



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF OCEAN AND COASTAL RESOURCE MANAGEMENT
Silver Spring, Maryland 20910

OCT 23 2009

Denby S. Lloyd, Commissioner
Alaska Department of Fish and Game
1255 West 8th Street
P.O. Box 115526
Juneau, Alaska 99811-5526

Dear Commissioner Lloyd:

Enclosed are the final evaluation findings for the Kachemak Bay National Estuarine Research Reserve (Reserve) for the period from May 2006 through April 2009.

The fundamental conclusion of this evaluation is that Alaska is adhering to the programmatic requirements of the NERR system in its operation of the approved Kachemak Bay Reserve. This document contains two recommendations, neither of which is mandatory. In response to the State's comments on the NOAA draft evaluation findings, we have made all factual corrections and deleted the recommendation regarding educational outreach efforts to Anchorage children.

We appreciate your cooperation and assistance and that of the Reserve staff during the accomplishment of this evaluation.

Sincerely,

Donna Wieting
Acting Director

Enclosure

cc: Charles O. Swanton, Director Sport Fish Division, Department of Fish and Game
Lisa Evans, Assistant Director, Sport Fish Division, Department of Fish and Game
Terry Thompson, Manager, Kachemak Bay NERR
Nina Garfield, Estuarine Reserves Division, OCRM, NOAA
William Reay, Manager, Chesapeake Bay-Virginia NERR



FINAL Evaluation Findings

Kachemak Bay National Estuarine Research Reserve

May 2006 through April 2009



All photos courtesy of the Kachemak Bay NERR



Office of Ocean and Coastal Resource Management
National Ocean Service
National Oceanic and Atmospheric Administration
U.S. Department of Commerce

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I. EXECUTIVE SUMMARY

The Coastal Zone Management Act (CZMA) of 1972, as amended, established the National Estuarine Research Reserve System (NERRS). Sections 312 and 315 of the CZMA require the National Oceanic and Atmospheric Administration (NOAA) to conduct periodic performance reviews or evaluations of all federally approved National Estuarine Research Reserves (NERRs). The review described in this document examined the operation and management of the Kachemak Bay National Estuarine Research Reserve (the NERR or the Reserve) during the period from May 2006 through April 2009. The Reserve is administered by the Alaska Department of Fish and Game (ADF&G), Sport Fish Division.

This document describes the evaluation findings of the Director of NOAA's Office of Ocean and Coastal Resource Management (OCRM) with respect to the Kachemak Bay NERR during the review period. This evaluation includes discussions of major accomplishments as well as recommendations for program improvement. The fundamental conclusion of the findings is that the State of Alaska is successfully implementing its federally approved NERR.

The evaluation team documented a number of Kachemak Bay Reserve accomplishments during this review period. During the three years since the last evaluation, the Reserve has undergone a period of significant transition, particularly with regard to staffing. In spite of several vacancies in key positions for more than a year and sometimes almost two years, the staff maintained programs and projects with very little delay or reduction in Reserve products and services. The State of Alaska and the ADF&G Sport Fish Division provided increased state financial support, and the Reserve Community Council was successful in obtaining state funds to match the federal funding for Visitor Center Exhibits. Operating through collaboration and partnerships is a hallmark of the Reserve's approach to conducting its programs. Research and monitoring efforts address a number of state and local needs, have direct application and use by other organizations and communities, and can inform management decisions related to climate change. Research and education programs and projects are well integrated, and the Reserve has expanded both its formal and informal education programming.

The evaluation team also identified areas where the Reserve and its programming could be strengthened. The Reserve, the Sport Fish Division, and the Community Council have all worked hard to secure cash match for Reserve programs. In the face of continuing funding challenges, the Reserve should develop a written strategy for future funding that can be endorsed by the Division of Sport Fish and OCRM. Because of the importance of electronic media in providing outreach and information, the Reserve's website should be significantly updated.

II. PROGRAM REVIEW PROCEDURES

A. OVERVIEW

The National Oceanic and Atmospheric Administration (NOAA) began its review of the Kachemak Bay Reserve in January 2009. The §312 evaluation process involves four distinct components:

- Initial document review and identification of specific issues of particular concern;
- A site visit to Alaska, including interviews and public meetings;
- Development of draft evaluation findings; and
- Preparation of the final evaluation findings, partly based on comments from the state regarding the content and timetables of recommendations specified in the draft document.

The recommendations made by this evaluation appear in boxes and bold type and follow the findings section where facts relevant to the recommendation are discussed. The recommendations may be of two types:

Necessary Actions address programmatic requirements of the CZMA's implementing regulations and of the Kachemak Bay Reserve approved by NOAA. These must be carried out by the date(s) specified;

Program Suggestions denote actions that NOAA's Office of Ocean and Coastal Resource Management (OCRM) believes would improve the program, but which are not mandatory at this time. If no dates are indicated, the state is expected to have considered these Program Suggestions by the time of the next CZMA §312 evaluations.

A complete summary of accomplishments and recommendations is outlined in Appendix A.

Failure to address Necessary Actions may result in a future finding of non-adherence and the invoking of interim sanctions, as specified in CZMA §312(c). Program Suggestions that are reiterated in consecutive evaluations to address continuing problems may be elevated to Necessary Actions. The findings in this evaluation document will be considered by NOAA in making future financial award decisions relative to the Kachemak Bay Reserve.

B. DOCUMENT REVIEW AND ISSUES DEVELOPMENT

The evaluation team reviewed a wide variety of documents prior to the site visit, including: (1) Kachemak Bay Reserve §312 evaluation findings dated 2006; (2) federally approved Environmental Impact Statement and program documents; (3) financial assistance awards and work products; (4) semi-annual performance reports; (5) official correspondence; and (6) relevant publications on natural resource management issues in Alaska.

Based on this review and on discussions with OCRM, the evaluation team identified the following priority issues:

- major accomplishments during the review period;
- status of Reserve staffing and needs;
- facilities development and maintenance and/or land acquisition efforts;
- status of general administration of the Reserve;
- status of implementation of the Reserve's research, monitoring, and education programs;
- the manner in which the Reserve coordinates with other governmental and non-governmental organizations and programs in the state and region; and
- the Reserve's progress in addressing the recommendations contained in the most recent Section 312 evaluation findings dated August 2006.

C. SITE VISIT TO KACHEMAK BAY NATIONAL ESTUARINE RESEARCH RESERVE

Notification of the scheduled evaluation was sent to the Alaska Department of Fish and Game, members of Alaska's congressional delegation, and regional newspapers. In addition, a notice of NOAA's "Intent to Evaluate" was published in the Federal Register on April 1, 2009.

The site visit to the Kachemak Bay Reserve was conducted from April 27 – May 1, 2009. The evaluation team consisted of Ms. Chris McCay, Evaluation Team Leader, National Policy and Evaluation Division, OCRM; Ms. Nina Garfield, Program Specialist, Estuarine Reserves Division, OCRM; and Dr. William Reay, Manager, Chesapeake Bay-Virginia National Estuarine Research Reserve.

During the site visit, the evaluation team met with the Reserve manager and staff; senior staff from the ADF&G Sport Fish Division and Commercial Fisheries Division; other state agency staff; coastal researchers and academicians; federal agency staff, including NOAA programs; local government staff; Kachemak Bay Research Reserve Community Council members; and non-profit organizations. Appendix C lists people and institutions contacted during this review.

As required by the CZMA, OCRM held an advertised public meeting on Tuesday, April 28, 2009, at 6:00 p.m. at the Kachemak Bay Reserve, Alaska Islands and Ocean Visitor Center, 95 Sterling Highway, Homer, Alaska. The public meeting gave members of the general public the opportunity to express their opinions about the overall operation and management of the Kachemak Bay Reserve. Appendix D lists individuals who registered at the meeting. NOAA's responses to written comments submitted during this evaluation are summarized in Appendix E.

The Kachemak Bay Reserve manager and staff members were crucial in setting up meetings and helping with logistics for the evaluation site visit. Their support is most gratefully acknowledged.

