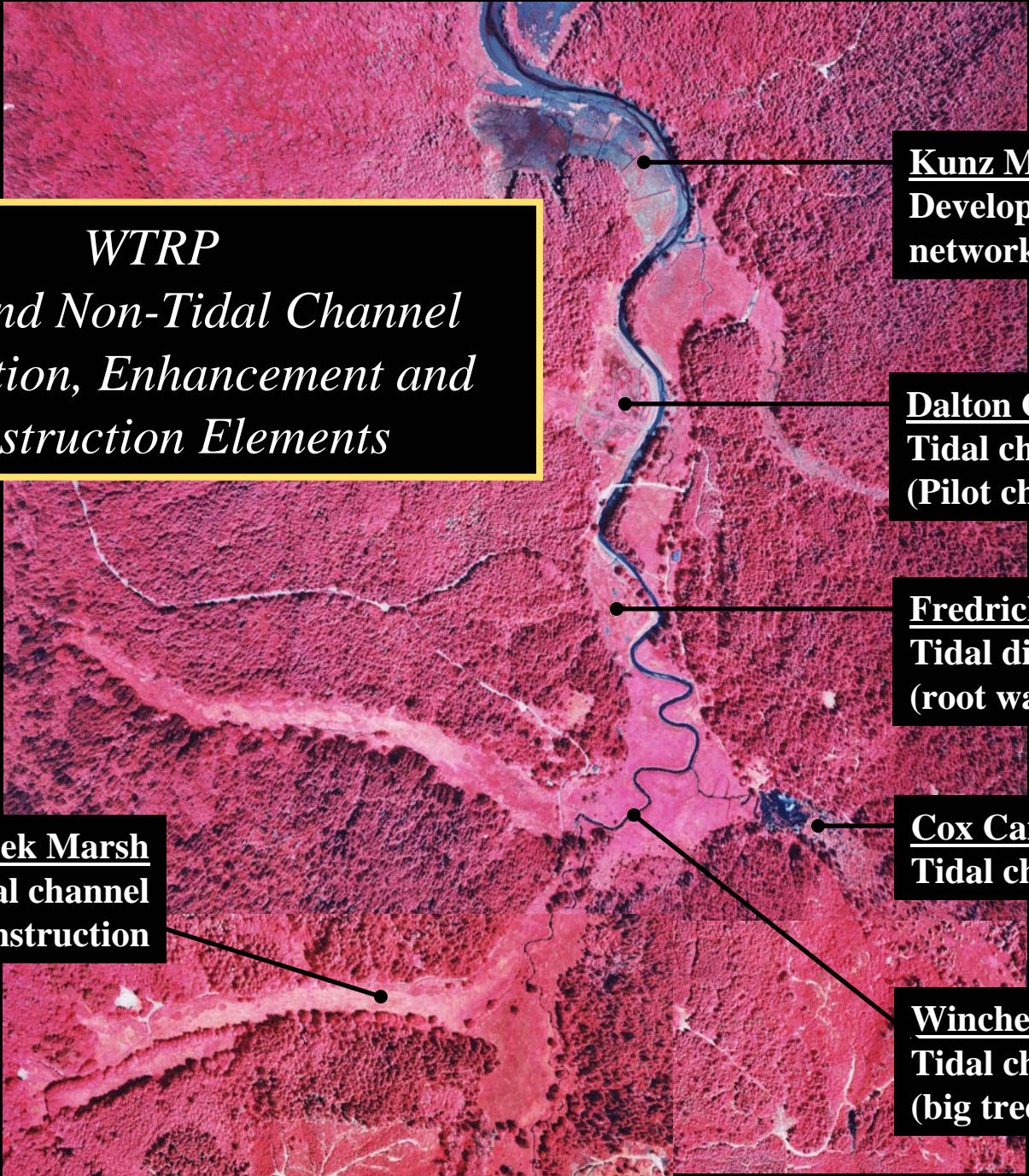


Wasson Creek/Leslie Marsh Restoration Project



WTRP
*Tidal and Non-Tidal Channel
Restoration, Enhancement and
Construction Elements*



Kunz Marsh
Development of tidal channel
network “passively”

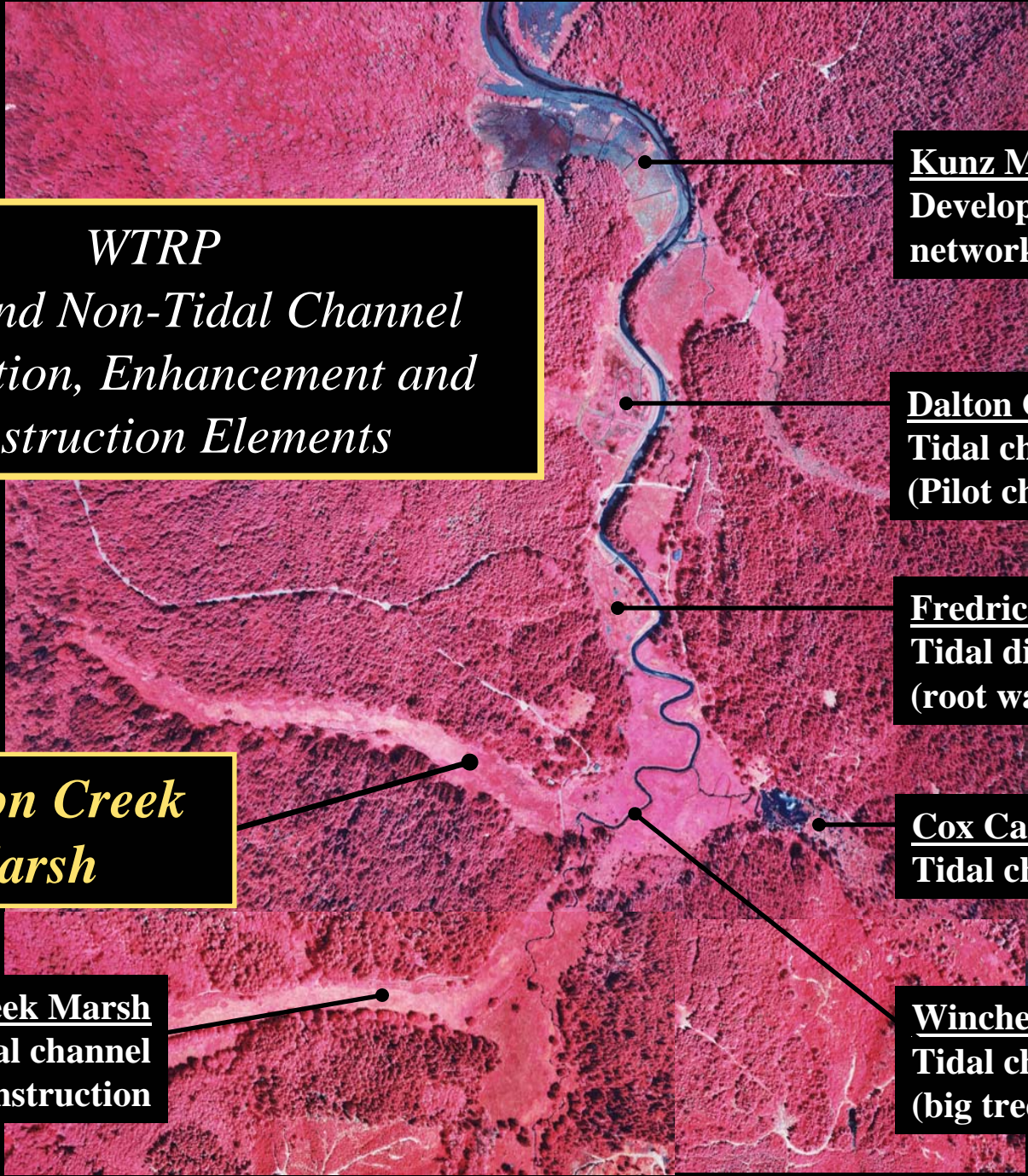
Dalton Creek Marsh
Tidal channel construction
(Pilot channel)

