Appendix A. Site Aerial Photographs

Table 1. Inventory of Aerial Photographs

Date	Band[1]	Figure No.	Time	Tide (ft MLLW)	Years > Breach	Platform[2]	Resolution	Vendor[3]
Apr 1, 2015	NC	A-1	NA	NA	Baseline	S	NA	GE
Jul 6, 2016	NC	A-2	18:41	4.1	0.73	FW	27cm	TA
Jul 21, 2016	CIR	A-3	17:26	4.6			30 cm	
Aug 23, 2016	NC	A-4	12:22	1.3	0.86	S	NA	DG
Nov 17, 2016	BW	A-5	~15:00	6.7	1.09	S	BA	DG
Aug 2017 (north levee only)	NC	A-6	NA	NA	1.80	UAV	8.4 cm	SFSU
	FC	A-7						
	NDVI	A-8						
Sep 9, 2017	NC	A-9	NA	NA	1.90	FW	26 cm	TA
	CIR	A-10						
Jul 16, 2018	NC	A-11	NA	~-0.8[4]	2.75	FW	15cm	QS
	CIR	A-12						
	NDVI	A-13						
Aug 16, 2019	NC	A-14	09:40	0.2	3.84	FW	23cm	PAS
Oct 9, 2019	NC	A-15	NA	NA	3.99	FW	16cm	PAS
	CIR	A-16						
	NDVI	A-17						
Jun 7, 2020	NC	A-18	NA	~-1.4[4]	4.62	FW	15cm	QS
	CIR	A-19						
	NDVI	A-20						
Jun 16 & 30, 2022 (north and west levees)	NC	A-21	NA	Below MTL	5.65	UAV	2.5	ED
Dec 9, 2022 (north and west levees)	NC	A-22	~11:00-12:00	2.7	6.13	UAV		SFEI

Notes:

1) *Image band: NC = Natural Color, CIR = Color Infrared, BW = Black and White, NDVI = Normalized Difference Vegetation Index, FS = False Color*
2) *Platform: S = satellite, FW = fixed wing aircraft, UAV = unmanned aerial vehicle ("drone")*
3) *Vendor: TA = Terravion, GE = Google Earth, DG = Digital Globe, QS = Quantum Spatial, PAS = Pacific Aerial Survey, ED = Envirodrones, SFEI = San Francisco Estuary Institute*
4) *Air photos flown with LiDAR data collection do not have reported time stamps, however noted in data report that flown at lowest tide*

April 1, 2015
Figure A-1

Map File: AirPhoto_2016_SearsPt_2019-0925dag

Data Sources: Air Photo, Terravion 2016;
Satellite Imagery, NAIP 2016

Air Photo, Natural Color
July 6, 2016
Sears Point
Sonoma County, CA

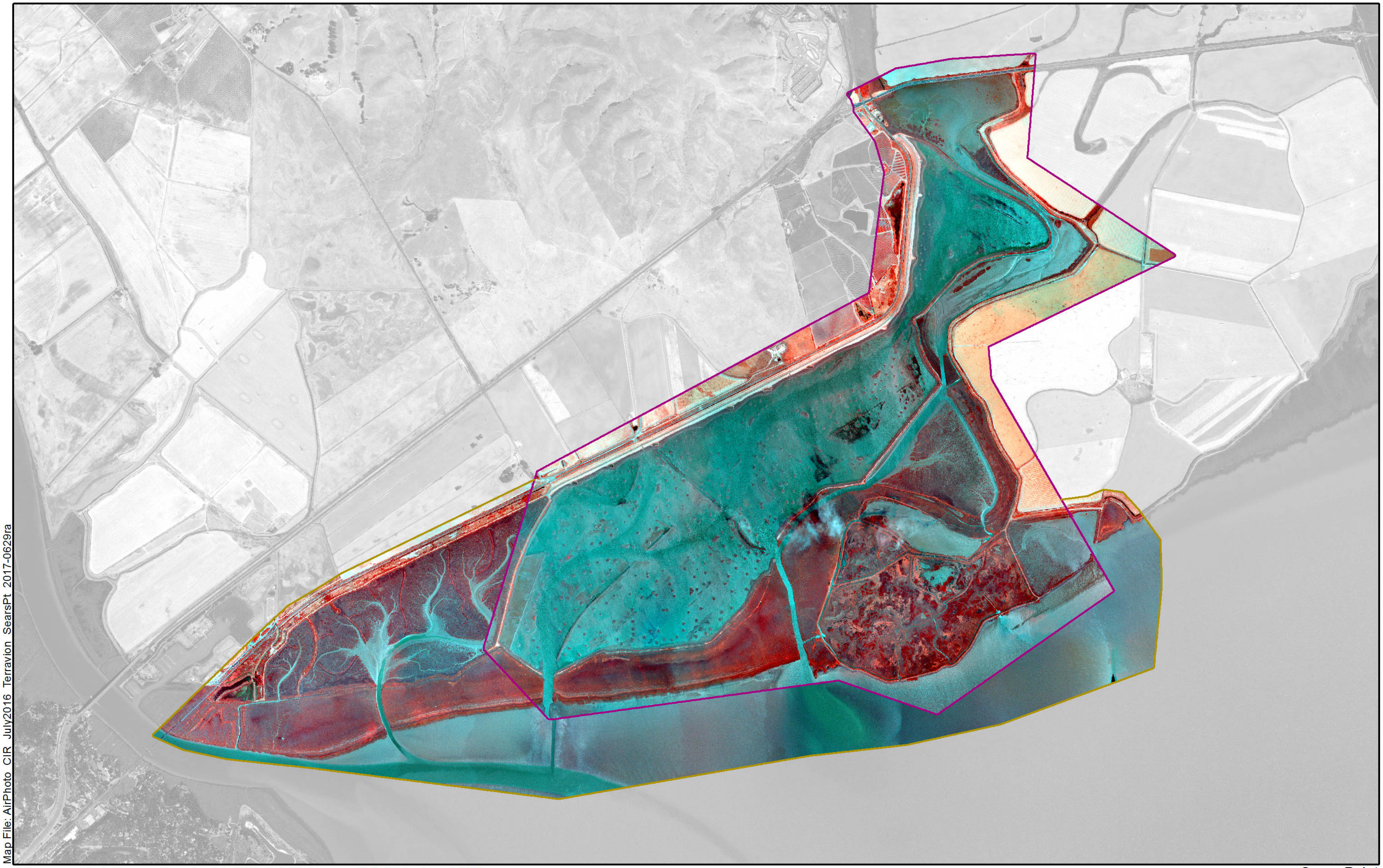
Feet
0 2,000 4,000
0 480 960
Meters
1:24,000 (1" = 2,000' at letter size)

North

San Francisco Bay National Estuarine Research Reserve

SONOMA LAND TRUST

Figure A-2



Map File: AirPhoto_CIR_July2016_Terravion_SearsPt_2017-0629ra

Data sources: Aerial Imagery,Terravion July 2016, Satellite Imagery, DigitalGlobe August 2016

1:36,000 (1" = 3,000' at letter size)

0 1,000 2,000 ft

0 300 600 m

Sears Point
Sonoma County, CA

Figure A-3

Air Photos:

Terravion, Color Infrared, July 06 2016 | 18:41

Terravion, Color Infrared, July 21 2016 | 17:26

Map File: SP Figure 2 Digital Globex

Data sources: Satellite Imagery, DigitalGlobe August 2016

Sears Point
Sonoma County, CA

1:36,000 (1" = 3,000' at letter size)

0 1,000 2,000 ft

0 300 600 m

Figure A-4

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Satellite Image:Digital Globe WV02, Natural Color, August 23rd 2016 | 12:22

