

# **SSRAA Contributions**

The following numbers and values include only the fish gear groups caught in the common property fisheries. This includes both traditional fisheries and terminal fisheries combined. There are no sport, cost recovery, escapement, or brood stock numbers included in this data. It is NOT total return; it is simply the number and associated ex- vessel value of fish that SSRAA produced that fishermen caught.

We start with chum. This includes both summer and fall chum production. The release site that produced the contribution is listed in the legend at the bottom of the graph. You will notice the red contribution drops out after 2004. That is because we no longer release fish at Earl West Cove, that production was shifted to Anita Bay.

#### **Total Common Property Harvest SSRAA Chum**



👅 Anita Bay 🛛 🖉 Earl West Cove 🛸 Kendrick Bay 🛸 Nakat Inlet 🛸 Neets Bay



#### Value Of SSRAA Chum Production to Common Property Fisheries

👅 Anita Bay 📲 Earl West 🔎 Kendrick 🛸 Nakat 🔎 Neets

It should be noted that the number of fish returning and the value of the Nakat release is quite remarkable. This site routinely releases 8 million fish where the other sites Kendrick and Anita released just over 20 million, and Neets releases in the neighborhood of 50 million every year.

Chum predominately return as 4 year old fish, with some contribution as 3 year old and 5 year old fish. Through the 4 year age class, the 2008 brood of Nakat summer chum have a survival rate of just over 8%, and there are still 5 year old fish to come. This is the highest survival we have every documented on SSRAA produced chum.

# Nakat Summer Chum Percent Survival





#### Value Of SSRAA Chum Production to Common Property Fisheries

👅 Gillnet 🚿 Seine 🗖 Troll

As you have notice, 2012 was a remarkable return of SSRAA enhanced chum. While the numbers are driven by summer chum, coho and chinook contributions were also impressive. Next you will see the coho and chinook data presented in the same fashion as the chum data.

Please take note that the numbers of fish go to the beginning of SSRAA production (1982 return) while the value data starts with the 1994 return year. 1994 is the first year of enhancement value used for evaluating the "Southeastern Alaska Area Enhanced Salmon Allocation Management Plan".

#### **Total Common Property Harvest SSRAA Coho**



🞽 Anita Bay 👅 Bakewell Lake 🚿 Burnett Inlet 🚿 Crystal Lake 🚿 Earl West Cove 🚿 Herring Cove 🚿 Nakat Inlet 🚿 Neck Lake 🚿 Neets Bay



#### Value Of SSRAA Coho Production to Common Property Fisheries

🛎 Anita Bay 🔎 Burnett 🔎 Crystal Lake 🚿 Earl West 🛸 Nakat 🛸 Neck Lake 🔎 Neets 🛸 Whitman 🔎 Bakewell



#### Value Of SSRAA Coho Production to Common Property Fisheries

👅 Gillnet 🚿 Seine 🛛 Troll

#### **Total Common Property Harvest SSRAA Chinook**





#### Value Of SSRAA Chinook Production to Common Property Fisheries

🛎 Anita Bay 📲 Caroll Inlet 📲 Crystal Lake 📑 Earl West 📑 Neets 📑 Whitman



#### Value Of SSRAA Chinook Production to Common Property Fisheries

🛾 Gillnet 🖉 Seine 🛛 Troll

#### **Total Common Property Harvest SSRAA Production**



Chinook Chum Coho Sockeye

Ex-vessel values of SSRAA production had hovered around 10 million dollar for several years. With the steadily increasing value of chum salmon in 2010 and 2011, the value of the SSRAA production to the fleets double between 2009 and 2011. With the increase in chum survival at most of the release sites and a stable chum value in 2012, the value increased by nearly 180 percent - to over 34 million dollars.



