

Wildlife habitat puzzles to put together with riddles to answer as well as rubber animals to place in the correct habitat.

Athabascan native story telling

Discussion and demonstrations of rain forest forestry techniques.

Discussion of Alaskan rain forests

Owl pellets

Owl habitat video as well as FWS video *A Home for Pearl*.

Environmental movies

Guitar playing and environmental song singing

Although this kind of week-long program takes a considerable amount of work by both the Refuge staff and local teachers, the benefits to the students are immense; all areas of school curriculum can be used in these projects. It is also an opportunity to involve the entire community in environmental subjects of interest to the Refuge as either participants or observers.

Headquarters Natural Garden

For the fourth year in a row, ROS Skinner coordinated and served as director of the McGrath Girl Scout Day Camp from June 1-4. This year, 32 students, ages 5 through 11, attended the four-day camp.



Girl Scouts Day Camp participants visit a local slough to put up their duck boxes and collect aquatic invertebrates. (BS 6/93)

Activities included an all day field trip to a marsh where the girls and boys sampled invertebrates, put up a goldeneye duck box (which they had made), and explored fish habitat by canoe. Canoe Captains included ROS Skinner, BT Medeiros, ADF&G Biologist Roger Seavoy, McGrath School teachers Phyllis and Norv Dallin, and Cindy Cox, IASD employee Karen Ladegard, and Irene Vanborg from Four Rivers Counseling Service staff. WB Skinner and RM Merritt assisted by shuttling of canoes to the wetland area.

The often overlooked invertebrates were "discovered" and several frogs and small fish were spotted. The six Scouts also built five more duck boxes and spent a hot, buggy day transplanting native plants from a black spruce upland, to the headquarters natural garden. White spruce plants were added by the Scouts later in the summer.



Members of the Junior and Brownie Girl Scout Troops proudly display their new flower boxes to be placed in front of the Refuge office building. (BS 6/93)

Landscaping work to the garden area had been donated earlier in the spring by a local construction company (Takotna Construction). Pond liners were purchased for a small marsh and bog, to be added the summer of 1994. Bird feeders and interpretive signs describing the different habitats of the Refuge and the wildlife species who use them, have been ordered.



Girl Scout members collected native plant species from around the McGrath area... (BS 6/93)



and then transplanted them into their natural garden in front of the Refuge office. (BS 6/93)

The garden will serve both as an aesthetic addition to the new Refuge headquarters building as well as a hands-on learning center for area students and community members. Plants will continue to be added over the next few summers.



The Girl Scout members worked together to construct several goldeneye nest boxes. (BS 6/93)



The Girl Scout troop proudly displays one of their completed goldeneye nesting boxes... (BS 6/93)



which were then placed on trees surrounding a local slough by Norv Dallin (L) and Roger Seavoy (R). (BS 6/93)



Girl Scout members get an opportunity to test their archery skills during the Day Camp activities. (BS 6/93)

Residential Environmental Education (EE) Science Camp

The EE Science Camp was a two phase project. Phase one included the building of six tent frames at the Refuge field headquarters. Phase two was the use of these tents by 15 high school students as their "home away from home" during the 15-day residential science program. The residential camp idea was originally proposed by RM Phil Feiger in 1990. Challenge Cost Share funds provided the materials for both the extra living space required for the students (wall tents and frames), as well as the extra equipment, food, and travel expenses of flying 15 students as well as the instructors, to the Refuge and back.

In January, the Challenge Cost Share (CCS) proposal for the camp was finalized and submitted to the Regional Office for their input and approval. Once it was revised, the long process of obtaining cooperator signatures was started. The final cooperator, Tanana Chief Council, signed the agreement in April and mailed it back the day after the new direct accountability postage requirement took effect (April 16). When the agreements didn't arrive, we began to worry that four months of obtaining signatures had to be started all over. This fear was put to rest when on May 3rd, the day we had decided to mail out the new agreements, our beat-up, dirty government envelope arrived with a 3rd class postal stamp with all the agreements inside.



