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# Appendix B

## General Explanation and Report Form

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### DEVELOPMENT OF THE REPORT FORM

Planning for the 2023 Census of Aquaculture started in 2022 with the mailout for the 2022 Census of Agriculture. The report form was developed through input from other government agencies, special interest groups, and each of NASS's field offices. Report form testing was conducted in several States and included various types of aquaculture producers. Aquaculture producers were asked to evaluate the report form through cognitive interviews, and patterns which emerged from these interviews were considered when making changes to the report form.

### DATA CHANGES

Following are report form changes and their effect on the publication tables.

#### Report Form Changes

Minor wording changes were incorporated in the report form for clarity. However, no form changes affected the content of the publication tables.

#### Table Changes

Sea urchins is included in Other miscellaneous aquaculture in the following tables:

- Table 8. Miscellaneous Aquaculture Production and Sales
- Table 20. Miscellaneous Aquaculture Production and Sales

### DEFINITIONS AND EXPLANATIONS

The following definitions and explanations provide a detailed description of the terms used in this publication. Items in the tables which carry the note "See text" are also explained. For exact wording of the questions on the 2023 Census of Aquaculture report form, see a copy of the form at the end of this appendix.

**Algae.** These are a very large and diverse group of simple organisms that can range from the microscopic (microalgae) to large seaweeds (macroalgae), such as giant kelp more than 100 feet in length. Microalgae include both organisms like bacteria called blue green algae, as well as green, brown, and red algae. Most algae grow through

photosynthesis.

**Aquaponics.** This is a system of aquaculture in which the waste produced by farmed fish or other aquatic animals supplies nutrients for plants grown hydroponically (cultivating plants in water), which in turn purify the water.

**Aquaculture Distributed.** Includes aquaculture products released into the wild for restoration, conservation, enhancement, or recreational purposes.

**Baitfish.** These are fish used for bait, such as crawfish for bait, fathead minnows, goldfish (feeder and bait), golden shiners, other shiners (emerald, silver, etc.), and suckers. Examples of fish in the Other baitfish category include hubs, leeches, and other types of minnows.

**Broodstock.** These are fish or other stock kept for reproduction, including males. Female broodfish produce the fertilized eggs which go to hatcheries.

**Cages or pens.** Cage culture involves growing a culture species in floating cages or baskets. Cages are normally used in larger, open bodies of water, such as lakes or rivers. The sides of the cages are rigid and are made of materials like plastic or plastic covered wire. Pens are large enclosures usually placed in rivers or ocean bays. Pens are usually floated in the water but may also be secured to the bottom. Pens are supported in some way, with the sides being flexible.

**Carp, other.** This category includes bighead, black, common, silver carp, and other carp not listed on the report form.

**Crustaceans.** These are invertebrate animals with a hard-shelled, segmented body and jointed legs. Examples include crawfish, lobsters, prawns, shrimp, and soft-shell crabs.

**Cropland used for crawfish.** This production method includes cropland on which crawfish are grown. Cropland includes cropland harvested, other pasture and grazing land that could have been used for crops without additional improvements, cropland on which all crops failed or were abandoned, cropland in summer fallow, and cropland idle

or used for cover crops or soil improvement but not harvested and not pastured or grazed.

**Direct to consumers.** This sales category includes sales made directly to individuals for home consumption or placement in their ponds for personal use. Also included are operations that raise and market fish through their own fee fishing operation. Sales made to fee fishing operations are included under Wholesale to other producers.

**Eggs.** These are embryos surrounded by nutrient material and a protective covering.

**Enhancement.** This is a term often used on the West Coast with salmon. State and tribal hatcheries are releasing young salmon into known population areas to be harvested later upon the salmon return from the sea.

**Fingerlings.** A size category including young fish, larger than a fry but not an adult.

**Flow through raceways.** This is an environment where fish are in a confined area, usually long and narrow, in which water enters one end and exits the other. Raceways can either be a natural flow system or a closed system. A natural flow system uses the natural flow of a river or stream, with water diverted from the stream. A closed system has the water from the raceway flow through a series of ponds and then is pumped into a header pond that flows back into the raceway. The water area for a closed system is the surface acres of a raceway and all associated ponds. The area for a natural flow system is the surface acres that the raceway occupies.

**Food fish.** These are fish raised primarily for food. Examples include hybrid striped bass, carp, catfish, flounder, yellow perch, red drum, salmon, sturgeon, tilapia, and trout. Examples of Other food fish include barramundi, cobia, Atlantic and black cod, pangasius/swai, Seriola, yellow croaker, and other food fish not listed on the report form.

The value of aquaculture products sold is published for all food fish, including catfish and trout. In addition, eggs from food fish are included in the food fish totals.

**Foodsize.** A size category including grown aquaculture products ready for market, also known as market size.

**Fry.** A size category including very young post-larval fish.

**Government agencies.** This sales outlet category includes sales made to Federal, State, or local government agencies, hatcheries, or other groups involved in purchasing aquaculture to stock Federal, publicly owned, or regulated

waters and recreational areas.

