

Progress

Places

- NM Boulders
- More boulders
- Boulder City
- House
- Patio
- SealceLoss8-14-2023

Layers

- Primary Database
- Announcements
- Borders and Labels
- Places
- Photos
- Roads

2002

Fanno Creek at Englewood Park prior to restoration of willows and other woody plants.



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Timeline controls: 1985, 7/2004, 2023

2004

Site vegetation was dominated by reed canary grass and Himalayan blackberry for decades. This vegetation, and the incised stream, remained static during this time.



2006
Site was mowed prior to grading and construction



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6/2007

1985 2023

YR 0 – 2006

Clean Water Services implemented a massive excavation and grading project to reconnect the floodplain and re-meander Fanno Creek.



7/2008

1985 2023

YR 2 – 2008

This effort largely failed to achieve the desired result. The stream remained confined to the new channel. Planted vegetation, however, was beginning to develop, and the first beaver dam appeared in this reach (arrow)



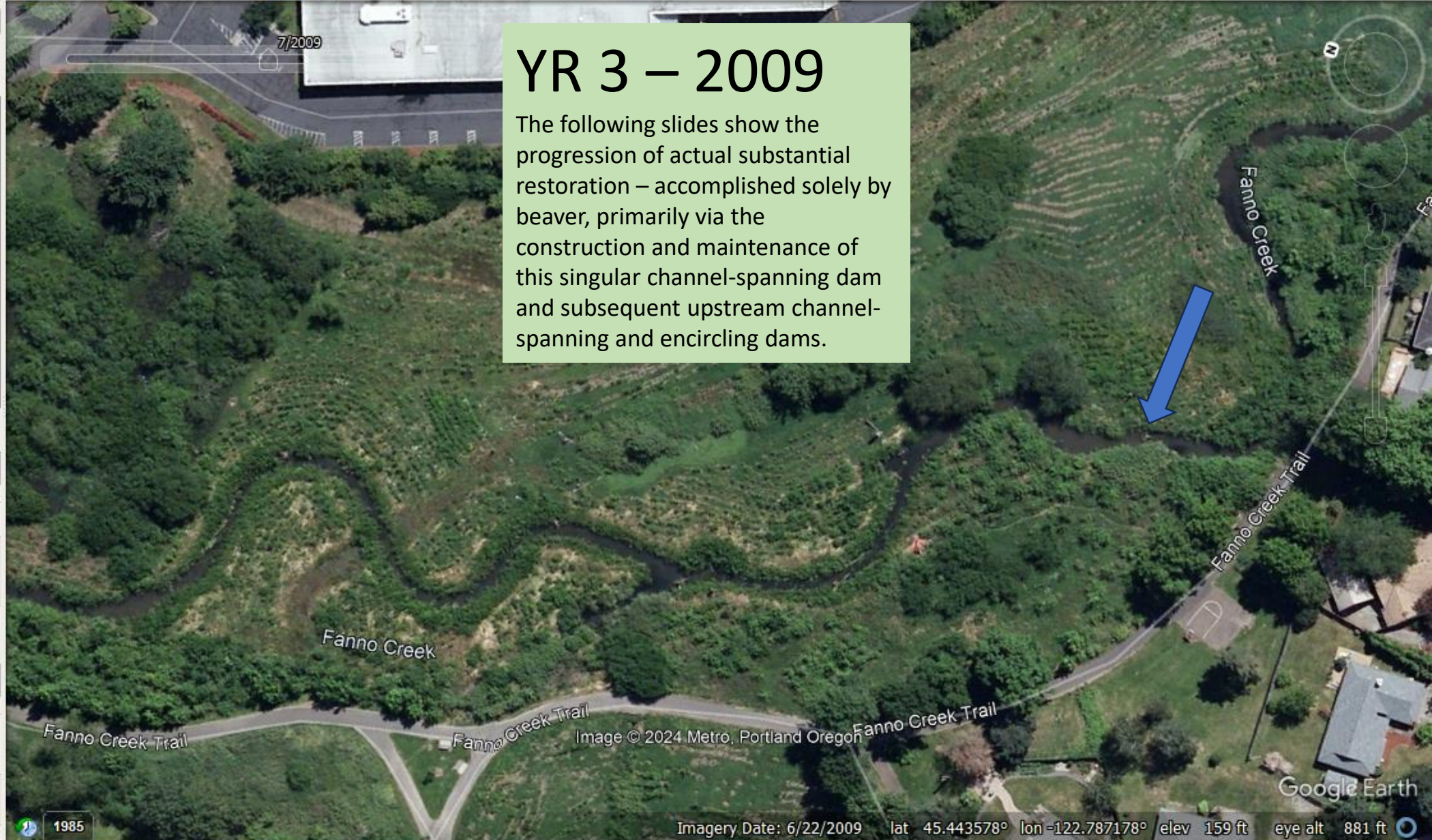
Progress

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YR 3 – 2009

The following slides show the progression of actual substantial restoration – accomplished solely by beaver, primarily via the construction and maintenance of this singular channel-spanning dam and subsequent upstream channel-spanning and encircling dams.

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YR 4 – 2010
 A secondary area of activity and dam construction appears upstream of the first.



Search

progress, or Search

Get Directions History

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8/2011

1985 2023

YR 5 - 2011



1985

Imagery Date: 8/20/2011 lat 45.443913° lon -122.786513° elev 169 ft eye alt 881 ft

Search

progress, or Search

ex: 15213

Get Directions History

Progress

+

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Navigation icons: Home, Fly, Rotate, Tilt, Street View, History, Layers, Search, Print, Share, Help



1985 Imagery Date: 7/23/2012 lat 45.442141° lon -122.787411° elev 169 ft eye alt 881 ft

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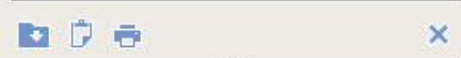
Search

progress, or Search

ex: 15213

Get Directions History

Progress



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YR 8 - 2014



1985

Imagery Date: 7/14/2014 lat 45.443262° lon -122.787071° elev 159 ft eye alt 881 ft

