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FY2008 Secretary of Defense Environmental Awards



ELMENDORF

Air Force Base, AK (PACAF)

Natural Resources Conservation —
Large Installation / Civil Works Facility

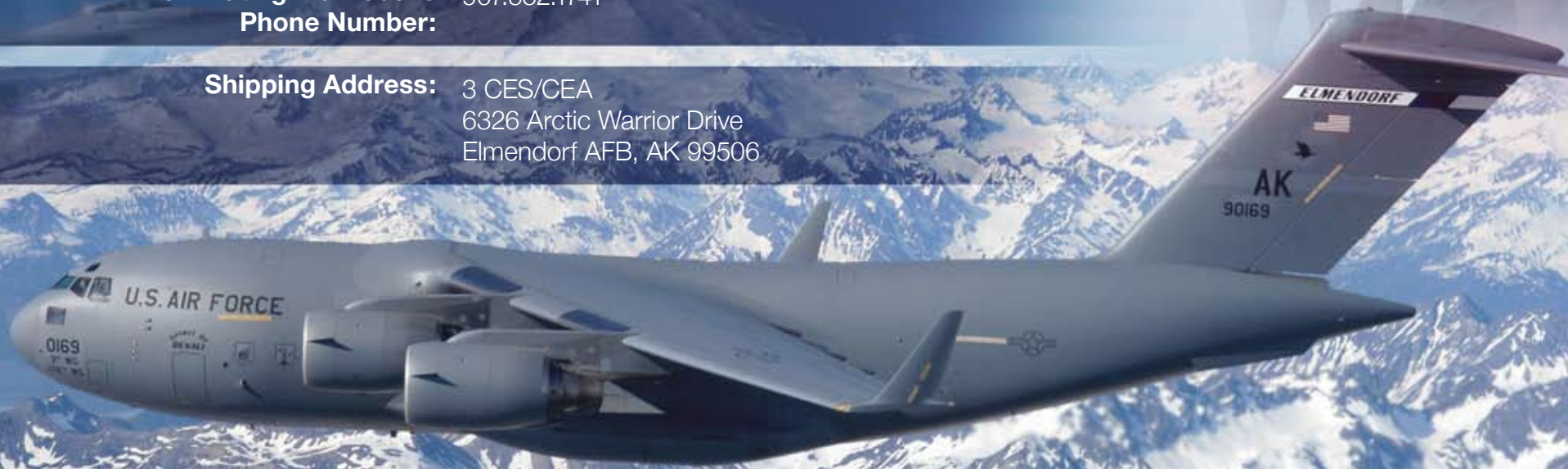


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Elmendorf AFB, AK (PACAF)

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“Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul.”
— John Muir, naturalist (1838-1914)

INTRODUCTION

Home to the 3rd Wing, Elmendorf Air Force Base (EAFB) is a vital Air Force asset, strategically located at the top of the world to support worldwide contingencies. The 3rd Wing’s proud fighting force is equipped with F-22, F-15, E3-B, C-17 and C-12 aircraft and consists of approximately 6,500 military personnel, 9,600 family members, and 1,900 civilian employees. Also located on EAFB is the Alaskan Command Headquarters, 11th Air Force Headquarters, 611th Air Operations Group and many associate and tenant units.

EAFB is located in south-central Alaska just north of downtown Anchorage and immediately west of Fort Richardson. The base skirts the shores of Knik Arm, the northernmost extension of Cook Inlet and lies in the Anchorage lowland. Surrounding the lowlands are the rugged mountains of the Chugach Range to the east and the Alaska Range to the north and west.

Elmendorf is truly the ultimate natural adventure for Airmen and their families, a place offering once-in-a-lifetime opportunities for hunting, fishing, and wilderness seeking.

Nowhere else in the Air Force can you see a combined assortment of wolves, brown/grizzly and black bears, moose, lynx, the endangered Cook Inlet Beluga whales (CIBW), bald eagles, or hear the haunting chorus of common and Pacific loons. Our rich biological diversity includes 264 species of plants, 10 fish, 1 amphibian, 118 birds, and 31 mammals.



