


Hurricane Ian — Office Closures




Some state offices are closed on **Thursday, October 6, 2022 and Friday, October 7, 2022**. [See Hours, Holidays and Closures](https://www.fdacs.gov/Contact-Us/Hours-Holidays-and-Closures) (https://www.fdacs.gov/Contact-Us/Hours-Holidays-and-Closures).

Visit the **FDACS Job Fair** (https://www.fdacs.gov/content/download/106960/file/Job-Fair-Flyer.pdf) [ **1 MB**] 

October 13, 2022

Effective October 6, 2022, campgrounds and recreation areas on 11 State Forests are  closed due to Hurricane Ian. [See a list of the closures](https://www.fdacs.gov/Divisions-Offices/Florida-Forest-Service/Florida-State-Forest-Campground-and-Recreation-Area-Closures-Due-to-Hurricane-Ian) (https://www.fdacs.gov/Divisions-Offices/Florida-Forest-Service/Florida-State-Forest-Campground-and-Recreation-Area-Closures-Due-to-Hurricane-Ian).

If you solicit charitable donations in Florida, you may be required to register with the  department prior to solicitation activity. Learn more about **[registration requirements](https://www.fdacs.gov/Business-Services/Solicitation-of-Contributions)** (https://www.fdacs.gov/Business-Services/Solicitation-of-Contributions).

Commissioner Nicole "Nikki" Fried

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Aquarium Care and Maintenance: Nutrition and Feeding

Proper nutrition is critical for good fish health. Because there is such a diversity of tropical ornamental fish, the nutritional requirements vary greatly as well. It is important to determine the specific requirements for each fish species being kept. Although a basic or staple tropical fish food may work well for some species, it may be insufficient for others. All species require some level of protein, lipids,

carbohydrates, vitamins and minerals.

Protein is necessary for growth and for repair of cells and body tissue. Proteins must be supplied regularly to ensure good growth and health. It is the most expensive component in feed and may comprise anywhere from 25 percent to 55 percent of the diet, depending on the fish species and size. While it is an important source of energy, excessive protein will simply increase ammonia production. Fish and shrimp meals are common sources of protein in fish feeds.

Lipids (fats and oils) are important to fish since they provide energy and allow the uptake of fat-soluble vitamins and other crucial nutrients. They are available from many sources, and extra fats can be stored in the body. Too much fat can affect the liver's ability to filter and cleanse the blood.

Like fats, carbohydrates provide energy for body functions. However, only omnivores (meat and plant eaters) and herbivores (plant eaters) utilize carbohydrates well; carnivores (meat eaters) do not.

Vitamin requirements vary among fish species, but vitamin deficiencies can result in reduced growth, anorexia (lack or loss of appetite), scoliosis (curved spine) and even death. Some vitamins, such as vitamin C, break down over time, so feed should be kept fresh. Mineral requirements are less known for fish but still play an important role in maintaining the osmotic balance between their tissues and water environment.

Quantity and frequency of feeding varies depending on several factors including size and age of fish, water temperature and the quality of diet. In general, more active species require more energy replenishment and, thus, more food. Younger fish also require higher feeding rates (relative to body mass) than older members of their species. Because cyprinids (goldfish, koi, barbs, danios) lack a true stomach, they often benefit from more frequent feedings. For all fish, as water temperature increases, fish metabolism increases, resulting in a greater feed requirement (until the temperature reaches significantly above the optimum range).

Once an optimal diet is determined, most tropical aquarium fish can be fed as much as they will consume in 1-3 minutes once or twice per day. If uneaten feed remains,

it should be removed and future feedings reduced to prevent water quality problems. However, the species' feeding habits must be taken into account. For instance, a plecostomus is a grazer and will not rapidly eat feed presented to it. All rules-of-thumb must also be carefully balanced with water quality. Even if significant fish growth is desired, the fish will suffer less from a restricted quantity diet than from poor water quality.

All fish food should be kept cool and dry to slow the deterioration of important nutrients and eventual spoilage. It is better to buy smaller quantities of food and replace it more frequently than to buy in bulk and store it.

Aquarium Fish

[Aquarium Fish FAQ](https://www.fdacs.gov/Consumer-Resources/Recreation-and-Leisure/Aquarium-Fish/Aquarium-Fish-FAQ) (<https://www.fdacs.gov/Consumer-Resources/Recreation-and-Leisure/Aquarium-Fish/Aquarium-Fish-FAQ>).



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