

# Mountain Village Fall Season Gillnet Test Fishery

## R&M# 10-10

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**Project Partners:** USFWS and Asacarsarmiut Tribal Council

### 1. Introduction:

#### *Objectives:*

The objective of the project is to estimate the run timing, age composition and relative abundance of fall chum and coho salmon in the Yukon River near Mountain Village.

**2. Study Area:** Yukon River near Mountain Village, approximately river mile 87. Test drift gillnet sites are approximately 3 to 4 miles upstream of the village.

### 3. Methods

All project participants are provided with the Operational Procedures Manual (Appendix A). The manual is written by ADF&G, and updated annually with input from participants.

On the first day of the project (July 17, 2010), Kyle Shumann of ADF&G traveled to Mountain Village to train the test fish crew. Kyle was accompanied by Yukon Delta Fisheries Development Association intern, Henry Uisok.

The Mountain Village test fishermen used a 25 fathom salmon gillnet with 5 and 7/8 inch mesh and 35 meshes deep. The nets are equipped with buoys marked "Test Fish" attached at each end of the net.

The fishermen were provided with a global positioning system (GPS) device and a hand-held thermometer for recording air and water temperature. A log book with data forms, a drift schedule, and supplies for age-sex-length (ASL) sampling were also provided.

Test fishermen departed Mountain Village each test day with enough time to arrive at the first test drift site by approximately 12:00 noon. Fishermen recorded daily climate conditions at the time of test fishing. The weather and water conditions were recorded by keeping track of the sky conditions, precipitation, wind direction, wind speed, and air and water temperature.

The test fishery consists of three drifts. Figure 1 in Appendix A denotes these three locations as

A1, A2 and A3. One drift was conducted at each of three different sites. Drifts are intended to last about 5 to 20 minutes shorter time if catch rates are high. Efforts were made to fish the designated sites as consistently as possible in order to keep data comparable within and between years. For each drift, the time was noted for the start and completion of net deployment, as well as the start and completion of net retrieval.

Age, sex and length sampling was taken from the salmon catch, with a daily goal of 40 fish to be sampled, all in accordance with the Operational Procedures Manual (Appendix A). The age of the salmon were determined by taking scale samples and are attached to scale gum cards. New scale gum cards are used daily to prevent loss or damage during subsequent sampling. The fish's sex was determined by cutting into the fish's abdomen and looking for ovaries or testes. The length of each fish was measured from the middle of the eye to the fork in the tail. At the end of the season, samples were sent to ADF&G for scale reading to determine age.

After all samples are taken, the fish are made available to households in the community for subsistence use.

Daily reports were faxed to ADF&G in Emmonak, or relayed by telephone if fax was unavailable.

After the season is over, ADF&G provides BSFA with Excel spreadsheets that contain all the catch and CPUE information for the season. This information is included as Tables 1 and 2 and Figures 1-3.

CPUE is calculated as described in the Operational Procedures Manual (Appendix A):

The deployment, fishing, and retrieval of the drift gillnets will be recorded for each sampling event. CPUE will be calculated using fish per 100 fathom-hours:

$$CPUE = [((100 \text{ fathom} * 60 \text{ minutes}) * (n))/(L*T)]$$

where:

$n$  = number of fish caught,  
 $L$  = length of net in fathoms  
 $T$  = the time the net fished

The time the net fished is calculated using:

$$T = ((\text{set time} + \text{retrieval time})/2) + \text{soak time}$$

The amount of time the gillnet is soaked varies. An independent CPUE calculation is made for each drift fished. This value is summed with CPUE calculations from the same day and gear type and then averaged to obtain a CPUE for the day and gear type:

$$\text{Daily CPUE} = ((\sum \text{CPUE})/n)$$

where:

$n$  = number of sets for the given day and gear type.

#### 4. Results

The 2010 fall season project operated for a total of 63 days from July 18 to September 19. Five local fishermen from Mountain Village were hired to perform the testing. Their names are Elmer Beans, Mathew S. Alexie, Lee Aguchak, Richard Kokrine and Shaun Agwiak. On September 12 there were high winds so Matthew and Lee were unable to perform the test fishing. Other than that the test fishing project had a successful season in Mountain Village.

Table 1 and Figures 1 and 2 summarize 2010 daily and cumulative catch and CPUE for fall chum and coho salmon, and provide comparisons with the project's historical average. In 2010, 502 fall chum salmon were caught, with a cumulative CPUE of 1,919.53. This compares to the 1997-2009 average catch of 302 and cumulative CPUE of 2,292.72. A total of 407 coho salmon were caught with a cumulative CPUE of 1,648.91, compared to the 1995-2009 average of 320 fish and cumulative CPUE of 1,195.03. All of the fish picked from the nets that were a part of the study were distributed to local residents for their subsistence use.

Table 2 summarizes daily climate observations recorded by test fish crews in 2010 and Figure 3 shows 2010 air and water temperature observations, graphically.

Test fish crews attempted to collect ASL samples from 439 chum salmon, but due to a variety of problems such as failing to record fish sex and scale errors, ADF&G was only able to utilize 248 fall chum salmon samples (DuBois, L. and Borba, B, personal communication and Schumann and DuBois, 2011). From scale readings, the age structure in 2010 was 12.9%, 60.1%, 26.2%, and 0.8% for ages 0.2, 0.3, 0.4 and 0.5 respectively. Females represented 53.6% of the samples.

One hundred seventy five coho salmon samples were useable for age and sex composition. In 2010, scale readings indicated 1.1%, 93.1% and 5.7% for ages 1.1, 2.1, and 3.1 respectively. Females represented 47.4% of these samples.