Black Bear — An estimated 20-30 black bears use installation lands. EAFB made great strides to become a “bear-resistant installation” by reaching 90% conversion of all at-risk dumpsters and garbage receptacles in 2008. These efforts won Alaska Department of Fish and Game (ADF&G) praise for being the bear management pacesetter in south-central Alaska.

Elmendorf AFB Highlights

- > 13,455 total acres
- > 6,232 acres of commercial forest
- > 1,510 acres of shrub lands
- > 3,770 acres available for moose hunting
- > Seven fishing lakes totaling 203 acres
- > 405 acres of vegetated wetlands
- > 6.6 miles of salt-water shoreline
- > 6.4 miles of streams, 2.2 miles available for fishing
- > 779 acres designated EOD Creek Natural Area

PROGRAM SUMMARY

- Pioneering bird radar showed times of major bird migrations providing critical mission support by altering flight schedules to dramatically reduce chances of bird strikes.
- Our Military Conservation Agent wildlife enforcement and monitoring program was recognized as “best-of-the-best” by the National Military Fish & Wildlife Association.
- Partnered with ADF&G to collar and long-term track the migration of 11 brown/grizzly bears throughout the Anchorage/EAFB area. This landmark study provided remarkable new insights on bruin habits.
- Innovative evapo-transpiration landfill cap is transforming 70+ acres at a former base landfill into a Bird Aircraft Strike Hazard (BASH)-friendly, forested wildlife oasis.
- Our base salmon counts with genetic sampling helped manage threatened Beluga Whale habitat and facilitate region-wide fishery decisions.
- Active Natural Resources staff engagement in the National Environmental Policy Act (NEPA) process protected two intensively used recreational lakes from inadvertent damage and preserved 14 acres of wetlands in project to extract 11M cubic yards of base gravel to be used in a major Port of Anchorage expansion.
- \$600K of wetlands mitigation projects had major improvements to base fisheries.

OVERALL CONSERVATION MANAGEMENT

Natural resources conservation management on EAFB is guided by the goals and objectives outlined in our Integrated Natural Resources Management Plan (INRMP), which was revised inhouse in 2006 and signed in 2007. Twenty-nine stakeholders were involved in the revision of the plan, including the ADF&G, USFWS, BLM, NOAA—National Marine Fisheries Service, the Native Village of Eklutna, EAFB Community Environmental Board, Alaska Department of Natural Resources, and the US Army Garrison Alaska (Fort Richardson). The vision of the EAFB natural resources staff and the stakeholders was a plan that would fully support the military mission, while protecting and preserving the base's valuable natural resources.

The INRMP identifies seven goals with 48 objectives and lists associated sequential milestones. A key provision adopted by the INRMP stakeholders was to use a management indicator species approach to monitor natural resource conservation success. Twelve species, representing the base's four major ecosystems, were identified and selected as management indicator species. Additionally, stakeholders agreed that the INRMP would be a "living document" available online, where the public could view frequent updates of monitoring studies and project results.

Responsibility for management of the natural resources program and implementation of the INRMP falls under the 3rd Mission Support Group, 3rd Civil Engineer Squadron, and specifically the Natural Resources Element within the Asset Management Flight. The Natural Resources Element consists of the conservation and natural resources chief, a wildlife biologist, chief enforcement specialist, a general/fisheries biologist, and a biological/forestry technician.

Key Stakeholder Focus Areas

- > Wetland/fisheries enhancement
- > Role of Sixmile salmon in critical habitat designation for Cook Inlet Beluga whale
- > Wildlife corridor identification and protection
- > Forest vegetation/timber resource status & trends
- > Invasive plant species control
- > Baseline status of the wood frog, EAFB's only amphibian
- > Baseline status of aquatic macro-invertebrates

MILITARY CONSERVATION AGENT PROGRAM

Another essential component of our natural resource conservation program is conservation enforcement, which is accomplished through our Military Conservation Agent (MCA) program. The MCA approach is unique in the Air Force and consists of up to 45 active duty Airmen who volunteer to perform conservation enforcement as an additional duty. These enthusiastic officers and Airmen receive 110 hours of advanced training and are certified to ensure Sikes Act compliance and to enforce state

fish and wildlife laws and regulations on EAFB. Additionally, MCAs respond to nuisance or distressed wildlife calls and provide wildlife safety monitoring for children commuting on foot to schools. Altogether these agents volunteered over 7,700 hours of staff time or 3.8 staff years saving the Wing over \$420K in personnel costs. Their outstanding conservation enforcement efforts and support for natural resource conservation program were recently recognized by the National Military Fish and Wildlife Association for having the best Military Support of any Natural Resources program in the Department of Defense.



