



DON'T DUMP THAT TANK! EDUCATION TO REDUCE NON-NATIVE AQUATIC PET RELEASE

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Keeping aquatic pets is a rewarding experience for many people. An aquarium full of tropical fishes or corals, a water garden with exotic flowering water lilies and koi, or a reptile display with aquatic turtles are beautiful and vibrant expressions of our love for the environment. The US aquatic pet trade is a multi-billion dollar industry supporting the livelihoods of many thousands and the enjoyment of millions of Americans.

Most of the aquatic pets—fish, invertebrates, plants, reptiles, amphibians, and other species—are not native to the US. These species that are such wonderful additions to our homes and gardens can become serious pests if they escape or are released into the environment. Well over 1000 species of non-native aquatic plants and animals (besides plankton) have been introduced into the non-captive, freshwater and marine environments in the US. The vast majority, 668, are fish species. The exact number that was originally released as pets is difficult to determine, but at least 100 ornamental fish species have been introduced into Florida (about 64% of all non-native fish introductions). The number one pathway for introduction of non-native pets is release by pet owners.

Pet ownership is an important responsibility. With the important place that veterinarians hold for pet owners, there is considerable opportunity for veterinarians to educate pet owners to reduce aquatic pet release.

WHY DO PET OWNERS RELEASE AQUATIC PETS?

Observations of pets in the environment and surveys of pet owners confirm that people all too often release their pets. Understanding why pet owners release their pets is vital to developing strategies to reduce the frequency of release. Some of the major reasons are below.

Mobility of Society

Society today is characterized by fast pace and mobility. People have considerable work, social, and recreational demands on their time. On-the-go pet owners may decide that maintenance of home aquaria or water gardens is too time-consuming. Relocating aquaria and aquatic pets may be difficult or impossible when their owners move to a new home, especially during long-distance moves.

Children

Many aquatic pets are purchased for and maintained by children. Children may lose interest or leave home. Adults may not want to take over husbandry duties.

Changes in Lifestyle

Lifestyles of people may change for many reasons. Aquatic pets are considered luxury items by many and a downturn in the economy may result in a desire to reduce household expenses by abandoning the aquarium hobby. A family illness, marriage, or divorce may reduce the time, interest, and funds to support aquatic pets.

Husbandry or Behavior Problems with Pets

Some species or types of systems may be challenging for pet owners. Species that grow to large size, require specialized food or water quality, are sensitive, or are aggressive may tax a pet owner's skill and patience.

WHY NOT RELEASE YOUR NON-NATIVE AQUATIC PETS?

It is Bad for the Releaser

Releasing non-native species into the environment is illegal under most circumstances and in most states. Federal or local regulations also may prohibit release. Non-native pet release is a misdemeanor in most jurisdictions but conviction may involve fines and jail time. Moreover, ignorance of fish and wildlife laws prohibiting release is not a legal excuse. One should always assume that the practice is illegal and act accordingly.

Management of non-native species costs natural resource agencies money in enforcement, control, and other management expenses. These resources are no longer available for other conservation projects. These same agencies operate on tax money... tax money collected from residents—in other words, the releaser's tax money.

Negative impacts of established non-native aquatic pets may impact economic or recreational activities of the releaser. Negative impacts on fishing or boating are good examples.

It is Bad for the Environment

Non-native species released into the environment may survive, reproduce, and establish. Once this occurs, it is difficult and costly, if not impossible to eradicate problematic species. They may become permanent members of the floral or fauna and have negative impacts on native species or on ecosystems. Non-native aquatic species may affect

natives through predation, competition for food, habitat, or other resources, aggression, hybridization, habitat alteration, or introduction of pathogens. Non-native species may threaten biodiversity or alter the character of socio-economically important landscapes or ecosystems.

It is Bad for the Pet

Many owners release pets in a misguided effort to provide the pet with its freedom, often as an alternative to seeing their pet die. What is not often realized is the stress that may occur to pets released into the environment. The environment may be wrong for survival such as when marine fish are released into freshwaters or when tropical species are released into cooler-climate regions. Predators often attack and eat newly released aquatic animals. Some may be subject to aggression from other species.

ALTERNATIVES TO PET RELEASE

Many owners contemplating release of their non-native aquatic pets will reconsider if they become aware of the negatives of release and viability of alternative options. Some possible options are below:

- **Locate a new home** - One of the best options is to find another pet owner willing to accept the pet. Friends, family, co-workers, neighbors, and schools are all potential options.
- **Contact a pet store** - Some pet stores may accept aquatic pets from owners and attempt to place the pet in a new home. In some cases, the pet store may be willing to trade different pets or dry goods; however, this is unusual. The pet owner should take care to understand the needs of any new pet and be willing to take on the responsibility of pet ownership. Pet store employees may be good resources for finding other outlets as well.
- **Network with a local hobbyist club** - A local hobbyist club is a great resource to learn more about pet husbandry and to find a new home for pets. Many of the members will be highly knowledgeable and very interested in preventing pet release.
- **Attend a local pet amnesty event** - Some state and local agencies sponsor pet amnesty programs where the public can surrender unwanted pets. Such events can be a great way to comply with fish and wildlife regulations by giving up illegal pets because there is usually a “no questions asked” policy. The agencies usually try to place the pet with a new owner or responsible breeder, though euthanasia may be necessary. Pet amnesty events are usually advertised on the agency website, through social media, in newspaper stories or ads, and on the radio.
- **Contact a zoo, public aquarium, or educational institution** - Such institutions seldom accept unwanted pets, but may be able to assist with contacts.