**c. Dates of Operations:** July17 to September 19, 2010

**d. Any Problems or Issues:**

The most significant problem with the 2010 project was that a number of the ASL samples were unusable. While there are usually a few samples that end up being discarded due to minor errors, a significant number of the samples collected failed to record sex information, or were otherwise incomplete. In the future, better training of the test fishermen and perhaps periodic checks on sample quality could be made to minimize the loss due to sampling errors.

Weather hampered test fishing efforts on five days; no test fishing occurred on August 8, 14 and 15 and September 8 and 12.

**References:**

Schumann, K., and L. DuBois. 2011. Salmon age and sex composition and mean lengths for the Yukon River area, 2010. Alaska Department of Fish and Game, Fishery Data Series No. 11-48, Anchorage <http://www.adfg.alaska.gov/FedAidPDFs/FDS11-48.pdf>

Alaska Department of Fish and Game. 2011. Bonnie Borba, personal communication. Excel spreadsheet containing test fish data from 2010.

Alaska Department of Fish and Game. 2011. OPERATIONAL PROCEDURES MANUAL, Mountain Village drift gillnet salmon test fishery, fall season, 2010. (Attached as Appendix A)



**Table 2.** Daily climatological conditions at the time of test fishing, Mountain Village, Yukon Area, 2010.

| Date   | Time         | Sky <sup>a</sup> | Precipitation <sup>b</sup> | Wind Direction | Wind Speed <sup>c</sup> | Air Temperature (°C) | Water Temperature (°C) |
|--------|--------------|------------------|----------------------------|----------------|-------------------------|----------------------|------------------------|
| 17-Jul |              |                  |                            |                |                         |                      |                        |
| 18-Jul | 12:15        | 4                | A                          | S              | 1                       | 18                   | 15                     |
| 19-Jul | 15:23        | 4                | B                          | S1             | 1                       | 12                   | 17                     |
| 20-Jul | 12:12        | 4                | B                          | S1             | 1                       | 13                   | 17                     |
| 21-Jul | 12:11        | 4                | A                          | SW1            | 1                       | 15                   | 17                     |
| 22-Jul | 12:11        | 4                | A                          | SW1            | 1                       | 10                   | 16                     |
| 23-Jul | 12:14        | 4                | B                          | NW1            | 1                       | 11                   | 16                     |
| 24-Jul | 12:17        | 4                | A                          | S              | 1                       | 12                   | 16                     |
| 25-Jul | 12:25        | 4                | B                          | NE             | 1                       | 11                   | 15                     |
| 26-Jul | 12:15        | 3                | A                          | S              | 1                       | 13                   | 16                     |
| 27-Jul | 12:15        | 4                | C                          | S              | 2                       | 11                   | 16                     |
| 28-Jul | 12:32        | 4                | C                          | SE             | 2                       | 12                   | 14                     |
| 29-Jul | 12:10        | 4                | B                          | E              | 1                       | 12                   | 15                     |
| 30-Jul | 12:27        | 3                | A                          | NE             | 2                       | 15                   | 15                     |
| 31-Jul | 12:26        | 2                | A                          | NE             | 1                       | 22                   | 16                     |
| 1-Aug  | 12:15        | 3                | A                          | E              | 1                       | 20                   | 15                     |
| 2-Aug  | 12:00        | 3                | A                          | W              | 1                       | 20                   | 16                     |
| 3-Aug  | 14:30        | 2                | A                          | S              | 1                       | 19                   | 17                     |
| 4-Aug  | 12:00        | 3                | A                          | SW             | 1                       | 18                   | 16                     |
| 5-Aug  | 12:05        | 3                | A                          | S              | 3                       | 15                   | 18                     |
| 6-Aug  | 12:05        | 4                | B                          | S              | 1                       | 14                   | 18                     |
| 7-Aug  | 12:12        | 3                | A                          | SW             | 1                       | 14                   | 18                     |
| 8-Aug  | <sup>d</sup> |                  |                            |                |                         |                      |                        |
| 9-Aug  | 12:00        | 4                | B                          | SE             | 4                       | 13                   | 17                     |
| 10-Aug | 12:00        | 4                | C                          | SE             | 2                       | 12                   | 16                     |
| 11-Aug | 12:00        | 4                | B                          | SW             | 2                       | 12                   | 15                     |
| 12-Aug | 12:05        | 4                | B                          | SE             | 2                       | 13                   | 16                     |
| 13-Aug | 12:00        | 2                | B                          | E              | 1                       | 10                   | 16                     |
| 14-Aug | <sup>d</sup> |                  |                            |                |                         |                      |                        |
| 15-Aug | <sup>d</sup> |                  |                            |                |                         |                      |                        |
| 16-Aug | 12:00        | 4                | B                          | E              | 1                       | 14                   | 16                     |
| 17-Aug | 12:08        | 3                | B                          | W              | 2                       | 12                   | 18                     |
| 18-Aug | 12:15        | 3                | A                          | W              | 1                       | 10                   | 15                     |
| 19-Aug | 12:05        | 3                | A                          | E              | 1                       | 10                   | 15                     |
| 20-Aug | 12:20        | 3                | A                          | E              | 1                       | 13                   | 15                     |
| 21-Aug | 12:15        | 2                | A                          | E              | 1                       | 15                   | 16                     |
| 22-Aug | 12:04        | 4                | B                          | NW             | 2                       | 12                   | 16                     |
| 23-Aug | 12:07        | 3                | A                          | W              | 1                       | 14                   | 16                     |
| 24-Aug | 12:26        | 3                | A                          | SW             | 1                       | 10                   | 15                     |
| 25-Aug | 12:17        | 3                | A                          | SW             | 1                       | 10                   | 15                     |
| 26-Aug | 15:45        | 4                | A                          | SW             | 2                       | 14                   | 15                     |
| 27-Aug | 12:13        | 4                | B                          | SW             | 2                       | 14                   | 15                     |
| 28-Aug | 12:13        | 4                | B                          | SW             | 1                       | 10                   | 15                     |
| 29-Aug | 12:00        | 4                | B                          | E              | 1                       | 10                   | 14                     |
| 30-Aug | 12:05        | 3                | D                          | SSW            | 1                       | 11                   | 14                     |
| 31-Aug | 12:05        | 3                | D                          | SSW            | 3                       | 11                   | 14                     |
| 1-Sep  | 11:00        | 4                | A                          | S              | 3                       | 11                   | 14                     |
| 2-Sep  | 12:00        | 4                | C                          | S              | 3                       | 12                   | 14                     |
| 3-Sep  | 12:00        | 5                | C                          | SE             | 2                       | 14                   | 14                     |
| 4-Sep  | 12:00        | 4                | C                          | SE             | 2                       | 14                   | 14                     |
| 5-Sep  | 13:07        | 4                | B                          | SW             | 2                       | 14                   | 13                     |
| 6-Sep  | 12:05        | 4                | B                          | SE             | 3                       | 14                   | 13                     |
| 7-Sep  | 12:00        | 4                | C                          | S              | 3                       | 14                   | 13                     |
| 8-Sep  | <sup>e</sup> |                  |                            |                |                         |                      |                        |
| 9-Sep  | 12:00        | 4                | A                          | -              | 0                       | 14                   | 12                     |
| 10-Sep | 12:00        | 2                | A                          | -              | 0                       | 12                   | 12                     |
| 11-Sep | 12:00        | 0                | A                          | S              | 1                       | 12                   | 12                     |
| 12-Sep | <sup>f</sup> |                  |                            |                |                         |                      |                        |
| 13-Sep | 15:00        | 3                | A                          | SSE            | 3                       | 12                   | 12                     |
| 14-Sep | 12:10        | 4                | A                          | SSE            | 2                       | 11                   | 13                     |
| 15-Sep | 12:00        | 1                | A                          | SSE            | 1                       | 15                   | 12                     |
| 16-Sep | 12:00        | 1                | A                          | E              | 1                       | 12                   | 13                     |
| 17-Sep | 12:05        | 1                | A                          | -              | 0                       | 15                   | 13                     |
| 18-Sep | 11:30        | 2                | A                          | SSE            | 2                       | 13                   | 12                     |
| 19-Sep | 11:50        | 1                | A                          | SSE            | 2                       | 13                   | 12                     |

