

USFWS Asian Carp Project Update

Asian Carp Monitoring

- USFWS Midwest Region early detection program in the Great Lakes, including the CAWS, for Asian Carps underway. Sampling gears include eDNA, trawling, gillnets, trammel nets, electrofishing, invertebrate sampling.
- In CAWS and IWW, the leading edge of adult Asian Carp has not changed since 2006 (55 miles from Lake Michigan).
- In CAWS, 2014 Monitoring will be seasonal above the barrier, and most effort will be focused below the barrier. Removal efforts will be focused where Asian carp are, whereas other monitoring methods will focus on where Asian carp numbers are low.
- Special focus of Framework monitoring activities at Brandon Road Lock.
- USFWS responsible to submit annual Report to Congress on Asian Carp in UMR and Ohio River basins per WRRDA Sec 1039(b).

eDNA

- Used as an early detection genetic surveillance tool since 2009 for bighead and silver carp (ACRCC Asian Carp Control Strategy Framework).
- USFWS, USACE, and USGS have partnered to lead the Asian Carp Environmental DNA Calibration Study (ECALS), funded through the Great Lakes Restoration Initiative to improve the understanding and interpretation of Asian carp eDNA results.
- Since the initial application of eDNA as a monitoring tool in the Chicago Area Waterway System (CAWS), and through the developments and improvements to the method through ECALS, eDNA is being used as a regional sampling method for waters of the Midwest Region. Through continued coordination with our state and federal partners, the Service has designed a 2014 sampling program to test for the genetic presence of Asian carp DNA in these waters.
- The Service coordinated with states, as well as Canada, to determine sampling sites and the number of samples collected for 2014. Water samples collected as part of the Great Lakes eDNA Monitoring Plan will be tested for the presence or absence of genetic material from silver or bighead carps. Samples will be processed by the Service's Whitney Genetics Lab in Onalaska, Wis. Following a five business day notification period to the states, the results of all sampling efforts will be posted online at <http://www.fws.gov/midwest/fisheries/eDNA.html>.
- Sampling sites will include the CAWS, Great Lakes, Ohio River and the Upper Mississippi River. Sampling sites in the CAWS will focus on the entryways to Lake Michigan, including the North Shore Channel, Chicago Lock, Lake Calumet and the Little Calumet River. CAWS sites will be sampled twice in 2014, each time immediately prior to the Seasonal Intensive Monitoring events scheduled for June and September as outlined in the 2014 ACRCC Monitoring and Response Plan.
- The sites and their respective priority levels in the Great Lakes, Ohio River, and Upper Mississippi River were chosen based on evaluation from the U.S. Army Corps of Engineers' Great Lakes and Mississippi River Interbasin Study assessment work and extensive input from the state natural resource agencies. In general, high priority sites will be sampled twice in 2014, and medium priority sites will be sampled once. The Service will also maintain a reserve of samples to repeat specific sampling areas or sample in other areas as requested by the states.

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- The Whitney Genetics Lab expects to process more than 9,000 samples in 2014, which is over four times the amount of samples processed in 2013.
- The Service is working with USACE on the development of a black carp marker, which is expected to be complete next year.

Quality Assurance Project Protocol (QAPP)

- The QAPP ensures continuity among all agencies involved in eDNA sampling activities by setting the same protocols for the collection and processing of eDNA samples. 2014 updates to QAPP include modifications and efficiencies documented through ECALS efforts, as well as broadening it for use outside the CAWS.
- Later in 2014, the Service will update the QAPP once research on new markers for bighead and silver carps are complete. Water samples will be collected up until the marker trials are complete. The Service will hold a workshop for state and federal partners in late June to review the new markers, then processing of 2014 samples will commence. It is anticipated that eDNA results will be available beginning in mid-July.

