GLOSSARY OF TERMS

Management:

Genetics – The processes associated with how traits and characteristics of an organism (genes) are passed to the next generation (heredity).

Population genetics – The measurable differences (variability) in the genes within a group of a species (population) that is distinguishable from another population of the same species. Populations can be separated by physical boundaries such as the Florida peninsula. Wild populations usually have a large amount of gene variability among the individuals in the population.

Stock – A group of a specific type of fish (species) that is distinguishable from another or other groups of the same type of fish. A stock can be based on genetic relationships, geographic distributions, and movement patterns.

Overfishing – Occurs when the rate of harvest is higher than the populations natural replenishment rate.

Overfished – Refers to a fish population that has becomes so small that the fishery spawning population cannot maintain the population at the current rate of harvest. A change in management is required to increase and protect the spawning members needed to rebuild and maintain the population.

Recruitment – The number of fish surviving their first year of life to become part of the stock.

Yield – The production of a fishery in terms of numbers or weight.

Fecundity – A measurement of the egg-producing ability of a fish. Fecundity generally increases with size of the fish.

Habitat - The environment in which a particular species lives. A habitat must provide the right environmental conditions, food, and in many cases shelter for a species to live.

Stock Enhancement:

Aquaculture – Growing (culture) organisms such as algae, aquatic plants, and aquatic animals (other than mammals) in water (aqua). Aquaculture can be in fresh or saltwater.

Mariculture – Aquaculture of marine organisms.

Hatchery - This is a facility where the reproduction, hatching, and growth of early life stages of aquaculture organisms occurs.

Stocking – Releasing aquacultured fish or other aquatic organisms into the wild or a manmade water body.

Stock Enhancement – The practice of releasing aquacultured organisms into the wild to help supplement, restore, maintain, or rebuild a stock of fish (or other aquatic organism) that is or was experiencing overfishing, or does not have sufficient resources including habitat to allow for enough young fish to survive or recruit into the population. A responsible stock enhancement program uses practices to prevent loss of genetic variability and disease transmission in wild populations.

Aquaponics - The combination of aquaculture of aquatic animals (other than mammals) with either aquatic plans or in a symbiotic environment. Plants and algae use animal wastes (such as ammonia) as nutrients, and plants remove harmful fish wastes from the environment while producing beneficial oxygen for the animals.

Extensive (Pond) Aquaculture - The aquaculture of organisms in ponds with ample amount of physical space for the organisms and with limited control of environmental and physical conditions. Extensive aquaculture is not as labor intensive as intensive aquaculture.

Intensive aquaculture - Aquaculture of organisms in tanks under crowded conditions that can be controlled better than in extensive aquaculture. Intensive aquaculture requires effort to supplement and control resources such as oxygen, water filtration, and to control water temperature. Attention to the environment and rearing of the organisms is intensive.

Recirculating Aquaculture Systems (RAS) – A combination of water filtration, pumping, resource supplements, and environmental control that is often used to maintain strong control over the quality of the aquatic conditions in intensive aquaculture.

Fish Behavior:

Foraging – Active searching for food.

Spawning – The act where animals broadcast or deposit gametes into the environment in a manner that facilitates fertilization.

Rearing – The act of caring for and growing animals in a protected environment.

Schooling – Swimming in a condensed group of individuals to avoid predators, spawn, forage, and to hunt for prey.

Life Stages:

Gamete - The reproductive unit of an organism.

Oocyte – The female gamete.

Sperm – The male gamete.

Fertilization – The joining of the male and female gametes to form an embryo.

Broodstock - The parent organisms used in aquaculture that spawn gametes.

Egg – An embryo encased by a rigid protective cover.

Larvae - The early life stage of marine fish and invertebrates that does not resemble the adult form. Over a period of days to months larvae slowly change into a juvenile fish during a process called metamorphosis.

Juvenile - Intermediate stage of an organism between the larval and sub-adult form which have most of the external features as the adult stage but are not reproductive. The juvenile stage can last from months to several years.

Sub Adult - A large juvenile organism that is indistinguishable from the adult in appearance but has not developed reproductive capability.

Adult - The fully developed and reproductively capable stage of an organism.

Water Quality:

Water Quality - A term used in aquaculture that encompasses a suite of measurable characteristics (parameters) such as dissolved oxygen, pH, ammonia, alkalinity, salinity, and temperature.

pH - A measure of the concentration of hydrogen ions present in water. pH is measured on a scale of 0 to 14 with 7 being pH neutral, pH less than 7 is acidic, and pH greater than 7 is basic. pH of seawater is typically 7.8-8.4 and is important to maintain to keep fish healthy.

Alkalinity - The chemical component of water that resists changes ("buffers") in pH. **"Buffers"** are abundant in seawater, but buffers such as carbonates and bicarbonates are often added directly to an aquaculture system to maintain acceptable pH.

Dissolved Oxygen (DO) - Dissolved oxygen (DO) is a measure of how much oxygen is dissolved in the water. All animals and plants require oxygen. Animals without lungs

use gills, specialized air bladders, or epidermis (skin) to obtain dissolved oxygen from the water.

Aeration - The action of forcing air directly into water using a physical device (such as an air pump or paddle wheel) to increase the dissolved oxygen in water, to mix the water, and to resist change in pH.

Bacteria – A diverse group of microscopic, single-celled organisms that inhabit all habitats on the planet, including on and within other living organisms.

Nitrifying bacteria -Nitrifying bacteria convert ammonia (the toxic waste excreted by aquatic organisms) into [less toxic] nitrite and further into [minimally toxic] nitrate.

Biological filter ("Biofilter")- A filter that provides a large surface area to host nitrifying bacteria which prevent accumulation of toxic ammonia and nitrite. Some specialized, but complex biological filters can prevent accumulation of nitrate.