



## Major Role of Aquatic Species and the Water Shed of Aquatic Species in an Ecosystem

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### DESCRIPTION

Aquaculture is the fastest growing source of meat protein. Aquaculture production is expected to surpass wild fisheries catch in 2018 if wild fishery catch management remains limited to 90 million tonnes per year. If aquaculture production continues to grow at its current rate, it will be on par with poultry and pork production in a few years. Aquaculture also includes the production of seaweeds, which reached 21 million tonnes in 2011 and is growing at a 10% annual rate. Humans consume a large portion of the sea weed produced. Improving seafood production to meet health needs and ensure sustainability will necessitate significant advancements in breeding technology. The FAO defines breeding is the process of sexual reproduction and offspring production (i.e. juvenile/seed). In contrast, technology is defined as the practical application of scientific knowledge. Thus, breeding technology can be defined as a technological innovation of culturing an animal with the goal of increasing reproduction and production. The goal of breeding aquatic species has evolved beyond simply increasing food production and quality to provide more sustainable, productive, and environmentally friendly approaches. Traditional breeding methods such as inbreeding practices, selective breeding etc.

Fish breeding is the form of artificial intervention aimed at influencing and manipulating fish brood stocks to breed and produce larvae under captive conditions is the most common breeding technology used for aquatic species. In general, seafood progenies can be obtained through captive breeding or wild collection. While some shellfish cultures continue to rely heavily on wild spat for stocking, it is important to note that this places strain on wild stocks and contributes to over-exploitation of these species. As a result, developing a captive breeding protocol for these wild species can help improve productivity and long-term exploitation. Examining their adaptability in various

production systems, behavioural changes, and performance under manipulated environmental conditions are also included. Selective breeding as a method of creating improved stocks for further more species exhibit a number of other biological characteristics that appear to increase the likelihood of beneficial outcomes. Although these traits and the results of early selective breeding work with fish suggested that significant improvements could be made with aquacultural species, several flaws in genetic research and its application were discovered, limiting the effectiveness of this approach for aquaculture. Fish reproduce by either producing live young or laying eggs. Livebearers give birth to fully developed and functional offspring known as fry. Within the female, the eggs are fertilised and hatch. Because the fry need to be more developed and large enough to fend for themselves after birth, most livebearers have fewer and larger fry than egg layers. Most livebearer species kept in home aquariums are relatively simple to breed. Sexes are usually easy to distinguish as well. Males are larger than females and have larger, longer, more ornate, and colourful fins. Only male swordtails have the "sword" on their tails, and male guppies have larger, more flowing, brightly coloured tails.

The watershed is shared by all living things in an ecosystem. A watershed is a region of land through which water flows to a common body of water, such as a lake or pond. We all live in a watershed, also known as a drainage basin. Watersheds can range in size from the mississippi river drainage basin to a farm with a pond. Mountains, farms, houses, businesses, and towns may make up people watershed. The watershed is shared by all living things in the ecosystem. Water from the ground can flow into a surface water body such as a lake, stream, or pond. The absorption by the ground Freshwater can be discharged from springs. Into large surface water bodies such as lakes and streams, and even off the coast of the oceans springs transport groundwater to the surface.

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