

Appendix B. Fixed Photo Monitoring

Appendix B. Sears Point Photo Monitoring

Feb 2013 – October 2018

Contents:

Photo Monitoring Data Sheet
Photo Monitoring Point Map
Photos

Notes:

- Photo points 1-8 were established in spring 2013 on February 2, March 29, and May 3 prior to major construction. Varying dates are a result of poor image quality needing to be retaken or additional photo points being added to fill gaps.
- Photo points 9-11 were established June 2014 to fill additional gaps in coverage which became apparent as the project progressed.
- Photo points 12-14 were established in June 2016 to capture views from the new levee that were not available prior to its completion and flooding of the site.
- Flooded conditions in December 2014 photos are the result of storms, not tidal inundation. All water is freshwater. Much of it had to be pumped from the site in order to resume work the following spring/summer.
- The October 2015 photos were taken immediately before the levee breach.
- The June 2016 photos were taken eight months after the breach and the return of the tides.

Photo Point 1, Photo 1.1
N 38.14709, W 122.43884
Bearing 279°

Photo Point Description: Crest of historic levee near northeast corner of property

Photo Description: View W overlooking ag field to Paradise Vineyard and Cougar Mountain showing where eastern end of new levee and marsh mounds will be constructed

February 2013



May 2014



December 2014

Note new 10:1 slope
added to historic levee



October 2015



June 2016

New levee

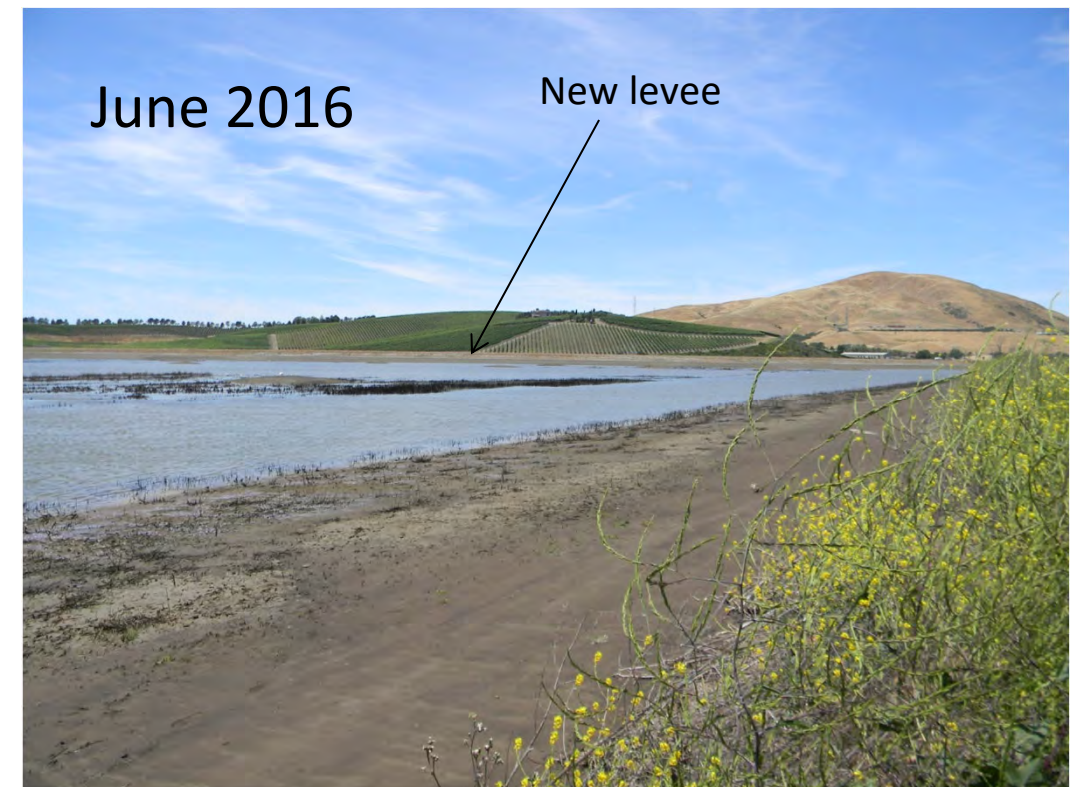


Photo Point 1, Photo 1.1

N 38.14709, W 122.43884

Bearing 279°

Photo Point Description: Crest of historic levee near northeast corner of property

Photo Description: View W overlooking ag field to Paradise Vineyard and Cougar Mountain showing where eastern end of new levee and marsh mounds will be constructed



Photo Point 1, Photo 1.2
N 38.14709, W 122.43884
Bearing 222°

Photo Point Description: Crest of historic levee near northeast corner of property

Photo Description: View WSW across ag field toward hunt club and eucalyptus trees to show that both these features are removed and that marsh mounds and tidal channels have been constructed

February, 2013



May, 2014



December, 2014



October, 2015



June, 2016



Photo Point 1, Photo 1.2

N 38.14709, W 122.43884

Bearing 222°

Photo Point Description: Crest of historic levee near northeast corner of property

Photo Description: View WSW across ag field toward hunt club and eucalyptus trees to show that both these features are removed and that marsh mounds and tidal channels have been constructed



Photo Point 1, Photo 1.3
N 38.14709, W 122.43884
Bearing 140°

Photo Point Description: Crest of old levee near northeast corner of property

Photo Description: View ESE across ag field with Tubbs Island radio towers and Mt Diablo visible in background to show marsh mound and tidal channel construction



