1980 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ✕ 0
- ● 0.01-1
- ● 1.01-10
- ● 10.01-100
- ● 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

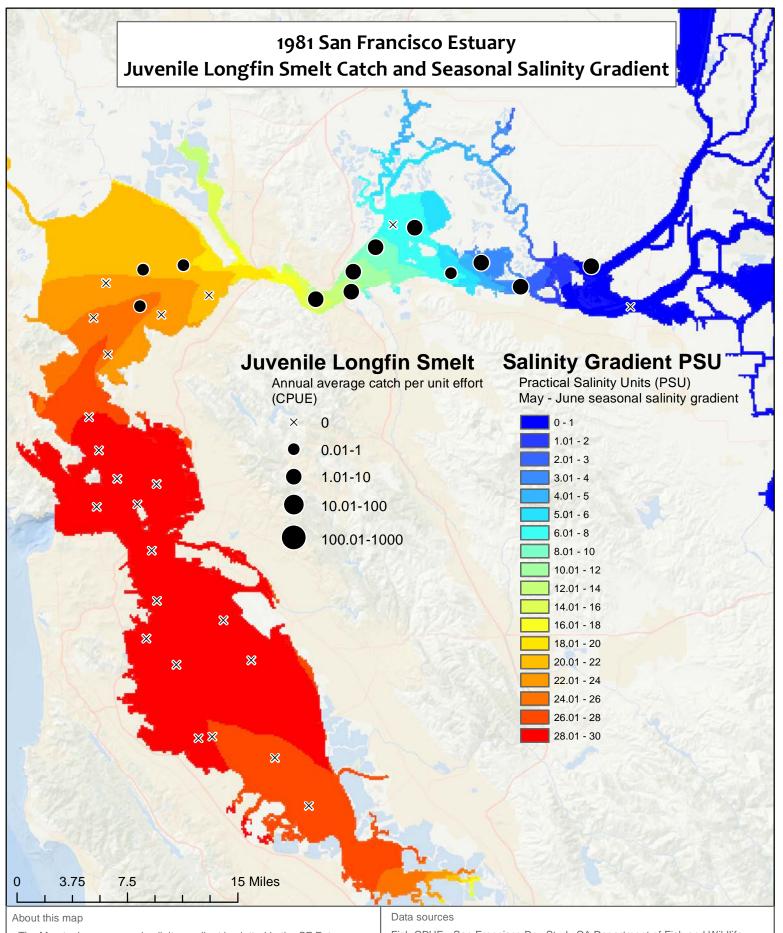The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

WTR1502244.2   E. Foresman 7/13/2015

Data sources

Fish CPUE - San Francisco Bay Study CA Department of Fish and Wildlife and the Interagency Ecological Program
Salinity Gradient - Coarse-grid version of UnTRIM San Francisco Bay-Delta Model, Delta Modeling Associates
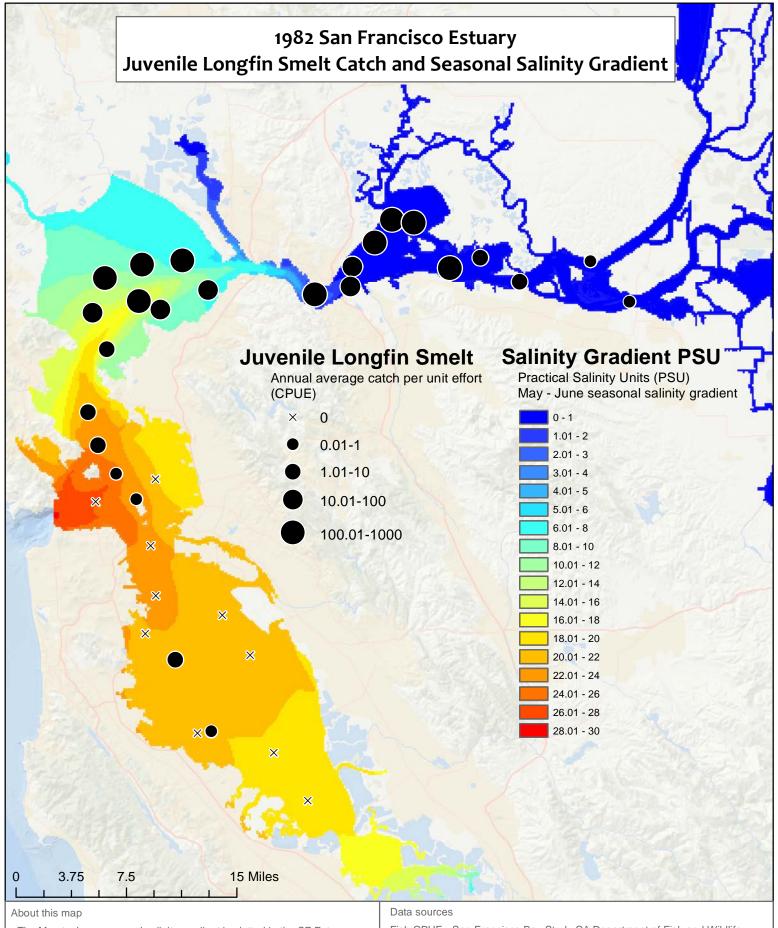Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

Esri, DeLorme, GEBCO, NOAA NGDC, and other contributors

1981 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

Symbol	CPUE
×	0
•	0.01-1
•	1.01-10
•	10.01-100
•	100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

Color	PSU
	0 - 1
	1.01 - 2
	2.01 - 3
	3.01 - 4
	4.01 - 5
	5.01 - 6
	6.01 - 8
	8.01 - 10
	10.01 - 12
	12.01 - 14
	14.01 - 16
	16.01 - 18
	18.01 - 20
	20.01 - 22
	22.01 - 24
	24.01 - 26
	26.01 - 28
	28.01 - 30

0   3.75   7.5   15 Miles

About this map

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Salinity Gradient - Coarse-grid version of UnTRIM San Francisco Bay-Delta Model, Delta Modeling Associates
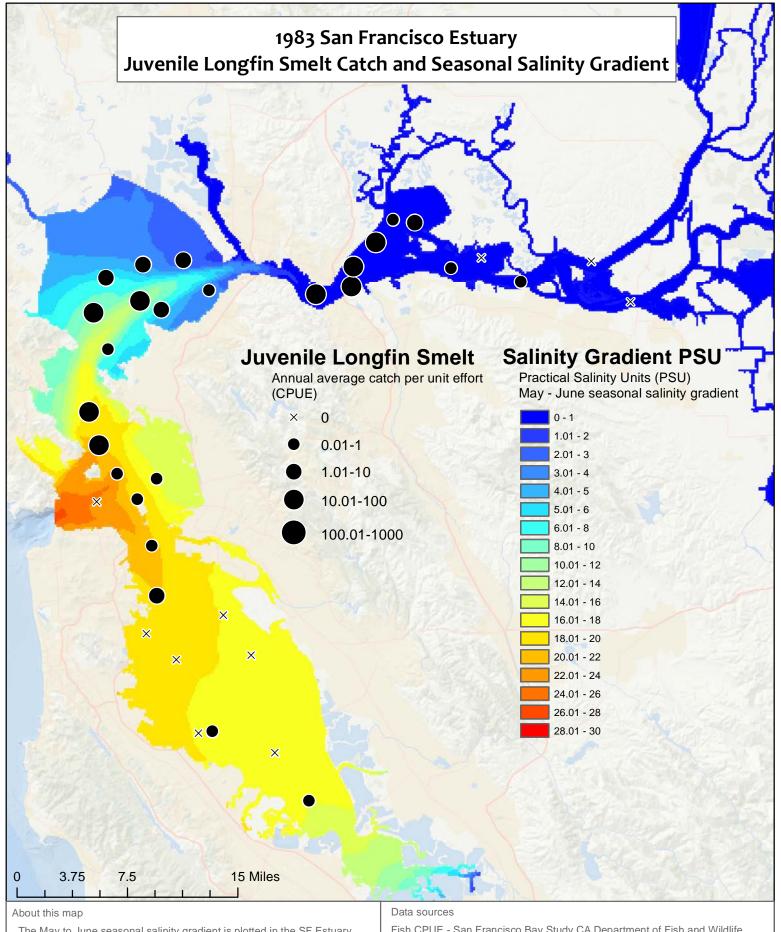Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

WTR1502244.2   E. Foresman 7/13/2015

1982 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt
Annual average catch per unit effort (CPUE)

