



Glacier Bay

Klondike Gold Rush

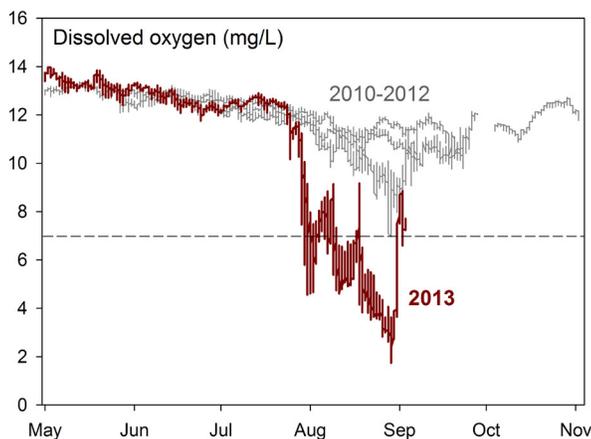
Sitka

2013 Field Season Highlights

SEAN data reveals real-time threats to salmon within boundaries of Sitka NHP

Although Sitka National Historical Park (SITK) is known for its pristine surroundings, warm weather and record salmon runs combined this summer to create a dangerous situation for fish in the Park's Indian River. The abundance of salmon and low water levels in late August resulted in extremely low levels of dissolved oxygen, which is essential for fish survival. Southeast Alaska Inventory and Monitoring Network (SEAN)

monitoring equipment tracked changing water quality conditions during this period and demonstrated that 2013 was an exceptionally poor year for dissolved oxygen levels. The minimum dissolved oxygen levels allowed under Alaska state law for rivers with salmon populations is 7 mg/L. Preliminary SEAN data below demonstrates oxygen levels below this threshold for almost the entire month of August 2013.



Preliminary SEAN data below demonstrates oxygen levels below the 7 mg/L dissolved oxygen threshold for almost the entire month of August 2013. During this period of low oxygen, fish were found dying before spawning in numbers greater than would be expected naturally.



Emily Noyd collects mussels for the marine contaminants program during her time as an intern with SITK and SEAN during summer 2013.

SEAN and Sitka NHP benefit from George Wright Climate Change Intern

SITK and SEAN teamed up this year to submit a successful proposal for the George Melendez Wright Climate Change Internship Program titled, "Small Park, Big Resources." The program funded a 12-week internship in summer 2013 focused on natural resource monitoring and science outreach related to climate change issues affecting SITK resources. The selected intern, Emily Noyd, played a key role in implementing this year's monitoring activities in SITK by conducting water quality and streamflow monitoring, and assisting in research projects on freshwater contaminants and salmon biology. She used these hands-on experiences to enrich well-attended interpretive presentations on climate change for park visitors. Before getting back to Seattle for her final year of undergraduate education, Emily finished this inspirational video detailing her work with the park: http://www.youtube.com/watch?v=B_q6NvQD3K4

SEAN helps make national Data Store more useful to customers

The Southeast Alaska Network (SEAN) provided technical project management to a regional effort to "clean up" all of Alaska's references in the National Park Service (NPS) Integrated Resource Management Applications (IRMA) Data Store. Despite the IRMA Data Store being an excellent repository for all of the NPS's research and publications, its content catalog had issues with inaccuracies and redundancies. To remedy this situation, the Alaska Region Inventory and Monitoring Coordinator contracted with Alaska Resources Library and Information Service (ARLIS) to review and correct all 30,000 references as well as to author procedures for ongoing maintenance of Data Store content. NPS

employees with the IRMA Development Team then initiated the formidable task of updating the master Data Store database to reflect ARLIS's work. By the end of the fiscal year, ARLIS had delivered its major work products. The SEAN continues to coordinate the work of a variety of contractors and agency partners to see the job through to completion. Once complete, it is expected that the IRMA Data Store will be much more attractive to researchers. To share these improvements, an educational effort is planned to show internal NPS customers how best to utilize the IRMA Data Store to further their work.

New website provides improved sharing of SEAN work to researchers and public

To improve its value to customers as well as to meet new Department of Interior design standards, Southeast Alaska Network (SEAN) staff conducted a major project to recreate its web presence from scratch. Aside from a more sophisticated look and feel, all content was revised to ensure it is complete, relevant and current. New features include online videos, interactive maps, and extensive connections to the national Integrated Resource Management Applications (IRMA) Data Store. The SEAN remains the only National Park Service Inventory and Monitoring Network in the country that gives users

the ability to directly download its detailed monitoring data in order to inform their own research. Both the public-facing web facilities and interconnected database were constructed using new national infrastructure that provides greater capacity, speed, and security. The web presence is also now in complete compliance with federally-required "Section 508" accessibility standards. This new site, currently comprised of 1,561 individual files, should serve SEAN customers well for a number of years to come.

