

# STATE OF ALASKA

## DEPARTMENT OF FISH AND GAME

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April 26, 1991

Alan Eliason,  
Superintendent, Katmai Nat'l Park  
P.O. Box 7  
King Salmon, Ak. 99613



Dear Mr. Eliason:

During an April 5, 1991 meeting at the Fish and Game office in Anchorage, we met with a number of organizations concerned about or interested in a salmon enhancement project on the Paint River. At that meeting, Ken Florey of Commercial Fisheries Division and I, agreed to produce documents that provided information about the concerns and issues that had been raised relative to this project. These documents are attached for your information and use.

These documents are preliminary efforts to address the issues that have been raised. I hope you recognize that these documents are our best effort to quickly provide you with available information. Clearly there is more that could be said on these issues and additional issues may remain to be addressed. Also, our views on potential impacts may change when more information becomes available. I believe that these documents should be useful, however, in helping to focus discussions. For example, our staff will find them useful in designing studies to evaluate changes caused by a fish ladder and in drafting elements of the management plan should a special area be created.

Please continue to let me know of any comments, suggestions, or additional information requests you have.

Best wishes,

Katmai National Park & Preserve

Date \_\_\_\_\_

☒ Superintendent  
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☐ Clerk Typist  
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☐ District Ranger  
☐ Interp Spec  
☒ RMS  
☒ RMS Wild  
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☐ Chief of Maint  
☐ Maint Clerk  
☐ Maint Worker  
☒ Seasonal Staff Tammy

*Karl B. Schneider*  
Karl Schneider  
Acting Regional Supervisor  
Division of Wildlife  
Conservation

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**PAINT RIVER ENHANCEMENT PROJECT  
DESCRIPTION, BACKGROUND AND FUTURE**

**PREPARED BY COMMERCIAL FISHERIES DIVISION  
ALASKA DEPARTMENT OF FISH & GAME**



**BACKGROUND STATEMENT:** The Paint River system contains a large network of streams interspersed with lakes systems. The outlet flows into Akjemguiga Cove in Kamishak Bay located approximately 3.5 miles north of the McNeil River falls. A steep series of falls located at the mouth of the river has precluded the establishment of natural salmon runs to this system at least in modern times. The rugged geography of this area and violent tectonic plate activity that is common suggests that in recent geologic time, salmon runs could have and probably did inhabit this drainage.

Discussions about developing salmon runs to Paint River by either building a ladder or blasting the falls have been going on since the federal salmon management days prior to statehood. It wasn't until the Fisheries Rehabilitation, Enhancement, and Development Division (FRED) and the Cook Inlet Aquaculture Association (CIAA) began cooperative engineering and biological feasibility studies in 1978 that any serious consideration was given to this project. Progress to this point has been slow, primarily do to the lack of money, but CIAA has secured the necessary funding and permits to begin construction during the spring of 1991.

**BIOLOGICAL FEASIBILITY AND STOCKING HISTORY:** Stocking of Paint River began with the introduction of pink salmon in the early 1980's for imprinting and survival studies. Pink salmon fry from Tutka Hatchery were stocked three consecutive years in the lower reaches of the mainstem of Paint River. Approximately one half million fry were first released in 1980, and a percentage of those were marked with fin clips. The complete stocking history and the adult return information is shown on table 1 & 2 below.

Table 1. Salmon fry releases in Paint River 1980-1990 in thousands of fish.

| Species       | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|---------------|------|------|------|------|------|------|------|------|------|------|------|
| Pink          | 554  | 510  | 405  | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| Sockeye       |      |      |      |      |      |      |      |      |      |      |      |
| Upper Lake    |      |      |      |      |      | 500  | ---- | 1000 | 1000 | 1000 |      |
| Lower Lake    |      |      |      |      |      | 320  | ---- | 552  | 500  | 500  |      |
| Elusivak Lake |      |      |      |      |      |      |      | 521  | 500  | 500  |      |

Table 2. Adult salmon returns to Paint River 1981-1991 in hundreds of fish (estimated).

| Species | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 |
|---------|------|------|------|------|------|------|------|------|------|------|------|
| Pink    | 600  | 4700 | *    | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- |
| Sockeye | ---- | ---- | ---- | ---- | ---- | ---- | ---- | ---- | *    | 70   | **   |

\* no fish observed but small number of return possible

\*\* The sockeye salmon return for 1991 is projected to be as high as 22,000 from the 2.1 million fry released in 1988.

The return information to date is very limited. All the estimates are from aerial surveys and the survival information that can be extrapolated from these data are of little or no value. The project calls for personnel to be on site beginning in 1991. One of their objectives is to monitor the adult returns to the base of Paint River falls for a potential cost recovery program to be conducted by CIAA.

**CURRENT STOCKING PLANS:** All fish enhancement activities conducted in the State of Alaska relative to the transport and introduction of fish are authorized under the provisions of a permit in 5 AAC 41.001. Currently there are two approved fish transport permits for Paint River.

- (1) Fish Transport Request (FTP) 80-65, authorizes 500,000 Tutka Creek pink salmon fry from Tutka Hatchery near Homer to be released in Paint River approximately five miles above the falls. This transport was carried out in 1980, 81 & 82 for the purpose of evaluating if out-migrant pink salmon fry could imprint on Paint River, survive the falls and return as adults. The results of this experiment showed a survival of less than 1.0 percent from fry to adult return, but the data is suspect since all adult returns were estimated by aerial surveys. This permit is not currently active. The Tutka pink salmon stock is not currently under consideration for stocking at production levels since it is a inter-tidal spawning stock, and a up-river stock with a later run timing than Tutka is more desirable.
- (2) FTP 85-A-1083 approved in 1985 and amended in 1987 authorizes the planting of up to 2,000,000 Tustumena Lake sockeye salmon fry into the Paint River Lakes system. 1,000,000 fry to Upper Paint River Lake, 500,000 to Lower Paint River Lake and

500,000 into Elusivak Lake. The original 1985 permit authorized 1,000,000 fry and in 1987 the amendment was made based upon the recommendation of the FRED Limnology Section. The Limnology Section based their recommendations on an empirical model for sockeye salmon in rearing-limited lakes. This stocking plan has been followed since 1988.

The current plan calls for continuing the sockeye planting project for at least two more years to complete the five year cycle needed to complete all age classes. The adult return timing of the sockeye to Paint River should closely mimic the late run returns to Tustumena Lake with the earliest returns arriving the last few days of June, peaking in mid-July and over by the first of August.