#### Value Of All SSRAA Production to Common Property Fisheries

■ Chinook ■ Coho ■ F.Chum ■ S.Chum ■ Sockeye



#### Value Of All SSRAA Production to Common Property Fisheries

👅 Gillnet 🚿 Seine 🛛 🖉 Troll

The allocation ranges for each of the fleets set into Alaska State Statute are evaluated by the Department of Fish and Game Southeastern region-wide. SSRAA's region encompasses districts 101 through 108, in southern southeast. SSRAA's Board only has jurisdiction over releases in these areas. The Board of Fisheries established the following value allocations as goals to be evaluated on a five year rolling average basis-

> Seine - 44% to 49% Troll - 27% to 32% Gillnet - 24% to 29%

The next table shows for the entire time series of the allocation plan, the value and percentage to each gear from SSRAA production.

#### Value of SSRAA Production SSRAA 1994 - 2012





In 2003 SSRAA started using an otolith marking technique to evaluate chum returns and survival rates. With this technique 100% of the fish can be marked compared to the previous method of using a coded wire tag (CWT) where as few as 1 in every 800 fish were marked. This process along with the intensive sampling and reading of the otoliths from the chum catch in districts 101 through 108 have given managers a more precise picture of the run timing and migration route of the SSRAA chum releases.

The following chart shows the different districts in our the region. When we say a fish came in through the "north" we are referring to fish being caught in districts 106, 107, 108 on their way back to spawn in either Neets Bay or Anita Bay. If the fish came from the "south" they were caught in districts 101 and 102 on their way back to those same facilities.





#### **Neets Bay Summer Chum Return Pattern**

#### Anita Return Patterns



Why the chum have shifted return patterns is speculation. There is some research to the effect that cooler ocean temperatures contribute to this behavior, and we have been in a cool stage in recent years with the Pacific Decadal Oscillation (PDO).



## The Pacific Decadal Oscillation (PDO)

Typical wintertime Sea Surface Temperature (colors), Sea Level Pressure (contours) and surface windstress (arrows) anomaly patterns during warm and cool phases of PDO



SSRAA's corporate goal is that 75% of the production is caught in the common property fisheries and 25% is used for brood stock and cost recovery. SSRAA has met that goal for the last three consecutive years and in 2012 it was 80/20. Extreme changes in return patterns may effect survivals rates and definitely affect which gear group has access to catching them in the common property fisheries. SSRAA's staff and Board of Directors will continue to put a high priority on evaluating the benefits of their production and understanding how program changes and additions may affect the gear allocation.

The last slide outlines what SSRAA predicts will return in 2013 for each species and release sites.

### SSRAA 2013 Forecast All Species - All Sites - Final

<b>Species</b>	Site	5 YR	4 YR	3 YR	СР	Terminal	Total
S Chum	Neets	280,000	900,000	413,000	318,600	1,274,400	1,593,000
S Chum	Nakat	90,000	450,000	120,000	330,000	330,000	660,000
S Chum	Anita	70,000	700,000	60,000	415,000	415,000	830,000
S Chum	Kendrick	120,000	1,250,000	100,000	1,029,000	441,000	1,470,000
F Chum	Neets	15,000	150,000	50,000	53,750	161,250	215,000
F Chum	Nakat	15,000	85,000	0	35,000	65,000	100,000
<b>Species</b>	Site	6 YR	5 YR	4 YR	СР	Terminal	Total
Chinook	Whitman	1,000	10,000	7,000	5,400	12,600	18,000
Chinook	Neets	1,000	12,000	9,000	6,600	15,400	22,000
Chinook	Anita	1,500	4,500	4,000	3,000	7,000	10,000
Chinook	Crystal	1,000	700	0	850	850	1,700
<b>Species</b>	Site	СР	<b>Terminal</b>	Total			
Coho	Whitman	13,800	4,600	18,400			
Coho	Neets	158,000	67,700	225,700			
Coho	Nakat	16,200	1,800	18,000			
Coho	Anita	11,000	2,000	13,000			
Coho	Neck	52,000	52,000	104,000			
Coho	Burnett	10,400	12,700	23,100			
Coho	Crystal	2,800	1,900	4,700			
Coho	Bakewell	27,200	3,000	30,200			