Alaska Region

Chugach National Forest

Glacier Ranger District

Conservation Education Plan

December 2005

(Final)

This plan has been reviewed and approved by the following:

for James Fincher, District Ranger Glacier Ranger District	12·7·05 Date
for Tim Charnon, Recreation Staff Officer Glacier Ranger District	12/7/05 Date
Lezlie Murray, Visitor Center Director Glacier Ranger District	12/7/05 Date

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INTRODUCTION

CONSERVATION EDUCATION & THE FOREST SERVICE

The Forest Service (FS) has provided educational programs since its inception in 1905. Early FS education was primarily a counter action to catastrophic events such as wildfires, and most efforts were nurtured by women like Mrs. Priscilla Edgerton, who authored *"Me Forest, A Handbook for Teachers"* in 1927, and Ms. Margaret Mount-March, who promoted the idea of conservation through talks to various civic and school groups in the 1920's and 1930's. Ms. Mount-March's "Penny Pines" raised student awareness and donations to fund the planting of pines on national forests.

Environmental education (EE) as a field was established in the 1960's. The North American Association of Environmental Education (NAAEE), defines EE as "a process that aims to develop an environmentally literate citizenry that can compete in our global economy; has the skills, knowledge, and inclinations to make well-informed choices; and exercises the rights and responsibilities as members of a community" (http://naaee.org/npeee).

In 1968 Chief Edward F. Cliff formally established the Forest Service education program. To emphasize the agency focus on conservation of natural and cultural resources, the Forest Service later coined the term "Conservation Education (CE)" rather than "Environmental Education."

Now 100 years after the creation of the agency, Forest Service educators are still protecting America's National Forests by providing youth, visitors, and urban & rural communities with the tools they need to take informed actions related to sustaining natural and cultural resources.

> ***Mission:*** Connect people to the land, by providing them with the tools they need to take informed actions related to sustaining natural and cultural resources.
>
> *—FS Conservation Education Goals (Revised 2002)*

INTRODUCTION

NATIONAL DIRECTION

USDA Forest Service Mission

The mission of the USDA Forest Service is to sustain the health, diversity, and productivities of the Nation's forests and grasslands to meet the needs of present and future generations.

Conservation Education Vision-to-Action Strategy

Completed in 1998, this multi-disciplinary plan was developed to establish an agency-wide vision for all Forest Service education programs. The mission of the Forest Service's education program is:

... Forest Service conservation education will be an effective, dynamic means for the Forest Service to connect the American people with their environment. The Forest Service will provide the tools Americans need to participate effectively in the critical task of sustaining our Nation's natural and cultural resources. This undertaking will be a coordinated, service wide effort that will affect all aspects of the agency's operations.

There are two core themes that support this mission:

- ◊ Sustainability of natural and cultural resources in forest, grasslands, and aquatic ecosystems.
- ◊ Awareness and understanding of interrelationships in natural systems and between people and the land

The Vision-to-Action Strategy states the importance and value of conservation education to the Forest Service:

Sustaining America's natural and cultural resources requires the participation of an informed public. Conservation education builds an understanding of the connection between people and their environment so they can effectively participate with the Forest Service in attaining the agency's mission. The agency needs people to understand the problems and potential solutions so that it can take necessary steps on behalf of the public, but for that to happen people need to understand the effects of their own actions...As a conservation leader, the Forest Service is expected to provide information and education to the public. The Forest Service has the organization, knowledge, people, partnerships, and experience to deliver a balanced conservation message.

"Caring for the land, ...

NATIONAL DIRECTION (CONT'D)

Conservation Education Learner Guidelines for Programs and Materials

Developed in February 2002, these *Learner Guidelines* are intended for use as a tool in the designing and presentation of Forest Service conservation education activities, programs, and products. Incorporating the guidelines into conservation education programs will increase the quality and effectiveness of conservation education efforts.

The Forest Service adapted the guidelines established by the North American Association for Environmental Education (NAAEE) to create *Learner Guidelines.*

The guidelines address the 5 goals of Environmental Education and how Forest Service conservation messages should apply at each level: awareness, knowledge, skills, values and attitudes, behavior.

Awareness & Knowledge: Conservation education should provide the knowledge necessary for interpreting the complex phenomena that shape the environment.

Skills: Conservation education should provide opportunities to gain skills necessary for informed decisions and behavior.

Values and Attitudes: Conservation education should encourage those ethical, economic, and aesthetic values and attitudes that, constituting the basis of individual behavior, will further the sustainability of the environment.

Behavior: Conservation education should also eventually result in signs of changes in behavior, which benefit the resources and are evidenced through changes in resource management practices.

Four Threats to the Health of the Nation's Forests and Grasslands

Healthy forests make for a healthy nation. In the 21st century, the nation's forests and grasslands face four threats. Forest Service Chief Dale Bosworth names them as: (a) *fire and fuels,* (b) *invasive species,* (c) *loss of open space,* and (d) *unmanaged recreation.*

Four Threats Fact Sheets in Appendix A.

...and serving people."

INTRODUCTION

REGIONAL DIRECTION

Alaska Region Key Messages for Interpretation and Conservation Education

In March 2003, Forest Service staff from throughout the Region met in Juneau for a three-day *Interpretive & Education Gathering.* The Region's employees identified a need for Region-wide themes, statements that would unify and help coordinate our efforts.

These themes do not include everything we may wish to communicate, but rather communicate the ideas that are critical for understanding the Chugach National Forest. All education efforts should relate to one or more of these themes, and each theme should be addressed in the overall education program of the Forest.

Ecosystems: Alaska's forests are dynamic ecosystems, shaped by nature, woven by culture.

World Class Resources: People can discover a unique combination of resources in the National Forests of Alaska. These world class resources are important locally, nationally, and globally.

Management and Stewardship: We, and our partners, care for your National Forests in Alaska using the best information to sustain the use and protection of resources for today and tomorrow.

People and the Land: Alaska's coastal lands and waterways have met peoples' social, physical, and spiritual needs for more than ten thousand years. Alaska's National Forests will continue to nurture the region's natural and cultural diversity for future generations.

(Fog hangs over a pond at Moose Flats in Portage Valley, Alaska. Photo courtesy of Burnie Schultz).

INTENT AND NEED

PURPOSE OF PLAN

This document has been created for internal strategic planning purposes. Within are the goals and objectives, and recommended actions the Glacier Ranger District (GRD) Conservation Education Staff feels are necessary for unifying and improving the quality and depth of CE programs. It is intended to guide staff efforts specific to conservation education operations within the Glacier Ranger District and Portage Valley Learning Center over the next 5 years.

It will provide staff with a timeline and framework for carrying out the recommended actions.

CALL FROM THE CHIEF

Chief Dale N. Bosworth, in a letter dated January 26, 2005, commented on the status and optimistic future of the FS Conservation Education program. Relaying the direction given by the Executive Leadership Team, Chief Bosworth states:

> *The [Executive Leadership] team recommended : reinvigorating the CE program to focus on pre-K through 12th grade and their educators, both formal and non-formal; and developing closer ties and strengthening partnerships with Research and Development, Interpretive Services and OC [Office of Communication]. They also recommended the development of a five-year strategic plan for CE to incorporate and direct the implementation of these recommendations. This plan will be developed together with key internal and external program partners, as well as representatives from field units.*

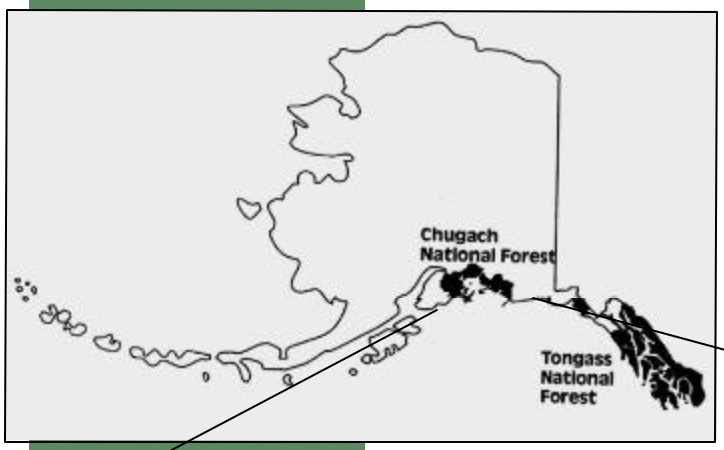
The responsibility of carrying out the Executive Leadership Team recommendations inevitably lies upon the shoulders of Forest and District level employees. A full version of Chief Bosworth's letter is available in Appendix B.