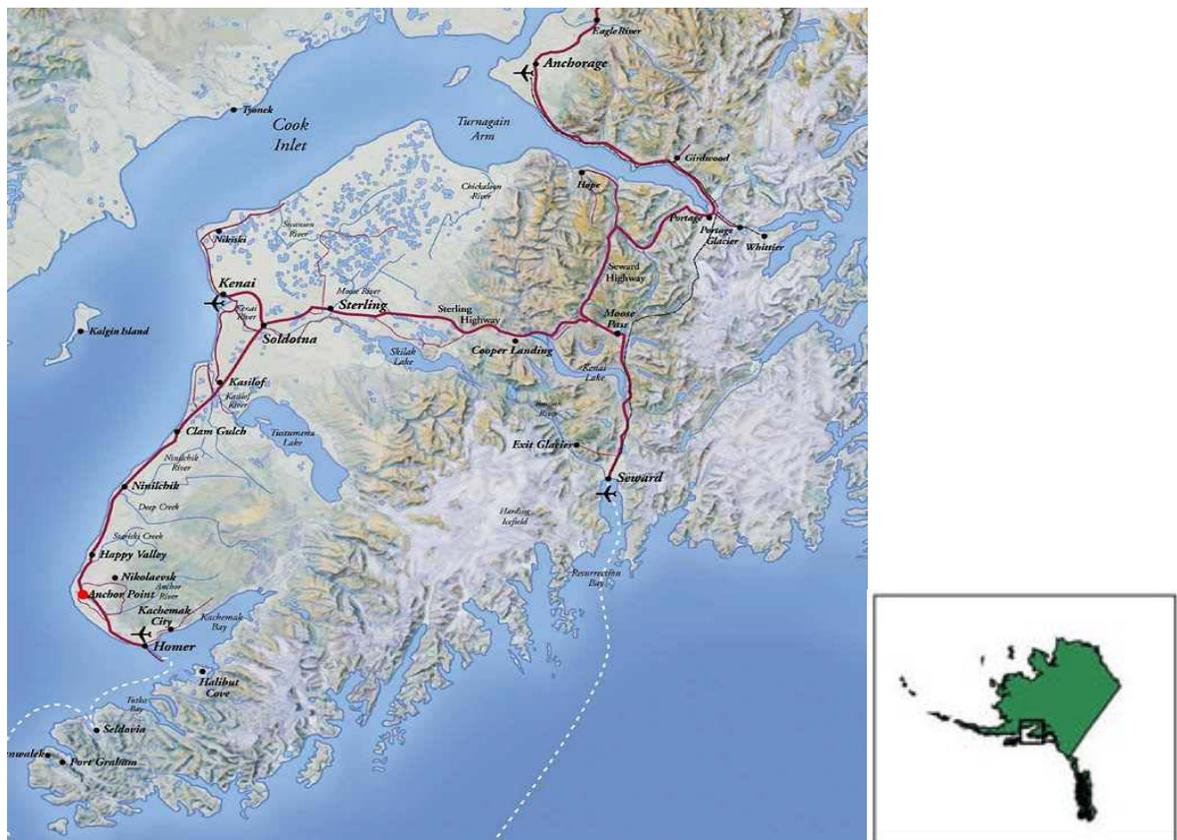
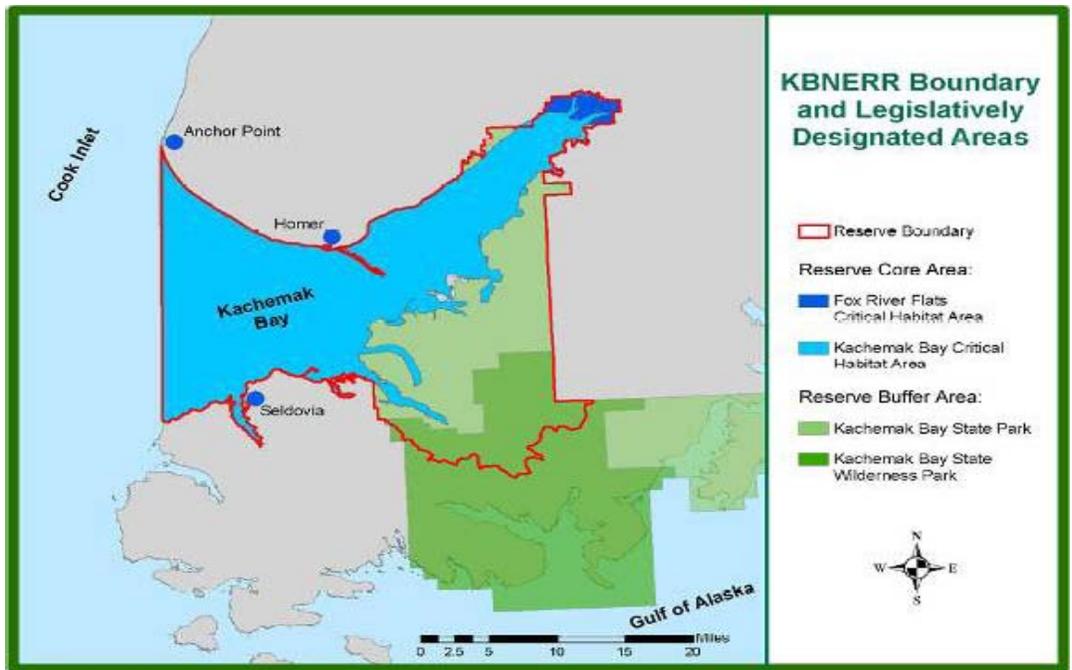
III. RESERVE PROGRAM DESCRIPTION

NOAA's Office of Ocean and Coastal Resource Management designated the Kachemak Bay National Estuarine Research Reserve (KBNERR or the Reserve) in 1999. The lead agency is the Alaska Department of Fish and Game (ADF&G), Sport Fish Division (SFD).

Kachemak Bay is located in south-central Alaska, south of Anchorage on the western coast of the Kenai Peninsula. It is one of the most productive and diverse estuaries in Alaska, and features tidal mudflats, marshlands, and upland forests. The southern shore includes the Kenai Mountains, which contain several glaciers that drain directly into the Bay. Kachemak Bay is 24 miles wide at its mouth and approximately 36 miles long. The Bay is a temperate region fjord with hydrographic conditions unique among National Estuarine Research Reserve System (NERRS) estuaries. An 8.7-meter tidal range primarily drives the Bay's circulation, and ocean currents within the Gulf of Alaska result in upwelling of nutrient rich waters. This nutrient-rich environment provides critical habitat for many species during various life phases.

KBNERR is the largest in the NERRS, encompassing approximately 365,000 acres. The lands within the Reserve are entirely in public ownership and are managed by various local, state, and federal entities. Three legislatively designated areas are included within the Reserve: (1) Kachemak Bay Critical Habitat Area, (2) Fox River Flats Critical Habitat Area, and (3) the portion of Kachemak Bay State Park that drains into Kachemak Bay. The two critical habitat areas are managed by the ADF&G Sport Fish Division, and the Alaska Department of Natural Resources manages the state park. These designations provide the strongest resource protection afforded by Alaska. Current uses include boating, fishing, hunting, shellfish harvesting, mariculture, and a variety of recreational activities such as sightseeing and hiking. Traditional uses permitted by state and federal agencies include commercial and recreational fishing and limited livestock grazing.

The Reserve's headquarters are located on the Kenai Peninsula in the City of Homer, overlooking Bishop's Beach and Beluga Slough. The Reserve is co-located with the Alaska Maritime National Wildlife Refuge in the Alaska Islands and Ocean Visitor Center. In addition to housing a bookstore and exhibits for both the Reserve and the Refuge, the Center is equipped with a dry lab, classrooms, public meeting rooms, and offices for the Reserve. A separate modular facility in Homer provides a bunkhouse for up to 10 visiting researchers, graduate students, and volunteers, including kitchen-dining, bath, and meeting room facilities; and leased offices for some partner agencies through cooperative agreements. A third building owned by the Reserve provides limited lab, storage, and workshop space.



IV. REVIEW FINDINGS, ACCOMPLISHMENTS, AND RECOMMENDATIONS

A. OPERATIONS AND MANAGEMENT

1. Administration and Staffing

During the three years since the last evaluation, the Reserve has undergone a period of significant transition, particularly with regard to staffing. This has included:

Manager – At the time of the last site visit, one of the staff was serving as acting manager, but within two months of the visit, a new manager had been hired. That person resigned eight months later in February 2007. The position as acting manager was then held consecutively by two staff members for nearly two years. In late 2008 the Reserve’s education coordinator, who was acting manager at that time, was hired as the new manager.

Education Coordinator – The education coordinator served in that position as well as acting manager for almost one year, until he was hired as the permanent reserve manager. The education coordinator position was advertised, but after less than two months the state of Alaska implemented a hiring freeze. Months later the freeze was lifted, and on the last day of this current evaluation site visit, a person accepted the offer to be the Reserve’s education coordinator.

Research Coordinator – Less than a year after the last site visit, the research coordinator accepted a new position and resigned. A new research coordinator was hired, but one year later in May 2008 that person resigned. After approximately five months, a permanent research coordinator was hired. She has been serving in that position for almost five months at the time of this site visit.

Coastal Training Program Coordinator – The CTP coordinator resigned in September 2007. In December 2008 one of the Reserve’s Graduate Research Fellows was hired as a temporary CTP coordinator. At the time of the site visit in April 2009, the CTP coordinator position was being advertised. Subsequent to the site visit, a CTP coordinator was hired.

