Fort Qu'Appelle Fish Culture Station

Saskatchewan
Ministry of
Environment

Fort Qu'Appelle Fish Culture Station

has the capacity to rear as many as 60 million fish each year. This stock replaces fish populations in waterbodies where winterkill has occurred or where natural reproduction is not successful. The station also stocks newly formed waterbodies (reservoirs) and waters where natural reproduction cannot keep up with the fishing pressure.

Stock can be used to extend the range of species, such as lake trout and arctic grayling, making them more accessible to anglers. A number of new species which do not occur naturally in Saskatchewan waters have been introduced.

History of the Fish Culture Station

The first stocking of a Saskatchewan waterbody took place in 1900. Eight million whitefish fry from a Manitoba hatchery were transported 300 miles by rail and horse-drawn wagon to the Qu'Appelle Valley lakes.

The demand on prairie fish stocks increased due to the rapid settlement of the west in the early twentieth century. The Fort Qu'Appelle Fish Culture Station began operating in 1915. During the station's early years, the vast majority of its stock was whitefish. Cisco were introduced (1918), perch (1920), bas (1923) and walleye, brown trout and rainbow trout (1924).

Additional species raised over the years include lake trout (first introduced in 1926), brook trout (1933), smelt (1944), arctic grayling (1947), kokanee salmon (1961), alpine char (1964), splake trout (1966), coho salmon (1969), cutthroat trout and tiger trout (1988). Walleye, northern pike and the various trout species presently comprise the majority of station stock.

Operation of the Station

The station is capable of rearing fish through their entire life cycle, from the egg stage through to adult.

Depending on the species and other factors, station stock are distributed to waterbodies at any of these stages: as eyed eggs, fry, fingerlings or adults. The vast majority are distributed at the advanced fry and fingerling stages.

Eggs: Millions of annually stocked fish begin their lives as small eggs obtained from brood stock kept at the station or from wild populations at spawn camps. Eggs collected from female fish are placed into moistened pans and fertilized with milt (sperm) from male fish. These procedures do not harm the fish and they are returned to the waterbody.

Incubation Stage

Three different methods of incubation can be used.

1. **Jar Culture:** The eggs, from walleye, northern pike and whitefish are placed in six litre capacity glass jars. Water is circulated through the jars so the eggs are constantly moved. The embryo gradually begins to develop within the egg and soon the eyes of the embryo appear as two dark spots. These are know as eyed eggs. The length of time it takes the eggs to hatch varies with the species and water temperature. Walleye take roughly four weeks after fertilization to hatch. At that point, the embryonic walleye or sac fry breaks out of the egg still attached. The yolk sac provides nourishment for the growth of the fry which begins to develop mouth parts and fins as the sac gradually dissolves. The free swimming fry move from the jars to larger tanks by swimming and moving with the water flow. These fry are stocked out two to five days after hatching.
2. **Trough Culture:** Used for various trout species, the fertilized eggs are placed in wire baskets and suspended in troughs. Processed groundwater, kept at a constant temperature, is circulated through the eggs. Once the eggs have hatched, the sac fry remain dormant at the bottom of the trough until the yolk sac is absorbed. At that point, the advanced fry swim to the surface of the water in search of food and proceed on through the fingerling and adult phases.

3. **Vertical Flow Incubators:** Used only for trout, the eggs are placed in vertically stacked incubator trays. Water injected at the top tray flows through the bottom of each tray to circulate through the eggs and then drop to the tray below. The advantage of this method compared to trough culture is the same number of eggs can be incubated in a smaller amount of floor space, using less water. Fry are transferred from the trays to troughs at the advanced fry stage.

Advanced Fry Stage

The nutrients in the yolk sac have been used up and feeding of station stock begins at this stage. When 10 per cent of the sac fry have reached the advanced fry stage, artificially prepared food (tiny granules high in protein and vitamins) is provided. The fry are fed eight times a day on average and given an amount which equals roughly three per cent of their body weight. Larger food granules are used as the fry grows. Fish which remain at the station through to the adult stage are fed three times a day with pellet-sized food to about one per cent of their body weight.

Distribution

Before station stock are distributed to provincial waterbodies, their weight and numbers are recorded so the receiving waterbody will not be overstocked. A waterbody is capable of supporting only a certain number of fish and if too many fish are placed in a waterbody, their needs for food and oxygen may be more than the waterbody is capable of providing some of the fish will perish.

Station stock distribution varies depending on the species and the stage in their life cycle the stock have reached. For example, walleye and whitefish fry make the journey from the station to their new homes in plastic cubes half full of water (10 litres). These containers are oxygen charged and can gold as many as 100,000 walleye fry or 50,000 whitefish fry for up to 12 hours. The vast majority of distribution is carried out by truck. Some remote northern lakes, which may be inaccessible or impractical to reach by road, are stocked by plane or helicopter.

Location and Hours of Operation

The station provides information to the public on its operation and role in meeting provincial fisheries management goals. The Visitor Information Centre provides literature, panel displays and audio-visual materials on various species raised at the station, the process of raising fish from egg through to adult and where the station stock are distributed. The station is located west on Highway #210, five kilometres from Fort Qu'Appelle.

The best time to visit the station is from the beginning of May to the middle of June. During this period the eggs are being incubated and the fry and fingerlings are being held in troughs. By the beginning of August, most of the fish have been stocked throughout the province.

The Visitor Information Centre is open to the public from 9 a.m to noon and 1 to 4 p.m., seven days a week from May 1 to Labour Day. To arrange a tour of the Fish Culture Station, write to:

Fish Culture Station
PO Box 190
Fort Qu'Appelle, Saskatchewan S0G 1S0
Telephone: (306) 332-3200
Fax: (306) 332-3203