eDNA TESTS FOR AQUATIC INVASIVE SPECIES

The Aquatic Animal Health Program, College of Veterinary Medicine at Cornell University, is offering several TaqMan qPCR eDNA assays to detect aquatic invasive species (AIS). All assays target the mitochondrial cytochrome oxidase c subunit 1 (CO1) sequence and have been Barcode selected and tested for specificity. The standard curve method for absolute quantification of CO1 copy number, employing species-specific amplicons, is used. The analytical sensitivity is one copy of CO1.

1. A TaqMan qPCR assay that amplifies silver (*Hypophthalmichthys molitrix*), bighead (*Hypophthalmichthys nobilis*), black *(Mylopharyngodon piceus)* and grass (Ctenopharyngodon idella) carp simultaneously (Pan Asian qPCR), is available. Species identification and secondary validation of Pan Asian qPCR positive samples are accomplished by semi-nested PCR amplification and sequencing an overlapping 208-bp region of the CO1 gene or by using Asian carp species-specific TaqMan qPCR assays. Similarly, Asian carp species-specific TaqMan qPCR is available for all four species of Asian carp and can be used individually if monitoring for only one species of Asian carp.

2. A TaqMan qPCR assay that amplifies sea lamprey (*Petromyzon marinus*) mitochondrial cytochrome oxidase c subunit 1 (CO1), is available. There is no cross amplification with chestnut (*Ichthyomyzon castaneus*), northern brook (*Ichthyomyzon fossor*), silver (*Ichthyomyzon unicuspisor*) or American brook (*Lethenteron appendix*) Lamprey’s but TaqMan qPCR assays are available for each of these species if requested.

3. A TaqMan assay for round goby (*Neogobius melanostomus*) is also available.

eDNA samples (filters) are provided by the user.

Price $97.00 per assay with a ten-sample minimum. Contact Dr. Rod Getchell rgg4@cornell.edu or Dr. Jim Casey jwc3@cornell.edu for further information.