During this evaluation period there were other staffing changes as well. OCRM and the Kachemak Bay Research Reserve Community Council, among others, were concerned about the delay in filling positions, particularly the manager and CTP coordinator. However, when the two positions became vacant in 2006 and 2007, respectively, it was determined that neither job class provided an adequate and qualified candidate pool and that the job class for each was not the most appropriate for the responsibilities of each position. The Reserve and Sport Fish Division leadership decided upon an appropriate job class for each position; both positions were in a single job series. The process was begun to reclassify both positions. At the same time, however, the state coincidentally and independently undertook a job class study of the chosen

job series. When a job class study is underway, the state will not allow recruitments to move forward until the class study is completed.

The study took over two years to complete. Because of that length of time and being forced to rely on existing Reserve staff to fulfill the manager's responsibilities, the ADF&G made a special request to fill the manager position before the job class study was completed. The request was granted, the manager position was finally advertised in June 2008, and the current manager was hired in November 2008.

The CTP coordinator position was in the same situation as the manager position, so staff members assisted with CTP activities in an effort to keep the program ongoing. The job class study was finally completed in February 2009, but because of economic conditions, a state hiring freeze was in place. The CTP coordinator position is federally funded, so the ADF&G requested a waiver on that basis to fill the position while the hiring freeze was in place. The waiver was granted, and the position was posted just after the evaluation site visit in April 2009. Since the site visit, the position has been filled and the new CTP coordinator began in September 2009.

The number of applications for the positions increased after the reclassifications. For example, there were 12 applications for the vacant manager position in early 2006 and 27 applications for the position in late 2008. Both the Reserve and the Sport Fish Division believe that this is a result of the reclassification. The Sport Fish Division Assistant Director has indicated she now hopes to pursue the reclassification of an existing position to serve as an assistant manager position.

The Division was supportive of the Reserve and its administrative location in the Division during reorganization activities in the ADF&G. Some discussion occurred about relocating the Reserve within ADF&G during that time, but with strong divisional support, the Reserve remains within the Sport Fish Division.

During this time of transition, the existing staff were able to continue most of the Reserve's programs and projects with very little reduction or delay in Reserve products and services. During the vacancy of the CTP coordinator position, the Reserve fell behind in reporting on CTP performance measures, but those reports are now complete and are being submitted as required. All other NERRS performance monitoring data submissions were and are submitted on time through the Reserve's semi-annual performance reports.

The Reserve hosted two NERRS sector meetings during this time, and with the staffing situation more stable than it has been in several years, OCRM looks forward to the Reserve becoming more involved in NERR system-wide initiatives. The partners in research and education as well as recipients of assistance and outreach from the Reserve staff with whom the evaluation team met were unanimous in their praise and admiration for the staff's dedication, expertise, and enthusiasm for their work. The ADF&G Division of Sport Fish also recognized three staff members with Director's Achievement Awards for their outstanding work during this review period.

ACCOMPLISHMENT: The Reserve has come through a period of staff transition and has attained a more stable staffing base. Several staff positions were reclassified, and a new manager, research coordinator, and education coordinator are now in place. Reserve programs and projects continued throughout unstable periods. The staff members are well respected and recognized by their peers, partners, and community members for their expertise, dedication, and enthusiasm.

The previous evaluation findings dated August 2006 included a program suggestion encouraging the Reserve and the Division of Sport Fish to continue efforts to gain more state financial support for core positions. The Division, and particularly the Assistant Director, who has been in the position since the last evaluation and who has direct oversight responsibility for the Reserve, have strongly supported the Reserve and its staff. The State of Alaska has increased its financial support for core positions. At the time of the last evaluation, the manager's position was funded entirely from federal grant monies directed for Reserve operations. General fund monies from the Division of Sport Fish now provide more than 40 percent of the position's salary. State Wildlife Grant funding provides approximately \$150,000 per year for research projects, and some funding from these monies provides approximately 40-45 percent of the research coordinator position's salary. The Reserve also receives approximately \$127,000 per year from State Wildlife Grant funding to conduct education projects, and the education coordinator position receives some of that funding as well as state funding from the Sport Fish Division, for a total of approximately 60 percent state support for the position's salary.

ACCOMPLISHMENT: The State of Alaska and the ADF&G Division of Sport Fish have provided increased state financial support for the Reserve's activities and core positions.

Through the efforts of the Kachemak Bay Reserve Community Council (Council), the Reserve received \$133,000 from the state legislature to use as match for the federal monies awarded to the Reserve for Visitor Center exhibits. Donations from BP (formerly British Petroleum) (\$10,000) and the Homer Foundation (\$1,000) were given to the Reserve for education programs during this evaluation period. These represent a significant boost to the non-federal funding necessary for the Reserve to administer and operate its programs, but these are non-recurring funds. Without a stable funding source, the Reserve will continually need to seek non-federal funds, an effort that will remain a challenge, especially given the economic recession and state budget concerns. Costs for facilities maintenance, replacement or repair of SWMP equipment, and staff salaries and associated benefit costs will likely only increase, so that less funding is available for programs. Some sources of funding that were previously available to the Reserve (Exxon Valdez Oil Spill funds, for example) are no longer available or are decreasing in amount. The Reserve may wish to consider developing a funding strategy to complement the Sport Fish Division's efforts to seek state funding. This strategy could, among other items, identify as many state sources and other creative funding mechanisms as can be found as well as ways to gain access to those sources. This is a priority for some of the Council members (see next section) whose support and network of contacts could be helpful.

PROGRAM SUGGESTION: The Reserve and the Sport Fish Division have worked hard to secure cash match for Reserve programs. In the face of continuing funding challenges, the Reserve should develop a written strategy for future funding that can be endorsed by the Division of Sport Fish and OCRM.

2. Kachemak Bay Research Reserve Community Council

The Council was established shortly after Reserve designation. Council members represent and are responsive to a broad base of interests. The director of the ADF&G Sport Fish Division makes appointments to the Council. The Council's primary purpose is broad – to provide an organized structure for substantive and meaningful dialogue and recommendations between numerous groups and entities interested in natural science research and education and the Reserve staff. Members of the Council also serve on the Reserve's research advisory and education advisory committees.

During this evaluation period the Council has been a strong advocate for the Reserve. Through the efforts of several members, the Reserve received \$133,000 from the Alaska Legislature to use as match for the federal monies for the Visitor Center exhibits. There had been significant difficulty in obtaining match, and the evaluation findings dated August 2006 contained a necessary action requiring the Reserve to obtain funds by the end of the exhibit award or return the federal funds.

As occurred during the previous evaluation, the evaluation team met with several members of the Council and was impressed by their dedication to and support of the Reserve staff and activities. The members had been concerned about the staffing situation and long vacancy periods for several positions but now are very pleased with the outcome and spoke highly of all the Reserve staff members. In turn, the staff and the Assistant Director noted how extremely helpful the Council has been for the Reserve.

Members of the Council with whom the team met listed a variety of priorities they were anxious to see the Council address or become more involved in, including the identification of more stable non-federal funding; the national budget for the Reserves; identification or establishment of a foundation or other entity that can accept donated funds to be used to pay the Reserve's National Estuarine Research Reserve Foundation dues; revitalization of the Coastal Training Program; education for legislators about the Reserve's accomplishments and needs; and greater clarity in the functions and roles of the Council and the education and research advisory committees. The evaluation team noted that the upcoming revision to the Reserve's management plan could serve as a vehicle to discuss the role and structure of the Council.

The Reserve and Sport Fish Division have recognized the energy and dedication of the Council and are hoping to reclassify an existing staff position to serve as the Reserve's assistant manager. Among other duties, this position would work directly with the Council. Reserve staff currently assist the Council by preparing meeting minutes and public notice announcements for Council meetings. As envisioned by the Reserve and Sport Fish Division, a new assistant manager position could work with the Council chair to develop agendas, coordinate and assist with

training opportunities for Council members, work with the Council’s research education, and legislative committees, work with the Council to increase its visibility in the community and region, and assist with some of the Council’s priorities (discussed above) that support the Reserve.

ACCOMPLISHMENT: During this evaluation period the Reserve Community Council was successful in obtaining state funds to match the federal funding for the Visitor Center exhibits. Council members are willing to tackle substantive issues and activities to support the Reserve.

3. Management Plan

Reserves are required by Federal regulation to have a current NOAA-approved management plan (15 C.F.R. Part 921.13). The plan should describe the reserve’s goals, objectives and management issues, as well as strategies for research, education and interpretation, public access, construction, acquisition and resource preservation, and, if applicable, restoration and habitat manipulation. A management plan has four valuable functions: (1) to provide a vision and framework to guide reserve activities during a five-year period; (2) to enable the reserve and NOAA to track progress and realize opportunities for growth; (3) to present reserve goals, objectives, and strategies for meeting the goals to constituents; and (4) to guide program evaluations. Regulations also require that a reserve’s plan be updated every five years.

