Alaska Salmon Harvesting Alternatives

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I. Wild salmon are harvested commercially in many locations around the northern hemisphere, including the Great Lakes, Canada, Japan, Russia, Ireland, Iceland, Norway, Britain and the Faroe Islands.

II. Unlike British Columbia and Alaska, most salmon fisheries worldwide employ passive harvest technologies, especially traps and weirs, rather than active gear types (such as drift gillnet, purse seine and troll) for wild salmon harvest.

III. Alaska fishermen may wish to consider alternative harvest methods. Alternatives may:
   • Improve product quality, thereby raising ex-vessel value
   • Improve harvesting efficiency to cut operating costs
   • Increase selectivity, thereby conserving weak stocks and allowing full utilization of strong stocks.

IV. Harvesting alternatives may include different ways of organizing, conducting and managing the fishery. For example:
   • Fishing cooperatively rather than competitively (Chignik model)
   • Organizing as collectives (Russian model) or community-owned fisheries (Japan model)
   • Changing fishery management to obtain certain results.
   • Implement product quality improvement procedures.

V. Employ fishing technology that is used elsewhere and may be more efficient and more selective, and/or may produce better quality. Such as weirs, traps, reef nets, fish wheels, beach seines and tangle nets.

Weirs
   • Used in Great Lakes, Ireland, Scandinavia, and many indigenous fisheries worldwide
   • Used on small rivers or where dams are in place. Some seasonal, some permanent
   • As simple as a row of pointed sticks driven into river bottom, or as complex as elevator fishway in a hydroelectric dam.
   • Hold fish alive, allow high quality product, allow excellent stock management by retaining the optimal percentage of total run, then assuring escapement of spawners
   • Permanent weirs are expensive to build, need to deal with ice, seasonal flooding.
   • May raise major issues over resource ownership and fish harvesting rights

Driven pile traps
   • Formerly used around Alaska and on the West Coast, and still used in Europe
   • Can be placed in terminal or corridor areas. Corporate, and family sized traps were used
   • Usually manned, watchman provides some measure of security
   • Most use steel wire mesh leads from the beach. May involve labor-intensive maintenance
   • May produce excellent quality, fish kept alive. Minimal labor to operate
   • Raise resource ownership issues. Expensive to build and maintain. May intercept mixed stocks, although live release is possible. Components (wire and pilings) now difficult to purchase. Metlakatla villagers stopped using their driven pile traps about 12 years ago.

Floating net traps
   • Used in Russia, Japan, and Europe, and development is now underway in B.C., Washington
   • Can be placed in terminal or corridor areas. Allows selective retention.
   • Many designs available, and new ones under development. Some are mobile, boat operated.
   • Japanese chum traps placed offshore without leads. Russian sockeye and mixed species traps use heavy mesh leads on steel cable bolted to concrete.
   • Fish can be brailed or rolled into tanked vessels for live delivery to processors
   • Less expensive to build and minimal labor to operate. Cheaper to build than driven pile traps
   • Smaller traps tested in B.C./Washington can be operated by a pair of gillnetters
• Can be used for other migratory species, including herring
• Usually unmanned, susceptible to theft, vandalism and predation, may be navigation hazard.
• Leads and traps themselves attract seals and fish loss can be considerable.
• Raise resource ownership issues potential for mixed stocks. Can be managed for selectivity and to promote optimum escapement.

Fish wheels
• Used in Alaskan and B.C. rivers, formerly the Columbia, and currently being re-developed in B.C. and Washington
• Specific to rivers and certain narrow, shallow channels with stable water levels.
• Both stationary and mobile scow-mounted. May be current powered or engine powered where current is insufficient
• Relatively low cost to build and operate.
• Lower fish quality at upriver location, and traditional wheels treat fish roughly
• Better fish handling devices being developed, and some now used to live hold the catch.

Reef nets
• Currently used commercially in Washington State, and traditional Native fishery technology
• Suitable to certain locations only, require clear water for visibility, and sloping bottom, and moderate sea conditions
• Moderate cost to build, low cost to operate. Susceptible to weather damage during season
• Requires specialized vessels
• Produces good quality, fish can be kept alive, can be selective and promote conservation by releasing by-catch.
• Labor intensive, and not suitable to high production fisheries.

Beach seine or “draft” nets
• Used in Russia, Ireland and elsewhere, including Alaska subsistence fisheries. Experiments underway in B.C. and Columbia River
• Used primarily in estuaries and inside rivers.
• Usually operated with outboard-powered skiffs, 50-100 fathom nets. Sometimes trucks, winches, cranes are employed.
• Low cost to build and to operate, very efficient, can be selective by location and time, and by-catch can be released. Fish can be handled individually and gently.
• Lower product quality due to operation in terminal areas, especially upriver.

Tangle or “tooth” nets
• Used in Washington, Oregon and B.C., mainly to allow release of endangered stocks
• Suitable in most applications where drift gillnetting is now used
• More selective and less damaging to fish than gillnets. Similar costs.
• 3.5”-4.5” web, can result in gilling smaller fish than previously caught
• Used carefully, fish can be live tanked for top quality.
• Slower to work and less productive in high volume fisheries than gillnets.
• Three-panel trammel nets can produce same fish quality, though not as selective.

Pelagic (floating) longlines
• Used for salmon in Japan
• Less damaging to fish than nets
• May produce high quality feeder salmon
• Raise major problems regarding by-catch, are being outlawed in many places

See me after the session for more information on these fish catching devices, or for details on Russian collective fisheries and Japanese community-based fisheries.