<sup>a</sup> Sky codes: 0=No observation, 1=Clear and visibility unlimited, 2=Cloud cover >50%, 3=Cloud cover >50%, 4=Complete overcast, 5=Thick fog.

<sup>b</sup> Precipitation codes: A=None, B=Intermittent, C=Continuous.

<sup>c</sup> Wind codes: 0=Calm, 1=1-10 mph, 2=11-20 mph, 3=21-30 mph, 4=over 30 mph.

<sup>d</sup> Did not fish due to weather.

<sup>e</sup> Did not fish due to commercial.

<sup>f</sup> Did not fish -changed fishermen.

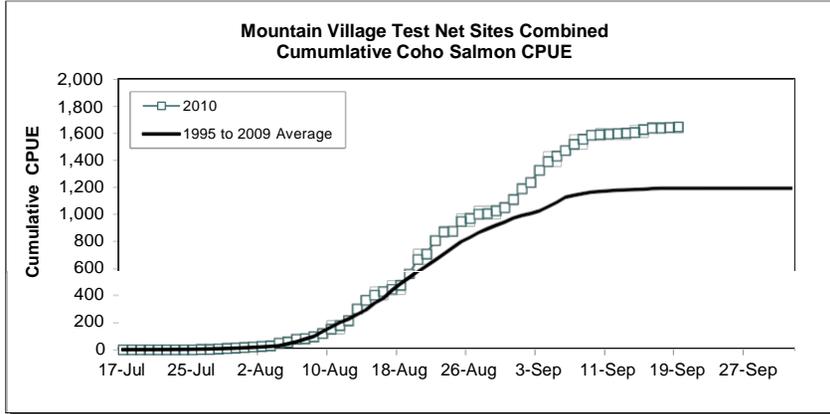
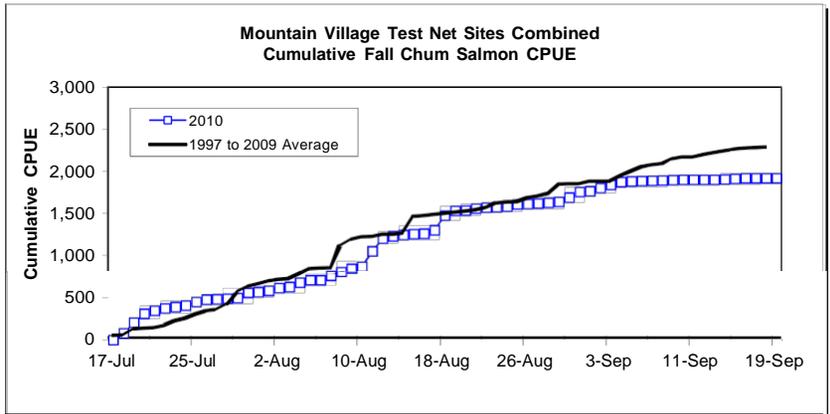
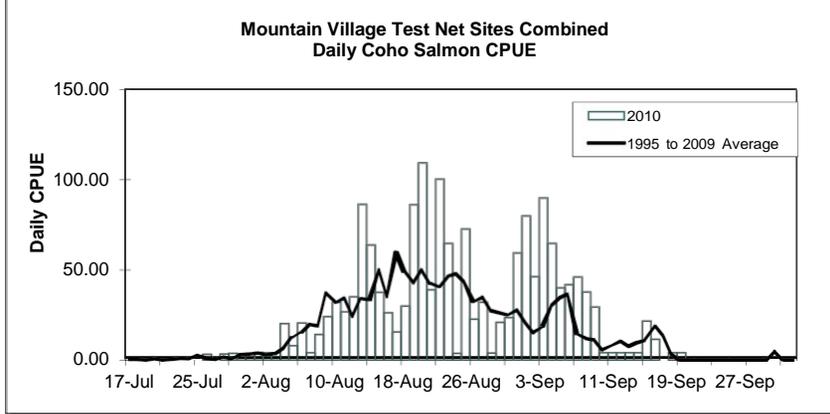
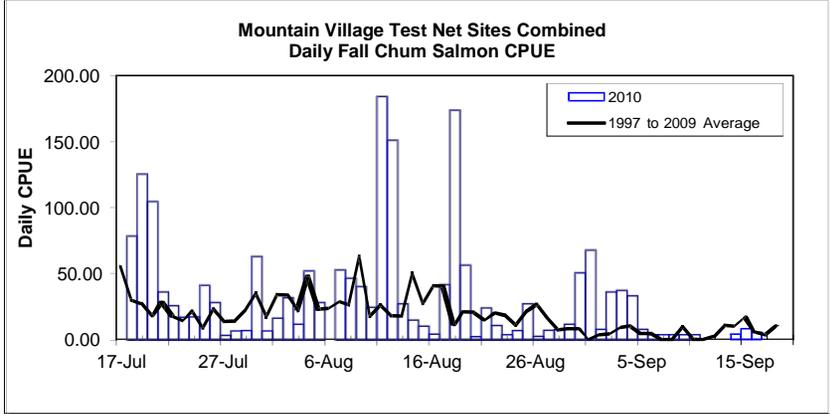
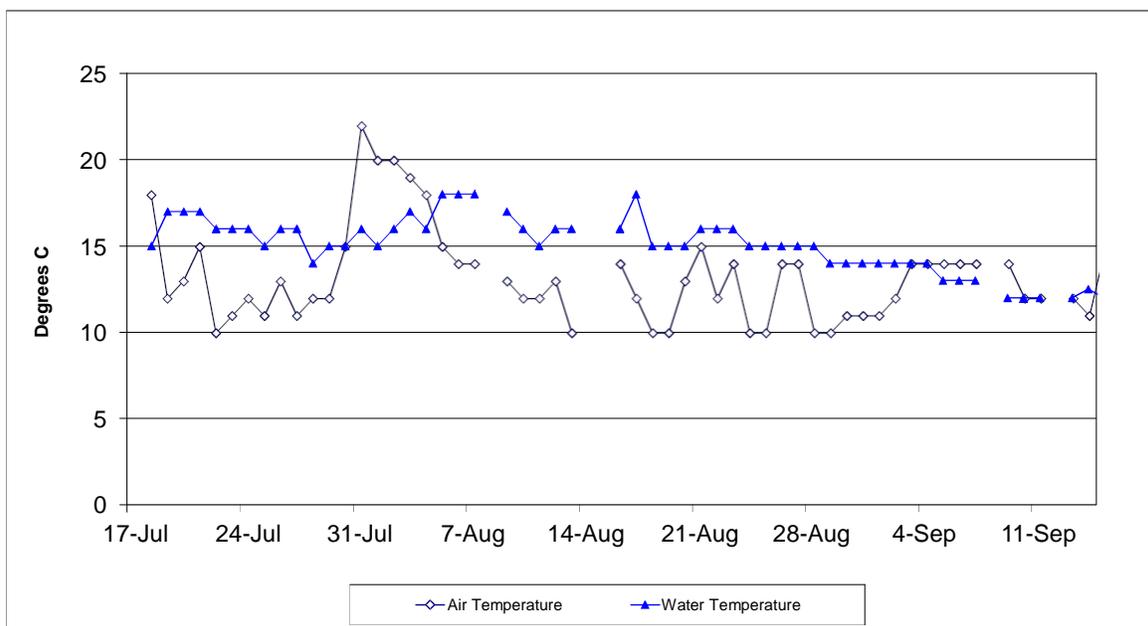


Figure 1. Historical fall chum salmon daily and cumulative catch per unit effort (CPUE), drift net test fishery, located near the community of Mountain Village, 1997 to 2009 average compared to 2010.

Figure 2. Historical coho salmon daily and cumulative catch per unit effort (CPUE), drift net fishery, located near the community of Mountain Village, 1997 to 2009 average compared to 2010.