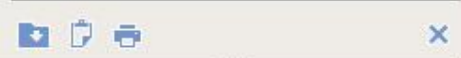
Search

progress, or Search

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Get Directions History

Progress



Places

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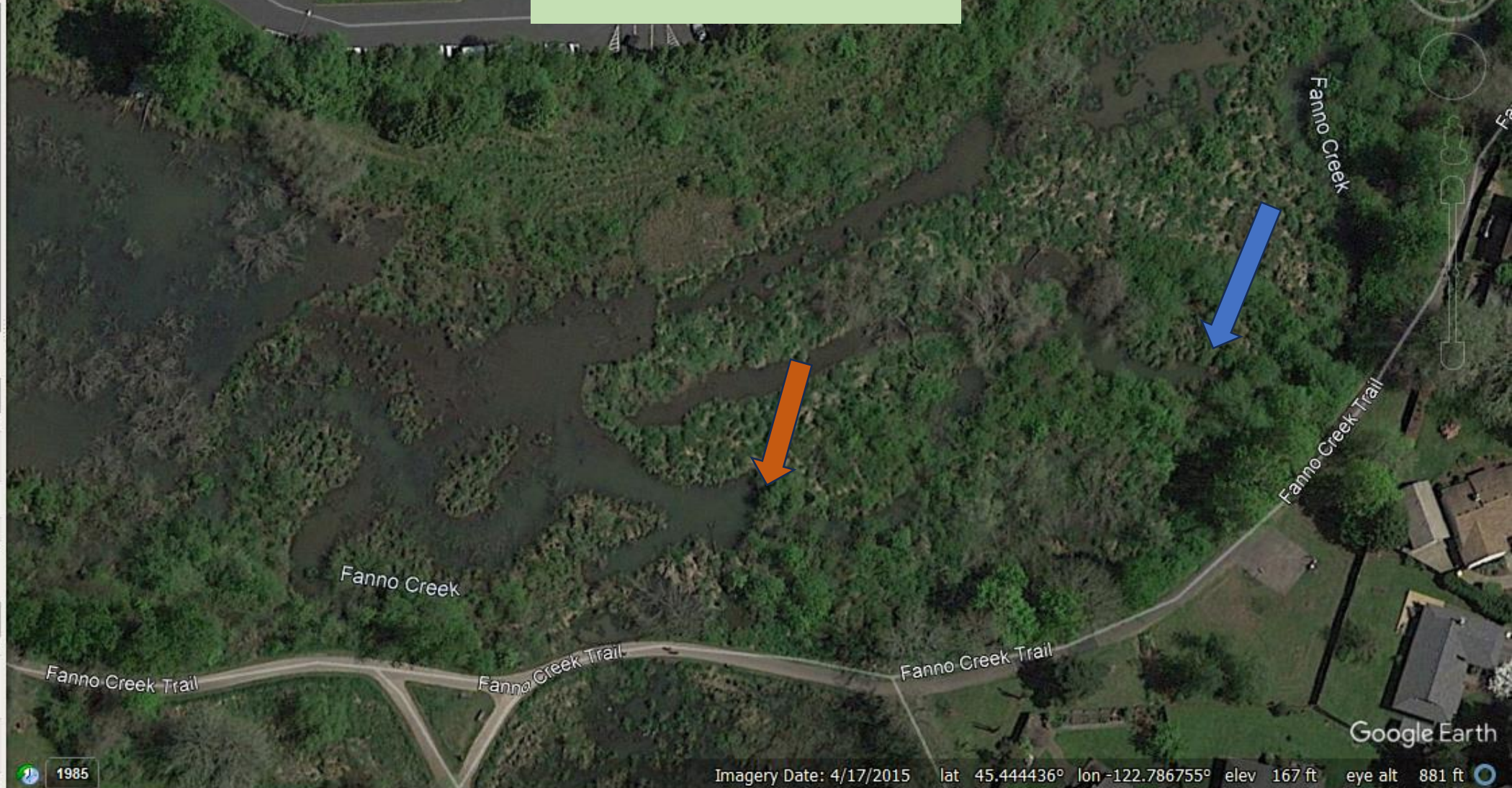
Layers

- Primary Database
- Announcements
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Timeline interface showing a date slider from 1985 to 2023, with a current date of 4/2015.

YR 9 - 2015



Search

progress, or Search

ex: 15213

Get Directions History

Progress

Places

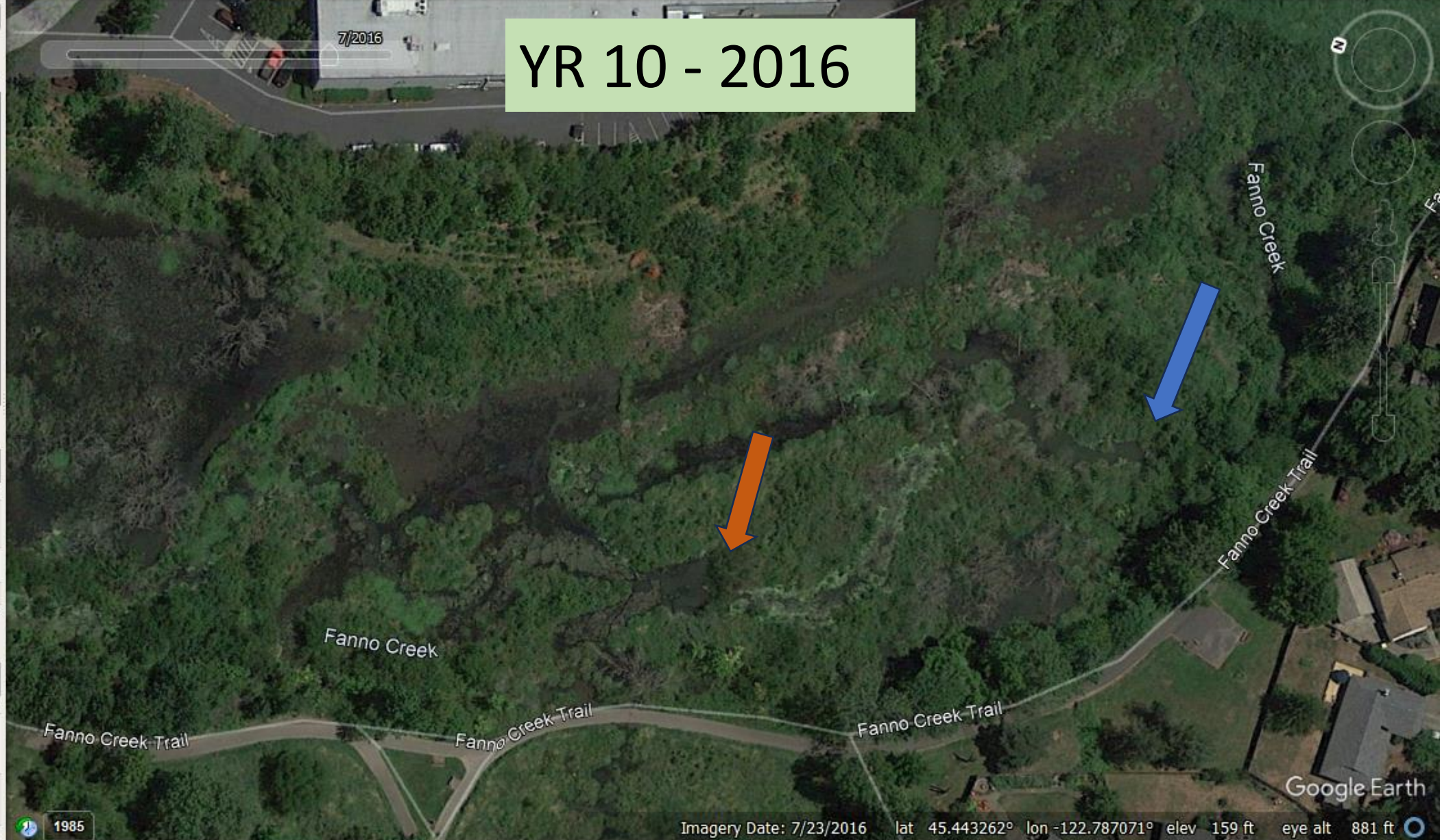
- NM Boulders
- More boulders
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- Patio
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Find in My Places