**FUTURE STOCKING PLANS:** With the transfer of all FRED hatchery programs aimed at commercial fishermen to the Private Non-Profit Aquaculture Associations (PNP), the future stocking of the Paint River system will be reviewed by the Cook Inlet Regional Planning Team (CIRPT) and approved by the Commissioner of Fish & Game. This process is outlined under Alaska Statutes Title 16, Chapter 10, Article 8, Sections 375-430, for PNP hatchery operation. The Regional Planning Team meetings are advertised and open to the public. In addition to the Regional Salmon Plan process, all requests for changes in species and/or number of salmon to be planted in the Paint River system must be approved under the FTP permit process outlined in 5 AAC 41.001 Transportation, Possession and Release of Live Fish.

In addition to the sockeye program, the long-term stocking strategies for Paint River include late run chum salmon. The brood stock of choice is either Cottonwood Creek or Bruin Bay which has a run-timing of 7/22-8/15. This late run-timing is after the majority of chum salmon have returned to McNeil River.

Pink salmon are the third priority with no specific broodstock under consideration at this time. There are no plans under consideration for the stocking of chinook or coho salmon in Paint River at this time.

As was earlier stated, all future stocking requests will have to be made through the Regional Planning Team and approved by the Commissioner of Fish & Game.

**FISHERY MANAGEMENT CONSIDERATIONS:** The primary mission of the Department of Fish & Game, Division of Commercial Fisheries is the **protection of wild stocks**. That is our statutory obligation and cannot be compromised. The chum salmon stocks at McNeil River have two components. The early run of older (5-6 year) fish returns from approximately 6/22 to 7/12, the late run of four year old fish returns from approximately 7/15 to 7/29. The current escapement goal for chum salmon to McNeil River is a range of 20,000 to 40,000 fish. The upper limit (40,000) is the goal during years when the

spawners distribute themselves further up the drainage. During years when the spawners only use the lower river and inter-tidal areas, the mid-point (30,000) is the management goal. Severe management restrictions are employed when the lower range (20,000) is not reached.

The primary management concern is the protection of the McNeil River chum salmon in a mixed-stock fishery outside the immediate McNeil River area. The later run timing of the chum salmon stocks chosen for introduction into Paint River will provide significant temporal separation. This concern will further be addressed by fishing very conservatively in the Kamishak River Subdistrict prior to July 15. If the four year old component of the run is weak, the fishery will be restricted through July 25. If necessary Kamishak River chums can be harvested earlier in the Douglas River Subdistrict.

The Alaska Board of Fisheries adopted the Paint River Subdistrict in 1988 to help manage the future returns to Paint River. However, the harvest of Paint River sockeye salmon will be primarily in the Chenik sockeye fishery which is to the north of Paint River. With the development of a sockeye salmon escapement goal for the Paint River system, (probably in the neighborhood of 20,000), and the cost recovery program that will be conducted on the returns that are excess to escapement, the need for a directed commercial sockeye salmon fishery in the Paint River Subdistrict is remote. The Paint River Subdistrict will most likely be used to protect the returns to Paint River until the runs are established.

The Paint River Special Harvest Area consists of all waters within Akjemguiga Cove and will be closed to commercial fishing. This special harvest area along with the conservative management of the Paint River Subdistrict will afford added protection to the late portion of the Mikfik sockeye salmon return and the early portion of the McNeil chum salmon return.

The Department will also be drafting a formal management feasibility analysis that will be included as part of the Basic Management Plan that is part of the approval process for projects such as Paint River.

**POTENTIAL BOAT ANCHORING AREAS:** The two primary boat anchoring areas that would be used by fishermen targeting on salmon returning to Paint River are the existing anchorages at Mikfik and behind Nordyke Island. There are no plans for dredging or clearing Akjemguige Cove for either a boat anchorage or to develop a more terminal harvest area.

# DRAFT

## DRAFT

### ANNOTATED LIST OF CONCERNS ABOUT ENHANCEMENT OF ANADROMOUS FISHERIES AT THE PAINT RIVER IN SOUTH-CENTRAL ALASKA

PREPARED BY: DIVISION OF WILDLIFE CONSERVATION, ANCHORAGE

EARLIER VERSIONS REVIEWED BY: DIVISIONS OF COMMERCIAL FISHERIES, SPORT FISHERIES, AND FISHERIES REHABILITATION AND ENHANCEMENT

DRAFT DATE: May 5, 1991



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## BACKGROUND

The McNeil River State Game Sanctuary was created by the Alaska Legislature in 1967. In 1955, the area had been closed to hunting by the territorial legislature. The purpose of the sanctuary is to protect an area where bears seasonally concentrate in very large numbers to feed on salmon that concentrate below a falls on the McNeil River about 1 mile upstream from the ocean. The actual size of the sanctuary is very small relative to the annual home ranges of any bear utilizing the sanctuary to fish for salmon.

The McNeil River Sanctuary is unparalleled anywhere in the world as a place to view large numbers of wild bears in close proximity. In large part this opportunity exists because bears in this area have learned that humans will display predictable and non-threatening behaviors. These bears also have not learned to associate human camps or humans with availability of garbage or other highly attractive human foods. These relations have been established through strict control of human activities within the McNeil River Sanctuary.

In the 1970s, an increasing number of visitors attracted to the area began to have an adverse affect on the numbers and activities of the bears using the area. Because of this and other concerns over unsupervised human use of the area, a system evolved whereby a limited number of visitor permits were granted each year by lottery to applicants who desired to view or photograph wild brown bears in a natural wilderness setting. Thanks to an effective management plan and cooperation between bear viewers and other groups and a growing bear population on the Alaska Peninsula, the number of bears utilizing the falls has almost doubled in the last 10 years. The area is managed by the Division of Wildlife Conservation in the Alaska Department of Fish and Game. Since the current permit system was adopted 19 years ago, there have been no injuries to sanctuary visitors by bears and no bears have needed to be killed in defense of life or property. There is much more demand for visitor permits than are available; in recent years only 7 to 10% of the applicants received permits, and as many as 1,800 applications are received annually.

The area to the south of the McNeil River Sanctuary includes an area of state lands between the sanctuary and Katmai National Park and Preserve that includes the lower portion of the Kamishak and Douglas Rivers. A land exchange with the National Park Service for this area has been discussed since 1982 and is still under discussion. In 1985, the Alaska Board of Game closed this area to bear hunting. This was done even though it was the assessment of the Division of Wildlife Conservation that the bear population throughout the Alaska Peninsula was significantly larger than 10 years earlier (Sellers and McNay 1984). The annual sport fishing questionnaire and observations by McNeil sanctuary staff document a significant increase in sport fishing effort in the Kamishak area in recent years.