Map File: SP Figure 3 Digital Globe BW

Data sources: Satellite Imagery, DigitalGlobe November 2016

Sears Point
Sonoma County, CA

1:36,000 (1" = 3,000' at letter size)

0 1,000 2,000 ft

0 300 600 m

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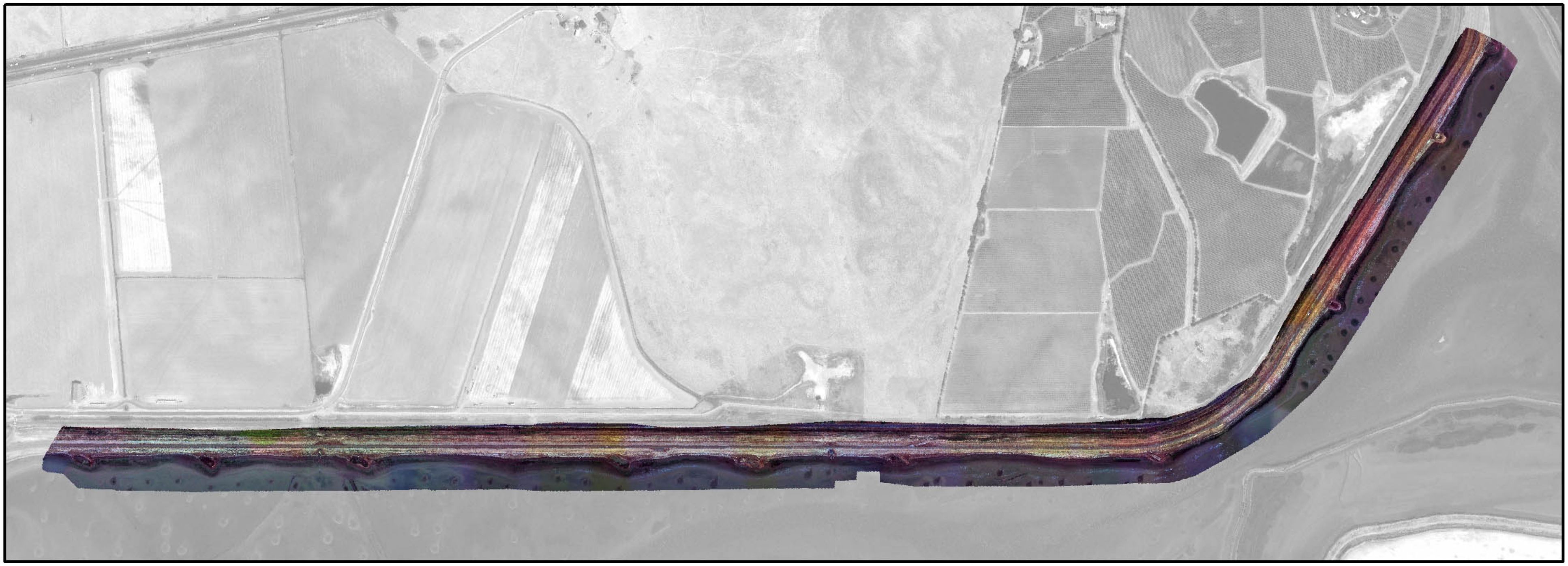
Figure A-5

Satellite Image:Digital Globe WV01, Black & White, November 17th 2016 | ~15:00



Data Sources: UAV Imagery, NERR 2017; Satellite Imagery, DigitalGlobe August 2016

North

0 1,000 2,000 Feet

0 200 400 Meters

1:18,000 (1" = 1,500' at letter size)

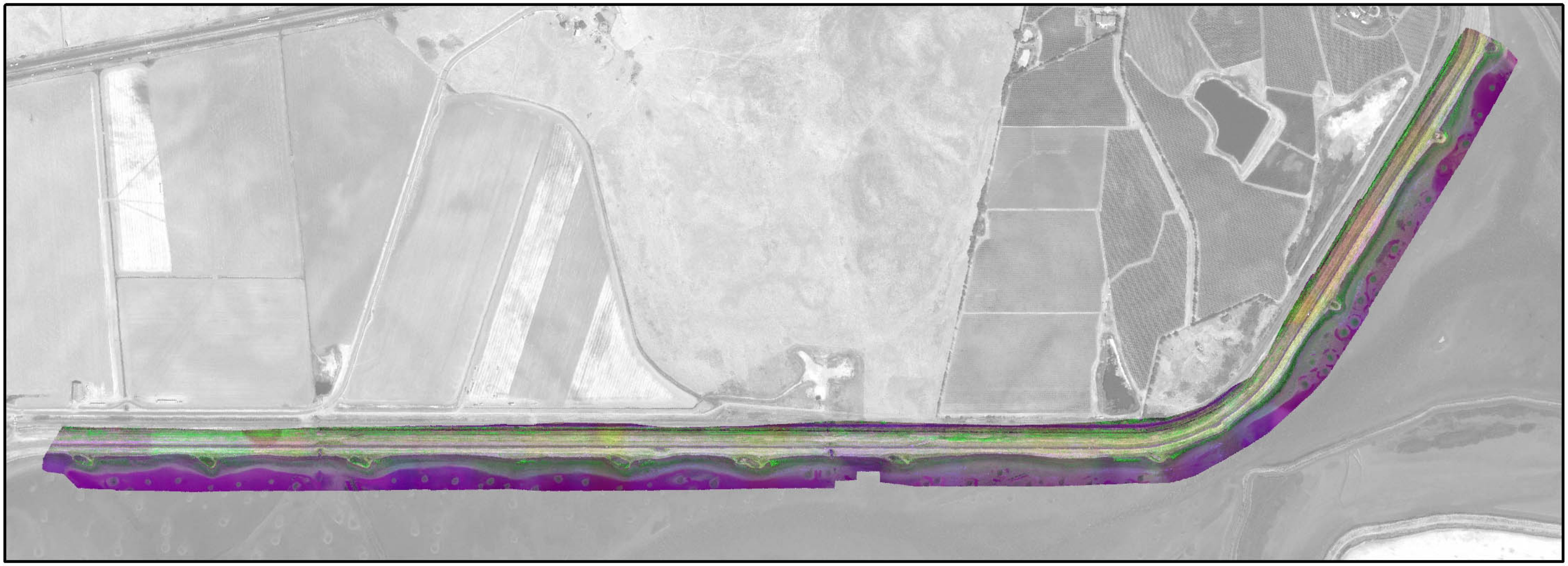
Unmanned Aerial Vehicle Imagery Survey

Natural Color, August 2017

Sears Point

Sonoma County, CA

Figure A-6



Data Sources: UAV Imagery, NERR 2017; Satellite Imagery, DigitalGlobe August 2016

