



THE

NATURAL RESOURCES NEWS

Agricultural and Forestry Experiment Station, School of Agriculture and Land Resources Management, University of Alaska Fairbanks

From the Desk of Carol E. Lewis

Economic development is a phrase in almost every Alaskan's vocabulary. Words are wonderful but they have meaning only if they are interpreted by action. The Department of Resources Management (DRM) is well placed to be a catalyst for action and a leader in providing information to assist in responsible economic development through multiple resource use in the state of Alaska and the circumpolar north.

The College of Resources Development and Management (CRDM) is proposed as a reality in 1997. The new college will combine the School of Agriculture and Land Resources Management (SALRM) with the School of Mineral Engineering (SME) and School of Management (SOM). This will expand opportunities for the DRM. In the SALRM, we serve as "interpreters" of biological and physical research information as it applies to economics, education, environmental law, land planning, and recreation. In the CRDM, we will expand our resource horizons to include minerals and petroleum and amplify our work in fisheries. Importantly, we will be leaders in forming alliances with business, marketing, and tourism professionals. We will also lead in adding the essential field of resources management for value-added economic development to traditional business portfolios.

The DRM's new partners will be critical as we continue to serve you. We would like your input. How can we better serve you in our new proposed role as well as our present role? Remember, the DRM's mission is to help make responsible economic development and resources management happen. Please send your replies to me: Carol E. Lewis, Resources Management, P.O. Box 757200, UAF, Fairbanks, AK 99775-7200.

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The Natural Resources News is a Department of Resources Management newsletter which focuses on departmental affairs related to teaching, research, and public service. The intent is to communicate events, issues, programs, and projects of interest to our clientele. We encourage readers, particularly alumni, to submit items of interest, including lead articles to P.O. Box 757200; Fairbanks, AK 99775-7200; or via E-mail to ffcel@aurora.alaska.edu.

KEY PEOPLE

Carol E. Lewis, Department Head, Professor of Resources Management

Harry R. Bader, Associate Professor of Natural Resources Policy

Joshua Greenberg, Associate Professor of Resource Economics

Alan Jubenville, Professor of Outdoor Recreation Management, *Natural Resources News* Editor

Susan Todd, Assistant Professor of Regional Land Use Planning

Deb Segla, Administrative Secretary

Fred M. Husby, Acting Dean, SALRM

G. Allen Mitchell, Acting Director, AFES

Territoriality in recreational settings

The example of the Gulkana River

by Dr. Alan Jubenville
Professor of Outdoor Recreation Management

Little research has been done on human territoriality in wildland recreational settings. Territoriality essentially refers to territorial functioning where people manage the locations they occupy for varying periods of time in order to accomplish certain functions with minimum intrusions from outsiders (Taylor, 1988).

In recreation, territorial functioning combines attitudes that lead to particular behaviors on a specific delimited site that reflect and reinforce excludability of use by others and control over recreational activities within the specific site. In order for such behavior to be necessary, the desired natural settings have to be sufficiently scarce to create inter-party competition (Malmberg, 1980).

Just because there are many people using a particular environmental setting does not mean these people perceive themselves as competitors. For example, backpackers who camp at a particular lake may not see day-use mountain bikers who simply pass by the lake as intruders. Backpackers, at the lake may not see themselves as competitors if they are using the resources differently; some may fish, some teach their kids appreciation of nature, some photograph the landscape. They may, however, become competitors if they all wish to fish at the better locations around the lake or if density increases to the point they cannot find a desirable campsite near the lake.

The first phase of this study was identifying

sites that had sufficient competition among users so the users had to establish and defend classical territories. Several sites were visited in Southcentral Alaska where there tends to be concentrations of visitors on public lands—from Resurrection Trail to the Hillside Trail system above Anchorage in Chugach State Park, to the king salmon run on the Gulkana River. The Gulkana River is a good example of competition because of the intense recreational fishing at limited places along the river over a four-to-five week period.

Participant observation was used to collect data on territories. All observations were done from a distance; no attempt was made by the observer to influence behavior. Observation periods were from two to four days from June 15 to July 14, 1996.

The study is funded by McIntire–Stennis funds through the Agriculture and Forestry Experiment Station.

Territorial Functioning

Territoriality on the Gulkana River revolves around king salmon fishing—an activity that has burgeoned in the last decade. Most recreationists fished the river during the king salmon run. Apparently other river users avoid this time.

