Permanent improvements and all-stage fish passage can be effected by the installation of this Departments Type "A" fishpass units at selected locations. The construction of a weir at point (3), estimated cost $500, the installation of 40 feet of steeppass at point (7), estimated to cost $10,000, 20 feet at point (8) at $5,000 and 30 lineal feet of steeppass at point (9) at $7,500 for a total estimated project cost of $23,000, would include all necessary work. A research project is underway on the estuary area on this stream, which would preclude any developmental work at this time. The Forest Service is a party to this research and the requirements should be well known to you.

SECOND EXAMINATION OF DOG SALMON

CREEK, 142 G, PLK INLET

SOUTHEASTERN ALASKA

On August 16, 1962, the first examination of Dog Salmon Creek was made with Ketchikan District Ranger Personnel. The notes made at that time are as follows:

> Falls listed as one mile up in stream catalog is actually ¼ mile up stream above mean high tide. Catalog also lists spawning facilities as limited. Survey records are inadequate to define past productivity. Do not recommend doing anything with sockeye here because of small lake rearing area.
>
> There is limited spawning area below falls. Clarence St. Clair of the logging company operating in the vicinity reports sockeye go into lake, pink and chum spawn below falls and coho ascend falls. Falls is in three steps.
>
> It appears to be very difficult on either high or low water levels. Upper section can be blasted, lower section blasted and 1-2 sections of denil steeppass installed at mid-section. Saddle in large builder on right (facing upstream) in middle section of falls can be blasted to accommodate steeppass. There is a natural resting pool between middle and upper section.

A second air, ground reconnaissance of Dog Salmon Creek was made on June 21 and June 22, 1963. Air reconnaissance from helicopter showed a second set of two falls and some rapids about two miles up the stream. Above these are cascades the remainder of the way to the lake. In the mile between the falls gradient appeared gentle and spawning area abundant.

The foot survey on June 22 bore out impressions obtained on air survey. Although in narrow constrictions at the lower falls, there is evidence of 3-4 foot rise in water level and extensive potholes cut in bedrock, above these falls stream widens and gradient is modified. There are gravel bars and natural flood channels. Water velocity, gravel size and other characteristics that make up a good salmon spawning environment, all appear in this stream. Because of the extensive spawning area (at least 100,000 square feet) above the falls in Dog Salmon Creek, this is probably one of the most promising of the pink and chum salmon habitat improvement projects examined to date (out of about 85). Recommend that Mr. Ziemer, Alaska Department of Fish and Game engineer, include this stream in his examination of laddering projects to be made on South Tongass this summer.

It is desirable that behavior of the salmon and their numbers and species be observed in the stream below the falls during the salmon run in September and October.

# DOG SALMON CREEK POLK INLET

Since the various examinations of Dog Salmon Creek were made (starting in 1962), some modification of the falls has been made by Kasaan District, as well as the installation of two sections of aluminum steeppass in 1967. The installation is now being evaluated. Small numbers of pink and chum salmon were observed above the falls in 1969.

We feel, however, that in spite the fact that work has been done on this system, previous examination should be recorded for the record. On August 16, 1962, the first examination of Dog Salmon Creek was made with Kasaan District Ranger personnel. The notes made at that time are as follows:

"Falls listed as one mile up in stream catalog is actually ¼ mile up stream above mean high tide. Catalog also lists spawning facilities as limited. Survey records are inadequate to define past productivity. Do not recommend doing anything with sockeye here because of small lake rearing area.

"There is limited spawning area below the falls. Clarence St. Clair of the logging company, operating in the vicinity, reports sockeye go into lake, pink and chum spawn below falls, and coho ascend falls. Falls is in three steps."

It appears to be very difficult for fish to ascend the falls on either high or low water levels. Upper section can be blasted; lower section can be blasted, and 1-2 sections of denil steeppass installed at mid-section. Saddle in large boulder on right (facing upstream) in middle section of falls can be blasted to accommodate steeppass. There is a natural resting pool between the middle and upper section.

A second air-ground reconnaissance of Dog Salmon Creek was made on June 21 and June 22, 1963. Air reconnaissance from helicopter showed a second set of two falls and some rapids about two miles up the stream. Above these are cascades the remainder of the way to the lake. In the mile between the falls, gradient appeared gentle and spawning area abundant.

A foot survey, also on June 22, bore out impressions obtained on air survey. Although in narrow constrictions at the lower falls, there is evidence of a 3-4 foot rise in water levels and extensive potholes cut in bedrock; above these falls, stream widens and gradient is modified. There are gravel bars and natural flood channels. Water velocity, gravel size, and other characteristics that make up a good salmon spawning area (at least 100,000 square feet) above the falls in Dog Salmon Creek, this is possibly

UNITED STATES GOVERNMENT

# Memorandum

U. S. Forest Service, South Tongass N. F.
Ketchikan, Alaska 99901

2620

TO : Regional Forester, R-10

DATE: April 1, 1965
Your Ref: 2/19/65

FROM : G. W. Van Gilst, Forest Supervisor, By

SUBJECT: Planning (Habitat Improvement, Dog Salmon Creek, Kasaan District)

The following plan will be followed to obtain information called for in Sheridan's preliminary reconnaisance report:

I. Number of pinks and chums spawning below falls. The Kasaan District made a survey September 24, 1964 and reported the following:

A. 600-800 salmon spawning below falls, 50% chum and 50% pink.

B. Several coho jumping into falls, none made it over.

C. Three cohos observed in first step 8 feet above base of falls. (About 6 feet from top of falls)

D. Water high and very turbulent.

E. No fish between falls and lake (no sign of fish depredations along stream banks)

F. Good spawning area above falls:

1. First half mile-small gravel 1/2" - 2"-wide riffles with occasional deep holes. Nearer to lake larger gravel.

G. Potentially a very good spawning stream.

H. Amount of salmon in creek have sufficient room to spawn below falls.

I. Local people stated creek has a good run of sockeye and steelhead. These fish do not have serious problems negotiating the falls.