North

0 1,000 2,000 Feet

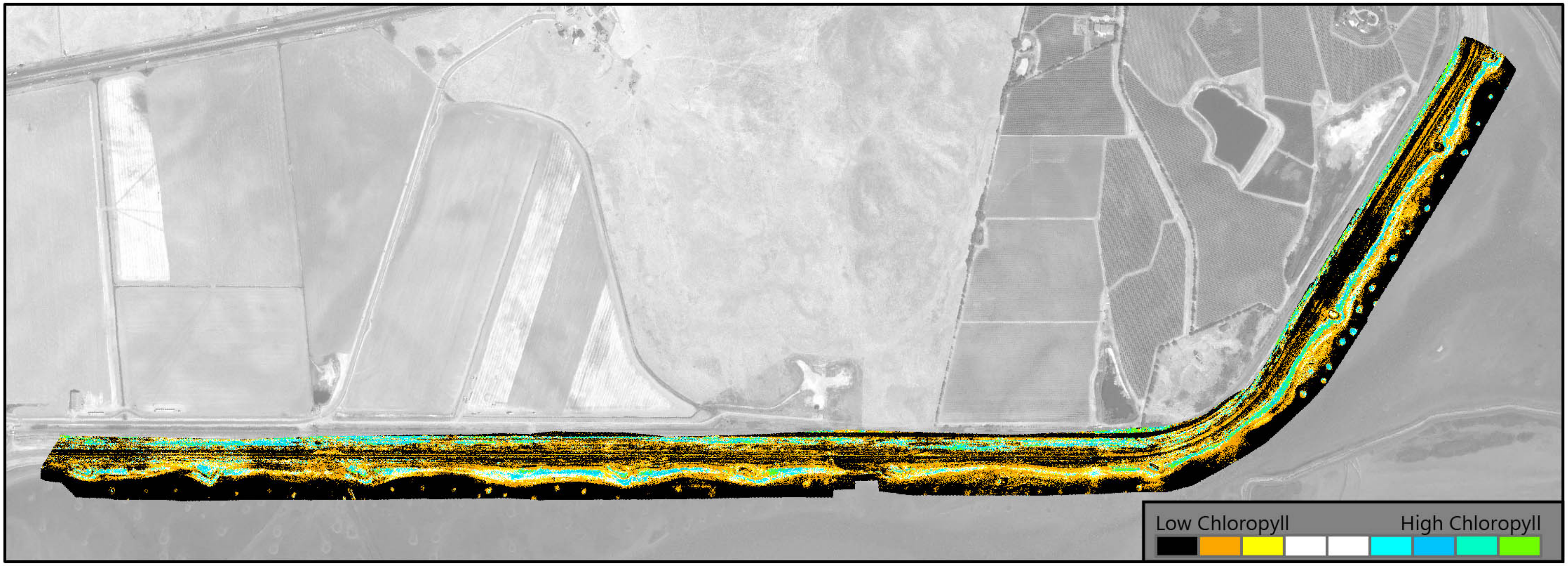
0 200 400 Meters

1:18,000 (1" = 1,500' at letter size)

Unmanned Aerial Vehicle Imagery Survey
False Color, August 2017
Sears Point

Sonoma County, CA

Figure A-7



Data Sources: UAV Imagery, NERR 2017; Satellite Imagery, DigitalGlobe August 2016

North

0 1,000 2,000 Feet

0 200 400 Meters

1:18,000 (1" = 1,500' at letter size)

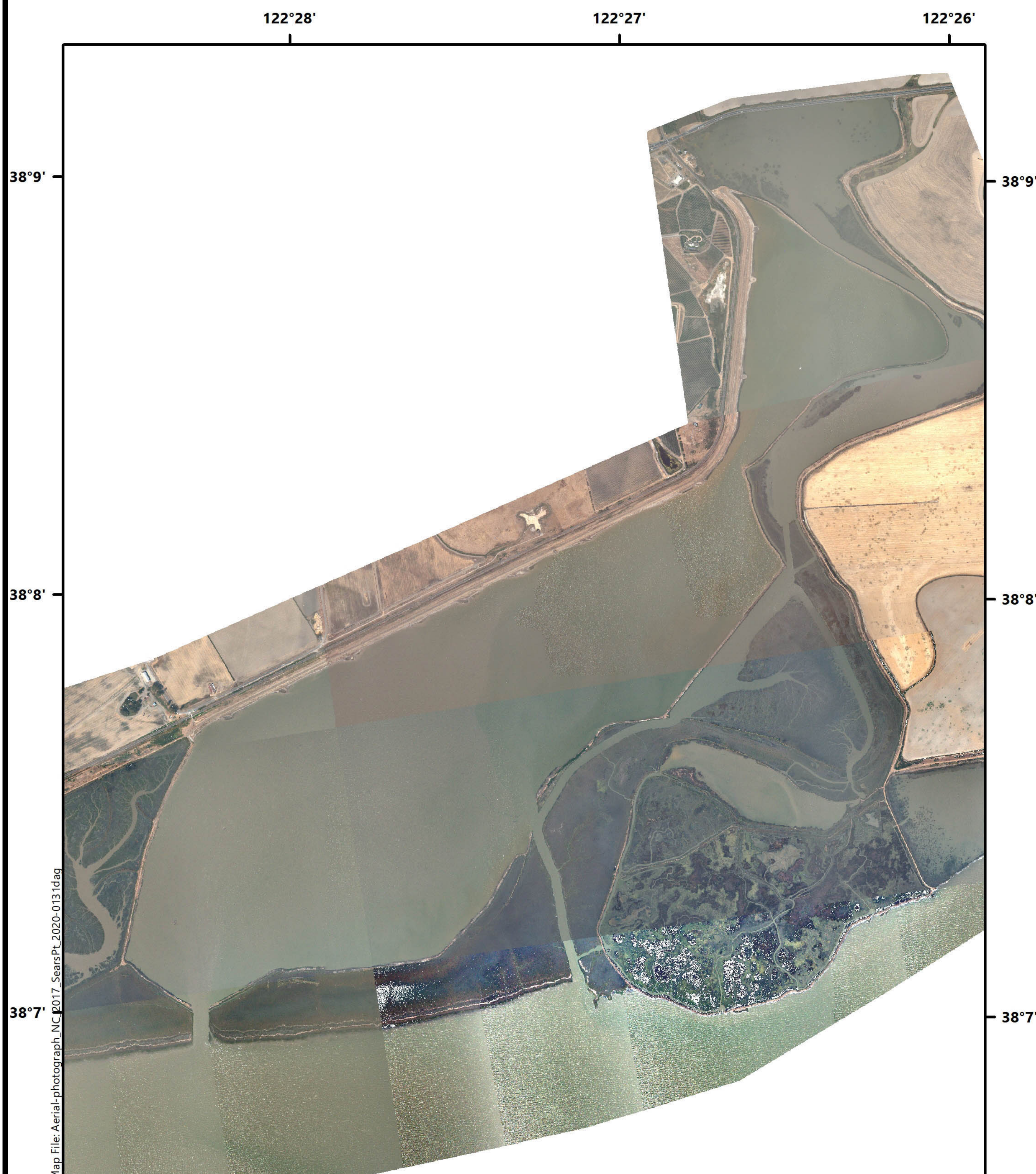
Unmanned Aerial Vehicle Imagery Survey

NDVI, August 2017

Sears Point

Sonoma County, CA

Figure A-8



Map File: Aerial-photograph_NC_2017_SearsPt_2020-0131dag

Data Sources: Photo (Terravion, 2017)