**Hybrid catfish.** These are a cross between a female channel catfish and a male blue catfish.

**Hybrid striped bass.** These are a cross between a male white bass and a female striped bass.

**Larvae.** Newly hatched, earliest stage of animals that undergo metamorphosis, differing markedly in form and appearance from the adult.

**Live haulers, brokers, etc.** Individuals or companies that purchase aquaculture products from a producer for immediate resale. They may or may not take possession of the product. Live haulers transport aquaculture products in oxygenated tank trucks to other outlets, including processing plants, pay lakes, recreational lakes, and retail outlets.

**Miscellaneous aquaculture.** This category represents the production of aquaculture products other than food fish, sport fish, baitfish, ornamental fish, crustaceans, and mollusks. Examples include microalgae, sea vegetables such as seaweed and ogo, alligators, caviar, eels, frogs, sea urchins, snails, tadpoles, turtles, and live rock. Examples of Other miscellaneous aquaculture include Gambusia and bioassay fish (fish used for toxicity testing).

**Mollusks.** These are marine invertebrates. Invertebrates have no backbone structure. In general, mollusks have three body regions: a head, a visceral mass, and a “foot.” Mollusks usually have a shell; although, some do not. Examples include Abalone, clams, mussels, oysters. Examples of mollusks in the Other mollusk category include scallops and scallop seed.

**Mollusks off bottom.** The use of water column suspension techniques, including enclosures and lines for the production of normally bottom-dwelling mollusks. These techniques are designed to minimize bottom predators and maximize the use of a three-dimensional space for cultivation.

**Mollusks on bottom.** The practice of raising mollusks on the bottom of tidal waters that have had oyster shell, clam shell, or other material added to improve the habitat for growth and survival.

**Non-recirculating systems.** Process of rearing aquatic organisms and discharging the water after its intended use.

**Off farm water.** Water that comes from a Federal supplier; irrigation district; mutual, private, or cooperative ditches; commercial company; or municipal or community

water system.

**On farm surface water.** Surface supply not controlled by a water supply organization. Examples include streams, drainage ditches, lakes, ponds, springs, and reservoirs.

**Ornamental fish.** These are fish raised for water gardens, aquariums, etc. Examples include koi, goldfish, and guppies. An example in the Other ornamental fish category is seahorses.

**Other aquaculture products.** This category includes all aquaculture products that are not listed in the table.

**Oysters, other.** This category includes Kumamoto and other oysters besides Eastern and Pacific.

**Pens.** See Cages or pens.

**Point of first sale.** The first point at which money is exchanged for aquaculture products. For example, delivery of aquaculture products from the farm to the processing plant is the point of first sale.

**Ponds.** The most common type of water facility for raising fish. Most ponds are man-made, and fish usually have access to the entire pond.

**Processors.** Companies that convert live fish to a product ready to cook, such as fish fillets. Usually, the purchasing plant has no ties to the producer. However, in some cases, the plant may be a cooperative that is jointly owned by the producer and other producers. Also included in this category are the sales of aquaculture products by vertically integrated operations through their own processing and marketing operations.

**Recirculating systems.** Metal, plastic, or fiberglass tanks normally above ground and usually under cover used for the rearing of aquatic organisms where 90 percent or more of system water is recycled. Some tanks may consist of frames with liners.

**Recreational stocking.** When the point of first sale is recreational stocking, the purchaser will use the aquaculture production to stock private lakes or ponds.

**Retail Outlets.** Point of first sale that includes restaurants, grocery stores, etc.

**Saltwater.** Water from a sea or ocean, including brackish water. Freshwater converted to saltwater by adding chemicals was tabulated as saltwater acres used in production. The source of water was tabulated as freshwater.

**Sea vegetables.** A type of algae seaweed that grows naturally in the ocean.

**Seed.** A size category including young aquaculture species, generally oysters, clams, or mussels, used for stocking; newly fertilized, earliest stage of these animals, also known as seed stock.

**Shellfish.** An aquatic invertebrate animal with a shell, particularly an edible mollusk or crustacean.

**Sport fish.** These are fish raised primarily to be released into lakes and streams to be caught by sport fishermen. Fish may also be sold to fee fishing operations. Examples include largemouth and smallmouth bass, crappie, muskie, northern pike, sunfish, and walleye and other sport fish not listed on the report form.

**Stockers.** A size category including young aquaculture species that are large enough to be placed in the final grow-out pond, net, pen, or tank to grow to foodsize.

**Sunfish.** This category includes bluegill, copperside, bream, redear/shellcrackers, etc.

**Surface water acres.** A measure of the number of square acres needed to cover the surface of a pond, tank, raceway, etc.

**Value of sales.** The gross value of sales before marketing and production costs are deducted.

**Wholesale to other producers.** This sales outlet category includes sales made to other aquaculture producers who buy live fish to raise for a later sale and sales to stock commercial and fee fish operations.