When Beavers Move In:
A Case Study Of A Restored Stream Channel

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The Nature Conservancy - Ohio Chapter

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History of Beavers in Ohio

Beaver effigy pipe
100 CE – 200 CE
Hopewell Culture

~ 400 Million Beaver

Beaver Wars
1640 - 1700

Hudson Bay Company
1670

Hudson Bay Company
3,000,000 pelts to Europe
1853-1877

1656

Iroquois Confederacy Ohio Lands

1750 – 1800

Trapping Peak

1830

Beaver Extirpated

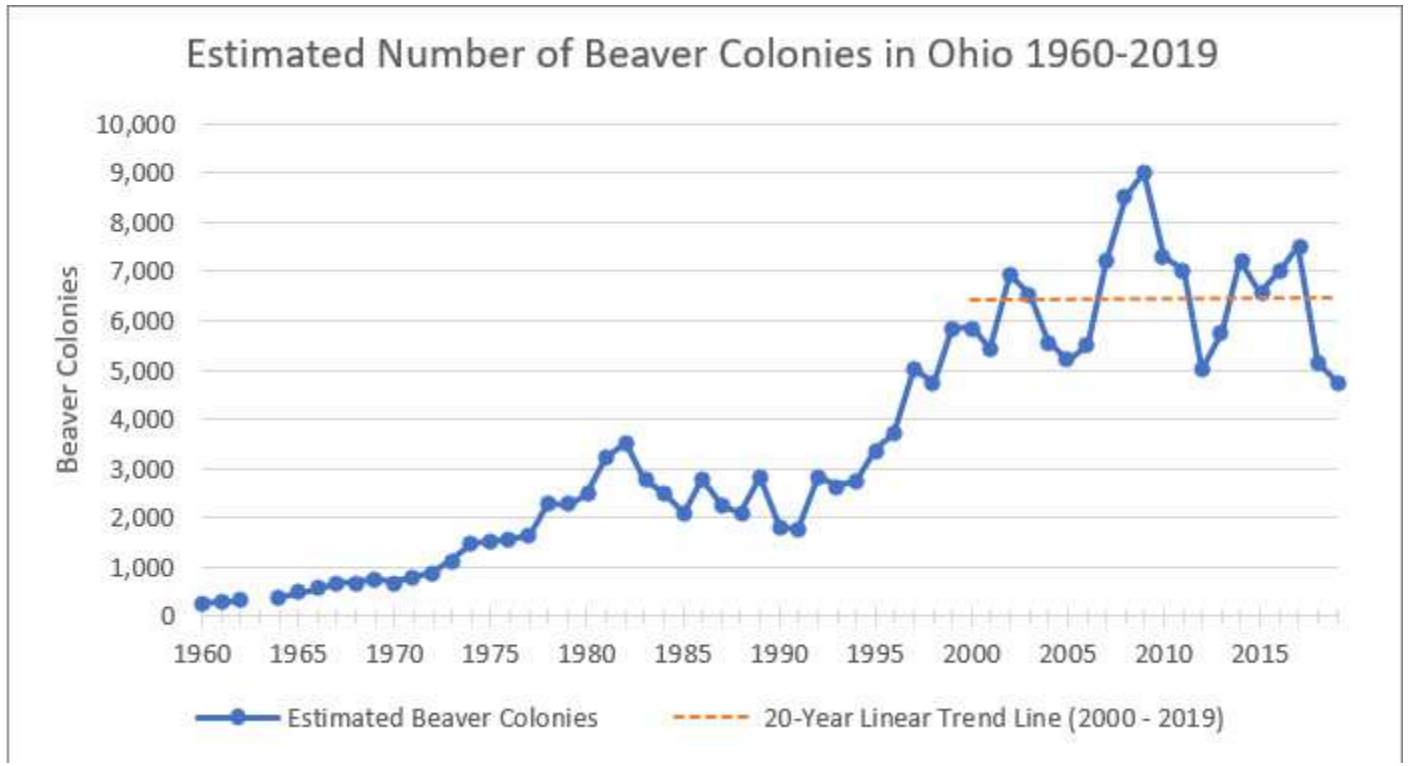
1936

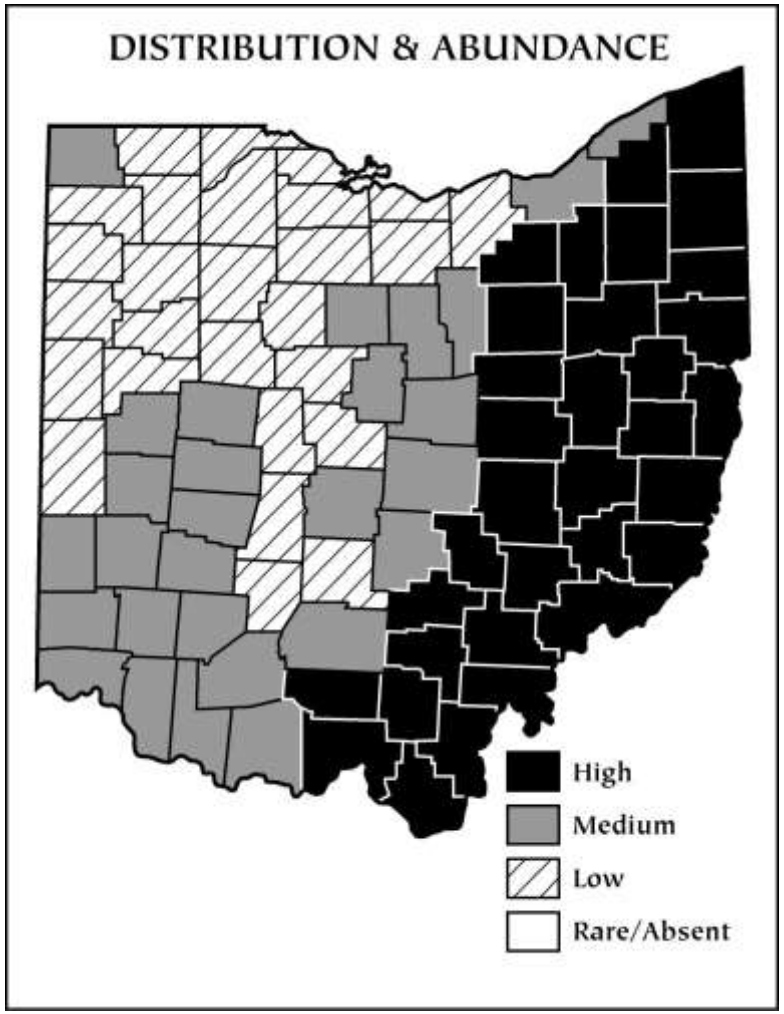
First Record of Return

2019

~ 27,768 Beavers DOW Survey

Beaver Distribution in Ohio





Beavers and Mitigation

Compensatory Mitigation

Designed to replace aquatic resource functions and values that are adversely impacted under the Clean Water Act Section 404 and Rivers and Harbors Act Section 10 regulatory programs.

RIBITS
Regulatory In-lieu Fee and Bank Information Tracking System

In-Lieu Fee Mitigation

“In-lieu-fee” mitigation occurs when a permittee provides funds to an in-lieu-fee sponsor instead of either completing project-specific mitigation or purchasing credits from an approved mitigation bank.

Ohio Interagency Review Team

Ohio Environmental Protection Agency

US Army Corps of Engineers

United States Department of Agriculture NRCS Natural Resources Conservation Service

NATIONAL MITIGATION & ECOSYSTEM BANKING CONFERENCE
THE environmental markets conference

Strait Creek ILF Mitigation Site

- Site identified - past land use modifications
- RFP for Design Bid Build 2016
- Design asked to incorporate beaver
- 2019 Construction
- Over 2600 linear feet

