

CURRENTS

Citizens Working Together For Community Vitality In A Healthy Watershed

Newsletter of the Kenai Watershed Forum

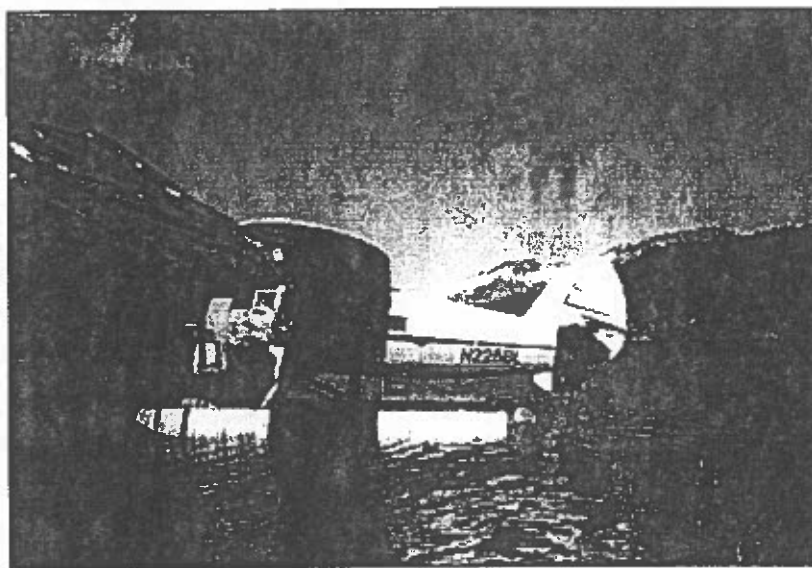
Winter, 2000

Source to Sea

Seward resident Jerry Dixon revisits the Kenai River after 32 years

This summer, Jerry Dixon decided to refresh his memory of the Kenai River, a river he first visited 32 years ago. Using a backpacker's raft and kayak, he floated from the upper reaches of Snow River to Cook Inlet. Source to sea.

As far as we know, Dixon is the first person to run that upper section of the Snow River (and he did it with the small, but real threat that a flash flood could come roaring down from a glacier above). In this story written by Dixon, he tells of his journey and the observations he made along the way.



Jerry Dixon's voyage down the Kenai River began deep in the Kenai Mountains at Paradise Lake, a short portage from the Snow River.

The source of the Kenai River is the north fork of the Snow River, just 15 miles north of my home in Seward. Flying in we pass over the section where the river plunges 600 feet in 1.5 miles. The cascades put my heart in my throat, knowing that soon I'll be running them in a raft.

At the Kenai's headwaters is a glacial lake that spills its contents into the Snow River every two to three years when the ice dam can no longer hold the water behind it. When that happens, this valley fills with a raging torrent. The river goes from 1,000 cubic feet per second to more than 50,000 cubic feet per second in a matter of hours.

A year ago when I scouted the area the lake had just emptied. Now it is almost full. 350 feet deep with glacial melt. Astounding! Thirty-seven billion gallons ready to spill into this river where I am doing the first descent. I ponder this as I fly down to land on Paradise Lake, a short portage from where I will begin my trip down the Snow River. If the lake breaks when I'm on the river, I don't think I would get out alive.

Paradise Lake is a magnificent spot, surrounded on three sides by glaciers and a stretch of falls 11 miles below. Between here and the falls I will encounter Class I to Class III

whitewater in my flimsy, 16-ounce, backpacker's raft.

Just above the falls, I see a most interesting sight — a mountain goat walking along the river. I have seen many goats but always high on a cliff. Here they are so unmolested that they walk right by on the river! Then I step onto the sandbar and cross two sets of brown bear prints. It seems I have chosen to camp on a bear trail. There are large wolf prints using the same right of way.

At Kenai Lake I trade my rubber raft for a sea kayak and paddle to Cooper Landing. In this section I see only one small fishing boat. The boaters wave. Essentially I have the entire lake to myself. Except for the beetle kill, this place looks the same as it did when I first saw it in the 1960s.

Even the Cooper Landing section has changed little. From the river, most of the bank looks in good shape. Only one place do I see people still throwing trash over the bank into the stream. On this entire section to Jim's Landing I come across only one other boat in the river.

Floating the canyon section of the Kenai River and paddling across Skilak Lake, it is so apparent what an outstanding

(continued on back page)

WHO IS KWF?

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HOW ARE WE DOING?

