletter • coho salmon updates • park-based website Moderately Effective: • snowy plover update	• factsheets • website • periodic reports • brown bags • personal contact

Other Partners (6):

The six other partner groups are listed together due to the similarity of their information needs and challenges. Most of them use select information about SFAN's natural resources as it relates directly to their geographic location or things that are of special interest to their audiences (often students) such as "charismatic megafauna." They are currently primarily getting information from meetings, trainings, personal contact with NPS staff, e-mails, and publications. In general, they are not familiar with the natural resource programs in the network, although they are slightly more familiar with the I&M Program and a couple of respondents were also familiar with the PCSLC, the Fire Program, and the PINN, PORE, and GOGA Natural Resource Programs.

Their greatest obstacle to getting information is access. These groups do not get updates, do not have access to park drives or networks, and in many cases are not even aware of what information exists. Information that does come their way seems "sporadic" and is often too long and technical. They would prefer to get it in a much more distilled way or even as "fun facts" or other kid-friendly bits of information. Improved organization and search capacity on the website would also help them get the information they need, as one respondent noted that it sometimes takes longer to look through the park website than it does to do a Google search on the same topic. Their audiences, and even their staff, also respond well to hands-on training from naturalists or interpretive staff.

Division/Program	Most Commonly Used Information Sources	Rating of Existing Sources	Preferred Methods of Information Delivery
Partners: Other Partners	• some contact with a few NPS staff • sporadic e-mails • working and meetings with NPS staff (e.g. MLPA project, others) • Mia Monroe and the Marin Headlands Park Partner meetings and symposium • Redwood Creek native plant nursery trainings • occasional professional development days • the Headlands Institute fall lecture series • local papers • NPS publications that they get delivered or pick up • GGNRA newsletter	Four of the six respondents had never heard of or used any of the listed sources. Very Effective: • meetings with NPS staff Moderately Effective: • PORE brown bag series • park-based websites Ineffective: • I&M monthly e-mail update	• annual symposia (very popular) • presentations at monthly brown bag lunches • newsletters (electronic) • a one-stop-shop website and an reminder e-mail with highlights • kid-friendly websites • direct training (brought to them) • factsheets • brochures • periodic reports • monthly or quarterly updates on current events/hot topics • a consolidated list with links to .pdfs of journal articles related to the park

Appendix D - Guide for Scientists

This brief guide is designed to facilitate the flow of information by encouraging scientists to synthesize complex scientific information into a format that is useful for a variety of audiences. This guide should be given to every non-NPS researcher permitted to work on parkland.

Dear Researcher:

Every research project provides a wealth of information that can be shared with park staff, partners, educators, students, community groups, and the visiting public. Below are some recommendations to help both you and park staff better communicate your important work to these audiences.

- A poster or a presentation at a brown bag lunch or an annual symposium may be requested from permittees conducting projects that are especially relevant to resource management or that have yielded particularly notable results.
- Permittees may be asked to write (or contribute to) short articles for park newsletters or updates, and may be asked to provide useful references to help improve links to more information on the park website.
- Each researcher must submit a thorough, descriptive, and well-written project abstract that outlines their goals, methods, and expected outcomes for the Investigators Annual Report (IAR). These abstracts should be useful for summaries, websites, and newsletters without significant additional information gathering by park staff. Photos may also be requested.

Project Abstract Guidelines for IAR Reports

Project Title:

A descriptive title of the research project

Objectives:

A bulleted list of the questions the study was designed to address

Background:

Two to five paragraphs describing relevant background information, including a description of the project site, a brief description of project methodology, and relevant ecological and cultural issues

Results to Date:

A bulleted list of results as of the submission of the IAR

Significance:

A brief explanation of the implications of these findings, how they relate to broader issues, and/or implications for park natural resources management

For more information, contact:

Hilary Clark, Hilary_Clark@nps.gov, (415) 331-0729 (for GOGA)

Ben Becker, Ben_Becker@nps.gov, (415) 464-5247 (for PORE)

Appendix E - Additional Information Needs

Participants were asked if there are additional topics or on-going projects that they would like more information on. Many people responded that it was hard to say what they might want to know more about because they feel unfamiliar with everything that is going on. Overall, specific responses were similar among people in different divisions or programs as summarized below.