The first major drainage to the north of McNeil River is the Paint River drainage. The mouth of the Paint River is only 3 miles north of the mouth of McNeil River. The Paint River is devoid of natural anadromous fish runs because of a 30-foot high falls at its mouth. The Cook Inlet Aquaculture Association has obtained financing and permits to construct a fish ladder around this falls beginning in the summer of 1991. The association intends to stock this system with all 5 species of Pacific salmon and to plan for escapements of 2,600 each of king and silver



salmon, 22,500 red salmon, and 300,000 each of chum and pink salmon.

This development of the Paint River fishery has raised a number of concerns about potential impacts on the bears that frequent the McNeil River Sanctuary in the summer months. Concerns that this development could adversely affect the primary objectives for the McNeil River State Game Sanctuary have been expressed by the Division of Wildlife Conservation since the project was first seriously investigated in 1978. The Division of Wildlife Conservation recognizes that enhancement of the Paint River salmon fishery will increase human presence in the Paint River area. It is expected that increased numbers of commercial fishermen, hunters, sport fishermen, guides, viewers of bears and other species, and developers of lodges or similar facilities will be attracted to this area. The Division of Wildlife Conservation recognizes that many activities by such groups can be conducted in ways that will be compatible with maintaining the bear populations and bear opportunities in the McNeil River Sanctuary. However, unregulated human activities may prove to be incompatible with this objective. The concerns about the Paint River enhancement project that have been expressed by the division and other organizations are listed and briefly discussed in this document.

The Alaska Legislature as well as other groups have expressed interest in creating a special-use area around the Paint River to the north as well as in the Kamishak River area to the south of the sanctuary. The management of this area would be designed to minimize adverse impacts of the Paint River enhancement project and projected increased public use on bear populations and bear viewing opportunities in the McNeil River Sanctuary. Some concerns that have been expressed by current and potential users of the Paint River uplands are also listed and briefly discussed in this document.

#### EXPRESSED CONCERNS RELATED TO POTENTIAL IMPACTS ON BEAR POPULATIONS AND BEAR VIEWING OPPORTUNITIES IN THE MCNEIL RIVER STATE GAME SANCTUARY.

Concern 1. Bears currently using McNeil River falls and Mikfik Creek within the sanctuary will, instead, be attracted to the Paint River outside the existing McNeil River Sanctuary. In the future, bears that would have fished within the existing sanctuary will, instead, be drawn to fishing opportunities created elsewhere by the enhancement project.

The behavior of individual bears cannot be accurately predicted, either for the bears currently in the McNeil River area or for future generations. The factors that will influence the distribution of bears between the McNeil River Sanctuary and an enhanced Paint River system include: (1) relative ease of catching fish in each area, (2) numbers of fish in each area,

(3) timing of runs in each area, (4) species of fish available at the same time in each area, and (5) levels and types of human activities in each area. The number of bears in each area and the sex-age composition and dominance of bears in each area will also depend on a number of these factors.

Although bear use of areas of food abundance is influenced by levels of human activity as well as level of bear conditioning to humans, many bears will select areas that provide the best opportunity to obtain food. This is the reason why so many bears come to the McNeil River falls; chum salmon are abundant there and relatively easy to catch. Similarly, increased escapement of red salmon into Mikfik Creek seems to have increased the number of bears in the sanctuary during June. Formerly these bears were elsewhere in the early spring.

It is probable that increased chum salmon escapements into western Cook Inlet streams have contributed to populations of bears on the Alaska Peninsula and to the increased number of bears seen in the sanctuary in recent years. Bears fishing at McNeil River are known to move to Battle, Kulik and Kokhonak Rivers in late summer to fish for red salmon. They doubtless go to other rivers as well. Red salmon escapements in these rivers vary considerably, but in general are much higher than they were in the early 1970s. Even though there has been increased availability and use of salmon in drainages to the south and west of the McNeil River Sanctuary, the number of bears using the sanctuary has increased.

Within the sanctuary there are differences in the sex and age composition of bears using different portions of the area. Generally, subdominant young bears are much less abundant at the falls and are more abundant in the grassy flatlands. Some large adult bears are also more intolerant of the humans at the falls and avoid areas of the sanctuary where humans occur. We would expect that these categories of bears that are, to some degree, excluded from the preferred fishing spots at the McNeil River falls, would be the most likely to first utilize new fishing opportunities at Paint River. Which bears would persist in using these new opportunities would depend on the level and types of human activities that occur there.

If salmon in the Paint River area are more abundant, more easily caught, or more preferred than salmon species available in the McNeil River Sanctuary, some bears will probably shift their activities to the preferred spots. The individuals most likely to do this will be the ones first learning about the new source of salmon. These will be bears that encounter such opportunities enroute to McNeil River falls from the north. Bears that move northeast to the falls from the Katmai coast are likely to be slow to learn about the new area. Studies in southcentral Alaska where few salmon are available indicated that some bears living in close proximity to the only salmon stream available never went there, whereas others moved great distances to fish in this

stream (Miller 1987). The differences probably reflect lack of knowledge of the salmon resource by the bears not visiting the areas as cubs with their mothers.

The fishing opportunities for bears at the Paint River are anticipated to span a longer period of time during the summer and fall than currently occurs at the McNeil River and Mikfik Creek or in the interior area mentioned above. Each of these areas has a largely one-species salmon run. The multiple-species runs anticipated for the Paint River will increase the probability that McNeil River bears will learn about the fishing opportunities in this area that occur before or after the McNeil River runs.

Available data are inadequate to predict whether or not opportunities for bears to catch salmon in the salmon-enhanced area will be comparable to or better than those currently available in the sanctuary. Unlike the McNeil River system where 90% of salmon occur within the 1 mile between the falls and McNeil Cove, in the Paint River system spawning salmon will be distributed over many miles. However, there are at least two areas in the Paint River system upstream of the falls where rapids may impede the upstream migration of salmon and create opportunities for bears to easily catch fish. If this occurs, such sites may create opportunities for additional bear viewing and photography. Information on these potentials and uncertainties will be collected during spring, 1991 (see below, research).