- Primary Database
- Announcements
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- Places
- Photos
- Roads

7/2016

YR 10 - 2016



1985

Imagery Date: 7/23/2016 lat 45.443262° lon -122.787071° elev 159 ft eye alt 881 ft

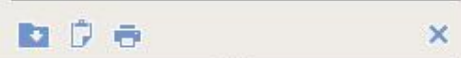
Search

progress, or Search

ex: 15213

Get Directions History

Progress



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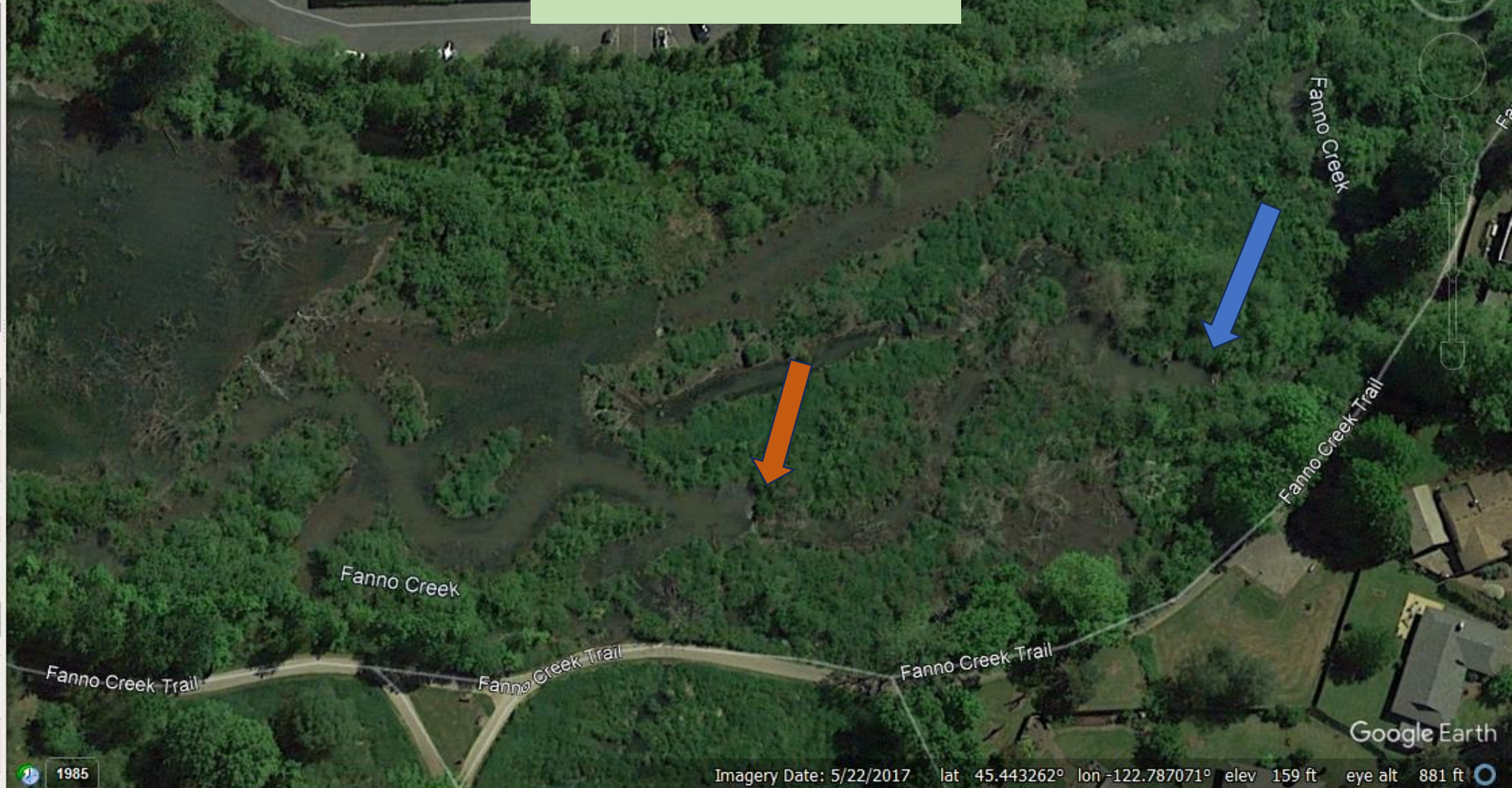
- Primary Database
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5/2017

1985 2023

YR 11 - 2017



Search

progress, or Search

ex: 15213

Get Directions History

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Timeline

7/2018

1985 2023

YR 12 - 2018



1985

Imagery Date: 7/16/2018 lat 45.443262° lon -122.787071° elev 159 ft eye alt 881 ft

Search

progress, or Search

ex: 15213

Get Directions History

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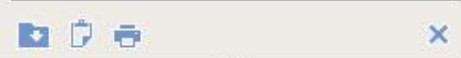
Search

progress, or Search

ex: 15213

Get Directions History

Progress



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Imagery Date: 8/13/2020 lat 45.443262° lon -122.787071° elev 159 ft eye alt 881 ft