Photo Point 1, Photo 1.3

N 38.14709, W 122.43884

Bearing 140°

Photo Point Description: Crest of old levee near northeast corner of property

Photo Description: View ESE across ag field with Tubbs Island radio towers and Mt Diablo visible in background to show marsh mound and tidal channel construction



Photo Point 2, Photo 2.1
N 38.13850, W 122. 44356
Bearing 321°

Photo Point Description: Crest of historic levee at pinch point of property

Photo Description: View NW to show hunt club and eucalyptus trees to be removed and soil remediation area



Photo Point 2, Photo 2.1

N 38.13850, W 122. 44356

Bearing 321°

Photo Point Description: Crest of historic levee at pinch point of property

Photo Description: View NW to show hunt club and eucalyptus trees to be removed and soil remediation area



Photo Point 2, Photo 2.2
N 38.13850, W 122. 44356
Bearing 240°

Photo Point Description: Crest of old levee at pinch point of property

Photo Description: View W across ag fields toward Dickson barns and home site to show future tidal channels and marsh mounds and removal of structures



Photo Point 2, Photo 2.2

N 38.13850, W 122. 44356

Bearing 240°

Photo Point Description: Crest of old levee at pinch point of property

Photo Description: View W across ag fields toward Dickson barns and home site to show future tidal channels and marsh mounds and removal of structures



Photo Point 2, Photo 2.3
N 38.13850, W 122.44356
Bearing 50°

Photo Point Description: Crest of old levee at pinch point of property

Photo Description: View E over graded levee with Tolay Creek on right of photo

December, 2014



October, 2015



June, 2016



Photo Point 2, Photo 2.3

N 38.13850, W 122.44356

Bearing 50°

Photo Point Description: Crest of old levee at pinch point of property

Photo Description: View E over graded levee with Tolay Creek on right of photo



Photo Point 3, Photo 3.1
N 38.12732, W 122.45146
Bearing 359°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View N of pumps and buildings to be removed. Cougar Mountain in distance.

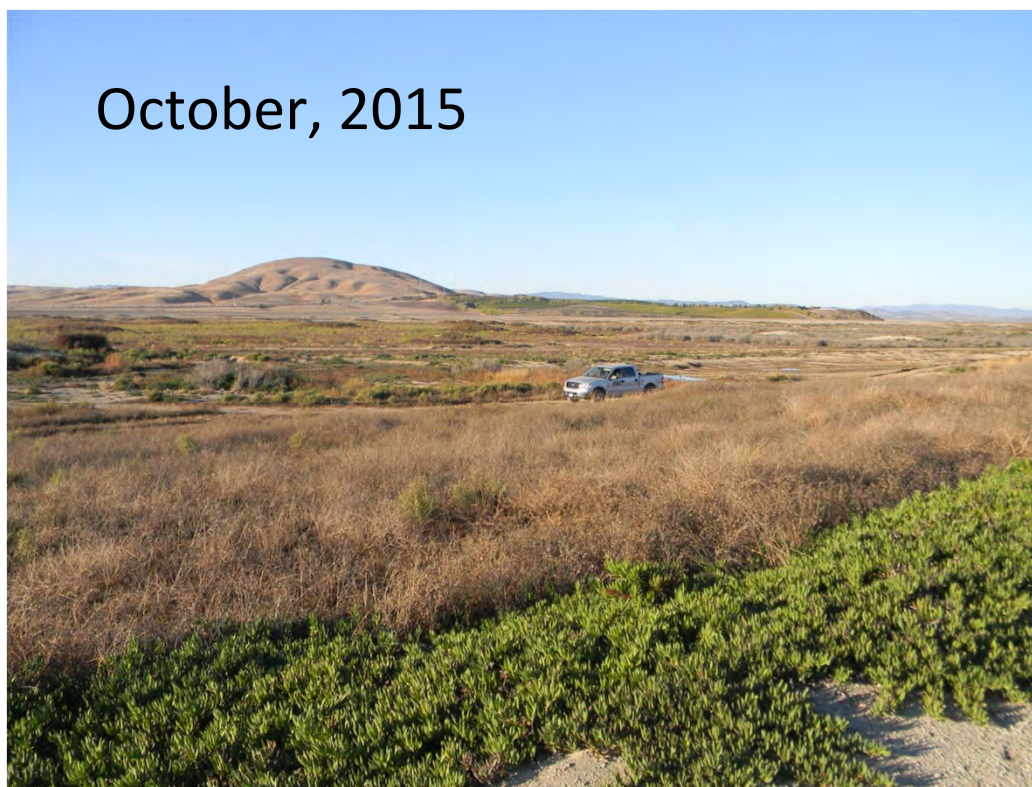


Photo Point 3, Photo 3.1

N 38.12732, W 122.45146

Bearing 359°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View N of pumps and buildings to be removed. Cougar Mountain in distance.



Photo Point 3, Photo 3.2
N 38.12732, W 122.45146
Bearing 316°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View NW of Dickson buildings to be removed.



Photo Point 3, Photo 3.2

N 38.12732, W 122.45146

Bearing 316°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View NW of Dickson buildings to be removed.