McGrath/Shageluk Village Living Skills students designed and prefabricated the tent frames that were to be used during the Refuge Environmental Education Camp. (BS 2/93)

Tents, survival equipment, and building materials were ordered in anticipation of the deadline for building tent frames on the Refuge. The design and construction crew were students in the McGrath and Shageluk High School Village Living Skills (VLS) classes. Lumber arrived in McGrath in February and the McGrath VLS class designed, cut, and built the first frame in the shop room checking all the new tents against the prototype. Because of wall tent size differences, a few adjustments needed to be made to the original design which the students quickly fixed. They cut and marked the remainder of the wood frames, readying them for assembly out on the Refuge. The tents and lumber were flown out by Rust's Flying Service with help from WB/P Finley and BT Mallek. Several students participated in loading the single engine Otter and even "volunteered" to help unload it at the Refuge (it was denied of course - much to their dismay).

A three day safety/survival class, conducted by the Refuge staff, was held on March 9-11 at the Refuge headquarters in McGrath. Tanana Chiefs Council provided CPR and First Aid training for the first two mornings of training. Our first big challenge of the project was presented when 9 of the 11 students on the project failed the CPR test after they had been told it was a requirement in order to go to the Refuge. The students worked out their own solution which is the way it should be: two quit the program, and the other nine got together that evening and studied for several hours. Needless to say, all passed the second test and

made the trip. Other training included aircraft safety and winter survival.



Students dig down through 4-5 feet of snow to set up the tent frames at ground level. (BS 3/93)

WB/P Finley transported ROS Skinner, five loads of students (eight young men and one young woman), and three instructors to the Refuge March 15-17. After putting in over 100 work hours each on designing, cutting, and building the frames in McGrath, the students worked almost another 90 hours each at the Refuge. They worked hard and completed five of the six frames in record time. Each location had to be cleared to ground level which meant removing 14' x 16' areas of 4-5 feet of snow. The only problem with the construction was the loss of several floor joists somewhere between McGrath School and the Refuge, meaning the 6th frame could not be completed. It was finished up the following week when the instructor and two students went back out

for an "overnighter" and used some rough lumber already at the field camp. Everyone made it home by the 21st just hours before one of the springs biggest snow storms.



Students reassemble the tent frames at the Refuge. (BS 3/93)

Through the whole project, the weather cooperated with daytime temperatures in the 'teens and nights a little below zero. The group was even treated to one of the year's most beautiful northern lights displays. Lots of pictures were taken, good meals were cooked by the students, and a lot of hard work was done by all participants. Several of the students expressed a desire to attend the August EE Science Camp. ROS Skinner learned a lot from working and living with high school boys for a week - they may be a little rough around the edges at times, but they are real people. They do have their own personal little faults just like the rest of us, but given the chance - they shine. She even learned to "enjoy" a new musical group - "Metallica".



The completed tent and frame, 'Home Sweet Home'. (BS 3/93)

Meetings with the McGrath School science teacher and IASD concerning the second phase of the cost share programs began in earnest in May and continued through June. Students were interviewed for the camp via audio-conference, and a well-rounded group representing almost all the villages within the school district was selected. The students seemed intrigued with the idea of spending ten days on the Refuge in addition to several training days in the "big city" of McGrath. A summer volunteer was also selected to be Camp Director. Lynn Kelley from Polson, Montana (the "Loon Lady"), arrived on June 16 and immediately jumped right to work helping ROS Skinner complete the equipment and food purchasing and helped finalize the camp schedule.

Camp dates were set for August 3rd through the 16th. Students arrived from the outlying villages on August 2nd and Service required safety classes (aircraft, boat, and bear) as well as CPR and first-aid, began the next day. A potluck dinner and Refuge

slide show was scheduled for the first evening in McGrath with all participating students and parents from McGrath invited. Training sessions each day were followed by evening checks of the McGrath High School black bear traps. Unfortunately no bears were caught during the time the students were in McGrath.