- × 0
- • 0.01-1
- ● 1.01-10
- ● 10.01-100
- ● 100.01-1000

Salinity Gradient PSU
Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

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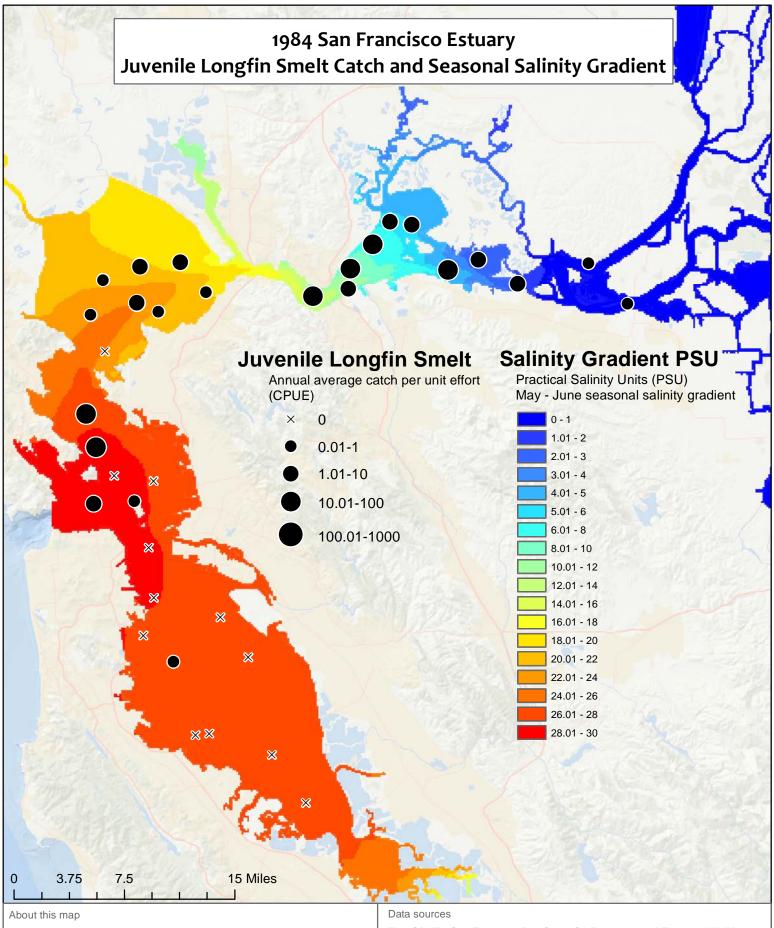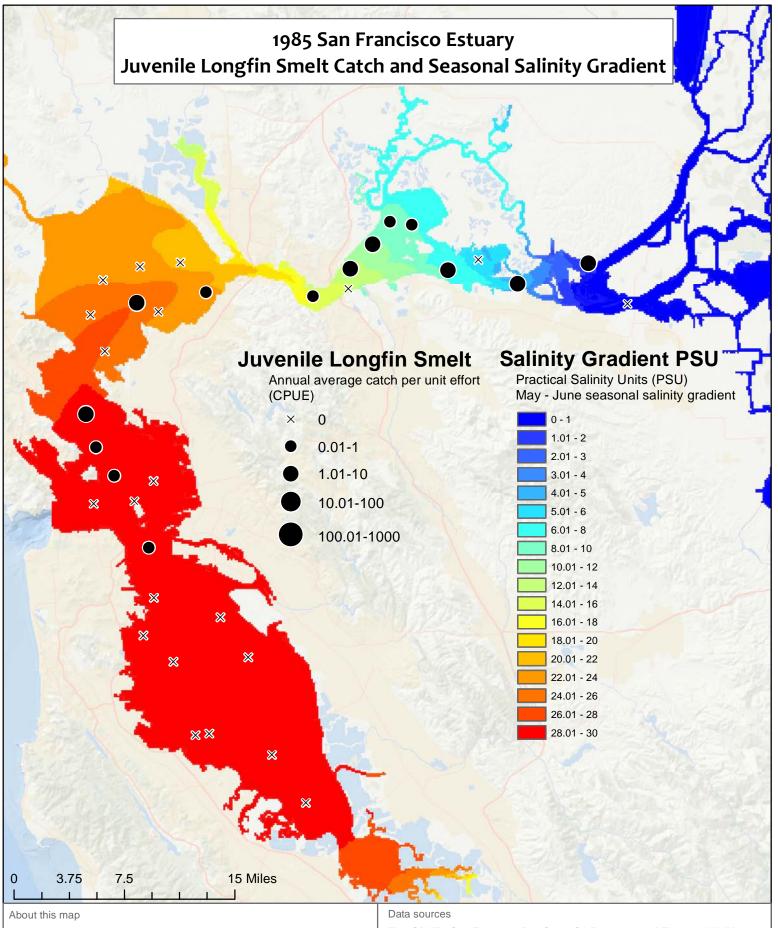Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

1983 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

Symbol	Value
✕	0
●	0.01-1
●	1.01-10
●	10.01-100
●	100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

Color	PSU Range
	0 - 1
	1.01 - 2
	2.01 - 3
	3.01 - 4
	4.01 - 5
	5.01 - 6
	6.01 - 8
	8.01 - 10
	10.01 - 12
	12.01 - 14
	14.01 - 16
	16.01 - 18
	18.01 - 20
	20.01 - 22
	22.01 - 24
	24.01 - 26
	26.01 - 28
	28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

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E. Foresman 7/13/2015

1984 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort
(CPUE)

- ✕   0
- ●   0.01-1
- ●   1.01-10
- ●   10.01-100
- ●   100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

| 0 | 3.75 | 7.5 | 15 Miles |

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary
beneath the annual average CPUE of age-0 longfin smelt for each
monitoring station in the SF Bay Study mid-water trawl. The salinity
gradient includes the two months in the season where juveniles are large
enough to be caught by the trawl nets.

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E. Foresman 7/13/2015

1985 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort
(CPUE)

- ×   0
- ●   0.01-1
- ●   1.01-10
- ●   10.01-100
- ●   100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary
beneath the annual average CPUE of age-0 longfin smelt for each
monitoring station in the SF Bay Study mid-water trawl. The salinity
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WTR1502244.2   E. Foresman 7/13/2015

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Salinity Gradient - Coarse-grid version of UnTRIM San Francisco Bay-Delta
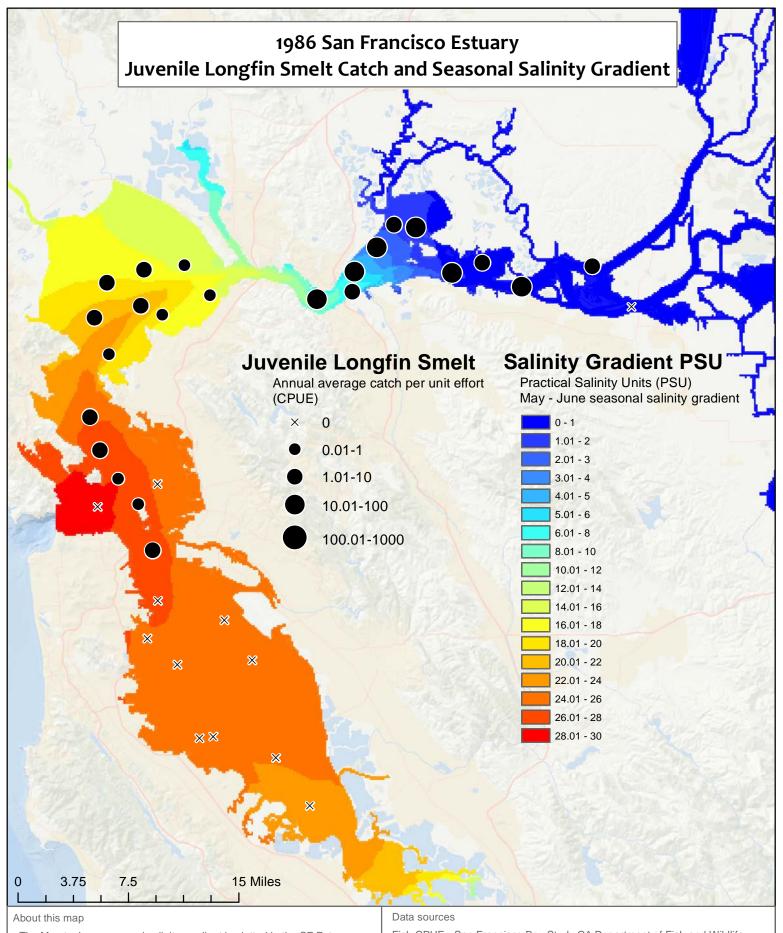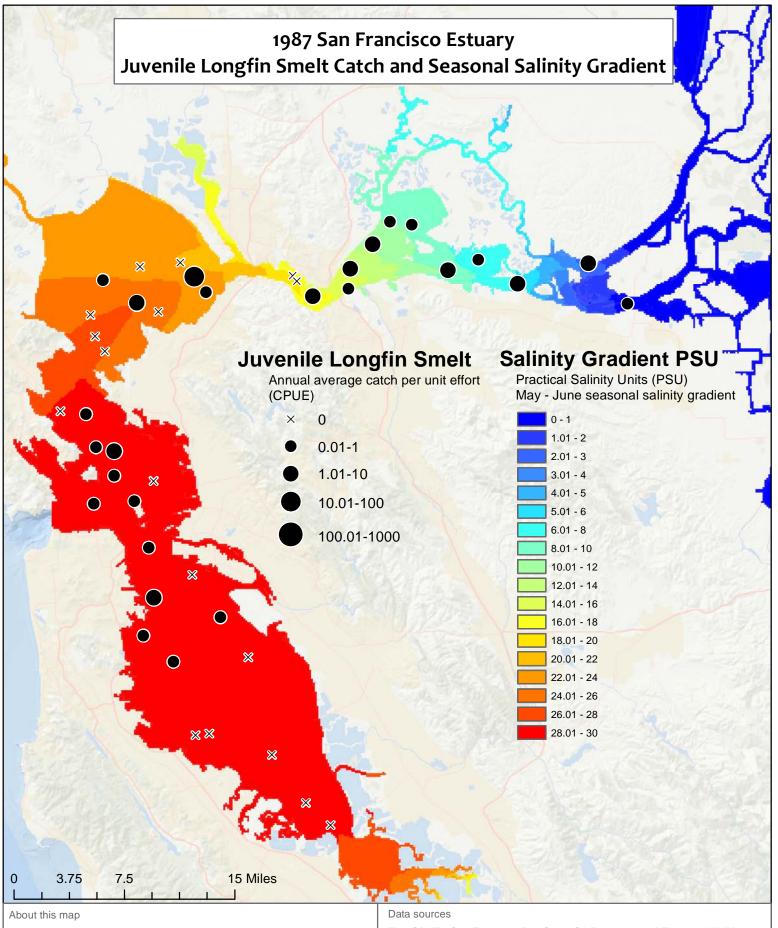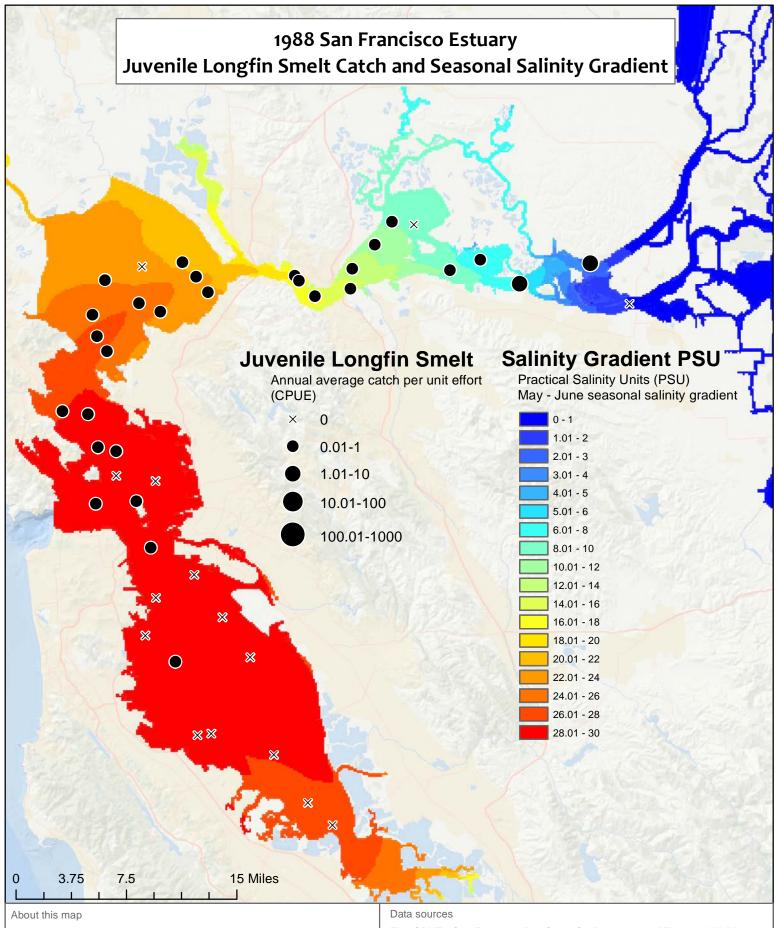Model, Delta Modeling Associates
Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