2014

Characterizing Risk

Distances from Lake Michigan

37 miles Dispersal barriers

55 miles Adult Population Front

62 miles Presence of Adults/Potential Spawning

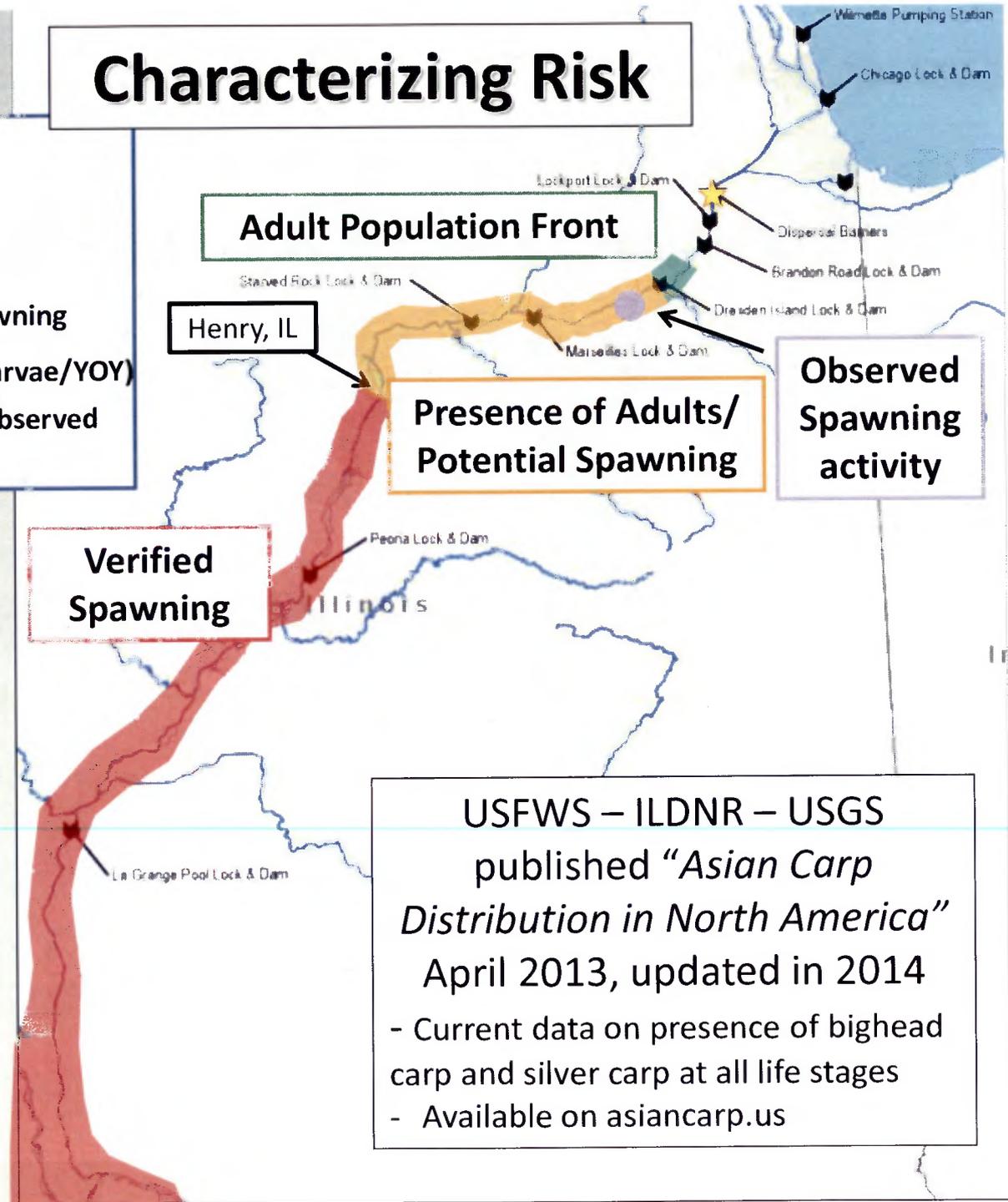
64 miles Observed Spawning activity (no larvae/YOY)

143 miles Established population: Closest observed small Asian carp (Henry, IL in Peoria Pool)

Areas of Concern

- 1) Observed Spawning in Marseilles Pool
- 2) Verified Identification of AC eggs and larvae near Henry, Illinois (Peoria Pool) yet no *small* fish upstream

***Overall leading edge of Asian carp invasion has not changed since 2006 (Dresden Island Pool; I-55)**



USFWS – ILDNR – USGS
published "Asian Carp
Distribution in North America"
April 2013, updated in 2014
- Current data on presence of bighead
carp and silver carp at all life stages
- Available on asiancarp.us

eDNA Regional Monitoring

USFWS eDNA Monitoring Program in 2014

- Great Lakes, CAWS, Ohio River, Upper Miss River
- Over 9,000 samples in the Midwest Region
- State involvement in planning, agreement on plan
- Plan for Great Lakes Region on www.asiancarp.us



eDNA

- Early detection monitoring tool
- Inform other efforts, to include traditional monitoring gear: help verify presence of live fish and rule out other vectors
- eDNA results should be interpreted and used in a monitoring framework rather than as a trigger for response
- eDNA results collected repeatedly over time in the same areas provides a baseline level of eDNA
- 5 to 10-day delay in posting results after state notification
- New marker information from ECALS to be applied in 2014

