

## **Update on Asian Loach in the Manor Kill watershed**

by S. Wells, DEC - R4 Aquatic Biologist, ver. 3-7-11

Note: see initial loach report ver. 9-21-10 for introduction

Fisheries scientists and technicians continued to document the infestation of Oriental weatherfish 'loach' in the Manor Kill watershed through Dec 3, 2010. Sampling effort identified a source population of loach in state wetlands some 8.4 river miles above Schoharie Reservoir (NYC). This headwater area of tributary (T) 16 to the Manor Kill (see map) comprises about 3 surface acres of habitat for loach that have spread among five headwater ponds. Loach have migrated downstream into the upper main stem Manor Kill and are presumed to be in Schoharie Res. but limited sampling has yet to detect any loach below river mile 7.8 near the mouth of T16. Over 800 loach were captured in 2010 with DEC staff collecting ~500 loach on 15 trips using backpack electro-shocking and standard steel 0.25 inch mesh minnow traps baited with bread or dog food. Additionally, a local landowner (see Sep 10' report) captured over 300 loach (32 trips) using minnow traps exclusively. Loach were highly susceptible to baited traps set overnight.

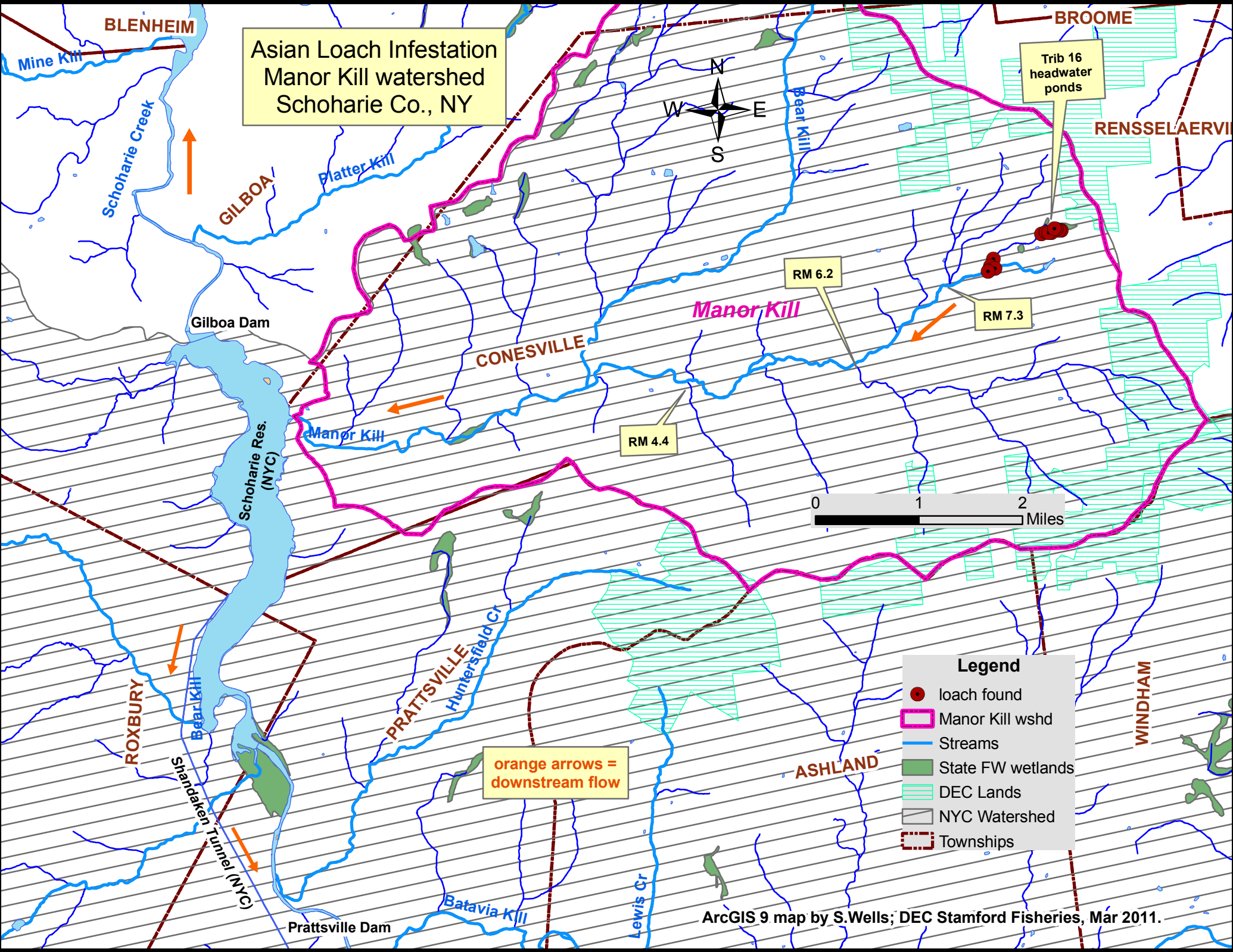
All loach collected by DEC were preserved with some voucher specimens provided to the NYS Museum, SUNY Cobleskill, and the NYCDEP. A total of 250 specimens were examined in the laboratory. Sizes ranged from 51-179 mm (2-7 in.) in total length and 1-41g (0.03-1.4 oz.) in wet weight with the largest loach typically being gravid females. Most loach were devoid of any gametes and thus determined as immature. Further examination is necessary to determine ages due to difficulty in reading their small and unusually ringed scales. Evidence suggests that this loach population is large (thousands) and self sustaining via an abundance of both young and gravid adults collected throughout the sampling period in 2010. Initial catches of loach began in 2008 (see Sep10' report) so we know that at least three year classes are present in the watershed but introduction may have occurred earlier.