Division	Additional information needs
Park Superintendents	• A more effective way to find past NPS policy and legislation such as enabling legislation, EAs, EISs, etc... • What people respond to as a conservation message • Fact sheets about what ever is a hot issue in their park, big environmental issues, and how SFAN is addressing them • The big picture story on lead and health (e.g. humans, other animals) in the context of what other states are doing • The degree of long-term success of restoration projects and associated maintenance activities • Status of natural resources such as raptors and plants and water quality at PORE
Natural Resources	
Chiefs and Program Leads	• Many things, but there is no time to go beyond just getting immediately relevant information • Better communication about what is going on in other network parks (e.g. workshops, projects, I&M activities) • Collaboration among protected areas dealing with wildlife corridor issues and how NPS fits in to the system • Updates on the results of BioBlitzes and All Taxa Biodiversity Inventory (ATBI) work • The effectiveness of restoration projects • Species conservation, air quality, and the local effects of climate change and sudden oak death
Fire	• Better access to graphs and photos • Notification on funding decisions • A list of vegetation and fire contacts • The regional effects of climate change • Weather data such as historical numbers of red flag days, offshore wind events, and other information from weather devices connected to a website • Results of the fire research and fire effects program

Division	Additional information needs
Vegetation	• A list of links to websites, reports, and other communication sources in a one-page reference document • How to set up contracts with graduate students and a list of professors, their specialty, and contact information • A brief summary of non-NPS research projects • What other parks are doing to educate maintenance staff • Marine/estuarine surveys, marine protected areas planning, and how these areas might recover once they are protected • How climate change affects PORE (e.g. sea level rise, vegetation, fire) and what park partners are doing to address their own climate-related issues • The effects of sudden oak death • The science of how major restoration projects (e.g. wetlands, dunes etc...) are done and the effects of these projects
Water and Wetlands	• A list of what projects are going on in the park and who is involved • Stream flow and weather data provided in a way that people can go look it up themselves • The effects of climate change on local park resources • A local weather and climate information feed (maybe from NOAA) and more information about what is happening with the I&M Program's weather and climate effort • Local air quality data • An update on the shoreline assessment project (Joe Kinyon)
Wildlife	• Lots, but he has no time to read anything else • The opportunity to go to conferences and trainings to learn from other parts of the network and outside organizations • Executive briefings on projects by non-NPS researchers in the park (e.g. graduate students, USGS)
Interpretation, Communication, and Education	
Chiefs of Interpretation	• A summary of the various projects being done in the parks with associated contact information • Big-picture synthesis of management decisions, practices, and results • The effects of climate change • General information on salmon and condors
Interpretive Staff	• If there is a database of observations (from visitors, staff, or volunteers), and if so can what kind of information is included and how people can get involved

Division	Additional information needs
	• If interpretive staff should participate in larger monitoring and tracking programs, and if so how to access that information • Natural resources projects at park sites and interpretive staff can help get that information out • A list of who to ask about a specific topic • Native American natural and cultural resource information • Information about animals other than birds like banana slugs or sea life • Monitoring relevant to climate change • Redwoods, specifically the role of fog, and their re-establishment on the coast
Public Information Officers	• Hard to anticipate because information needs are issue-based • A resource list of who to call for a particular topic or issue (including partners) • Fact sheets on basic resources, features, structures, organizations, special designations (e.g. biosphere reserve) • Climate change • Smaller-scale stories about specific things that make the area special • Water issues—quality, quantity, and use for fish vs. people • Sudden oak death and especially its relationship to fire • Restoration projects (what species are being replanted and why) • The impact of the Cosco Busan oil spill on park resources • General information on geology and insects
Communications Liaison	• The effects of sudden oak death, climate change, and fire • The status of endangered species in the park
PCSLC	• A one-page, highly distilled, big picture summary of both the marine environment and terrestrial ecosystems in the park • What is going on in parks other than PORE
Law Enforcement	
Staff	• Hard to anticipate because that is usually whatever requires immediate attention • The status of natural resources like non-native plants, harbor seals, plovers, and grunion surveys • On-going research projects (who is involved, what are they doing, how long will it last) because people ask
Partners	

Division	Additional information needs
GGNPC	• Anything that is newsworthy and has a clear “so what” message • Things that the park wants made more accessible to a layperson and/or added to GGNPC website • Easier access to better organized art and photos • An assessment of how the “Big Year” (http://www.ggnrbigyear.org/) affected the natural resources in the park • How the mushroom/hair mat oil spill remediation project worked • The results of the bee study at the Presidio • The effects of nursery plants on the success or failure of restoration projects
Presidio Trust	• A list of projects, pictures, and maps all housed in one place • Activities in the Presidio that have a human interaction component
PRNSA	• Hard to anticipate because it depends on what is currently an issue for park users
Other Partners	• Anything would be good because they get so little • The increase in mountain beavers after PORE fire years ago • Native and invasive plants, tide pools, watersheds/water cycle, soundscapes, and other tangible, visible, and interesting things that they can use with very young kids • The human impact on the environment • The general health of populations of native species in the park (especially the charismatic megafauna) • Whether or not local water quality is safe for human contact • What the park is doing about the coyote issue—volunteers come in with misinformation but there is a lack of accurate information to provide them with instead • The spotted owl breeding failure from 2006 and what has happened since then • Bee inventories, their survival in parks, and the diversity of bees at PINN

The Department of the Interior protects and manages the nation's natural resources and cultural heritage; provides scientific and other information about those resources; and honors its special responsibilities to American Indians, Alaska Natives, and affiliated Island Communities.

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