AUDIENCE

The Glacier Ranger District Conservation Education Plan is intended for use primarily by the Interpretation & Conservation Education team of the district.

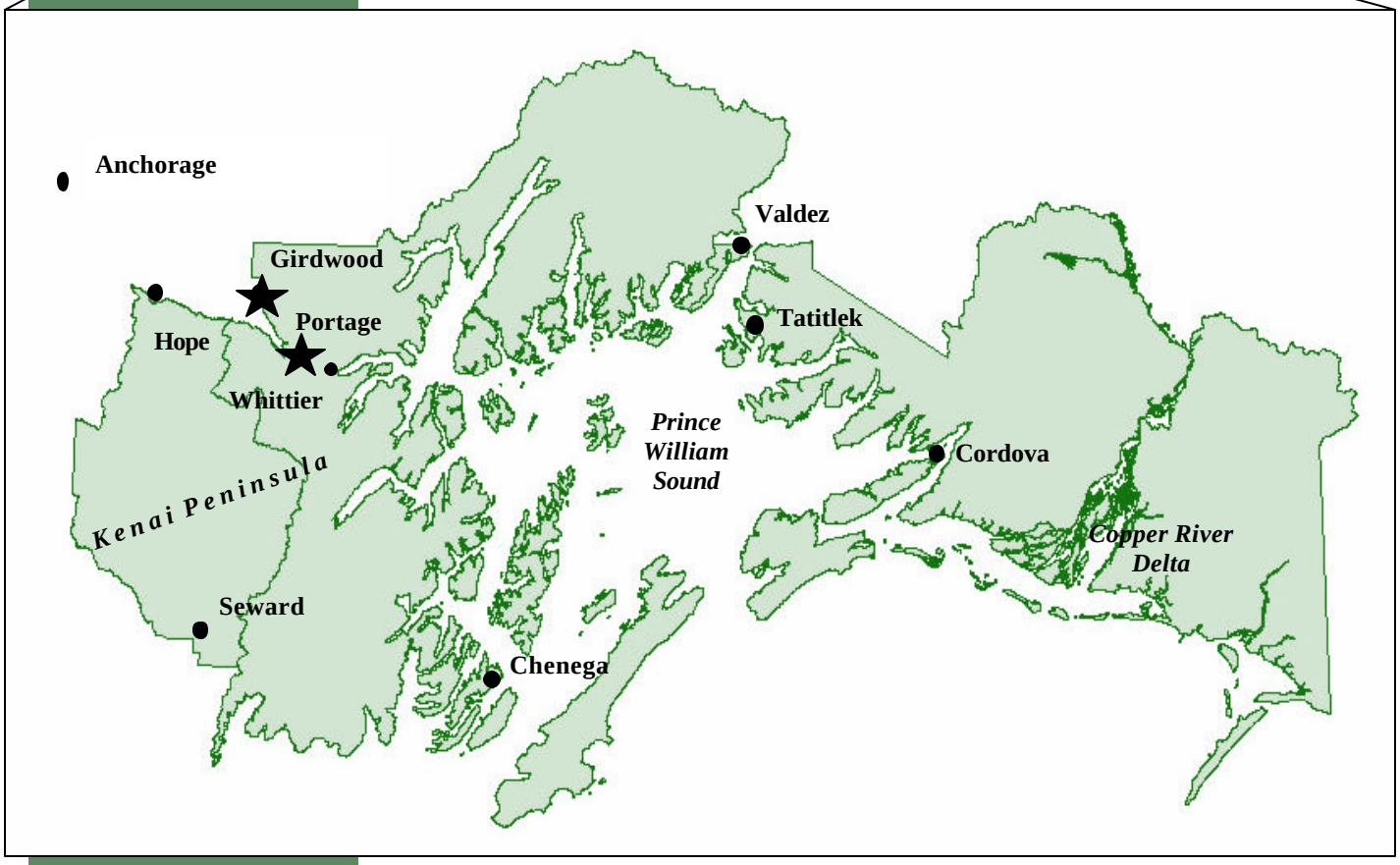
This document may also be used by other Forest Service employees developing strategic plans for their respective Forests and Districts.

CHUGACH NATIONAL FOREST



Three Ranger Districts (RD) share management of the Chugach National Forest: The Cordova RD, Glacier RD, and Seward RD.

Currently, the forest's 5.6 million acres stretch from the Kenai Peninsula to Bering Glacier east of Cordova, a distance of more than 200 miles.



BACKGROUND

CHUGACH NATIONAL FOREST

The Chugach National Forest is the 2nd largest National Forest in the United States, encompassing approximately 5.5 million acres land surrounding the Prince William Sound.

The multiple-use management of the Chugach National Forest directly affects the livelihoods of many South-Central Alaska residents. However, as the Chugach is part of the National Forest System, managers must consider national as well as local interests. Three Ranger Districts share the management of the Chugach National Forest; the Cordova Ranger District, The Seward Ranger District, and the Glacier Ranger District.

GLACIER RANGER DISTRICT

The Gist

The Glacier Ranger District (GRD) manages the land encompassing Western Prince William Sound in the 2nd largest National Forest in the country, the 5.3 million acres of the Chugach National Forest.

Over 10,000 glaciers make their home in the Chugach Mountain Range, one of the most breathtaking backdrops in the world. With world-class resources, dynamic ecosystems, and an abundance of recreational opportunities linking people to their land, the GRD practices sustainable management to ensure future generations are able to value and use their National Forest.

Our Audience

The GRD office is located just 35 miles south of Anchorage in the resort town of Girdwood (population ~ 2,000). A unique blend of personalities comprise the Girdwood community and surrounding towns of Indian, Bird, Portage, and Whittier.

In addition to the natural resources in the Chugach, the GRD is also in close proximity to Anchorage, Alaska. With a resident population of approximately 260,000 (http://quickfacts.census.gov), Anchorage is the largest city in the Last Frontier. Many residents of, and visitors to, Anchorage recreate in the Chugach each year.

There is one common thread among the majority of residents in the towns of South-Central Alaska: recreating in the Chugach National Forest.

Conservation Education History

The GRD education staff has provided a number of programs over the past 7 years (1998-2005). With a staff of 2 to 3 front-line educators, the number of direct student contacts is remarkable.

1998 marked the pilot year for the District's Conservation Education Program when staff developed a working relationship with the Anchorage School District. After meeting with various school district employees, staff began visiting elementary classrooms, teaching an array of 1-hour programs related to the Forest. By the end of the 2000-2001 school year, the program was booming, reaching approximately 6,000 students.

School Year	Student Contacts
1998-1999	5,157
1999-2000	5,400
2000-20001	5,935
2001-20002	4,024
2002-2003	4,952
2003-2004	3,945
2004-2005	5,381

In May 2002, the Anchorage School District (ASD) acknowledged the District's conservation education efforts by awarding front-line staff members with Outstanding Volunteer of the Year Awards.

Due to an escalating summer interpretive program, and an expanding education program outside the ASD, staff limited the number of classroom visits offered to the ASD in 2003-2004 in order to avoid spreading their abilities and creativity too thin.

