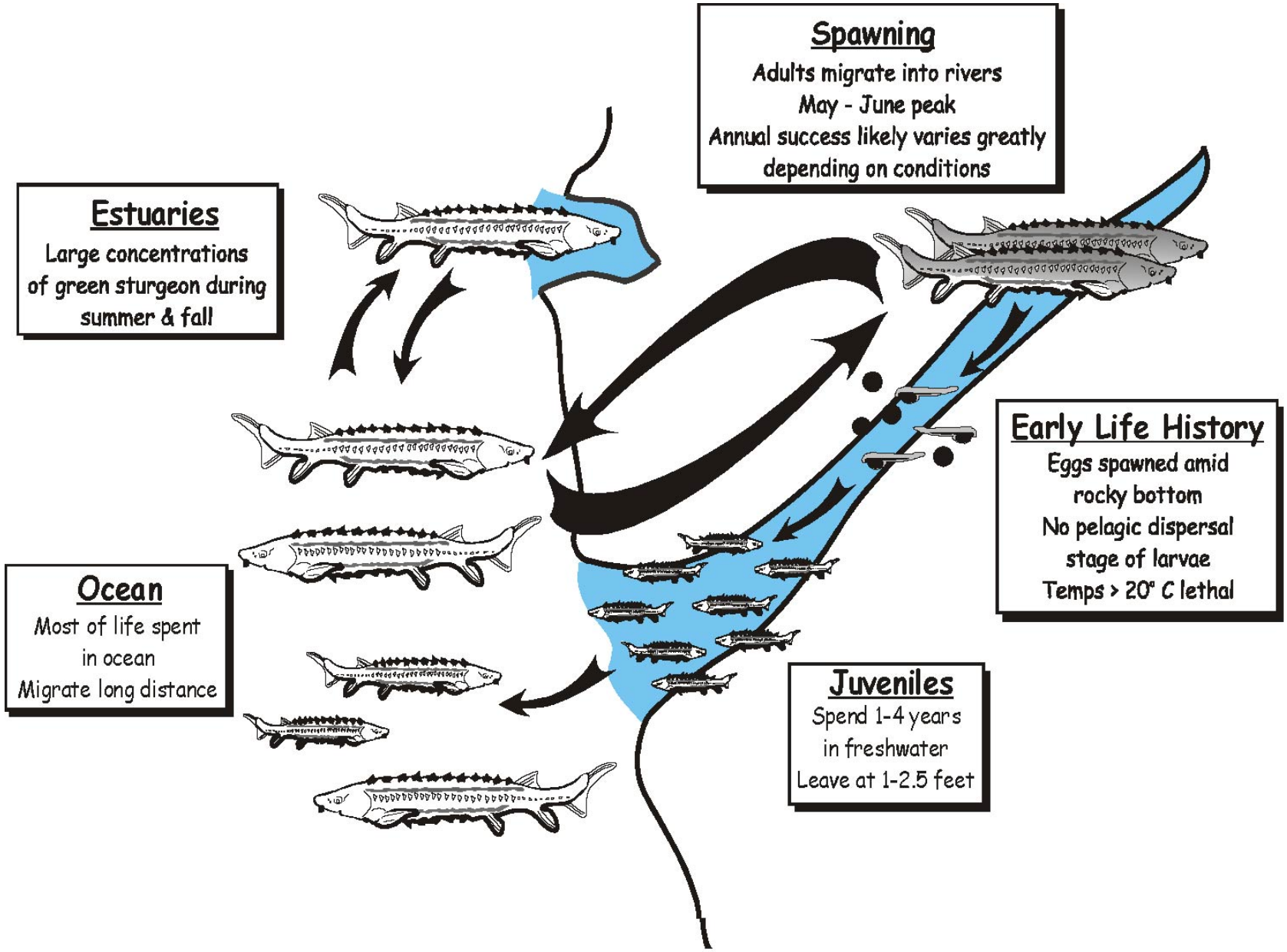
11.0 Green sturgeon overview

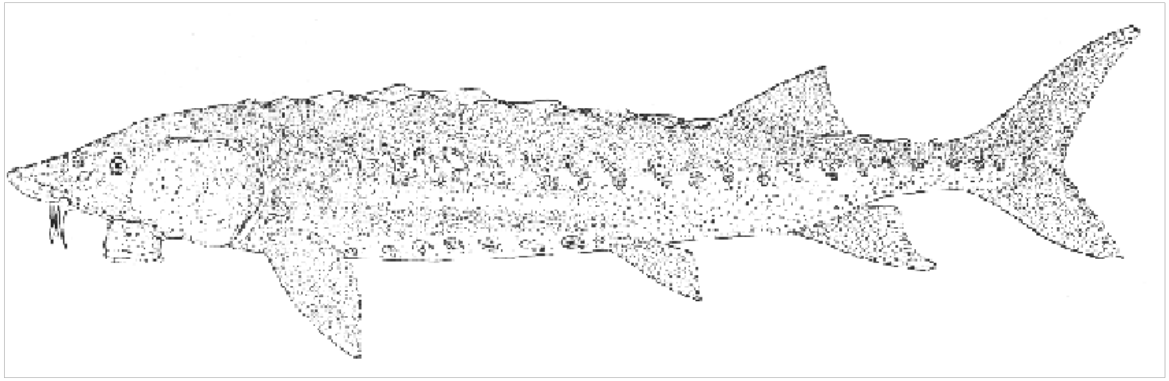
Steve Lindley and Mary Moser

6 May 2015

Photo: Thomas Dunklin

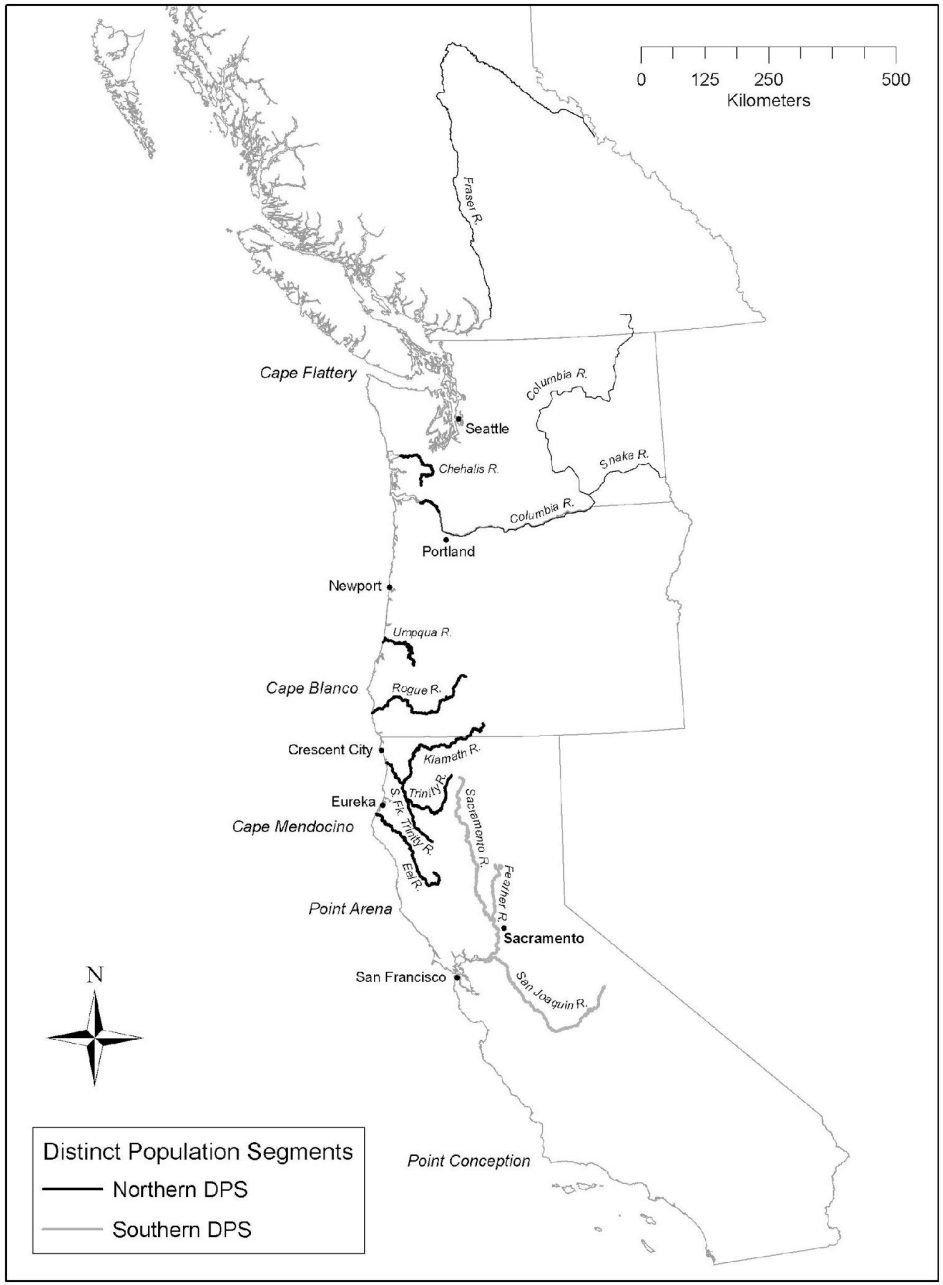

Spawning
Adults migrate into rivers
May - June peak
Annual success likely varies greatly depending on conditions
Estuaries
Large concentrations of green sturgeon during summer & fall
Early Life History
Eggs spawned amid rocky bottom
No pelagic dispersal stage of larvae
Temps > 20° C lethal
Ocean
Most of life spent in ocean
Migrate long distance
Juveniles
Spend 1-4 years in freshwater
Leave at 1-2.5 feet

PETITION TO LIST THE NORTH AMERICAN GREEN STURGEON (*Acipenser medirostris*) AS AN ENDANGERED OR THREATENED SPECIES UNDER THE ENDANGERED SPECIES ACT