Sears Point Restoration Project, Sonoma County, CA

September 2017 Aerial Photograph
Natural Color

1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

0 300 600 Meters

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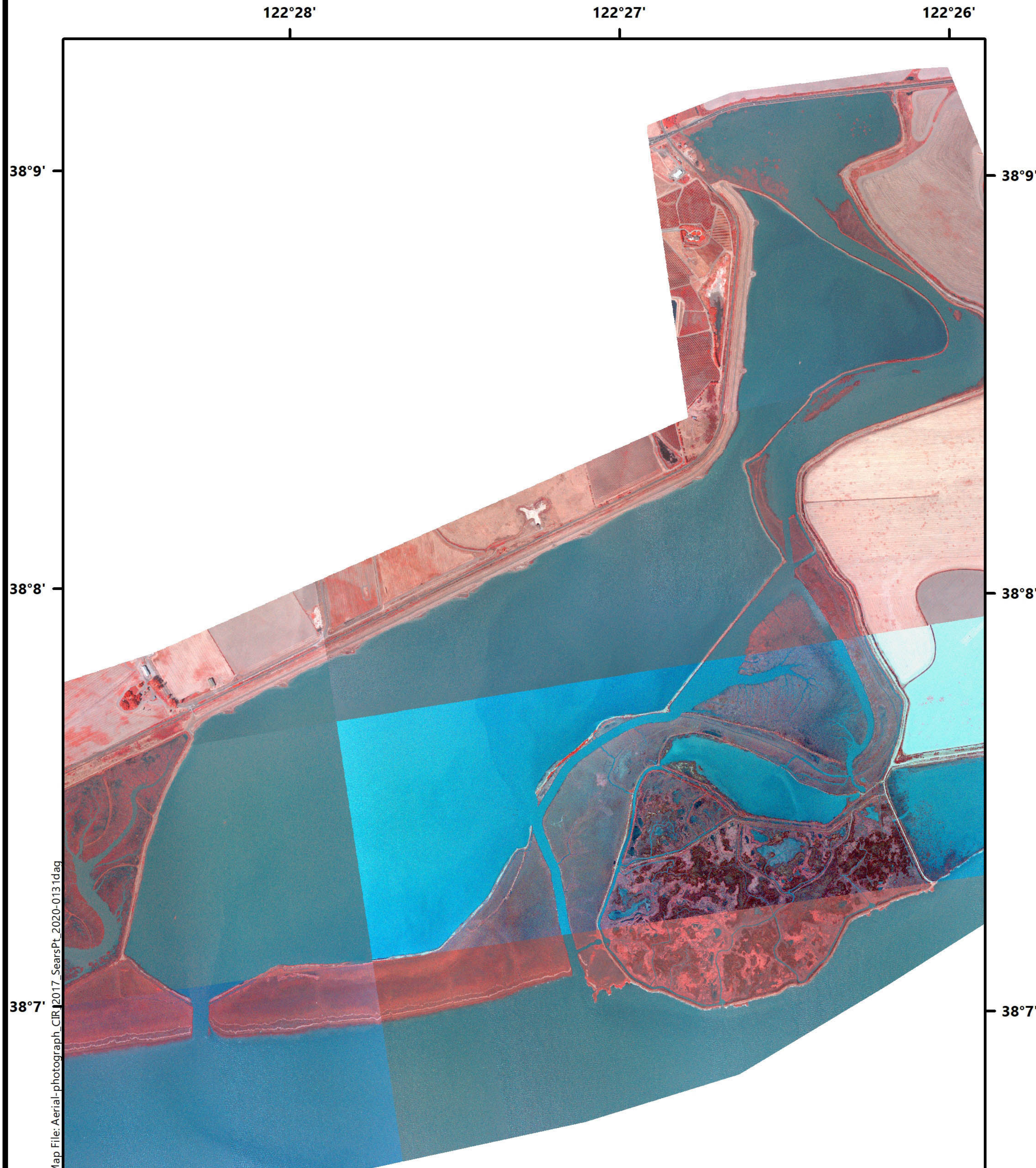
Gillenwater GillenH2O Consulting

San Francisco Bay National Estuarine Research Reserve

Figure A-9



Data Sources: Photo (Terravion, 2017)

Sears Point Restoration Project, Sonoma County, CA

September 2017 Aerial Photograph
Color Infrared

1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

0 300 600 Meters

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San Francisco Bay National Estuarine Research Reserve

Figure A-10

Map File: AirPhoto_2018_SearsPt_2018_0904ra

Data Sources: Air Photo, Quantum Spatial 2018;
Satellite Imagery, DigitalGlobe August 2016

Air Photo, Natural Color
July 16th 2018
Sears Point

Sonoma County, CA

Feet
0 2,000 4,000

0 480 960
Meters
1:24,000 (1" = 2,000' at letter size)

North

San Francisco Bay National Estuarine Research Reserve

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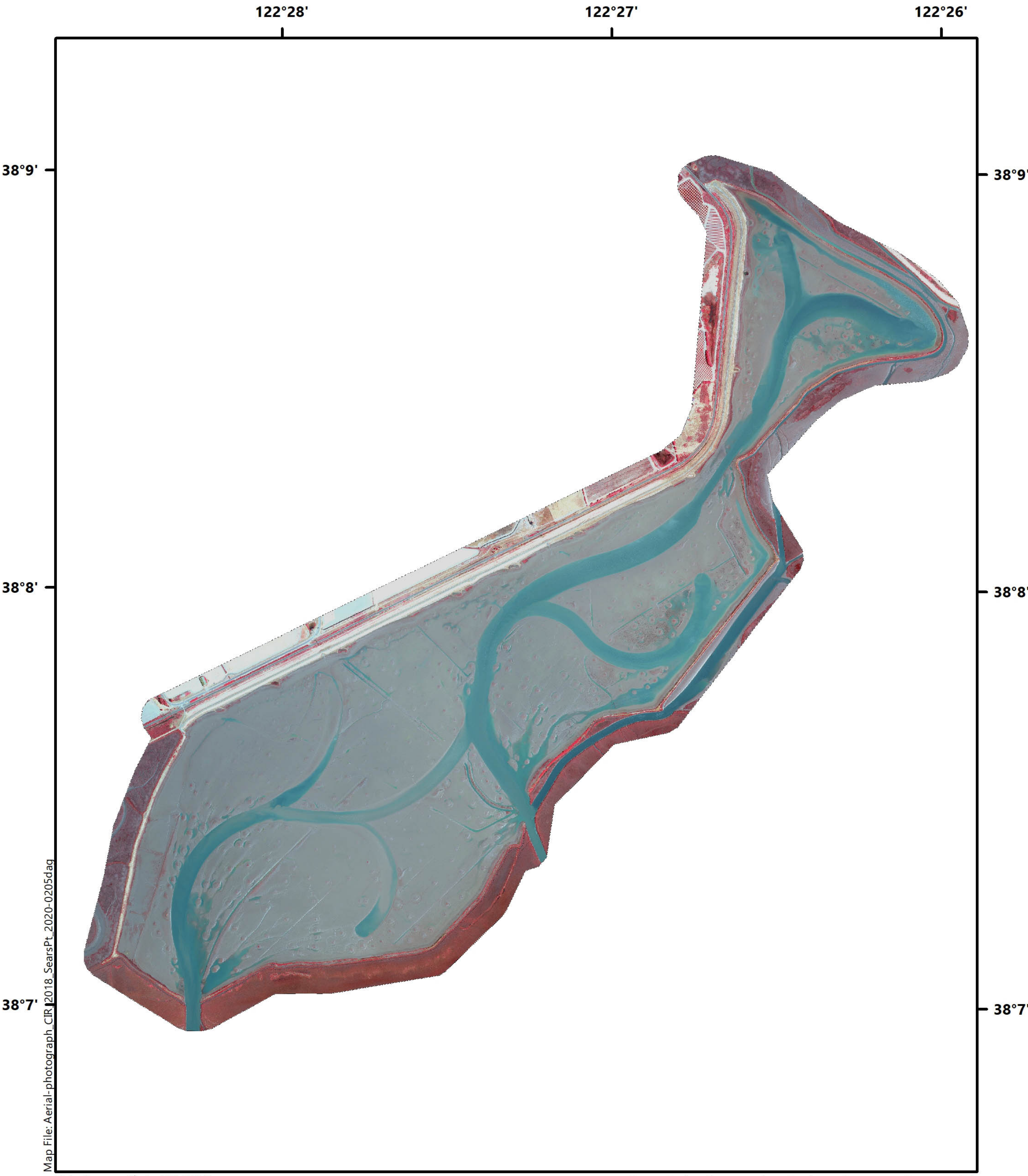
Figure A-11



Map File: Aerial-photograph_CIR_2018_SearsPt_2020-0205daq

Data Sources: Photo (QS, 2018)

Sears Point Restoration Project, Sonoma County, CA

July 2018 Aerial Photograph
Color Infrared

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San Francisco Bay National Estuarine Research Reserve