Students and instructors arrive at the Refuge camp for the first annual Environmental Education Science Camp. (KB 8/93)

All students and faculty were transported to the Refuge via a Ketchum Air Service "beaver" aircraft on floats. The logistics of moving so many people and gear precluded use of the station's Cessna 185 for other than a support role. Students and staff were flown out over a two day period due to weather complications. On the return flights home, Ketchum Air Service "forgot" to pick us up so we were forced to fly 2-3 students/instructors at a time back to McGrath over a three day period. The final student and ROS Skinner made it back to McGrath on the evening of the 18th, with much of the gear left behind to be shuttled back over the next few weeks.

The 12 (2 dropped out before camp started and 1 came back early with the chicken-pox) students, grades 8th-12th, lived on the Refuge for ten days. Classes were conducted at both the field headquarters facility, and in the field via boats. Several guest instructors participated and did an excellent job. Roger Seavoy, a biologist with the ADF&G, presented several sessions on fur bearers, including a segment on trapping. Heather Johnson, FWS Park Ranger at the Koyukuk/Nowitna NWR Complex, taught fire

ecology. Laura Thorpe, a Service fishery biologist stationed in Fairbanks, taught fish ecology and explored fish tagging and aging techniques. Fishery technicians Warren Platt and Robert Dentler also lent a hand especially with evening fishing trips in the boats with the students.



Fisheries Division biologist Laura Thorpe talks about fish ecology and various techniques for aging fish while students...



discover there are more parts to a fish than the fillets and "guts". Student John Nikolai discovers the otolith. (KB 8/93)



Lina Demoski demonstrates the efficiency of an Ulu knife, used by native Alaskans to process their fish and game. (KB 8/93)



Lina D. (R) did a tasty job of making sure all instructors and students were well fed in her other role as camp cook. (KB 8/93)



Lina Demoski, from Anvik, demonstrated the art of willow root basket weaving. She is well known throughout Alaska for her consistent high quality weaving and unique designs. (KB 8/93)

The IASD not only provided us with funds for field equipment and food, but also provided us with an outstanding science teacher, Norv Dallin. TCC provided us with funding for food, a native culture instructor and cook, Lina Demoski, as well as a youth and alcohol prevention counselor, Chris Mullen.

Lina, an elder from Anvik, was born on what is now refuge land near the confluence of the Innoko River and Hammer Creek. She had many stories to tell of growing up and living off the land with her family. She also prepared a traditional Alaskan treat from the local berries and whitefish known as 'Eskimo ice cream'.