**Figure 3.** Air and water temperatures collected at the Mountain Village drift gillnet test fishery site, Yukon Area, 2010.

## **APPENDIX A**

# **Operational Procedures Manual**

# **OPERATIONAL PROCEDURES MANUAL**

## **MOUNTAIN VILLAGE DRIFT GILLNET SALMON TEST FISHERY FALL SEASON 2010**

A Joint Project  
with

Asa'carsarmiut Traditional Council  
PO Box 32249  
Mountain Village, Alaska 99632  
(907) 591-2814  
Fax (907) 591-2811

Bering Sea Fishermen's Association  
110 W 15<sup>th</sup> Ave, Unit A  
Anchorage, Alaska 99501  
(907) 279-6519

and

Alaska Department of Fish and Game  
PO Box 127  
Emmonak, Alaska 99581  
(907) 949-1320  
Fax (907) 949-1830

Fairbanks ADF&G Office  
1300 College Road  
Fairbanks, Alaska 99701  
(907) 459-7274  
Fax (907) 459-7271

## **MOUNTAIN VILLAGE DRIFT GILLNET SALMON TEST FISHERY FALL SEASON 2010**

**Location:** Yukon River near Mountain Village, approximately rivermile 87. Test drift gillnet sites are approximately 3 to 4 miles upstream of the village (Figure 1).

