

# WISCONSIN DEPARTMENT OF NATURAL RESOURCES

## 2022 Strawberry Creek Weir Summary

The Wisconsin Department of Natural Resources (DNR) operates three salmon and trout egg collection facilities on Lake Michigan tributaries, including the Strawberry Creek Salmon Spawning Facility, or Strawberry Creek Weir (SCW) discussed herein. SCW is in Sturgeon Bay, Wisconsin, in Door County and has been in operation since the early 1970s. SCW is the DNR's primary egg collection facility for Chinook salmon *Oncorhynchus tshawytscha* and typically provides the entire egg quota needed by the DNR to produce Chinook salmon for stocking into Lake Michigan.

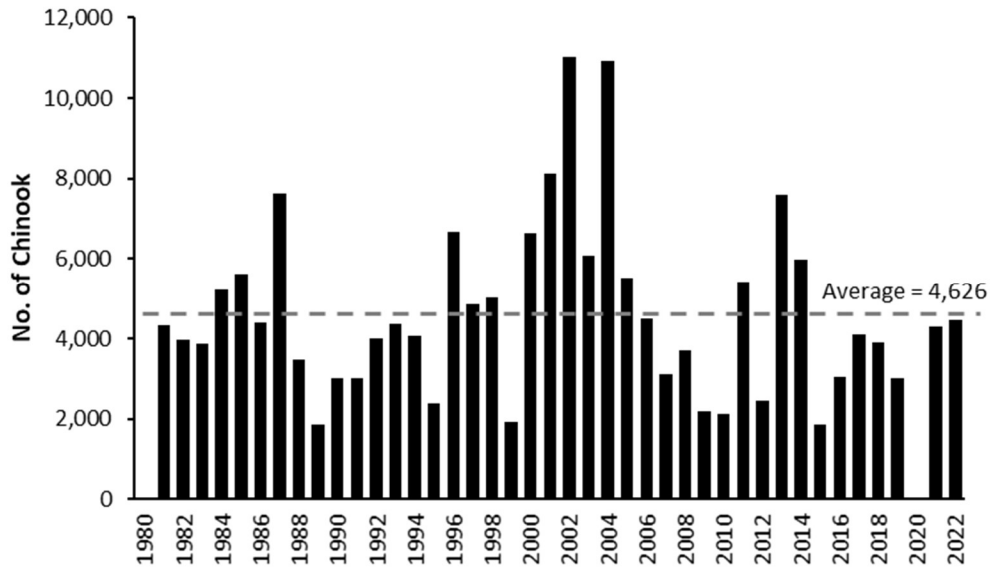
This basic report summarizes the number of fish processed at SCW during 2022. Please note that these numbers cannot be interpreted as absolute numbers of fish returned. Many variables impact these spawning runs, including stream flow, lake level, water temperature, stocking numbers, survival, harvest, dates of operation for each weir, etc. These factors vary from year to year and can impact the number of fish available and processed at each egg collection facility. Egg collection goals also vary from year to year, depending on projected stocking quotas, DNR production needs and egg requests from other states or agencies.

### Spring 2022 Strawberry Creek

Approximately 114,000 Chinook salmon fingerlings from the Wild Rose State Fish Hatchery were stocked into a rearing pond at SCW on April 12 and 13, 2022. These Chinooks were reared in the pond for five weeks and released on May 20, 2022. Rearing activities included feeding twice daily, monitoring water conditions (i.e., temperature, dissolved oxygen) and routine maintenance. To release these Chinooks, a seine net was used to direct Chinooks out of the pond and into Strawberry Creek. Screens were pulled on the downstream end of the pond on May 20, and the pond was seined twice on May 31 to push the last of the fish out of the pond. All Chinooks stocked at SCW in 2022 had adipose fin clips but did not have coded wire tags (CWTs). In addition to the adipose clip, a left ventral clip was given to about 30,000 Chinooks stocked at SCW in 2022 for future age assignments.

### Autumn 2022 Strawberry Creek

SCW was operated for Chinook salmon spawning from Sept. 30 to Oct. 20, 2022. The weir was open and fishing for 20 nights. Specific processing dates for egg and data collections were Oct. 3, 6, 10, 13, 17 and 20. The number of Chinook salmon processed for data daily were 408, 1,220, 651, 992, 441 and 443, respectively (a total of 4,155). In addition to the 4,155 spawning Chinook salmon processed for data, another 302 mortalities were removed from the pond and tallied at SCW during 2022 (a total of 4,457). This number of Chinook (4,457) is near the long-term average of 4,626 (Figure 1). Overall, 574 female Chinooks were spawned, and over 3.2 million eggs were collected (Table 1). The Chinook eggs were transferred to Wild Rose and Kettle Moraine Springs state fish hatcheries, where they were incubated, hatched and raised until the following spring for stocking into several Lake Michigan tributaries.