Photo Point 3, Photo 3.3
N 38.12732, W 122.45146
Bearing 263°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View W of Dickson buildings and power poles to be removed. Mt Burdell in background



Photo Point 3, Photo 3.3

N 38.12732, W 122.45146

Bearing 263°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View W of Dickson buildings and power poles to be removed. Mt Burdell in background



Photo Point 3, Photo 3.4
N 38.12732, W 122.45146
Bearing 230°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View along levee crest toward planned breach 2 with power poles scheduled for removal

May, 2013



May, 2014



December, 2014



October, 2015



June, 2016

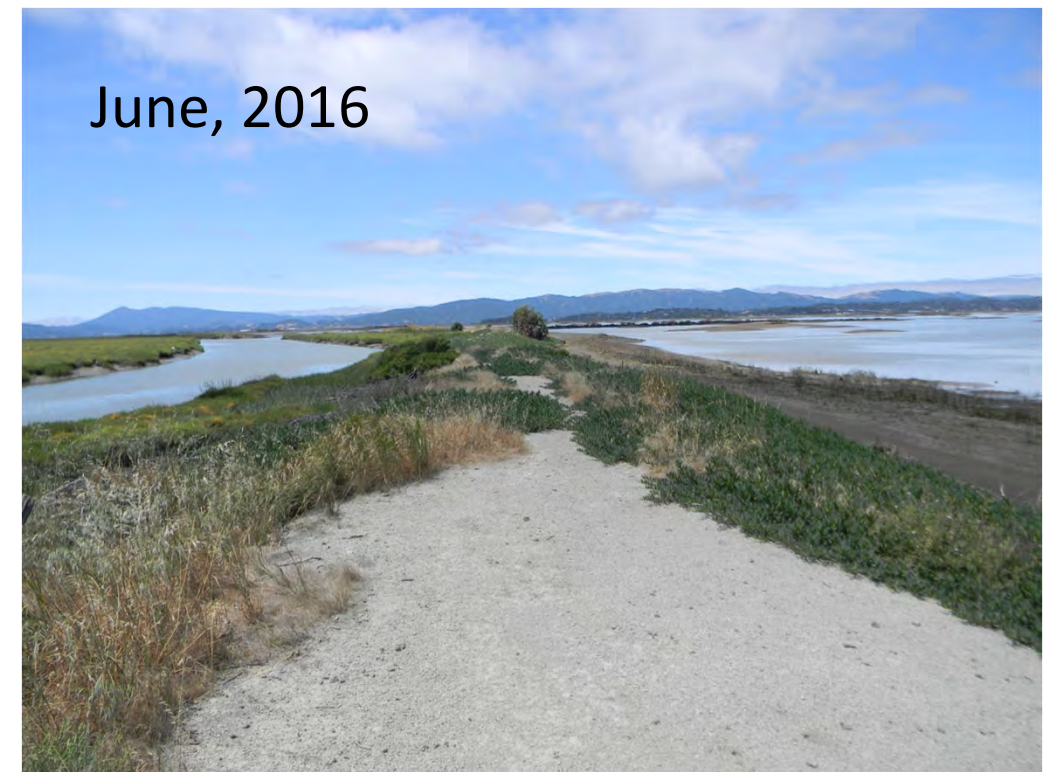


Photo Point 3, Photo 3.4

N 38.12732, W 122.45146

Bearing 230°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View along levee crest toward planned breach 2 with power poles scheduled for removal



Photo Point 4, Photo 4.1

N 38.12384, W 122.45428

Bearing 5°

Photo Point Description: Crest of historic levee just west of planned breach two

Photo Description: Alternate view along levee crest toward planned breach 2 with poles to be removed



Photo Point 4, Photo 4.1

N 38.12384, W 122.45428

Bearing 5°

Photo Point Description: Crest of historic levee just west of planned breach two

Photo Description: Alternate view along levee crest toward planned breach 2 with poles to be removed



Photo Point 4, Photo 4.2

N 38.12384, W 122.45428

Bearing 316°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View NW over ag fields and existing drainage ditch where new tidal channels and marsh mounds will be constructed

February, 2013



May, 2014



December, 2014



October, 2015



June, 2016



Photo Point 4, Photo 4.2

N 38.12384, W 122.45428

Bearing 316°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View NW over ag fields and existing drainage ditch where new tidal channels and marsh mounds will be constructed



Photo Point 4, Photo 4.3

N 38.12384, W 122.45428

Bearing 272°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View W over ag fields where new tidal channels and marsh mounds will be constructed. Mt Burdell in distance.

February, 2013



May, 2014



December, 2014

Marsh mounds



October, 2015



June, 2016



Photo Point 4, Photo 4.3

N 38.12384, W 122.45428

Bearing 272°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View W over ag fields where new tidal channels and marsh mounds will be constructed. Mt Burdell in distance.



Photo Point 4, Photo 4.4

N 38.12384, W 122.45428

Bearing 221°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View SW over fields toward Sonoma Baylands where new tidal channels and marsh mounds will be constructed

February, 2013



May, 2014



December, 2014



October, 2015



June, 2016



Photo Point 4, Photo 4.4

N 38.12384, W 122.45428

Bearing 221°

Photo Point Description: Crest of historic levee behind Dickson farm buildings

Photo Description: View SW over fields toward Sonoma Baylands where new tidal channels and marsh mounds will be constructed

July, 2017



October, 2018



Photo Point 5, Photo 5.1
N 38.12049, W 122.47446
Bearing 173°

Photo Point Description: south end of
levee dividing Sears Point from
Sonoma Baylands

Photo Description: View S of future
Breach 1

May, 2013



May, 2014



December, 2014



October, 2015

Excavator working on
breach



June, 2016



Photo Point 5, Photo 5.1
N 38.12049, W 122.47446
Bearing 173°

Photo Point Description: south end of
levee dividing Sears Point from
Sonoma Baylands

Photo Description: View S of future
Breach 1



Photo Point 5, Photo 5.2
N 38.12049, W 122.47446
Bearing 77°

Photo Point Description: south end of levee dividing Sears Point from Sonoma Baylands