1986 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort
(CPUE)

Symbol	CPUE
✕	0
•	0.01-1
●	1.01-10
●	10.01-100
⬤	100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

	0 - 1
	1.01 - 2
	2.01 - 3
	3.01 - 4
	4.01 - 5
	5.01 - 6
	6.01 - 8
	8.01 - 10
	10.01 - 12
	12.01 - 14
	14.01 - 16
	16.01 - 18
	18.01 - 20
	20.01 - 22
	22.01 - 24
	24.01 - 26
	26.01 - 28
	28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary
beneath the annual average CPUE of age-0 longfin smelt for each
monitoring station in the SF Bay Study mid-water trawl. The salinity
gradient includes the two months in the season where juveniles are large
enough to be caught by the trawl nets.

WTR1502244.2

E. Foresman 7/13/2015

1987 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort
(CPUE)

Symbol	Value
×	0
●	0.01-1
●	1.01-10
●	10.01-100
●	100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

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1988 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ×   0
- •   0.01-1
- •   1.01-10
- •   10.01-100
- •   100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

Data sources

Fish CPUE - San Francisco Bay Study CA Department of Fish and Wildlife and the Interagency Ecological Program
Salinity Gradient - Coarse-grid version of UnTRIM San Francisco Bay-Delta Model, Delta Modeling Associates
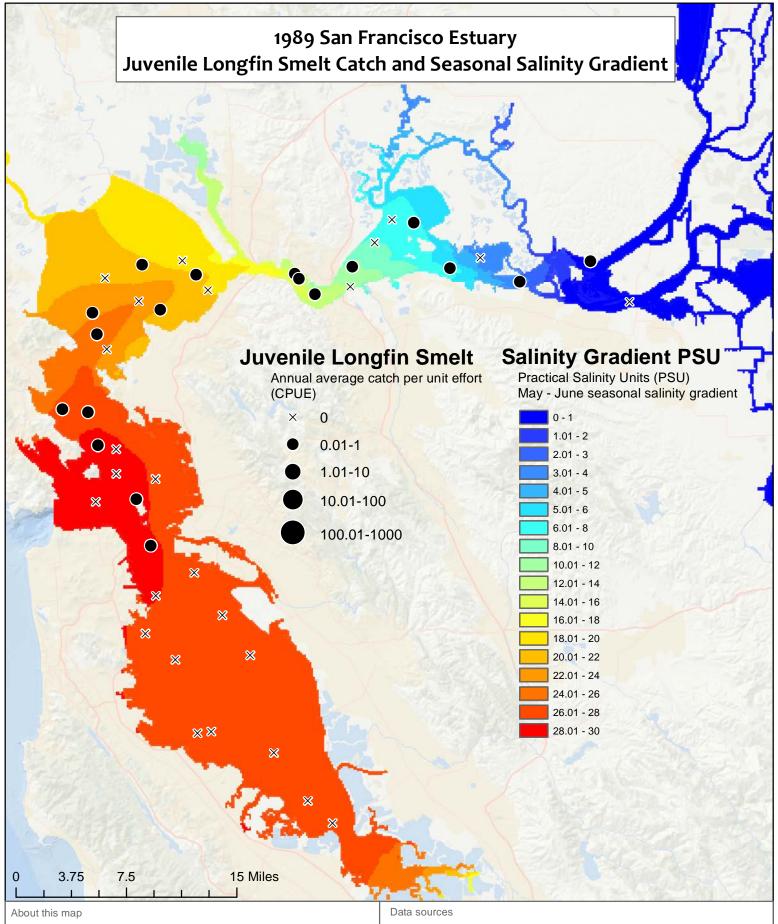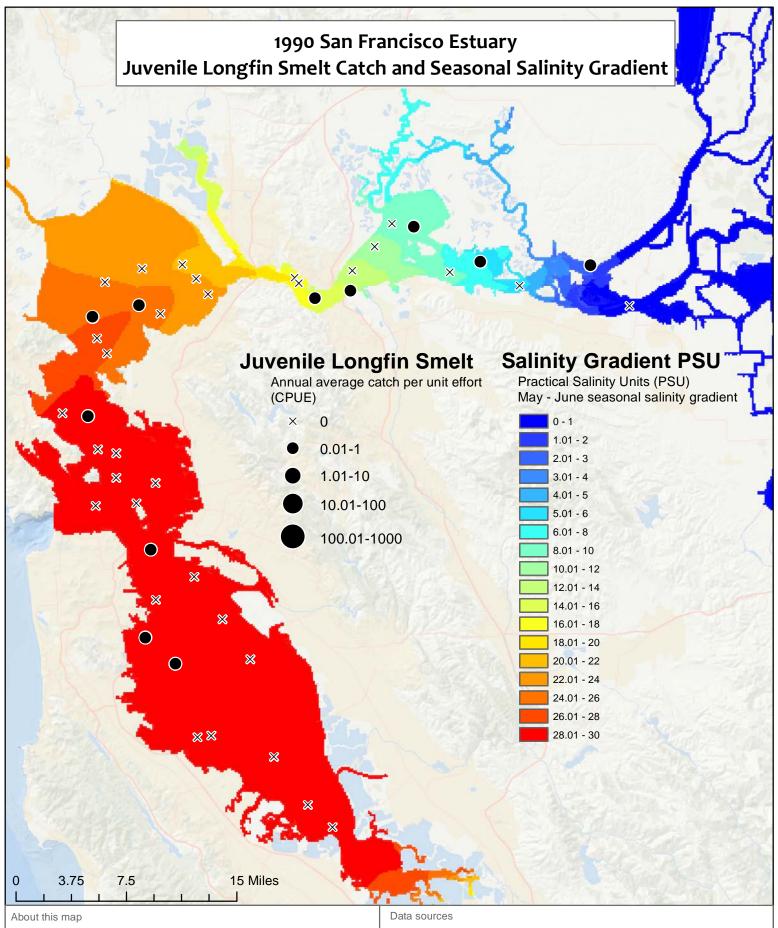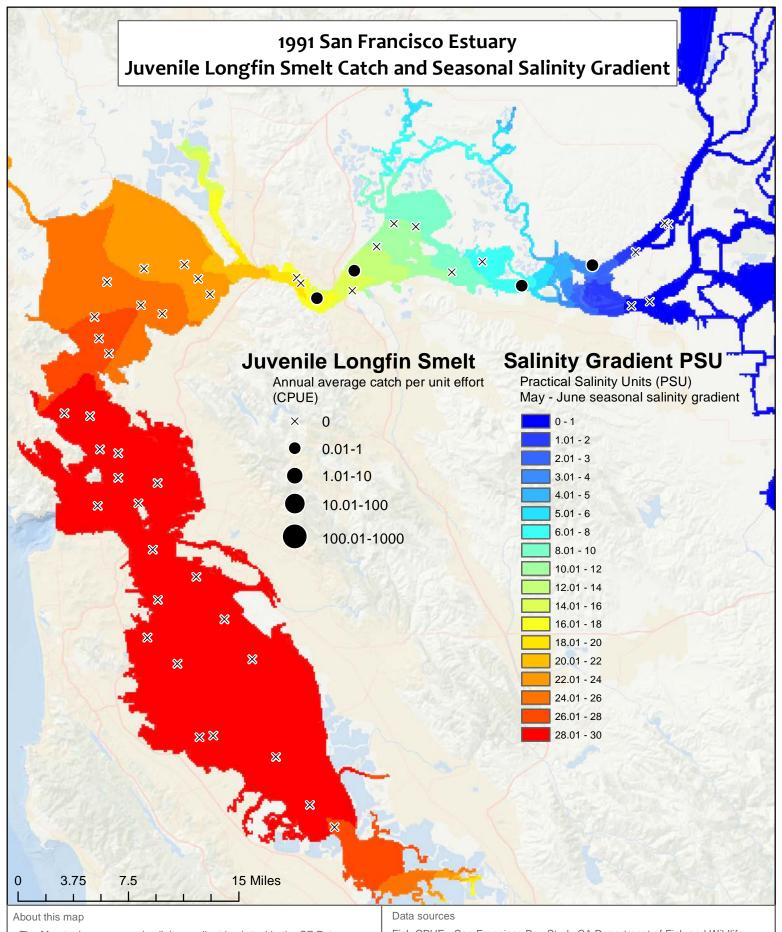Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