Fredrickson Marsh
Tidal ditch enhancement
(root wads)

Cox Canyon Marsh
Tidal channel restoration

Winchester Creek
Tidal channel enhancement
(big trees)

Anderson Creek Marsh
Non-tidal channel
construction



WTRP
*Tidal and Non-Tidal Channel
Restoration, Enhancement and
Construction Elements*

Kunz Marsh
Development of tidal channel
network “passively”

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Tidal channel construction
(Pilot channel)

Fredrickson Marsh
Tidal ditch enhancement
(root wads)

*Wasson Creek
Marsh*

Cox Canyon Marsh
Tidal channel restoration

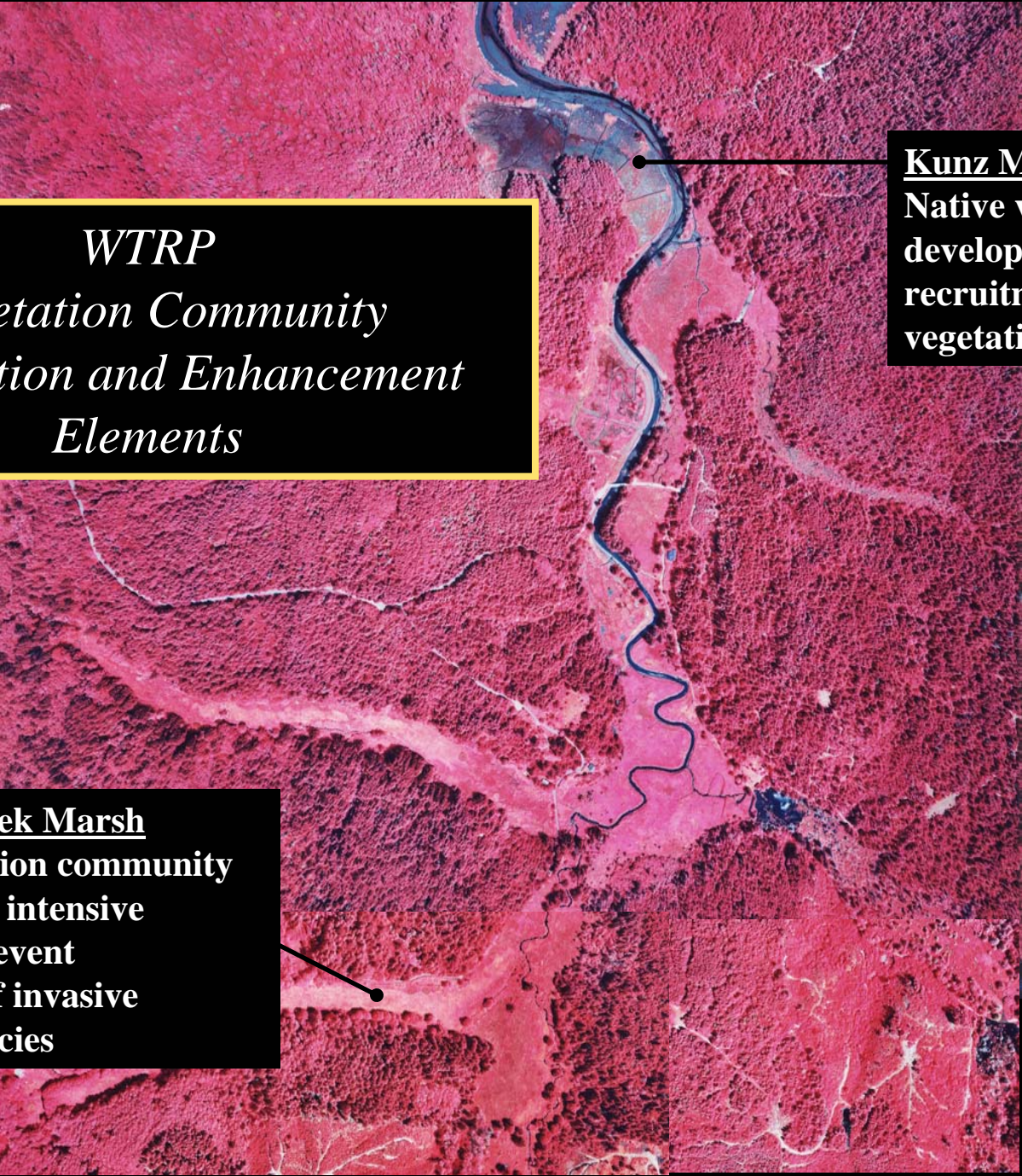
Anderson Creek Marsh
Non-tidal channel
construction

Winchester Creek
Tidal channel enhancement
(big trees)

Wasson Creek Marsh:

The latest example of the lingering effects of historic land uses on coastal wetlands

- ✓ Simplified drainage network
- ✓ Lack of channel complexity- large wood structures
- ✓ Simplified vegetation community (reed canary grass!)



*WTRP
Vegetation Community
Restoration and Enhancement
Elements*

Kunz Marsh
Native vegetation community
developed by natural
recruitment- no invasive
vegetation species

Anderson Creek Marsh
Native vegetation community
established by intensive
planting to prevent
recruitment of invasive
vegetation species

Wasson Creek Marsh

8.04 Hectares / 19.85 Acres

An aerial photograph of a marshy area. A winding creek, Winchester Creek, flows through the landscape from the top right towards the bottom right. The surrounding area is a mix of dense green forest and brownish, marshy ground. A dashed yellow line marks a specific location where a low dike or road was removed. Two white arrows point from text boxes to these features.

Low dike/road
removed in 2003

Winchester Creek



**Leslie Family
Marsh**

Coquille River

**Bandon Marsh
NWR**



Pond

Upper Road

Barn Structure

Borrow Area
for Phase 1
Project

Beaver Hill Road

Lower Road

Excavated Stream
Channel
(Approx)

**Leslie Family Marsh
Phase 1 Restoration
Project**
13.69 Hectares / 33.82 Acres

North Bank Road

Arch Culverts



Pond

Upper Road

Barn Structure

Borrow Area
for Phase 1
Project

Beaver Hill Road

Lower Road

Excavated Stream
Channel
(Approx)

**Leslie Family Marsh
Phase 1 Restoration
Project**
RCG (approximate)

North Bank Road

Arch Culverts

Demonstration Project Proposal

Paired site approach?

Site 1: Wasson Creek Marsh

- Test “passive” tidal/non-tidal channel construction and buried LWD (60%)
- Test RCG conversion to native herbaceous/woody community at a project scale

Demonstration Project Proposal

Paired site approach?