MCAs Rescue Distressed Wildlife — A moose calf separated from its cow by fencing is captured to be re-united. MCAs typically respond to more than 200 wildlife calls annually. MCA training includes conservation law enforcement, the use of specialized weapons and tactics, and wildlife response.

MISSION ENHANCEMENT

Bird Aircraft Strike Hazard Program

A critical element of our war fighting capabilities is keeping the air space in and around our runways free of birds and wildlife that can jeopardize aircraft operations. As part of the BASH team, many forward thinking ideas and innovations have been accomplished by our natural resources staff to ensure the safest skies and grounds possible.

Mission Enhancing Bash Program Highlights

- > Pioneering use of avian radar obtained with DoD Legacy funds—Wing alters spring and fall air operations
- > Wildlife movement management—airfield perimeter automated gates keep out moose/wildlife
- > Around-the-clock pyrotechnic hazing techniques scare away birds from airfield area
- > Conducting field research—weekly counts of Bohemian waxwings identified high winter concentrations. This discovery led to increased winter hazing efforts and BASH vegetation management focusing on the replacement of ornamental berry producing trees throughout the cantonment area
- > Vegetation management techniques are eliminating waterfowl grazing and raptor hunting areas
- > Insect control through vegetation management discourages bird attracting grasshopper infestations
- > Collaboration with federal, state and local agencies, and civic action committees is reducing encroachment activities that may attract birds to our airspace



DoD Legacy Funded Avian Radar — EAFB has participated in the Legacy project since 2003 and is now participating in the ESTCP-funded Avian Radar Validation study. Use of Legacy funds for this radar saved the AF \$120K. Radar application has enlightened EAFB pilots and Flight Safety, and flight operations now avoid peak nighttime migration concentrations.

LAND USE MANAGEMENT

The closing of our 70+ acre base landfill adjacent to the base's north-south runway presents an excellent example of enhancing the base's mission by reducing a high-BASH attractant and mitigating the loss of moose habitat due to recent base development. Most landfills in the country are capped with a rigid clay layer to prevent rainwater from seeping into the landfill and drawing out toxic leachates. Clay caps have high maintenance costs and promote bird-attracting grass growth, a significant BASH problem on EAFB.

To address these compounding problems, our natural resources staff formed a task force involving multiple federal and state agencies, academia, and contractors to explore more suitable methods to cap the landfill. From this collaboration, a radically different solution called evapo-transpiration capping was selected, designed, and implemented.

Dubbed "ET", this alternative landfill cover system consists of a layer of soil covered by over 185,000 native tree saplings, providing an ideal moose habitat. ET's soil layer retains water and the evapo-transpiration effect of the vegetation transfers this water from the soil to the air. The self-healing nature of the ET cap over the crack-prone clay cap is projected to save \$5M in maintenance costs over the life of the project.

ET has transformed an old landfill and eyesore into an enhanced 70-acre natural habitat for wintering moose, while minimizing the bird air strike potential. Agencies are looking at the applicability of ET technology for landfill capping in rural villages throughout the State of Alaska.

Port of Anchorage (POA) Expansion Project

EAFB possesses enormous amounts of gravel, a mineral resource that is absolutely essential for construction and development. As part of a \$700 million expansion project, the POA requested permission to extract 11 million cubic yards of gravel from Elmendorf. In a classic win-win situation involving multiple agencies and the NEPA process, an agreement was reached where, in exchange for mining 255 acres of gravel on base, EAFB receives numerous mission enhancing benefits.