Kachemak Bay Reserve’s management plan will soon be due for revision and update. Throughout the site visit the evaluation team and Reserve staff discussed opportunities to focus on various strategic planning efforts, some of which are linked to the hiring of new staff. This includes development of or revisions to a research plan and an education plan now that new research and education coordinators have been hired. Community Council members also discussed a need to clarify the roles and responsibilities of the Council and the Research and Education Committees. The upcoming time period for revising the Reserve’s management plan offers an opportunity to focus on these various planning efforts and how they might relate to the management plan.

4. Facilities and Infrastructure

The Reserve is co-located with the Alaska Maritime National Wildlife Refuge (Refuge) in the Alaska Islands and Ocean Visitor Center. The state owns two other buildings associated with the Reserve, but it is the Center that has increasingly focused attention on Kachemak Bay Reserve and its programs. The Visitor Center is a great asset for the community of Homer, which is allowed to use it for community functions, thereby exposing participants to the Reserve and its activities. It was one of three Alaska locations selected to host the display of posters highlighting the 200th anniversary of NOAA. During the month they were on display, over 14,000 visitors came to the Center.

The Reserve and the Refuge are seeking ways to make the building more energy efficient to address high energy costs. They have worked diligently to make the Center more environmentally “green,” and together the two partners now recycle, reuse, or compost an average of 80 percent of waste generated at the Center.

In addition to housing a bookstore and exhibits for both the Reserve and the Refuge, the Center is equipped with a dry lab, classrooms, public meeting rooms, and offices for the Reserve. A separate modular facility in Homer provides a bunkhouse for up to ten visiting researchers, graduate students, and volunteers and includes kitchen-dining, bath, and meeting room facilities. The same modular facility includes leased offices for some partner agencies through cooperative agreements. Another building owned by the Reserve provides limited lab, storage, and workshop space.

5. Coordination and Partnerships

Given its relatively isolated location and Homer’s population of about 5,000 people, one could assume somewhat limited opportunities exist for the Reserve to establish many partnerships and coordinate programs and activities with other local groups. In fact, however, Homer is home to a very large number of non-profit and non-governmental groups (the number often cited is 50), many of whom work together rather than separately. This is particularly true in the environmental education field. The Reserve has coordinated on a variety of efforts with a range of agencies and groups, many of which are discussed below.

The Kachemak Bay Environmental Education Alliance (KBEEA) represents over 20 member organizations (including the Reserve) involved in providing or promoting environmental education. KBEEA members coordinate activities to reduce pressure on resources, avoid duplication of programs, organize citizen-monitoring programs and design materials and activities based on needs identified by user groups. Reserve staff played a significant role during development of the KBEEA and was responsible for the group’s website. During this evaluation period, leadership for KBEEA has become a rotating position. This has reduced some demands on Reserve staff, and member groups with whom the evaluation team met indicated that the KBEEA has become stronger since the previous evaluation site visit and serves as a role model for other communities. Select examples of cooperation and collaboration between the Reserve and other members of the KBEEA include: The Center for Alaskan Coastal Studies offers educational boat trips that include plankton tows and then uses the Reserve facilities for follow-up lab analysis. The Reserve continues to share facilities and partner on education events with the Pratt Museum in Homer. The Cook Inlet Regional Citizens Advisory Committee and the Reserve are collaborating on hydrographic survey and salt marsh mapping projects.

The Alaska Coastal Management Program (ACMP) also has been a Reserve collaborative partner during this evaluation period, primarily through the Reserve’s Coastal Training Program (CTP). The Reserve conducted a needs assessment for the ACMP’s local coastal district coordinators and identified three major needs: 1) review of the ACMP roles, impacts, and how to implement recent changes to statutes and regulations; 2) proper and effective commenting on permit requests; and 3) delivery of effective educational outreach and responses to applications.

Because of the difficulty in providing training in person throughout Alaska, the Reserve suggested to the ACMP that it develop a variety of self-directed presentations for Coastal District Coordinators. Building on that idea, the ACMP is developing four PowerPoint© presentations.

The Reserve could assist the ACMP in addressing other issues identified in the needs assessment, including coastal processes, shoreline and riverbank restoration, and climate change and its implications for coastal Alaska. The ACMP provided funding to the Reserve to conduct a study of erosion rates in the Kenai Peninsula Borough, which was information the borough wanted and needed. The Reserve and ACMP have also collaborated in the review of applications submitted to the state for funding provided to the state under the Coastal Estuarine and Land Conservation Program (CELCP).

The USFWS Maritime National Wildlife Refuge (NWR or Refuge) and the Reserve do more than just share a building, although that itself requires significant cooperation. Both have worked to make the building more energy efficient and now recycle, reuse, or compost an average of 80 percent of waste generated at the Visitor Center as well. The NWR uses the Reserve's lab facilities and 'bunkhouse' space when necessary, and the Reserve uses the NWR's boats after receiving special safety boat training from the Refuge staff. There have been a number of collaborative efforts in education and outreach which are discussed later in this document, and the NWR provided financial support for a Reserve education staff member to represent the State of Alaska at the national "No Child Left Inside" conference in Nebraska.

The two partners have had some discussion about research collaboration, specifically related to climate change issues. They are also in the early stages of discussions about establishing a surface elevation table (SET) network in Kachemak Bay to monitor for elevation changes, particularly in salt marshes. Salt marshes in the Reserve are typically not very accessible and are subject to ice scour, so it is possible SET stations might not prove effective. Thus, the two partners are discussing a SET site in Beluga Slough, which the Visitor Center overlooks and which is more accessible. The Reserve and the Refuge have also begun investigating the possibility of creating a cell-phone tour or pod-cast tour of Reserve and Refuge lands. A person might use a cell phone, for example, to call a specific number to hear about the natural and cultural history and resources of a particular location. This would be a good outreach mechanism to provide people with information about areas that may be inaccessible.

Lake Clark National Park and Preserve is a wilderness park with no visitor center or road access, so being located in Homer in the building that formerly housed Reserve staff has been valuable – it provides a place for the public to see the face of the Park. The Park is a member of the KBEEA, and Park staff members have assisted the Reserve with its Discovery Labs and other interpretive programs. The National Park Service Pacific West Region (which includes Alaska) is developing a Pacific Ocean Strategy and is now working on possible collaborative and research efforts which could involve the Reserve.

NOAA and the Reserve have collaborated on a number of activities and projects during this evaluation period. In the summer of 2007 the Reserve hosted two NOAA Hollings Scholars and one NOAA Education Partnership Program student who worked with the research and education staff. With the creation and increasing presence and activities of NOAA's Alaska Regional

Collaboration Team, additional opportunities are appearing for NOAA and the Reserve to work together.

- The NOAA NCCOS Kasitsna Bay Lab has coordinated with the Reserve to offer K-12 education programs on the Bay's south side at the Lab. The only practical way to reach the Reserve's Visitor Center from the south side of Kachemak Bay is by boat, which is impractical and cost-prohibitive for school classes. Both Reserve staff and Katsitsna Bay Lab staff also collaborate with the Seldovia Village Tribe and others to provide programs during Seldovia Sea Days, which is a learning experience the Seldovia Village Tribe provides to educate its students about Kachemak Bay and its resources. The Lab also depends upon the Reserve's research committee for building research partnerships.

- The NCCOS Center for Coastal Fisheries and Habitat Research, Alaska's Sea Grant Marine Advisory Program, and the Reserve have been collaborating on harmful algal blooms in Kachemak Bay. NCCOS scientists recently developed a relatively cheap, easy, and quick test for domoic acid. Domoic acid is one of the most important biological toxins posing risks to west coast bivalves. The product of a group of naturally occurring diatoms, domoic acid causes amnesiac shellfish poisoning, which can cause serious illness and death in humans and marine mammals when the shellfish are ingested. For unknown reasons, Kachemak Bay is the highest risk site in Alaska for domoic acid.

- NCCOS is involved in leading an effort in Alaska to encourage and involve Native Alaskans in science. In Alaska, NCCOS has worked with the Reserve and others on this effort. The Reserve education staff has worked with the school districts and tribal representatives of Port Graham, Seldovia, and Nanwalek to emphasize science education and has brought programs to the three communities.

- NOAA's National Ocean Service began a new two-year integrated ocean and coastal mapping effort in Kachemak Bay during August 2008 entitled "Hydropalooza." Such sea-floor data will provide water depth maps and updated nautical charts for Kachemak Bay and the Reserve.

ACCOMPLISHMENT: The Reserve has maintained and strengthened its existing collaborations and partnerships. New elements of partnerships have been developed or are being discussed, which have expanded and will continue to expand the reach of the Reserve's programs.

One area in which the Reserve and the Sport Fish Division may want to strengthen coordination is with other divisions in the ADF&G. The ADF&G is of significant value to the Reserve, but the Reserve can also prove to be of significant value to the Department. There have been some collaborations already, primarily educational efforts. These have included "Leave No Child Inside" program elements such as "Discover Wild Alaska" team planning, Kids Fishing Day, and development of a "Kids in Nature" template and toolbox for Department educators. In addressing invasive species threats, projects included the development of a video on threats to

Alaska from a variety of invasive species and a traveling educational display on Alaska aquatic invaders.