- **Euthanasia** -Euthanasia, though best used as a last resort, is a viable, common, and humane alternative to release. A local veterinarian and, in some cases, a biologist can facilitate the process.

WHAT CAN VETERINARIANS DO?

The consensus is that only one thing will help reduce the frequency of non-native pet release—education. Education is what is needed to change behavior. A change in behavior is needed to reduce the release of pets.

Aquatic pets are becoming an increasing part of private veterinary practices. Moreover, many owners of dogs, cats, birds, terrestrial reptiles, small mammals, and exotic animals also keep aquatic species. Pet owners view veterinarians as people in positions of authority and may be more likely to follow advice and instruction from them than from pet stores or other information sources. Therefore, veterinarians are in a unique position to help the non-native pet release problem.

- **Educate the public on responsible pet ownership** – Pet ownership is a responsibility with an ethical dimension.
- **Assist pet owners with disease problems** – This is what veterinarians do best. Solving water quality and disease issues makes for healthy pets. Healthy pets in turn provide greater pet owner satisfaction.
- **Provide information on proper husbandry** – Proper care of aquatic pets makes their ownership more enjoyable and sustainable in the long-term. There may be a learning curve and a need for outside resources for veterinarians new to aquatics.
- **Educate pet owners on the negatives of release** – Proactive discussions with pet owners can provide them with information to make a better choice than release of non-native pets into the environment. Daily discussions with pet owners may provide numerous “teachable moments” where veterinarians can head off a contemplated release or potential releases in the future.
- **Serve as a resource for contacts to place unwanted pets** – The extensive networks of many veterinarians can be used to help place pets with new owners.
- **Facilitate euthanasia** – Veterinarians can discuss euthanasia options with pet owners and perform euthanasia, a humane alternative to release.

SUMMARY

Release of non-native aquatic pets is an environmental and ethical problem. Release can have a negative impact on the releaser, the environment, and the released pet. Pet owners release aquatic species for a variety of reasons but education can help change this behavior. Veterinarians can be an important educator of the public regarding the negatives of non-native aquatic pet release and viable alternatives. Veterinarians also are among the best-suited to deal with euthanasia if that option is needed.

ADDITIONAL RESOURCES

1. ANSTF 2012. Protect Your Waters. Aquatic Nuisance Species Task Force Stop Aquatic Hitchhikers Campaign. Available: <http://www.protectyourwaters.net/>.
2. FWC. 2012. Florida Fish and Wildlife Conservation Commission—Florida's Exotic Fish and Wildlife. Available: <http://myfwc.com/nonnatives>.
3. Hill JE. 2008. Non-native species in aquaculture: terminology, potential impacts, and the invasion process. U.S. Department of Agriculture-Southern Regional Aquaculture Center Publication No. 4305. Stoneville, Mississippi. Available: <https://srac.tamu.edu/index.cfm/event/getFactSheet/whichfactsheet/209/>.
4. Hill JE. 2011. Emerging issues regarding non-native species for aquaculture. U.S. Department of Agriculture-Southern Regional Aquaculture Center Publication No. 4305. Stoneville, Mississippi. Available: <https://srac.tamu.edu/index.cfm/event/getFactSheet/whichfactsheet/225/>.
5. NISIC. 2012. National Invasive Species Information Center: Aquatic Species. Available: <http://www.invasivespeciesinfo.gov/aquatics/main.shtml>.
6. PIJAC. 2012. Habitattitude™ Campaign. Available: <http://www.pijac.org/projects/project.asp?p=27>.
7. UF/TAL. 2012. University of Florida Tropical Aquaculture Laboratory. Available: <http://tal.ifas.ufl.edu/>.
8. USGS. 2012. U.S. Geological Survey Nonindigenous Aquatic Species Database. Available: <http://nas.er.usgs.gov/>.
9. Yanong RPE, Hartman KH, Watson CA, Hill JE, Petty D, Francis-Floyd R. 2007. Fish slaughter, killing, and euthanasia: a review of major published U.S. guidance documents and general considerations of methods. University of Florida Cooperative Extension Service Circular 1525, Gainesville, Florida. Available: <http://edis.ifas.ufl.edu/pdffiles/FA/FA15000.pdf>.