

# Update on Current Dye-Trace Studies in the Upper Onion Creek Watershed, Hays County, Texas

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Presentation to Board of Directors  
January 11, 2018



**Barton Springs/Edwards Aquifer**  
Conservation District

# Study Partners



Hays Trinity  
Groundwater  
Conservation  
District



**Barton Springs  
Edwards Aquifer**  
CONSERVATION DISTRICT



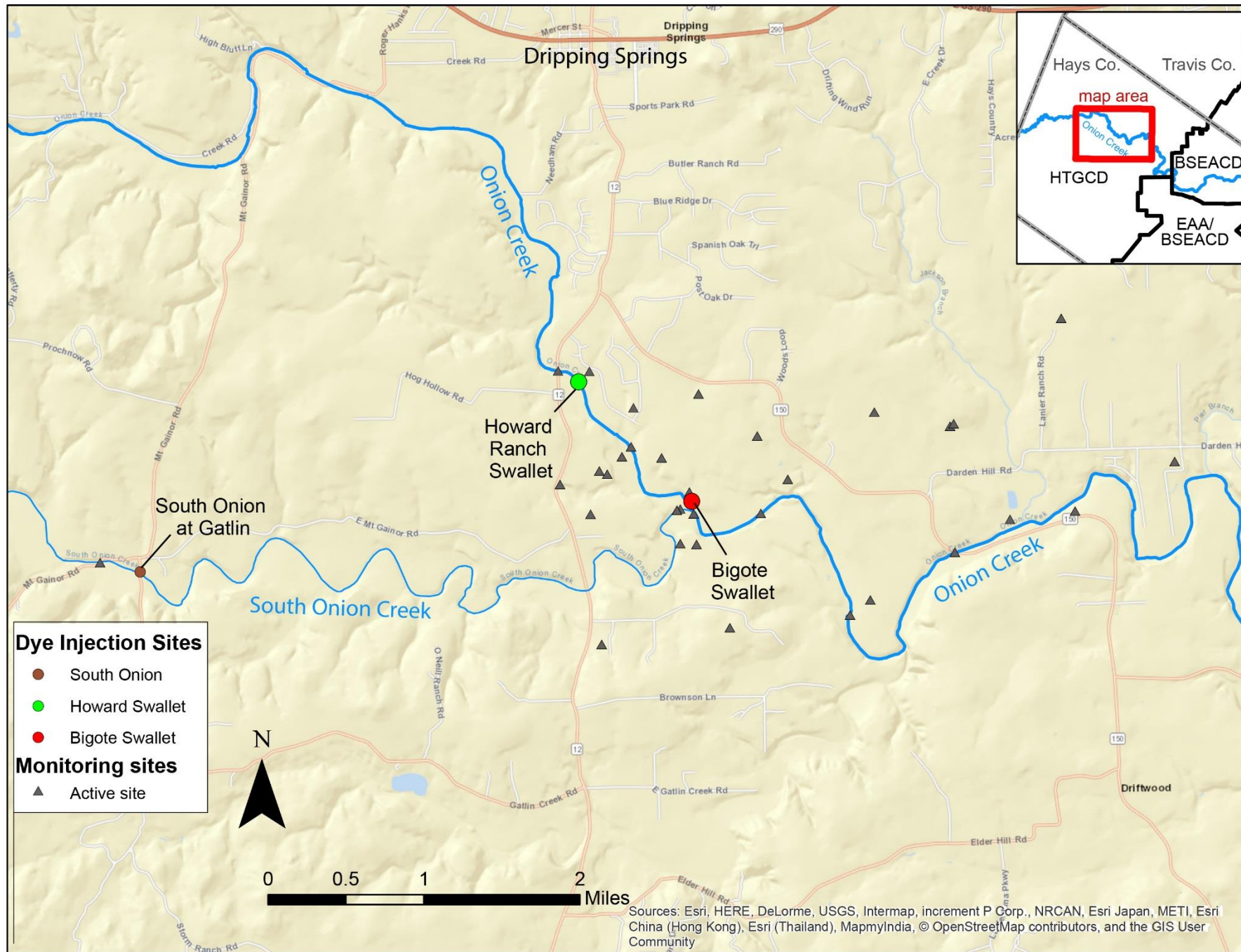
## Interagency Memorandum

Update on Current Dye-Trace Studies in the Upper Onion Creek Watershed, Hays County, Texas

January 10, 2018

### Introduction

A consortium of central Texas agencies and groundwater scientists conducted a series of studies of the Trinity Aquifers that culminated in publication of the Hydrogeologic Atlas of the Hill Country Trinity Aquifer (Wierman et al., 2010). A continuation of those studies has revealed a hydrologic connection between the Middle Trinity Aquifer and the Blanco River and portions of Upper Onion Creek (Hunt et al., 2016; 2017).