Site 1: Wasson Creek Marsh

- Test “passive” tidal/non-tidal channel construction and buried LWD (60%)
- Test RCG conversion to native herbaceous/woody community at a project scale

Site 2: Leslie Family Marsh

- Bury LWD (60%) in tidal/non-tidal channel
- Increase area of intertidal and seasonally flooded wetland habitat on site.
- Test RCG conversion to native woody/herbaceous community at a project scale



Fern Ridge

(Mandy Tu, The Nature Conservancy, 2002?)

SHADE CLOTH TREATMENTS



**Looks promising...1 yr after cloth removal, there is
no regrowth from rhizomes.**

(Mandy Tu, The Nature Conservancy, 2002?)

Demonstration Project Proposal

Leslie Restoration Phase 2- Conceptual Plan



Demonstration Project Proposal

Leslie Restoration Phase 2- Conceptual Plan



Goals:

1. Continue improvement of tidal and non-tidal channel complexity
2. Increase area of intertidal and seasonal open water
3. Convert reed canary grass monocultures to native woody and herbaceous plant communities
4. Encourage long term beaver activity at the site (as final restoration phase)



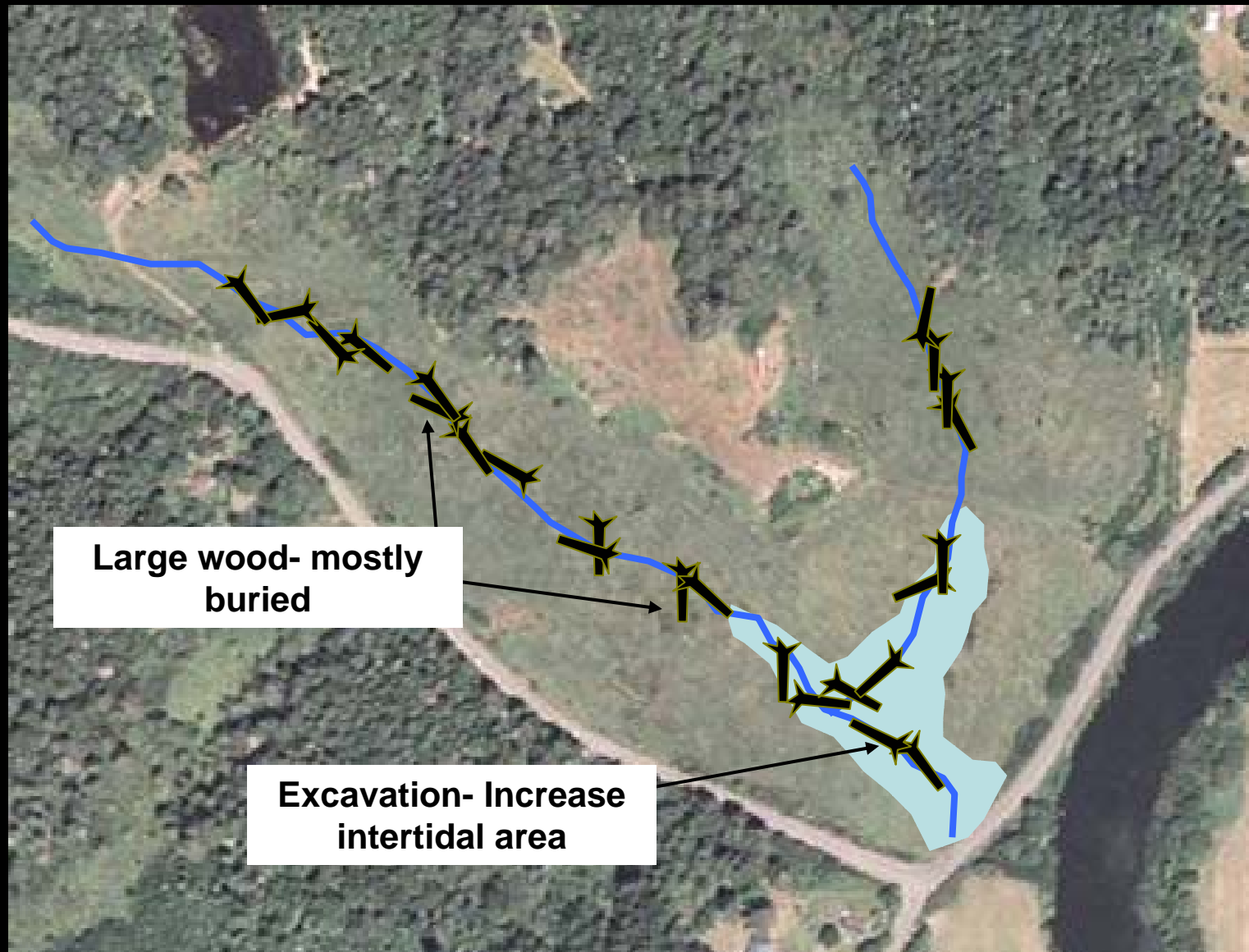
Demonstration Project Proposal

Leslie Restoration Phase 2- Conceptual Plan



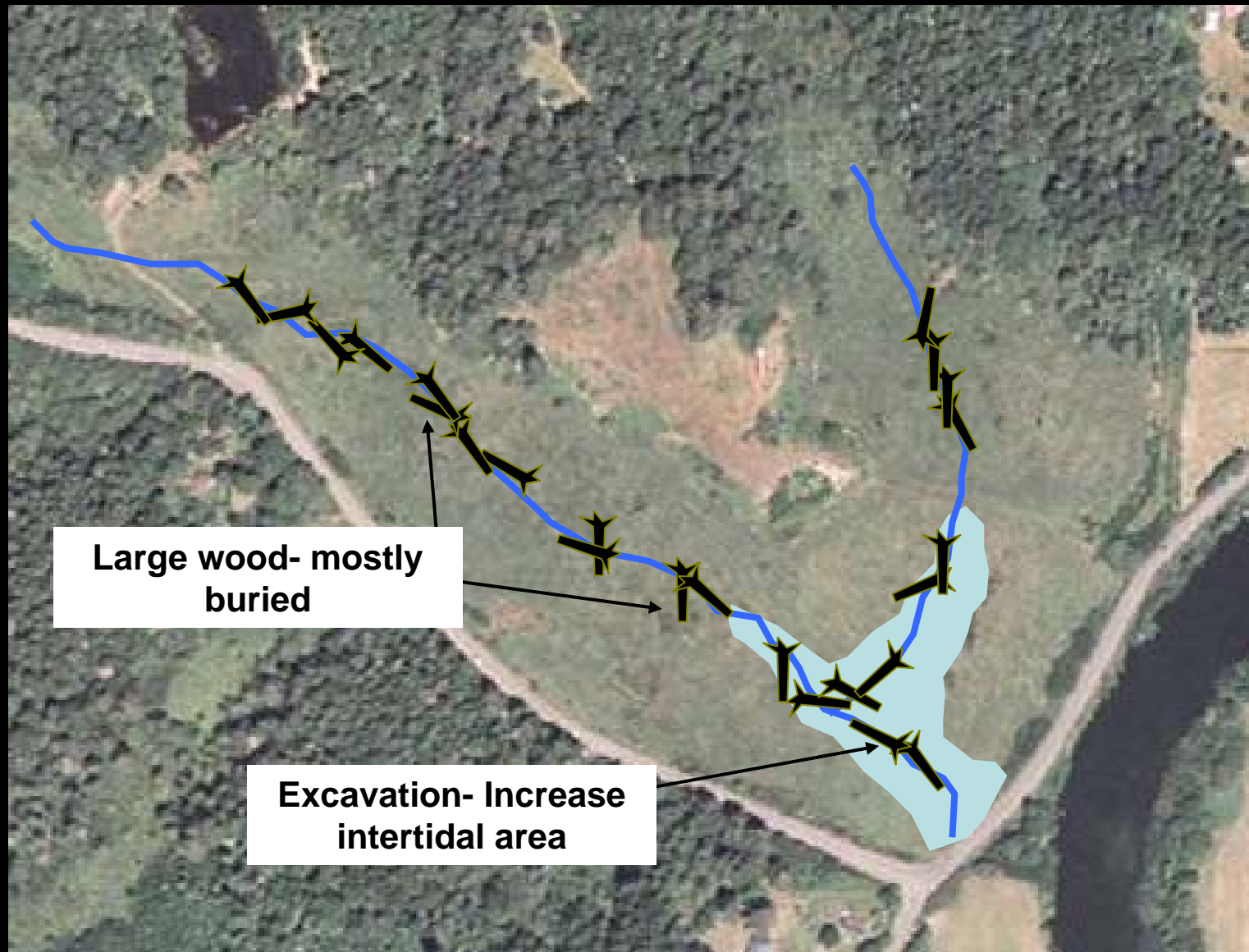
Demonstration Project Proposal

Leslie Restoration Phase 2- Conceptual Plan



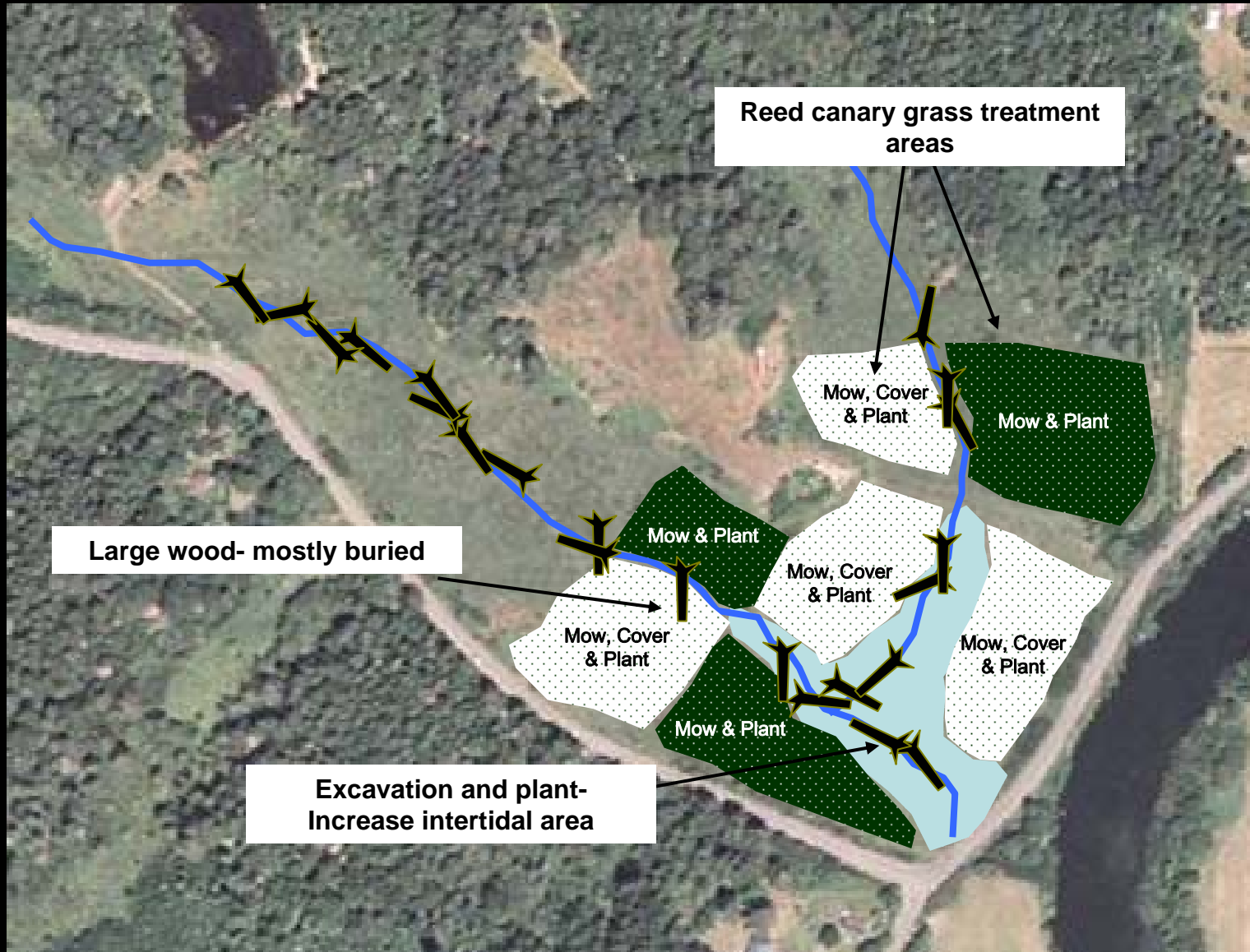
Demonstration Project Proposal

Leslie Restoration Phase 2- Conceptual Plan



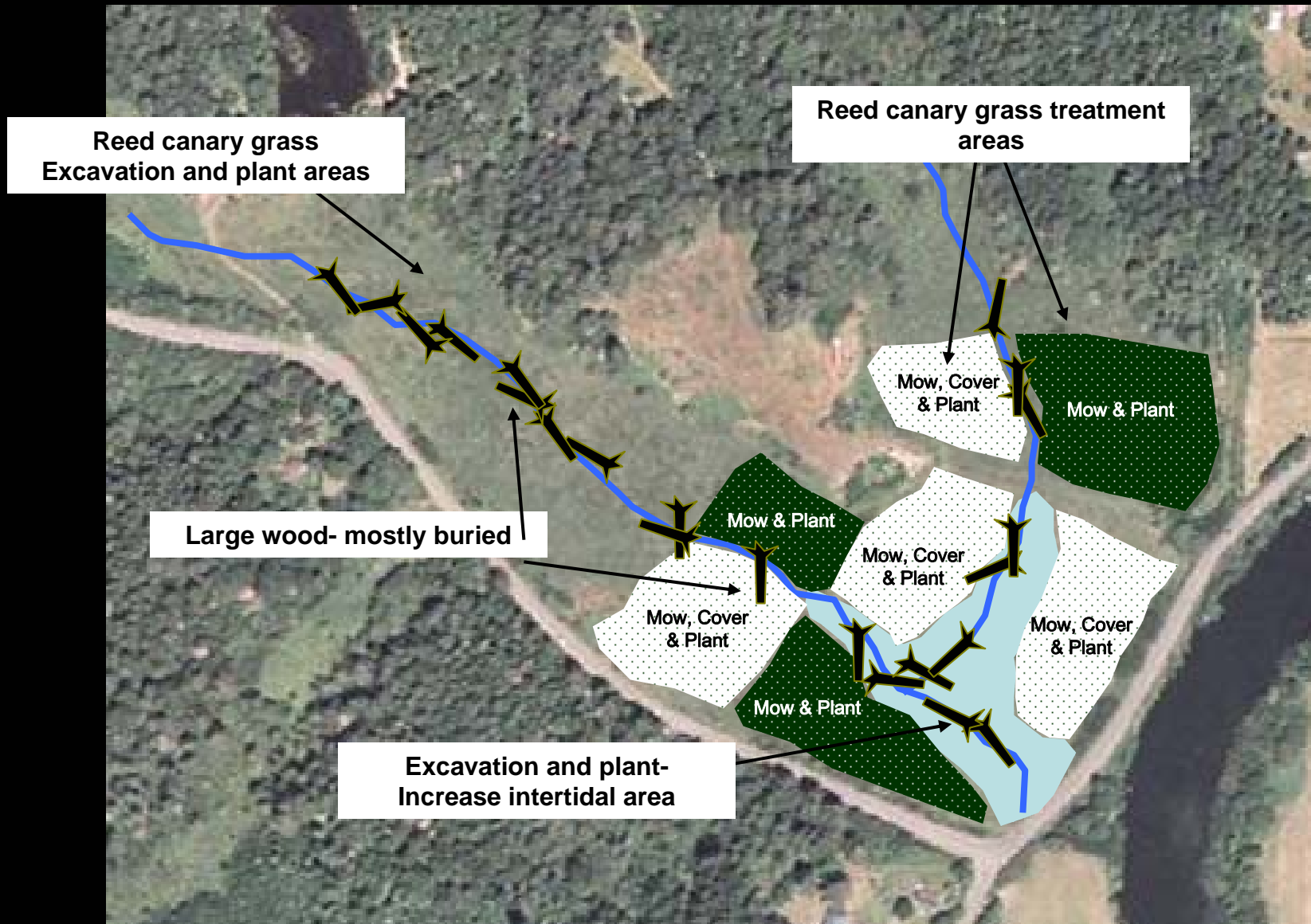
Demonstration Project Proposal

Leslie Restoration Phase 2- Conceptual Plan



Demonstration Project Proposal

Leslie Restoration Phase 2- Conceptual Plan



Demonstration Project Proposal

Leslie Restoration Phase 2- Conceptual Plan

Reed Canary Grass Conversion to Woody Plant Community

Historic woody floodplain communities included:

Oregon ash- *Fraxinus latifolia*

Willow- *Salix spp.*

Crabapple- *Malus fusca*