Search

progress, or Search

Get Directions History

Progress

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- NM Boulders
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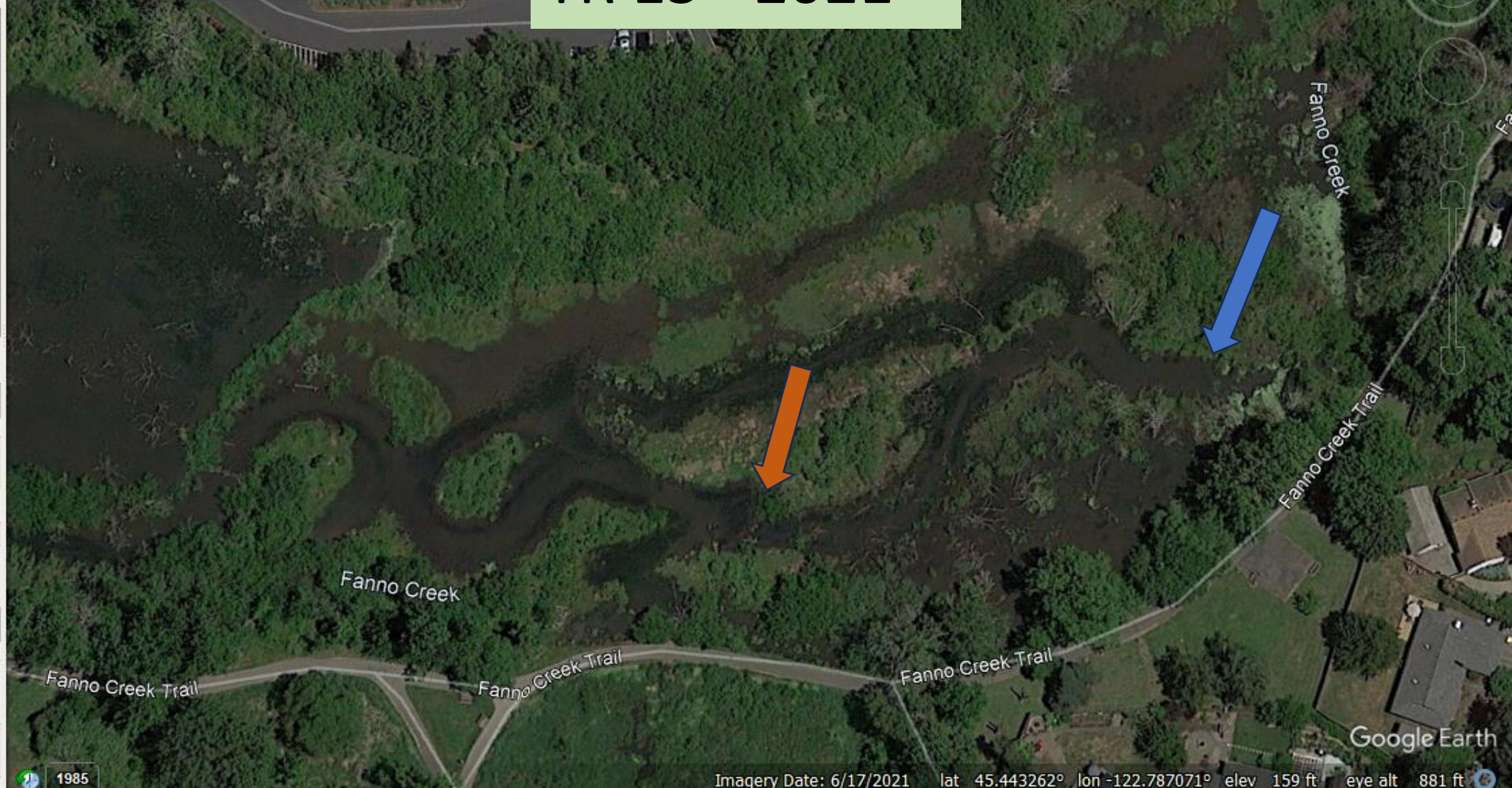
Layers

- Primary Database
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6/2021

1985 2023

YR 15 - 2021



Progress

Places

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Layers

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- Roads

Click to open the time options dialog

7/2022

1985 2023

YR 16 – 2022

The same site 16 years after restoration of willows and re-initiation of beaver activity.



Timeline slider showing Imagery Date: 7/2023. Range from 1985 to 2023.

YR 17 – 2023

Seventeen years after project was initiated, beaver have largely rendered the human-constructed elements of the project irrelevant. Only the planted vegetation and the subsequent activities of beaver have proven effective agents of wetland restoration, now for over 15 years.



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Layers

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- Roads

7/2003



2003

This adjacent portion of the Fanno Creek floodplain was not manipulated with excavation and construction. The site was similarly dominated by reed canary grass and blackberry.

Image © 2024 Metro, Portland Oregon

Google Earth

Progress

Places

- My Places
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 - Start tour here

Layers

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- Announcements
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2006 – Yr 1

The area was mowed and planted with willow, cottonwood, ash and other woody vegetation.

Image © 2024 Metro, Portland Oregon

Google Earth

Progress

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Layers

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2009 – Yr 4

Woody vegetation begins to fill in the site.