The Kenai Watershed Forum is interested in hearing from you. Write, call, fax, e-mail, or stop by sometime. We're located on the second floor of the Blazy Mall in Soldotna.

ADDRESS: P.O. Box 2937, Soldotna, Ak 99669

PHONE NUMBER: 260-5449

FAX NUMBER: 260-5412

E-MAIL: robert@kenaiwatershed.org

WEB PAGE: <http://www.kenaiwatershed.org>

The Kenai Watershed Forum is a citizens' non-profit organization dedicated to working together for community vitality in a healthy watershed.

KWF MEMBERSHIP

Thanks to the following people for recently contributing to the Kenai Watershed Forum. If you would like to renew your membership or become a new member, please fill out and return the contribution envelope in this newsletter.

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The jokulhaup's on us

Glacier-dammed lakes regularly flood Kenai River

Floods have many causes. Heavy rains, sudden snowmelts and ice jams are common reasons for rivers to overflow their banks. The Kenai River floods for all those reasons, plus a fairly unique phenomenon known as jokulhaups.

Jokulhaups are outburst floods caused by the rapid release of water from a glacial lake. These lakes are formed when a glacier crosses a valley, blocking the flow of water coming down the mountains. Throughout the seasons, rain, snowmelt and water from the melting glacier accumulate in the lake.

The Kenai Watershed has two jokulhaups that drain into the Kenai River and cause flooding. One of these glacial lakes is located on the Skilak Glacier. The other is on the glacier that feeds the Snow River.

On average these lakes drain every two to three years. The process begins in one of two ways.

Under one scenario, the lake fills high enough to float the glacier. That allows the water to start escaping from the bottom, under the ice. The heat caused by the flowing water begins to melt the ice above it, enlarging the opening.

In the other scenario, a fracture forms in the ice dam. As the water flows through and the ice melts, the crack enlarges.

In both cases, the opening begins to close after the water drains. The lake begins to fill and the process begins again.

The Snow River glacial dam last broke on Sept. 30, 1998. The Skilak Glacier dam broke at the end of November.

This article is based on information provided by the Alaska River Forecast Center. For more information about jokulhaups or to see pictures, visit the AKRFC website at www.alaska.net/~akrfc.

Snow River Glacial Lake Releases

<u>Year</u>	<u>Peak flow^o</u>
1949	11,600
1951	6,250*
1953	4,420*
1956	7,310*
1958	8,350*
1961	14,000
1964	14,200
1967	21,600 *
1970	12,100*
1974	23,100
1977	14,900*
1979	12,800
1982	15,500
1985	8,230
1988	8,820
1990	9,100
1993	17,200
1996	14,700
1998	9,940

^o Peak flows as measured at Cooper Landing. Flow levels are in cubic feet per second. The flood level at Cooper landing is 13,400 cfs.

* Indicates daily mean flow

Neither snow, nor cold, nor frozen streams stop our volunteers

The air temperatures are numbing and the water icy, but that doesn't stop our volunteers from wading into the Kenai River's tributaries to check on water quality.

They may have to break through ice to find running water, but the information they collect — the amount of oxygen in the water, temperature and acidity, among other data — will help keep these waters productive.

This winter, volunteers are monitoring 10 creeks that feed into the Kenai. The water sources for these creeks changes from summer to winter, making it important to continue the sampling this time of year.

In the summer, the creeks are fed with rainwater. In the winter, when the rain turns to snow, the creeks flow with groundwater.

We don't know what to expect from our efforts, but because fish live in the streams year-round we know it's important that we do the work. At the least, we will have a baseline of information for future scientists.

Listed below are our recently trained volunteers and the creeks they are monitoring.