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MITIGATION BOUNDARY

SPECIAL PROTECTIONS FOR THE SOIL, WATER, AND NATIVE PLANTS WITHIN THIS AREA

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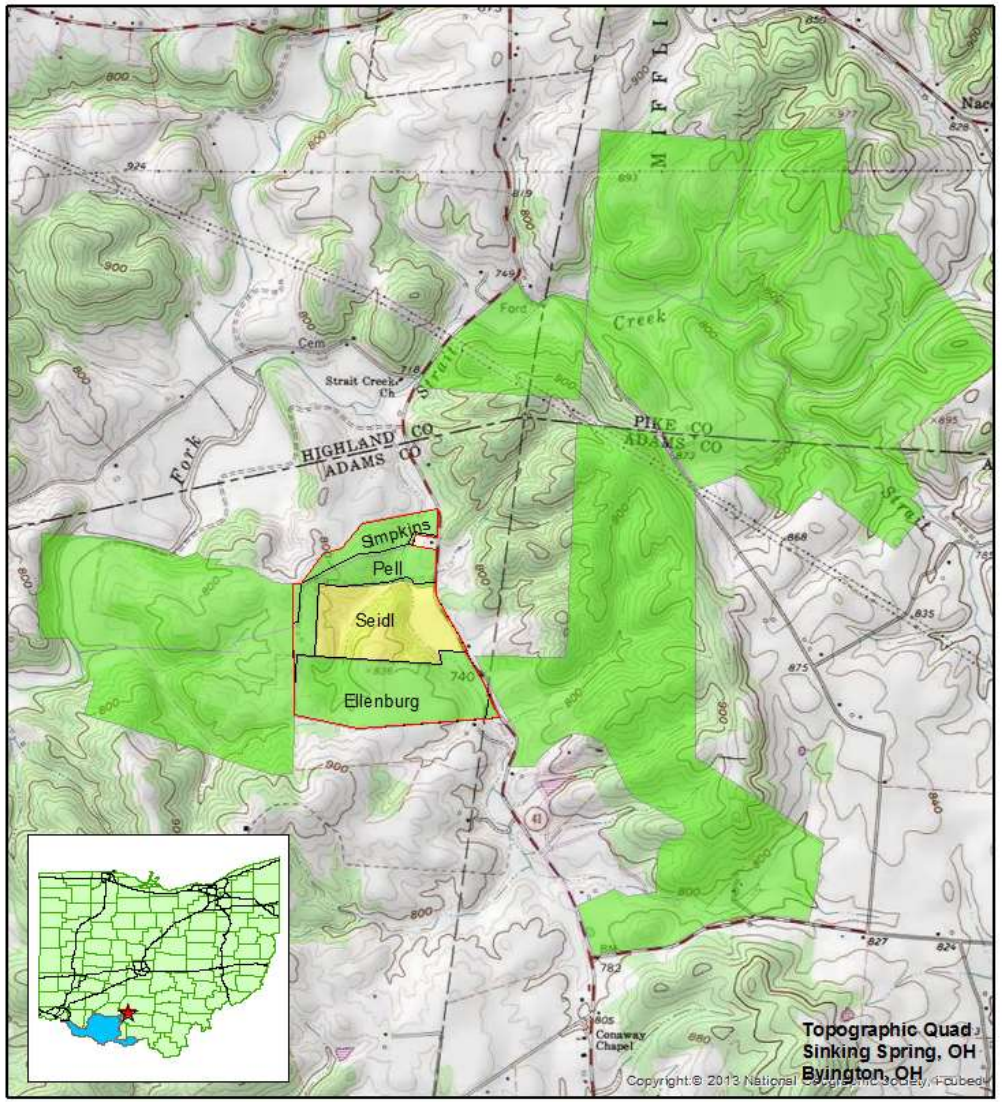
Strait Creek Site Location



Legend

- Mitigation Site
- Mitigation_Site_Parcels
- Strait Creek Preserve
- Seidl Parcel