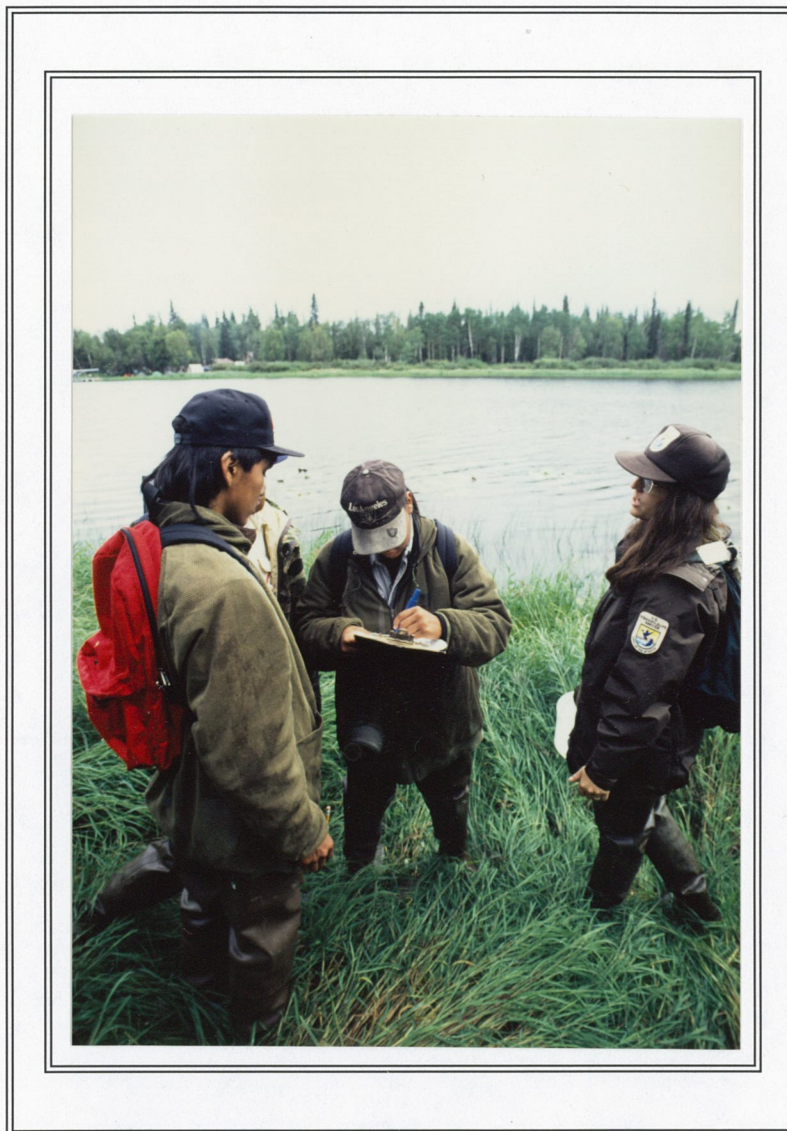


Lina D. included in her menu a traditional native Alaskan treat called "Eskimo ice cream", made from lard, whitefish, wild berries, and sugar. It tastes better than it sounds! (KB 8/93)

Our final staff member was Kathy Bushue, an Anchorage based professional wildlife photographer, who not only took excellent pictures during camp, but also gave a fantastic slide show of her work on Alaska wildlife and a workshop for the students and staff.

The Refuge staff was a tremendous help throughout the camp. AT Collins and BT Medeiros provided backup support and expediting of materials and supplies. The summer volunteers were not only excellent role models, but also willingly sharing their particular areas of expertise with the students. Our summer RAPS student, Pat Snow, gave an excellent pep talk to the students about the RAPS program and his first year at college majoring in the natural resource field.

After the final evaluations were in, the consensus was that all the cooperators were enthused about another camp next summer and the students had a good time and learned a lot. Complaints from the students ranged from having to do dishes, to their 11 p.m. bedtime while it was still bright and sunny outside. We kept the student on a 9 a.m. starting time each morning, making the early bed time a necessity.



ROS Skinner (R) helps students set traps and record the data they collected from their small mammal trapping exercises. (KB 8/93)

The following list of activities and classes occurred during the 15 day camp program:

CPR/first aid
safety training - boat, bear, survival, and aircraft
black bear trapping techniques
radio-telemetry
wildlife photography
map and compass work
small mammal trapping - live and snap traps
furbearer ecology
furbearer trapping techniques
wolf ecology
root basket making
berry picking
waterfowl ecology
owl pellets
fishing clinic
fish ecology
fire ecology
fire management techniques
plant identification
loon ecology
native story telling
moose ecology
wetland ecology
student projects and journals



Most of the students and instructors who made the first annual Environmental Education Science Camp a reality. (KB 8/93)



Using the Alaska Fire Curriculum, Koyokuk/Nowitna Park Ranger (PR) Heather Johnson teaches students about fire ecology, having student teams prepare their own fire management plans. (KB 8/93)



PR Johnson shows students how to identify various plants and prepare their own herbarium. (KB 8/93)



ADF&G Biologist Roger Seavoy teaches students about furbearer ecology and trapping techniques. (KB 8/93)

Challenge Cost Share Program:

Challenge Cost Share proposals for 1994 were submitted in October. ROS Skinner submitted three proposals including: a second annual EE Science Camp; substation construction at the field camp by IASD students; and the McGrath School Earth Week. The Refuge was awarded two of the grants: \$14,500 for the science camp, and \$3100 for the McGrath School Earth Week.