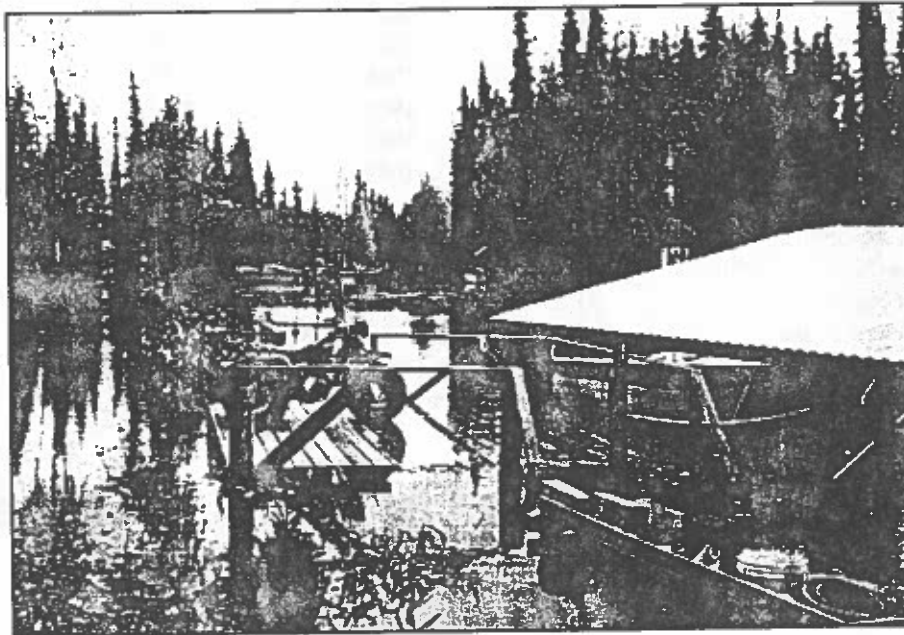
Natasha Johnson — Beaver Creek
 Bruce Rife — Slikok Creek
 Janette Herrin — Slikok Creek
 Cathy Cline — Slikok Creek
 Rhonda McGrady — Soldotna Creek
 Dawn McGrady — Soldotna Creek
 Alexandra Robinson — Slikok Creek
 Pauline Simmons — Soldotna Creek
 John Simmons — Soldotna Creek
 Jason Long — Beaver Creek, Soldotna Creek
 Ned Piatt — Aquaculture Creek

NATURE'S SO

FLOODS CLEAN KENAI RIVER TO

When we think of weather-related disasters, we probably envision powerful storms and subsequent flooding. While we have been spared the devastation seen recently in the Carolinas and parts of India, flooding is a constant concern in Alaska.

Flooding comes about through a variety of scenarios. For example, heavy, isolated downpours within a watershed may result in rapid flash-flooding in a small area or within a single, smaller stream. Rapid warming and subsequent snowmelt may cause general high waters and flooding.



This situation frequently gives some time for reactions.

Continual heavy rains may saturate the ground and cause flooding as further rain escapes as runoff rather than being drawn into the ground. Somewhat unique to Alaska and mountainous areas are the glacier dams that suddenly open and allow massive amounts of water to surge downstream. Rivers also can flood because of ice jams (often happening at a sharp bend in the river) that create a temporary dam and then back-up water into the surrounding floodplain above the ice dam.

Effects on people

Whatever the cause of flooding, we are first concerned about our personal safety and then the safety of our

property. Buildings and other human structures are frail in comparison to the awesome force of moving flood waters. Not only can these waters destroy buildings but a variety of toxic substances can be carried into the stream, too.

For example, flooding in areas around sewage treatment plants can immediately poison the stream with pathogenic bacteria and render it unsafe for drinking. Perhaps an even more problematic situation is when the flood waters inundate personal water wells. Fuel tanks and even properly stored chemicals also can be washed into the current by flood waters and dispersed over a wide area.

These are just a few concerns when flooding occurs.

A Silver Lining

In spite of the damage to our personal property, flooding has a silver lining to it. High water events, or flooding, are a reoccurring, beneficial, and perfectly normal part of the watershed system.

The fast moving waters will remove the finer particles, clays, and detritus that have been deposited since the last high water. In a sense, these finer sediments are choking the normally productive gravel. Thus, high waters act to cleanse the rocks and gravel of a stream.

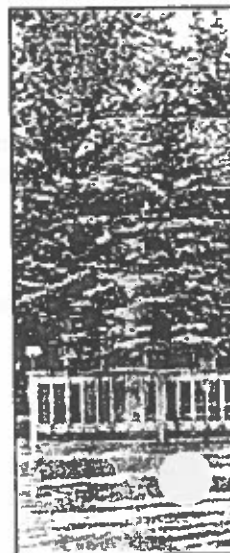
Incidentally, when a stream suddenly runs "brown" with high waters, most of

us expect that clay and sand particles are the cause of the color. Actually, the color usually comes from the washing of fine particles of plant detritus into the water column.

A Good Cleaning

High water events can flush-out the fine detritus particles from deep gravel deposits (called the hyporheic) and allow water to freely flow through. These gravel areas, with water moving within, are the choice of the salmonids for spawning.