(It's amazing what they'll learn with a pencil and potato! "Forest Explorers" practice their mapping skills inside the Begich, Boggs Visitor Center before heading outdoors where they'll put their newfound skills to the test on the compass course!)

GLACIER RANGER DISTRICT CONSERVATION EDUCATION PROGRAMS

"Thank you for coming to our classroom. I did not know the forest belonged to all the people in the country. That was really fascinating!

P.s. I hope you can come teach us more."

—2nd grader,
Spring Hill Elementary

◊ **In-school programs (ASD)**
Since 1998, staff has been traveling into Anchorage to present programs covering a variety of topics relating to the Chugach NF. Each individual program is 1 hour in length and includes an introduction to the Forest Service.

◊ **Begich, Boggs Visitor Center (BBVC) Field Trips**
If sufficient funding and transportation is available to Portage Valley, students will travel to the Chugach National Forest to visit the BBVC. Activities may include a movie showing of "Voices From the Ice", a grade-specific scavenger hunt which guides students through the numerous exhibits, and/ or interpretive presentations. Staff coordinates with teachers to provide a learning experience that best suits the students' needs.

(Glacier Ranger District Conservation Education programs connect children to the Forest through hands-on learning experiences.)

◊ **Four Valleys Community Schools (FVCS - Girdwood)**
FVCS, a non-profit organization, caters to the communities of Girdwood, Bird, Indian, and Hope, AK. Conservation Education Staff offers after school programs through FVCS on topics related to the Chugach NF. District participation with FVCS programs strengthens the community ties between the Forest Service and these local communities.

◊ **Nature Spooktacular (Halloween—BBVC)***

The first Nature Spooktacular was held in 1999. Each October around Halloween, creative educators from the Glacier RD, Seward RD , Alaska Department of Fish & Game, and the Bird Treatment and Learning Center (Anchorage) get together to showcase the less desirable, and, perhaps, not-so-attractive elements of their National Forest, making for an outrageous afternoon of learning. The eerie transformation of the BBVC into a Halloween haven attracts many 'creepy' visitors to their National Forest.

◊ **Forest Explorers**

Program began as FVCS after school program for local children, but as popularity soon grew, so too did the program itself. Now in Portage Valley, the purpose of the program is to get kids out in their National Forest in winter and teach them how to do so safely and wisely. Kids devote three Saturday mornings, and finish the fourth with an over night stay, at the BBVC.

◊ **Puppet Shows For Preschoolers (GRD, Glacier City Hall)***

In 2004, staff began putting on puppet shows for local preschoolers as a way to bring more visitors to the GRD office. The first year proved successful as local parents returned with their preschoolers show after show, expressing their support of the educational opportunities. In March 2005, shows were put on each Monday morning at the Glacier City Hall in Girdwood in order to provide the local child care program with the same opportunities. The program was a hit! The final show brought nearly 30 community participants.

(Forest Explorers built winter survival shelters in Portage Valley, 2004. The quinzee, or snow cave, takes less time to construct than the traditional igloo. Snow is piled high, then hallowed out inside, protecting individuals against the harsh Alaskan winter conditions.)

*According to the Alaska Region Guidelines for Using the Conservation Education Reporting System, FY05—programs geared toward a non-captive audience are counted toward Interpretation, rather than Conservation Education.

PORTAGE VALLEY LEARNING CENTER

ROOM TO GROW

The Facility

The Portage Valley Learning Center (PVLC), constructed during the summer of 2004, is an exciting new facility. This multi-purpose classroom addition to the Begich, Boggs Visitor Center (BBVC) will be used primarily for educational programs, but will provide space for other uses as well.

The addition of the classroom is not only an expansion of space, but an expansion of possibility. The vast majority of our conservation education programs take place indoors, within the confinement of school buildings. In order to make a difference in the way students learn about the environment, it is essential to get them out into it!

(The wait is over, and the Portage Valley Learning Center is ready for conservation education.)

Having our own classroom in the natural setting of the Chugach will allow us the locale needed to provide *true* conservation education opportunities. Students will have the opportunity to learn about the forest and then step outside into it!

CURRENT ISSUES

GRD CONSERVATION EDUCATION

The CE program on the District has continually grown in popularity over the last 7 years. Each fall as the backpacks are donned and students start back-to-school, requests from local school teachers flood the phone lines. While striving to maintain a high number of student contacts, the District makes an effort to provide the most rewarding, memorable experience for each individual student.

However, efforts can be further strengthened and more efficiently coordinated. The lack of strategic focus, formally standardized curricula, and concrete evaluation have mired any substantial change in recent years.

Chief Bosworth, at the national level, has addressed the need to educate on the 4 threats. The Region (R10) stresses the importance of relating conservation education programs to the 4 key messages. School districts need to meet standards. We, at the district level, must improve our thematic focus to convey the Forest Service's National and Regional messages, as well as meet the educational standards of our local school districts.

In order for the Glacier Ranger District Conservation Education program to grow, efforts must be made to better the existing conditions.

Glacier Ranger District conservation education staff feels the contents and recommended actions included in this plan should be regarded with priority and seen through to completion.

RECOMMENDED ACTIONS

The following recommendations are the key components of the Glacier Ranger District Conservation Education strategy. These recommendations are critical steps to the future effectiveness of the educational efforts on the District.

Recommended actions, upon implementation, will be regularly evaluated, modified, and updated.

The following recommended actions are listed according to completion date & are not a prioritized list.

MANAGEMENT DIRECTION

RECOMMENDED ACTION 1:
Goal: Fill 3rd Lead Information Assistant Position—Education

Presently, coordination of Conservation Education programming is shared between all full time interpretation/ education staff members. Under the current system, accountability falls on several shoulders. In order to avoid the risks associated with multiple persons overseeing the same professional area and improve consistency and effectiveness of the CE program, *it is recommended that management enhance structural organization by hiring an additional Lead Information Assistant to coordinate conservation education at the district level.*

This individual would be the primary person responsible for CE tasks, such as scheduling, curriculum development, partnership collaboration, etc. See existing and recommended staffing flowchart in Appendix C.

To be completed by January 2006

RECOMMENDED ACTION 2:
Goal: Develop Memorandum of Understanding with School Districts

The GRD has made thousands of student connections over the last decade in the Anchorage School District. To formalize the existing partnership between the Forest Service and ASD, *it is recommended that a Memorandum of Understanding (MOU) be written.*

While a lesser amount of student contacts comes from the Chugach School District (CSD), an agreement with the CSD should also be formalized. The CSD is anticipating more involvement at the GRD in the near future.

The document will stand as confirmation of the mutual partnership between Glacier Ranger District and the Anchorage School District, and provide a framework for planning, conducting, and evaluating Conservation Education programs.

To be completed by end of 2005 fall semester.

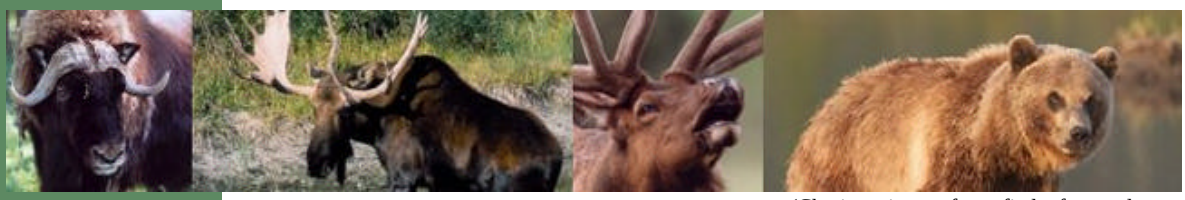
RECOMMENDED ACTION 3:
Goal: Seek formal partnerships

Objective 3.1: *Partner with Alaska Wildlife Conservation Center in Portage Valley*

The Alaska Wildlife Conservation Center (AWCC) is a non-profit 501 (c) (3), whose mission is to provide refuge for orphaned, injured and ill animals, to take care of animals that cannot survive in the wild, and to educate visitors about Alaska's wildlife. Due to the Alaska Wildlife Conservation Center's growing emphasis on education, as well as their neighborly location in Portage Valley, *it is recommended that the Glacier Ranger District establish a formal partnership with the center.*

In the past, many school and youth groups visit both the Alaska Wildlife Conservation Center and the Begich, Boggs Visitor Center, often on the same day. With a formal partnership, staff from both programs will work together to provide wildlife and conservation education opportunities that are unified, yet site-specific.