In its home range in Asia, this particular loach species (one of 110 spp. worldwide) are considered fine table fare (e.g., fried loach, loach soup) similar to the snakehead (*Channa* spp.) but their small size also makes usable as baitfish for anglers in Asia (illegal in New York). In the USA however, introductions stem mostly from illegal releases of aquaria pets and attempts at aquaculture rearing. The source of this infestation is unknown and remains under investigation.

Concurrent loach studies conducted in the Dwaar Kill watershed (Orange/Ulster Co., NY) by Dr. R. Schmidt and assistants at Bard College at Smith's Rock in MA have confirmed some known life history traits for loach (N = 111 captured). Gut analysis revealed ingestion of common aquatic invertebrates although most stomachs were empty. Active spawning loach were accurately sexed as a result of their distinct spawning behavior when males clasp around gravid females presumably to induce egg release using a hardened posterior dorsal ridge. This activity tends to leave an abrasion mark (loss of scales) on the sides of females which may yield up to 17,000 eggs over a period of time (loach are batch spawners).

Loach sampling will continue in the Manor Kill watershed with 2011 objectives to determine its downstream range and gain further knowledge into their life history, behavior, and possible impacts on aquatic organisms. Salamanders and numerous resident fishes must now share space and resources with loach. Changes in this relatively small aquatic ecosystem are inevitable as loach continue to expand their population and range. Loach eradication is unlikely, but ideas are being proposed to combat their invasion in the headwaters. Because T16 often runs dry in the summer and the headwater ponds are all small (< 0.75 acres), it may be possible to draw down the ponds and/or treat them to eradicate loach from T16. Knowledge and experience gained from such an exercise may prove invaluable in future battles against invasive fishes. Public education and outreach about the potential dangers of spreading invasive species is still the best defense against Asian loach and other alien fishes in New York State waters.