The Reserve and Sport Fish Division could look for opportunities to support the mission of the Department and its divisions. Some of the Reserve's data and research information is already being used by the Habitat Division, and additional information could prove useful to the Habitat Division. The CTP could solicit training and research needs of the ADF&G divisions and identify whether the Reserve could address any of these needs. Greater support to the ADF&G may also provide more diversified funding opportunities for the Reserve.

B. RESEARCH AND MONITORING

The Reserve has been able to establish its research program from a broader habitat/ecosystem-based perspective rather than a narrower sport fish-based focus. The Reserve has been successful in obtaining funds from the state and from other sources that allow for research projects that may still relate to sport fish but also address the Reserve's other priority research topics. In addition, the Reserve's research and monitoring has direct application and use by other entities. Sea Grant and the small shellfish aquaculture industry in Kachemak Bay use the Reserve's water quality data, temperature monitoring, and harmful algal bloom data and knowledge. Permitting staff in the ADF&G Commercial Fisheries Division use some of the Reserve's research and monitoring data in determinations about permit issuance.

Given the State of Alaska's concern about oil spills and volcanic activity with its associated ash fall, the Reserve's ongoing research in circulation patterning and hydrodynamic studies in Kachemak Bay is quite inter-related and integrated with the Reserve's research involving harbor seals, otters, larval crab transport, hard shell clams, harmful algal blooms, and even glacial retreat. The Reserve's habitat mapping capabilities are integrated into all of its sector programs and help to inform management decisions about critical habitat areas within the Reserve, serve stewardship opportunities, and will be of increasing importance to climate change adaptation efforts.

1. Research Activities

Goal 2 of the Reserve's management plan is to "Increase understanding of the natural and human processes occurring in the coastal environment." There are five objectives to meet that goal, and each objective has multiple strategies, which pertain to the marine environment, nearshore environment, watershed environment, and/or socio-economic impacts. The research objectives are primarily aligned with the NERRS strategic plan and the ADF&G Sport Fish Division strategic plan. The Reserve staff members have been involved in a variety of research projects and activities that are addressing some of these strategies, and the following highlights are from some of the project work that was conducted during this evaluation period.

Headwater Streams: During this evaluation period the Reserve began conducting Headwater Streams II, whose goal is to model connections between landscape settings and fish communities in headwater streams across the Kenai lowlands. Headwater streams are a high proportion of

total stream networks in the Reserve's study area (Anchor River, Stariski Creek, Deep Creek, and Ninilchik River). These systems are poorly understood and generally susceptible to change or alteration because they cross private property or are lands with unprotected status. Thirty sites in four wetland classes have been sampled, measuring almost 60 elements. The research has shown that topography is a key driver of stream health. Researchers have also correlated fish size to other variables, so not every headwater stream is the same; that is, niche partitioning occurs, making it vital to maintain the diversity of habitat configurations for a diversity of fish. Thirteen of the 30 stream systems in the study were identified for protected status. They have been placed in the State Anadromous Stream Catalog. The Catalog is important because it specifies which streams, rivers, and lakes will be given protection as known significant habitat for anadromous fish species, such as salmon. Activities, such as road crossings, or hydroelectric projects that may affect those habitats are reviewed by the Alaska Department of Fish and Game – Habitat Division and will only be permitted if the project plans provide for the proper protection of fish habitat.

Harbor Seal Study: In 2003 the Minerals Management Service began a study to provide information about harbor seal distribution and abundance in Cook Inlet for oil and gas leasing sales and for oil spill response planning. There are approximately 8400 seals in lower Cook Inlet, and approximately 26% of them are found in the Fox River flats in August. The Reserve staff has worked with the NOAA Fisheries Marine Mammal Laboratory to conduct the technical data gathering in Kachemak Bay. Intensive aerial surveys were conducted and satellite tags were deployed on 76 seals. Conclusions reached to date indicate that Kachemak Bay has the largest seal haul-out in all of Cook Inlet, and that Kachemak Bay seals tend to stay in the bay all winter long. The Reserve plans to further analyze data collected (e.g., bathymetry, sea surface temperature, ocean color) to study habitat usage and foraging areas.

Otters as an Indicator Species of Ecosystem Health: Sea otters occupy Kachemak Bay year round. The number of otter carcasses recovered cumulatively throughout the year has increased each year since 2001. Approximately 40% of the known otter mortalities from 2002 through August 2008 were caused by bacteria that cause vulvular endocarditis, which is an inflammation of tissue lining a heart valve. There are several hypotheses about the cause, including increased exposure to the bacteria, increased virulence of bacteria, and predisposing factors allowing the bacteria to infect the otters. Predisposing factors may include immunosuppression due to a virus, contaminants, or genetics; or diet. Radio transmitters have been implanted in 44 otters, and they are monitored weekly, either visually or by radio signal. There is a mortality signal in each VHF transmission. At the time of the site visit, three adult males had been taken in subsistence hunts, and one was killed by a boat strike that caused severe trauma. Two adult females died from disease. The Reserve is also monitoring sea otter forage ecology.

Larval Transport of Tanner and Dungeness Crab between Inner and Outer Kachemak Bay: This project is being conducted by one of the Reserve's Graduate Research Fellows. In order to create effective management strategies, it is imperative to understand larval transport into and out of the bay. Physical forcing, specifically tides and wind, has been shown to control distribution and behavior of larval crabs within estuarine environments; however, no study has documented both larval crab abundance and effects of transport within Kachemak Bay. Several hypotheses are being tested and various sampling methods are being used to identify spatial and

temporal distributions. This study will provide critical information for management of sustainable marine resources within this highly productive and diverse estuarine ecosystem and for updating hydrodynamic modeling of the Bay. Further work will focus on genetic analysis, creation of a crab larval identification guide and additional sampling work.

Patterns of Glacial Retreat in Kachemak Bay: Approximately a dozen glaciers are located on the south side of Kachemak Bay. There is no question that they are retreating, but this study looked at the rate of retreat for nine glaciers using photographic analysis. Results of the study to date show that most Kachemak Bay glaciers have receded approximately one mile since 1952. A few have receded half as far, while one has receded over twice as far. Also significant is the finding that the rate of retreat is increasing. Dinglestadt Glacier, for example, has receded almost seven times faster in the past 56 years compared to the 128 years prior. As glaciers continue to recede and thin, glacial discharge into the Bay will decrease, which will lead to a wide range of physical and biological effects.

The Kachemak Bay Reserve has been successful in attracting students in the NERRS Graduate Research Fellowship (GRF) Program. The Reserve hosted three GRFs during this evaluation period. The larval transport of crabs described above is being conducted by a GRF. Another GRF studied physical forcing and its role in sessile communities. He found that when water flow increased, it led to an increase in species richness at local sites. This has implications for conservation strategies to address biodiversity and the effects of invasive species. A third GRF project studied the role of habitat complexity with regard to kelp beds in crab ecology. At the time of the site visit another GRF was just beginning her fellowship.

The Reserve staff participated in the 2006 and 2009 Kachemak Bay Science Conferences, and the 2009 event was held at the Visitor Center. It is a tradition for all of the organizations and agencies involved with scientific research, environmental education, and natural resource management in Homer to work together to plan the conferences. These conferences provide the opportunity for researchers and citizen scientists to present their findings to each other and to the community of people who live in the Bay and depend upon its resources. It is a good example of the integration of research and education, both by the Reserve and the larger Homer community. The Monitoring and Education and Outreach sections that follow include additional examples of research and education integration.

ACCOMPLISHMENT: The Reserve's current research and monitoring efforts address a number of state and local needs and have direct application and use by other organizations and communities. Research is well integrated into the educational programs of the Reserve, and the results of many of the research projects can provide reference data that can inform management decisions related to climate change adaptation.

2. Monitoring

In spite of the staff turnover throughout this evaluation period, the Reserve kept its System-wide Monitoring Program (SWMP) functioning. There is an interest in the Bay's bivalve populations and the possible restoration of those populations, so the SWMP water quality data is invaluable.

The Reserve has partnered with the Northwest Association of Networked Ocean Observing Systems (NANOOS) to provide real-time water quality data to shellfish growers. Sea Grant uses the Reserve's data for needs related to its aquaculture program. The local oyster farmers in Kachemak Bay benefit from the data because if water temperatures exceed a certain threshold, the growers are not allowed to sell their product. However, when they are aware that surface temperatures are rising, the oysters can be lowered to the Bay bottom until conditions change. The Reserve's meteorological data is used by local mariners and others. The SWMP has also been collaborating with Wet Labs, Inc., on research and development field testing of a phosphate probe.