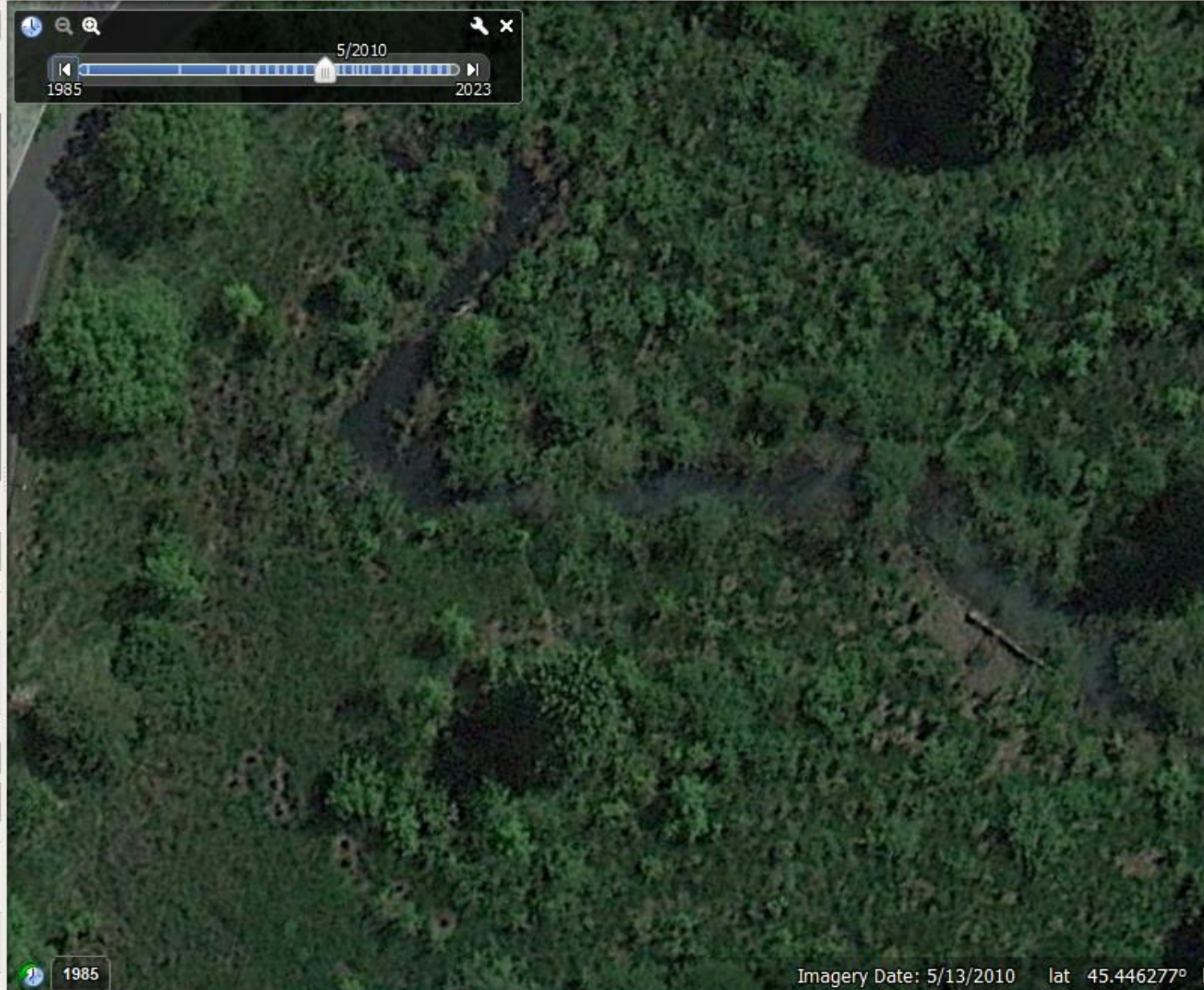
Progress

Places

- My Places
 - ButlerCredits
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Layers

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2010 – Yr 5

With no other intervention besides planting woody vegetation, the same progression occurs.

Progress

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Layers

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12/2013

1985 2023



Image © 2024 Metro, Portland Oregon

2012 – Yr 7

Beaver have now constructed numerous dams, rapidly reconnecting the stream with its floodplain, re-watering off-channel swales and ponds, and restoring the natural complex of anastomosing channels and ponds characteristic of beaver wetlands.

Search

progress, or Search

ex: 37.407229, -122.107162

Get Directions History

Progress

Places

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 - Make sure 3D Buildings layer is checked
 - Start tour here

Layers

- Primary Database
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 - Roads

5/2017

1985 2023

2017 – Yr 12



1985

Imagery Date: 5/22/2017 lat 45.446277° lon -122.787852° elev 166 ft eye alt 487 ft

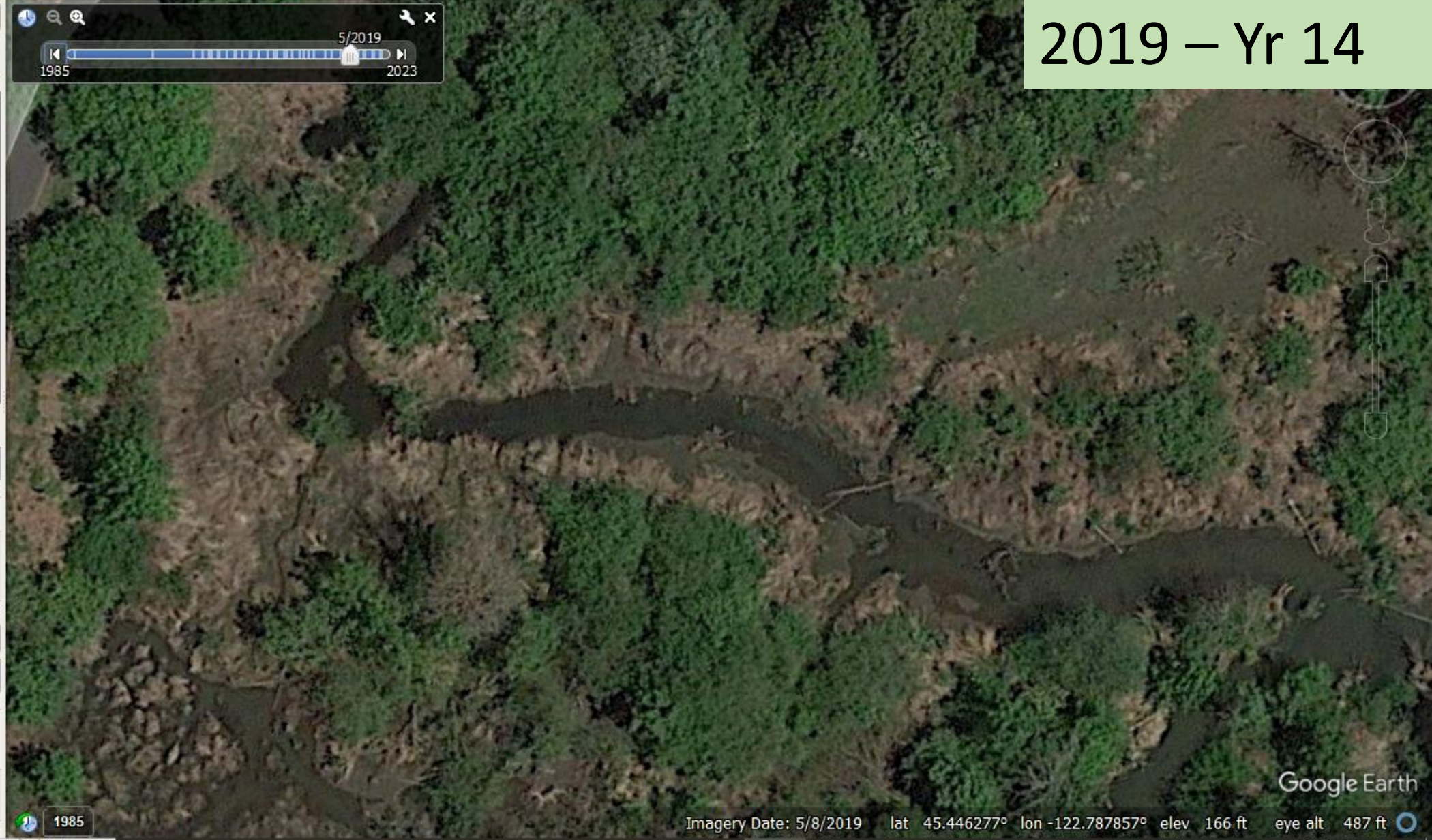
Progress

Places

- My Places
- ButlerCredits
- Sightseeing Tour
 - Make sure 3D Buildings layer is checked
 - Start tour here