**Personnel:** Contract test fishermen from Mountain Village with project administration by Tammy Aguchak of the Asa'carsarmiut Traditional Council (ATC); Project assistance, management, and training provided by Jeff Estensen (fall season manager) and Mick Leach (scale collection) from the Alaska Department of Fish and Game (ADF&G).

**Time Table:** The Mountain Village test fishery is to operate from approximately 17 July to 17 September 2010.

**Funding Sources:** USFWS Yukon Treaty Implementation Research and Management Fund \$22,043.75. Project number RM 10-10. Administered by BSFA.

### **Introduction**

The Mountain Village Drift Gillnet Salmon Test Fishery (MVTF) has operated since 1995. A limited analysis of the results has concluded that the project does provide a useful measure of run timing and, to a lesser extent, relative abundance between and within years. The MVTF results correlated somewhat with the Lower Yukon River Set Gillnet Test Fishery located at rivermile 24 near the mouth of the Yukon River. Since 2001 the Lower Yukon River test fishing project was changed over from set gillnets to drift gillnet fishing to improve the correlation. Additionally, the MVTF results typically correlate well with the passage estimates provided by the Pilot Station sonar, located 135 miles upstream

In 2010, the intent of the MVTF will be to operate from approximately 17 July through 17 September. The same drift gillnet sites used in the previous years (sites A1-A3) will be used in 2010 (Figure 1). The daily MVTF catch data will be converted to a catch per unit effort (CPUE) index, which can be compared to the prior years' database, as well as between other monitoring projects in the same year. The MVTF results may be considered by the area manager, along with other sources of information, for inseason management of the subsistence and commercial fisheries. Additionally, a scale sampling program will continue to obtain age composition of fall chum and coho salmon caught in the test fishery.

## **Objectives**

The objective of the project is to estimate the run timing, age composition, and relative abundance of fall chum and coho salmon in the Yukon River near Mountain Village.

### **Participant's Responsibilities and Expectations**

#### **Asa'carsarmiut Traditional Council (ATC):**

- Recruit, hire, and pay contract test fishermen.
- Supervise test fishermen to assure that the Operational Procedures Manual is being followed.
- Transmit daily test fish results provided by contract test fishermen to ADF&G. If the fax is not available, drift fishing times and catch data must be dictated over the phone on a daily basis for timely use in fisheries management.

#### **Bering Sea Fishermen's Association (BSFA):**

- Provide funding from the US portion of the Research and Management fund to pay contract fishermen's salaries and ATC administrative costs.
- Assist in training contract test fishermen.
- Produce a final project report on the results of the test fishery for the funding source.

#### **Alaska Department of Fish and Game (ADF&G):**

- Provide notebook with data sheets to ATC.
- Receive results of the test fishery on a daily basis.
- Calculate daily and cumulative CPUE for the test fishery.
- Compare MVTF results with other run strength and timing information.
- Provide feedback of the project results to the test fishermen, ATC, and BSFA.
- Assist in training contract test fishermen.

#### **Contract Test Fishermen:**

- Provide a boat, outboard motor, fuel, motor oil, oars, first aid kit, repair tools, and other necessary equipment to effectively operate the boat and deploy the drift test fishing gear.
- Operate the test drift gillnet fishery in accordance with the Operational Procedures Manual and directives from ATC and ADF&G.
- Keep accurate records on weather conditions, daily catch results for each drift, and dispersal of the harvest. Form is referred to as Table 1.
- Collect age-sex-length data. Information recorded on ASL sheets (pink bubble forms).
- Have nets mended as necessary.
- Work with ATC staff to ensure that daily results are transmitted to ADF&G in

Emmonak (FAX 907-949-1830) by 5:00 p.m. each day or the Fairbanks office when directed (FAX 907-457-7271). If the fax is not available, drift fishing times and catch data must be dictated over the phone to ADF&G in Emmonak (907-949-1320) or Fairbanks (907)459-7293 on a daily basis for timely use in management.

## **Methods**

### **Gear:**

The Mountain Village Test Fishery will use a 25 fathom salmon gillnet with 5 and 7/8 inch mesh and 35 meshes deep. The net shall be equipped with two buoys with the words “Test Fish” painted on them.

### **Field Procedures:**

The test fish crew should meet at 11:15 a.m. each day to prepare the boat and gear. Test fishermen should depart Mountain Village with enough time to arrive at the first test drift site by 12:00 noon. Gas tanks should be filled earlier in the day or at the end of the previous day’s test fish operation. The test fish boat should be outfitted with the following equipment:

- 25-fathom drift gillnet with buoys marked with the words “Test Fish.”
- Boat should be marked with a sign “Test Fish.”
- Sufficient gas and oil to conduct that day’s test fishery plus extra gas for a minimum of an hour of running.
- Tools for emergency repairs.
- A data log book with log sheets and drift schedule.
- A thermometer.
- Scale sampling equipment (scale gum cards, tweezers, tape measure, wax paper, acetates, sample notebook).
- Float coats or life vests are to be worn at all times while in the boat.
- One or two oars.
- First aid kit.

### **Test Fishing Drifts:**

The test fishery consists of three drifts. One drift is to be conducted at each of three different sites (Figure 1). Efforts should be made to fish the designated sites as consistently as possible. Keeping the sites, net size, and time of fishing consistent helps make the data comparable within and between years.

At approximately 12:00 noon each day, the first of the three drifts should be conducted. Each drift will last 5 to 20 minutes. Drifts should last 5 to 10 minutes when catch rates

are high. The distance covered by the drift will vary depending on the time in the water as well as water and wind conditions.

Any problems encountered during the drift should be noted in the logbook. Problems may include snags, net saturation (extremely high catch rate), and alteration of the drift pattern because of conflicts with other nets, drift, etc. Fish should be counted and then released if they are lively and netted only in the mouth. Any salmon that are netted in the gills should be retained. Record the total number of salmon caught (catch), the number kept (harvest), and the number released alive by species.