Partnership to be formalized no later than end of 2006.



(Charismatic meg-fauna find refuge and care at the Alaska Wildlife Conservation Center.)

I&CE STAFF DIRECTION

RECOMMENDED ACTION 4:
Goal: Develop Conservation Education Summer Program

One of the district's most successful and acclaimed programs is the winter Forest Explorers camp. With the addition of the Portage Valley Learning Center, staff is capable of accommodating children during summer hours of operation, as well. *It is recommended that staff develop a summer program specifically for youth.*

The summer program will offer single-day and/or multi-day opportunities for youth to experience and learn about their 2nd largest National Forest. Lessons and activities will be conducted in the Portage Valley Learning Center **and** out-of-doors, in the natural setting of the Chugach NF.

Pilot program to be conducted and evaluated August 15, 17, 19, 2005.

RECOMMENDED ACTION 5:
Goal: Increase Multi-Agency Collaboration

Over 90% of Alaska is managed by Federal or State agencies, many of which have established environmental education programs specific to respective sites. This diversity among natural resources management agencies in Alaska is significant. In an effort to strengthen existing relationships, but also bridge some of the wider gaps between agencies, *it is recommended the District Conservation Education team strives to increase multi-agency collaboration.*

Increasing our knowledge of other agencies' existing programs will allow us to best fit our curricula within the bigger framework of federal agency education, and benefit Alaska's students by providing them with original Forest Service management messages.

Objective 5.1: *Become a Hands on the Land Program Provider*

Hands on the Land (HOL) is a network of field classrooms stretching across America. HOL is sponsored by Partners in Resource

I&CE STAFF DIRECTION (CONT'D)

Education (PRE), a collaboration or five federal agencies, a non-profit foundation, schools, and other private sector partners.

The HOL vision is to enhance kindergarten through high school student-learning through the environment. PRE members are the Bureau of Land Management, the National Park Service, the Natural Resources Conservation Service, the USDA Forest Service, and the U.S. Fish and Wildlife Service.

Application was submitted February 2, 2005. Application approval received July, 2005. Glacier Ranger District is now a Hands on the Land program provider!

Objective 5.2: *Participate in Alaska Citizen Science Program's Wood Frog Monitoring Project*

The Citizen Science Program is a partnership including the Alaska Department of Fish and Game, U.S. Fish and Wildlife Service, Chugach National Forest, the Alaska Zoo, and the Alaska Natural Heritage Program.

Over the next five years, members from the preceding agencies will be administering educational programs at schools, youth organizations, and community groups with hopes of drawing in citizen volunteers to assist with Wood Frog surveys and data collection. Glacier Ranger District education staff will present introductory programs through Four Valleys Community School. District Wildlife Biologist will assist as needed.

Initial programs to be offered March and April 2006.
Wood Frog Surveys to be conducted April through June 2006.
(Five year program, will be implemented, evaluated, and adapted as needed.)

EARTH SYSTEMS ELEMENTARY PROGRAM

RECOMMENDED ACTION 6:
Goal: Develop Curricula to Address National/ State Standards & FS Key Messages

The ASD Science Curriculum Department assess Kindergarten through 6 grade student progress based on the Earth Systems Elementary Science Program Framework. The Earth Systems Program guides inquiry –based science which includes the following process skills: observing, classifying, measuring, predicting, inferring, summarizing, communicating, collecting data, analyzing data, drawing conclusions, building models, interpreting evidence, and experimenting. Earth Systems Elementary Science Program Framework chart in Appendix D.

The ASD uses the American Association for the Advancement of Science's—Project 2061 to develop their district level educational standards. In order for the GRD CE program to benefit the teachers and students, *it is recommended the GRD develop and adapt curricula to address the ever-evolving educational standards.*

Curricula tailored to both ASD standards, and Forest Service National and Regional Key Messages to be implemented during 2005-2006 school year.

Objective 6.1 *Attend and participate in ASD in-service trainings*

Conservation education staff representatives will regularly attend in-house teacher trainings relating to standards-based curricula. This will provide GRD educators with the resources, skills, and network necessary for understanding, and aligning curricula with ASD needs.

Meetings to be attended as offered, beginning summer 2005.

Objective 6.2 *Seek assistance from fellow Hands on the Land Program Providers, pending application approval.*

Many partners within the Hands on the Land network have experience writing their curricula to meet educational standards, and may be able to provide assistance in our curricula development process.

CONSERVATION EDUCATION FOR THE STUDENTS

RECOMMENDED ACTION 7:
Goal: Focus in-school audience to 3rd grade*

District Conservation Education Staff recognize the importance of contacting a high number of students, but more so value the *quality* of programming. In order to continue reaching a high number of students, but more effectively communicate agency messages, *it is recommended the Glacier Ranger District Conservation Education Program focus attention to the 3rd grade audience.*

Approximately 50,000 students are enrolled in the Anchorage School District. Current district conservation education programs may reach an audience of students ranging in grade from kindergarten through 7th grade. Targeting one grade level will create the strategic focus necessary to build upon concepts within the given framework (ASD Earth Systems Elementary Science Program). Having met with ASD Science Curriculum Department staff to discuss agency messages and goals, the decision was made to focus efforts at the 3rd grade level.

In-school programs will target 3rd grade audience by January of the 2005-2006 School Year.

Objective 7.1: *Inform school district administrators and teachers of upcoming changes.*

The ASD Science Curriculum Department agrees to assist Glacier Ranger District staff in distributing information to teachers. District Conservation Education Staff will draft a letter explaining the future vision and scheduling procedures of conservation education programs.

Distribute flyer announcing options for 3rd grade teachers through Community Resources by end of December 2005. Utilize ASD Science Curriculum Department to distribute grade-specific correspondence as needed.

Objective 7.2 *Increase effectiveness of in-school programming through multiple class visits*

The Glacier Ranger District currently spends only 1 hour per class in the Anchorage schools. Though these brief programs are excellent in concept, they lack time for more sufficient content. In order for students to truly relate to, and understand their Chugach National Forest, it is imperative that the students learn ***in*** the forest.

The proposed multiple visits would entail the following:

1.) A pre-visit packet sent to teachers upon scheduling. Packet will include teacher resources such as background information, vocabulary, and activities for students initial introduction to the Chugach.
2.) A brief class visit that will build on the concepts from the pre-visit packet, and prepare students for their visit to the Chugach.
3.) A field trip to the Portage Valley Learning Center! Classes will come to the forest to culminate the concepts studied in school.
4.) A post-visit packet including assessment tools student awareness and knowledge gained through aforementioned visits.

Pre-visit teacher packet to be created along with curricula for in-school and PVLC visits during summer/ fall 2005. Pre-visit packets will be distributed to teachers upon scheduling, beginning January 2005. In-school and PVLC visits will be conducted starting January 2006, and will continue through school year terminus.

**The Glacier Ranger District Conservation Education Staff is beginning the process of limiting our audience to 3rd grade, and views this 3rd grade focus as PHASE 1 of 2. After implementation and proper evaluation of success at the 3rd grade level, staff hopes to expand audience to include 5th grade classes as well (PHASE 2). Pending evaluation of 3rd grade success at PHASE 1, revisions will be made to this plan to include goals and objectives of PHASE 2.*
See diagram on next page.

THE PHASE APPROACH

IN THE LONG RUN...