WTR1502244.2   E. Foresman 7/13/2015

1989 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort
(CPUE)

Symbol	Value
✕	0
•	0.01-1
•	1.01-10
•	10.01-100
•	100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

Color	Range
	0 - 1
	1.01 - 2
	2.01 - 3
	3.01 - 4
	4.01 - 5
	5.01 - 6
	6.01 - 8
	8.01 - 10
	10.01 - 12
	12.01 - 14
	14.01 - 16
	16.01 - 18
	18.01 - 20
	20.01 - 22
	22.01 - 24
	24.01 - 26
	26.01 - 28
	28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

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E. Foresman 7/13/2015

1990 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt
Annual average catch per unit effort (CPUE)

- ✕ 0
- • 0.01-1
- • 1.01-10
- ● 10.01-100
- ● 100.01-1000

Salinity Gradient PSU
Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

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WTR1502244.2

E. Foresman 7/13/2015

1991 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort
(CPUE)

✗ 0

● 0.01-1

● 1.01-10

● 10.01-100

● 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

1992 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt
Annual average catch per unit effort
(CPUE)

✕ 0

● 0.01-1

● 1.01-10

● 10.01-100

● 100.01-1000

Salinity Gradient PSU
Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

WTR1502244.2   E. Foresman 7/13/2015

1993 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ✕ 0
- ● 0.01-1
- ● 1.01-10
- ● 10.01-100
- ● 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

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WTR1502244.2

Data sources

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Salinity Gradient - Coarse-grid version of UnTRIM San Francisco Bay-Delta Model, Delta Modeling Associates
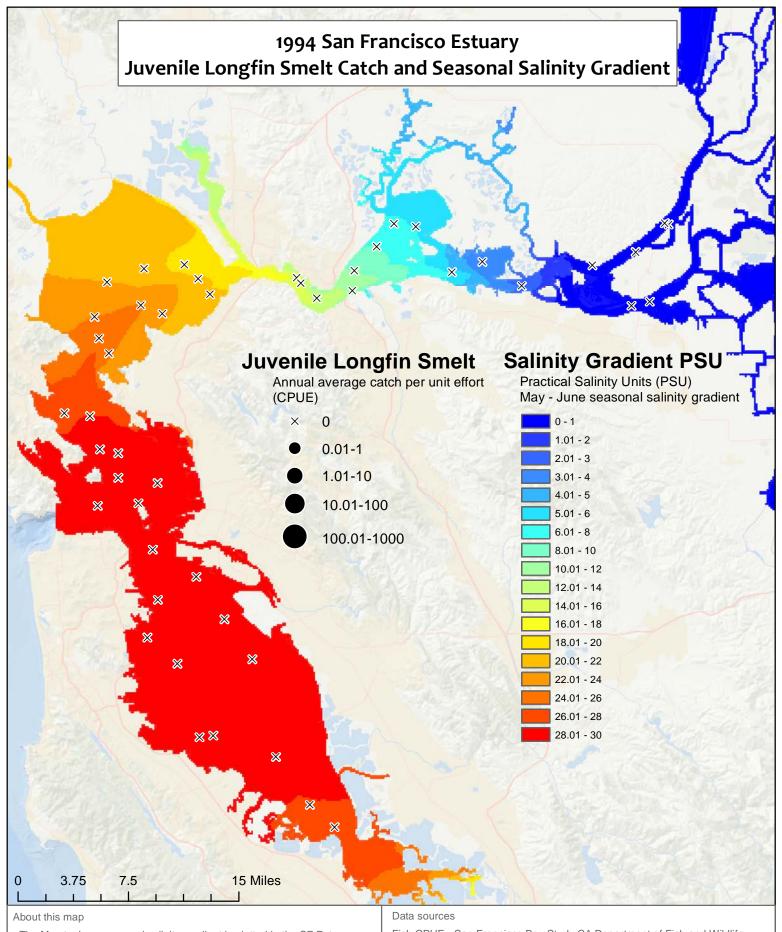Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

E. Foresman 7/13/2015

1994 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ✕ 0
- ● 0.01-1
- ● 1.01-10
- ● 10.01-100
- ● 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

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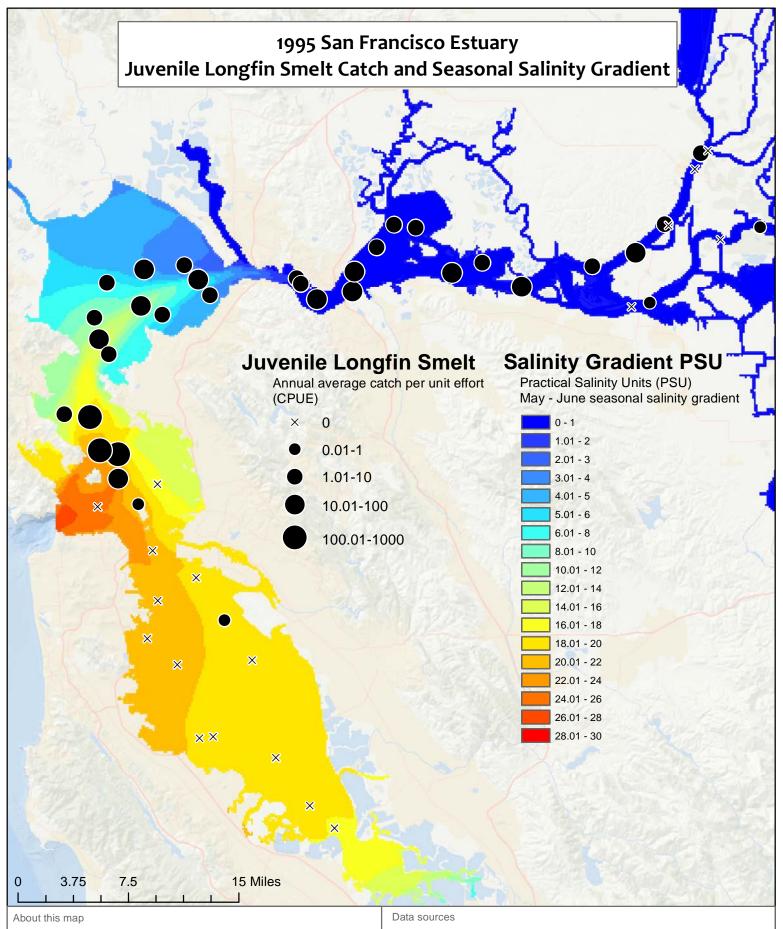Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

1995 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort
(CPUE)

✕	0
●	0.01-1
●	1.01-10
●	10.01-100
●	100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

	0 - 1
	1.01 - 2
	2.01 - 3
	3.01 - 4
	4.01 - 5
	5.01 - 6
	6.01 - 8
	8.01 - 10
	10.01 - 12
	12.01 - 14
	14.01 - 16
	16.01 - 18
	18.01 - 20
	20.01 - 22
	22.01 - 24
	24.01 - 26
	26.01 - 28
	28.01 - 30

0   3.75   7.5   15 Miles

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beneath the annual average CPUE of age-0 longfin smelt for each
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WTR1502244.2