During the first drift, information on environmental factors should be taken (cloud cover, precipitation, wind speed and direction, and air and water temperature).

Nets should always be retrieved as quickly as possible. Slow retrieval of the test net affects the catch rate, referred to as the catch per unit effort (CPUE). If possible, pick fish from the web while retrieving the net. At times of high abundance, it is best to pull the entire net into the boat prior to removing the fish from the web. If it is thought that the catch rate will be high on a given day, test fishermen should seek a third person to assist with the operation.

Test drifts at sites 2 and 3 should be performed in a similar manner to the first drift, and recorded on the daily log sheet. Site location numbers do not change even if fished in a different order. Drift numbers are consecutive throughout the season.

If a commercial fishing period is announced for District 2 that will overlap with the daily test-fishing period, test fishing can continue to be conducted only if the following conditions are met:

1. The contract test fisherman or his crewmember possesses a valid CFEC permit for the lower Yukon Area, and the non-permit holder on the boat possesses a valid State of Alaska fishing crewmember license.
2. The three test drifts are conducted in the same manner as outlined in this manual. The same 25-fathom drift gillnet should be used. All salmon harvested during the commercial salmon fishing period in the test drifts may be sold on the individual's CFEC permit.
3. The contract test fishermen and his crewmember abide by all applicable subsistence and commercial regulations.
4. The fact that test/commercial fishing occurred should be noted in the comments section of the daily data sheet.

If the above conditions are not met on days with a commercial fishing period, test fishing will not be conducted that day and must be noted in the log book and data sheets.

## Catch Sampling and Delivery of the Harvest:

After the three drifts are completed, the test fish crew should immediately return to Mountain Village to sample and deliver the catch. Salmon should first be sampled for gender and length while collecting scales for aging (age-sex-length sampling) and then made available for local subsistence use. The Asa'carsarmiut Traditional Council will help publicize the availability of the fish. Test fishermen should log the delivery (bottom section of Table 1) and make note of the dispersal of the fish as kept by test fishermen for subsistence use or given away to other households for subsistence use.

## Sampling Goals:

Sample up to 40 fall chum salmon per day for each day fished. On days when the catch is less than 40 fall chum salmon, sample all fall chum salmon harvested. When the catch is greater than 40, randomly sample only 40 out of the total catch.

**Sampling Procedures (Refer to sampling tab in notebook for more specific information. Figures in this section correspond to figures in sampling procedures manual):**

Complete before fish are distributed to local subsistence users:

1. Fill out the information for that day in the scale sampling data notebook (rite-in-rain).
2. Fill out information on front of scale gum card (be careful not to get the cards wet as they will stick together). A new scale gum card should be used everyday regardless of the number of scales taken to prevent them from getting lost or damaged during subsequent sampling.
2. Determine whether the salmon is a male or female and put either M (male) or F (female) in the Sex column in the sampling data notebook.
3. Measure the salmon from the middle of the eye to the fork in the tail (Figure 1) and record this in the Length column in the notebook. Measure to the nearest 0 or 5 mm (a 573 mm measurement should be rounded to 570 or 575 mm, whichever it is closest to). **All lengths should end in either 0 or 5.**
4. Take scales from each fish (1 scale per chum salmon, 3 scales per coho salmon) from the preferred area (Figure 1) and attach scale(s) to the gummed scale card corresponding to the number of the sample (i.e. Scale #1 should be put directly on the 1 printed on the gum card, scale #2 on 2 and so on). **Important: the side of the scale facing up on the card should be the side of the scale that is facing outward on the fish. Try to orientate each scale on the card in the same direction. For orientation purposes note that the outside surface has texture while the inside is smooth.**
5. If genetic sampling is requested, conduct samples according to instructions from the biologist.
6. Once sampling of the daily catch is done, put a piece of waxed paper over the side of the gum card with the scales stored pressed flat and in a safe place until the cards can be sent to Emmonak or Anchorage for aging.

**Office Procedures:**

Assignments to be completed after the harvest is delivered:

1. Test fishermen shall transfer the information from the field notebooks to the Daily Test Fish Reporting Log and Age Length (AL) Forms (Table 1). Data should be transferred to the back up books each day and sex and length information should be filled in on the pink bubble forms (No. 2 lead pencil). If supplies of AL forms run short, record the information on daily scale sampling data log provided in Table 2. It is the test fishermen's responsibility to ensure that the climatologic, drift gillnet data, fishing time, and fish distribution portions of the daily log sheet and the daily scale sample log sheet are transferred accurately.
2. Test fishermen must submit the day's test fish results to ATC staff.
3. ATC staff compiles data collected for that day's test fishery and ensures that the forms are filled out correctly. ATC staff reports the results to ADF&G (Emmonak office (907) 949-1320, FAX (907) 949-1830).

**Interpreting the Mountain Village Test Fish Index:**

Calculating the daily CPUE for the Mountain Village Test Fishery:

|  |  |
|--|--|
| Number of Fathoms = 1<br>Start Net Out = 2<br>Net Full Out = 3<br>Start Net In = 4<br>Net Full In = 5<br>Mean Fishing Time = 6 | $\text{Mean Fishing Time} = (4 - 3) + \frac{(3 - 2) + (5 - 4)}{2}$ $\text{Index} = \frac{(6000) * (\text{Number of Fish})}{(6) * (1)}$ |
|--|--|

The deployment, fishing, and retrieval of the drift gillnets will be recorded for each sampling event. CPUE will be calculated using fish per 100 fathom-hours:

$$\text{CPUE} = [((100 \text{ fathom} * 60 \text{ minutes}) * (n))/(L*T)]$$

where:

- n*= number of fish caught,
- L*= length of net in fathoms
- T*= the time the net fished

The time the net fished is calculated using:

$$T = ([(\text{set time} + \text{retrieval time})/2] + \text{soak time})$$

The amount of time the gillnet is soaked varies. An independent CPUE calculation is made for each drift fished. This value is summed with CPUE calculations from the same day and gear type and then averaged to obtain a CPUE for the day and gear type:

$$\text{Daily CPUE} = ((\sum \text{CPUE})/n)$$

where:

$n$ =number of sets for the given day and gear type.