N

0 0.075 0.15 0.3 0.45 0.6 Miles

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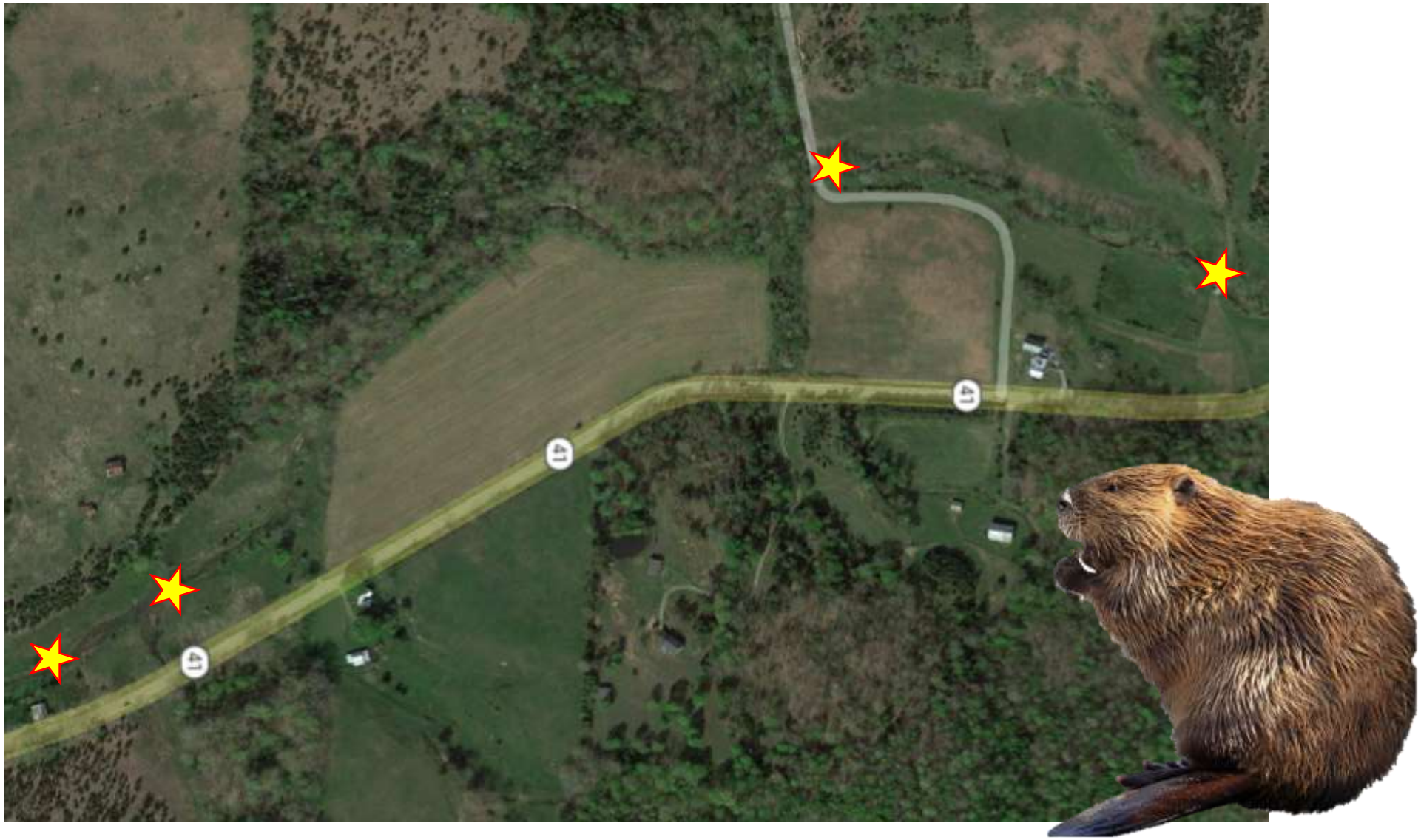