Photo Description: View NE over ag fields where new tidal channels and marsh mounds will be constructed



Photo Point 5, Photo 5.2
N 38.12049, W 122.47446
Bearing 77°

Photo Point Description: south end of
levee dividing Sears Point from
Sonoma Baylands

Photo Description: View NE over ag
fields where new tidal channels and
marsh mounds will be constructed



Photo Point 5, Photo 5.3
N 38.12049, W 122.47446
Bearing 31°

Photo Point Description: south end of levee dividing Sears Point from Sonoma Baylands

Photo Description: View NE along levee and fields where new tidal channels and marsh mounds will be constructed

May, 2013



May, 2014



December, 2014



October, 2015



June, 2016



Photo Point 5, Photo 5.3

N 38.12049, W 122.47446

Bearing 31°

Photo Point Description: south end of levee dividing Sears Point from Sonoma Baylands

Photo Description: View NE along levee and fields where new tidal channels and marsh mounds will be constructed



Photo Point 6, Photo 6.1
N 38.12773, W 122.47174
Bearing 192°

Photo Point Description: Sonoma Baylands levee where it will join Sears Point levee

Photo Description: View S with Sonoma Baylands marsh in foreground and Sears Point in background intended to show proximity of restored sites. Sonoma Baylands was restored in 1995.

February, 2013



May, 2014



December, 2014



October, 2015



June, 2016

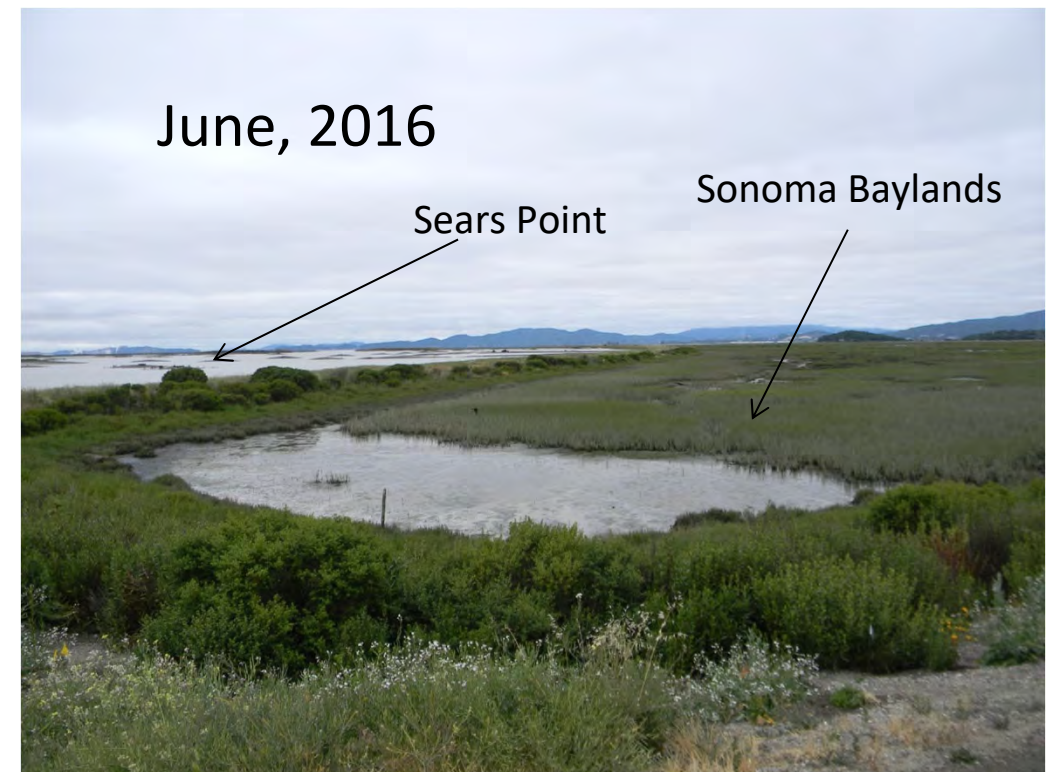


Photo Point 6, Photo 6.1

N 38.12773, W 122.47174

Bearing 192°

Photo Point Description: Sonoma Baylands levee where it will join Sears Point levee

Photo Description: View S with Sonoma Baylands marsh in foreground and Sears Point in background intended to show proximity of restored sites. Sonoma Baylands was restored in 1995.



Photo Point 6, Photo 6.2
N 38.12773, W 122.47174
Bearing 120°

Photo Point Description: Sonoma Baylands levee where it will join Sears Point levee

Photo Description: View SE over ag fields where new tidal channels and marsh mounds will be constructed. Mt Diablo in distance

February, 2013



May, 2014



December, 2014



October, 2015



June, 2016



Photo Point 6, Photo 6.2

N 38.12773, W 122.47174

Bearing 120°

Photo Point Description: Sonoma
Baylands levee where it will join Sears
Point levee

Photo Description: View SE over ag
fields where new tidal channels and
marsh mounds will be constructed.
Mt Diablo in distance



Photo Point 6, Photo 6.3
N 38.12773, W 122.47174
Bearing 62°

Photo Point Description: Sonoma Baylands levee where it will join Sears Point levee

Photo Description: View ENE where new levee and Bay Trail will be built



Photo Point 6, Photo 6.3
N 38.12773, W 122.47174
Bearing 62°

Photo Point Description: Sonoma
Baylands levee where it will join Sears
Point levee