The 2010 Mountain Village Drift Gillnet Test Fishery will continue to collect information to determine salmon timing and relative abundance. Daily CPUE can be compared within the year to provide timing information. Additionally, daily CPUE and cumulative CPUE can be compared to previous years to provide an estimate on relative salmon abundance. The degree to which this project correlates with other projects will continue to be monitored.

Using the test fishery as a management tool is not as simple as it may appear. Numerous variables such as wind, water level, other fishermen fishing in the vicinity, and debris can influence the effectiveness of the gear used to catch fish. Also, catchability changes from year to year and within a season.

### **Safety**

- **If it is too rough, do not go fishing.**
- Do not go test fishing alone. If a crewmember is sick, get another crewmember to fill in.
- Wear float coats or floatation vests at all times when in the boat.
- Operate the test fish boat and gear in a safe and responsible manner.

### **Post Season Reporting:**

Following conclusion of the test fishery field season, the Project Leader will write a report on the test fish results.

### **Consultation and Public Support:**

The 2010 Mountain Village Drift Gillnet Test Fishery will be modeled based on the successfully operated project operated since 1995. This project is supported by the residents of Mountain Village and provides valuable information used in the management of the Yukon River fisheries.

Scale samples will be forwarded to Emmonak ADF&G office for inseason aging by either mailing it or sending it on a plane to Emmonak with the Emmonak ADF&Gs address (located on the cover of this document) on the cover of the package.

At the end of the season all age data should be mailed directly to the ADF&G Anchorage address below:

Alaska Department of Fish and Game

Division of Commercial Fisheries  
c/o Larry Dubois  
333 Raspberry Road  
Anchorage, AK 99518-1599  
(907) 267-2386

At the end of the season, the test fishing notebooks and log sheets should be mailed to ADF&G Fairbanks office at the following address:

Alaska Department of Fish and Game  
Division of Commercial Fisheries  
c/o Bonnie Borba  
1300 College Road  
Fairbanks, AK 99701  
(907) 459-7260

Table 1. Daily Mountain Village Test Fishery Reporting Log, \_\_\_\_\_ (yr).

To: Alaska Department of Fish and Game, Emmonak (FAX 907 949-1830)  
 Test Fishermen (Captain): \_\_\_\_\_  
 Subject: Mountain Village Test Fishery Data

ADF&G Notes

| Daily Climatological and River Conditions at Time of Test Fishing 1/ |      |     |        |                   |               |             |               |
|--|------|-----|--------|-------------------|---------------|-------------|---------------|
| DATE   | TIME | SKY | PRECIP | WIND<br>Direction | WIND<br>Speed | AIR<br>TEMP | WATER<br>TEMP |
|  |      |     |        |                   |               |             |               |

|      |           |          |           | FISHING TIME   |                  |                 |                 |                | Fall Chum Salmon |                  |                | Coho Salmon   |                  |                |
|------|-----------|----------|-----------|----------------|------------------|-----------------|-----------------|----------------|------------------|------------------|----------------|---------------|------------------|----------------|
|      |           |          |           | No.<br>Fathoms | Start<br>Net Out | Net<br>Full Out | Start<br>Net In | Net<br>Full In | Total<br>Kept    | Total<br>Release | Total<br>Catch | Total<br>Kept | Total<br>Release | Total<br>Catch |
| Date | Drift No. | Site No. | Mesh Size |                |                  |                 |                 |                |                  |                  |                |               |                  |                |
|      |           |          |           |                |                  |                 |                 |                |                  |                  |                |               |                  |                |
|      |           |          |           |                |                  |                 |                 |                |                  |                  |                |               |                  |                |
|      |           |          |           |                |                  |                 |                 |                |                  |                  |                |               |                  |                |

| Mountain Village Test Fishery Catch Disposition Log |                       |      |      |                 |                     |
|---|-----------------------|------|------|-----------------|---------------------|
| Date  | Subsistence Household | Chum | Coho | Other Salmon 1/ | Other Non-Salmon 1/ |
|   |                       |      |      |                 |                     |
|   |                       |      |      |                 |                     |
|   |                       |      |      |                 |                     |

Other Comments :

1/ See codes on back of form.

Table 1. Daily Mountain Village Test Fishery Reporting Log, \_\_\_\_\_ (yr). (Continued)

| <b>CODES:</b>                          |                                     |              |                 |
|--|-------------------------------------|--------------|-----------------|
| <b>SKY-</b>                            | <b>PRECIPITATION-</b>               | <b>WIND-</b> | <b>SPECIES-</b> |
| 0 no observation                       | A none                              | 0 calm       | K Chinook       |
| 1 clear or mostly clear                | B intermittent                      | 1 1-10mph    | S Sockeye       |
| 2 cloud cover not more than 1/2 of sky | C continuous rain                   | 2 11-20mph   | P Pink          |
| 3 cloud cover more than 1/2 of sky     | D snow                              | 3 21-30mph   | W Whitefish     |
| 4 complete overcast                    | E snow and rain                     | 4 over 30mph | Sh Sheefish     |
| 5 thick fog                            | F hail                              |              |                 |
|  | G thunderstorm with or without rain |              |                 |