Recent Reports and Publications

Sergeant, C.J., and S.A. Nagorski. Submitted to River Research and Applications, Sept. 2013. The implications of monitoring frequency for describing riverine water quality regimes. *In preparation.*

Arendt, A., C. Larsen, M. Loso, N. Murphy, and J. Rich. 2013. Alaskan National Park glaciers - status and trends: Third progress report. Natural Resource Data Series NPS/AKRO/NRDS—2013/439. National Park Service, Fort Collins, Colorado.

Arendt, A., C. Larsen, M. Loso, N. Murphy, and J. Rich. 2012. Alaskan National Park glaciers - status and trends: First progress report. Natural Resource Data Series NPS/AKR/NRDS—2012/403. National Park Service, Fort Collins, Colorado.

Brinkman, A., B. Moynahan, and M. S. Lindberg. 2013. Black-legged kittiwakes in Glacier Bay National Park and Preserve: a review of existing data and recommendations for long-term population monitoring. Natural Resource Technical Report NPS/SEAN/NRTR—2013/672. National Park Service, Fort Collins, Colorado.

Cyr, A., C.J. Sergeant, and T.M. O'Hara. In Press. Developing a freshwater contaminants monitoring protocol for the Southeast Alaska Network: summary of 2013 field activities in Klondike Gold Rush and Sitka National Historical Parks. Natural Resource Data Series NPS/SEAN/NRDS—2013/XXX. National Park Service, Fort Collins, Colorado.

Hoekman, S.T., B.J. Moynahan, W.F. Johnson, and C.J. Sergeant. In Press. Glacier Bay National Park and Preserve Kittlitz's murrelet monitoring protocol: Version KM-2012.1. Natural Resource Report NPS/SEAN/NRR—2012/XXX. National Park Service, Fort Collins, Colorado.

Hoekman, S.T., C.J. Sergeant, and W.F. Johnson. 2013. Monitoring Kittlitz's and marbled murrelets in Glacier Bay National Park and Preserve: 2012 annual report. Natural Resource Technical Report NPS/SEAN/NRTR—2013/810. National Park Service, Fort Collins, Colorado.

Hoekman, S.T., C.J. Sergeant, and W.F. Johnson. In Press. Monitoring Kittlitz's and marbled murrelets in Glacier Bay National Park and Preserve: 2011 annual report. Natural Resource Technical Report NPS/SEAN/NRTR—2013/XXX. National Park Service, Fort Collins, Colorado.

National Park Service. 2013. State of the Park Report for Klondike Gold Rush National Historical Park. State of the Park Series No. 5. National Park Service, Washington, D.C. (C.J. Sergeant, D. Schirokauer drafted Natural Resources section)

Sergeant, C. J., W. F. Johnson, and S. Nagorski. 2013. Freshwater water quality monitoring protocol: version FQ-2013.1, Southeast Alaska Network. Natural Resource Report NPS/SEAN/NRR—2013/651. National Park Service, Fort Collins, Colorado.

Sergeant, C.J., and W.F. Johnson. 2013. Southeast Alaska Network freshwater water quality monitoring program: 2012 annual report. Natural Resource Technical Report NPS/SEAN/NRTR—2013/706. National Park Service, Fort Collins, Colorado.



Andrew Cyr carries minnow traps to a sampling location on the Taiya River in KLGO. The fish caught during the trip are currently being analyzed at the University of Alaska Fairbanks for a suite of contaminants, including several heavy metals.

SEAN supporting graduate student

Andrew Cyr, UAF masters student, completed his second year of work on the Freshwater Contaminants Vital Sign via a CESU agreement led by Dr. Todd O'Hara at University of Alaska Fairbanks (UAF) and co-investigators Dr. Andres Lopez (UAF) and Dr. Lisa Hoferkamp (UAS). Andrew led field collections at KLGO and SITK during summer 2013. Andrew and SEAN staff were successful in collecting several fish species across glacial/non-glacial and anadromous-influenced/non-anadromous habitats. These samples will be analyzed for a suite of contaminants in FY14 and contribute directly to long-term monitoring protocol development.

Network Pulse

SEAN implements long-term ecological monitoring and provides scientifically sound natural resource information to parks. To date, SEAN has completed original monitoring protocols for three Vital Signs: oceanography, freshwater water quality, and Kittlitz's murrelets. Marine contaminants and streamflow Vital Signs have adopted existing protocols. Years of data available on our website: Oceanography: 19, Kittlitz's murrelets: 4, Water quality: 3, Marine contaminants: 3.

STAFF NEWS

Mike Bower joined SEAN as the Network's new Program Manager in June.