The following illustrates the multi-phase approach to providing the 'greatest good for the greatest number of students in the long run'…..or for the purpose of this plan, over the next 5 years.

PHASE 1
(2 years)

School Year 2005-06

1. Pilot implementation of 3rd grade curricula based upon multi-visit approach, correlated to standards.
2. Schedule 10 school visits/ PVLC visits, teachers must commit to ALL components of multi-visit approach
3. Assess throughout.

School Year 2006-07

1. Based upon successful assessment, continue focus on 3rd grade.
2. Implement use of additional staff (interns, university students, seasonal hires, etc.) in preparation for broadening student audience to include 5th grade in 2007-08.
3. Begin development of curricula correlated to 5th grade standards.
4. Assess throughout.

PHASE 2
(2-3 years)

School Year 2007-08

1. Continue 3rd grade programming with trained staff (interns, seasonal hires, etc.)
2. Permanent staff takes lead on expanding student audience by implementing 5th grade curricula.
3. Assess throughout.

School Year 2008-10

1. Continue consistent programming at 3rd and 5th grades.
2. Determine feasibility of expanding student audience again for school year 2009-10.
3. Assess throughout.

Upon completion of Phase 2, this plan should be revised to include the results of Phases 1 & 2, and guide actions for Phase 3 if needed; dependent upon assessment and resources available.

EVALUATION & ASSESSMENT

Evaluation is critical to the success of any program. Without a clear understanding of a program's strengths and weaknesses, growth becomes impossible. With proper evaluation, as the field of education continues to evolve, so too will the Glacier Ranger District Conservation Education Program.

REGIONAL (R10) ASSESSMENT

The Alaska Natural History Association is a non-profit organization working with the USDA Forest Service and other Alaskan land management agencies to provide educational and interpretive services. In support of the USDA Forest Service, the association is conducting a survey to assess the effectiveness of the Forest Service conservation education programs.

The survey is part of the Credibility Through Accountability (CTA) process, and is being distributed to educators receiving conservation education programs during fiscal year 2005. While this is a Region-wide survey, the knowledge gained from the responses to these surveys will benefit the Glacier Ranger District immensely. Sample survey can be found in Appendix E.

FOREST WIDE ASSESSMENT

In addition to the region-wide survey being conducted by the Alaska Natural History Association, the Chugach National Forest is planning an evaluation its' Interpretation and Conservation Education programs. An Enterprise Team is expected to conduct the Forest-wide evaluation in fiscal year 2006.

DISTRICT LEVEL ASSESSMENT

District level evaluation is more crucial than ever before. With the many expected changes to the Glacier Ranger District Conservation Education program over the next five years, staff will need to conduct formal evaluations for teachers and students throughout the year. This plan will be revised as evaluations are conducted.

The future of conservation education on the Glacier Ranger District now lies on the shoulders of a great team. With dedication, enthusiasm, practice, and patience we must now venture toward a brighter future.

Appendices

Appendix A: Four Threats to the Health of the Nation's Forests

FIRE AND FUELS

United States Department of Agriculture

Forest Service

CONTACT: LENNIE EAV 202-205-3818 OR SUE STEWART 202-205-1129

JUNE 2004

Conditions in many forest types have dramatically changed since the time of European settlement (see pie chart below).

- Research shows that National Forest System (NFS) areas at high risk from wildland fire (Class 3) come to 51 million acres, or 26 percent of the NFS.
- Areas at moderate risk (Class 2) amount to 80.5 million acres, or 41 percent.
- Areas currently within their historical range (Class 1) come to 65 million acres, or 33 percent.
- On the NFS, 73 million acres in Classes 2 and 3 were identified as the highest priority for fuels reduction and ecosystem restoration treatments.

(*For additional information on fire regimes and condition classes, visit http://www.frcc.gov*)

Percentage of NFS Acres by Condition Class

FUEL LOADINGS

- In the West, 26 million acres have been identified as fuels treatment "hotspots," or high priority areas.
- Mechanical treatment is needed in high-priority areas where there are 576 million dry tons of excess biomass fuels. That includes about 6 billion trees.
- Loadings average over 22 dry tons per acre. A study of 97 million acres of timberland in 15 Western States found 2 billion tons of excess fuels on those lands.

TREATMENTS

Treatments to reduce fuels and restore ecosystems involve various techniques, including thinning, prescribed burning, and clearing forest debris. Post fire rehabilitation includes restoring burned habitat and landscapes; repairing damaged roads, rivers, and riparian areas; replanting trees; and preventing erosion. Do treatments work? The pictures below tell a dramatic story.

The aftermath of the 2002 Rodeo-Chediski Fire in Arizona reflects the benefits of forest health treatments. The top stand was thinned before the fire and fire damage was minimal. The bottom stand was not thinned before the fire and suffered heavy damage to the overstory.

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Invasive Species

United States Department of Agriculture

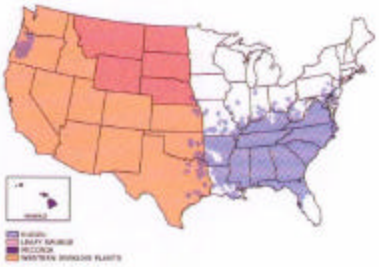
Forest Service

Contact: Rob Mangold (703) 605-5340; Jim Reaves (703) 605-5252; or Janette Kaiser (202) 205-1185

June 2004

- Invasive species are major threats to our Nation's aquatic and terrestrial ecosystems. Invasives destroy fish and wildlife habitats, alter nutrient cycling and natural fire regimes, and can reduce biodiversity and degrade native ecosystem health.
- Invasive aquatic species pose a significant risk to the 220,000 miles of streams, over 2 million acres of lake, and 15,000 miles of coastline across the National Forest System. There are more invasive species per unit of aquatic ecosystems than in terrestrial ecosystems.
- All invasives combined cost Americans more than $137 billion a year in total economic damages and associated control costs.
- Infestations of terrestrial and aquatic invasive plants have reached epidemic proportions, spreading rapidly over hundreds of millions of acres, across all landscapes and ownerships.
- Invasive forest diseases, such as the Chestnut Blight, have wiped out entire forest species in the East (i.e., the American Chestnut) and Dutch elm disease virtually eliminated an urban forest tree—the American elm.
- Tens of thousands of exotic species have been introduced into the United States, many of which have proven to be invasive and are causing widespread harm.
- Many of the invasive plants found in the United States today were originally introduced for food, fiber, or as ornamentals or ecosystem management tools (e.g., use of kudzu to stabilize degraded soiils).
- Invasive species recognize no borders. Prevention and control of invasive species require tremendous cooperation across all landscapes and among public and private stewards of the land.

This map depicts the geographic distribution of kudzu (blue), leafy spurge (red), and Western invasive plants (orange) in the United States in 2002. For a larger version of this and other invasive species maps, visit: http://www.fs.fed.us/forest health.



Internet Resources

Bugwood Network: www.bugwood.org
USDA Forest Service Invasive Species Program: www.fs.fed.us/invasivespecies/html
National Invasive Species Council: www.invasivespecies.gov

Some Serious Invasive Species

Insects: (left to right) Asian longhorned beetle, hemlock woolly adelgid; emerald ash borer

Pathogens: Sudden oak death canker (left) and white pine blister rust (right)

Weeds: (left to right) Kudzu (Jerry Asher, USDI BLM), yellow star-thistle (Peggy Greb, USDA ARS), eurasian watermilfoil (Allison Fox, University of Florida)

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Loss of Open Space

United States Department of Agriculture

Forest Service

Contact: Larry Payne (202) 205-1602 or Rick Cooksey (202) 205-1469

June 2004

- America is losing important working forests and rangelands to development across the Nation at an alarming rate. In fact, forests and rangelands are being converted to development more than 3 acres a minute.