Returns of wild salmon stocks fluctuate between years in response to factors such as climate, human fishing effort, and other factors. Variations in run size caused by such factors have been observed at McNeil River and affect the number of fish available for bears to catch. If alternative runs are available to McNeil River bears during years when the natural McNeil-Mikfik runs are small, some McNeil River bears will find these runs and benefit from them.

Incidental observations at McNeil River falls suggest that bears may prefer king salmon over the much more abundant chum salmon. If preferences for different species or runs exist, as seems probable, they probably reflect differences in fat/oil content of the flesh. There are differences in oil content of different runs of the same salmon species and also differences between species. If bears have the opportunity to choose between two sites equivalent in terms of fish catchability and human activities and one site had relatively low-oil chums at the same time the other had high-oil kings or reds, the most dominant bears in an area would be expected to be at the site that had the preferred species.

It is unknown whether such choices between salmon species will develop in the McNeil-Paint River area. The run timing for the proposed introduced stocks has not been determined. The

characteristics of the Paint River relative to sites where bears may concentrate to fish for these stocks is also unknown and may be impossible to accurately predict. It is worth noting, however, that there are currently wild runs of salmon in the Kamishak and Douglas Rivers to the south of McNeil River Sanctuary. These runs have not prevented growth in numbers of bears using the McNeil River Sanctuary over the past decade. However, both of these rivers have only very small runs of reds, almost no kings, and the Douglas River has only a small run of silvers. This makes the situation different than anticipated for the Paint River system. Recent escapements in the Kamishak and Douglas Rivers is provided below (data from annual review of Lower Cook Inlet Salmon Fishery reports to Alaska Board of Fisheries, ADF&G).

|       | KAMISHAK RIVER     |        |       | DOUGLAS RIVER |        |         |
|-------|--------------------|--------|-------|---------------|--------|---------|
| YEAR  | Reds               | Chums  | Pinks | Reds          | Chums  | Silvers |
| 1990* | 230                | 1,200  | --    | 600           | 10,400 | 1,800   |
| 1989  | 500                | 42,000 | --    | 600           | --     | --      |
| 1988  | data not available |        |       |               |        |         |
| 1987  | 500                | 28,000 | 1,500 | 0             | --     | --      |

\*Atypical and unexpected low returns in 1990 (Bucher and Morrison 1990).

Concern 2. Bears that visit the McNeil River Sanctuary have been conditioned to expect humans to behave in predictable ways; appropriate visitor behavior is taught and mandated by sanctuary regulations and ADF&G staff at the sanctuary. In the Paint River area, bears that are accustomed to predictable human behaviors will encounter humans in ways neither the bears nor the humans expect. This may decondition McNeil River bears thereby decreasing visitor satisfaction and increasing risks to McNeil River Sanctuary visitors.

This result would be highly likely if there were no restrictions on use in the Paint River area and, as expected, introduction of salmon into the system resulted in a large increase in numbers of humans using the area. Special regulations and management plans will be developed to avoid these adverse consequences if the legislature establishes a special area (refuge, sanctuary, etc.). With appropriate management plans, most of these adverse impacts can be avoided while still permitting more diverse and less restricted access than exists in the McNeil River Sanctuary. Such adverse impacts cannot be completely avoided because bears using the McNeil River area during the summer, move to other areas during other seasons where they encounter other types of management. Although the bears currently using McNeil now encounter, during different seasons, people under different circumstances than exist at McNeil, these encounters have not prevented an increase in the number of bears or in the quality of bear viewing opportunities in the McNeil

River Sanctuary. This is because the levels and types of human use in Katmai National Monument and in the drainages immediately adjacent to the McNeil River Sanctuary is generally compatible with sanctuary objectives. This is increasingly not the case near the mouth of the Kamishak River to the south of McNeil, and would likely not be the case following salmon enhancement of the Paint River drainage immediately to the north of the sanctuary. Throughout Alaska, it is necessary to avoid conditions that habituate bears to associate humans with non-natural foods and garbage; this need is especially vital, however, in areas adjacent to the McNeil River Sanctuary.

Concern 3. The above circumstances may also result in increased incidental deaths or injuries of McNeil River bears at the hands of visitors to the area affected by salmon enhancement. Bears injured or wounded in such incidents may pose increased threats to visitors in the sanctuary or in Katmai National Park.

Available evidence suggests that increased human presence in bear habitat will result in increased numbers of "defense of life or property" (DLP) kills. Statewide, such kills amount to a relatively small proportion of total reported bear mortalities (5%) but are higher in more populated areas and during periods when more people are in bear country (Miller and Chihuly 1987). It is not expected that DLP kills of bears in the Paint River area will become so prevalent that they will constitute a population-level impact. There is no evidence that wounded bears will become more dangerous to humans except immediately following the wounding. Our expectation is that, in most cases, wounded bears would become more cautious of humans, not less. This was seen during the 1960s when 50 McNeil River bears were darted, immobilized, and marked as part of research studies without becoming more aggressive towards humans. In fact, some of these marked bears ultimately became among the most tolerant bears to visitors in the sanctuary. Bears that are conditioned at McNeil River Sanctuary to be highly tolerant of human presence may be more vulnerable to being killed by visitors to the Paint River area who unaccustomed to and frightened by bears that do not flee from humans. Avoiding such kills will probably require that visitors to the Paint River area receive information or training about the habituated behaviors of bears they may encounter and how to deal with such encounters. The management guidelines that will be developed for a legislatively-designated special area around the Paint River, discussed above, will diminish these problems.

Concern 4. The area affected by salmon enhancement will receive increased bear hunting pressure that will result in more hunter harvests of bears that have been habituated to non-threatening human presence. Individual bears that are well-known at the McNeil River Sanctuary may be shot.

The Paint River area to the north of the McNeil River Sanctuary is currently open to bear hunting. Over the last decade, an

average of 3.6 bears/year have been taken in the area that includes the Paint River, Chenik Creek, Chenik Lake, and Amakdedori Creek (see attached table). The McNeil River Sanctuary has been closed to bear hunting since prior to statehood. In 1985, the Alaska Board of Game also closed to bear hunting an area between the sanctuary and Katmai National Park. When these closures were made, the Board recognized that the McNeil River bears were especially conditioned to human presence and merited protections beyond those required to assure that adequate populations of bears were maintained. Increased publicity associated with the McNeil River Sanctuary and the Paint River salmon enhancement program will focus interest on the area by sport fishermen, bear viewers, and commercial fishermen. We suspect that this will also result in increased numbers of bear hunters, which would likely lead to increased harvests. Over time, the number of bears inhabiting the Paint River area would probably increase in response to increased biomass of salmon.