E. Foresman 7/13/2015

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Salinity Gradient - Coarse-grid version of UnTRIM San Francisco Bay-Delta
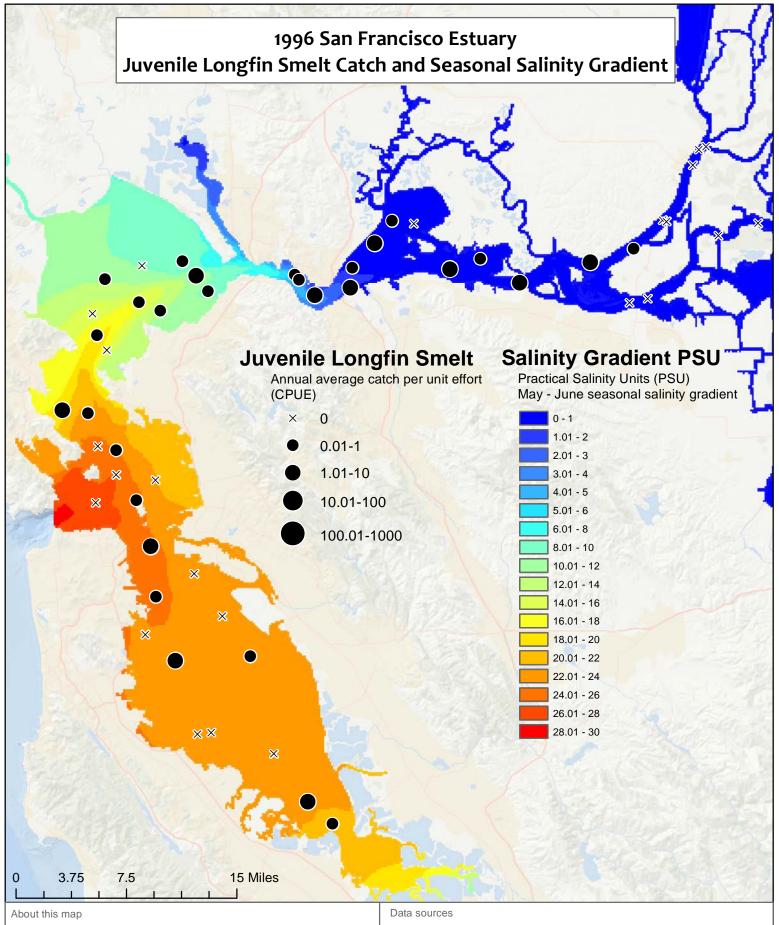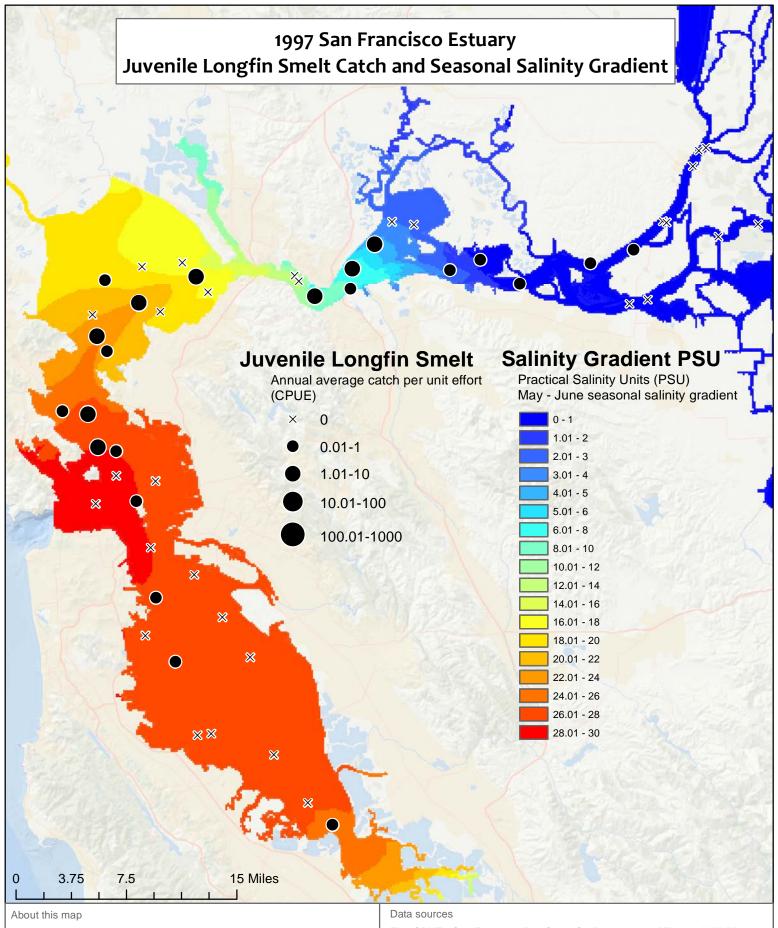   Model, Delta Modeling Associates
Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

1996 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ✕ 0
- • 0.01-1
- • 1.01-10
- • 10.01-100
- • 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
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0   3.75   7.5   15 Miles

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Fish CPUE - San Francisco Bay Study CA Department of Fish and Wildlife and the Interagency Ecological Program
Salinity Gradient - Coarse-grid version of UnTRIM San Francisco Bay-Delta Model, Delta Modeling Associates
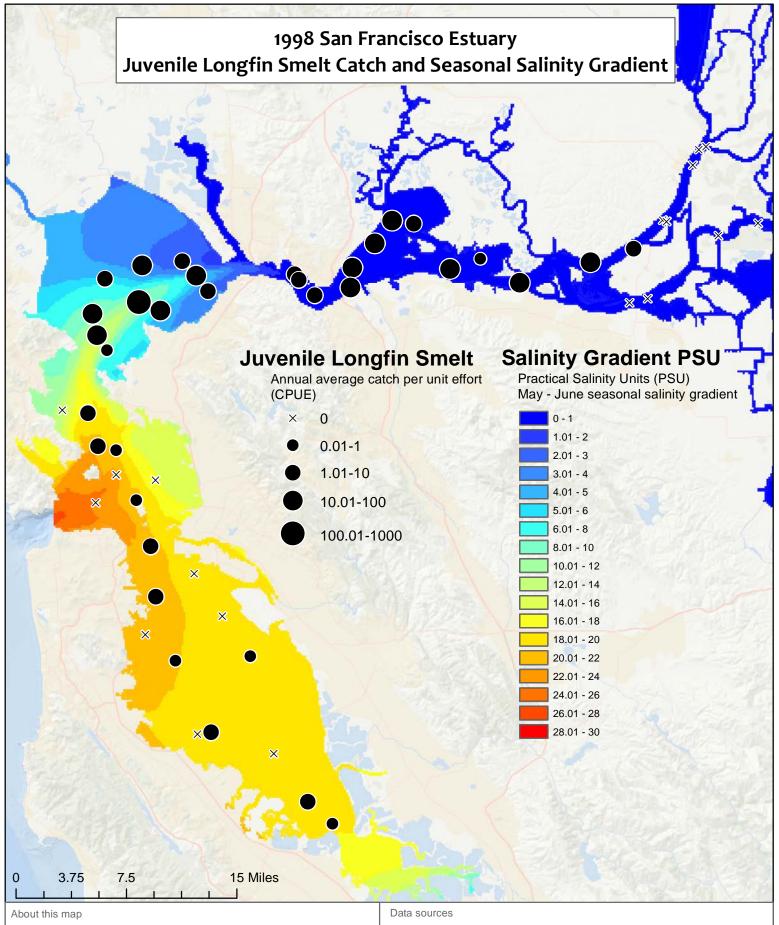Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

1997 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

✕   0

●   0.01-1

●   1.01-10

●   10.01-100

●   100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

WTR1502244.2

E. Foresman 7/13/2015

Data sources

Fish CPUE - San Francisco Bay Study CA Department of Fish and Wildlife and the Interagency Ecological Program
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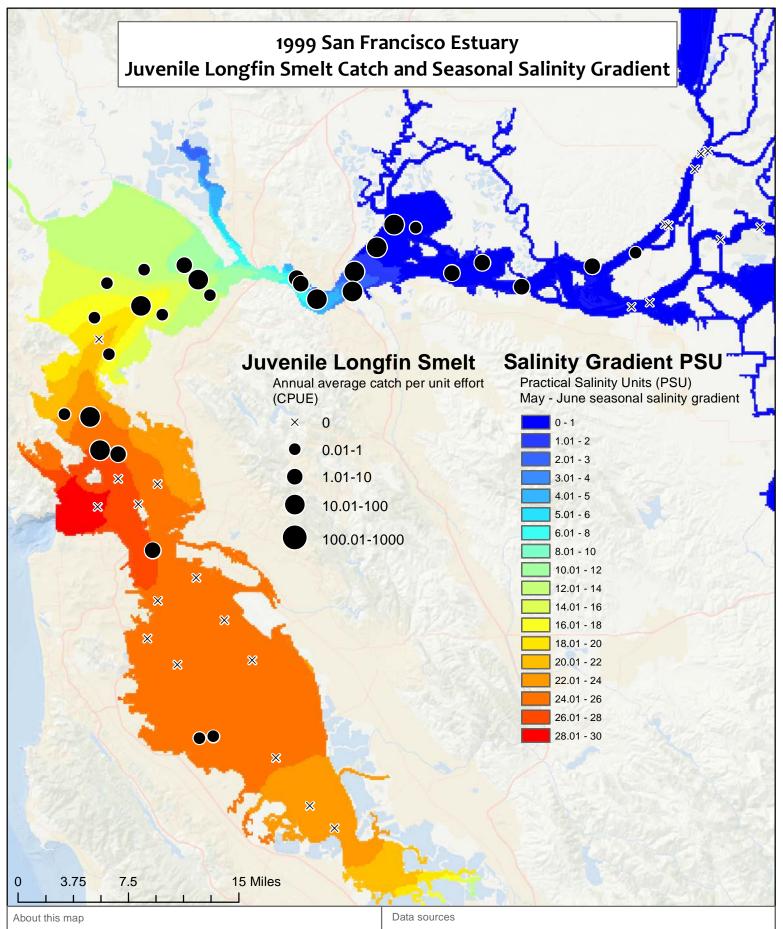Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

1998 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

×   0

●   0.01-1

●   1.01-10

●   10.01-100

●   100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

1999 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort
(CPUE)

- ✕ 0
- • 0.01-1
- • 1.01-10
- • 10.01-100
- • 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
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- 4.01 - 5
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- 10.01 - 12
- 12.01 - 14
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- 16.01 - 18
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- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