Red osier dogwood- *Cornus stolonifera*

Edge species:

Big leaf maple- *Acer macrophyllum*

Red alder- *Alnus rubra*

Elderberry- *Sambucus racemosa*

Sitka spruce- *Picea sitchensis*

Western red cedar- *Thuja plicata*

Demonstration Project Proposal

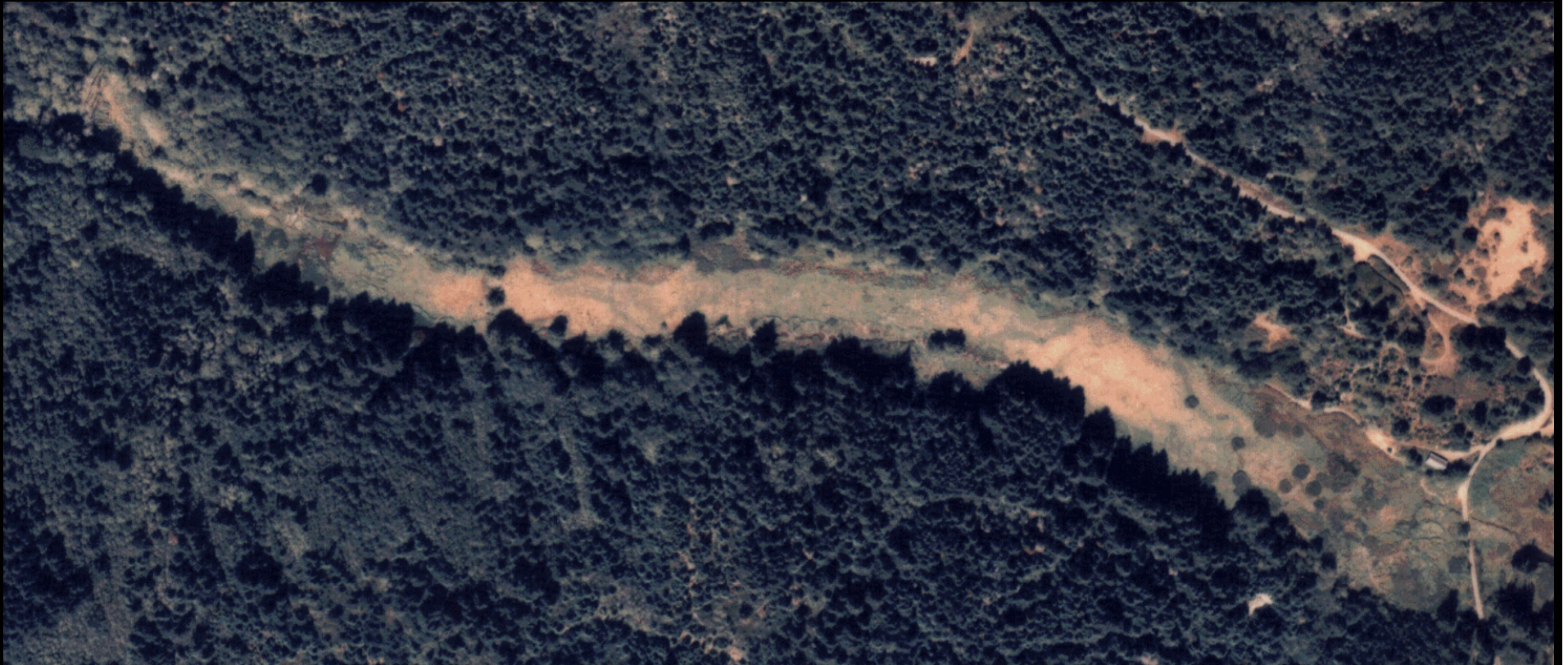
Leslie Restoration Phase 2- Conceptual Plan

Uncertainties

- Successful implementation of this project will require a sustained effort of at least five years (project construction, manual release of plantings, installation of post-cover cloth plantings, multi-year monitoring). What state or federal grant programs will support such a multi-year effort?
- What planting densities are required for woody and herbaceous vegetation to out compete reed canary grass either after mowing or treatment with shade cloth?
- Will woody vegetation grow quickly enough at the required planting density to shade reed canary grass?
- Will the shade restrict reed canary grass growth?