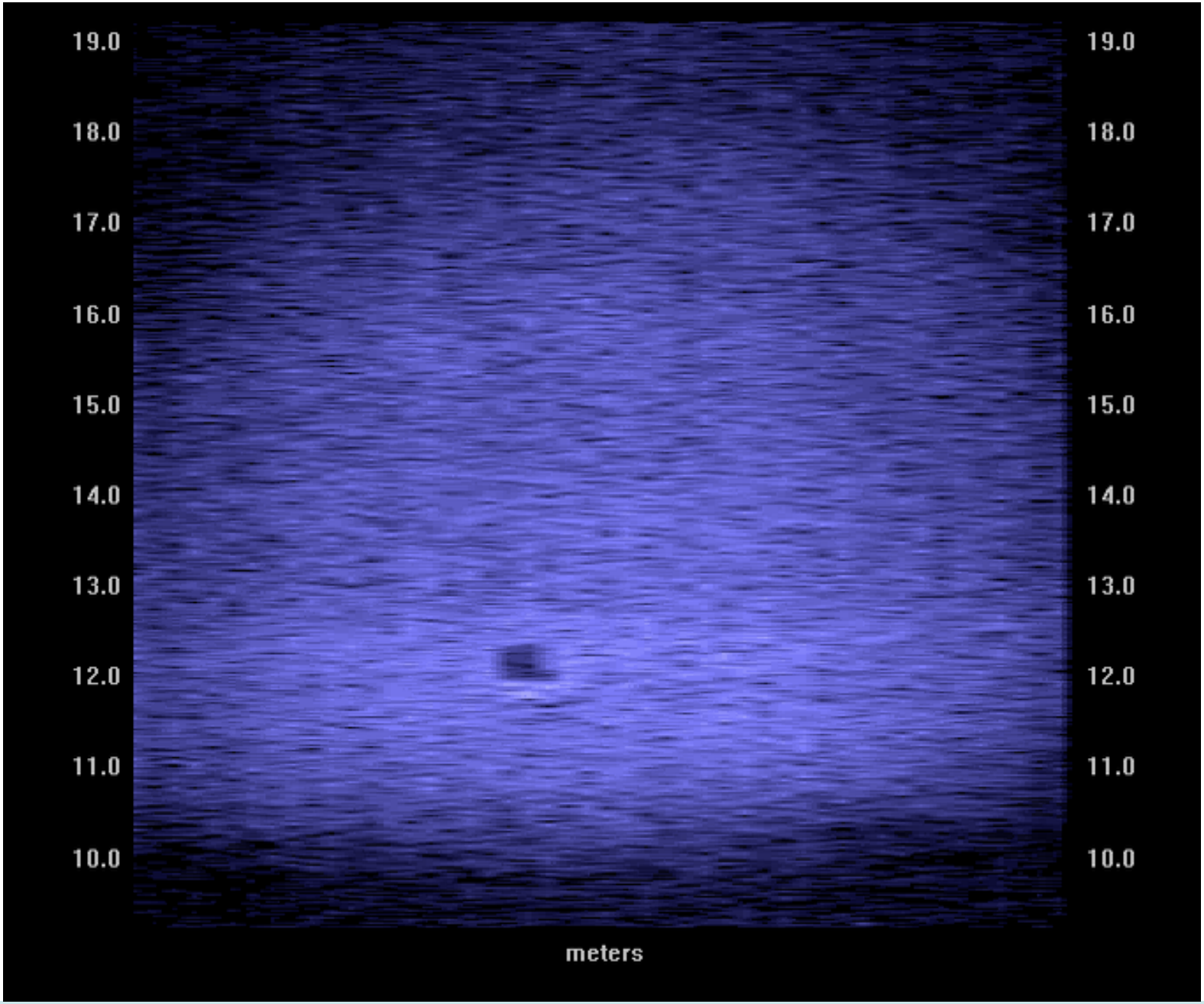


ENVIRONMENTAL PROTECTION INFORMATION CENTER
CENTER FOR BIOLOGICAL DIVERSITY
WATERKEEPERS NORTHERN CALIFORNIA
PETITIONERS

JUNE 2001


0
125
250
500
Kilometers
Fraser R.
Cape Flattery
Columbia R.
Seattle
Snake R.
Chehalis R.
Columbia R.
Portland
Newport
Umpqua R.
Cape Blanco
Rogue R.