Flooding waters also will sort the gravel into uniform sized particles that are then redeposited. We have all seen new sand bars and gravel



RUB BRUSH

BENEFIT OF FISH AND WILDLIFE

areas remaining after high waters recede. That sorting and deposition is a plus for the insects that live between the gravel and the fish that are looking for a place to deposit their eggs

Along with purging the stream of fine organic debris, larger sticks, limbs, and leaves get washed downstream, too. Even larger stream structures like logs, root balls, or boulders can be rearranged.

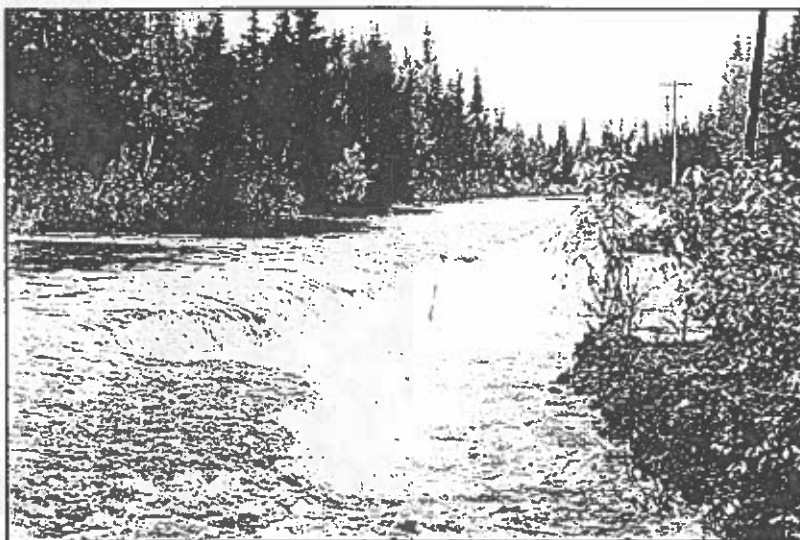
Floods also scour channels and create new, deep pools. These new areas provide additional colonization opportunities for algae, rooted plants, and aquatic invertebrates.

What about the biota?

An obvious question is: What happens to the living organisms (biota) during the flooding?

Gravel that gets rolled around is scraped clean of most algal cells. A majority of stream organisms, like fish and aquatic insects, are able to find places of refuge during high waters. Fish can find refuge behind large boulders, under rock outcroppings, within pool areas, or in slower water lateral to the channel. Smaller fish are known to work their way deep into the gravel substrate during flood events where they can wait out the torrent.

It is well documented that aquatic insects use these deep

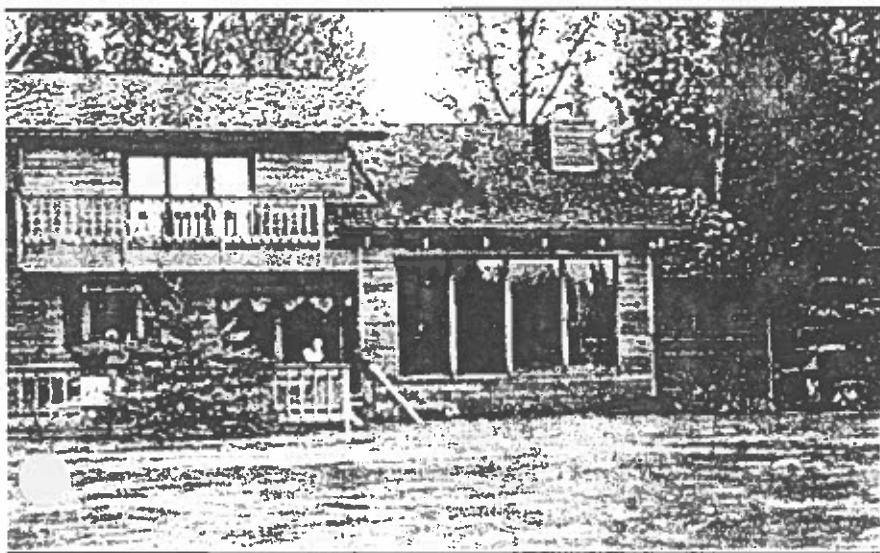


substrates for refuge and quickly will be found crawling or clinging on the bottom substrate when the water slows down. Perhaps the biggest insult they receive is being moved downstream a little or having some of their food washed away. While much of the algae these insects might have fed upon is removed, there are now lots of available surfaces for algal attachment and the algae grow back in a matter of days.