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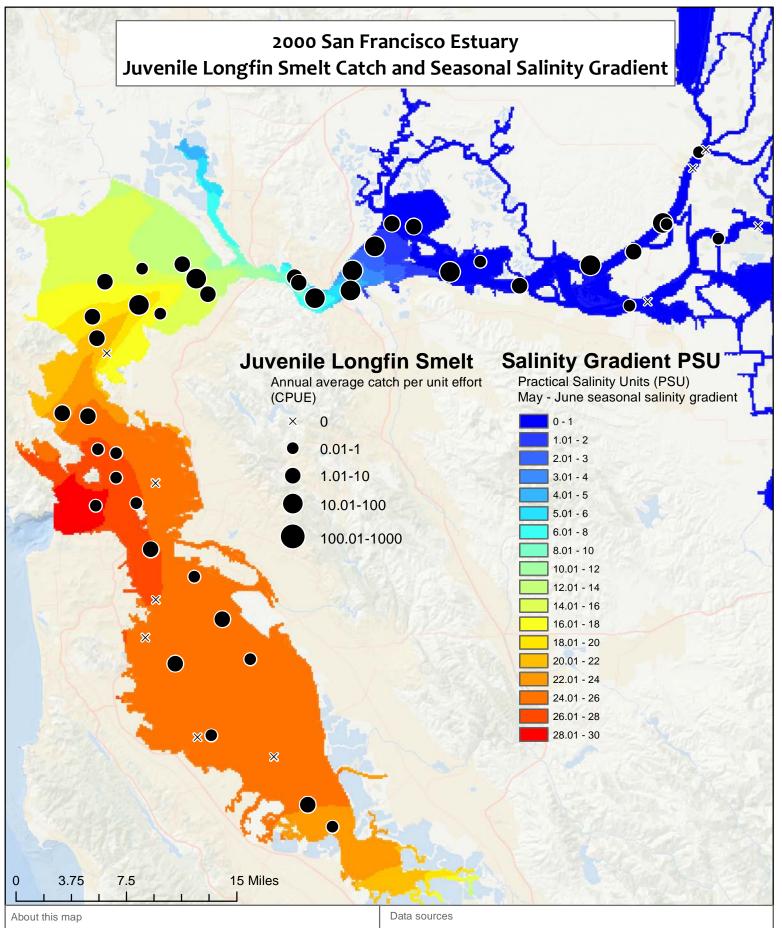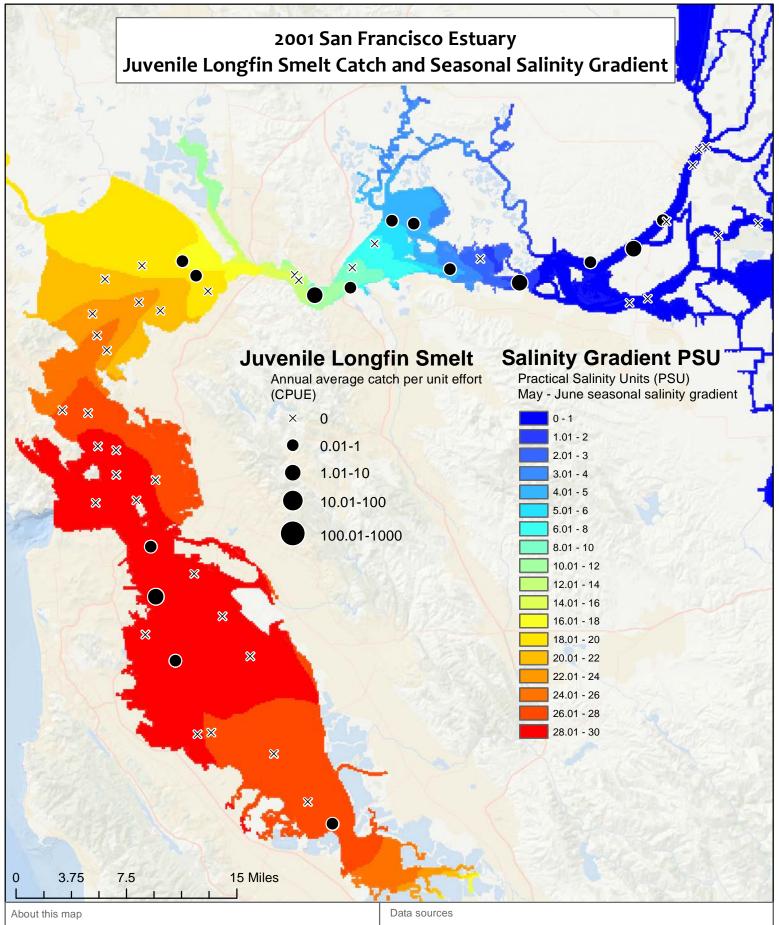Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

2000 San Francisco Estuary
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Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ✕ 0
- ● 0.01-1
- ● 1.01-10
- ● 10.01-100
- ● 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
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- 4.01 - 5
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- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
- 22.01 - 24
- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

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2001 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

× 0

● 0.01-1

● 1.01-10

● 10.01-100

● 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

	0 - 1
	1.01 - 2
	2.01 - 3
	3.01 - 4
	4.01 - 5
	5.01 - 6
	6.01 - 8
	8.01 - 10
	10.01 - 12
	12.01 - 14
	14.01 - 16
	16.01 - 18
	18.01 - 20
	20.01 - 22
	22.01 - 24
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	26.01 - 28
	28.01 - 30

0	3.75	7.5	15 Miles

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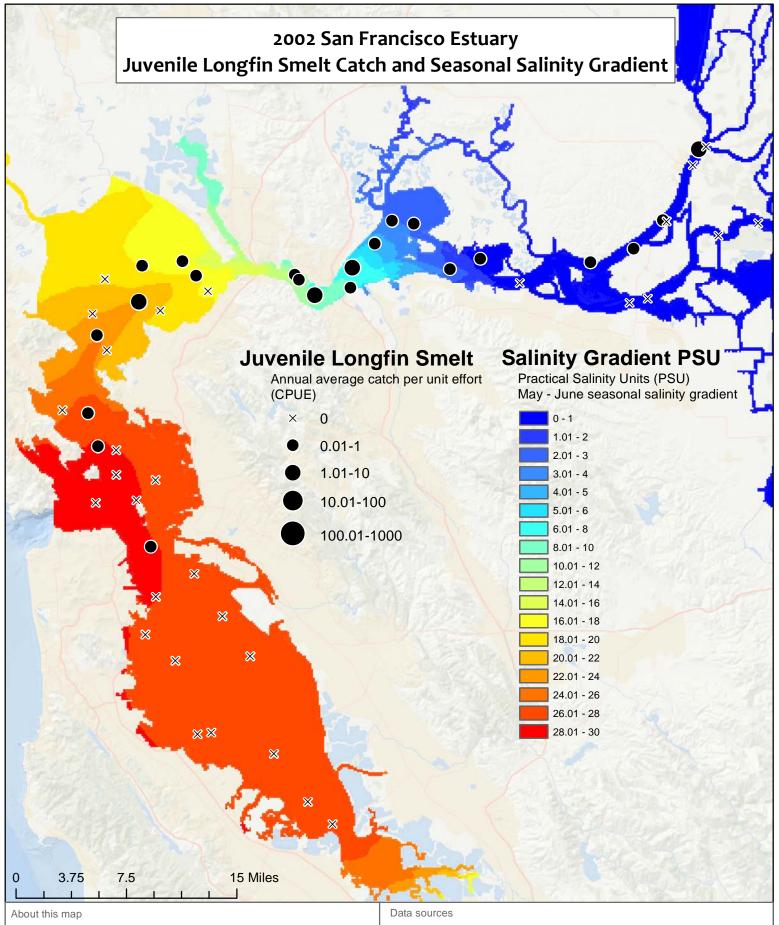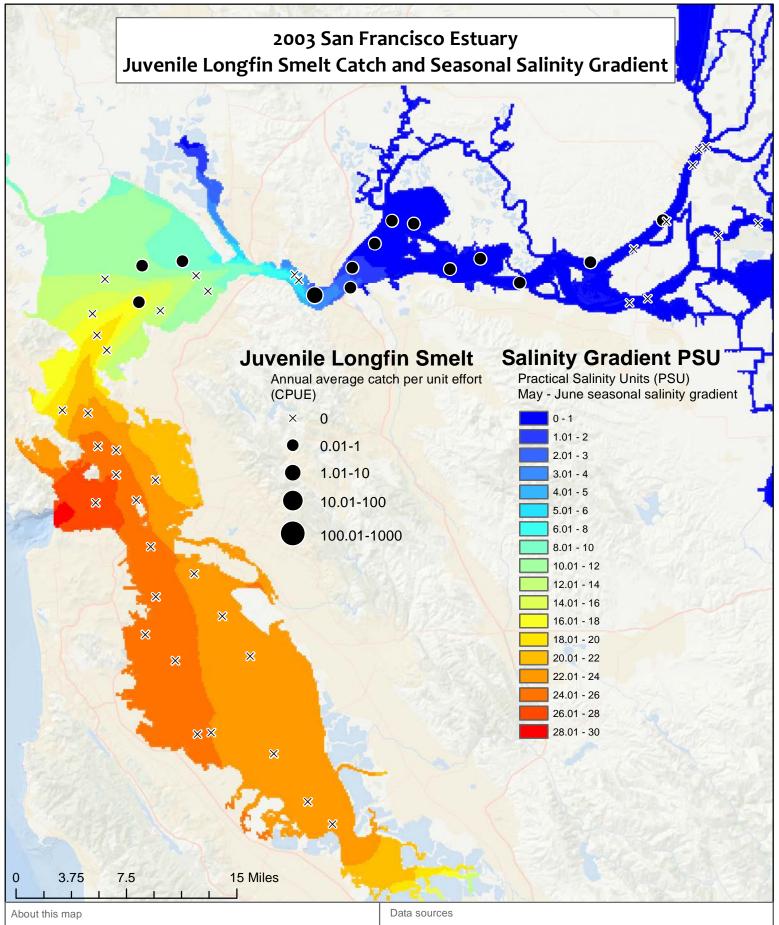Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

2002 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt
Annual average catch per unit effort (CPUE)

Symbol	Value
✕	0
●	0.01-1
●	1.01-10
●	10.01-100
●	100.01-1000

Salinity Gradient PSU
Practical Salinity Units (PSU)
May - June seasonal salinity gradient

	PSU
	0 - 1
	1.01 - 2
	2.01 - 3
	3.01 - 4
	4.01 - 5
	5.01 - 6
	6.01 - 8
	8.01 - 10
	10.01 - 12
	12.01 - 14
	14.01 - 16
	16.01 - 18
	18.01 - 20
	20.01 - 22
	22.01 - 24
	24.01 - 26
	26.01 - 28
	28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

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2003 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ×   0
- ●   0.01-1
- ●   1.01-10
- ●   10.01-100
- ●   100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
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0	3.75	7.5	15 Miles