Crescent City
Klamath R.
Trinity R.
Eureka
Sacramento R.
Cape Mendocino
S. Fk. Trinity R.
Eel R.
Feather R.
Point Arena
Sacramento
San Francisco
San Joaquin R.
N
Distinct Population Segments
Northern DPS
Southern DPS
Point Conception

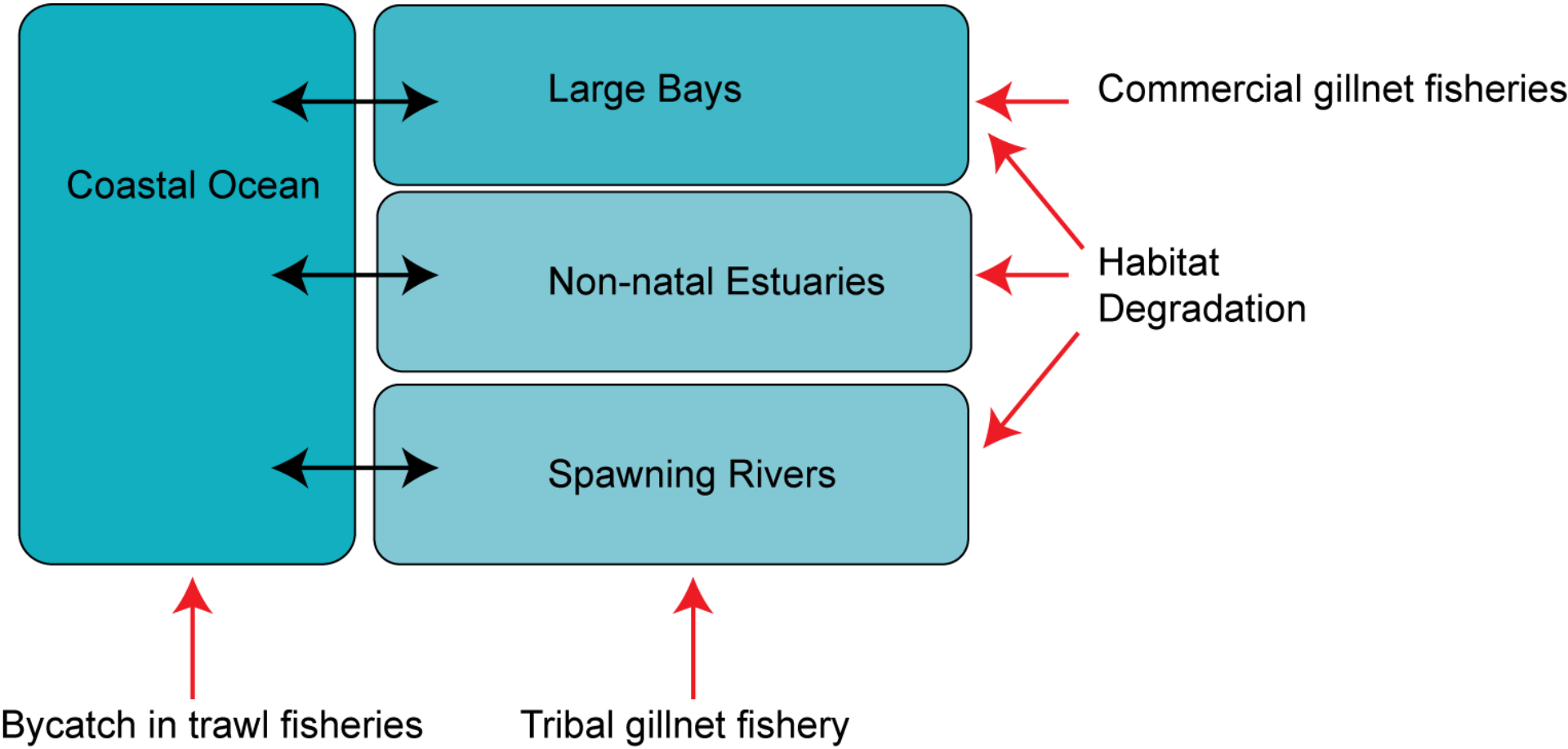
NORTH RIVER
ROSEBURG OREGON
ALUMINUM BOATS
UC DAVIS