MISSION BENEFITS OF POA EXPANSION

- > Hills mined at the end of the north-south runway reduce a flight path hazard
- > Re-vegetation of mined areas provides new moose habitat and will deter congregations of large birds
- > The elimination of an open water pond at the end of the east/west runway removes a chronically attractive source to waterfowl and shorebirds
- > The Port provides \$600K for wetland mitigation on base
- > Fort Richardson upgraded the gravel haul road to facilitate rapid deployments of Stryker Brigades as well as other military forces to the port without the need to use the public highway system—a major security improvement
- > NEPA process identified and protected two important recreational fishing lakes



Wildlife Habitat Enhancement in Paper Birch Stand — EAFB's birch stands are a product of 1940s wildfires. Clear cutting 12 acres of pure birch stand provides regeneration for moose browse, increased biodiversity, and firewood sales, which generate \$2K annually.

Forest Management An unprecedented beetle outbreak in the 1990s killed most of the spruce trees throughout south central Alaska including those on EAFB. The resulting tree mortality affected nearly every component of the ecosystem. Our natural resources staff met this forest management challenge head-on with commercial timber salvage operations, which are reducing the significant wildfire danger. The removal of beetle-killed spruce and other trees during our tree harvesting operations has already resulted in 82 acres (of a planned 340 acres) of ideal moose habitat. In addition, our residential use firewood and Christmas tree cutting programs continue with over 500 permits issued annually, generating forestry management annual receipts of \$6K while providing unique Alaskan family experiences.

EAFB has been recognized for our forest regeneration efforts five-years running by the Tree City USA program. Most notable were the 185,000 trees saplings planted at the landfill. Tree City USA involves local boy and girl scouts in educating the public about the importance of reforestation and its role in carbon-fixing.

FISH AND WILDLIFE

Fish Management Pacific salmon returning to EAFB's Sixmile Creek are an essential component of the endangered Cook Inlet Beluga whale's (CIBW) critical habitat and are a highly desirable recreational resource. To monitor and promote this fishery, our natural resources staff has counted returning salmon for over two decades. In 2008, through a collaborative effort with the ADF&G, genetic samples from adult Sixmile Creek salmon were collected. This DNA fingerprinting is expected to enhance our understanding of Cook Inlet stocks and the role EAFB-produced fish contribute to CIBW food requirements.

In exchange for running a fish hatchery on base, the ADF&G stocks 8,000 fish annually – 6,000 rainbow trout and 2,000 king salmon in base lakes for the purpose of recreational fishing. Over 900 base residents receive free annual permits to fish on EAFB lakes. The non-military community is allowed access through DoD member sponsorship program. Most of the lakes on EAFB provide access opportunities for the disabled.

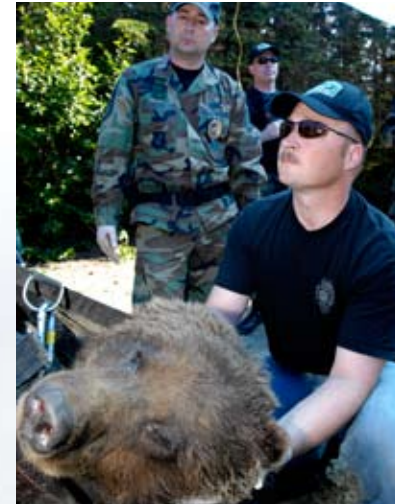
Collaborative Wildlife Management Using a network of volunteers and cooperating agencies, our natural resources staff has extended its ability to protect and preserve the rich natural resources on base. For example, Audubon Society members monitor loons, grebes and other birds. A study led by USFWS biologists determined that rusty blackbird habitat on EAFB was ideal and, unlike a continent-wide decline, our population is robust in productivity. These collaborative efforts help identify habitat protection strategies to include in future INRMP revisions.

Brown Bear Study

Our natural resources staff is pioneering urban wildlife management. We led a two-year effort involving ADF&G, Fort Richardson, and the Bureau of Land Management to identify demographics of the Anchorage-bowl brown/grizzly bear population including minimum size, habitat use, movement corridors, and food selection. The project employed 11 GPS collars and included such techniques as bear hair collection for DNA and stable isotope analysis. A key component in the success of this study was the dedication of our MCAs, who were able to live-trap four brown/grizzly bears and collect dozens of hair samples around the base.