Demonstration Project Proposal

Wasson Creek Marsh- Conceptual Plan



Demonstration Project Proposal

Wasson Creek Marsh- Conceptual Plan



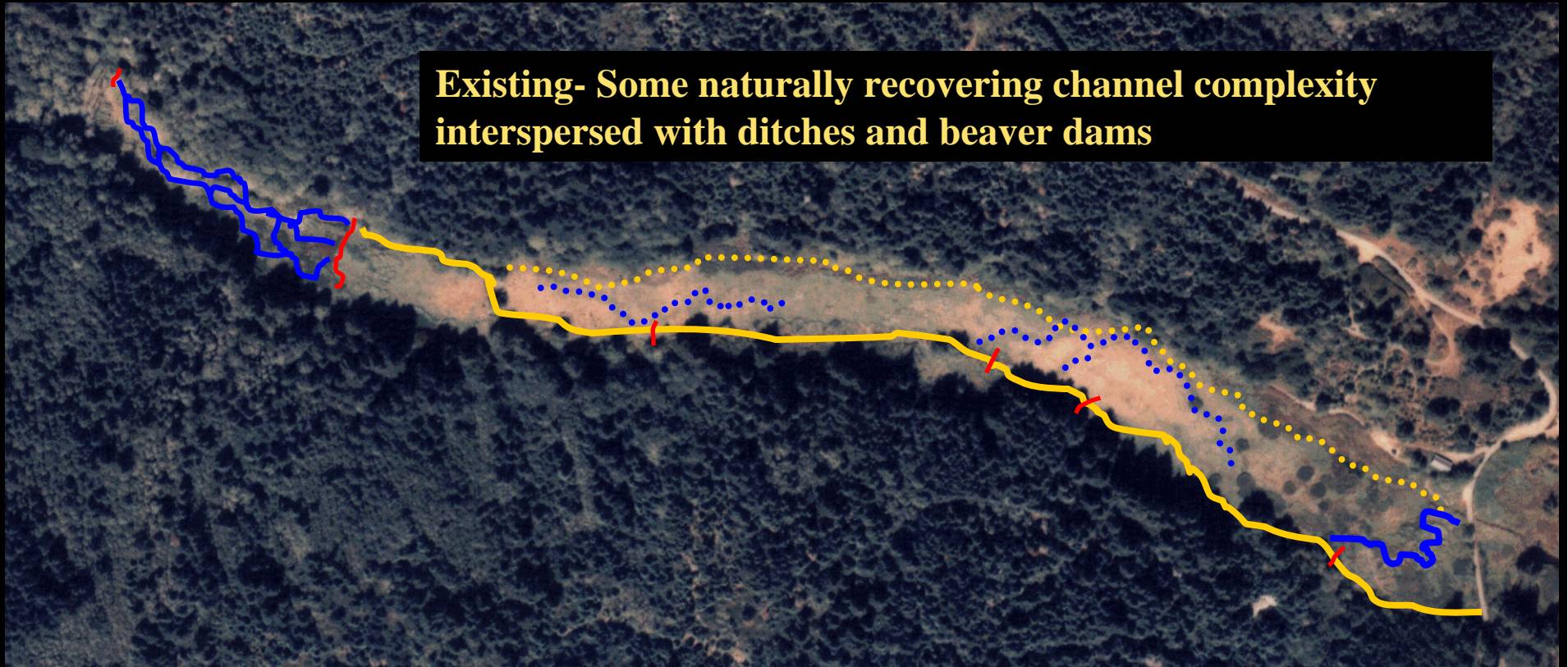
Goals:

1. Restore channel complexity to the site
2. Test a passive channel development concept in a non-tidal setting
3. Convert reed canary grass areas to native herbaceous and woody plant communities
4. Encourage long term beaver activity at the site (as final restoration phase)

Demonstration Project Proposal

Wasson Creek Marsh- Conceptual Plan

Existing- Some naturally recovering channel complexity interspersed with ditches and beaver dams



———— Ditch- active channel

———— Naturally recovering channel complexity

..... Ditch

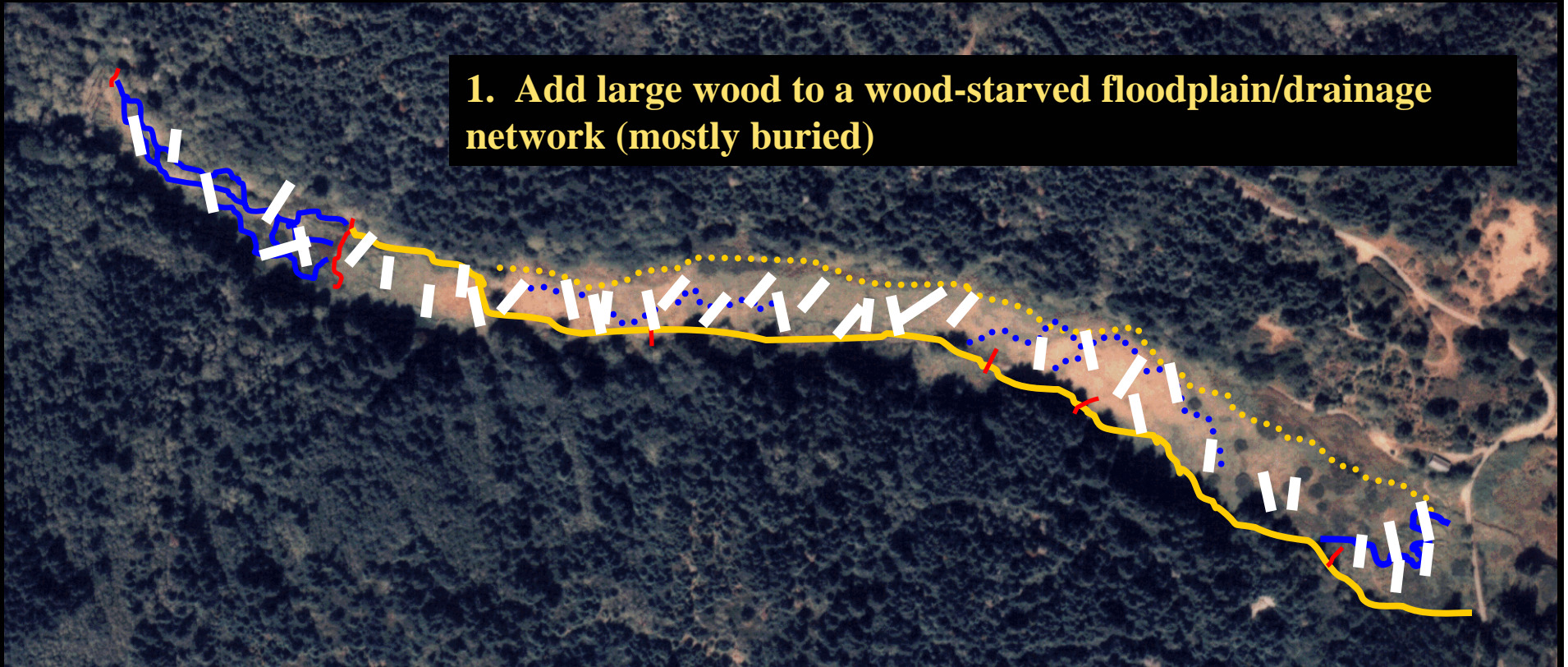
..... Remnant channels/overflow channels

— Beaver dams
(approximate location)

Demonstration Project Proposal

Wasson Creek Marsh- Conceptual Plan

1. Add large wood to a wood-starved floodplain/drainage network (mostly buried)



— Ditch- active channel

— Naturally recovering channel complexity

..... Ditch

..... Remnant channels/overflow channels

— Beaver dams
(approximate location)