J. Another observation will be made in October 1965.

II. Measure the quantity of available spawning area below and above falls. This work will be done in May 1965.

COSTS

The cost of the project was $1349.00 which was distributed as follows:

| | |
|---|---|
| Supplies | $119.00 |
| Air travel | 147.00 |
| Skiff rental | 103.00 |
| Salary | 894.00 |
| Food | 81.00 |
| Total | $1349.00 |

Several items in the above listed costs are high for this project - as follows:

1. Supplies - over one half of the dynamite and caps were not used.

2. Salary - the Kasaan trail crew (4 men) assisted on this job. A crew of this size was needed in transporting materials to the site, and sand bagging the stream, however, due to time element in drilling and the small amount of rock to be removed after each shot, the crew was given other assignments as improving the trail to the falls, clearing out debris from the stream, etc.

OBSERVATIONS

No migrating salmon were noted in the stream at the time the project was carried on, or on two subsequent visits to Dog Salmon Creek after the project was completed.

A partially eaten (eagle kill) red salmon was found near the falls on 6/29/66 and some silver fry were found in pools above the falls.

CONCLUSION

1. The diversion channel was designed to provide access over the falls primarily during periods of low stream flow. In periods of high flow much of the water will be carried over the diversion channel.

2. At the completion of the project, it was the opinion of Dale Philman of the ADF&G that the falls could be negotiated by pink and chum salmon. It was felt that the most difficult portion will be the bottom of the natural U-shaped trench. Photo #3.

3. More observations will be necessary, particularly at lowest stream flow to determine if salmon are stranded below the falls.

Photographic coverage of the project is attached.

David McKee

Kasaan Ranger District, Ketchikan, Alaska

2630

Files

August 11, 1966

David D. Ruff, Forester

Habitat (project completion report - Dog Salmon Improvement Project)

Stream improvement work was completed on 7/1/66 at the falls 1/4 mile upstream on Dog Salmon Creek, 142 G, Polk Inlet. (See attached map). South Tongass engineering, Alaska Department of Fish & Game, and Kasaan Ranger District personnel assisted in the project which culminated several years of study and observations at this site.

PAST HISTORY

The initial examination of the Dog Salmon Creek falls was made on August 16, 1962 by Bill Sheridan, Regional Fish Biologist and Kasaan District personnel. At that time it was determined that the falls constituted a hindrance to salmon migrations at various stages of stream flow.

A second, air, ground reconnaissance was made at Dog Salmon Creek on 6/21-22/63 by Bill Sheridan. The stream was felt to hold great promise for a pink and chum salmon habitat improvement project, and a request was made to have Mr. Gil Ziemer, ADF&G engineer look over the site.

On 8/28/63 Mr. Ziemer examined the falls and proposed two possible treatments as follows: (1) installation of 30 lineal feet of steep-pass laddering, or (2) diverting all of the water to a deeply incised U sloped trench in the upper part of the falls.

A thorough examination of Dog Salmon Creek was made by personnel of the Kasaan District on 9/24/64 to determine the number of salmon spawning above the falls and the quantity and quality of spawning gravel in upper Dog Salmon Creek.

A second and comprehensive examination of quality and quantity of spawning gravels in Dog Salmon Creek was completed on 4/13-14/65 by Kasaan District personnel.

Several observations on spawning salmon were made during the summer and fall of 1965, however, no salmon were noted above the falls.

REPLY TO: 2620 Planning

October 7, 1969

SUBJECT: Stream survey report from Ketchikan District

TO: Forest Supervisor, South Tongass N.F.

Thank you for the stream survey data for Dog Salmon, Aiken, and Ratz Creeks. Such evaluations are just as important as the initial construction of such projects.

With regard to Aiken Creek, dolly varden must be able to routinely ascend the falls each year, because this species does not usually remain in a stream over the summer where there is no access to a lake. Ordinarily, mature dolly varden leave a lake in the spring, enter saltwater, where they remain for awhile, then enter spawning streams in the fall. They usually then overwinter in a lake. It is possible that additional coho salmon entered the system after the date of the survey, September 9. The rearing area and not available spawning area is the main factor limiting production of coho salmon above the fall. In estimating a coho benefit cost ratio for the area above the fall, the rearing area should be used. Possibly coho do not have difficulty ascending the fall, and the system is supporting all the coho it can without additional improvement. Estimation of a benefit cost ratio for installation of steeppasses to allow pinks to ascend the fall would be based upon available spawning area as outlined in the benefit cost booklet.

The observation of 140 pink salmon above the fall in Dog Salmon Creek certainly indicates that we may now have a foundation for an upstream run. Coho salmon may go all the way into the small lake and its inlets, if they can make it over all of the falls. According to a logging operator (I think it was Sinclair), who was in the area a few years ago, a small sockeye salmon run went all the way to the lake. Possibly the best way to get the largest number of pinks and chums over the fall into the upstream area would be to curtail fishing intensity in Polk Inlet and Skowl Arm. Perhaps you could consult with Carl Rosier regarding this possibility.

We agree with Don Sweney regarding a benefit cost analysis on laddering the fall in upper Ratz Creek.

William Sheridan
Fishery Biologist

cc: Roy Rickey, ADF&G
Sheridan

BSheridan:pm