- Loss of open space (1) affects our air, water, and vegetation, (2) degrades wildlife habitat, and (3) reduces outdoor-based economic opportunities.

- Loss of open space is a result of the division of forested landscapes into smaller, more isolated patches. Loss of open space is of concern because it poses a threat to the health, sustainability, and viability of ecosystems and rural communities.

- Loss of open space impacts biodiversity in the United States. Patches of land left over from development may be too small for the survival of certain species of birds and animals. Corridors that connect natural habitats can be cut off, potentially leading to local extinction and reduced breeding success.

- Conversion of forests and rangelands reduces the land area for: (1) products such as wood and meat, (2) recreational opportunities, and (3) contributions of those outputs to local economies.

- Loss of open space increases land values and taxes. For local governments, it boosts the costs of providing social services to their communities (e.g., firefighting, postal offices, etc.), undermining traditional and rural land uses.

- Rural communities are losing their identity as they become overwhelmed by suburbia. The uniqueness of individual communities is giving way to the common place.

Key Internet Links/Definitions

- *Sustainability*—(1) "... to meet the needs of the present without compromising the ability of future generations to meet their own needs." *United Nations World Commission on Environment and Development. The Brundtland Commission, Our Common Future, 1987;* (2) "The principles of sustainability integrate three closely interlined elements: the environment, the economy, and the social system—into a system that can be maintained in a healthy state indefinitely." (http://forestry.about.com)

- *Biodiversity* —"... most commonly refers to the number and variety of distinct organisms (species) living on the earth." (http://web.bio.utk.edu/guffey/Biodiversitysite/whatisbiodiversity/whatis.html)

- *Fragmentation*—See http://www.fs.fed.us/na/durham/coopforest/fragmentation/text/definitions.html and http://www.fs.fed.us/ne/fia/studies/FRAG/main.html

- *Habitat fragmentation*—See http://www.fs.fed.us/psw/publications/rosenberg/rosenberg2.pdf and http://www.fs.fed.us/na/durham/coopforest/fragmentation/text/links.shtml

Millions of Americans are building dream homes away from bustling cities into the wide open spaces of rangelands and in forested areas nestled in scenic hills and valleys (as shown in photo above). This phenomenon is expected to continue along with our population growth, giving rise to the urbanization of wildland areas.

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UNMANAGED RECREATION

United States Department of Agriculture

Forest Service

CONTACT: DAVE HOLLAND (202) 205-0900 OR MARY WAGNER (202) 205-0925

JUNE 2004

Providing for the long-term protection of National Forest System (NFS) lands and resources is essential to maintaining the quality of the recreation experience in the national forests. Motorized off-highway vehicle (OHV) use is an appropriate way to sightsee, access hunting and fishing opportunities, and otherwise enjoy recreational experiences on NFS lands. However, there has been a dramatic increase in OHV use coupled with impressive advances in motor vehicle technology over the last 30 years. This growth is prompting the Forest Service to take a closer look at its management of this use so that the agency can continue to provide opportunities desired by the public, while preserving NFS lands and resources.

- The number of OHV users has climbed sevenfold in the past 30 years, from approximately 5 million in 1972 to 36 million in 2000.
- Unmanaged OHV use has resulted in unplanned roads and trails, erosion, watershed and habitat degradation, and impacts to cultural resource sites.
- Compaction and erosion are the primary effects of OHV use on soils. Riparian areas and aquatic-dependent species are particularly vulnerable to OHV use.
- Studies indicate that the survival and reproduction of some wildlife species may be affected by excessive noise and disturbance.
- Local forest designation of roads, trails, and areas for OHV use provides forest visitors with opportunities to enjoy recreation experiences while protecting natural and cultural resources.
- Use of OHVs in the national forests is addressed through forest plans or through separate access and travel management plans.
- Management of OHV impacts includes use of designated roads, trails, and areas for recreation opportunities; closure of sensitive areas; user education; enforcement; and use monitoring.
- The Forest Service is one of many addressing this issue. Motorized sports enthusiasts and organizations, conservationists, State agencies, and local governments are working on solutions to address increased impacts and use conflicts on Federal, State, local, and private lands.

INTERNET RESOURCES

- http://www.fs.fed.us/recreation/programs/ohv
- http://www.recreation.gov/
- http://www.fs.fed.us/recreation/programs/nvum
- http://naturaltrails.org
- http://www.nohvcc.org
- http://wilderness.org/OurIssues/ORV/
- http://sharetrails.org

(Opinions and views expressed on any non-Government Web sites listed here are those of the respective authors and/or organizations. The USDA Forest Service does not endorse any claims, opinions, and products appearing on these Web sites.)

Example of impact on the land by unmanaged OHV use.

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Appendix B: Forest Service Conservation Education Program Letter from Chief Bosworth

United States Department of Agriculture | Forest Service | Washington Office | 1400 Independence Avenue, SW Washington, DC 20250

File Code: 1620-3 Date: January 26, 2005
Route To:

Subject: Forest Service Conservation Education Program

To: Regional Foresters, Station Directors, Area Director, IITF Direction and WO Staff

The Forest Service has provided and supported education about natural resources since its creation as an agency in 1905. Over our first hundred years, the public we serve has grown and become more diverse in their understanding of their relationship to the land. As our second hundred years begins, we recognize that conservation education is more important that ever in increasing the public's understanding of the nation's resources. During the Forest Service Centennial Congress, partners and forest users noted the value of conservation education and called on the agency to enhance educational programs in order to build a strong future generation of natural resource stewards and leaders. A panel of young women and men urged the agency to provide them with the necessary tools to become conservation stewards and leaders in their communities. They noted that early exposure to Forest Service conservation education programs, such as "Kids for Conservation," spawned a passion and a commitment to natural resources in their own lives. The Head Start program commended the Forest Service Conservation Education program for the Woodsy's ABCs, calling it the best book to connect kids with the land. These thoughts and recommendations were a timely affirmation of the September 7, 2004 Executive Leadership Team decision on the future of Conservation Education in the Forest Service.

The agency recently completed an analysis of the Conservation Education program (CE). The analysis was conducted by the Directors of CE, Recreation and Heritage Resources, the Office of Communication (OC), and Resource Valuation and Use Research. The team made recommendations based on the value of CE to the Forest Service in enhancing agency credibility as a science-based natural resource management agency and in educating the public about the value of natural resources in order to promote a conservation ethic and connect people to the land.

The team recommended: reinvigorating the CE program to focus on pre-K through 12th grade and their educators, both formal and non-formal; and developing closer ties and strengthening partnerships with Research and Development, Interpretive Services and OC. They also recommended the development of a five-year strategic plan for CE to incorporate and direct the implementation of these recommendations. This plan will be developed together with key internal and external program partners, as well as representatives from field units. We will be advertising the Director and Deputy Director positions for CE in the coming months and we are looking for strong, energetic candidates for both jobs.

The message from delegates at the Centennial Congress was strong and passionate; conservation education focused on youth is imperative to developing a stewardship ethic, an understanding and connection to natural resources, and, ultimately, to conservation of the nation's natural

resources. By singing this letter with me, the Executive Team urges you to participate in and support conservation education. Using science-based research, expanded partnerships, and opportunities afforded on America's forest and grasslands we will create a new generation of conservation stewards and leaders to provide for the future sustainability of the nation's forests.