Layers

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2019 – Yr 14

Progress

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 - Start tour here

Layers

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6/2021

1985 2023

2021 – Yr 16



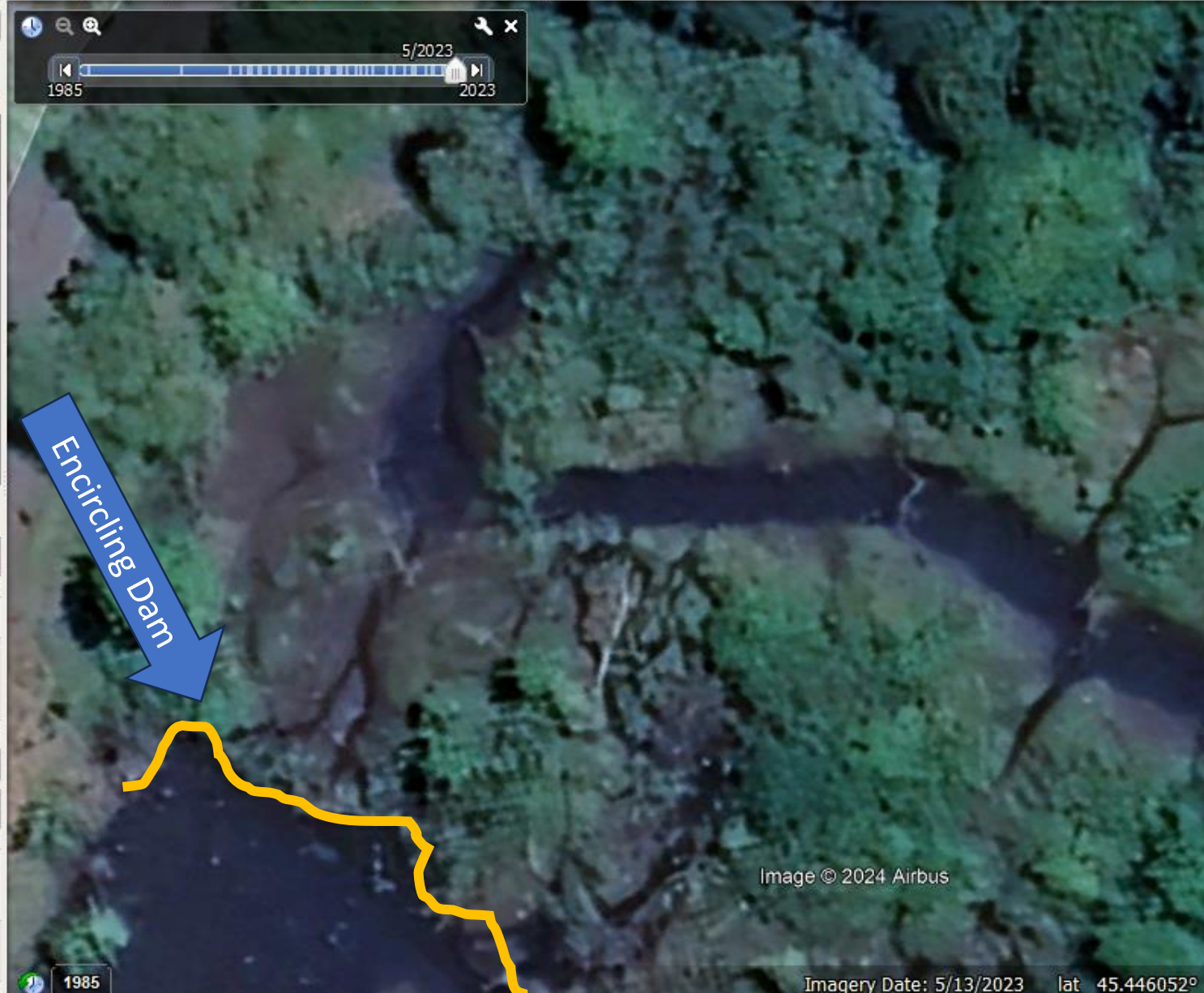
Progress

Places

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- ButlerCredits
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2023 – Yr 18

Eighteen years after planting, the site continues to support vibrant, complex, dynamic wetlands, with no human construction at all. A recent development is an extensive encircling dam, corralling water diverted from an upstream channel.

Image © 2024 Airbus

Progress

Places

My Places

- ButlerCredits
- Sightseeing Tour
 - Make sure 3D Buildings layer is checked
 - Start tour here

Layers

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6/1994

1994
 DSL's Half Mile Bank demonstrates an identical progression.



Roderick Creek

NW Half Mile Ln

Image U.S. Geological Survey

Google Earth

1985

Imagery Date: 6/27/1994 lat 45.548449° lon -123.186252° elev 216 ft eye alt 1260 ft

Progress

Places

My Places

- ButlerCredits
- Sightseeing Tour
 - Make sure 3D Buildings layer is checked
 - Start tour here