1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

0 300 600 Meters

Figure A-12

Map File: AirPhoto_2018_SearsPt_2018_0904ra

Data Sources: Air Photo, Quantum Spatial 2018;
Satellite Imagery, DigitalGlobe August 2016

Air Photo, NDVI
July 16th 2018
Sears Point
Sonoma County, CA

North

San Francisco Bay National Estuarine Research Reserve

Feet: 0, 2,000, 4,000
Meters: 0, 480, 960
1:24,000 (1" = 2,000' at letter size)

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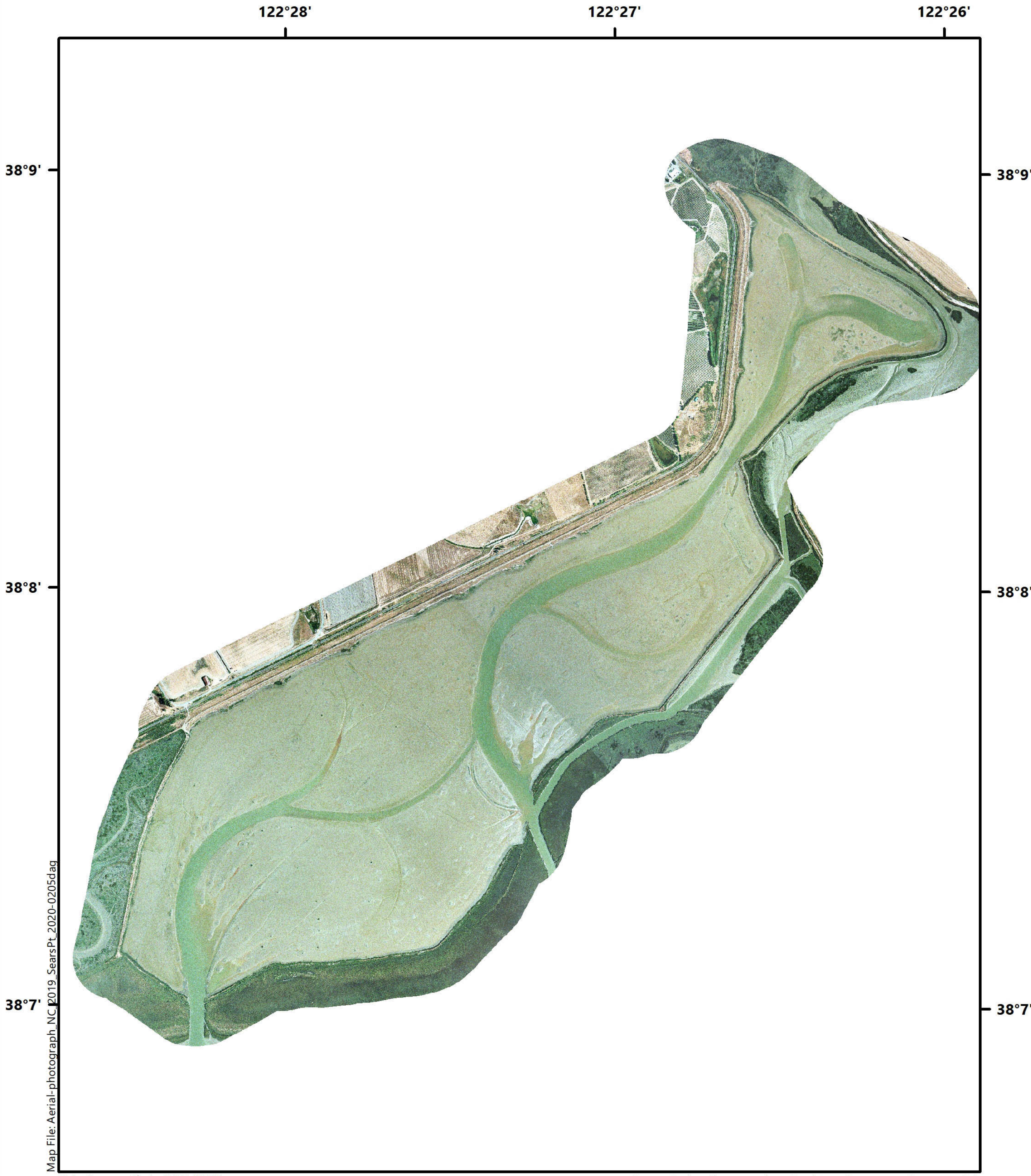
Figure A-13



Map File: Aerial-photograph_NC_2019_SearsPt_2020-0205dag

Data Sources: Photo (PAS, 2019)

Sears Point Restoration Project, Sonoma County, CA

August 2019 Aerial Photograph
Natural Color

Gillenwater GillenH2O Consulting

San Francisco Bay National Estuarine Research Reserve

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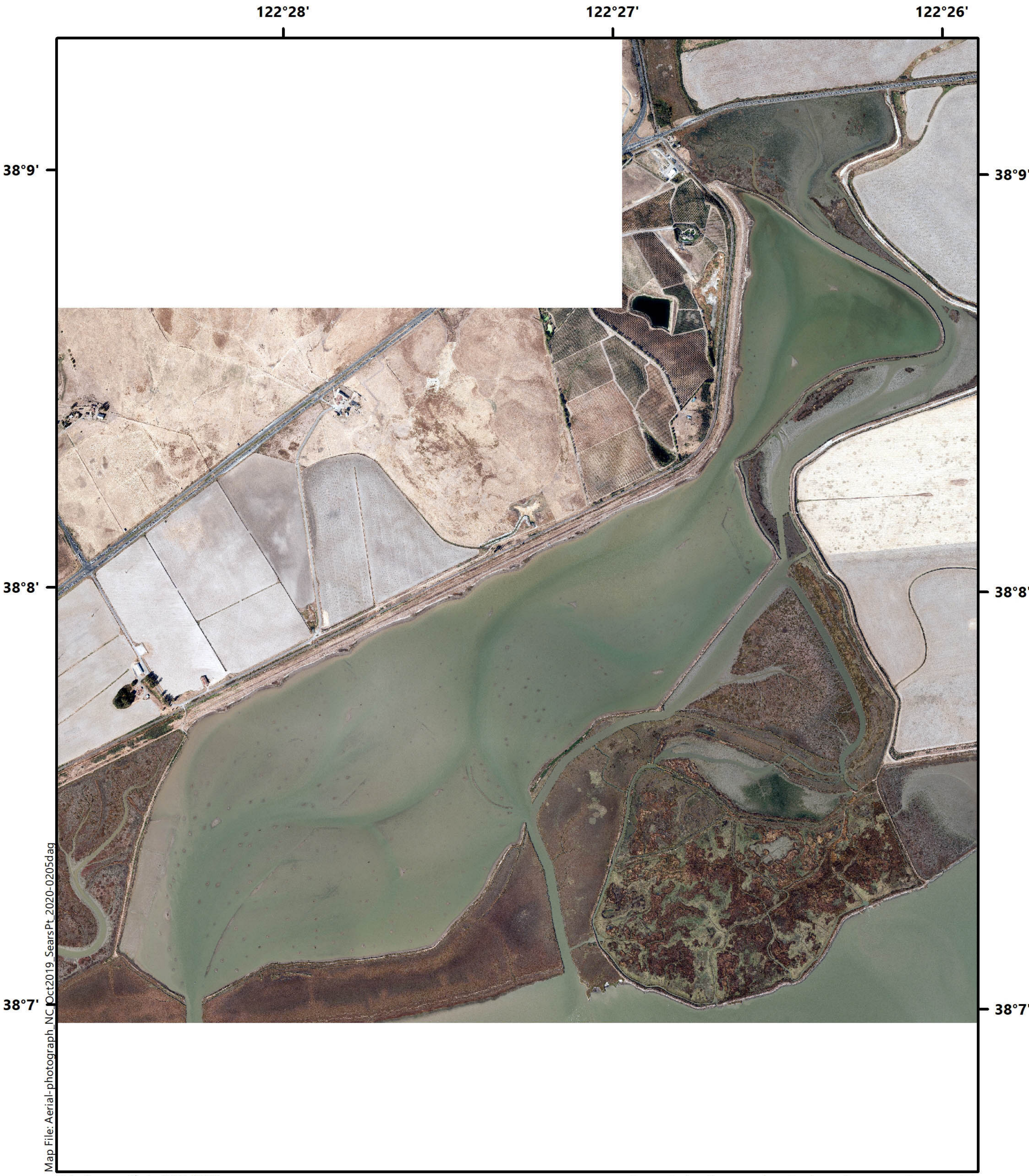
1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

