Rush Ranch Restoration Projects Update: Lower Spring Branch Creek Suisun Hill Hollow

Constructed Fall 2019

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Presented to the Suisun Marsh Adaptive Management Advisory Team May 19, 2020







Project Setting in Suisun Marsh

• North-central Suisun Marsh



Three Restoration Projects

Lower Spring Branch Creek (*constructed* 2019)

- Seasonal stream flows into First Mallard Slough
- 15-acre tidal marsh restoration

Suisun Hill Hollow (*constructed 2019*)

- Seasonal stream flows into Goat Island Marsh
- 8-acre seasonal wetland restoration

Goat Island Marsh (*Phase 2, no change since 2015 AMAT presentation*)

- 80-acre tidal marsh restoration
- Natural upland transition

CEQA via Solano County USFWS tiered off SMP BiOp



Status of Lower Spring Branch and Suisun Hill Hollow Implementation

- Constructed fall 2019
- Tides restored Nov 15, 2019 (Lower Spring Branch)
- UAV as-built air photo and topography
- SLT submitted initial monitoring report to CDFW and permitting agencies, Feb 25, 2020 mainly covered as-built condition
- Surface and groundwater monitoring installed Jan 2020 for Lower Spring Branch, no downloads yet due to Covid-19 (will happen 5/20/20)
- CDFW Prop 1 Grant Fall 2019 for transition zone enhancement and monitoring not awarded
- No funding in place for any monitoring, NERR taking on water level, some vegetation but no funding

Existing Conditions (LSBC)



Project Area Features, LSBC

Restoration Design and Restored Habitats (LSBC)



As-Built UAV Air Photo (LSBC)



Rush Ranch Open Space Solano County, CA

Figure xx

1:1,800 (1" = 150' at letter size) 0 75 150 ft Meters 0 22.5 45



November 15, 2019 UAV Photograph - LSBC

As-Built Topography (UAV + ground data) (LSBC)



2019 As-Built Topography, LSBC

Culvert Replacement

- Aluminum arch culvert
- 20' bottom width
- 16' wide crossing
- 10.5' NAVD88 soffit
- 1.5' NAVD88 channel invert
- 12' NAVD88 road
- Shallow cement mixing soil stabilization
- Dewater work area







SOIL TREATMENT CROSS-SECTION

Figure 6

What it took to install the arch culvert

What it took to install the arch culvert

What it took to install the arch culvert

"

X

Public access turnout

Lowered Ranch Road

Rush Ranch HQ

First Mallard Slough (existing tidal marsh) Lower Spring Branch Creek (restored tidal marsh)

View to north

As-Built UAV Oblique Photo (LSBC)



View to east

Next Steps – if funding can be obtained (LSBC)





Monitoring Infrastructure, LSBC

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ation Control, LSBC

NERR Proposed Vegetation Monitoring (unfunded)





Public Access Features



Arch culvert channel crossing (0.01 ac)

Gravel path (0.07 ac)

Public access turnout (0.01 ac)

Restored (Constructed) Habitats



Tidal marsh (0.46 ac)

Tidal channel (0.39 ac)

Tidal marsh ecotone* (0.11 ac)

Enhanced Habitats



Tidal marsh (6.50 ac)

Tidal marsh ecotone (7.02 ac)

*habitats formed on overflow bench, crossing side slopes, and road approaches

26 Gradsects (~10 m, ~5 1-m² quadrats each)

Older Alluvial Fans

Existing Conditions (SHH)



Restoration Design and Restored Habitats (SHH)



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Restored and Enhanced Habitats, SHH

As-Built UAV Air Photo (LSBC)



Rush Ranch Open Space Solano County, CA

Figure xx

Jata sources. All photo (Enviroutories, 2019, Terraviori, 2017)



November 15, 2019 UAV Photograph, SHH

As-Built Topography (UAV data) (LSBC)



1:2,400 (1" = 200' at letter size) 100

30

SIEGEL

SOLANO LAND TRUST

200

60

Rush Ranch Open Space Solano County, CA

Figure xx

2019 As-Built Topography, SHH

Suisun Hill Hollow, west enhancement area

Alkali Pools

Lowered Quarry Road

Lowered Impoundment Berm

View to southeast