/s/ Dale N. Bosworth
DALE N. BOSWORTH
Chief

/s/ Sally D. Collins
SALLY D. COLLINS
Associate Chief

/s/ Elizabeth Estill
ELIZABETH ESTILL
Deputy Chief for Programs, Legislation and Communication

/s/ Joel D. Holtrop
JOEL D. HOLTROP
Deputy Chief State and Private Forestry

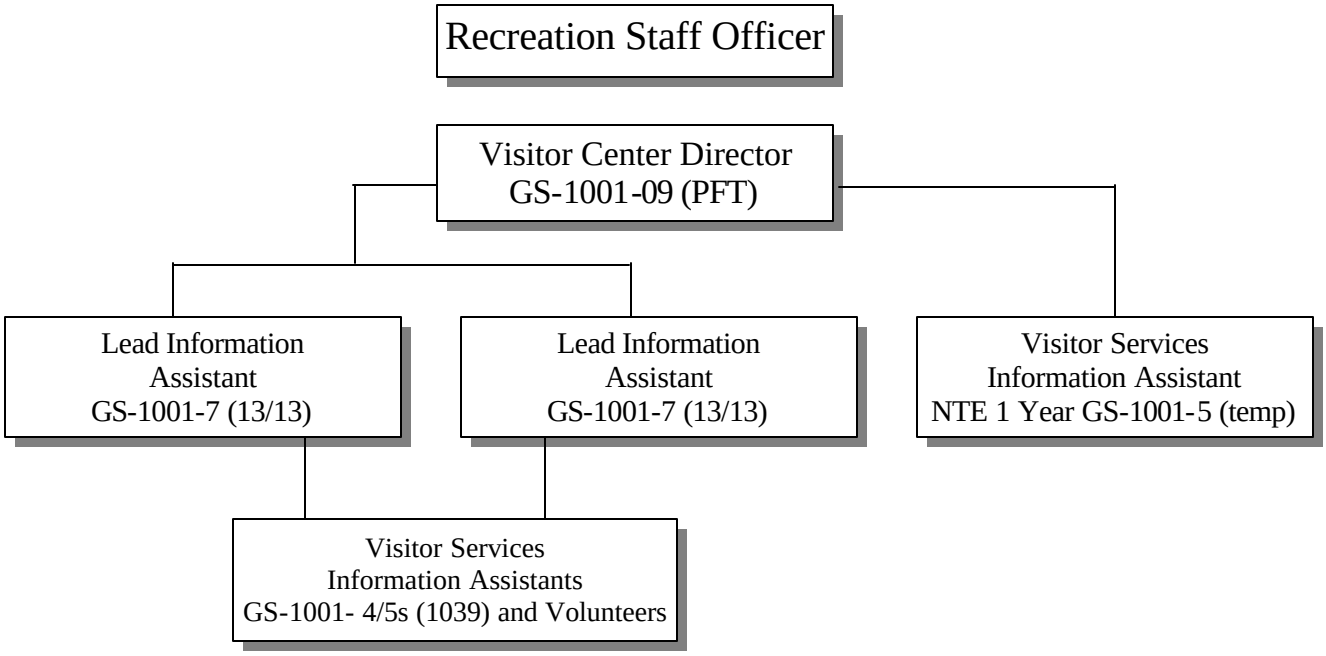
/s/ Tom L. Thompson
TOM L. THOMPSON
Deputy Chief for National Forest System

/s/ Ann M. Bartuska
ANN M. BARTUSKA
Deputy Chief for Research & Development

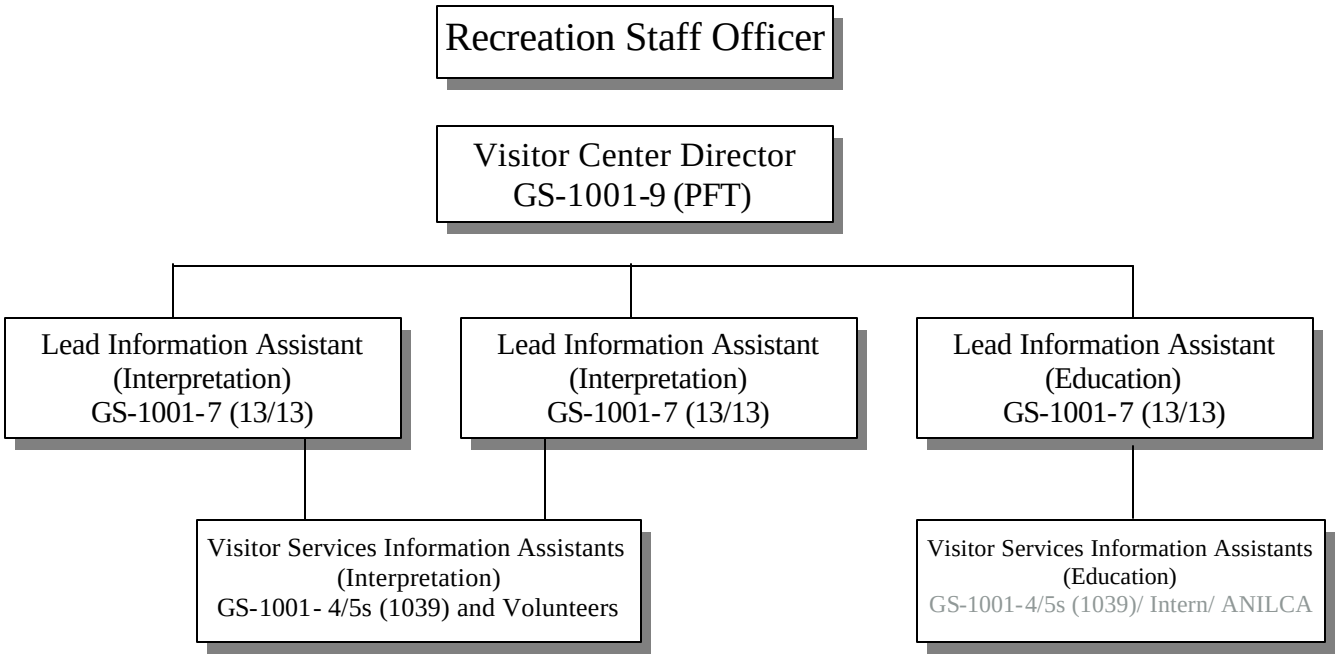
/s/ Christopher L. Pyron
CHRISTOPHER L. PYRON
Deputy Chief for Business Operations

Appendix C: Glacier Ranger District Interpretation and Conservation Education Staffing