— Large conifer logs and root wads

Demonstration Project Proposal

Wasson Creek Marsh- Conceptual Plan

2. Fill ditches without re-grading floodplain

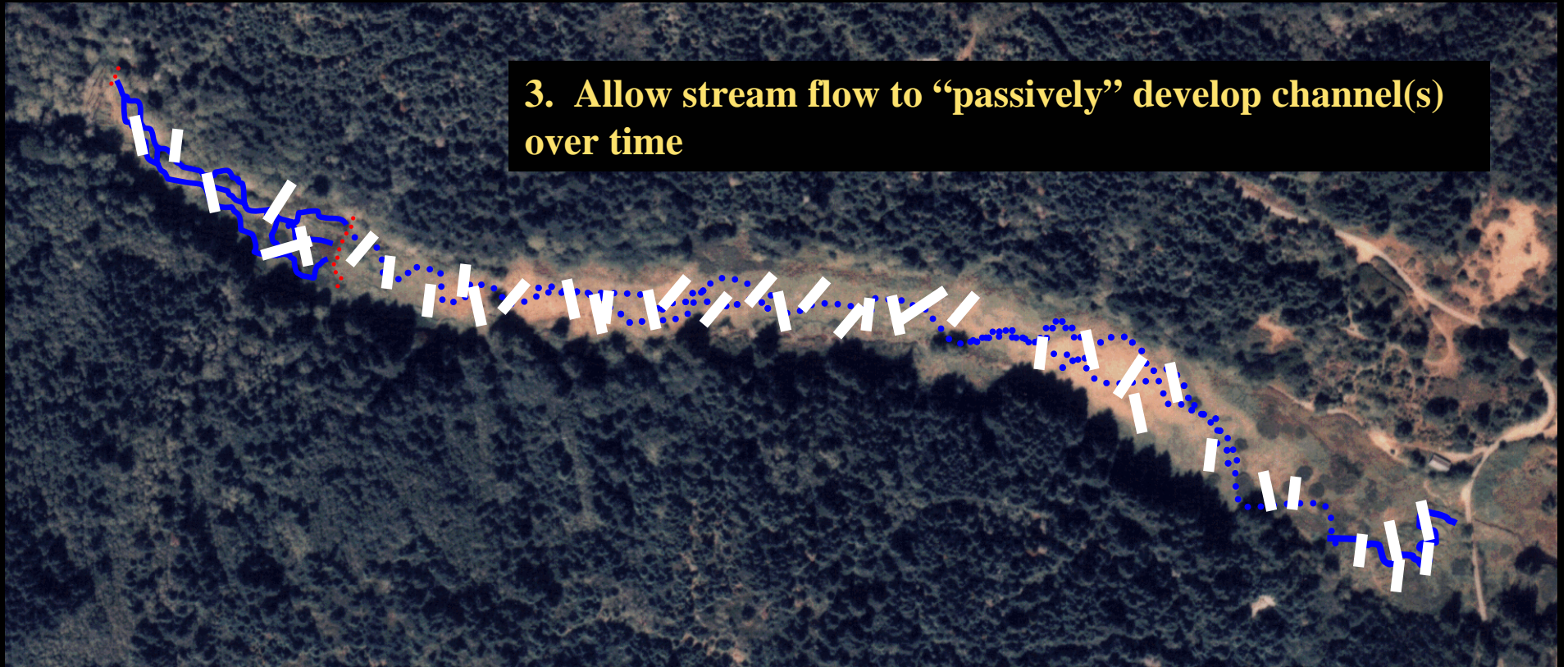


- Filled ditch- active channel
- Naturally recovering channel complexity
- Filled ditch
- Remnant channels/overflow channels
- Large conifer logs and root wads