Individual bears that have become accustomed to encountering humans in non-threatening circumstances at McNeil River falls will vary in their response to humans. Some individual bears will be highly tolerant away from the sanctuary while others will be much more leery of humans away from the sanctuary than within the sanctuary. Individual bears that retain their tolerance to humans away from the sanctuary would become relatively easy targets for hunters in areas where hunting is allowed. However, it will not be possible to protect all McNeil River bears from hunting mortality; individual bears move too far. The lands immediately north of the McNeil River Sanctuary and the adjacent Katmai National Preserve lands have been open to bear hunting since the sanctuary was established. Some bears that are McNeil River regulars have been and will continue to be taken by hunters far from the sanctuary boundaries or the boundaries of any legislatively-designated special use area around the enhancement project. The Alaska Board of Game will need to find a balance between protecting bears frequenting bear-viewing areas and the interests of sportsmen to harvest sustainable numbers of bears in areas where the impact on bear viewing opportunities will be small. The exact nature of the balance that will be achieved is not clear at this time. The Division of Wildlife Conservation has recommended to the Big Game Commercial Services Board that Uniform Coding Unit 09A-0301 that includes the entire Paint River drainage be excluded from being a guide-use area.

Concern 5. Increased numbers of fishing boats will anchor in McNeil River Cove, especially during foul weather, because of limited number of protected anchorages in the region. This will represent a disturbance to McNeil River permittees and improper practices by anchored fishermen may decondition some McNeil River bears. This may occur especially when boats are beached at low tide and may be approached by bears.

Differences between user groups will have to be reconciled in management plans and guidelines that are yet to be developed. Problems similar to these in McNeil Cove have been addressed through the Mikfik management plan. Similar efforts would be necessary to eliminate misunderstandings between different user groups for the expanded area. McNeil Cove cannot accommodate the number of vessels that may participate in an enhanced Paint River fishery without significant detrimental impacts on sanctuary visitors and bears in the sanctuary. Consideration would need to be given to developing new anchorages elsewhere such as at Nordyke Island. This would also benefit fishermen who would not have to worry about bears around their beached boats. It should be noted, however, that under the limited entry system currently in effect for Cook Inlet fishermen, the total number of fishing permits is fixed. Since some boats will be fishing elsewhere than on Paint River stocks, the whole fleet will not be seeking anchorages in this area.

Concern 6. The relatively small McNeil River and Mikfik Creek salmon runs will be mixed in with the larger enhanced runs bound for the Paint River and this will result in overfishing of the runs bound for the McNeil River Sanctuary. This could decrease or eliminate the number of salmon available to bears within the sanctuary.

A primary mandate of both the Division of Commercial Fisheries and the Division of Sport Fisheries is protecting wild runs of salmon. In order to protect the small McNeil River and Mikfik Creek runs (50,000 red and chum salmon), it may be necessary to regulate portions of the Paint River commercial fishery as a terminal fishery. This means that fishing would occur upstream of the point where Paint River stocks are mixed with McNeil-Mikfik stocks. Where necessary to protect wild stocks, this will be done even if it means a decline in quality of the fish harvested. This objective must be clearly stated in the fishery management plan for the Paint River stocks as the economic incentives will be high to fully exploit the Paint River runs anticipated to achieve more than 1.5 million fish. It is possible that some problems associated with mixed-stock fishing can be avoided by careful selection of fish stocks for introduction into the Paint River. The Division of Commercial Fisheries has expressed their willingness to attempt to find transplant stocks that peak at different times than the McNeil River runs to avoid conflicts.

Concern 7. Enhanced salmon runs in the Paint River area will increase bear density to the point where food supplies utilized by bears during other seasons are overutilized.

If the enhancement project works as anticipated by the Cook Inlet Aquaculture Association, probably the total number of bears using the area seasonally will increase. Available evidence suggests that bear densities vary from 2.6 to 142 per 100 square miles in Alaska and that the differences reflect availability of

food, especially salmon, to bears. It is a basic principle of ecology, however, that populations of any species will increase only until they encounter a limiting factor. This factor may be food during a specific season, availability of cover, social intolerance, or some other factor. If food supply is currently limiting bear populations in this area, increasing food in the form of salmon will increase bear numbers to the point where the next limiting factor is encountered. Further population growth will be constrained by that factor.

There are few indications that increased bear densities resulting from Paint River salmon enhancement would adversely affect moose populations. Moose apparently colonized the Alaska Peninsula only in this century. Moose numbers reached a high level in the mid 1960s and have subsequently declined in many areas in a cycle that would be expected where populations are limited by availability of food and occasional severe winters. Moose are able to sustain their numbers in some portions of Game Management Unit 9 (Alaska Peninsula) even where bear populations are very dense.

Villagers from Kokhonak may be concerned about increases in the regional bear population that could lead to more conflicts with bears around the village.

Concern 8. If the lower reach of the Paint River receives sanctuary status, and fisheries enhancement is an allowed use in the sanctuary, this might result in salmon enhancement activities in the McNeil River, an activity that has not been allowed to date.

The act that established the existing sanctuary does not preclude fisheries enhancement. Previous efforts to enhance the McNeil River by adding red salmon to McNeil Lake were disapproved by the Commissioner of Fish and Game based on concerns over adverse impacts of increased commercial fishing activity on bears and bear viewing. These concerns included displacement of bears from the falls to more upstream areas. Legislation should not prohibit fisheries enhancement because circumstances might arise where the McNeil River salmon runs were destroyed and needed to be reestablished. Management plans or legislation could define the circumstances under which salmon enhancement programs within the sanctuary would be considered.

#### CONCERNS ABOUT ACTIVITIES WITHIN A LEGISLATIVELY-DESIGNATED SPECIAL USE AREA IN THE PAINT RIVER DRAINAGE

Concern 1. Improper garbage disposal or food storage procedures by personnel involved in constructing the fish ladder, lodges or other permitted activities within the special use area will attract bears, including McNeil River regulars, and condition them to associate people with food.



