APPENDIX C
SOIL SURVEY INFORMATION

Appendix C

COMPLETE SOILS SURVEY INFORMATION FOR SERIES ENCOUNTERED IN STUDY AREAS

Map Unit Description: Rd—RINDGE MUCK

Contra Costa County, California Version date: 7/22/2008 1:16:22 PM

Map Unit Setting

Elevation: 10 to 20 feet
Mean annual precipitation: 12 to 16 inches
Mean annual air temperature: 59 degrees F
Frost-free period: 250 to 310 days

Map Unit Composition

Rindge and similar soils: 85 percent
Minor components: 9 percent

Setting

Landform: Marshes
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Organic material

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 12 to 48 inches
Frequency of flooding: Rare
Frequency of ponding: None
Available water capacity: Very high (about 16.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability (nonirrigated): 4w

Typical profile

0 to 60 inches: Muck

Minor Components

Webile
Percent of map unit: 5 percent
Landform: Marshes

Kingile

Percent of map unit: 4 percent
Landform: Deltas
Landform position (three-dimensional): Rise

Map Unit Description: 230—Ryde clay loam, partially drained, 0 to 2 percent slopes

Map Unit Setting

Elevation: -20 to 0 feet
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 270 days

Map Unit Composition

Ryde and similar soils: 85 percent
Minor components: 15 percent

Setting

Landform: Flood plains, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material derived from reeds and tules, and alluvium derived from mixed rick sources

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 36 to 48 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very high (about 12.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability (nonirrigated): 4w

Typical profile

0 to 24 inches: Clay loam
24 to 63 inches: Stratified muck to silty clay loam

Minor Components

Guard
Percent of map unit: 3 percent
Landform: Rims

Egbert
Percent of map unit: 2 percent
Landform: Flood plains

Itano
Percent of map unit: 2 percent
Landform: Flood plains

Kingile
Percent of map unit: 2 percent

Landform: Deltas
Peltier
Percent of map unit: 2 percent
Landform: Flood plains
Rindge
Percent of map unit: 2 percent
Landform: Deltas
Scribner
Percent of map unit: 2 percent
Landform: Flood plains

Map Unit Description: Se—SHIMA MUCK
Map Unit Setting
Elevation: 0 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 260 to 310 days
Map Unit Composition
Shima and similar soils: 85 percent
Setting
Landform: Marshes
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Organic material
Properties and qualities
Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 24 to 48 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 4.0 mmhos/cm)
Available water capacity: Moderate (about 7.8 inches)
Interpretive groups
Land capability classification (irrigated): 3w
Land capability (nonirrigated): 4w
Typical profile
0 to 21 inches: Muck
21 to 25 inches: Silty clay
25 to 60 inches: Sand

Map Unit Description: Wa—WEBILE MUCK

Map Unit Setting

Elevation: 10 to 20 feet
Mean annual precipitation: 12 to 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 260 to 330 days

Map Unit Composition

Webile and similar soils: 85 percent
Minor components: 14 percent

Setting

Landform: Marshes, channels
Landform position (three-dimensional): Talf, dip
Down-slope shape: Linear
Across-slope shape: Linear, concave
Parent material: Organic material and alluvium derived from igneous and sedimentary rock

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 36 to 60 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very high (about 15.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability (nonirrigated): 4w

Typical profile

0 to 43 inches: Muck
43 to 60 inches: Silty clay

Minor Components

Kingile
Percent of map unit: 10 percent
Landform: Marshes

Egbert
Percent of map unit: 4 percent
Landform: Sloughs

Map Unit Description: 179—Itano silty clay loam, partially drained, 0 to 2 percent slopes

Map Unit Setting

Elevation: -20 to 0 feet
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 270 days

Map Unit Composition

Itano and similar soils: 85 percent
Minor components: 15 percent

Setting

Landform: Flood plains, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat):
Moderately high (0.20 to 0.57 in/hr)
Depth to water table: About 36 to 54 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability (nonirrigated): 4w

Typical profile

0 to 15 inches: Silty clay loam
15 to 34 inches: Stratified silt loam to silty clay loam
34 to 60 inches: Stratified very fine sandy loam to silty clay loam

Minor Components

Dello
Percent of map unit: 4 percent
Landform: Flood plains

Kingile
Percent of map unit: 4 percent
Landform: Deltas

Ryde
Percent of map unit: 4 percent
Landform: Flood plains

Map Unit Description: 225—RINDGE MUCK, PARTIALLY DRAINED, 0 TO 2 PERCENT SLOPES

Map Unit Setting

Elevation: -20 to 0 feet
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 270 days

Map Unit Composition

Rindge and similar soils: 85 percent
Minor components: 15 percent

Setting

Landform: Deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material deriveed from reeds and tules

