News from the Watershed

Aquaculture – farming of the waters

There is an ancient practice that has been used in China since about 2500 b.c. The Hawaiian people have been using it for over 1,000 years. Many cultures have used aquaculture, which is the cultivation of aquatic organisms, for centuries. The Japanese, Romans, Europeans and Canadians have all utilized this practice for years and continue to do so in today's world. Americans jumped on the bandwagon in the 20th century with the harvesting of wild kelp. Today, aquaculture is big business worldwide. Interest in aquaculture production is on the rise for various reasons and the practice is catching on in a big way in the United States.

Harvesting seafood in the wild is becoming more challenging. Restrictions on wild harvest of aquatic species have caused many to look into aquaculture. In addition, technology has come so far that some species simply cannot reproduce fast enough to keep up with the harvesting demands.

There are many advantages to the controlled conditions of producing aquatic plants and animals in aquaculture. For example, those involved in aquaculture can maintain a steady supply of products that they offer. This controlled environment allows the species of aquatic life to be more uniform in size, making pricing more consistent. In addition, these aquatic producers may create ideal breeding conditions which allow increased growth rates and enhanced disease resistance. As with all supply and demand, once the product becomes more plentiful, costs will decrease, making seafood more affordable to the consumer.

Of course, there are disadvantages as well. The introduction of exotic or non-native species is prevalent. The pollution or waste from these aquaculture sites can be problematic. And new production areas create destruction of natural habitat in many cases.

Since aquaculture is becoming so popular worldwide, the United States Department of Agriculture (USDA) has set up an Aquaculture Program. Its mission is "to conduct high quality, relevant, basic and applied aquaculture research and technology transfer to create jobs and economic activity that will improve the international competitiveness and sustainability of the United States aquaculture, and reduce dependence on imported seafood and threatened ocean fisheries."

The research components of the program include:

- Genetic improvement
- Integrated aquatic animal health management
- Reproduction and early development
- Growth, development and nutrition
- Aquaculture production systems
- Sustainability and environmental compatibility of aquaculture
- Quality, safety and variety of aquaculture products for consumers.

There are many different types of aquaculture. Algaculture is the farming of algae or seaweed. Fish farming is the raising of fish in tanks or enclosures, generally for food. Freshwater prawn farming is designed to raise and produce freshwater prawn or shrimp for food. Mariculture is the farming of marine organisms and shrimp farming is the cultivation of marine shrimp for human consumption. In addition, many tropical species of aquatic life are collected for aquariums and pets. So, we can see that aquaculture is becoming big business.

According to the USDA Economic Research Service, during the past two decades, the value of U.S. aquaculture production rose to nearly $1 billion. The National Oceanic and Atmospheric Administration (NOAA) reports that aquaculture is the fastest growing form of food production in the world. Globally, nearly half the fish consumed by humans is produced by fish farms and this trend is expected to continue.

So now we know more about this fascinating practice. It is comforting to know that many agencies are researching aquaculture and keeping up with the latest technology. Hopefully, aquaculture will be part of the solution to producing more food for the world, while maintaining the integrity of our precious natural resources.