If improper practices are followed during the construction period, this would almost certainly occur. However, stipulations on the Land Lease permit issued by the Department of Natural Resources (DNR) for the 5-acre site around the proposed ladder are designed to preclude these problems. These stipulations mandate daily incineration of garbage, removal from site of non-burnable solid waste, fencing the construction camp and permanent cabin site to preclude brown bear entry, and building a bear-proof food storage area. These stipulations apply to construction, maintenance, and operation of the facility. In addition, the DNR permit requires that all construction workers attend a bear/human interaction orientation class presented by Fish and Game staff. Violations of permit stipulations are unlikely to occur because they could lead to termination of the lease. The management plan for any special use area must include provisions that will prevent new developments and activities from adverse conditioning of bears.

Concern 2. Bears will be attracted to the fish ladder and conflicts will result between enhancement objectives and bear fishing at the fish ladder.

The permit issued by the DNR specifies that all structures will be designed to exclude bears. The fish ladder will be enclosed by a steel grate so that salmon swimming up it will not be available to bears and so that bears can not get into the system. These design features have been adequate to prevent problems where fish ladders currently operate in areas having abundant bears such as Kodiak and Afognak Islands.

Concern 3. Bears will be attracted to the point where fish exit the ladder and will be swept over the falls or become a problem to operation of the ladder.

The top of the falls is only about 40 feet from where fish will exit the ladder. Whether or not bears are attracted to this area will at the top of the fish ladder will depend on whether fish may be caught there. This is a function of the depth of the water. With the exception of pink salmon, most salmon species do not linger long at the exit of fish ladders. However, construction plans indicate that the water at the intake to the system may be relatively shallow. The water depth where fish exit the ladder will be between 0.5 and 6.5 feet deep depending on the level of water in the river. At water depths less than 4 feet, bears may concentrate at the location where fish exit the ladder. It appears that current construction plans do not include mechanisms to prevent bears from being attracted to the point where fish exit the fish ladder. If problems develop in this area, it may be necessary to deepen the pool at the top of the ladder or to construct fences or other barriers to prevent bears from fishing in this area. Family groups may be especially vulnerable to being swept over the falls because cubs are not strong swimmers and mothers will follow their cubs.

Concern 4. After the Paint River ladder is built, bears will concentrate in the intertidal area below the ladder.

On the Fraser River on Kodiak Island, a problem developed with a fish ladder when bears concentrated at the entrance to the ladder and blocked entrance of fish into the system. The problem was corrected by adding concrete structures which physically blocked bears from approaching the entrance to the system (Lonnie White, FRED, Kodiak, pers. commun.). This problem is not expected to develop at the Paint River ladder because the entrance to the ladder by bears will be prohibited by steep cliffs and deep water. At the mouth of Akjemguiga Cove, however, bears may be attracted to fish swimming through low tide shallows in the sill zone. If this develops, significant numbers of bears may concentrate around the mouth of the bay leading to the Paint River. Such bears are very unlikely to impede progress of salmon into the ladder system. Problems may develop between fishermen and bears fishing in this sill area, however. Based on experience in McNeil Cove, problems are especially likely to develop between bears and boats that are beached at low tide. If such problems develop, they will need to be addressed through a process similar to that used for developing the existing Mikfik management plan. Conflict between bears and humans in this area is another good reason for exploring potentials for offshore anchorages at Nordyke Island or elsewhere.

Concern 5. Mining claims will be developed in the Paint River that will adversely affect salmon production in the system. Improper solid waste disposal practices around such claims will adversely condition some McNeil bears to associate humans with availability of garbage and will increase defense of life and property (DLP) kills by miners.

Exploratory drilling on a mining claim of the American Copper and Nickel Co. Inc. is scheduled for an area on Canyon Creek above Paint River Lake during summer 1991. If a mine is developed in this area it may have adverse impacts on water quality which would affect the ability of the system to support salmon that are introduced into the system. The Department of Fish and Game would have limited authority to require mitigative measures since the waterway involved is not currently an anadromous stream. The Alaska Department of Natural Resources has indicated its willingness to administratively close to oil and gas entry or mineral leasing any special-use area the legislature may designate around the Paint River. This would not affect current claims however.

If a mine is developed in the Paint River area there are risks that activities of the miners would result in increased DLP kills of bears. As noted above, it is also probable that uncontrolled activities by miners, as by other users of the area, could result in adverse conditioning of bears that use the McNeil Falls. Such a result will be difficult to avoid unless regulated

under terms of a management plan for a legislatively-designated special use area.

#### CONCERNS OF COMMERCIAL FISHERMEN, SPORT FISHERMEN, AND HUNTERS

Concern 1. Upstream enhancement activities may be constrained by regulations limiting access or development in the upper Paint River Area.

There is a falls below the lakes on the Lake Fork (northern fork) of the Paint River. Access by spawning red salmon to the lakes above this falls is necessary to establish a strong red salmon run in the Paint River drainage. A fish ladder or other enhancement may be necessary to assure passage above this falls. Enabling legislation for special area designation of the Paint River area could be worded to specify that such enhancement will be permitted if it is compatible with the objectives for the McNeil River Sanctuary. Where there are alternative ways of accomplishing the enhancement objectives, preferences should be given to approaches that do not compromise the esthetics of the area for multiple uses. An example of such an approach would be to attempt to modify the natural flow of the falls to facilitate salmon passage before resorting to artificial fish ladders.

Concern 2. Access and activities by sport fishermen and other recreational users of the Paint River area will be restricted.

Some reasonable restrictions will probably be necessary to prevent adverse impacts to the McNeil River Sanctuary. However, introducing salmon to this drainage and the certainty that this will yield new opportunities to utilize fish and game resources will yield net benefits to these recreationists even if their activities are regulated to some extent. Examples of reasonable regulations may include access permits during certain time periods or in certain areas when bear-human interactions are most likely, requirements that fishermen utilize designated camping areas that are equipped with elevated food caches, aircraft ceilings in bear concentration areas, and hunting seasons designed to avoid periods of bear concentrations.

Concern 3. Bear hunting will be closed in the area as it is in the McNeil River Sanctuary. New viewing areas may create a domino effect that would result in still more closures.

Currently, only a few sport-killed bears are taken annually in the Paint River and associated drainages (see attached table). The Alaska Board of Game will consider regulations proposed from the public or from division staff to regulate hunting opportunity deemed necessary to protect viewing opportunities at the McNeil River Sanctuary. Because bear movements are so large, some bears frequenting the McNeil River Sanctuary will be exposed to hunting regardless of how large the sanctuary is. If bear populations increase in response to an increase in salmon biomass in the

Paint River system, human use opportunities may expand without detriment to the McNeil population. The Board of Game is the appropriate forum to determine the balance between the views of different interest groups.