# Purpose of Study

- Determine influence of water flowing in Onion Creek on the Trinity Aquifers
- Evaluate direction and velocity of groundwater flow
- Gain a better understanding of water quality of the Trinity Aquifers



# Previous Studies

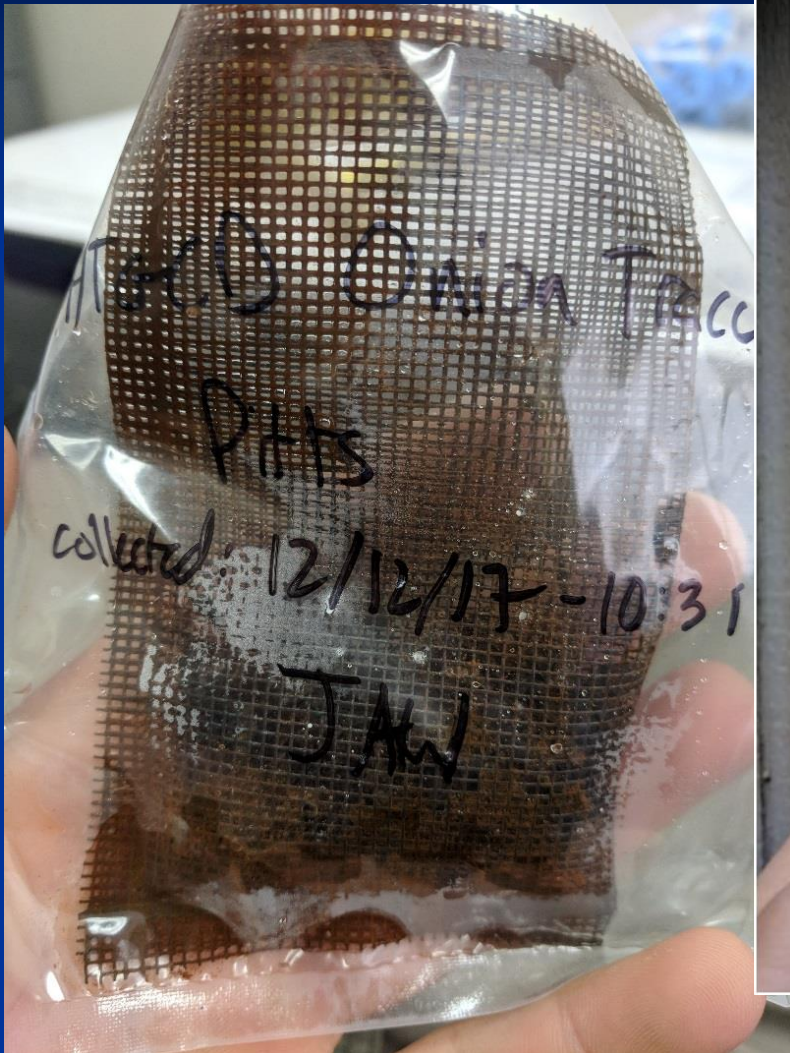
- Hunt, B. B., B.A. Smith, M.O. Gary, A.S. Broun, D.A. Wierman, J. Watson, and D.A. Johns, and, 2017, **Surface-water and Groundwater Interactions in the Blanco River and Onion Creek Watersheds: Implications for the Trinity and Edwards Aquifers of Central Texas**. South Texas Geological Society Bulletin, v. 57, no. 5, January 2017, p. 33-53.
- Hunt, B. B., A. S. Broun, D. A. Wierman, D. A. Johns, and B. A. Smith, 2016, **Surface-water and groundwater interactions along Onion Creek**, Central Texas: Gulf Coast Association of Geological Societies Transactions, v. 66, p. 261–282. **Award winning paper at GCAGS**
- Wierman, D.A., A.S. Broun, and B.B. Hunt (Eds), 2010, **Hydrogeologic Atlas of the Hill Country Trinity Aquifer**, Blanco, Hays, and Travis Counties, Central Texas: Prepared by the Hays-Trinity , Barton/Springs Edwards Aquifer, and Blanco Pedernales Groundwater Conservation Districts, July 2010, 17 plates+DVD.