The pattern of fishing was undergoing a change at the beginning of the study—from a traditional mode of claiming space at the known primary holes where fish concentrate during their upstream migration, to a much different one. Fishers following the new pattern use many fishing holes.

Traditionalists

Traditionally the pattern of fishing and the subsequent territorial development focused on a few primary fishing holes. They were well known by such names as Long Hole, BLM Hole, and Eagle Hole. Families or groups of friends would float the river until they found a primary hole, and then camp on the hole for their entire fishing trip.

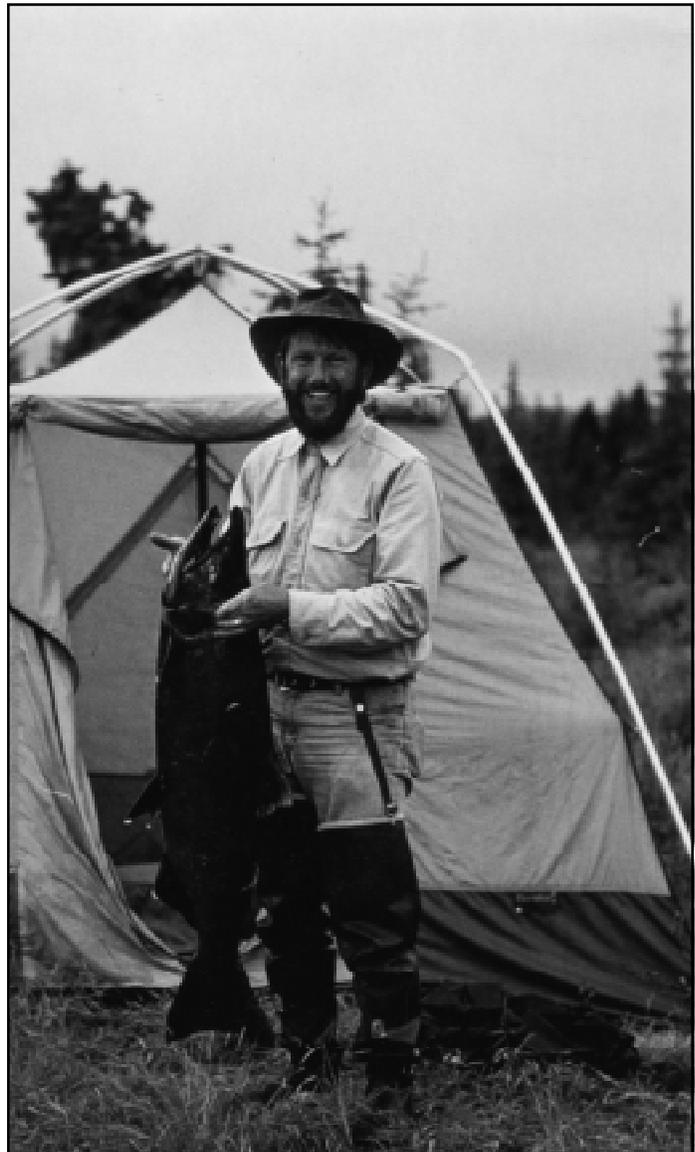
To establish claim to that hole, they would set up camp, spread out their gear, and actually fish the hole. If fishing was slow, they may socialize around camp. In all instances observed, they would begin to actively fish if another party floated through the hole. Thus, they marked and actively defended their territory. If groups stopped and fished on the lower part of these holes, they were ignored, as if to say you are not welcome. The invading party typically left quickly. There were never any physical confrontations.

This type of territorial functioning was acceptable as long as competition was not too severe. However, king salmon fishing has increased dramatically on other more well-known rivers in Alaska while fishing stocks are declining. Thus, the Gulkana River has become a target for displaced fishers. Some guided fishing has also been displaced to the Gulkana and new guides have been attracted. These circumstances increase competition for limited resources and change the pattern of fishing on the river. This has changed the pattern of territoriality and territorial functioning.

Newcomers

The new usage pattern has probably been evolving over the last decade, but the magnitude of change has been greater in the last two or three years. Rather than simply camping and fishing on the primary holes, the new trend is to fish all or at least many primary and secondary holes, spending only a short time at each one. People simply fish the holes on a given stretch of the river on a day-use

basis, and camp wherever they happen to be at the end of the day. According to some participants, this is a more efficient way of catching king salmon because the fish could be resting in any hole, primary or secondary, at any given time. A number of the parties were very congenial in inviting people to have a cup of coffee at their camps. Interestingly two primary holes that historically were occupied by large parties over the July 4th weekend, in 1996 did not have a single camping party on July 4th or 5th.