Study results revealed extraordinary findings. An alarming 35 brown/grizzly bears, at a minimum, were discovered using adjoining military lands and state and Municipality of Anchorage parks. The study proved these large predators were traveling often unseen along creek greenbelts near new base housing projects and through DoD golf courses. Correlations of GPS locations with stable isotope analyses indicated the presence of bears near residential and human-use areas because of the abundance of moose and salmon, which were measured to be roughly 70% of brown/grizzly bear's diet.

The study also served as a catalyst to further define wildlife movement corridors on EAFB and Fort Richardson and allowed ADF&G to carry out an informed response to the highest ever number of human-bear conflicts occurring in the parklands adjacent to EAFB during summer 2008. In addition to national media coverage, this study has been reported at two national conferences of wildlife biologists and land managers, the North American Wildlife and Natural Resources Conference and The Wildlife Society Conference. Future publications in scientific journals are expected.



Captured Brown Bear — MCAs helped capture and GPS-collar 11 brown bears during collaborative study. Study objectives were to document population demographics on EAFB, Fort Richardson, and Anchorage area parks. A minimum of 35 bears were discovered through DNA analyses of hair snare samples.



Moose Hunter Success —

Up to 25 bowhunters are permitted annually to hunt moose on EAFB. EAFB hunters enjoy an 85% success rate, the highest of any Alaska bow hunt. This sustainable harvesting has diminished dangerous moose presence near homes.

Moose Management

The natural resources staff strives to optimize moose habitat to maintain a healthy moose population for all to enjoy. Since 2006, we have enhanced over 105 acres for moose habitat. Our habitat monitoring shows that moose are at or near the base's carrying capacity, allowing for limited annual harvest. Through a public drawing, up to 25 archery moose hunting permits are issued per year, generating an average of \$2.7K for EAFB's wildlife management account. Our hunter management program has successfully reduced nuisance moose near family housing areas, which helps keep the base's residents and their pets safe.

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Other Natural Resources/Outdoor Recreation

Unparalleled opportunities exist on base for wildlife viewing, berry picking, snowmobiling, all-terrain vehicle use, canoeing, downhill and cross-country skiing, snowshoeing, dog mushing, hiking, mountain biking and even recreational gold panning. Each year an estimated 95% of base personnel take advantage of these once-in-a-lifetime opportunities. The MCA program monitors the activities and participants to ensure safe use and protection of the natural resources.

Invasive Species Control and Pest Management

Invasive plant species surveys in 2007-08 identified alarming findings for this “pristine” Alaska installation. Researchers found 67 invasive terrestrial plants, including 11 species previously unrecorded in the Anchorage area and three species not previously found in south-central Alaska. European chokecherry was discovered to be rapidly spreading by seed from city landscape planting. Chokecherry has been identified by Alaska botanists as an invasive posing a high risk for environmental damage, especially in riparian and wetland ecosystems. Chokecherry also produces abundant berries, which draws Bohemian waxwings, a bird which is considered high to moderate BASH risk during winter. Their removal had high correlation to mission enhancement. Fortunately, no invasive aquatic plants or mollusks were

discovered. The prioritized list of invasive species as incorporated into the EAFB Pest Management Plan.

Invasive control treatment was accomplished with three summer-hire employees and included hand pulling, digging, minimal herbicide treatment of stumps, and experimental use of boiling water in sensitive vegetation areas. Invasive plant control efforts in 2008 included removal of four high priority infestations: chokecherry on 36 acres, white sweet clover on 265 acres, Canadian thistle on six acres and birdvetch on 26 acres.



EAFB MCAs Educate Students—MCAs took the opportunity of multiple wolf sightings/scares on base during the winter of 2007-08 to educate students and staff at 3 local elementary schools. Students learned about wild canid behavior and identification. Over 300 children are provided conservation education annually.