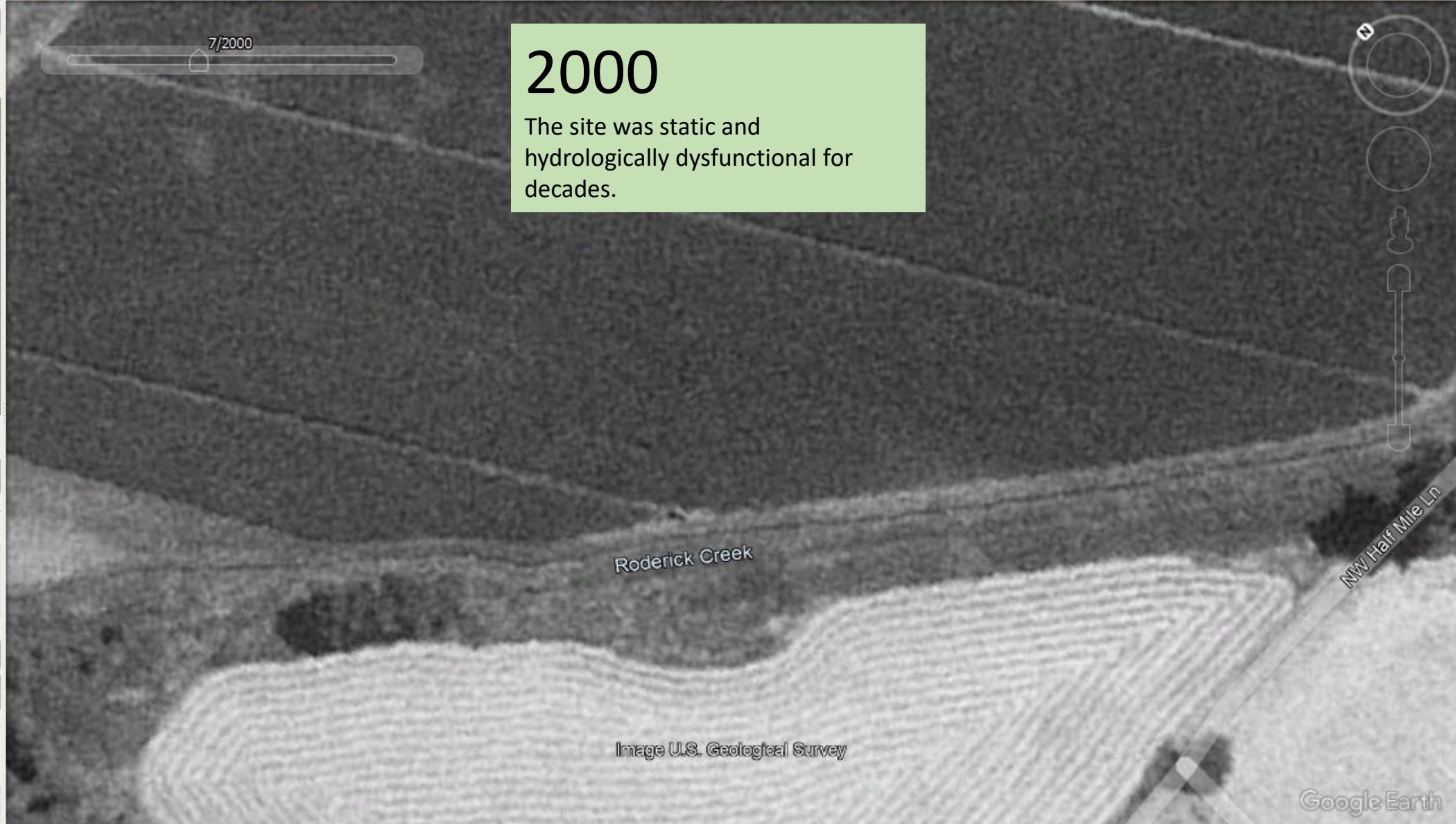
Layers

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7/2000

2000

The site was static and hydrologically dysfunctional for decades.



Roderick Creek

NW Half Mile Ln

Image U.S. Geological Survey

Google Earth

1985

Imagery Date: 7/29/2000 lat 45.548449° lon -123.186252° elev 216 ft eye alt 1260 ft

Search

progress, or Search

ex: 15213

Get Directions History

Progress

Places

My Places

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 - Make sure 3D Buildings layer is checked
 - Start tour here

Layers

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1985 Imagery Date: 6/28/2005 lat 45.548449° lon -123.186252° elev 216 ft eye alt 1260 ft

Progress

Places

My Places

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- Sightseeing Tour
 - Make sure 3D Buildings layer is checked
 - Start tour here

Layers

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Timeline

1985 11/2011 2023

YR 1 – 2011

In 2011, Clean Water Services implemented a massive excavation and structure placement project.



Progress

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Layers

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Timeline toolbar with icons for home, pan, fly, and other navigation tools.

Timeline slider showing Imagery Date: 7/2012, with markers for 1985 and 2023.

YR 2 – 2012

The ponded area in upper right corner fills as a result of beaver activity downstream of the project. Hydrology on the remainder of the site was largely unaffected by mass excavation, channel relocation and structures.



Progress

Places

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Layers

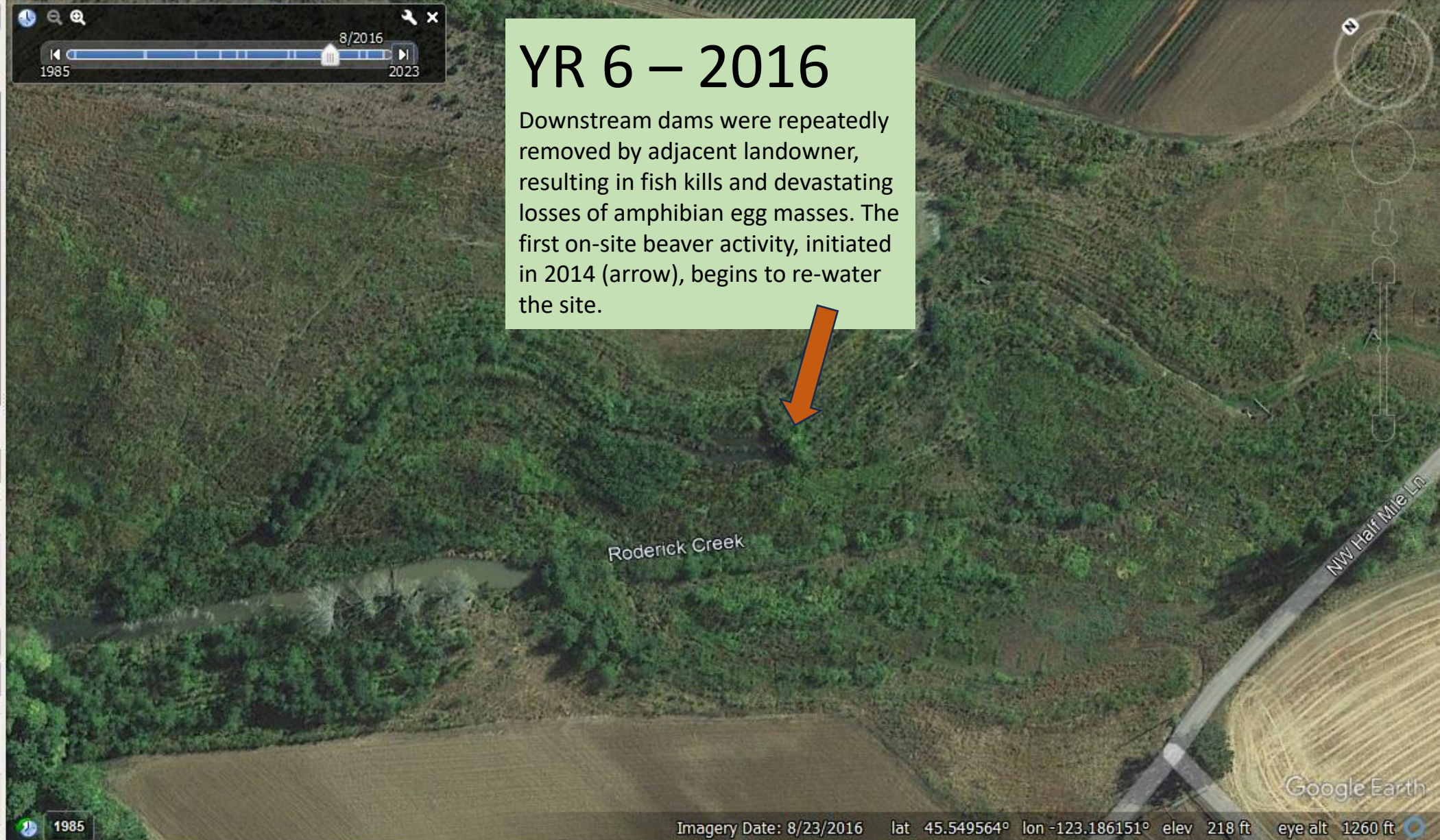
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Timeline

1985 8/2016 2023

YR 6 – 2016

Downstream dams were repeatedly removed by adjacent landowner, resulting in fish kills and devastating losses of amphibian egg masses. The first on-site beaver activity, initiated in 2014 (arrow), begins to re-water the site.