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 36 to 48 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very high (about 16.8 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability (nonirrigated): 4w

Typical profile

0 to 13 inches: Muck
13 to 60 inches: Mucky peat

Minor Components

Kingile
Percent of map unit: 4 percent
Landform: Deltas

Peltier
Percent of map unit: 4 percent
Landform: Flood plains

Ryde
Percent of map unit: 4 percent
Landform: Flood plains

Map Unit Description: 263—Venice mucky silt loam, partially drained, 0 to 2 percent slopes, overwashed

Map Unit Setting

Elevation: -20 to 0 feet
Mean annual precipitation: 14 inches
Mean annual air temperature: 61 degrees F
Frost-free period: 270 days

Map Unit Composition

Venice and similar soils: 85 percent
Minor components: 15 percent

Setting

Landform: Deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Herbaceous organic material derived from reeds and tules

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: About 36 to 48 inches
Frequency of flooding: Rare
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water capacity: Very high (about 15.1 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability (nonirrigated): 4w

Typical profile

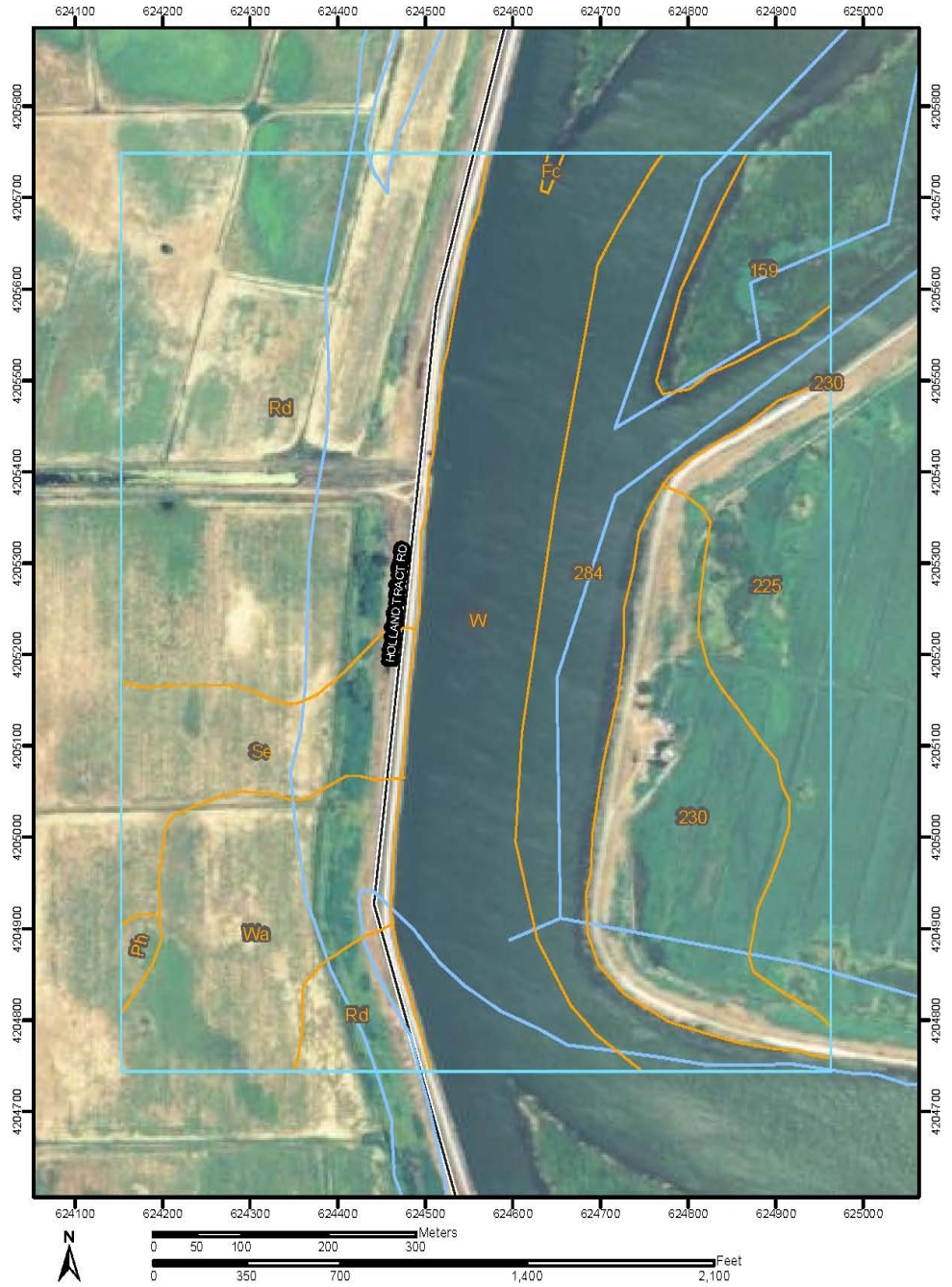
0 to 15 inches: Mucky silt loam
15 to 60 inches: Mucky peat