The Reserve now plans to establish an additional weather station at Anchor Point. The decision to establish this station was in direct response to the needs of a number of users for additional meteorological data in that part of Cook Inlet (the northwest corner of the Reserve) and because of local awareness and appreciation of the Reserve's capabilities.

ACCOMPLISHMENT: Kachemak Bay NERR was able to maintain SWMP in spite of staff turnover and shortages during this evaluation period. The data from SWMP is used by the local aquaculture industry and mariners.

Kachemak Bay Reserve staff members are conducting several monitoring projects in collaboration with community volunteers. These efforts serve as a bridge between research and education and indicate the integrated nature of programs and activities at the Reserve.

Two projects involve monitoring for invasive species: European green crabs, which are voracious predators, preferring bivalves and other infaunal organisms, but are also known to prey on other species of crabs; and tunicates and bryozoans, which are fouling organisms that affect aquaculture. European green crabs have not yet been found in Reserve waters, but tunicates and bryozoans are already in the Bay. The invasive species monitoring originated with the Smithsonian Environmental Research Center (SERC). Initially the tunicate/bryozoan monitoring was a collaboration between the SERC and the NERRS and was conducted in reserves and national marine sanctuaries along the U.S. west coast. Both are now being conducted in Kachemak Bay by Reserve staff and volunteers. These monitoring efforts are a good public education tool, allow for the development of community networks and response planning, and will, in the case of the European green crab, provide the early detection vital for eradication.

Community members are also involved in monitoring for harmful algal blooms (HABs) and phytoplankton. HABs are a particular concern for the aquaculture industry and human health. Five sites around the Bay near oyster farms are monitored biweekly, primarily by oyster farmers.

C. EDUCATION AND OUTREACH

According to the Reserve's management plan, Goal 3 is to "Foster responsible stewardship of the coastal environment." Goal 4 is to "Foster a public that is involved with and supportive of Reserve activities." There are a total of five objectives to meet those goals, and each objective

has multiple strategies. The education and outreach objectives are primarily aligned with the NERRS strategic plan and the ADF&G Sport Fish Division strategic plan. In the case of the Sport Fish Division, whose aquatic education program focus is on sport fishing opportunities and resources found primarily in freshwater environments, the Reserve's focus on the marine environment is complementary to the Division's.

The Reserve coordinates its environmental programming with over 20 organizations involved in providing or promoting environmental education through the Kachemak Bay Environmental Education Alliance (KBEEA). KBEEA members coordinate activities to reduce pressure on resources, avoid duplication of programs, organize citizen-monitoring programs and design materials and activities based on needs identified by user groups.

The Reserve's education and outreach programs are well integrated with the research and monitoring programs, as can be seen in the research discussions above and as illustrated by the Reserve's work with the Kachemak Heritage Land Trust. The Trust works on the Kenai Peninsula with willing landowners to preserve land with significant natural, recreational, or cultural values through purchase or conservation easements. The Trust uses the Reserve's research and scientific background information to help identify resources on properties on the Kenai. During this evaluation period the Trust has been conducting outreach to landowners in the Anchor River area. Reserve education staff helped develop a one-page information sheet to describe research and scientific background information in that area in clear, easily understood language. The Trust is now able to provide that information to landowners to help them understand the values of their properties.

1. Education and Outreach Programs

Formal Education Programming: The formal education program (primarily K-12) has grown over the past three years and has even added a pre-K component because of increased interest. Formal education programs are organized around two thematic areas: The Alaska Ocean Science component now has 14 classroom programs (with some outside activities), while the Alaska Estuary Science component has seven outdoor programs. These education programs are offered to classes in April and May and in September and October. The biggest audiences are 3rd and 4th graders. The total numbers of programs offered and students participating have decreased somewhat each year during this evaluation period because the programs have become longer and allow more contact hours per student. The national *Leave No Child Inside* initiative has strongly influenced the development of the outdoor programs, and every grade level program has an outdoor component. Formal programs are extremely popular, but at this point Reserve staff and resource capacity has been met. Reaching out and marketing programs to high schools is part of the K-12 formal education programming that has been limited because of staffing shortages during this evaluation period. The addition of a new education coordinator, who was hired on the last day of the evaluation site visit, will add staff capacity to the education programs.

The Reserve has also created post-Discovery Lab programs. (See discussion of Discovery Labs under the Informal Education Programming below.) The post-Discovery Lab programs are personalized Discovery Labs for pre-school through 12th grade students. The public Discovery Labs are left set up for two or three days afterward, and each school group that formally

schedules a session with the Reserve for a post-Discovery Lab is given a short lesson on that Lab's particular topic, followed by time to explore the Discovery Lab. The Reserve tries to have at least four staff (which includes GRFs) and volunteers on hand to help students at the eight lab stations. These programs last from 45 minutes for pre-school and kindergarten classes to 90 minutes for high school students.

ACCOMPLISHMENT: The Reserve has expanded its formal education programming to the limits of staff and resource capacity in spite of staff shortages and logistical issues. In part it has been able to do this by creating a new K-12 program (post-Discovery Labs) based upon an existing informal program (Discovery Labs). Education programs integrate the research being conducted at the Reserve.

Students and school classes within the general area of Homer are able to come to the Visitor Center for the Reserve's educational programs. Reaching students beyond Homer is more difficult because of costs and time involved with transportation. As noted earlier, the only practical way to reach the Reserve's Visitor Center from the south side of Kachemak Bay is by boat, which is generally impractical and cost-prohibitive for school classes. To reach native Alaskan school classrooms in Seldovia and Port Graham, Reserve staff have crossed the Bay and provided programs at the NCCOS Kasitsna Lab, to which the students are able to travel. Reaching students from Anchorage has been more difficult. Travel from Anchorage to Homer involves an 8-9 hour round-trip drive, which means significant transportation costs and an overnight stay for students. It is now, and will continue to be, a challenge for staff to provide classroom experience to Anchorage students.

The number of K-12 teacher/educator training and workshops offered has also been limited by the number of Reserve education staff and sometimes funding limitations of the target group. The staff did conduct an Anchorage teacher in-service workshop on plankton ecology and art; training for the staff of Kenai Fjords Tours on plankton, seabirds, and marine mammals; two workshops for the volunteers and staff of the Center for Alaskan Coastal Studies on plankton ecology; and provided tide guide training for local residents. These trained tide guides help deliver stewardship messages to large groups visiting Kachemak Bay beaches during low tides in the spring.

Adult education programming has been addressed through several formal mechanisms. Reserve staff members teach college courses at the local college, which benefits the college but also provides a professional development opportunity for Reserve staff. Courses have also been offered to Elderhostel participants, residents of a local senior center, and to a total of 116 newly hired staff of BP.

One K-12 environmental education opportunity in which the Reserve staff expressed interest during the site visit is NOAA's Bay Watershed Education and Training (B-WET) Program. NOAA B-WET is an environmental education program that promotes locally relevant, experiential learning in the K-12 environment. It is locally implemented and administered by the most appropriate NOAA office or program. The primary delivery of B-WET is through competitive funding that promotes meaningful watershed educational experiences. Eligible

applicants include K-through-12 public and independent schools and school systems, institutions of higher education, nonprofit organizations, state or local government agencies, and Indian tribal governments. B-WET funds are appropriated each year by Congress and generally are available for up to three successive years for a single project. The funds can be used for a variety of expenses to conduct programming, including buses, stipends, travel, substitutes, equipment, and professional evaluators. B-WET programs exist in California, Chesapeake Bay, the Gulf of Mexico, Hawaii, New England, and the Pacific Northwest, but not in Alaska.

In order for applicants to be eligible for B-WET funding in Alaska, the Reserve may wish to seek opportunities to gain B-WET grant eligibility for Alaska. Congressional members may be unaware of the state's interest, and the Community Council could be one venue for raising the issue with Alaska's congressional delegation and appropriate others.

Informal Education Programming: Based upon information and comments the evaluation team heard during the site visit, the Reserve's Discovery Labs are highly popular and are the Reserve's 'signature' education activity. These are self-directed open labs designed for people of all ages and include inquiry-based activities at each of the learning stations. From 2006 through 2008, 114 Discovery Lab sessions were attended by approximately 11,150 visitors, both children and adults. Over 90 volunteers assisted the Reserve staff with the Labs. Each Discovery Lab consists of eight learning stations (tables), which are centered on a specific topic. Themes change in each lab, with typically over 20 different topics selected each year. Individual fall and winter labs are provided once, and summer labs are presented three times over a one-week period.

Topics range from sharks and marine invertebrates to estuary edibles and geology, but in 2009, with the eruption activities from the Mt. Redoubt volcano directly affecting the Homer area, the most popular lab offering was entitled "Fire & Ice: Volcanoes & Glaciers." Each topic generally includes one learning station that addresses research being conducted in the Reserve. In an effort to engage all ages into Discovery Lab topics, one learning station involves an art project relevant to the topic. This table is typically staffed by a volunteer and is very popular with the young children who visit the Labs. All of the Reserve staff, including GRFs, and volunteers, many from partner organizations and agencies, man the learning stations at each Discovery Lab. Reserve staff train volunteers every year for these activities.