There is an interesting sidelight about flooding and aquatic insect lifecycles. Insects are apparently able to detect oncoming low pressure areas that may bring rainstorms and subsequent flooding. (This is possibly done by micro changes in the carbon dioxide levels in the stream as the atmospheric pressure drops) Many insects will quickly emerge from the water and become aerial insects just before storms.

While stream flooding can be a devastating event in terms of human life or property loss, it is a normal ecological event and in many ways beneficial for the overall health of the entire watershed.

Dr. David Wartinbee, who teaches stream ecology at Kenai Peninsula College, wrote this article for Currents. Dr. Wartinbee is also a member of KWF's Board of Directors.



Retirement keeps Cooper Landing couple busy

Darwin and Geneese Peterson moved to Cooper Landing 13 years ago to retire. Now they operate a fishing guide service, own a successful tackle shop and process and ship fish.

That's a full plate for most people. But after 30 years of cattle ranching in western Montana, working Alaska's frenzied but relatively short fishing season is the good life for the Petersons.

"There's not much for us to do during the winter," said Darwin.

That's not exactly true. At least not for Geneese. She works a few hours most winter days tying fishing flies to sell at the Kenai Cache, their tackle store near Cooper Landing. By May, she will have tied roughly 30,000 flies. Still less than half of the 80,000 bought every summer by anglers.

In a little more than a decade, Darwin has seen a surge in the number of anglers on the Upper Kenai River, the stretch between Cooper Landing and Skilak Lake. Despite the increased pressure, he thinks the fishing is as good as it has ever been. Darwin attributes that success to good management by the Alaska Department of Fish and Game.

Catch-and-release regulations on rainbow trout have prevented overfishing, he said. He hopes that new studies on Dolly Varden will lead to similar regulations for the rainbow's relative.



Darwin and Geneese Peterson sell homemade flies and other gear at their tackle shop.

The Petersons have two sons. Andy, who in the past has worked as a Kenai River guide, is in law school in San Diego. The Peterson's other son, also named Darwin, helps his parents run the guide operation in the summer and works as an aide for Senator John Torgerson in the winter.

The senior Darwin thinks the number of anglers coming to the Kenai Peninsula will continue to grow. He hopes that not all of the traffic heads straight

for the river.

"People kind of have a salmon frenzy," he said. "Maybe in the future we can build a few more campgrounds on the lakes and divert some of the pressure there."

Darwin would also like to see the Kenai Peninsula Borough open up more land in the Cooper Landing area. That would keep land prices affordable and help the community grow, he said.

Salt migrating toward Soldotna Creek

A recent study shows contamination from an Alaska Department of Transportation salt pile is creeping slowly toward Soldotna Creek.

The DOT removed the pile and cleaned the soil immediately around the site in June of 1998, but a study conducted this summer concludes the problem still lingers. Salt in the ground that was not cleaned appears to be moving toward the creek, a Kenai River tributary that supports spawning salmon.

There is no indication that the salt has

reached the creek yet. Chloride levels in the creek and the nearby wetlands have fluctuated over the past year, but the cause of those fluctuations is not clear.

The firm conducting the study recommends that the DOT continue to monitor the area.

The DOT moved the open-air salt pile from the Soldotna Creek site after pressure from KWF and other organizations.

The DOT salt pile is now located in a covered building at DOT's new headquarters across from Skyview.

Four-legged mousetrap

Voracious weasels wipe out mouse problems in a hurry

Forget about baiting traps with cheese. If you've got mice, the weasel can be your best friend.

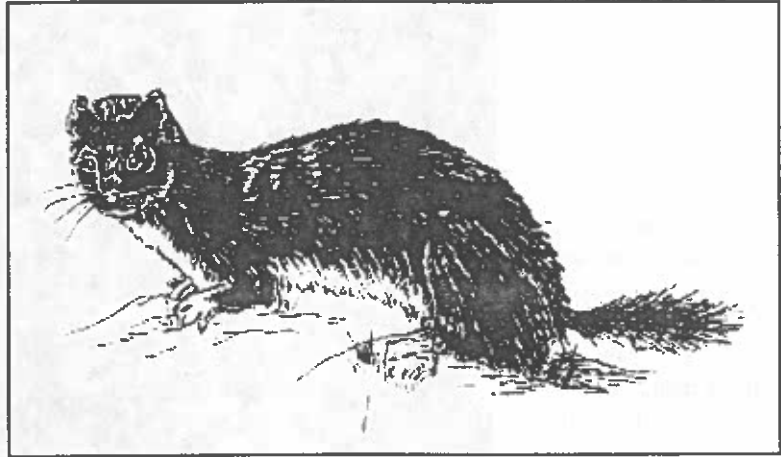
Because they need to eat more than 40 percent of their weight every day, weasels are very proficient hunters. And their prey of choice are mice and shrews. When weasels come sniffing around, mouse problems quickly disappear.