0 300 600 Meters

Figure A-14



Data Sources: Photo (PAS, 2019)

Sears Point Restoration Project, Sonoma County, CA

October 2019 Aerial Photograph
Natural Color

Gillenwater GillenH2O Consulting

San Francisco Bay National Estuarine Research Reserve

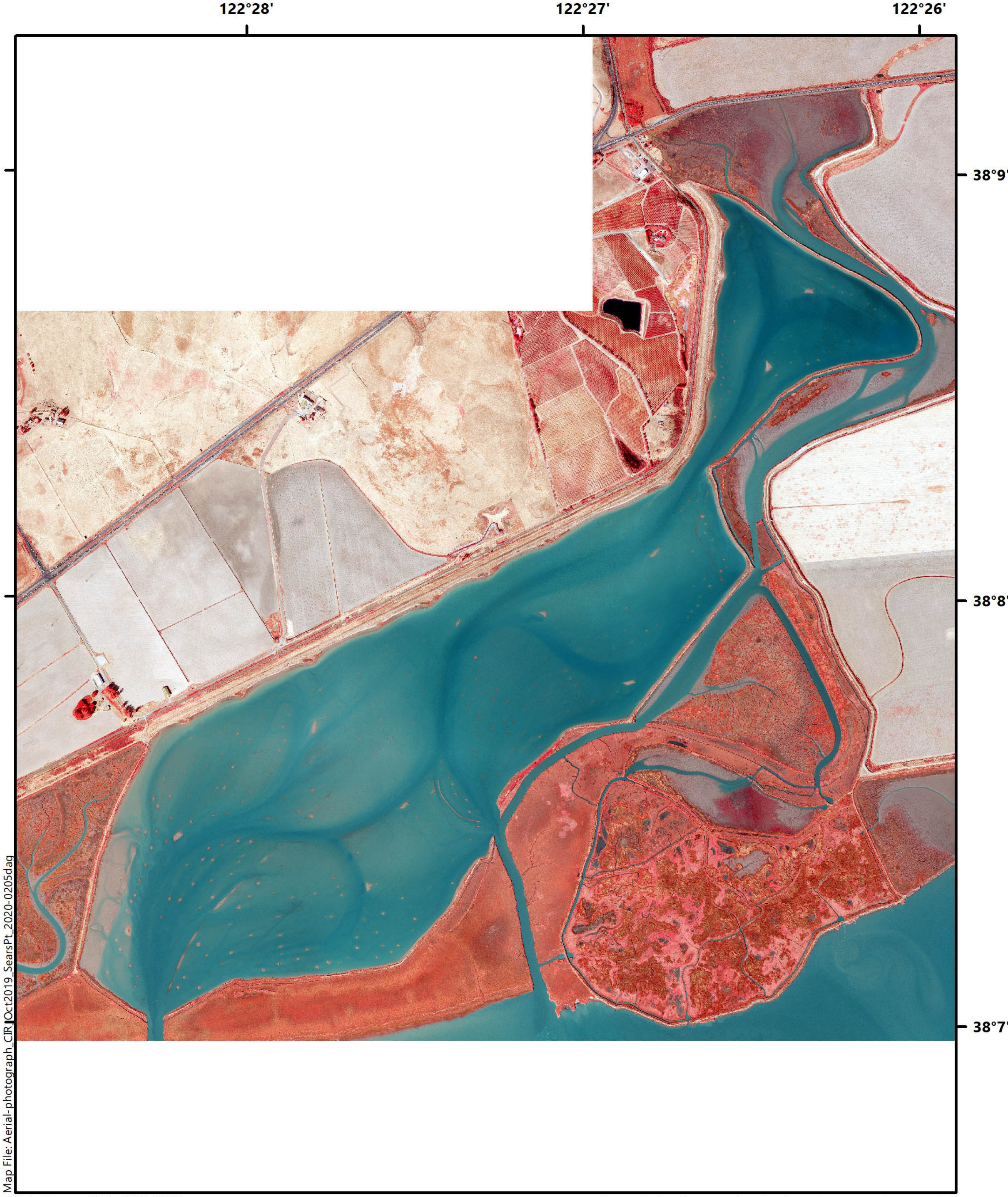
SONOMA LAND TRUST

1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

0 300 600 Meters

Figure A-15



Data Sources: Photo (PAS, 2019)

Sears Point Restoration Project, Sonoma County, CA

October 2019 Aerial Photograph
Color Infrared

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Gillenwater GillenH2O Consulting

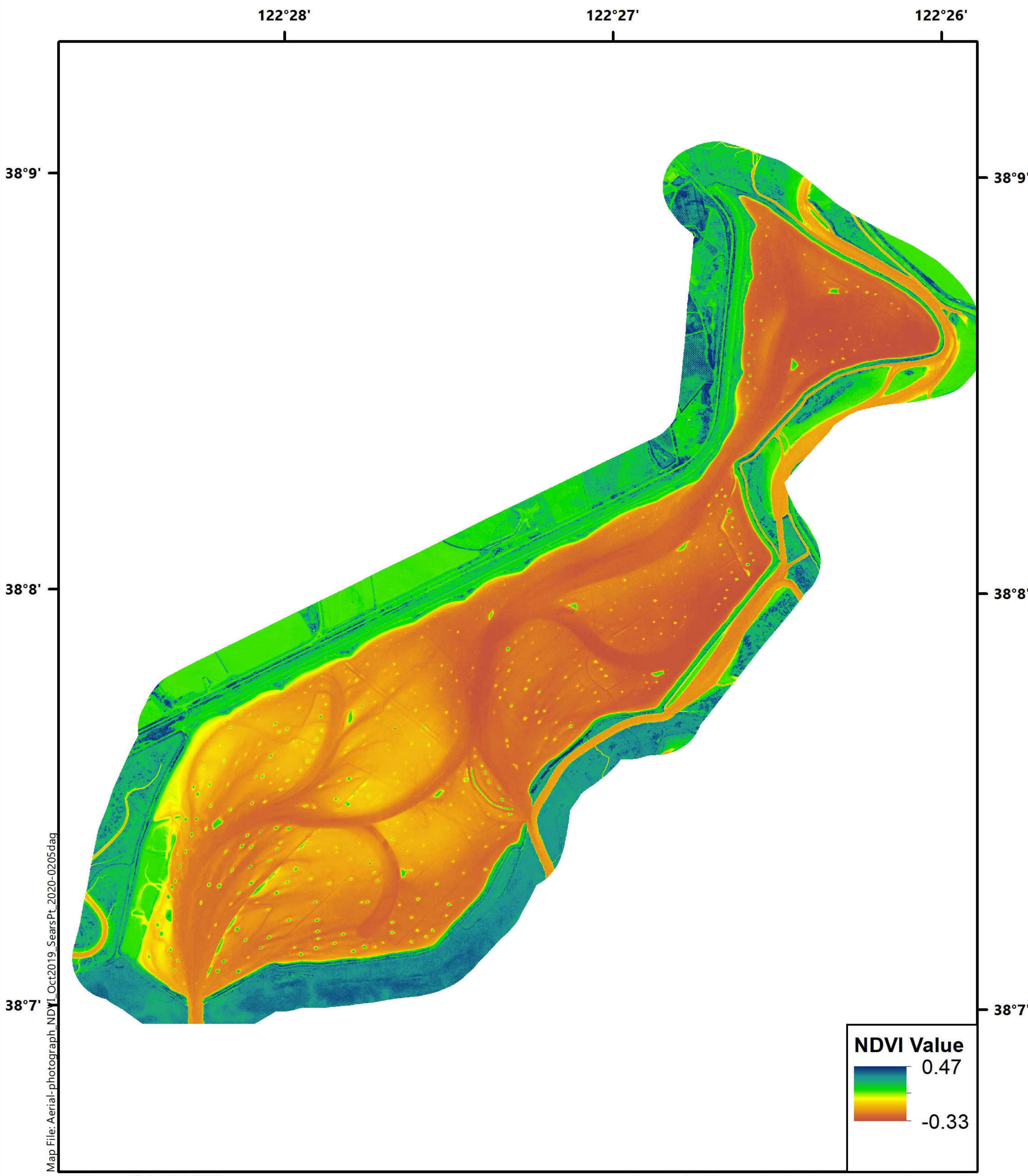
San Francisco Bay National Estuarine Research Reserve