During this evaluation period, the Reserve provided up to 16 estuary hikes and 20 beach hikes each summer to local residents and visitors to Homer. The beach walks are a cooperative effort among Reserve, Refuge, and National Park staff, who rotate as walk leaders. Community members also volunteer to work with Reserve staff in the monitoring programs for the European green crab, tunicates, and HABs. (After attending classroom training for monitoring European green crab, two local students found a previously undocumented crab species in Halibut Cove on the south shore of Kachemak Bay.)

During this evaluation period, Reserve educators have produced two "Discovery Lab-in-a-Box" scientific kits with input from local science teachers. These are packaged units that can be loaned to teachers who are unable to bring classes to the Reserve. The "clam kit" targets grades

1 through 3, while the “crab kit” targets grades 4 through 6. Several units of each kit are being created, and the next step is to market them in a more formal fashion.

Outreach Activities: The Reserve has been an active collaborative participant in a number of local community activities, some of which are one-time events and others that are recurring. In all cases informing the public about the resources and character of Kachemak Bay and the importance of stewardship is the Reserve’s goal. These outreach activities have included:

- National Estuaries Day – During the 2008 event, the Reserve conducted a Beluga Slough bioblitz.
- Kachemak Bay Shorebird Festival – In collaboration with the Refuge and the National Park, the Reserve hosted a Junior Birders Discovery Lab.
- Earth Day
- Kenai River Festival
- City of Anchorage “Salmon in the City”
- Winter Family Fun Day

The Reserve provides outreach announcements for all of its events via listserves, newspapers, several local radio stations, and posters placed throughout Homer. In addition, the Reserve prepares bi-weekly “Bay Science” articles for the Homer News. These articles are written by staff and visiting researchers about research and topics of scientific interest in Kachemak Bay. With state match for the Visitor Center exhibits obtained, the exhibits, when completed, should be an effective mechanism to provide information about the Reserve and activities. Work on the exhibits has begun.

ACCOMPLISHMENT: The Reserve’s informal education programs and outreach activities have been expanded through efforts like the “Discovery Lab-in-a-Box.” The community training for monitoring programs has shown significant effectiveness, as evidenced by the discovery of a previously undocumented crab species in Kachemak Bay by two students.

The Reserve also maintains a website, but it is in need of updating. Some of the materials date from five or more years ago. Given the logistical challenges for spreading the word about the Reserve and its activities, this electronic medium is an important way to reach people. With staffing now fairly stable, OCRM urges the Reserve to expend the staff time necessary to update the website.

PROGRAM SUGGESTION: The Reserve’s website should be updated, and projects, news and activities that have occurred in the last several years should be added.

2. Coastal Training Program (CTP)

The Reserve’s staffing issues during this evaluation period affected the Coastal Training Program. The CTP Coordinator resigned in mid 2007 to take another position elsewhere, and the Reserve did not have a permanent CTP Coordinator from then on. This position was one for which the Reserve waited until the State of Alaska’s position classification study and

reclassification process was complete. A temporary CTP Coordinator was hired in December 2008. The position was finally reclassified and advertised. At the time of the site visit, applications were being accepted. Since the site visit, the position has been filled.

In the second half of 2006 the CTP provided technical assistance to the City of Homer to coordinate meetings, work sessions, and field trip activities to develop guidelines for coastal bluff erosion on properties bordering the Bay. The CTP also partnered with numerous agencies to provide a one-day workshop on rockfish biology and management for approximately 80 individuals.

The logistical challenges in reaching and leaving Homer and the sparse and dispersed population create difficulties for the CTP to reach a target audience beyond the 25-30 people on the Kenai Peninsula who are among CTP target audiences. Therefore the CTP is reaching out to the statewide Alaska Coastal Management Program. In early 2009 the temporary CTP Coordinator conducted a training needs assessment of the 28 Alaska coastal district coordinators. Three major training needs were identified and presented to the Alaska Coastal Management Program: 1) review of the ACMP roles, impacts, and how to implement recent changes to statutes and regulations; 2) proper and effective commenting on permit requests; and 3) delivery of effective educational outreach and responses to applications. Because of the difficulty in providing training in person throughout Alaska, the Reserve suggested to the ACMP that it develop a variety of self-directed presentations for Coastal District Coordinators. Building on that idea, the ACMP is developing four PowerPoint© presentations.

With a new CTP Coordinator now in place, OCRM anticipates that the Coastal Training Program will move forward. There are opportunities to work with the Alaska Coastal Management Program to collaborate on workshops to address training needs already identified. The CTP may also be able to identify training and research needs of the ADF&G divisions and consider whether the Reserve can address any of these needs.

D. STEWARDSHIP AND RESOURCE MANAGEMENT

Within the NERR system, many reserves conduct or accomplish programs or activities related to land acquisition, enforcement, restoration, restoration science, technical advice and support, and community education under the general rubric of stewardship and resource management. Because the Reserve has so successfully integrated its research and education components, elements of stewardship and resource management are identifiable in almost all of its activities and programs, as can be seen in the discussions above.

All the land and waters within the Reserve boundaries are in public ownership and management, although the Reserve has no direct resource management responsibility for those land and water resources within its boundaries.

The majority of the area included within the Reserve boundary is relatively pristine and has not been significantly impacted by human activity. However, the Reserve's current management plan recognizes that there are a few locations that have been impacted and that could be

considered for restoration. Such restoration would be done in partnership with the agency having management responsibility. Some of the Reserve's research and monitoring activities may support potential restoration and resource management activities.

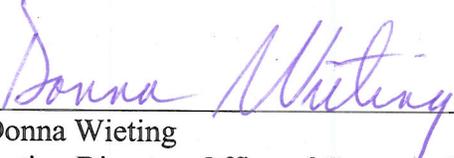
V. CONCLUSION

For the reasons stated herein, I find that the State of Alaska is adhering to the programmatic requirements of the Coastal Zone Management Act and the regulations of the National Estuarine Research Reserve System in the operation of its approved Kachemak Bay National Estuarine Research Reserve.

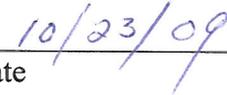
The Kachemak Bay Reserve has made notable progress in: Administration and Staffing; Kachemak Bay Research Reserve Community Council; Coordination and Partnerships; Research Activities; Monitoring; and Education and Outreach.

These evaluation findings also contain two (2) recommendations. All of the recommendations are in the form of Program Suggestions. There are no Necessary Actions. The Program Suggestions should be addressed before the next regularly-scheduled program evaluation, but they are not mandatory at this time. Program Suggestions that must be repeated in subsequent evaluations may be elevated to Necessary Actions. Summary tables of program accomplishments and recommendations are provided in Section VI.

This is a programmatic evaluation of the Kachemak Bay National Estuarine Research Reserve that may have implications regarding the state's financial assistance awards. However, it does not make any judgment about or replace any financial audits.



Donna Wieting
Acting Director, Office of Ocean and Coastal
Resource Management



Date

VI. APPENDICES

Appendix A. Summary of Accomplishments and Recommendations

The evaluation team documented a number of the Reserve Management Authority's and the Reserve's accomplishments during the review period. These include:

Issue Area	Accomplishment
Administration and Staffing	The Reserve has come through a period of staff transition and has attained a more stable staffing base. Several staff positions were reclassified, and a new manager, research coordinator, and education coordinator are now in place. Reserve programs and projects continued throughout unstable periods. The staff members are well respected and recognized by their peers, partners, and community members for their expertise, dedication, and enthusiasm.
Administration and Staffing	The State of Alaska and the ADF&G Division of Sport Fish have provided increased state financial support for the Reserve's activities and core positions.
Kachemak Bay Research Reserve Community Council	During this evaluation period the Reserve Community Council was successful in obtaining state funds to match the federal funding for the Visitor Center exhibits. Council members are willing to tackle substantive issues and activities to support the Reserve.
Coordination and Partnerships	The Reserve has maintained and strengthened its existing collaborations and partnerships. New elements of partnerships have been developed or are being discussed, which have expanded and will continue to expand the reach of the Reserve's programs.
Research Activities	The Reserve's current research and monitoring efforts address a number of state and local needs and have direct application and use by other organizations and communities. Research is well integrated into the educational programs of the Reserve, and the results of many of the research projects can provide reference data that can inform management decisions related to climate change adaptation.
Monitoring	Kachemak Bay NERR was able to maintain SWMP in spite of staff turnover and shortages during this evaluation period. The data from SWMP is used by the local aquaculture industry and mariners.