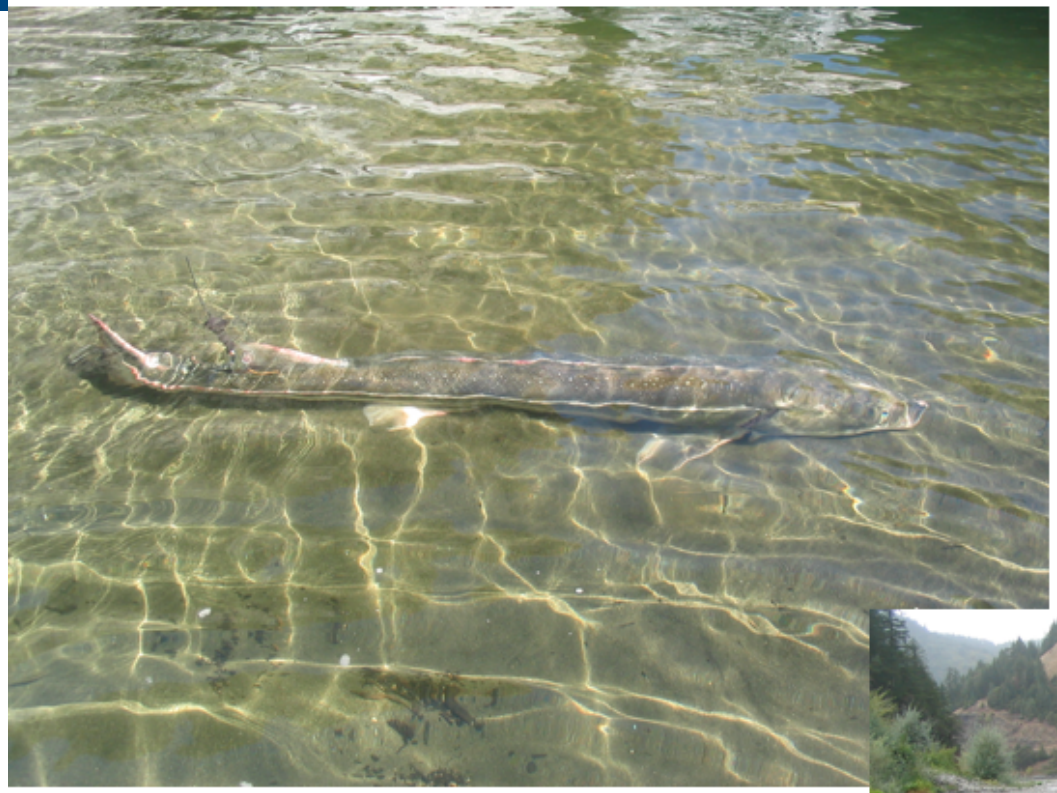

19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
19.0
18.0
17.0
16.0
15.0
14.0
13.0
12.0
11.0
10.0
meters