1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

0 300 600 Meters

Figure A-16



Data Sources: Photo (PAS, 2019)

Sears Point Restoration Project, Sonoma County, CA

October 2019 Aerial Photograph
NDVI

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Gillenwater GillenH2O Consulting

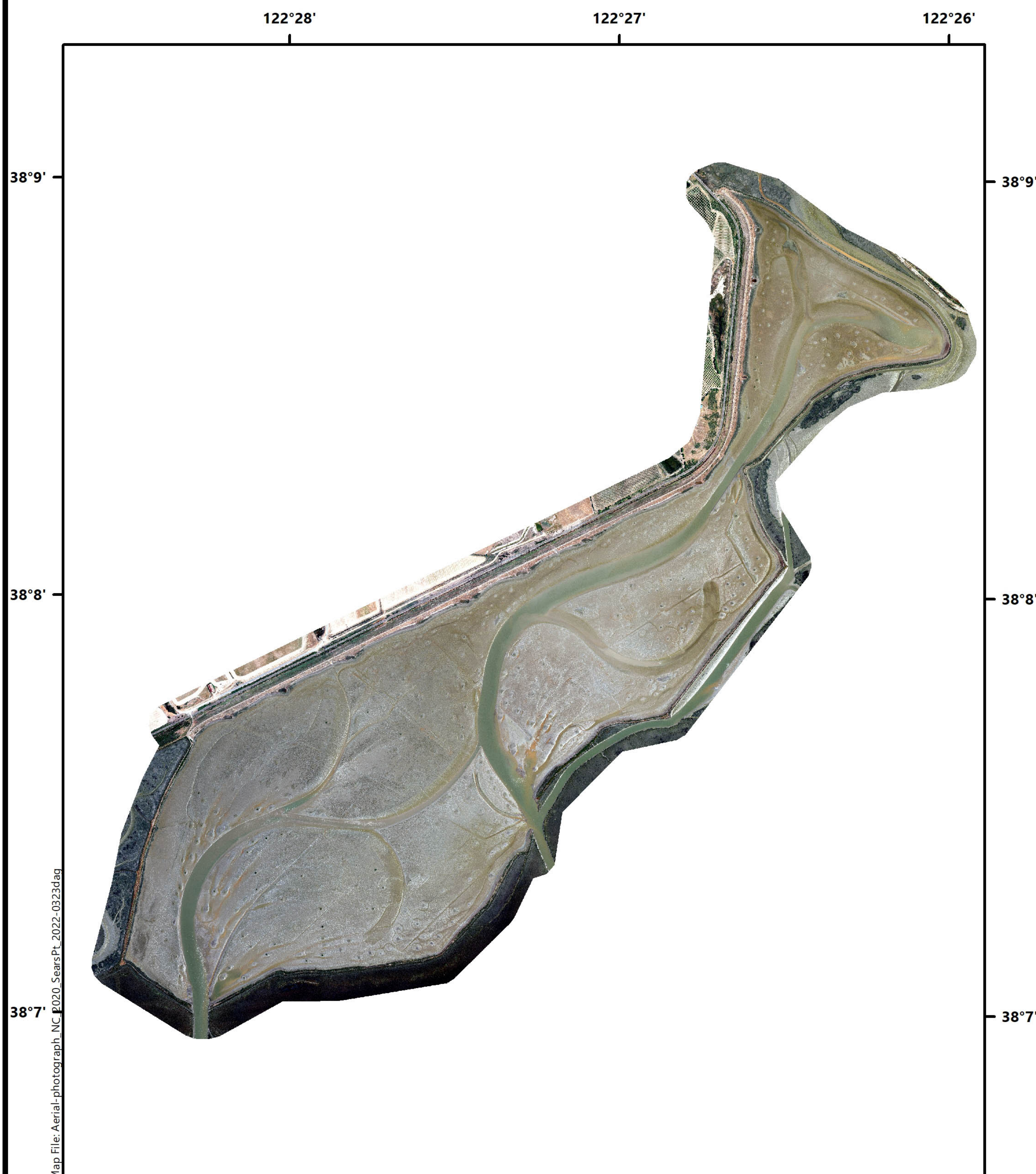
San Francisco Bay National Estuarine Research Reserve

1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

0 300 600 Meters

Figure A-17



Data Sources: Photo (QS, 2020)

Sears Point Restoration Project, Sonoma County, CA

June 2020 Aerial Photograph
Natural Color

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Gillenwater GillenH2O Consulting