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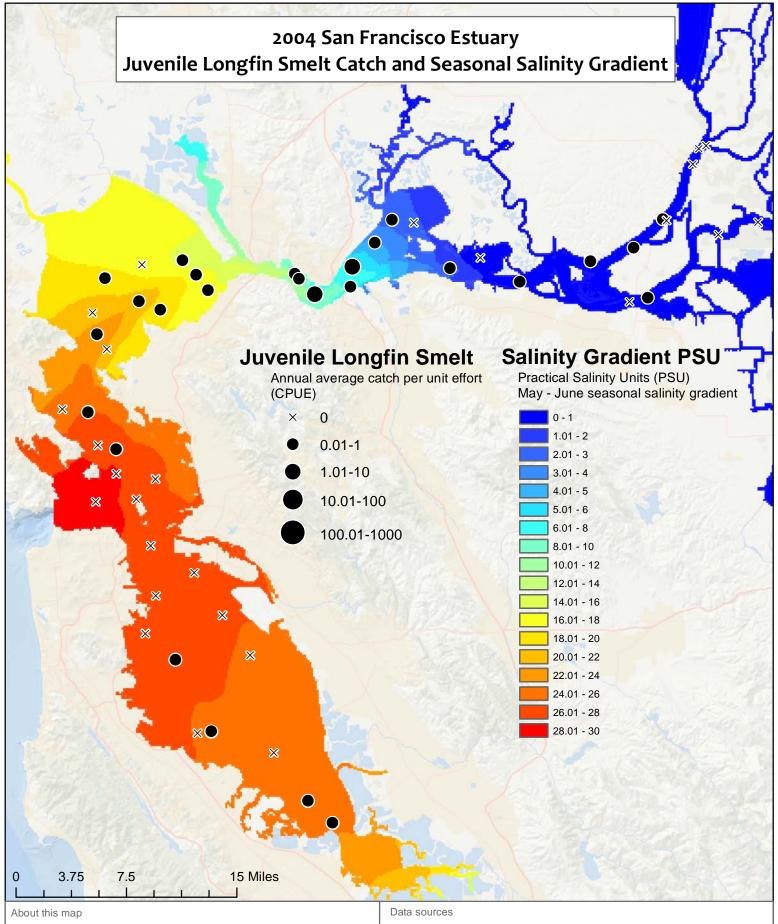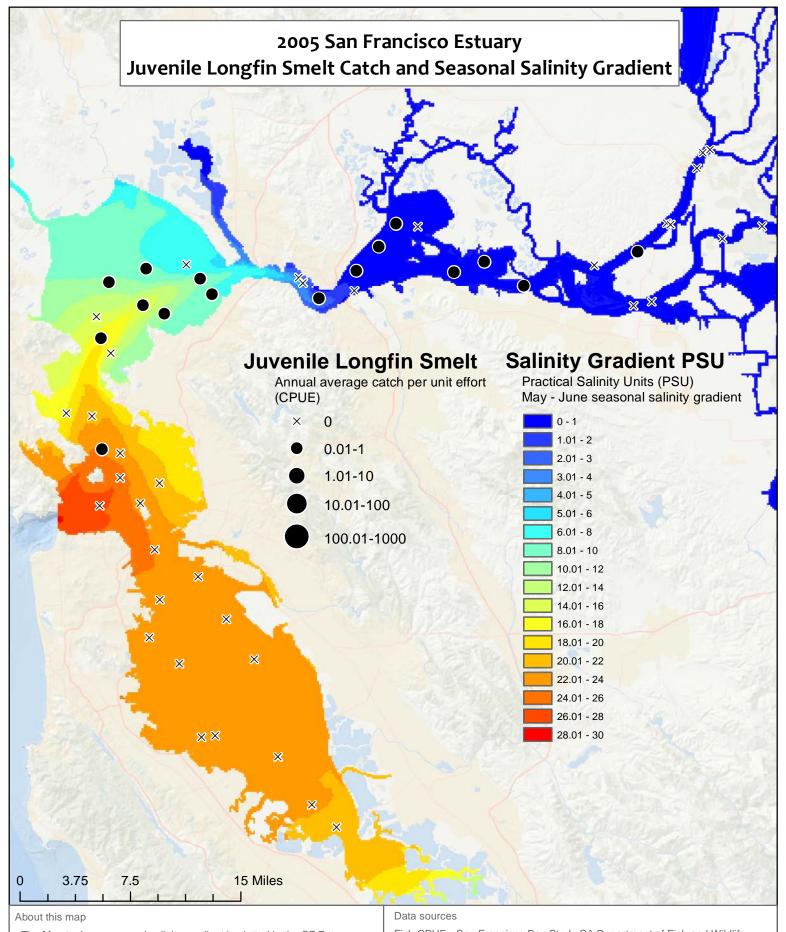Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

2004 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

Symbol	CPUE
×	0
•	0.01-1
•	1.01-10
•	10.01-100
•	100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

Color	PSU Range
	0 - 1
	1.01 - 2
	2.01 - 3
	3.01 - 4
	4.01 - 5
	5.01 - 6
	6.01 - 8
	8.01 - 10
	10.01 - 12
	12.01 - 14
	14.01 - 16
	16.01 - 18
	18.01 - 20
	20.01 - 22
	22.01 - 24
	24.01 - 26
	26.01 - 28
	28.01 - 30

0   3.75   7.5   15 Miles

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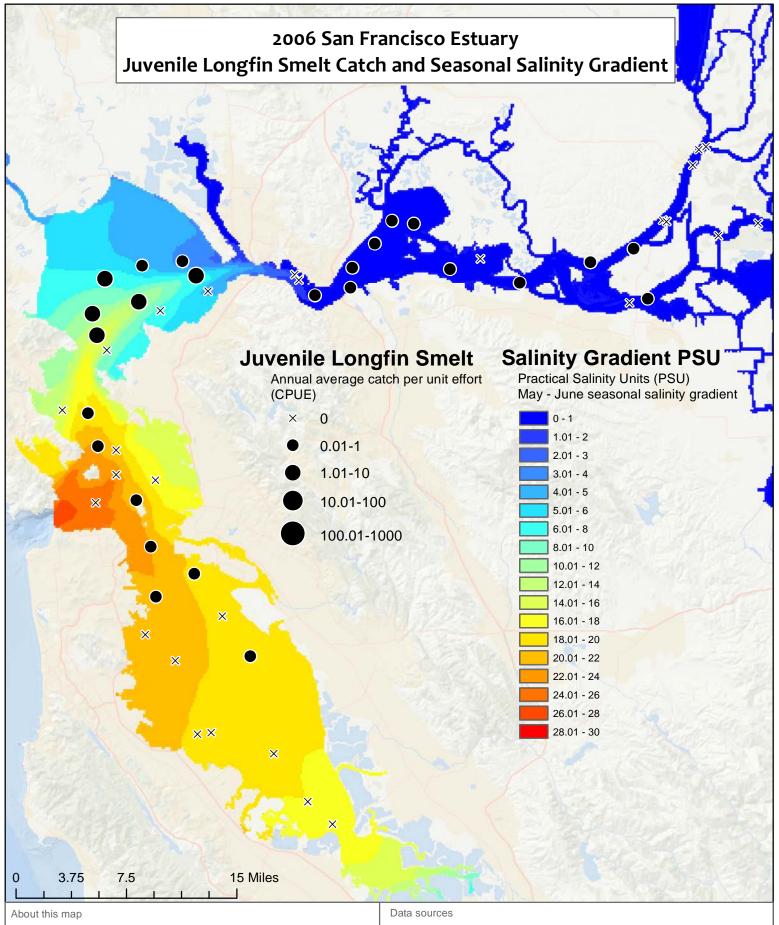Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

2005 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

× 0

● 0.01-1

● 1.01-10

● 10.01-100

● 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
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0   3.75   7.5   15 Miles

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Salinity Gradient - Coarse-grid version of UnTRIM San Francisco Bay-Delta Model, Delta Modeling Associates
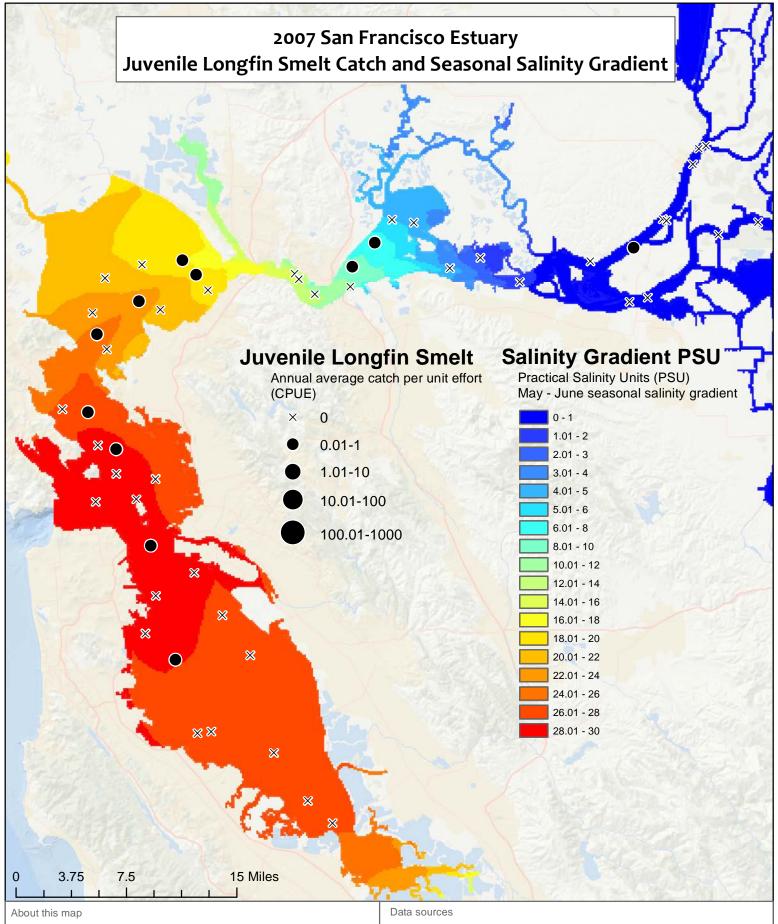
Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