Demonstration Project Proposal

Wasson Creek Marsh- Conceptual Plan

3. Allow stream flow to “passively” develop channel(s) over time

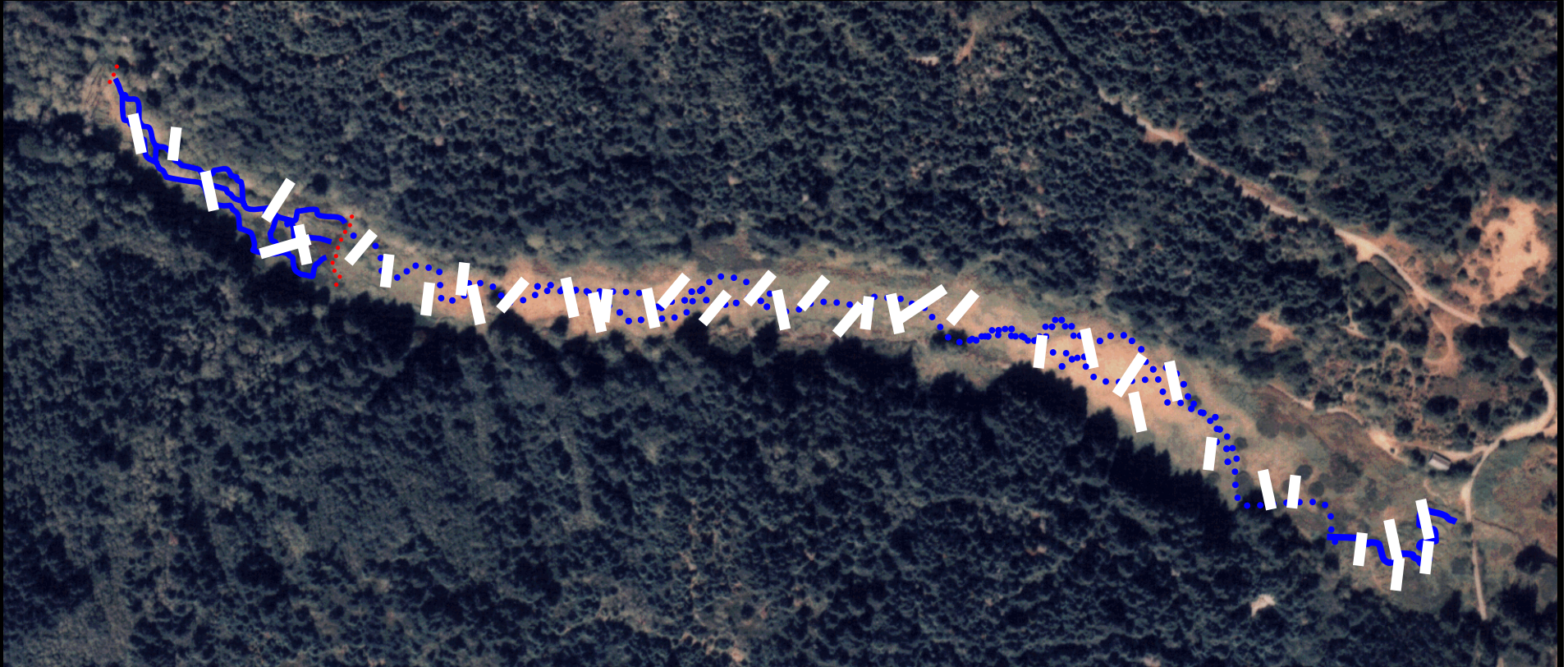


———— Naturally recovering channel complexity

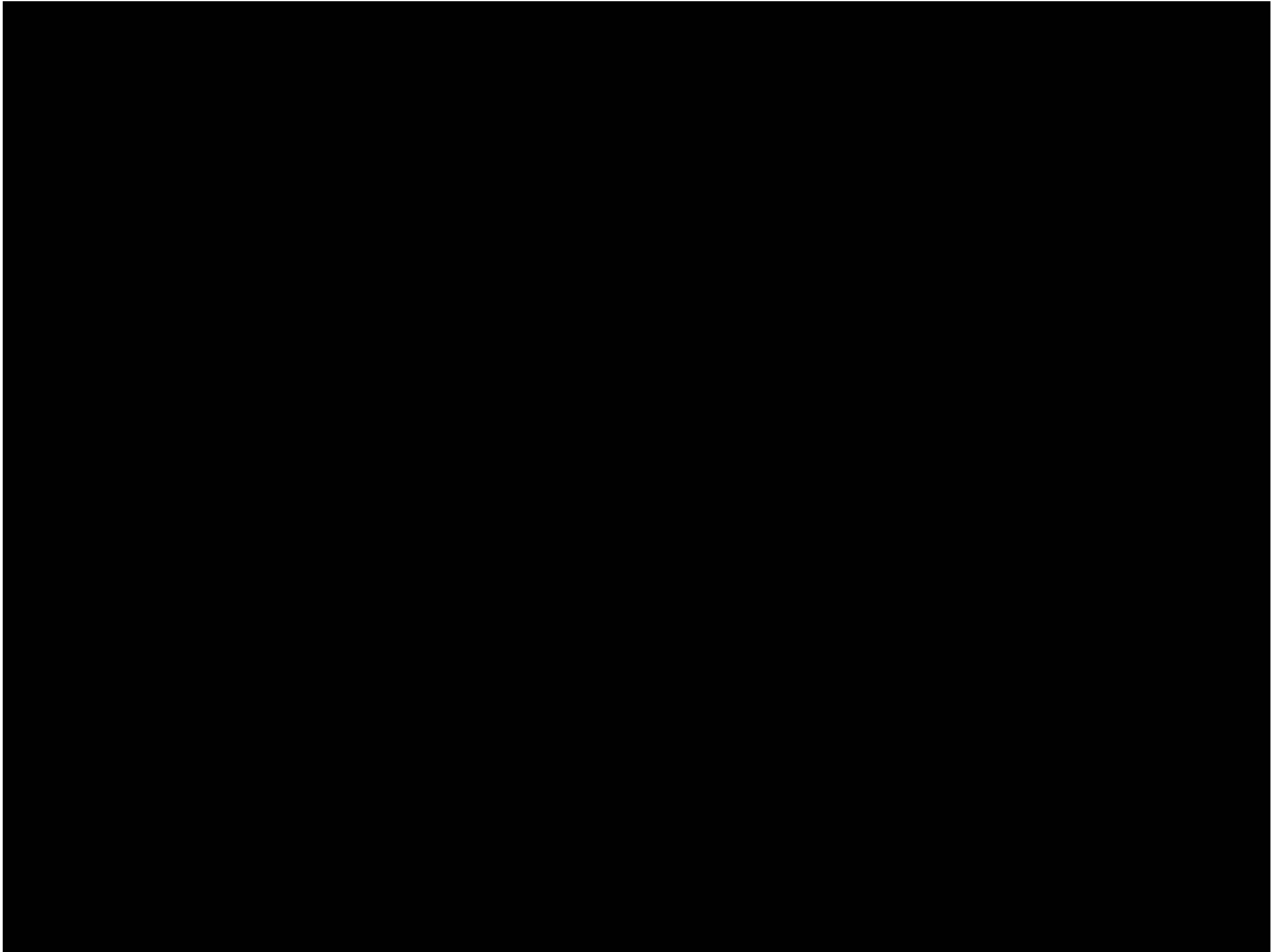
..... Newly forming complex channels

—— Large conifer logs and root wads

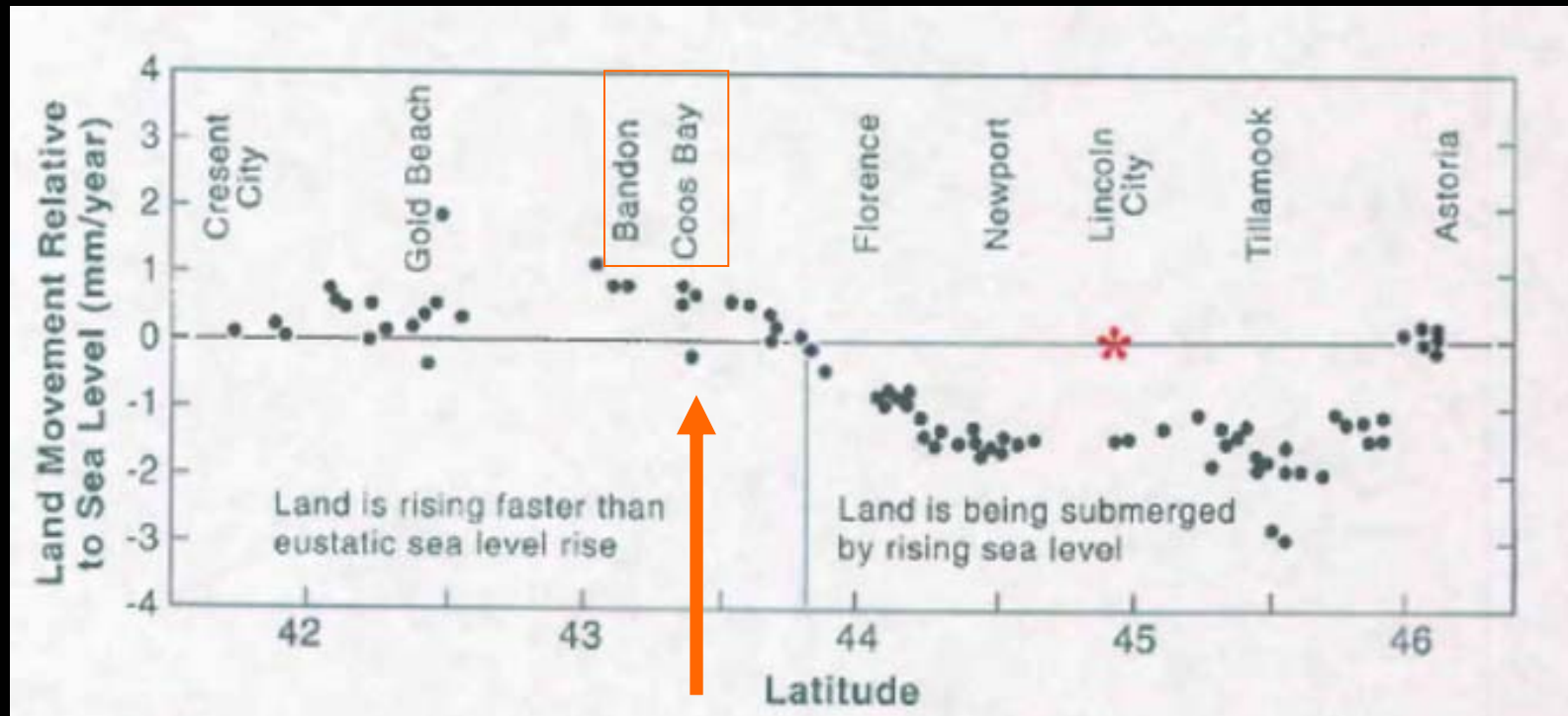
Uncertainties



- 1. Where does the ditch fill material come from? (from Leslie project?) (Cost?)**
- 2. What's the best way to connect lower end of the channel to Winchester Creek?**
- 3. How long will aquatic habitat for fish be affected? And is that time an acceptable trade-off for the long-term development of complex low gradient freshwater floodplain habitat?**
- 4. How can this project address the reed canary grass already established on site?**



Coastal Wetlands Issues



Tectonic uplift on the southern OR coast reduces or eliminates the effects of sea level rise (Komar, 1977)

Reed canary grass

- Forms monoculture stands that overtake native plant communities- fast, early growth shades out native species; optimizes different reproductive systems- favors seed production when not flooded- asexual reproduction when flooded
- RCG matt is barrier to small mammals
- Seeds provide little nutritional value
- Birds don't use it- stems too dense
- Eradication will not be possible- goal will be to maintain RCG as subordinate member of the plant community