Concern 4. Fishermen and bears get along well at the Brooks River so there is no reason to be concerned about sportfishermen on the Paint River.

Recent studies by Barrie Gilbert of Utah State University have demonstrated that bears are affected in many ways by the large numbers of fishermen at the Brooks River. Adverse human-bear interactions are more prevalent at Brooks River and elsewhere within Katmai National Park than at McNeil. The primary reason these interactions have not been more harmful to either bears or people is because the National Park Service devotes a large amount of staff effort to controlling human behaviors in this area. The evidence from Brooks River proves the point that heavy human presence has a dramatic effect on the distribution, abundance, and behavior of bears, not the reverse.

#### DESCRIPTION OF RESEARCH DONE IN THE MCNEIL RIVER AREA.

Most forms of wildlife research require marking animals to ensure correct identification of individuals. In recognition of the preference of bear viewers to see and photograph animals unencumbered by such marks and in the absence of compelling reasons to conduct research at McNeil, the Division of Wildlife Conservation has not given permits for wildlife research requiring marking bears in the McNeil River Sanctuary since the early 1970s. Some data are routinely collected by staff stationed at the sanctuary who are able to recognize more than 60 individual bears without aid from human-applied marks. These data include information on bear interactions, abundance of bears in the sanctuary during the summer, reproductive status of recognized individuals, numbers of salmon caught by bears, and information on visitor numbers and impressions. Also, in 1990, McNeil River visitors were surveyed to estimate the economic value of their experience.

Based on the maximum number of identified individuals ever present at one time in the approximately 0.2 square mile area that can be seen from the viewing platform at McNeil Falls, maximum bear density was estimated at 450/square mile during one day in 1987. Of course, typical bear densities, even at McNeil, are lower than this. Densities at McNeil River falls are in an area of seasonal concentration and do not represent bear densities in a wider area that includes all habitats occupied by bears throughout a whole year. In such an area south of the McNeil River Sanctuary on the Pacific Ocean coast of Katmai National Park, bear densities were measured at 1.4/square mile. This is the highest density that has been recorded in Alaska studies of areas that include the whole range of habitats occupied by bears throughout the year. By comparison, bear

densities were 0.5/square mile at Black Lake near Chignik on the Alaska Peninsula. Current bear density in the wide area that includes McNeil, Paint River, and the adjacent mountains is probably intermediate between the Katmai and Black Lake densities.

Beginning in 1963, research that included marking bears was conducted at McNeil River by the Division of Wildlife Conservation. Papers from this work include Faro and Eide (1974), Glenn et al. (1976), Hessing and Aumiller (in review), and Sellers and Aumiller (in prep.). Other papers based on work elsewhere on the Alaska Peninsula include Glenn 1980, Glenn and Miller (1980), Modafferi (1984), Sellers and McNay (1984), Miller and Sellers (1990), and Sellers and Miller (1991). Behavioral research was also conducted by a team from Utah State University in the early 1970s. Publications based on this work include Egbert (1978) and Egbert and Stokes (1976).

Movement studies based on radio collared bears have not been done in the McNeil-Paint River area. The seasonal movements of bears that visit the McNeil River Sanctuary are not known in most cases. However, it is clear that some come from farther south along the coast in Katmai National Park. Two bears marked in this area during oil spill studies in spring 1989, were seen at McNeil River falls during summers of 1989 and 1990, at least 50 miles from where they were marked. At least three bears known to frequent the sanctuary have been sighted in the Kamishak River area by McNeil River staff during incidental visits. A systematic survey would probably reveal many more. Of the 60 bears marked in the sanctuary during the 1960s and 1970s, 10 were known to have been legally taken by sport hunters. Two of these were killed on the Kamishak River and two at Douglas River approximately 15 miles beyond the Kamishak River. Other marked bears were killed north of the sanctuary at Chenik or Kulik Lakes and Kakhonak Bay.

#### DESCRIPTION OF PLANNED OR POTENTIAL RESEARCH PROJECTS

Beginning in 1991, the Division of Wildlife Conservation plans to conduct annual aerial surveys of bears on the Dunuletak and Chenik Creeks, Paint River and McNeil River. These surveys will document numbers of bears utilizing these drainages before the enhancement project and any shifts that may occur during and subsequent to the enhancement. The Paint River was surveyed from the air by D. Sellers on July 24 and 28, 1989, no bears were seen.

The Division of Wildlife Conservation and the Department of Natural Resources along with an ADF&G fisheries expert intend to inspect the Paint River system during spring 1991. This inspection will help to document the types of human uses that the area can support without adverse impacts and areas that may

concentrate fish and bears, possible viewing areas, access points, and possible camping areas.

Further economic studies are under consideration to evaluate the economic benefits to Alaska of various recreational uses that may occur in the Paint River drainage following enhancement.

Additional research that would involve marking bears is being considered. One useful project would require applying visual marks to bears in the area north of the McNeil River Sanctuary during spring. If these bears appeared at the sanctuary, we would know that they came from the north and are bears that would be most susceptible to interception during subsequent years by fish in the Paint River. If these bears failed to appear at the McNeil River falls subsequent to development of the Paint River fishery, the hypothesis of interception would be supported by efforts to find these marked bears in the Paint River or other enhanced systems. Also, the baseline behavior of marked bears at the sanctuary could be documented prior to the enhancement and compared with changes that might result in the behavior of these individuals subsequent to the enhancement. Such information would be useful in making decisions about whether more or fewer activities can be permitted. Hunter kills of these marked bears would also provide information on harvest rates of bears in this system and on bear movements. Support from groups concerned with the bear viewing program at the McNeil River Sanctuary would be sought before initiating research involving marking bears in the McNeil area.

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Brown Bear Sport Harvest in the proposed sanctuary north of McNeil River State Game Sanctuary.