Photo Description: View ENE where
new levee and Bay Trail will be built



Photo Point 6, Photo 6.4
N 38.12773, W 122.47174
Bearing 31°

Photo Point Description: Sonoma
Baylands levee where it will join Sears
Point levee

Photo Description: View NE toward
Cougar Mountain across fields north
of RR with barn where new levee will
be built



Photo Point 6, Photo 6.4
N 38.12773, W 122.47174
Bearing 31°

Photo Point Description: Sonoma
Baylands levee where it will join Sears
Point levee

Photo Description: View NE toward
Cougar Mountain across fields north
of RR with barn where new levee will
be built



Photo Point 6, Photo 6.5
N 38.12773, W 122.47174
Bearing 329°

Photo Point Description: Sonoma Baylands levee where it will join Sears Point levee

Photo Description: View NW across RR track toward eucalyptus that will be removed

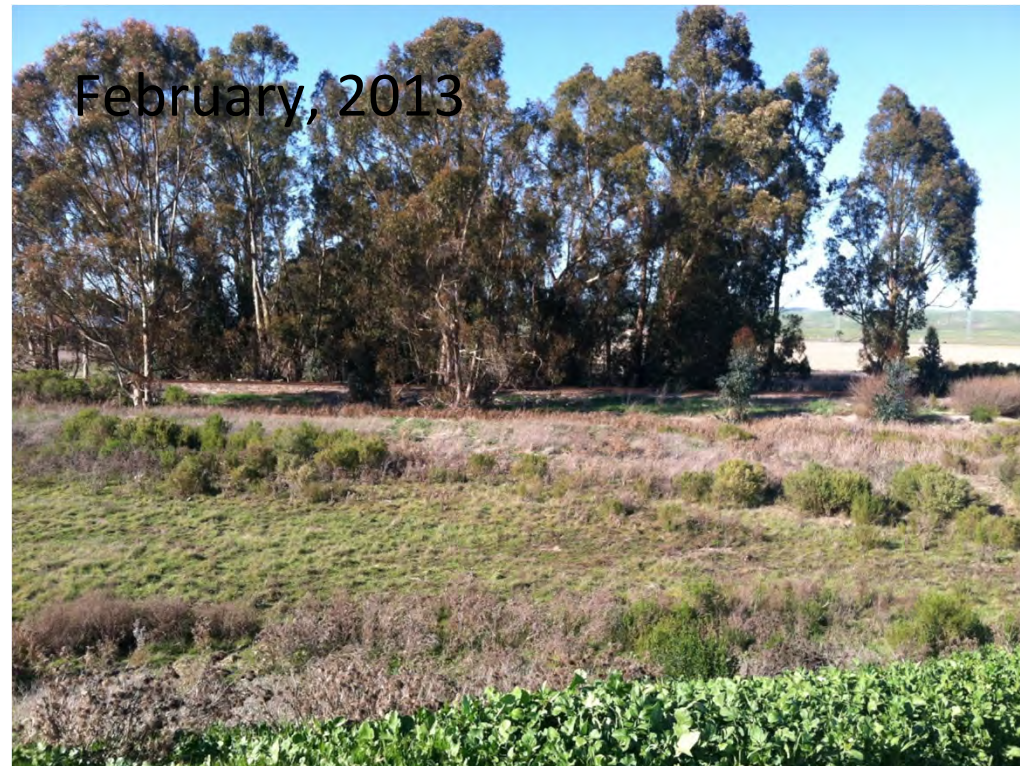


Photo Point 6, Photo 6.5
N 38.12773, W 122.47174
Bearing 329°

Photo Point Description: Sonoma
Baylands levee where it will join Sears
Point levee

Photo Description: View NW across
RR track toward eucalyptus that will
be removed



Photo Point 7, Photo 7.1
N 38.13111, W 122.46503
Bearing 1°

Photo Point Description: North of railroad crossing on Reclamation Road

Photo Description: View N toward Cougar Mountain. New road and stormwater pump will be in foreground



Photo Point 8, Photo 8.1
N 38.13892, W 122.45336
Bearing 206°

Photo Point Description: Hilltop located north of railroad track looking over future tidal area.

Photo Description: View toward Mt. Tam and San Pablo Bay with future tidal restoration area in mid-ground. Note detention pond for stormwater pump built in foreground