Minor Components

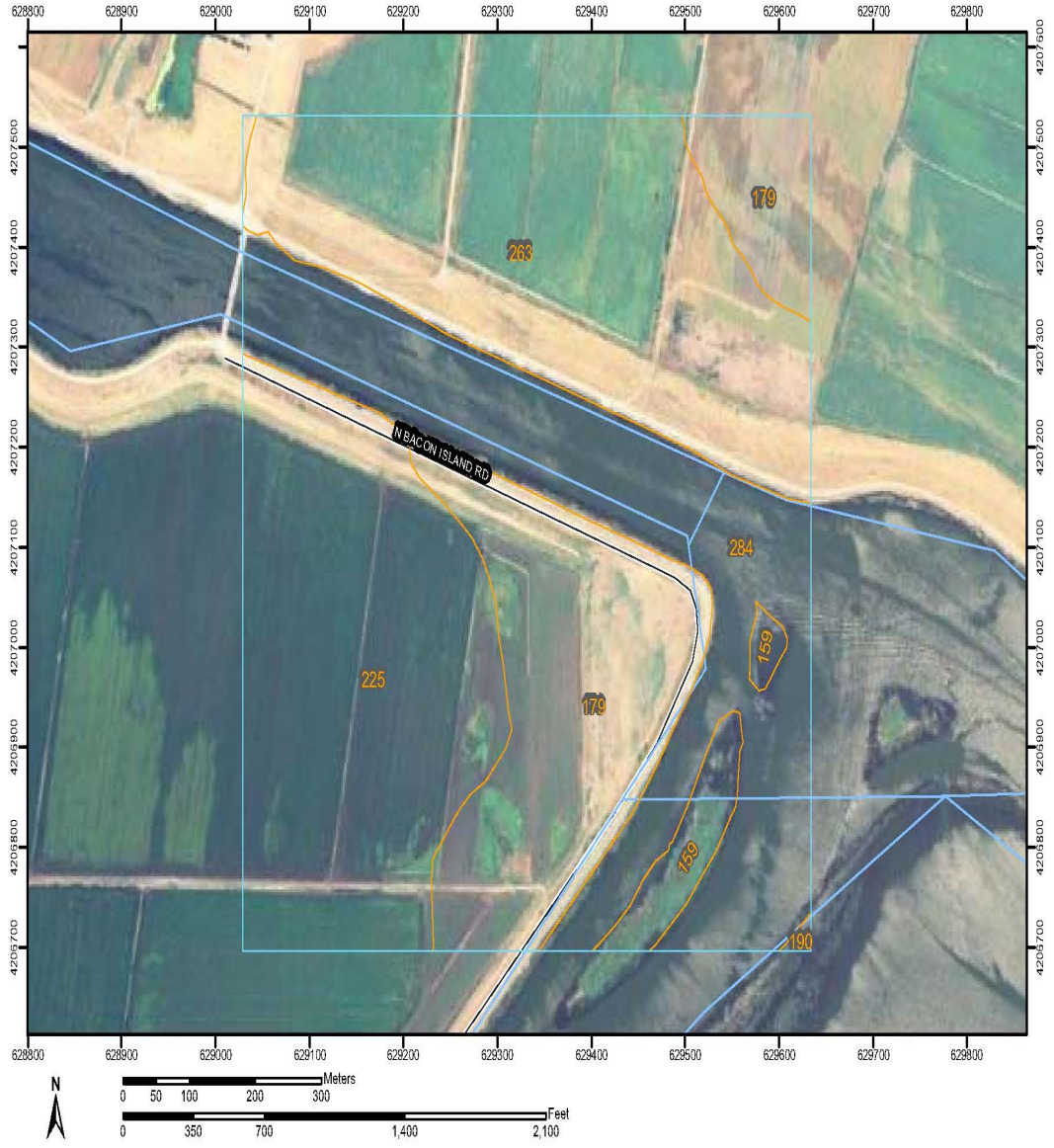
Peltier
Percent of map unit: 5 percent
Landform: Flood plains

Rindge
Percent of map unit: 5 percent
Landform: Deltas

Ryde
Percent of map unit: 5 percent
Landform: Flood plains



Soils on Old River Study Area.



Soils on Connection Slough Study Area.

Soils on Holland Alternate Storage Study Area.