Existing I&CE Staffing FY 2005

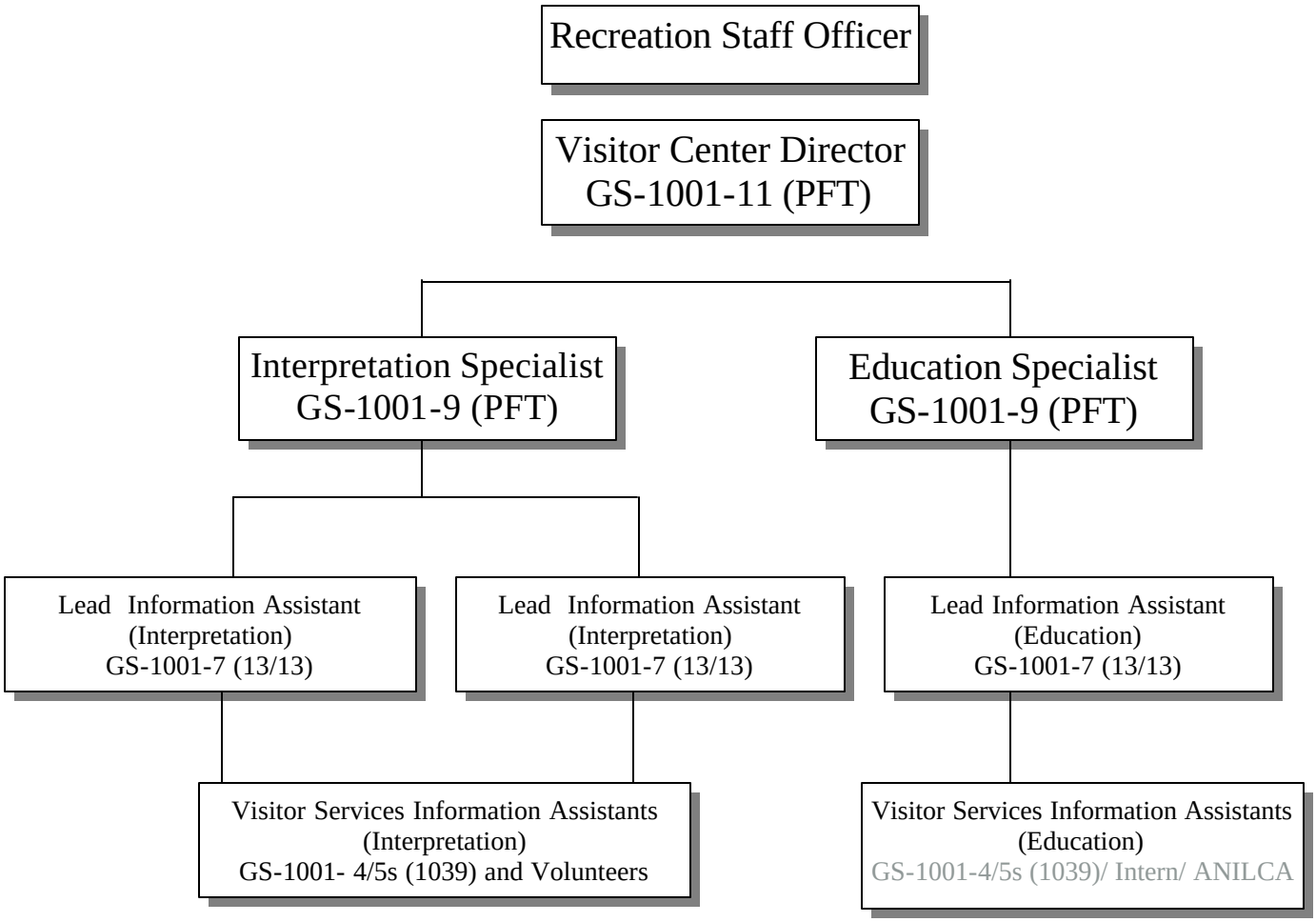


Recommended I&CE Staffing FY 2006



Glacier Ranger District Interpretation and Conservation Education Staffing (continued)

Glacier Ranger District Recommended Staffing by FY 2009



Appendix D: Anchorage School District Earth Systems Elementary Science Program Framework

ANCHORAGE SCHOOL DISTRICT
EARTH SYSTEMS ELEMENTARY SCIENCE PROGRAM FRAMEWORK
ADOPTED MAY 2003

PROCESS EMPHASIS: The **Earth Systems Program** is inquiry-based science which includes the following process skills: observing, classifying, measuring, predicting, inferring, summarizing, communicating, collecting data, analyzing data, drawing conclusions, building models, interpreting evidence and experimenting.

GRADE	FOCUS	LIFE SCIENCE	PHYSICAL SCIENCE	EARTH SCIENCE	INVESTIGATIONS AND APPLICATIONS
K	*Character-istics*	**Life Characteristics** Insights: Myself and Others	**Properties of Matter** FOSS: Wood & Paper	**Properties of Earth Materials** FOSS: Pebbles, Sand & Silt	Dinosaur Digs or Balls and Ramps (example)
1	*Inter-relationships*	**Comparing Animals** ASD: Alaskan Animals	**Comparing Matter** NSRC: Balancing and Weighing	**Watersheds** ASD: The Power of Water	Investigating Insects (example)
2	*Cycles*	**Cycles in Life** NSRC: Plant Growth & Development	**Investigating Vibration** Insights: Sound	**Characteristics & Behavior of Soil** NSRC: Soils	Butterflies, Salmon, or Birds (example)
3	*Change*	**Seasonal Variation** ASD: Observing Alaskan Plants	**Observing Changes** NSRC: Changes	**Recording & Interpreting Data** ASD: Weather	Mystery Powders (example)
4	*Systems*	**Skeletal Systems** Insights: Bones & Skeletons	**Electrical Systems** Insights: Circuits & Pathways	**Mineral Identification** FOSS: Earth Materials	Alaska Sea and River Week (example)
5	*Energy Flows*	**Energy for Life** NSRC: Ecosystems	**Testing Variables** FOSS: Variables	**Energy Sources** ARIES: Exploring Energy	Aviation or Levers & Pulleys (example)
6	*Scale and Structure*	**Waste Management** Insights: There Is No Away	**Form & Function** Insights: Structures	**Relative Size & Distance** ASD: Astronomy	Outdoor School or Voyage of the Mimi (example)

FOSS = Full Option Science Study
ASD = Anchorage School District
ARIES = Harvard-Smithsonian
NSRC = National Science Resource Center
Insights Elementary Science Curriculum

Appendix E: Survey of USDA Forest Service Conservation Education Program Performance

Alaska Natural History Association

SURVEY OF USDA FOREST SERVICE CONSERVATION EDUCATION PROGRAM PERFORMANCE

Dear Educator:

The Alaska Natural History Association is a non-profit organization working with the USDA Forest Service and other Alaskan land management agencies to provide educational and interpretive services. In support of the USDA Forest Service, the association is conducting this survey to assess the effectiveness of the Forest Service conservation education program.

Conservation education connects people to the land by providing them the tools they need to take informed actions related to sustaining natural and heritage resources. It emphasizes: sustainability of natural and cultural resources in forest, grassland, and aquatic ecosystems, and awareness and understanding of interrelationships in natural systems and between people and the land.

Your participation in this brief survey would be greatly appreciated, and your opinions will be an important consideration in our evaluation of the USDA Forest Service conservation education program. As you fill out this survey, please let your answers reflect the educational program you just experienced, or the educational materials you received. Thank you.

Charles Money
Executive Director, Alaska Natural History Association

For each of the following statements, please indicate your opinion by circling the appropriate number below where 1 indicates you *strongly disagree* with the statement and 7 means you *strongly agree* (if you have no opinion, or have not had experience with the statement, please skip it):

	Strongly Disagree			Neutral			Strongly Agree
(1) Conservation education is a *strong component* of our school's curriculum.....	1	2	3	4	5	6	7
(2) In general, the USDA Forest Service has an *important role* in providing conservation education programs in primary and secondary schools.....	1	2	3	4	5	6	7
(3) The *information* in the conservation education programs and materials (activities, presentations, written documents, audiovisual products, teaching aids, and other curriculum materials) provided by the USDA Forest Service has *improved my capacity to teach conservation education*.....	1	2	3	4	5	6	7
(4) The *presentation* or delivery of the information in the USDA Forest Service conservation education programs and materials has *improved my capacity to teach conservation education*.....	1	2	3	4	5	6	7
(5) We are likely to request the USDA Forest Service to provide conservation education programs and materials again in the future.....	1	2	3	4	5	6	7

PLEASE COMPLETE OTHER SIDE

Survey of USDA Forest Service Conservation Education Program Performance (continued)

(6) What do you think are the *strengths* of the USDA Forest Service conservation education programs and materials?

(7) How do you think the USDA Forest Service conservation education program and materials could be *improved*?

(8) Do you have any other comments regarding USDA conservation education programs or materials?

(9) Please provide a little background information on yourself:

(a) Name_____

(b) Position_____

(c) Phone or email to contact you_____

(d) How many years have you been teaching?_____

(e) How many years have you been teaching at this school?_____

(f) Currently, what grade levels do you teach?_____

(g) Currently, what subject(s) do you teach?_____

(h) How many years has the USDA Forest Service provided conservation education programs and materials to your school?_____

THANK YOU FOR TAKING THE TIME TO COMPLETE THIS EVALUATION.

If you have any questions about this evaluation, or about USDA Forest Service conservation education programs or materials, please contact Kristi Kantola with the Forest Service at 907-586-8727.

FOR ADMINISTRATIVE USE

Ranger District

Program Name

Program Date:

In which database will this program be reported? (check only one) ___CE ___WFRP___Interp