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Timeline toolbar with icons for home, pan, fly, and other navigation tools.

Timeline slider showing dates from 1985 to 2023, with a marker for 6/2017.

YR 7 – 2017

Beaver dam maintenance and enhancement continues at the first location and begins at many additional sites upstream. Downstream dams continue to be removed however, and fish and egg-mass kills continue on lower ponds.



Search

progress, or Search

ex: 15213

Get Directions History

Progress

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1985 5/2020 2023

YR 10 - 2020



1985

Imagery Date: 5/6/2020 lat 45.549564° lon -123.186151° elev 218 ft eye alt 1260 ft

Progress

Places

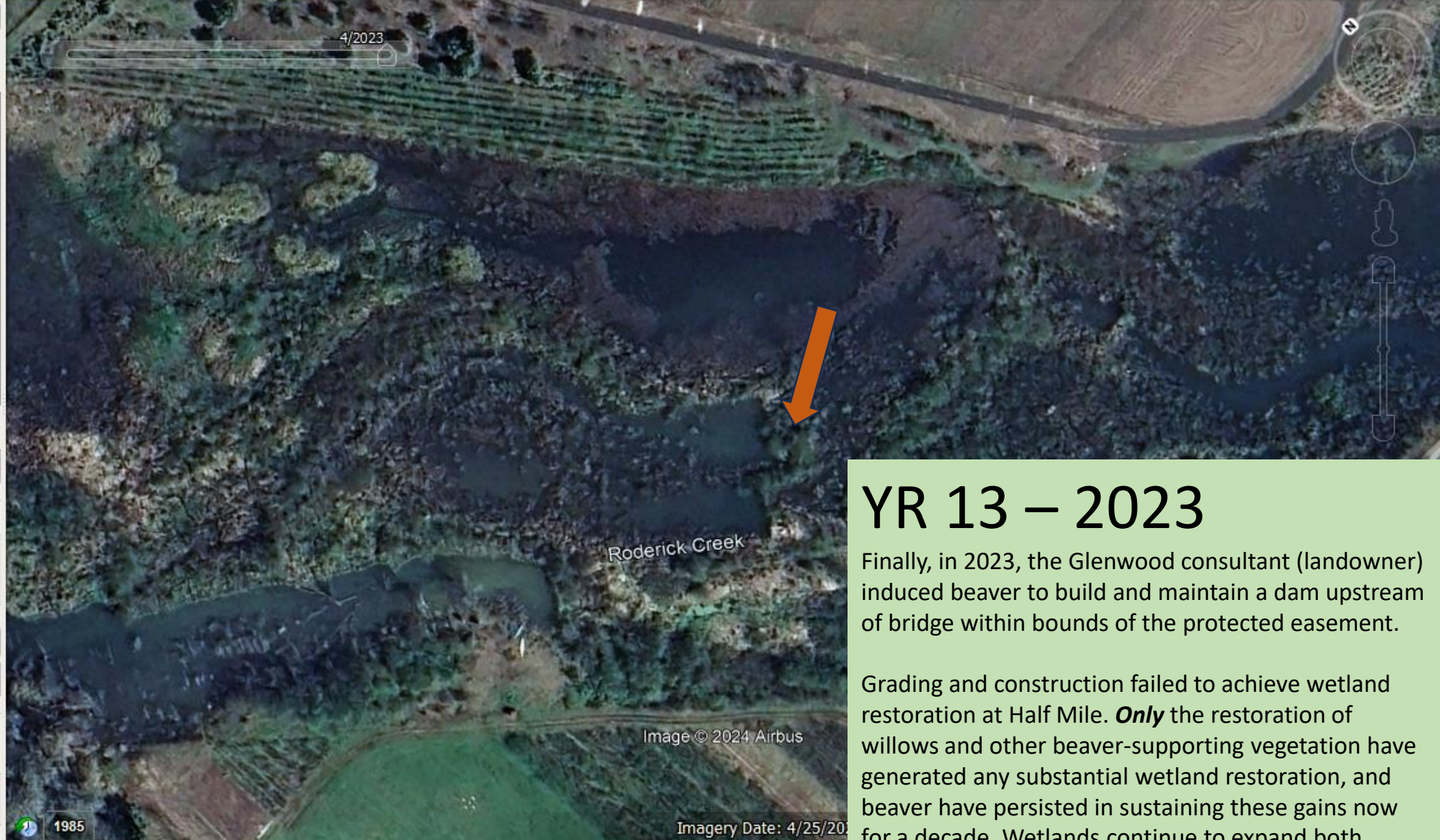
My Places

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4/2023



YR 13 – 2023

Finally, in 2023, the Glenwood consultant (landowner) induced beaver to build and maintain a dam upstream of bridge within bounds of the protected easement.

Grading and construction failed to achieve wetland restoration at Half Mile. **Only** the restoration of willows and other beaver-supporting vegetation have generated any substantial wetland restoration, and beaver have persisted in sustaining these gains now for a decade. Wetlands continue to expand both within and outside the project boundary.

21 Nov 2020

This dam was constructed
Fall 2020 on Roderick
Creek below Half Mile
Wetland



26 Dec 2020

Same dam the following month.



08 Jan 2021

The day the dam was excavated by neighboring farmer.



15 Jan 2021

Seven days later, beaver
have made substantial
progress on re-build.



17 Jan 2021

Nine days later, major reconstruction complete.



08 May 2021

Dam was removed again in April 2021, but largely rebuilt by May 2021. Dams have been removed and rebuilt in this location at least forty times in the past ten years, each removal resulting in turbidity flushes and losses of fish and amphibians.



6/1994



yon Creek

Cedar Canyon Creek
Image U.S. Geological Survey

1994
Banks Wetland with beaver trapping
and dams continuously removed.

1985

Imagery Date: 6/27/1994 lat 45.613821° lon -123.



7/2000



yon Creek

terest and other features

Cedar Canyon Creek
Image U.S. Geological Survey

2000
Banks Wetland, four years after
cessation of beaver control.

1985

Imagery Date: 7/29/2000 lat 45.613390° lon -123.1



7/2004

yon Creek

Cedar Canyon Creek
Image © 2024 Metro, Portland Oregon

2004

Eight years after cessation of beaver control. No other treatments applied.

1985

Imagery Date: 7/20/2004 lat 45.613390° lon -123.

5/2023



nyon Creek

Cedar Canyon Creek
Image © 2024 Airbus

2023

Site as it appears today, 29 years after cessation of beaver control.



1985

Imagery Date: 5/16/2023 lat 45.613390° lon -123