2006 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort
(CPUE)

Symbol	Value
×	0
•	0.01-1
•	1.01-10
•	10.01-100
•	100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
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- 16.01 - 18
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- 20.01 - 22
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- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary
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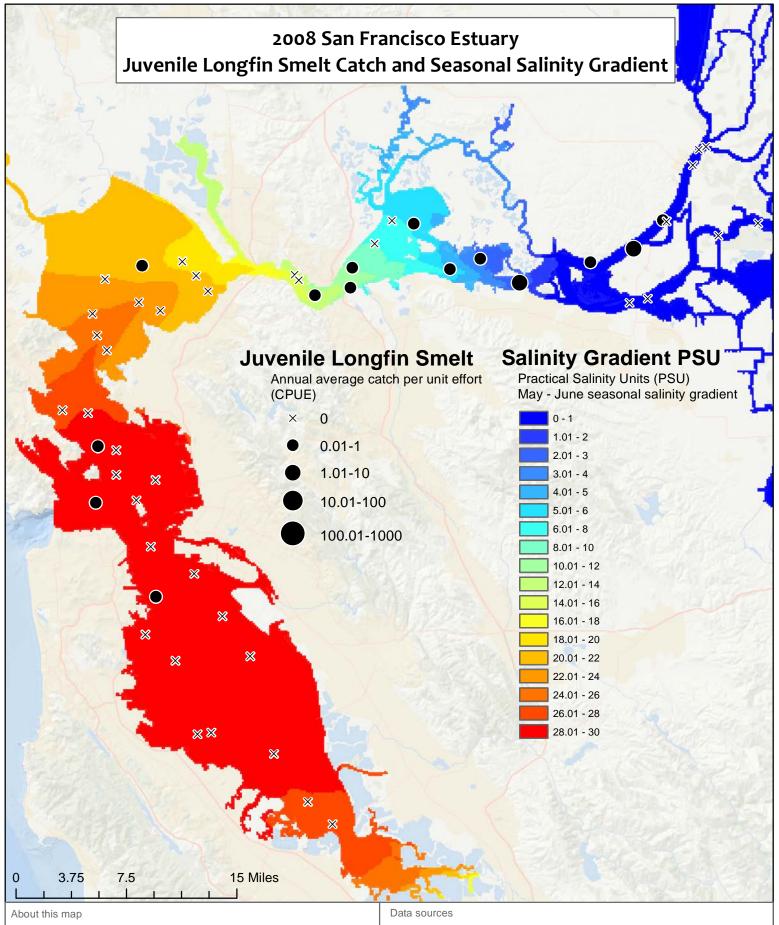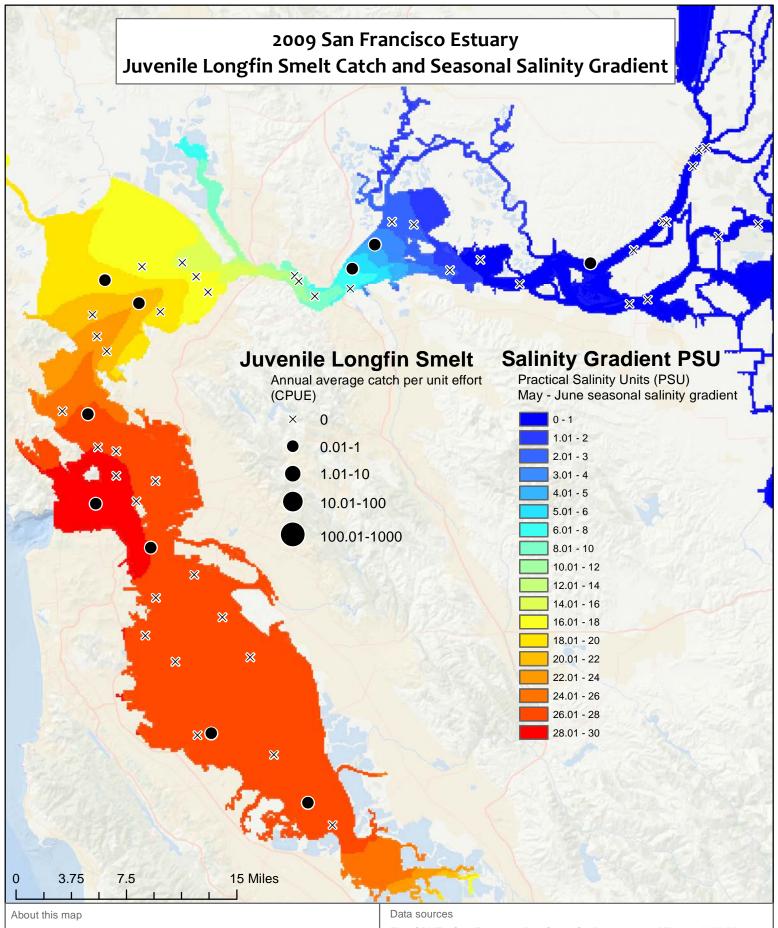   Model, Delta Modeling Associates
Basemap - ESRI, DeLorme, BEBCO, NAANGDC, & others

2007 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ✕ 0
- • 0.01-1
- • 1.01-10
- ● 10.01-100
- ● 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
- 5.01 - 6
- 6.01 - 8
- 8.01 - 10
- 10.01 - 12
- 12.01 - 14
- 14.01 - 16
- 16.01 - 18
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- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

About this map

The May to June seasonal salinity gradient is plotted in the SF Estuary beneath the annual average CPUE of age-0 longfin smelt for each monitoring station in the SF Bay Study mid-water trawl. The salinity gradient includes the two months in the season where juveniles are large enough to be caught by the trawl nets.

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2008 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt
Annual average catch per unit effort (CPUE)

× 0

● 0.01-1

● 1.01-10

● 10.01-100

● 100.01-1000

Salinity Gradient PSU
Practical Salinity Units (PSU)
May - June seasonal salinity gradient

■	0 - 1
■	1.01 - 2
■	2.01 - 3
■	3.01 - 4
■	4.01 - 5
■	5.01 - 6
■	6.01 - 8
■	8.01 - 10
■	10.01 - 12
■	12.01 - 14
■	14.01 - 16
■	16.01 - 18
■	18.01 - 20
■	20.01 - 22
■	22.01 - 24
■	24.01 - 26
■	26.01 - 28
■	28.01 - 30

0   3.75   7.5   15 Miles

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2009 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ✕   0
- •   0.01-1
- •   1.01-10
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- •   100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
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Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt
Annual average catch per unit effort
(CPUE)

× 0
● 0.01-1
● 1.01-10
● 10.01-100
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Salinity Gradient PSU
Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
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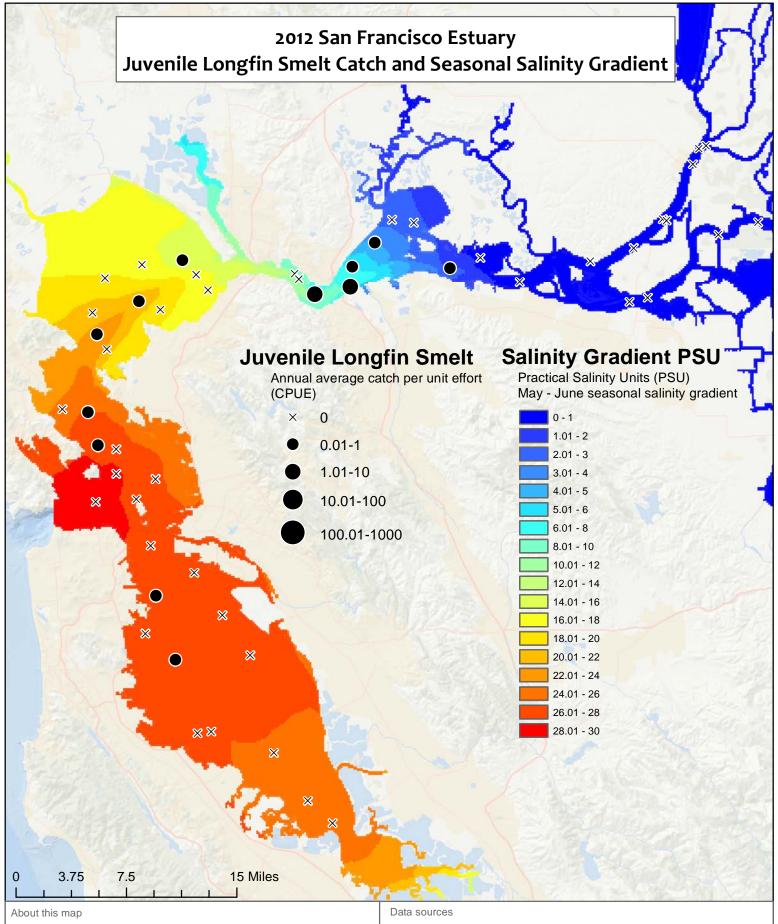   Model, Delta Modeling Associates
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2011 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ✕   0
- •   0.01-1
- ●   1.01-10
- ●   10.01-100
- ●   100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

- 0 - 1
- 1.01 - 2
- 2.01 - 3
- 3.01 - 4
- 4.01 - 5
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- 10.01 - 12
- 12.01 - 14
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- 16.01 - 18
- 18.01 - 20
- 20.01 - 22
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- 24.01 - 26
- 26.01 - 28
- 28.01 - 30

0   3.75   7.5   15 Miles

2012 San Francisco Estuary
Juvenile Longfin Smelt Catch and Seasonal Salinity Gradient

Juvenile Longfin Smelt

Annual average catch per unit effort (CPUE)

- ✕ 0
- ● 0.01-1
- ● 1.01-10
- ● 10.01-100
- ● 100.01-1000

Salinity Gradient PSU

Practical Salinity Units (PSU)
May - June seasonal salinity gradient

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