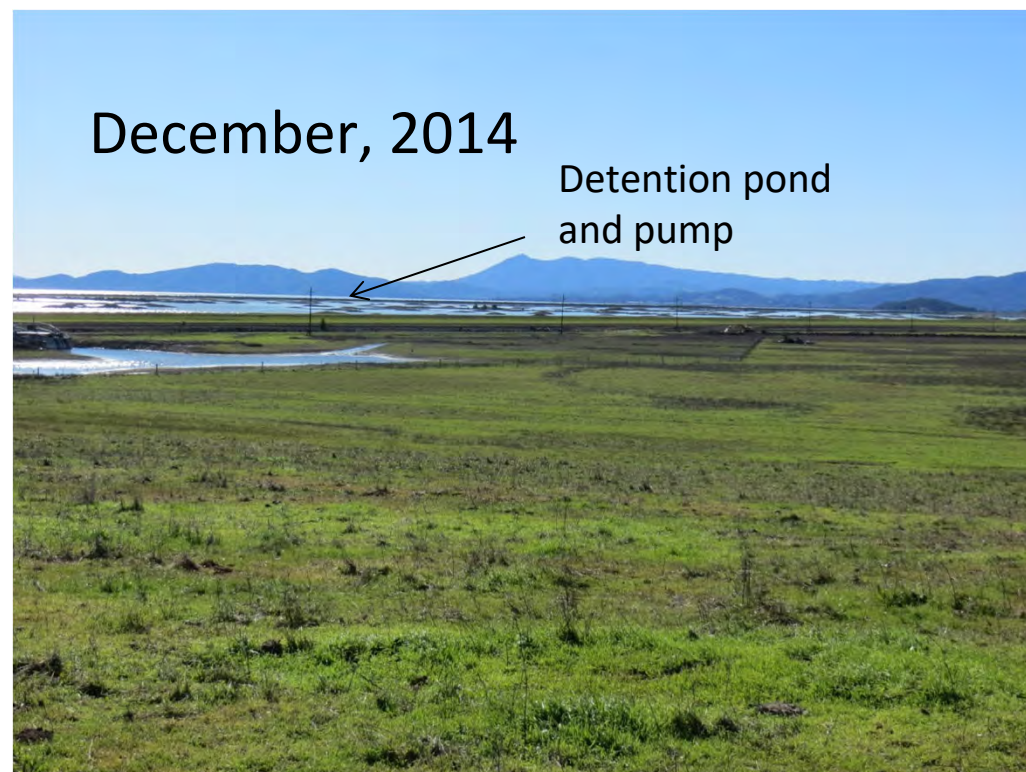


Photo Point 8, Photo 8.2
N 38.13892, W 122.45336
Bearing 175°

Photo Point Description: Hilltop located north of railroad track looking over future tidal area.

Photo Description: View toward San Francisco and San Pablo Bay with Dickson Ranch buildings and future tidal area in mid-ground. Note detention pond for stormwater pump built in foreground

February, 2013



May, 2014



December, 2014



October, 2015



June, 2016



Photo Point 8, Photo 8.3
N 38.13892, W 122.45336
Bearing 140°

Photo Point Description: Hilltop located north of railroad track looking over future tidal area

Photo Description: View toward Mt. Diablo and San Pablo Bay with vineyard in foreground and future tidal area in mid-ground



Photo Point 9, Photo 9.1
N38.14558, W122.45564
Bearing 245°

Photo Point Description: Riparian enhancement area just south of Hwy 37

Photo Description: Inside riparian exclosure looking downstream at riparian plantings

Photo point not yet established

May, 2014



December, 2014



Photo not taken

June, 2016



Photo Point 9, Photo 9.2
N 38.13892, W 122.45336
Bearing 46°

Photo Point Description: Hilltop located north of railroad track looking over future tidal area

Photo Description: Inside riparian exclosure looking into headcutting tributary with willow wall.

Photo point not yet established



May, 2014

Photo not taken



June, 2016

Photo Point 10, Photo 10.1
N38.15482, W122.46027
Bearing 123°

Photo Point Description: Top of Cougar Mountain overlooking project site

Photo Description: View ESE toward the head of Tolay Creek (tidal portion) and the eastern portion of the tidal restoration area.



Photo Point 10, Photo 10.2

N38.15482, W122.46027

Bearing 162°

Photo Point Description: Top of Cougar Mountain overlooking project site

Photo Description: View SE of middle portion of tidal restoration area with riparian enhancement area and stormwater pond 2 visible in mid-ground of photo

Photo point not yet established



Photo Point 10, Photo 10.3

N38.15482, W122.46027

Bearing 191°

Photo Point Description: Top of Cougar Mountain overlooking project site

Photo Description: View SW over Refuge headquarters, stormwater pond 1 and western portion of tidal restoration area. Mt Tam in background.