# Dye-Trace Methodologies

- Injection of non-toxic fluorescent dyes into surface water entering the subsurface through recharge features.
- Sampling from downgradient wells and springs.
- Lab analyses using a spectrofluorometer



# Sampling Methods



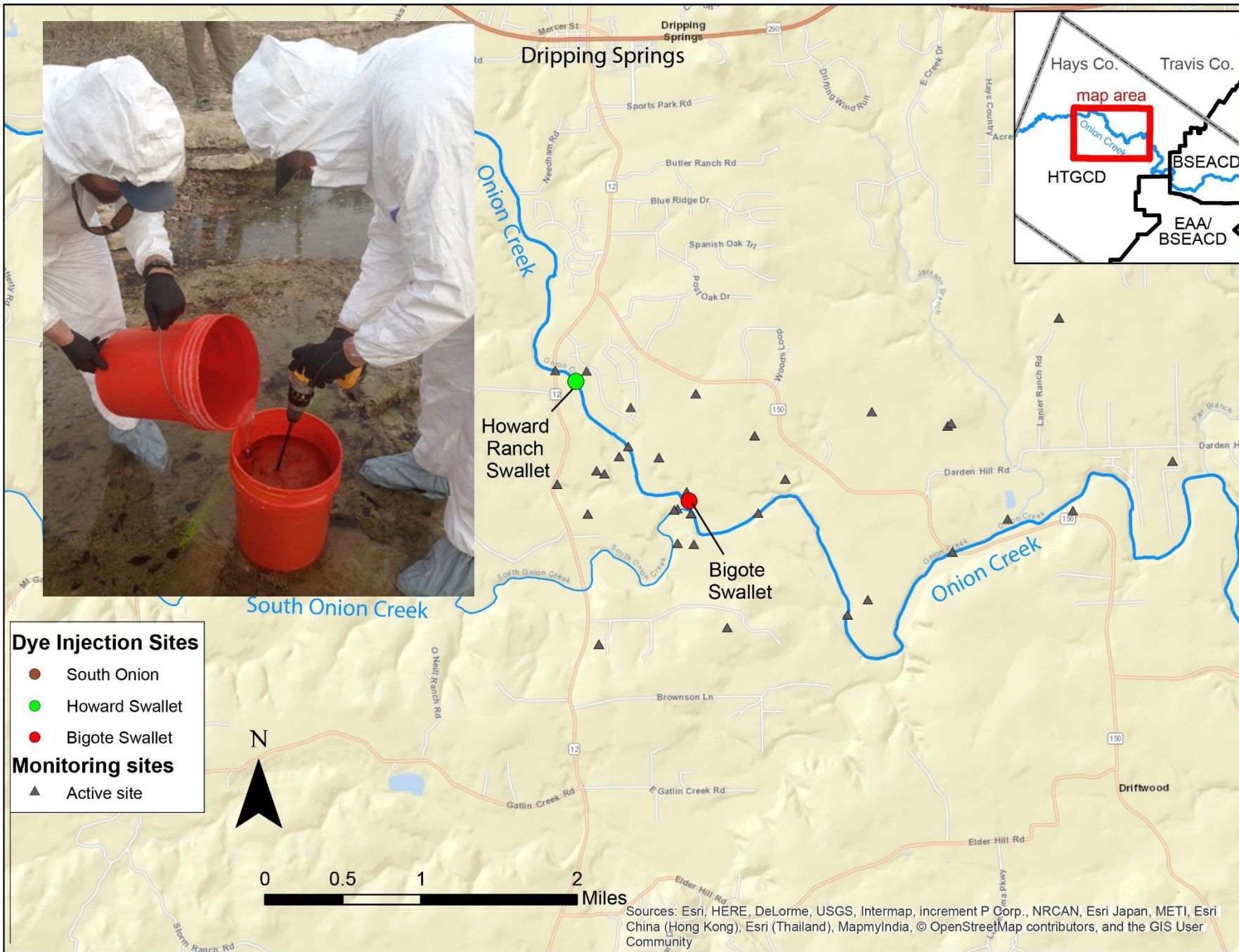




# Bigote Swallet