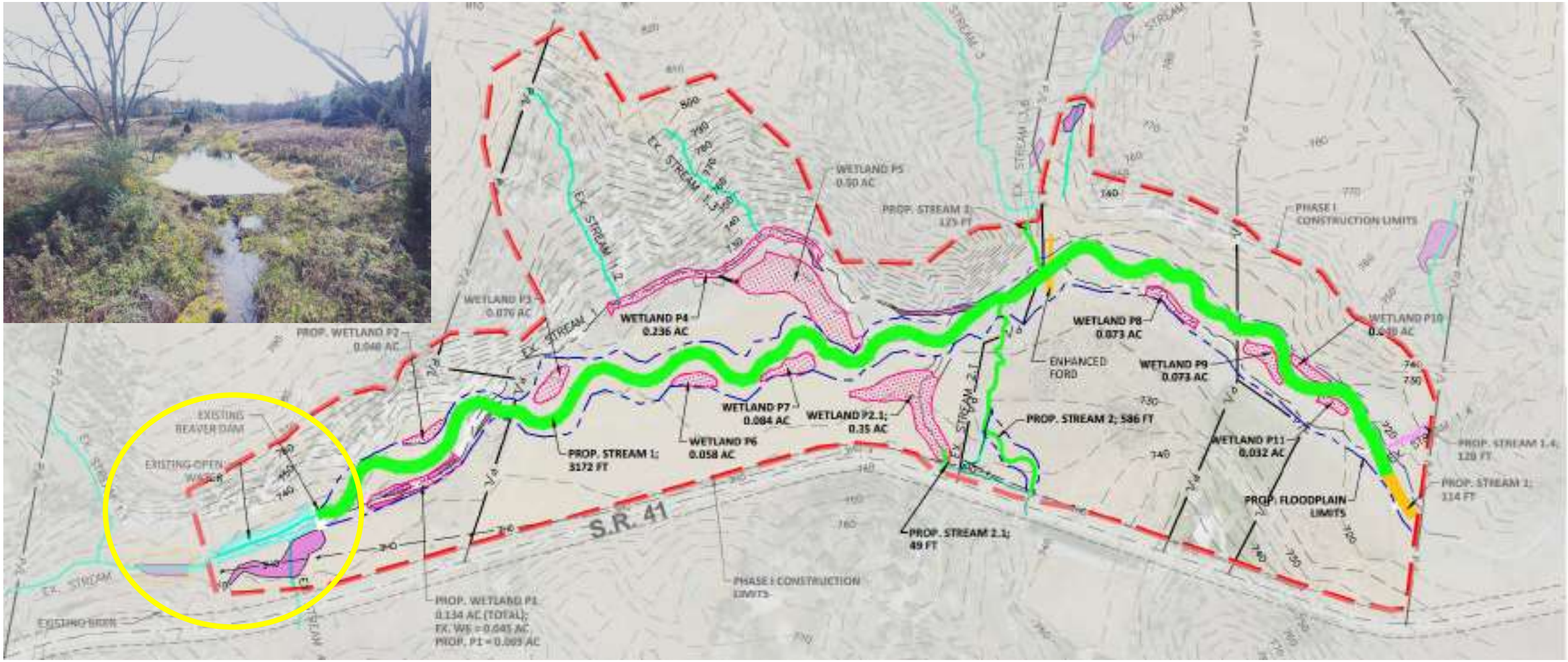
Figure 1: Strait Creek Mitigation Site USGS Topographic Map