Photo point not yet established

May, 2014



January, 2015



October, 2015



June, 2016



Photo Point 11, Photo 11.1
N38.11680, W122.47131
Bearing 87°

Photo Point Description: On old levee just west of planned Breach 1

Photo Description: View toward Breach 1 on levee

Photo point not yet established



Photo Point 11, Photo 11.1

N38.11680, W122.47131

Bearing 87°

Photo Point Description: On old levee
just west of planned Breach 1

Photo Description: View toward
Breach 1 on levee



Photo Point 11, Photo 11.2

N38.11680, W122.47131

Bearing 20°

Photo Point Description: On old levee just west of planned Breach 1

Photo Description: View NNE toward Cougar Mountain where channel will be built

Photo point not yet established

June, 2014



December, 2014



October, 2015



June, 2016

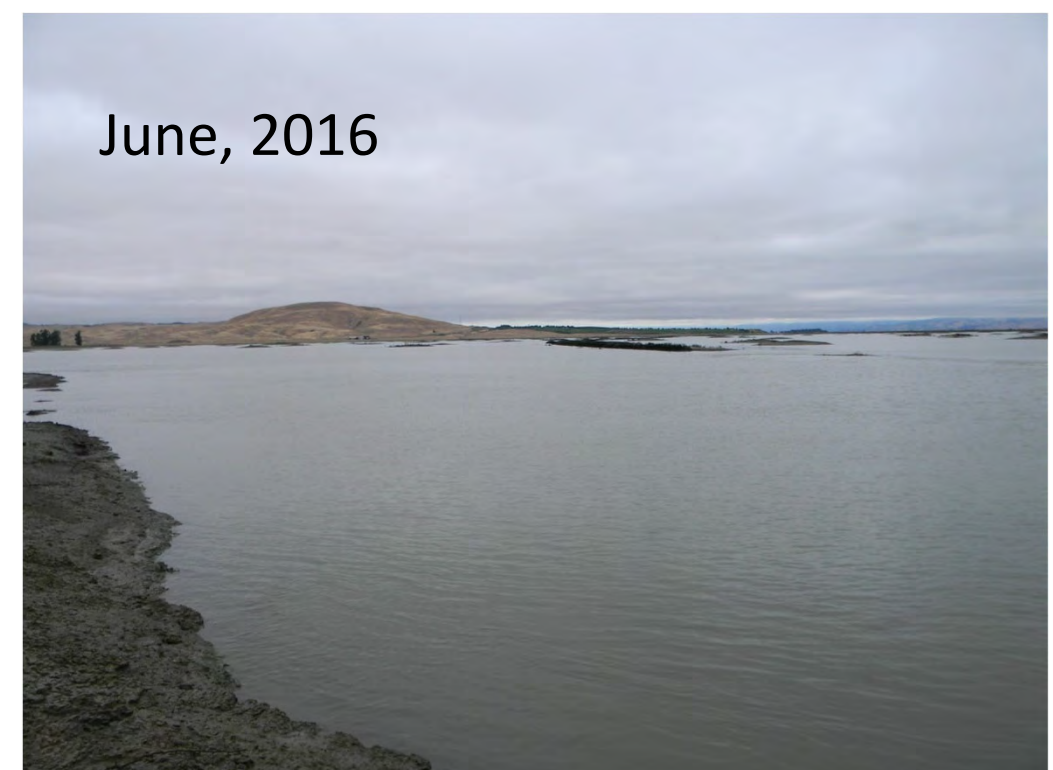


Photo Point 11, Photo 11.2

N38.11680, W122.47131

Bearing 20°

Photo Point Description: On old levee
just west of planned Breach 1

Photo Description: View NNE toward
Cougar Mountain where channel will
be built



Photo Point 11, Photo 11.3

N38.11680, W122.47131

Bearing 324°

Photo Point Description: On old levee just west of planned Breach 1

Photo Description: View NW with Sears Point levee in foreground and Sonoma Baylands separator levee in background

Photo point not yet established



Photo Point 11, Photo 11.3

N38.11680, W122.47131

Bearing 324°

Photo Point Description: On old levee
just west of planned Breach 1

Photo Description: View NW with
Sears Point levee in foreground and
Sonoma Baylands separator levee in
background



Photo Point 12, Photo 12.1

N38.14823, W122.44347

Bearing 114°

Photo Point Description: Top of new levee near northeastern end overlooking restoration area and marsh panne.

Photo Description: View SE over marsh panne, habitat levee slope, and restoration area.