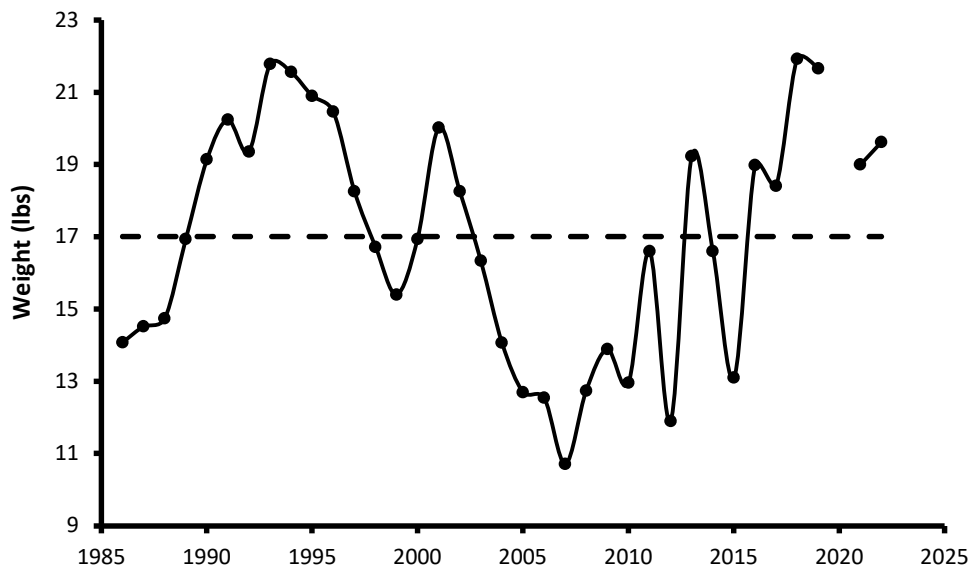
**Figure 1.** Numbers of Chinook salmon handled during autumn spawning operations at the Strawberry Creek Weir per year from 1981-2022 (2020 data not available). The long-term average is 4,626 (dotted line). Several factors impact these numbers including stream flow from rainfall and supplemental water pumping, lake level, water temperature, stocking numbers, survival rates, dates of operation for the weir, etc.

**Table 1.** Numbers of Chinook salmon processed for data, females spawned, eggs collected and average number of eggs per female at Strawberry Creek Weir during autumn 2022. (Note: Every fish wasn't always removed from the pond each day, and instead fish were sometimes processed at a later date).

Date	Chinooks Processed	Females Spawned	Eggs Collected	Avg. Eggs Per Female
Oct. 3, 2022	408	122	634,608	5,202
Oct. 6, 2022	1,220	120	541,542	4,513
Oct. 10, 2022	651	120	741,282	6,177
Oct. 13, 2022	992	164	1,027,057	6,263
Oct. 17, 2022	441	48	309,311	6,444
Oct. 20, 2022	443	--	--	--
<b>Total</b>	<b>4,155*</b>	<b>574</b>	<b>3,253,709</b>	<b>5,668</b>

\*An additional 302 Chinooks were removed from the pond and stream and were just tallied from Sept. 30 to Oct. 21 (4,155 processed + 302 tallied = 4,457 total).

Almost all Chinook salmon at SCW were processed for data, including total length (mm), weight (kg), sex, lamprey scars and fin clips. Fish health veterinarians also collected samples from a subsample of fish. The total length for all Chinooks ranged from 11.7 to 44.5 inches (average = 34.5 inches) and ranged in weight from 0.4 to 33.4 pounds (averaged 16.3 pounds). A total of 1,990 males were sampled and ranged in total length from 11.7 to 44.5 inches (average = 32.1 inches) and in weight from 0.4 to 33.4 pounds (average = 12.9 pounds). A total of 2,165 females were sampled and ranged in total length from 24.6 to 43.5 inches (average = 36.6 inches) and in weight from 2.3 to 32.5 pounds (average = 19.4 pounds). The average weight of age-3 female Chinooks in 2022 was 19.6 pounds (N=247) based on known age-3 fish from fin clips at Strawberry Creek (Figure 2).



**Figure 2.** The average weight of age-3 female Chinook salmon processed at the Strawberry Creek Weir per year from 1986-2022 (2020 data not available). The long-term average is 17.0 pounds (dotted line). Many factors impact Chinook size, including alewife biomass, Chinook abundance and the ratio of predator/prey (etc.).

A water pump powered by a diesel engine was operated continuously to supplement stream flow at SCW from Sept. 30 to Oct. 20, 2022. The water level in Strawberry Creek was relatively low prior to pump operation and before multiple precipitation events during the last two weeks of the weir operation. The pump increased flow and ensured that Chinook salmon could easily swim upstream and seemed to trigger the annual Chinook spawning run by increasing stream flows.

For additional Lake Michigan fisheries information, please visit our website:

<http://dnr.wi.gov/topic/fishing/lakemichigan>

For fishing information, please visit:

<http://dnr.wi.gov/topic/fishing/lakemichigan/OutdoorReport.html>

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