Alan Jubenville shows his catch—a king salmon—from the Gulkana River. An increase in the number of people fishing for kings on the Gulkana has changed the pattern of territoriality and territorial functioning (courtesy photo).

Salmon fishers stop at a hole, fish for a short while, and then move on. Even when they were catching fish, they were typically gone within an hour. There was little effort—other than the presence of the people and their active fishing—to mark and defend a particular hole. Other parties would float past and select the next hole. A few groups would wait upstream for the party to move if they wanted to fish a particular hole.

Over the July 4, 1996 weekend, the only conflict observed was at Long Hole, a traditional territory. Five parties with dories established a camp there. They would take turns capturing the hole and no one else but them could fish. The flat bottom dories could easily be moved into the head of the hole and were held by the rower or anchor while people fished. At least three of the parties appeared to be guided.

Discussion

The overall pattern of king salmon fishing on the Gulkana River is changing quickly from well-defined and defended territories at primary fishing holes to fishing many primary and secondary holes throughout the day. Since most of the secondary holes were overlooked in the past, this allows more people to fish without intensive marking and defending of a static territory at a primary fishing hole.

In sum, there appears to be more intensive use of the fishery resource with less competition among fishers. Thus, more people can fish for king salmon and they appear to be more successful in actually catching them. This pattern was initiated by fishing guides and now seemingly adopted by most fishers on the middle portion of the Gulkana River. This revolutionary change actually enhances territorial functioning if the goal is to catch king salmon under aesthetically pleasing conditions.

This social evolution could only have taken place voluntarily where the participants readily changed due to perceived benefits. If

management had made the change there would have been great resistance. Thus, while the public may benefit from this social change, the question is, can the fishery sustain itself under the new pattern of fishing?

The Alaska Department of Fish and Game began an escapement monitoring program this past summer. Using the fish counts, they will develop baseline data on needed escapement to sustain the fishery. Hopefully, the agency can manage for the sustainability of the king salmon fishery while meeting the needs of sport fishers under the changing, more efficient, use pattern.

Literature Cited

Malmberg, T. 1980. *Human Territoriality*. Mouton Publishers: New York.

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Dr. Alan Jubenville

Faculty News



Dr. Joshua Greenberg

JOSHUA GREENBERG completed several major economic studies this past year: Norton Sound Red King Crab Fishery, Bioeconomic Consequences Climate Change on the Pollock Fishery, Alternative Management Measures in Alaska Red King Crab and Snow Crab Fisheries. He was also appointed to several committees: Executive Council of the Western Agricultural Economics Association, Crab Planning Team of the North Pacific Fishery Management Council, and Founding Fellow, Alaska Institute of Tourism.

CAROL LEWIS's work focuses on the fact that agriculture (including forestry), mining, and manufacturing are the only mechanisms which will generate new wealth." In keeping with this theme, Lewis is cooperating with Bob Trent, Dean, School of Mineral Engineering, and John Fox, Department Head of Forest Sciences in a joint project with Massachusetts Institute of Technology. The project, "Development of Appropriate Technologies for Remote Complex Regions", a World Bank theme to foster value-added industry. The project is partially funded by UA and MIT. Lewis and Trent are seeking matching funds from private, state and federal interests.

Lewis is also UAF's lead scientist for the Advanced Life Systems for Extreme Environment (ALSEE) project. The project seeks to improve rural sanitation, clean water and water supply, and nutrition in rural Alaska. NASA and private industry's technology is coupled with education and training. Dr. David Bubenheim, Regenerative Life Support Branch for NASA, is co-investigator on the project and leads NASA's efforts. NASA's