3. Outdoor Classrooms-Teachers

The Iditarod Area School District (IASD), with headquarters in McGrath, administers schools in ten communities. Schools within the District are located on both the Kuskokwim and Yukon River drainages. Through cooperation with the District, the Refuge has an opportunity to effect positive change across a vast area of interior Alaska. ROS Skinner has been able to work closely with District personnel and area principals and teachers to include Service wetland and fire curriculum into the schools. Two of the Challenge Cost Share Grants for 1992/93 had the McGrath School and Iditarod District as cooperators.

National Wildlife Week materials were distributed to the ten IASD communities as well as several local home schooling families. ROS Skinner met with area principals and the District School Board to explain the services available through the Refuge and to also present a follow-up on the summer science camp. The

principals reported positive feed-back from their students who had participated, and they are hopeful a second summer camp will follow.

Materials from the Refuge EE library were loaned to several outlying schools over the school year. Books and materials were also on loan to several teachers from the McGrath School for both science presentations and computer hypercard stacks generated by students. The Anchorage Regional Office Loon Kit was used several times by McGrath teachers as well as the Fire Curriculum.

5. Interpretive Tour Routes

Two *Watchable Wildlife Great Adventure Trips along the Innoko and Iditarod Rivers* brochures were designed by ROS Skinner and AT Collins. These brochures described trips on these rivers and were printed for public distribution. *Gold Panning on the Innoko River* is a six day float trip down the Innoko River with stops at several historic sites along the way as well as suggestions of spots where "color" has been found in the past. *Iditarod River Float Trip Into Gold Rush History* is a four day trip floating from the gold mine town of Flat past the ghost town of Iditarod to Dikeman.

The brochures give a short history of the Innoko Refuge area as well as cautioning visitors about mosquitos, bears, and laws concerning the collection of artifacts. Fishing areas are pointed out as well as recommendations for gear. Both trips are limited to visitors using float planes in the summer. Although few visitors to the Refuge may actually take advantage of this Watchable Wildlife Program, response to the brochures has been positive.

6. Interpretive Exhibits/Demonstrations

Local carpenter, Frank Torres of Takotna Construction, was commissioned to build bookshelves, a map case, and a glass display case for displaying items for sale in the Alaska Natural History Association (ANHA) bookstore. The Grand Opening was planned for early March when the town is full of Iditarod Trail Dog Sled Race visitors. Unfortunately Frank was called away to help break trail for the dog teams and could not complete the bookcase in time for the scheduled opening. The opening was also complicated by a last minute move of the race check-point further up river. Few of the businesses in town were able to take advantage of the extra money in town, and hopes are that the check-point will be moved back to the main part of town in 1994.



The newly constructed ANHA book shelves were full by mid-summer with various titles pertaining to Alaska and the interior region, where the Refuge is located. (BS 1/93)

Inventory for the bookstore began arriving in January and by mid-summer the shelves and cases were filled with books, topo maps, and local arts and crafts. The first month's receipts totaled over \$110 with Iditarod cards being the fastest moving part of the inventory. By year's end, the book store had surpassed it's first year projected sales budget of \$900 and a healthy start was made during the Christmas season on next years goal. The local arts and crafts have sold very well with over \$300 of beadwork being sold. Although this only generated \$30 for the bookstore, it is a very worthwhile addition to both the artists, who have a place to display their work, and local and non-local shoppers. During the cooler weather, the art case was restocked with locally made fur hats and mittens as well as the beadwork and baskets. Area topo maps were a hot seller during the fall hunting season, and Alaska wildlife mobiles made a big hit during Christmas.

ROS Skinner manned an ANHA sales table at the McGrath Fair in August and at the two Christmas fairs in December. The tables generated extra income to the bookstore as well as introduced many local people to the bookstore. Future additions to the bookstore include a Refuge t-shirt as well as new book titles dealing with this area of Alaska.

In addition to the ANHA bookstore area, new interpretive signs were added to the downstairs of the Refuge headquarters building.