Rusty Blackbird - EAFB, Fort Richardson, and USFWS collaborated on DoD Legacy funded study of the nesting behavior and habitat selection of Rusty blackbirds, a species on numerous organizations' list of species of concern. Our natural resources staff helped locate 13 nests in two years.

CONSERVATION EDUCATION

- > Regular fish and wildlife tours at our unique Wildlife Education Center
- > Visiting Anchorage schools to discuss local area wildlife, their habits and conservation
- > Wildlife briefing for newly arriving AF members and for long-term TDY personnel such as Red Flag-Alaska
- > Natural resources conservation education briefings quarterly to command staff
- > Providing opportunities for Eagle Scout candidates to complete their project requirements
- > Wildlife guest speaker program for base residents
- > One-on-one education—our MCA agents patrol family housing, informing residents of potential bear/moose attractants
- > All Terrain Vehicle and snowmobile orientation training for base residents
- > Regular conservation information in the local base newspaper and the base's computer home page

COMMUNITY RELATIONS

- > Our quarterly Community Environmental Board meetings showcase our natural resources program accomplishments to the public and provide a forum for feedback
- > Partnering with Anchorage Audubon Society for loon watcher program and Christmas Bird Counts
- > Our natural resource volunteer program contributes 300-500 hours annually for trail maintenance, resources monitoring and habitat enhancement

Environmental Enhancement and Natural Resources Compliance

EAFB is an integral player in enhancing the Anchorage environment through minimizing bear-human conflicts in the surrounding community in addition to on the base. Our “bear-resistant installation” status reflects our serious intent to contribute to the community. As a participant in ADF&G’s urban bear conflict committee, we have made great strides to keep bears from learning to feed on human garbage, thus enhancing the environment for bears and humans.

In addition to the base’s INRMP, a key component for environmental enhancement on EAFB is our Environmental Management System (EMS) program, which was certified by an independent auditor. EMS provides a systematic approach for environmental planning and protection, including developing and delivering audits, assessments, educational programs, environmental programs, systems and processes.

EAFB Natural Resources Awards and Recognition—2007 & 2008

A top-notch staff with a rich history of natural resources conservation.

Under EMS, the state of our natural resources program is briefed quarterly to the Environmental Safety and Occupational Health Council, which is chaired by the Vice Wing Commander. Additionally, EAFB received the prestigious US EPA Natural Performance Track membership— the first member in Alaska—for demonstrating a sustained record of environmental enhancement and natural resources compliance.

Our natural resources section continues to receive command support, receiving full funding in 2007, 2008 and again in 2009. Additionally, we have approval to hire another biologist to work endangered species issues.

2008 Awards

- United States Environmental Protection Agency National Performance Track Award
- General Thomas D. White Natural Resources Conservation Award (Air Force)
- Outstanding Civil Engineer Environmental Flight Award (PACAF)
- National Military Fish & Wildlife Association Award for Military Conservation Agents
- General Thomas D. White Pollution Prevention Team Award (PACAF)
- General Thomas D. White Environmental Policy Act Team Award (PACAF)

2007 Awards

- United States Environmental Protection Agency National Partnership for Environmental Priorities Award
- Outstanding Civil Engineer Environmental Flight Award (PACAF)
- General Thomas D. White Cultural Resources Management Award (Air Force)
- General Thomas D. White Restoration Award (PACAF)
- General Thomas D. White Restoration Award Team Award (PACAF)
- General Thomas D. White Natural Resources Team Award (PACAF)



Canadian Swallowtail on Fireweed — Habitat enhancement projects on EAFB typically generate a flush of fireweed, which attracts a host of wildlife from moose to butterflies.

CONCLUSION

From our Wing Commander:

“Our globe-spanning mission requires us to operate in a wide variety of ecosystems, many of which are quite fragile and unforgiving. Regardless of where we operate, our goal is to always meet the highest standards for natural resources protection. My fighting force and I feel privileged to be stationed in such a grand setting as Alaska. We firmly believe that natural resources conservation can go hand-in-hand with the execution of our mission. I’m proud to say that on Elmendorf Air Force Base, we are dedicated to environmental stewardship.”

Col Thomas Bergeson
Commander, 3rd Wing