Photo point first established June 2016

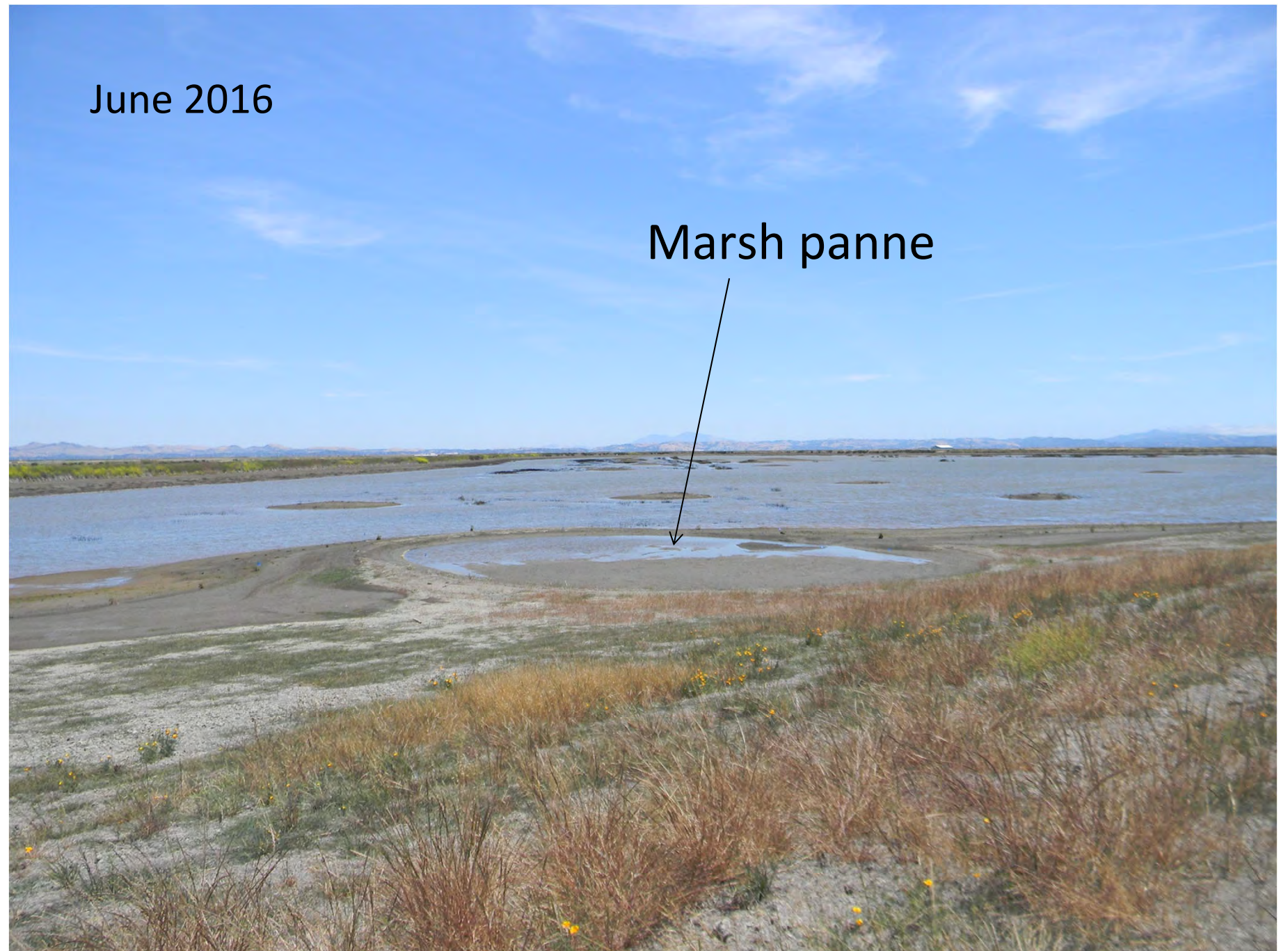


Photo Point 12, Photo 12.1

N38.14823, W122.44347

Bearing 114°

Photo Point Description: Top of new levee near northeastern end overlooking restoration area and marsh panne.

Photo Description: View SE over marsh panne, habitat levee slope, and restoration area.



Photo Point 13, Photo 13.1

N38.135244, W122.45319

Bearing 92°

Photo Point Description: Top of new levee near northeastern end overlooking restoration area and marsh panne.

Photo Description: View E of habitat levee slope and restoration area. Low tide during original photo shows exposed mudflat

Photo point first established June 2016



Photo Point 13, Photo 13.1

N38.135244, W122.45319

Bearing 92°

Photo Point Description: Top of new levee near northeastern end overlooking restoration area and marsh panne.

Photo Description: View E of habitat levee slope and restoration area. Low tide during original photo shows exposed mudflat



Photo Point 13, Photo 13.2

N38.135244, W122.45319

Bearing 148°

Photo Point Description: Top of new levee near northeastern end overlooking restoration area and marsh panne.

Photo Description: View ESE over pump 2 outlet and restoration area. Low tide during original photo shows exposed mudflat

Photo point first established June 2016



Photo Point 13, Photo 13.2

N38.135244, W122.45319

Bearing 148°

Photo Point Description: Top of new levee near northeastern end overlooking restoration area and marsh panne.

Photo Description: View ESE over pump 2 outlet and restoration area. Low tide during original photo shows exposed mudflat



Photo Point 13, Photo 13.3

N38.135244, W122.45319

Bearing 203°

Photo Point Description: Top of new levee near northeastern end overlooking restoration area and marsh panne.

Photo Description: View SW over habitat levee and restoration area. Low tide during original photo shows exposed mudflat

Photo point first established June 2016



Photo Point 13, Photo 13.3

N38.135244, W122.45319

Bearing 203°

Photo Point Description: Top of new levee near northeastern end overlooking restoration area and marsh panne.

Photo Description: View SW over habitat levee and restoration area. Low tide during original photo shows exposed mudflat



Photo Point 14, Photo 14.1

N38.13250, W122.46017

Bearing 88°

Photo Point Description: On top of levee

Photo Description: View E over levee habitat slope and restoration area. Low tide during original photo shows exposed mudflat area

Photo point first established June 2016



Photo Point 14, Photo 14.1

N38.13250, W122.46017

Bearing 88°

Photo Point Description: On top of levee

Photo Description: View E over levee habitat slope and restoration area. Low tide during original photo shows exposed mudflat area



Photo Point 14, Photo 14.2

N38.13250, W122.46017

Bearing 154°

Photo Point Description: On top of levee

Photo Description: View SE over levee habitat slope and restoration area. Low tide during original photo shows exposed mudflat area

Photo point first established June 2016



Photo Point 14, Photo 14.2

N38.13250, W122.46017

Bearing 154°

Photo Point Description: On top of levee

Photo Description: View SE over levee habitat slope and restoration area. Low tide during original photo shows exposed mudflat area



Photo Point 14, Photo 14.3

N38.13250, W122.46017

Bearing 211°

Photo Point Description: On top of levee

Photo Description: View SW over levee habitat slope and restoration area. Low tide during original photo shows exposed mudflat area

Photo point first
established June
2016



Photo Point 14, Photo 14.3

N38.13250, W122.46017

Bearing 211°

Photo Point Description: On top of levee

Photo Description: View SW over levee habitat slope and restoration area. Low tide during original photo shows exposed mudflat area



Photo Point 15, Photo 15.1

N38.12989, W122.46685

Bearing 190°

Photo Point Description: On top of levee

Photo Description: View SW over levee habitat slope and restoration area. Marsh Panne in foreground full. Low tide during original photo shows exposed mudflat area

.

Photo point first established June 2016

June, 2016



Photo Point 15, Photo 15.1

N38.12989, W122.46685

Bearing 190°

Photo Point Description: On top of levee

Photo Description: View SW over levee habitat slope and restoration area. Marsh Panne in foreground full. Low tide during original photo shows exposed mudflat area

.

Photo point first established June 2016



Photo Point 15, Photo 15.2

N38.12989, W122.46685

Bearing 190°

Photo Point Description: On top of levee

Photo Description: View W over levee habitat slope and restoration area. Levee top in photo center. Vegetation on either side of levee is stubble following hay harvest.

Photo point first established June 2016

June, 2016



Photo Point 15, Photo 15.2

N38.12989, W122.46685

Bearing 190°

Photo Point Description: On top of levee

Photo Description: View W over levee habitat slope and restoration area. Levee top in photo center. Vegetation on either side of levee is stubble following hay harvest.

Photo point first established June 2016