Education and Outreach	The Reserve has expanded its formal education programming to the limits of staff and resource capacity in spite of staff shortages and logistical issues. In part it has been able to do this by creating a new K-12 program (post-Discovery Labs) based upon an existing informal program (Discovery Labs). Education programs integrate the research being conducted at the Reserve.
Education and Outreach	The Reserve’s informal education programs and outreach activities have been expanded through efforts like the “Discovery Lab-in-a-Box.” The community training for monitoring programs has shown significant effectiveness, as evidenced by the discovery of a previously undocumented crab species in Kachemak Bay by two students.

In addition to the accomplishments listed above, the evaluation team identified several areas where the program could be strengthened. Recommendations are in the forms of Program Suggestions and Necessary Actions, although there are no Necessary Actions from this evaluation. Areas for improvement include:

Issue Area	Recommendation
Administration and Staffing	PROGRAM SUGGESTION: The Reserve and the Sport Fish Division have worked hard to secure cash match for Reserve programs. In the face of continuing funding challenges, the Reserve should develop a written strategy for future funding that can be endorsed by the Division of Sport Fish and OCRM.
Education and Outreach	PROGRAM SUGGESTION: The Reserve’s website should be updated, and projects, news and activities that have occurred in the last several years should be added.

Appendix B. Response to Previous (2006) Evaluation Findings

Necessary Action: By the end of the exhibit construction award period, the Reserve must identify non-federal match funds for the exhibits planned at the Visitor Center or return the funds unexpended to NOAA.

Response: The Reserve was able to secure the non-federal match for the NOAA facilities monies in the amount of \$133,000 from the State of Alaska in 2007. The Reserve Community Council was instrumental in working with our legislative representatives to secure this state money. KBNERR educator Catie Bursch is leading the efforts to complete the exhibit project. Currently, the Reserve is continuing to work on finishing designs, issuing request for quotes on video products, and working with the U.S. Fish and Wildlife Service to secure an exhibit design and fabrication contractor. Fabrication and installation of the exhibits are scheduled to be completed by summer of 2010.

Program Suggestion: The Reserve and Division are encouraged to continue their efforts to gain more state financial support for core positions, particularly the education and research coordinators.

Response: Over the review period the State of Alaska has strengthened their financial support for core positions, as well as salary support for various KBNERR employees. Currently, multiple KBNERR staff receive state supported salary:

- Manager: 5.25 months of state salary support using general fund monies from the Division of Sport Fish (previously this position was 100% federally funded)
- Research Coordinator: KBNERR receives approximately \$150,000 per year from State Wildlife Grant funding to conduct research projects. The RC receives partial funding from these monies to provide programmatic oversight and supervision.
- Education Coordinator: KBNERR receives approximately \$127,000 per year from State Wildlife Grant funding to conduct education projects. The EC receives partial funding from these monies to provide programmatic oversight and supervision. The EC also receives approximately 4 months of state funding from the Division to assist with statewide aquatic education oversight and projects.
- Office Manager: 100% state supported salary
- Accounting Clerk: 100% state supported salary

Program Suggestion: The Reserve should explore stronger state support for the Visitor Center maintenance costs.

Response: The Division is keenly aware of the desire to diversify the financial support for Visitor Center operations and maintenance. Due to declining state budgets and demands on existing monies the State has not been able to provide additional funding. The Community Council has discussed this issue as one they may wish to advocate for with our local elected representatives in coming legislative sessions.

Program Suggestion: The Reserve should explore whether additional opportunities exist for partnership and collaboration with the Alaska Coastal Management Program.

Response: Over the past three years the Reserve has strengthened our ties to the Alaska Coastal Management Program (ACMP) in a couple of key areas: CELCP and training. Over the last two years the KBNERR manager has been actively involved in reviewing and providing comments for CELCP proposals submitted to the ACMP. KBNERR has also been actively involved in participating and presenting at the annual Alaska Coastal Program Manager meeting held in Juneau. Past presentations include: Use of historical aerial images to document coastal erosion, Coastal Training Program (CTP) presentation, and outreaching a recently completed needs assessment of the 28 coastal program coordinators.

Program Suggestion: The Reserve should install permanent signage at the visitor Center identifying the Reserve and NOAA and should consider other strategies to increase the visibility of the Reserve at the Center.

Response: The Reserve, in cooperation with the Alaska Maritime National Wildlife Refuge has worked to install new signage throughout the Alaska Islands and Ocean Visitor Center which clearly identify the facility partners. During high visitor use periods during the summer months KBNERR education interns are providing visitor services at the front reception desk.

Program Suggestion: The Reserve should explore strategies for obtaining a position or person to coordinate activities involving volunteers.

Response: KBNERR was not able to dedicate or support a position to coordinate volunteer activities. While not diminishing the need, KBNERR has not identified a dedicated volunteer coordinator as a high priority. Currently, each KBNERR staff who have volunteer needs or opportunities manages their own volunteers by recruiting, training, and tracking and documenting volunteer hours.

Program Suggestion: The Reserve should explore the creation or development of a non-profit support organization.

Response: Due to community resistance KBNERR has not pursued the establishment of a non-profit support organization. The resistance within the local community is based on fear of competition for already scarce financial resources and the demands that yet another local non-profit would place on the community. The Department of Fish and Game has established the Alaska Fish and Wildlife Heritage Foundation that may be of use to KBNERR in future years.

Program Suggestion: The Reserve should explore the Cooperative Ecosystem Studies Unit Program as another option for research coordination and partnership opportunities, particularly with the National Park Service and U.S. Fish and Wildlife Service in the Kachemak Bay and

Kenai Peninsula areas.

Response: KBNERR has investigated, and when appropriate, looked for opportunities to work within the CESU Pacific Northwest regional system. A number of years ago KBNERR partnered with the National Park Service and the Pacific Northwest CESU on a collaborative project. Since this program suggestion KBNERR has actively looked to use this program, but to date has not found the appropriate project to make this partnership work.

Appendix C. Persons and Institutions Contacted

Alaska Department of Fish and Game

Lisa Evans, Assistant Director, Sport Fish Division
Nicky Szarzi, Sport Fish Division
Ted Otis, Commercial Fisheries Division

Kachemak Bay National Estuarine Research Reserve

Terry Thompson, Manager
Angela Doroff, Research Coordinator
Ori Badajos, Fisheries Biologist
Joel Markis, Fisheries Biologist
Steve Baird, Research Analyst/GIS
Coowe Walker, Watershed Specialist
Carmen Field, Marine Educator
Ingrid Harrald, Marine Educator
Catie Bursch, Marine Educator/Illustrator
Kim Donohue, Administrative Support
Megan Murphy, Graduate Research Fellow
Jim Palardy, Graduate Research Fellow
Tammy Hoem, Graduate Research Fellow

Kachemak Bay Research Reserve Community Council

Bob Hartley, Community Member
Ralph Broshes, Community Member
Will Files, Community Member
Brenda Konar, Agency Member, University of Alaska
Ted Otis, Agency Member, ADF&G
Roger MacCampbell, Agency Member, ADNR, Division of Parks and Recreation

Federal and State Agency and Local Government Representatives

Ray RaLonde, Alaska Sea Grant Marine Advisory Program
Amy Holman, NOAA Alaska Regional Collaboration Team
Kris Holdereid, NOAA National Centers for Coastal Ocean Science
Glenn Seaman, NOAA National Centers for Coastal Ocean Science
Elizabeth Wasserman, Lake Clark National Park and Preserve
Mary McBurney, Lake Clark National Park and Preserve
Glenn Chen, Department of Interior Bureau of Indian Affairs
Lisa Matlock, Maritime National Wildlife Refuge
Steve Brockman, Acting Assistant Manager, Maritime National Wildlife Refuge
Will Meeks, Acting Manager, Maritime National Wildlife Refuge
Marianne Aplin, Visitor Center Manager, Maritime National Wildlife Refuge
Roger MacCampbell, Alaska Department of Natural Resources, Division of State Parks and Recreation
Gina Shirey-Potts, Alaska Department of Natural Resources, Coastal Management Program

Other Organizations and Representatives

Michael Opheim, Environmental Specialist, Seldovia Village Tribe

Beth Trowbridge, Center for Alaskan Coastal Studies

Ryjil Christianson, Pratt Museum

Brenda Konar, University of Alaska-Fairbanks

Steve Okkonen, University of Alaska-Fairbanks

Ray RaLonde, Cook Inletkeeper

Marie McCarty, Kachemak Heritage Land Trust

Appendix D. Persons Attending the Public Meeting

The public meeting was held on Tuesday, April 28, 2009, at 6:00 p.m. at the Kachemak Bay Reserve, Alaska Islands and Ocean Visitor Center, 95 Sterling Highway, Homer, Alaska. No members of the public attended the meeting.

Appendix E. NOAA's Response to Written Comments

NOAA received no written comments regarding the management or administration of the Kachemak Bay National Estuarine Research Reserve