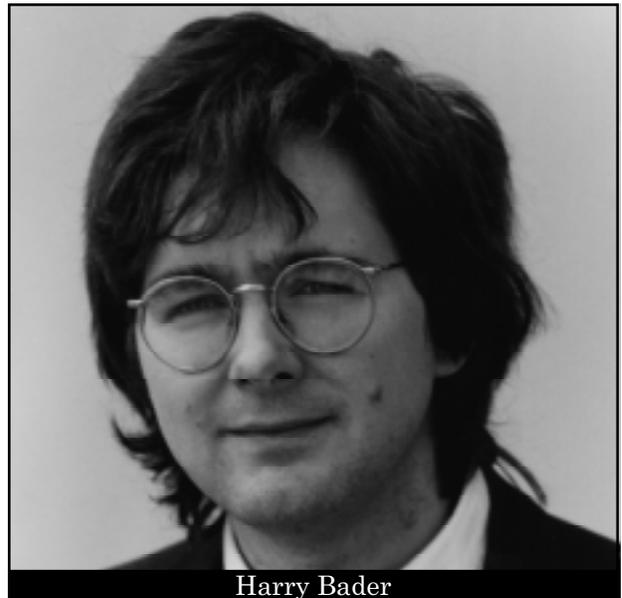
interests, in addition to transferring technology to earth-based applications, are developing, testing, and deploying technologies for future space exploration. Funding is being pursued through state and private interests to match federal dollars secured by Alaska's Congressional delegation.

ALAN JUBENVILLE taught the NRM 365: Outdoor Recreation Management course at the Mat-Su College in Spring 1996. Jubenville said that "While commuting can be fun, the real answer is in electronic distance delivery."

Jubenville recently completed writing a book—*Hiking Trails, Canoe Trails, and Public Use Cabins in Southcentral Alaska*. The book was published by Hunter Publishing in 1996.

SUSAN TODD has been very involved in the 40-Mile Caribou and Wolf Management Plan as chief mediator and planner. She also worked as a mediator coach for a Mediation Workshop, April 15-19 and coauthored a chapter, The Alaskan Wolf Summit, in *Case Studies in Environmental Disputes*. The book covers several high-profile disputes and the consensus processes which attempted to resolve them. Published by the Hawaii Justice Foundation, which has produced several works on consensus processes, the book should be available by September 1997.

HARRY BADER passed the Alaska Bar Exam this summer. He also recently completed the last year of a trail impact study in the White Mountains National Recreation Area and is completing the field work portion of assessing damage to natural resources in Bosnia using Geographic Information Systems.



Harry Bader

Student News

Greg Robbe completed his master's thesis, "A Survey of the Highway Visitors" and graduated in June.

Kathy Tietz completed her master's thesis, "Impact of Recreational Use on Soils and Vegetation" and graduated in August.

Steve Becker was the Teaching Assistant for Dr. Todd in NRM 101. Becker is also the recipient of a Rotary Ambassadorial Scholarship. He will be spending 1997–1998 in Scotland working with Dr. Ian Alexander. He is specializing in arctic soils.

Christi Young earned an MBA in May 1996 and an M.S. in NRM in May 1997. Her thesis is titled, "Discussion of the Needs and Uses of Feasibility Studies within Rural Communities of Alaska".

Amy Prosser completed her master's thesis, "Environmental Racism in the Landscape: A Paradigmatic Survey and Mapping of Environmental Burdens" and graduated in May.

Sergei Ivanov joined us this year. Sponsored by the Russian government, Sergei will be looking at the impacts of recreation in national parks. The Nature Reserve near Khabarovsk, which he manages, will be expanding to allow public recreation. Sergei is looking forward to this new challenge and wants to return home with new tools for managing recreation.

Hiram Wilmking received a Rotary Ambassadorial Scholarship from Germany and is being hosted by the Department of Resources Management. He is helping Larry Hinzman investigate snow depth and its relationship to the hydrology of arctic soils. Hinzman is an associate professor with the Water Research Center.

Thanks to the SALRM graduates who responded to a School letter and questionnaire this past summer. It is always enlightening to hear from former students working in the natural resources management field. Their information will be shared with incoming and current majors to use in planning careers and setting program directions. Comments from alumni include:

• *Try to secure an internship in a land management agency. This is an excellent opportunity to gain experience.*

• *Take all the Geographic Information System (GIS) courses you can.*

• *Learn your soils and watershed management.*

• *Silvics and Dendrology may be tough when you are taking the courses, but the knowledge is extremely valuable in the field.*

• *I highly recommend taking the 10-day field trip in May. It is a real eye opener.*

If you have comments, please contact any faculty member or Barb Pierson, the student recruitment coordinator by calling 907•474•5550. Pierson's e-mail: fnbjp@aurora.alaska.edu

E³ Educational Effectiveness Evaluation

There is a thrust nationwide to improve the responsiveness and quality of higher education programs. The University of Alaska Board of Regents (BOR) has joined with other land-grant universities in an effort to evaluate and improve delivery of instruction programs. This will involve

development of instruction mission statements, evaluation tools, and response plans for UAF undergraduate core curriculum, its undergraduate and graduate degree programs, and in some cases, specific courses. The School of Agriculture and Land Resources Management's NRM degree programs will be one of six pilot evaluations.