**Table 2. Mountain Village Drift Gillnet Salmon Test Fishery Scale Sampling Data Log, \_\_\_\_\_(yr).**

Date  CHUM SALMON  
Mountain Village 5 ? -inch DRIFT GILLNET

| Card # |     | Length |
|--------|-----|--------|
| 1      | M F | _____  |
| 2      | M F | _____  |
| 3      | M F | _____  |
| 4      | M F | _____  |
| 5      | M F | _____  |
| 6      | M F | _____  |
| 7      | M F | _____  |
| 8      | M F | _____  |
| 9      | M F | _____  |
| 10     | M F | _____  |
| 11     | M F | _____  |
| 12     | M F | _____  |
| 13     | M F | _____  |
| 14     | M F | _____  |
| 15     | M F | _____  |
| 16     | M F | _____  |
| 17     | M F | _____  |
| 18     | M F | _____  |
| 19     | M F | _____  |
| 20     | M F | _____  |
| 21     | M F | _____  |
| 22     | M F | _____  |
| 23     | M F | _____  |
| 24     | M F | _____  |
| 25     | M F | _____  |
| 26     | M F | _____  |
| 27     | M F | _____  |
| 28     | M F | _____  |
| 29     | M F | _____  |
| 30     | M F | _____  |

Date  COHO SALMON  
Mountain Village 5 ? -inch DRIFT GILLNET

| Card # |     | Length |
|--------|-----|--------|
| 1      | M F | _____  |
| 2      | M F | _____  |
| 3      | M F | _____  |
| 4      | M F | _____  |
| 5      | M F | _____  |
| 6      | M F | _____  |
| 7      | M F | _____  |
| 8      | M F | _____  |
| 9      | M F | _____  |
| 10     | M F | _____  |
| 11     | M F | _____  |
| 12     | M F | _____  |
| 13     | M F | _____  |
| 14     | M F | _____  |
| 15     | M F | _____  |
| 16     | M F | _____  |
| 17     | M F | _____  |
| 18     | M F | _____  |
| 19     | M F | _____  |
| 20     | M F | _____  |

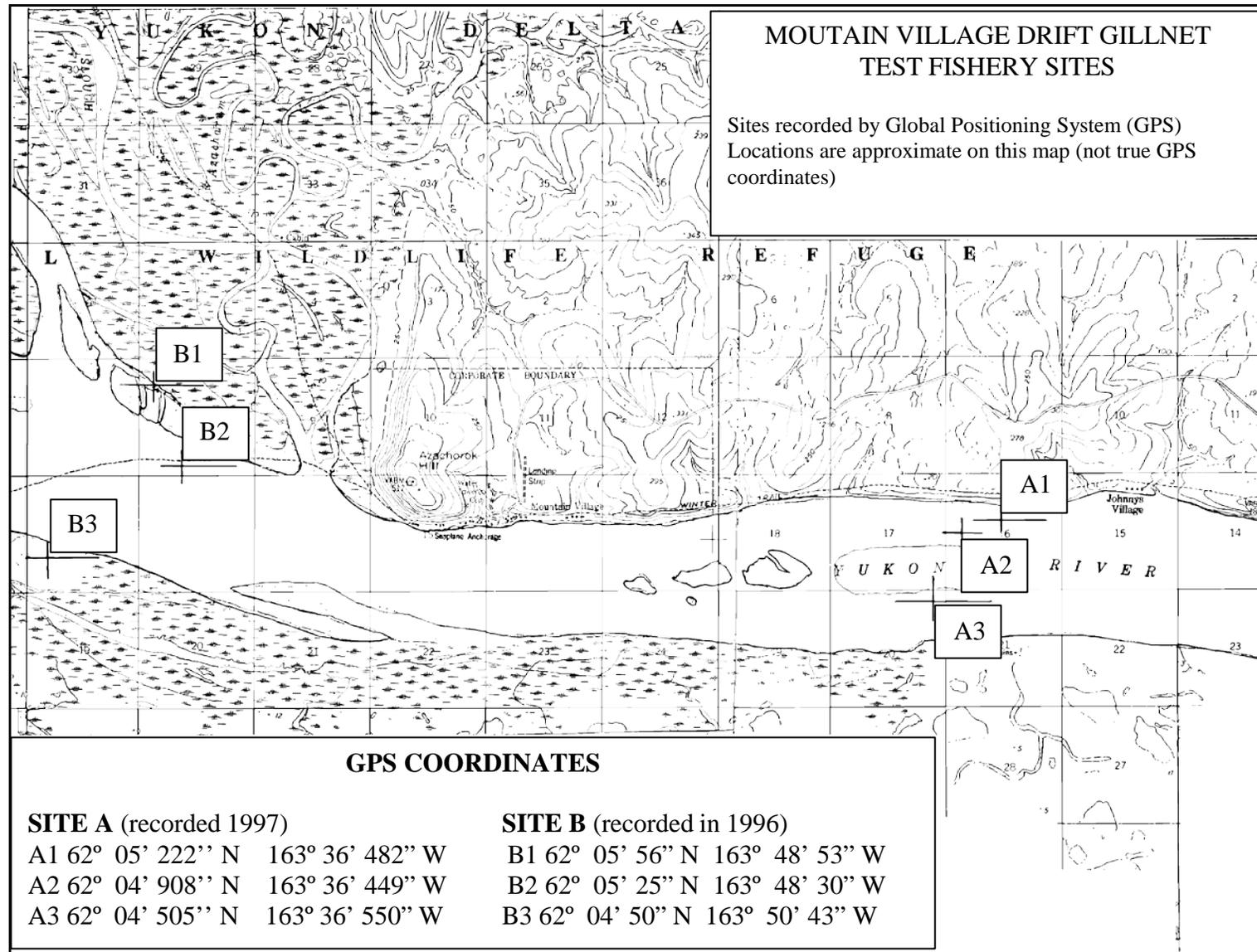


Figure 1. Mountain Village test fishery showing drift gillnet site.