Asian Loach Infestation  
Manor Kill watershed  
Schoharie Co., NY



Trib 16  
headwater  
ponds

RM 6.2

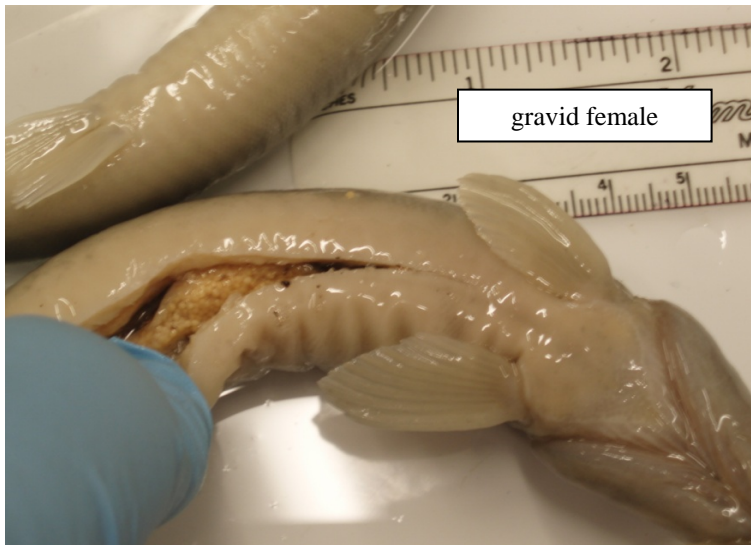
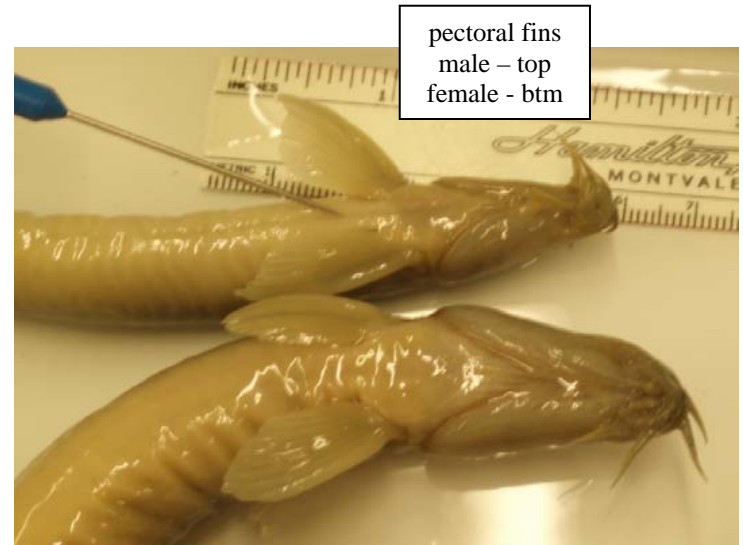
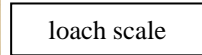
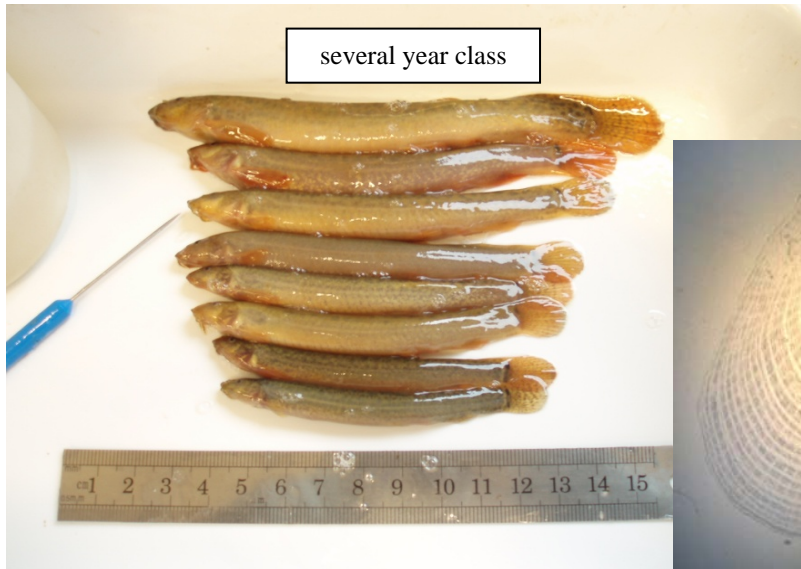
RM 7.3

RM 4.4

0 1 2  
Miles

orange arrows =  
downstream flow

- Legend**
- loach found
  - ▭ Manor Kill wshd
  - Streams
  - State FW wetlands
  - ▨ DEC Lands
  - ▩ NYC Watershed
  - ▤ Townships



Laboratory work on loach from the Manor Kill (Schoharie Co., NY; fall 2010).



Baited minnow traps in loach habitat; trib 16 headwaters of the Manor Kill (Schoharie Co., NY; fall 2010).