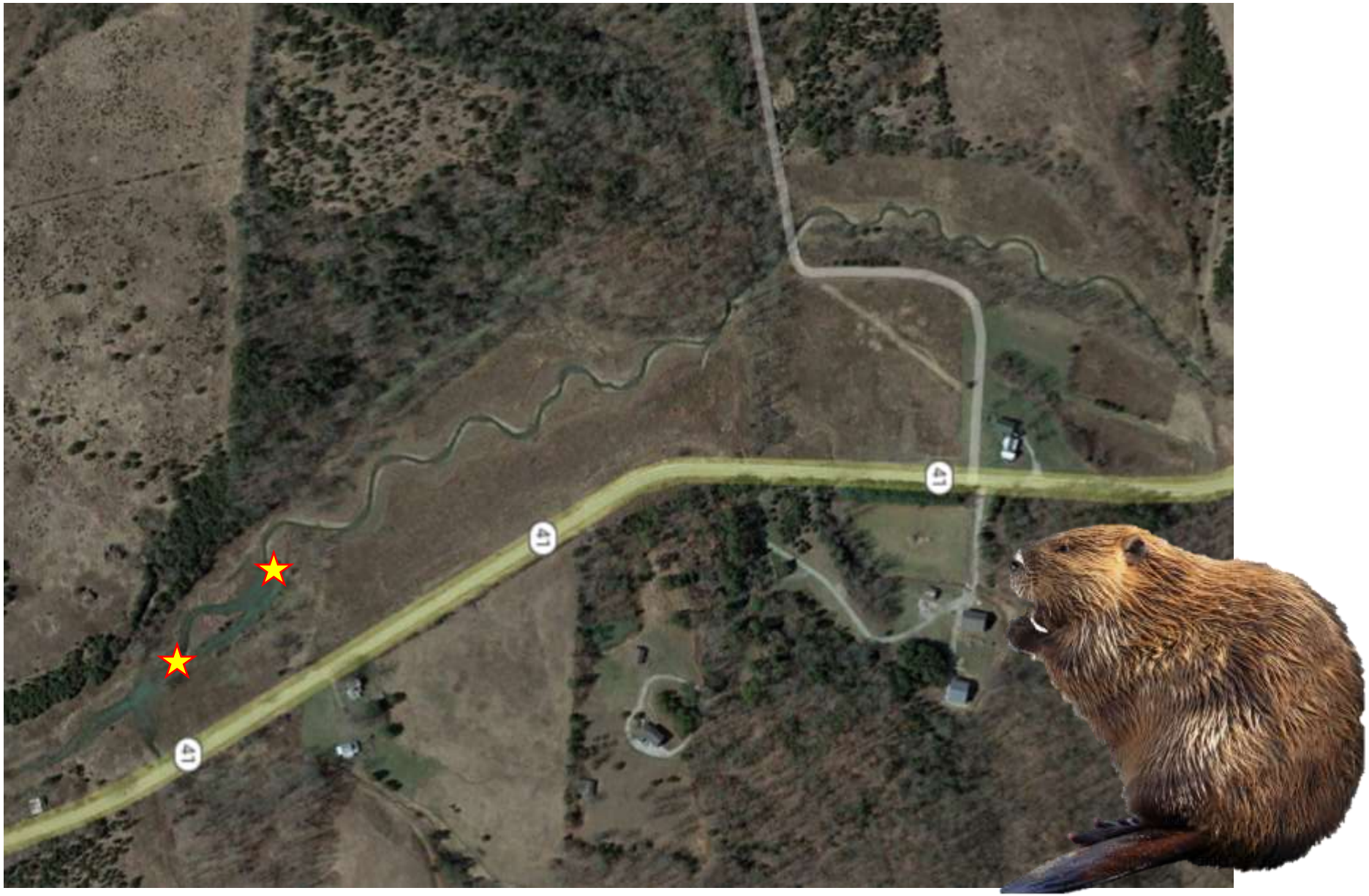
Beaver Dams Prior to Restoration



Final Plan Set for Restoration Work



Beavers Dams Following Restoration



Two years post construction: 2021

Installation of a Pond Leveler Device

Beaver Not Observed in Restoration Site

2022 – Downstream Dam

2022 – Upstream Dam

Future Recommendations

- Embrace the dynamic nature of beavers
- Incorporate areas of deeper water
- Protect mature trees
- Work with interagency review teams regarding the allowance of beaver

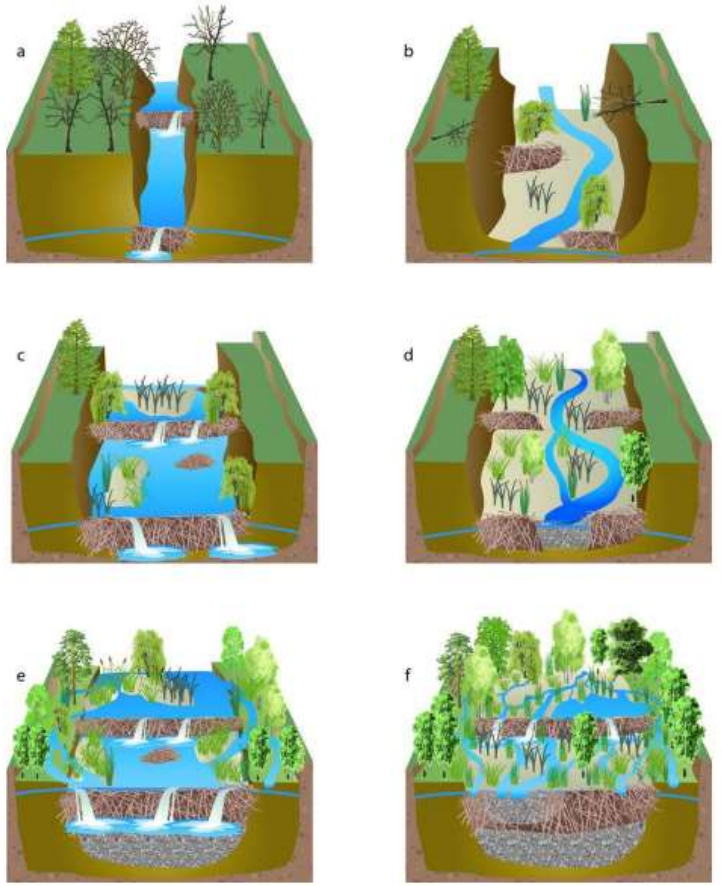


Figure 5: Sequence of ecosystem change with beaver colonization as is introduced by Polluck et al. (2014). A shows initial beaver colonization. B is the resultant stream profile after dams have been abandoned. The incised and widened stream then goes through another sequence of beaver inhabitation and abandonment in c-d. Pictures e-f show the wetland environment that is established after sustained beaver inhabitation. The resultant ecosystem is more biodiverse and stable than the previous pictures.

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