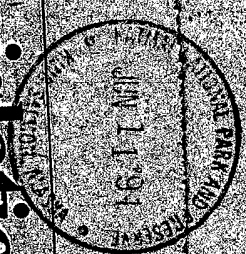
| Year                                   | Males | Females | Unk. | % Resident | Total Bears |
|--|-------|---------|------|------------|-------------|
| <u>Paint River and its tributaries</u> |       |         |      |            |             |
| 1982                                   | 3     | 1       |      | 25         | 4           |
| 1984                                   | 1     | 0       |      | 0          | 1           |
| 1988                                   | 1     | 1       |      | 0          | 2           |
| 1990                                   | 2     | 0       |      | 50         | 2           |
| <u>Amakdedori System</u>               |       |         |      |            |             |
| 1972                                   | 3     | 0       |      | 0          | 3           |
| 1975                                   | 1     | 1       |      | 0          | 2           |
| 1981                                   | 1     | 1       |      | 100        | 2           |
| 1982                                   | 0     | 1       |      | 0          | 1           |
| 1985                                   | 0     | 1       |      | 0          | 1           |
| 1987                                   | 2     | 0       |      | 50         | 2           |
| 1989                                   | 0     | 3       |      | 0          | 3           |
| 1990                                   | 1     | 0       |      | 0          | 1           |
| <u>Chenik System</u>                   |       |         |      |            |             |
| 1970                                   | 2     | 0       |      | 0          | 2           |
| 1976                                   | 0     | 2       |      | 50         | 2           |
| 1978                                   | 1     | 1       |      | 0          | 2           |
| 1980                                   | 4     | 1       | 1    | 0          | 6           |
| 1982                                   | 1     | 1       |      | 50         | 2           |
| 1983                                   | 0     | 2       |      | 0          | 2           |
| 1984                                   | 1     | 1       |      | 0          | 2           |
| 1986                                   | 1     | 0       |      | 0          | 1           |
| 1987                                   | 0     | 1       |      | 0          | 1           |
| 1988                                   | 3     | 0       |      | 0          | 3           |
| 1990                                   | 3     | 1       |      | 0          | 4           |

In the years 1970-1990 that are not noted, there was no harvest.



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# Some fear legislation will hurt, not help bears

## Sanctuary bill also creates hunting ground

by DAVID FURCH

Alaska environmentalists and Friends of McNeil River say they fear legislation designed to protect brown bears may have the opposite effect.

The sponsor, House Speaker, Ben Grasseford, D-Sitka, said the bill expanding McNeil River State Sanctuary and establishing McNeil River State Game Refuge along nearby Paint River is the first step in ensuring the bears will have a safe haven.

The Alaska Outdoor Council, a group of hunters and fishermen interested in conservation and access to public resources, calls the bill a compromise indicative of the times. Council members said the bill sets a precedent and will prompt more efforts to close public lands to people.

A first ladder is scheduled to be completed this summer, allowing salmon a chance to climb the 30-foot-high Paint River falls. Salmon can be expected to establish new spawning grounds in previously inaccessible areas.

Tony Dawson with Friends of McNeil River believes bears accustomed to feeding on salmon at McNeil River will travel a mile or so to the north to catch fish at the new site.

When the bears wander upstream into the new refuge, hunting will still be allowed.

They will be easy pickings up river in the timber. Dawson said. "When man builds some things to catch bears to another food supply, it's no better than baiting a trap. These bears are still very much in jeopardy. I think Bear's heart is in the right place, but putting lines on a map doesn't mean much. Bears can't read a map."

Grasseford contends that he had the bears' best interests at heart when he proposed the bill. It calls for adding 20,120 acres to the McNeil Sanctuary.

Dawson said 8,640 acres are along the Paint River to the north while 20,480 acres are along the shoreline bordering McNeil River to the south and east.

Friends of McNeil, the Sierra Club, The Alaska Wildlife Federation and The Wilderness Society said the new refuge containing 131,840 acres to the north and west is no protection because the Board of Game could allow hunting in the refuge. No refuge in the state is closed to hunting, and legislators decided to keep the McNeil Refuge open because they did not want to create a precedent.

According to McKie Campbell, special assistant to Department of Fish and Game Commissioner Carl Ressler.

"It may or may not be appropriate to close something," Campbell said. "It's up to the Board of Game to make that decision." The key meeting is this fall.

Heads of the environmental groups said closing the refuge would protect McNeil bears venturing in the Paint River and into tributaries where bears are likely to go for salmon.

Valerie Brown, executive director of the Alaska Wildlife Alliance, is blunt about the bill. "It doesn't do much."

Environmentalists are trying to get an injunction to stop construction of the fish ladder and are expected to make an appeal to the 9th U.S. Circuit Court of Appeals in San Francisco on Tuesday.

Sanctuary expansion and creation of the refuge will not take place until the ladder is operational, according to the bill passed on the last day of the legislative session Tuesday.

Grasseford said he thinks environmentalists are making a mistake.

"I don't give a damn if people go there to look at bears or photograph them. I did this for the bears and the fish, not for people," Grasseford said.

Without this bill the Department of Natural Resources could allow oil and gas and mineral exploration and the Department of Fish and Game could allow bear hunting. It this is not accepted, the lossers in this will be the bears.

Grasseford said his bill is the first step in protecting McNeil bears and he will introduce other legislation if necessary to keep the brown bears safe.

Existing sanctuary language was written in the 1960s and is wide open, Campbell said. There are no restrictions on oil and mineral exploration, leases and there is no listed purpose for the sanctuary, he said.

In contrast, the new law demands protection of the brown bear, Campbell said.

Fish and Game leads the passage of this bill provides increasing protection of McNeil River bears by enlarging the sanctuary, providing the buffer and allowing for permanent protection of the bears he said.



would have liked would not have gotten through the Legislature," said Campbell.

"Do the environmentalists want to face accepting this bill as protection or do they instead want to have legal action to block the effective date of the start of the bill?"

Environmental groups also fear that wording in the bill would give the Alaska Department of Natural Resources the ability to allow tourist lodges to be built within the sanctuary.

They are right, said Cindy Roberts, special assistant to Department of Natural Resources Commissioner Harold Heine. "The refuge is not closed to mineral entry," Roberts said. "And we do have the option to develop fly-in sites or lodges or whatever DNR deems fit."

"It turned out to be a pretty nifty deal for every one involved. I'm sorry, but it seems the environmentalists never will be satisfied."

Richard Bishop, lobbyist for the Alaska Outdoor Council, said the council believes the bill is a trend in the Legislature they will fight.

"It has become a trend. When a concern arises in resource management that there is a problem, their management says let's make a refuge," said Bishop. "There is shallow thinking among environmentalists that if you name something a sanctuary or refuge the problem would be solved."

He said the new refuge includes prime hunting and fishing areas which the Outdoor Council is concerned about being shut down.

Bishop admits the McNeil bears could become easy prey for hunters because they are so friendly. But he said the area can be left open to hunting and fishing and trapping and through management the bears can be protected.

"The bill sets a bad precedent for hunting and trapping," Bishop said. "This should have been left to management, not legislation."