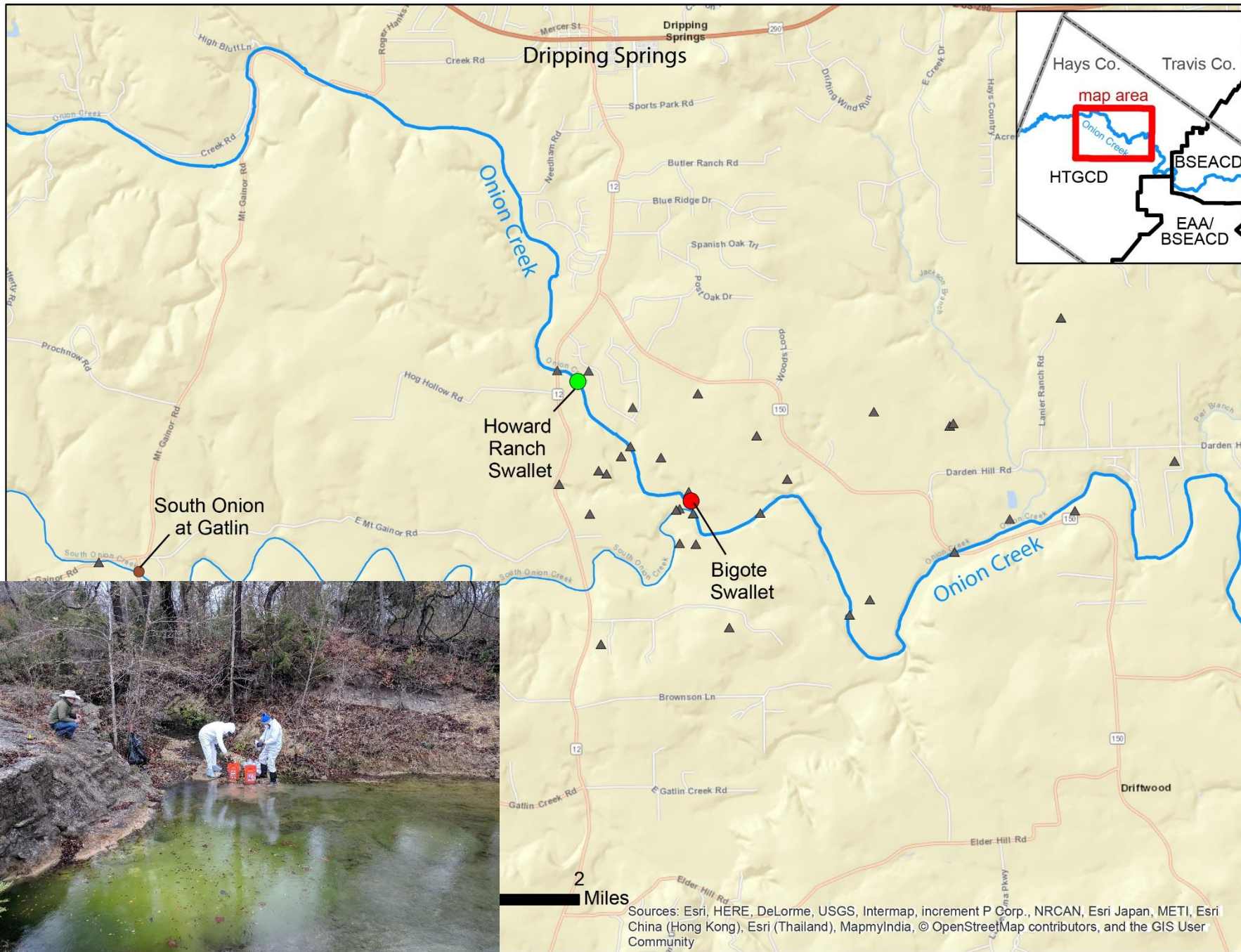






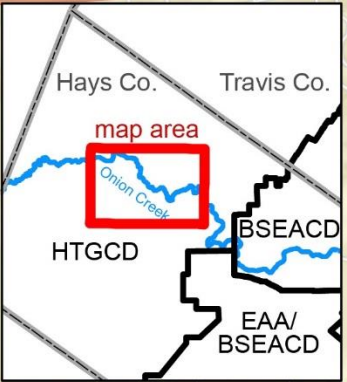
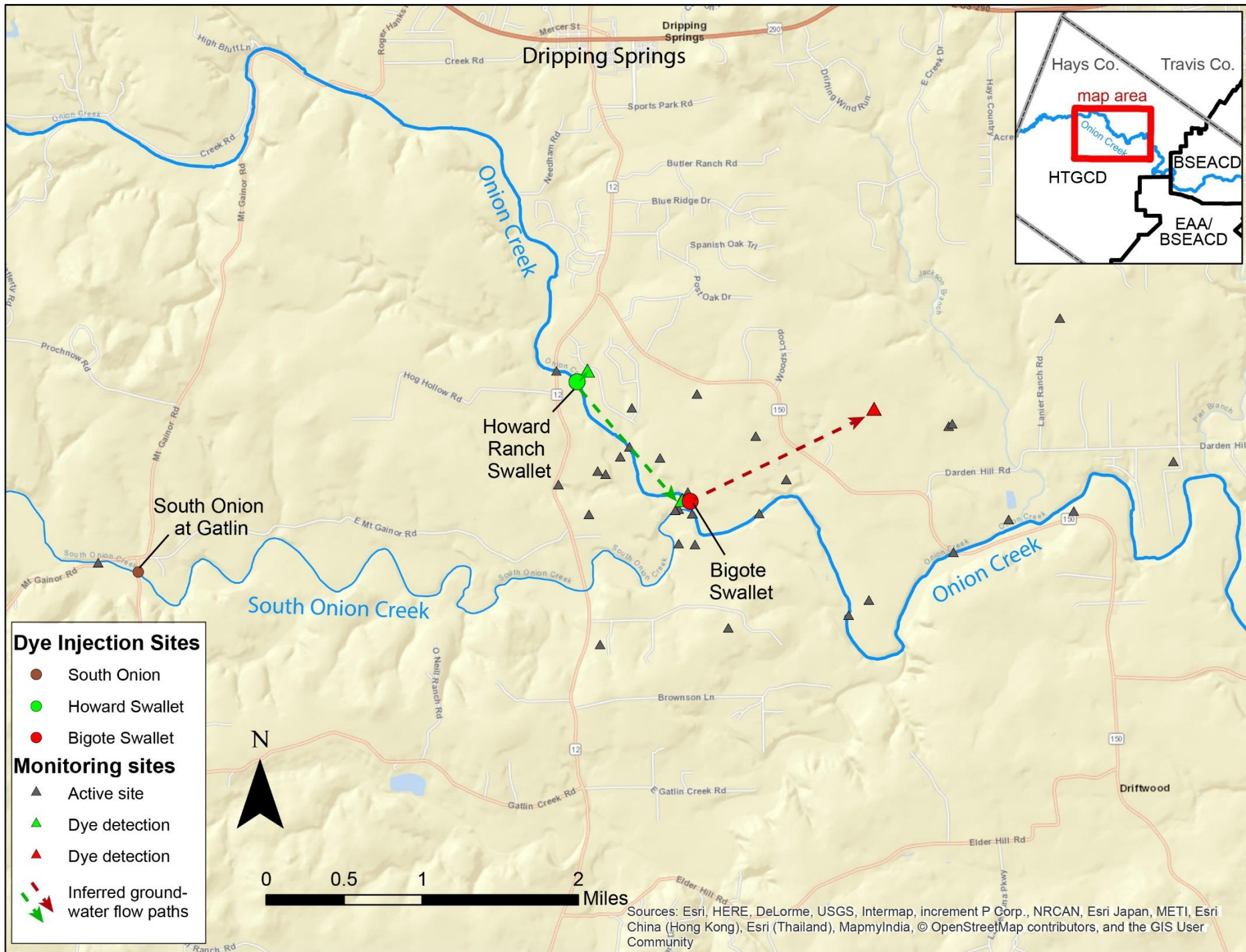
# Howard Ranch





# South Onion Creek





**QUESTIONS?**