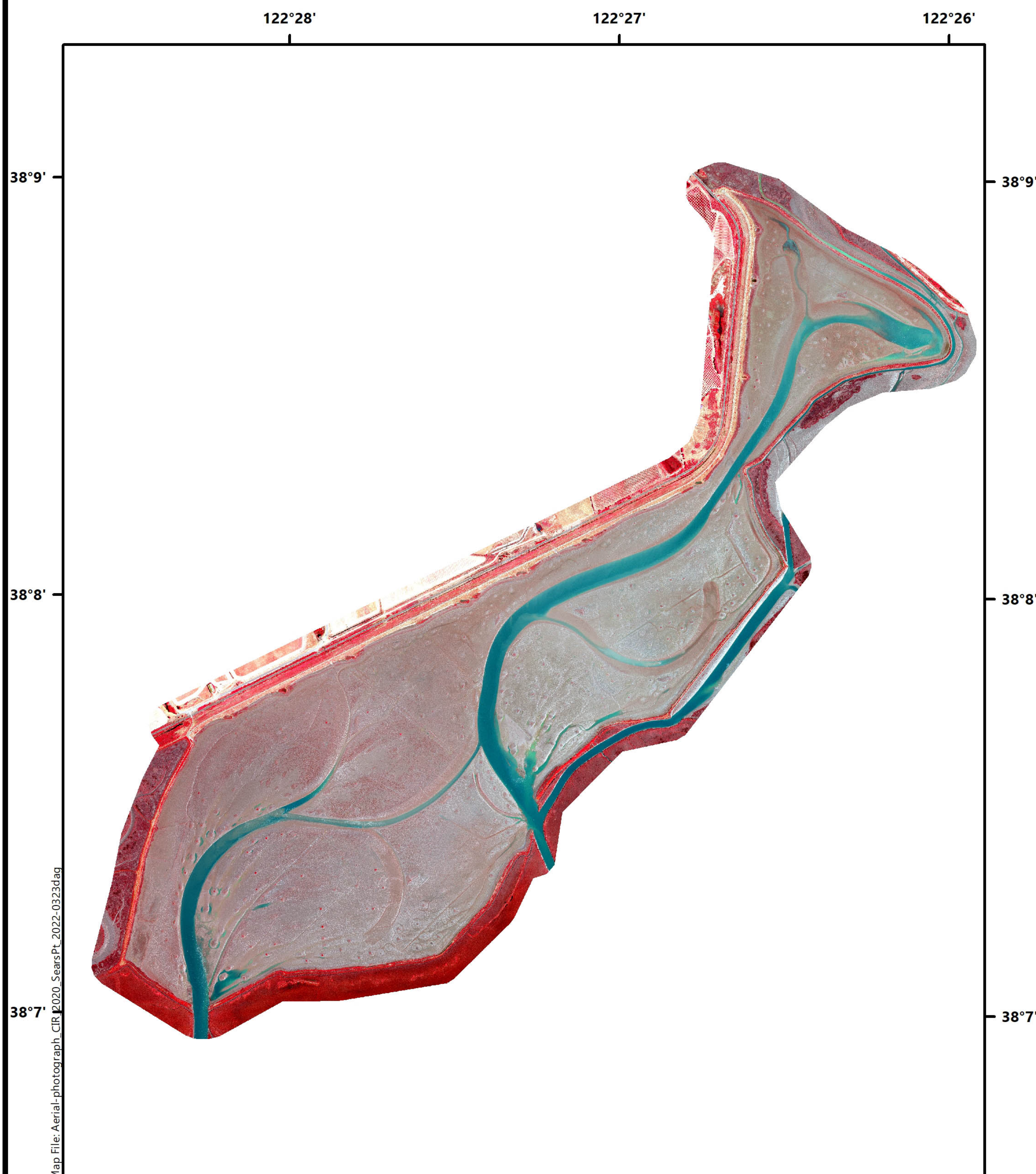
SIEGEL ENVIRONMENTAL

1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

0 300 600 Meters

Figure A-18



Data Sources: Photo (QS, 2020)

Sears Point Restoration Project, Sonoma County, CA

June 2020 Aerial Photograph
Color Infrared

Gillenwater GillenH2O Consulting

SONOMA LAND TRUST

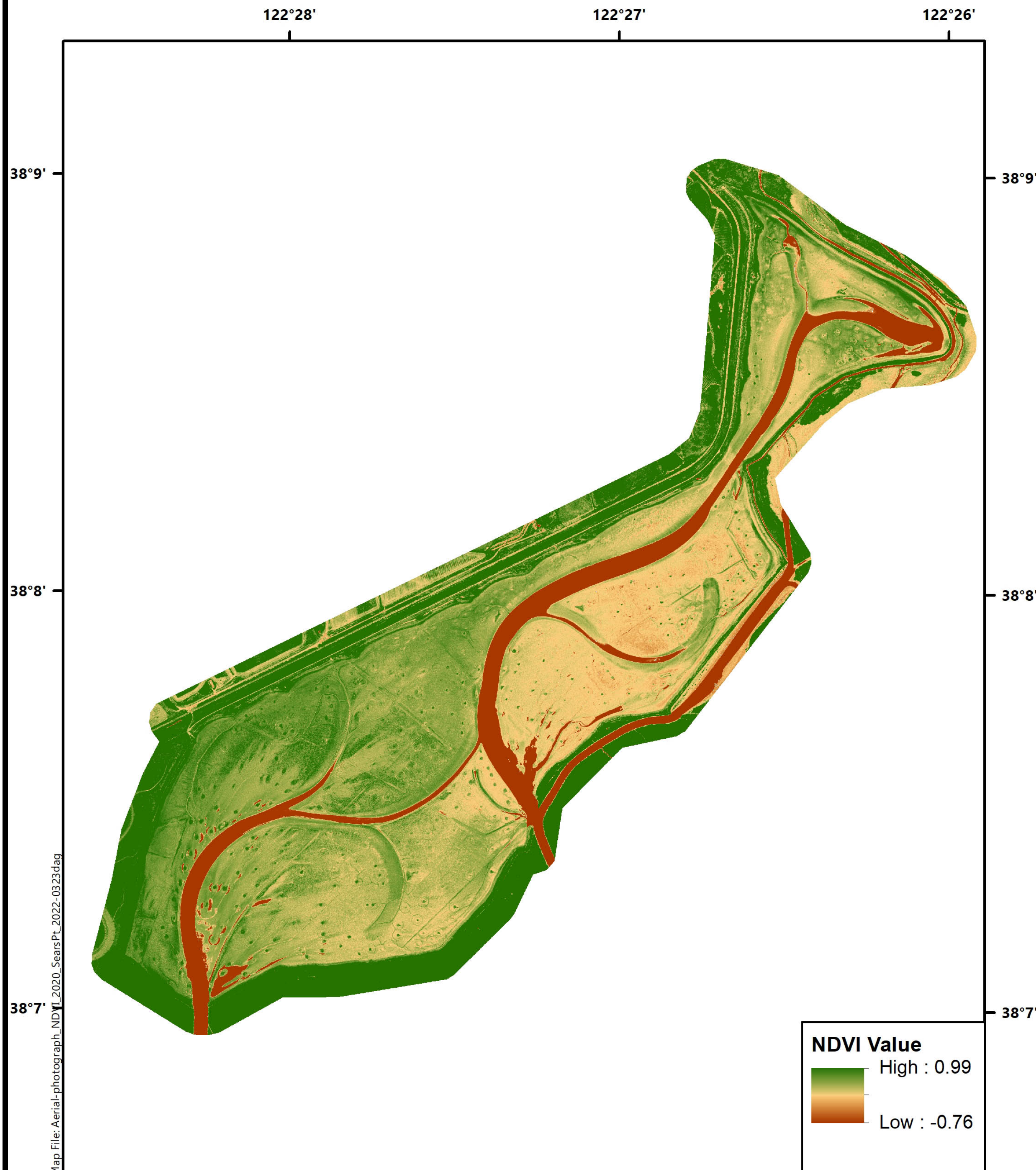
SIEGEL ENVIRONMENTAL

1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

Meters 0 300 600

Figure A-19



Map File: Aerial-photograph_NDVI_2020_SearsPt_2022-0323daq

Data Sources: Photo (QS, 2020)

Sears Point Restoration Project, Sonoma County, CA

June 2020 Aerial Photograph

NDVI

1:24,000 (1" = 2,000' at letter size)

0 1,000 2,000 Feet

0 300 600 Meters

Figure A-20

Map File: drone-orthoimagery_SearsPt_June2021_2022-0111

Data sources: Basemap (NAIP, various);
Orthomosaic imagery (EnviroDrones, 2021)

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SIEGEL ENVIRONMENTAL

1:15,600 (1" = 1,300' at letter size)

0 650 1,300 Ft

0 200 400 M

Sears Point Levee Adaptive Management

Figure A-21

June 16 and 30, 2021 (Pre-Construction) Orthomosaic Imagery

Map File: drone-orthoimagery SearsPt Dec2021 2022-0111

Data sources: Basemap (NAIP,various);
Orthomosaic imagery (SFEI, 2021)

1:15,600 (1" = 1,300' at letter size)

0 650 1,300 Ft

0 200 400 M

SONOMA LAND TRUST

SIEGEL ENVIRONMENTAL

Sears Point Levee Adaptive Management

Figure A-2

December 9, 2021 (Post-Construction) Orthomosaic Imagery