The Department of Resources Management will have an important role in the evaluation process. Two of our courses, NRM 101: Natural Resources Management and Policy, and NRM 304: Perspectives in Natural Resources Management, will be used to measure skills in communication and students' knowledge about resources when they begin our program. We are also offering a new course, NRM 105: Orientation to Resources Management, where students can learn about jobs and opportunities and share their experiences and expectations with us.

Through the miles, Resources Management / SALRM delivers

Distance delivery of educational material is becoming more extensive daily. Today, the 'place-disadvantaged student' (one who cannot, for a number of reasons, relocate to a university or college campus) is being targeted by educators throughout the United States. The Internet has made it possible to deliver courses in a very sophisticated, interactive, and interesting format. Compact disks are replacing video tapes and real-time delivery, using compressed video links, is commonplace.

But what about the student who is place-disadvantaged AND living in an area where communications links are not capable of delivering real-time instruction. What about the student who has no links to the Internet, and personal computers with CD-ROMS are not available? This describes a growing number of students who are interested in obtaining a B.S. degree in Natural Resources Management. These students live in Palmer, Tok, Ft. Yukon, Venetie—not all remote in the usual sense of transportation—but very remote in availability of sophisticated communication links.

The Department of Resources Management is leading the School of Agriculture and Land Resources Management in bringing our courses to students in communication remote areas. We are using a tried and tested technology called telegraphics. It uses a personal computer (PC) with interactive software that can link to student locations with only two analogue telephone lines, one for audio and one for video. This link makes telegraphics very cost effective. Students can see still shots on the PC monitor that are taken in the classroom with a video camera while the lecture is being delivered. This makes it ideal for maps, demonstrations, and getting to know each other. The instructor can use "slides" that are pre-prepared much as those for an overhead projector. The students and the instructor can interact on the slides (filling in charts, blanks to questions, adding comments) using colored 'pens, erasers, whiteout, and a typewriter to communicate. All students and the instructor can download any of the still photos, slides and comments at any time. Of course, the students and the instructor are in full audio contact.

Joshua Greenberg and Carol Lewis used telegraphics to deliver NRM 310: Agricultural Concepts, for the first time during the 1996 spring semester. There were three sites; Fairbanks (5 students), Palmer (10 students), and Ft. Yukon (2 participants). The University of Alaska statewide system supported the Depart-

ment in this effort. David Leone, UA Network Services customer services division manager, and his team set up the equipment at all of the sites, trained our people, and were constantly available for help and technical support. We were all pleased with student comments at an exit interview conducted by Leone. There had been problems with the audio, but overall, everyone was pleased with the course. Several comments mentioned the friendly atmosphere and the enjoyment of meeting others at remote locations and being able to "talk" to them and "put a face to a name and a voice".

We are continuing to move forward with telegraphics. Carol Lewis and Harry Bader (Resource Management), John Fox (Forest Sciences), Jay McKendrick (Plant, Animal, and Soil Sciences) and John French (School of Fishery and Ocean Sciences) are delivering NRM 304: Perspectives in Natural Resources Management, to seven students in Palmer this (Spring 1997) semester.

Telegraphics has been called an outdated technology by some. It certainly is when compared to the Internet and real-time delivery. It certainly is not, however, when compared to the telephone, the only other means available for distance delivery in some locations. It is also a technology that definitely has a place when budgets for course delivery at the University of Alaska are level at best. And it certainly can be a way to bring our degree to place-disadvantaged students. Our B.S. degree in natural resources management is increasingly in demand.



Dr. Allen Mitchell, Acting Director of the Agricultural and Forestry Experiment Station, leads this Palmer distant delivery class discussion. The course is being "delivered" from Fairbanks (photo by Carol Lewis).

'96 Faculty Publications List

Jubenville, A. 1996. *Hiking Trails, Canoe Trails, and Public Use Cabins in Southcentral Alaska*. Leesburg, VA.: Hunter Publishing, Inc.

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