The most common type of weasel in the Kenai Watershed is the short-tailed weasel, also known as the ermine. This furry carnivore is more common than many think. But because it is so small - no longer than 15 inches - the weasel often goes unnoticed.

If attacked, weasels escape from their enemies with speed or by hiding in tight places. If cornered, the weasel can emit an odor as pungent as that of a skunk, although it cannot spray the musk as skunks do.

The short-tailed weasel's pure white winter fur has been used as trim on parkas and other clothing for centuries. In western society, the fur was considered a badge of royalty.

Source: Alaska Dept. of Fish and Game Wildlife Notebook Series



Weasel Facts and Figures

Species: Short-tailed weasel

Size: Up to 15 inches in length and 7 ounces in weight

Relatives: mink, marten, river otter, sea otter and wolverine

Summer Color: Brown with yellowish underbody

Winter Color: White with black tip on tail

Interesting Fact: The weasel is powerful for its size. It has been observed to run without stopping for close to 300 yards, carrying in its mouth a mouse nearly as large as itself.

THANK YOU * THANK YOU * THANK YOU

J~B STOR 'N LOK

Donated a storage trailer to the Kenai River Festival.

GCI

Donated internet access and space for our web page.

Kenai Peninsula Fishermen's Association

Donated \$100 to the Kenai River Festival.

THANK YOU * THANK YOU

Nature Guide Now Available

The Kenai Watershed Forum's Nature Guide, which depicts more than 100 common animals, birds and plants of the Kenai River Watershed, is now available.

KWF funded the guide in an effort to help both residents and visitors develop a deeper appreciation of our magnificent watershed.

The guides can be purchased for \$2.95 at our office, the Kenai National Wildlife Refuge Headquarters, the Kenai Visitors and Cultural Center and Frames and Things in the Blazy Mall

Dixon: Paddler floats Kenai River from beginning to end

(continued from front page)
resource this is and how it is available to all Alaskans and our visitors.

Hiking above Skilak I glance across the sun-drenched hills and see a brown bear running up a slope to the east. Its fur ripples in the sun as it moves. I am downwind and retrace my steps to find a snow patch to glissade away. The wind picks up to 35 knots and I wait for more than 24 hours to kayak across Skilak. On my second day of waiting I decide to put on my full drysuit and try it. I use all of my 30 years of whitewater expertise as the waves crash over my boat.

Living in Seward I paddle Resurrection Bay 12 months a year and have paddled when the salt spray froze on my boat. But the sea in January is still warmer than Skilak in June.

It is heartening to know that a pioneer would recognize Skilak Lake and the first few miles of the Kenai River as it flows out of the lake. Beginning at the Kenai Keys, though, the river winds through suburbia. From Skilak Lake to Cook Inlet, I find only one place to camp that isn't an



established campground. Even the islands are claimed.

In some places the 'No Trespassing' signs are posted every 50 feet for miles on both sides of the river! Try stepping ashore anywhere but at a park below the Keys and you will find, 'Keep Out', 'No Trespass', 'Don't Even Think About Tying Up Here', 'Stay Off.' Other than a sign advertising a bed-and-breakfast and one marketing hamburgers, I see only one sign that doesn't say stay away

.....
Dixon used a raft to float from the upper reaches of the Snow River to Kenai Lake, then switched to a sea kayak to finish the voyage to Cook Inlet.

.....
— a 'God Bless' in Soldotna.

No one who knew this lower river from the mid-1960s and who sees it now can doubt the habitat destruction that has gone on. When you float it source to sea, the difference between federal land and that which is private stands in stark contrast.

Something else that jumps out at me is the half-million-dollar homes with lawns flowing to the river on one side and the shacks falling into the river opposite them. The lack of planning is staggering. Only in Alaska would such a treasure be developed so haphazardly. Some owners have bulldozed right to the river and dumped a trailer on the clearing. Alaskans accept this as 'progress' and 'personal property rights'.

My last day on the Kenai I float in the sun to the bridge with fishermen waving. Then I have a five-mile paddle against the tide and the wind. As I pass cannery row before paddling into Cook Inlet, the entire esplanade of the Kenai Mountains is spread out before me and I hope that there will be salmon in the Kenai and wildness in the mountains for generations of Alaskans.

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