

## China Poot

The China Poot dip net fishery and how it is provided, with or without Tutka Bay Lagoon Hatchery was a hot topic in 2021 and continues to be going into 2022.

For nearly a half century, sockeye salmon have been harvested by Alaskans in the China Poot dip net fishery, which is a direct result of salmon aquaculture through the operations of two CIAA hatcheries—Trail Lakes and Tutka Bay Lagoon.

Sockeye salmon returning to China Poot can't reach the lake because of waterfall outlets that prevent passage. Using this lake as a natural rearing system, ADF&G released sockeye fry into the lake from 1976 through 1992. CIAA took over the releases in 1994 and the associated lake fertilization and limnology program in 2007.

Providing the dip net fishery, as well as the opportunity for commercial, sport, and our own cost recovery harvest on these salmon is an important project for CIAA. But providing these fisheries is complex. Below is a snapshot of what goes into producing China Poot sockeye salmon runs each year.

### **Tutka Bay Lagoon Hatchery—brood collection**

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#### **June–July**

- Crews set up net pens in the lagoon.
- Over many days, adult sockeye salmon are captured by a purse seiner and each set is transferred to a net pen.
- Crews set up for sorting fish (sex, species, and accurate count) from the initial holding net pen into a receiving net pen.
- Crews set up a lensing bag, which is a freshwater holding vessel for the sockeye to continue to mature. Freshwater is supplied through buried lines from the hatchery to the lagoon.

#### **July–August**

- Sockeye are sorted and counted from the lagoon pen to the freshwater lensing bag to achieve the desired male to female ratio.
- The fish are held over a period of weeks to reach maturation for gamete collection.
- Crews constantly check for maturation and sort mature sockeye into pairs until at least 100 mature pairs are obtained.
- Staff set up equipment on a float in the lagoon for an egg take.

#### **August–September**

- Crews start taking eggs from females and milt from males.
- The eggs and milt are kept separate and placed in coolers.
- At the end of each spawning day, a float plane transports the coolers to Upper Trail Lake for transfer via trucks to Trail Lakes Hatchery.

### **Trail Lakes Hatchery—incubation to fry or smolt**

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## **September–April**

- Staff begin fertilizing the eggs and loading them into incubators.
- Prior to hatching all eggs are thermal marked.
- Eggs hatch into alevin and thermal marked again if required.
- Alevin remain in incubators, absorbing their yolk sac.
- In the spring, when alevin have turned to fry, they are transferred to raceways short-term rearing.
- Fry ready to be released into lakes are loaded into tanks on trucks and driven to Upper Trail Lake for transfer to a float plane.
- The plane makes multiple flights to release the fry to China Poot.
- For the sockeye program to continue, brood stock is needed. This requires a number of the fry to remain at Trail Lakes Hatchery to be reared for an additional year to become smolt.
- The smolt are then driven to Homer on trucks and loaded onto a boat for transport to a net pen in Tutka Bay Lagoon. The entire transfer process takes about four days.

## **Tutka Bay Lagoon Hatchery—smolt**

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### **April**

- Crews install a net pen in the lagoon to receive sockeye smolt.
- Sockeye smolt delivered from Trail Lakes Hatchery are short-term reared in the next pen for 4–6 weeks prior to release in the lagoon. This imprints the sockeye to return to the lagoon as adults in two to three years.

### **China Poot**

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- CIAA maintains a limnology and fertilization program annually.
- Crews fly to China Poot to take limnology samples and measurements in the spring, summer, and fall.
- The samples are taken to ADF&G's laboratory in Soldotna and prepared for analysis.
- CIAA pays ADF&G to analyze the samples. The results help CIAA monitor food source availability and to ensure the stocking program is not having detrimental effects to the lake.
- The limnology results also guide the amount of fertilizer required to be put on the lake.
- CIAA purchases liquid fertilizer to apply to the lake about once a week in the summer months.

All of this detail is only a brief glimpse of the efforts that go into providing China Poot fisheries. And all of this involves significant expenditures—some of which go directly to Homer-based support services such as float planes, boats, and storage.

The good news is that in 2020 and 2021, CIAA Board of Directors have elected to not take any China Poot sockeyes for cost recovery, ensuring they could be harvested entirely in the dip net, sport, and commercial fisheries. This is our commitment to service to the community.

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## Typical Cycle

- 5 - Seine Boat Days (Brood Collection)
- 23 - Float Plane Trips (Eggs, Limnology, Fertilizer, Fry)
- 12 - Truck Transfer Trips
- 5 - Tender Boat Trips (Homer to Tutka)