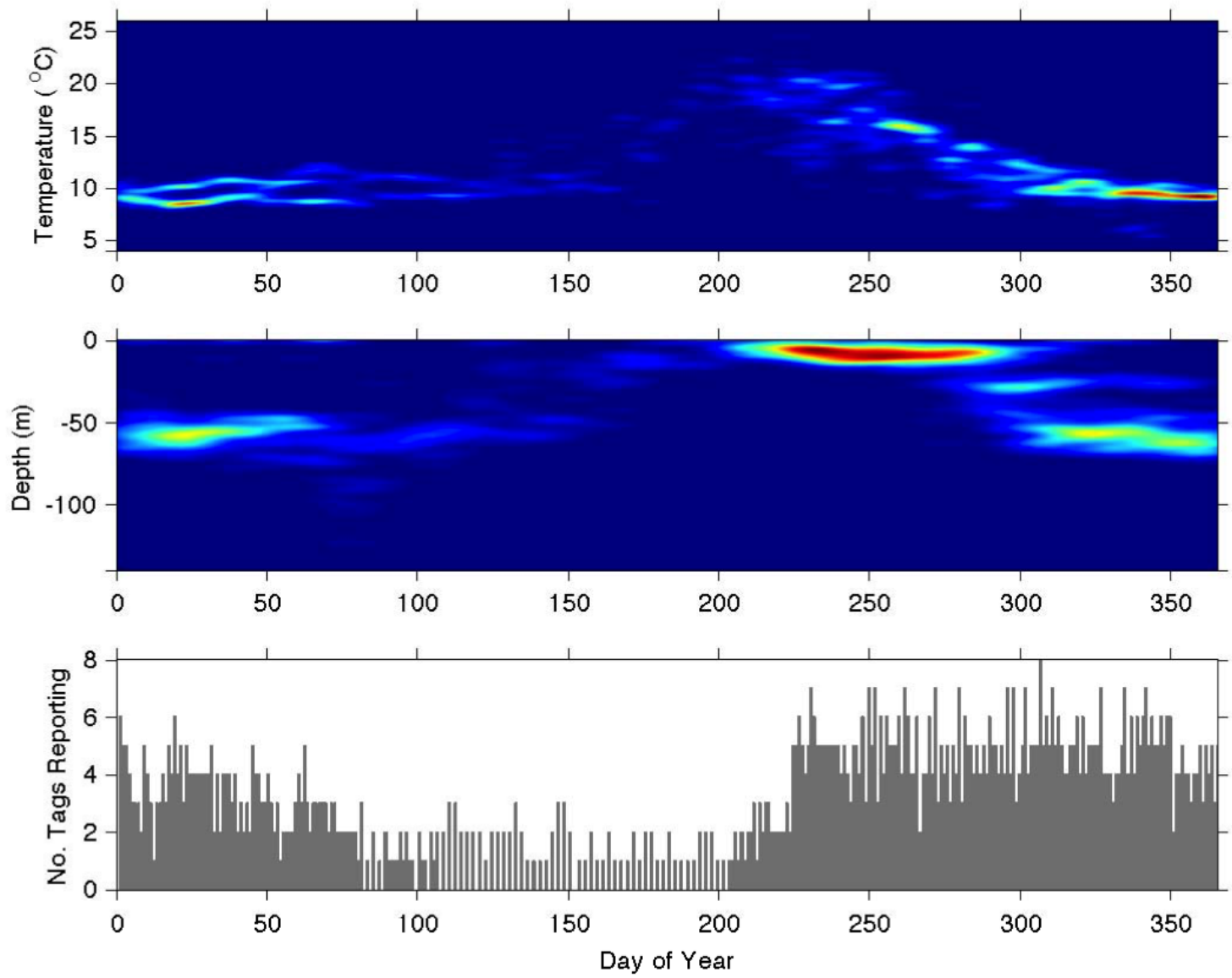
Runs size estimates from DIDSON surveys

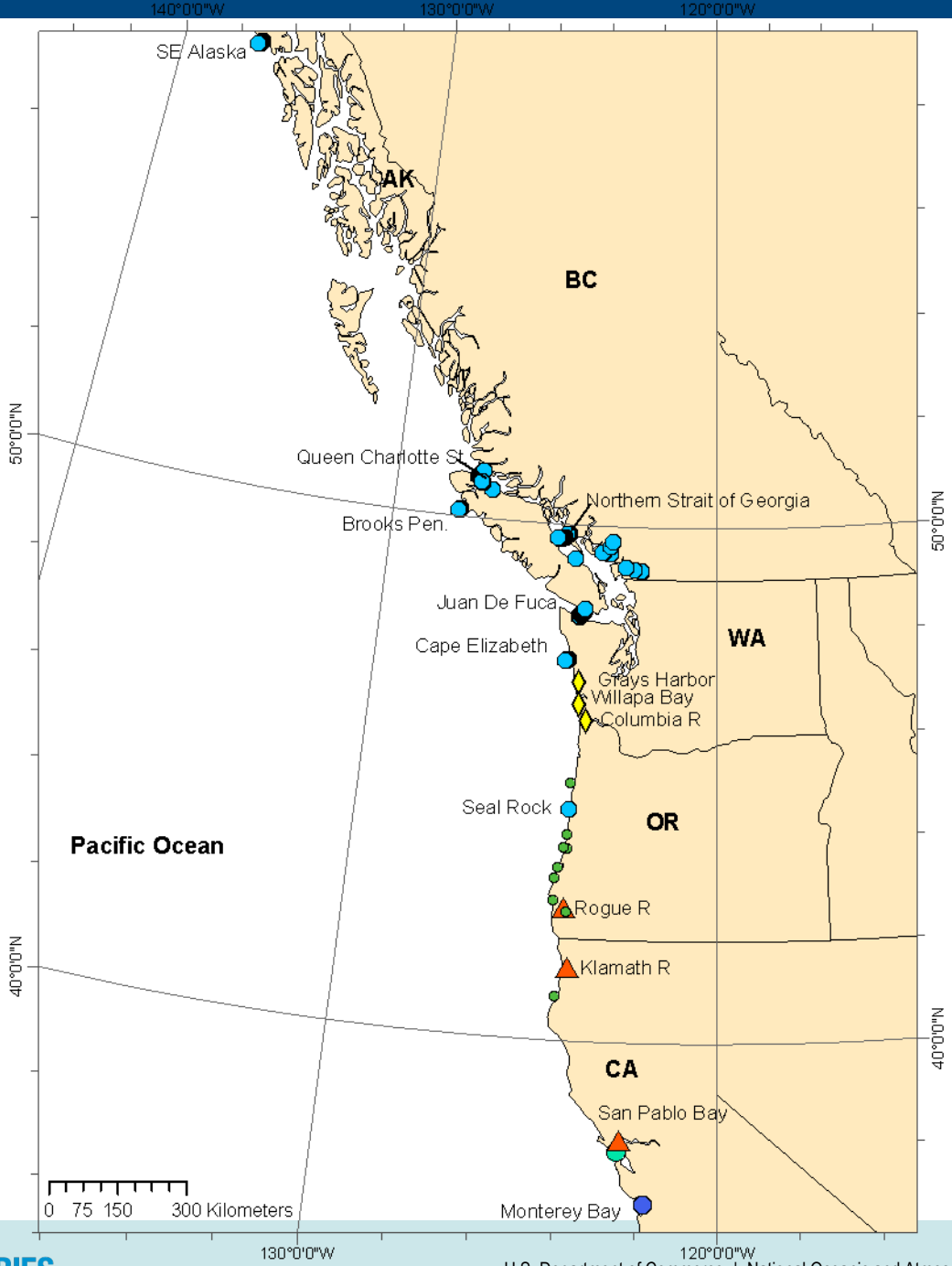
River	Year	Pop Size (95% CI)
Klamath	2010	349 (52)
	2011	471 (42)
	2012	386 (45)
Rogue	2010	327 (50)
	2011	454 (46)
	2012	256 (27)
Sacramento	2010	164 (47)
	2011	220 (42)
	2012	329 (57)
	2013	338 (61)
	2014	526 (64)

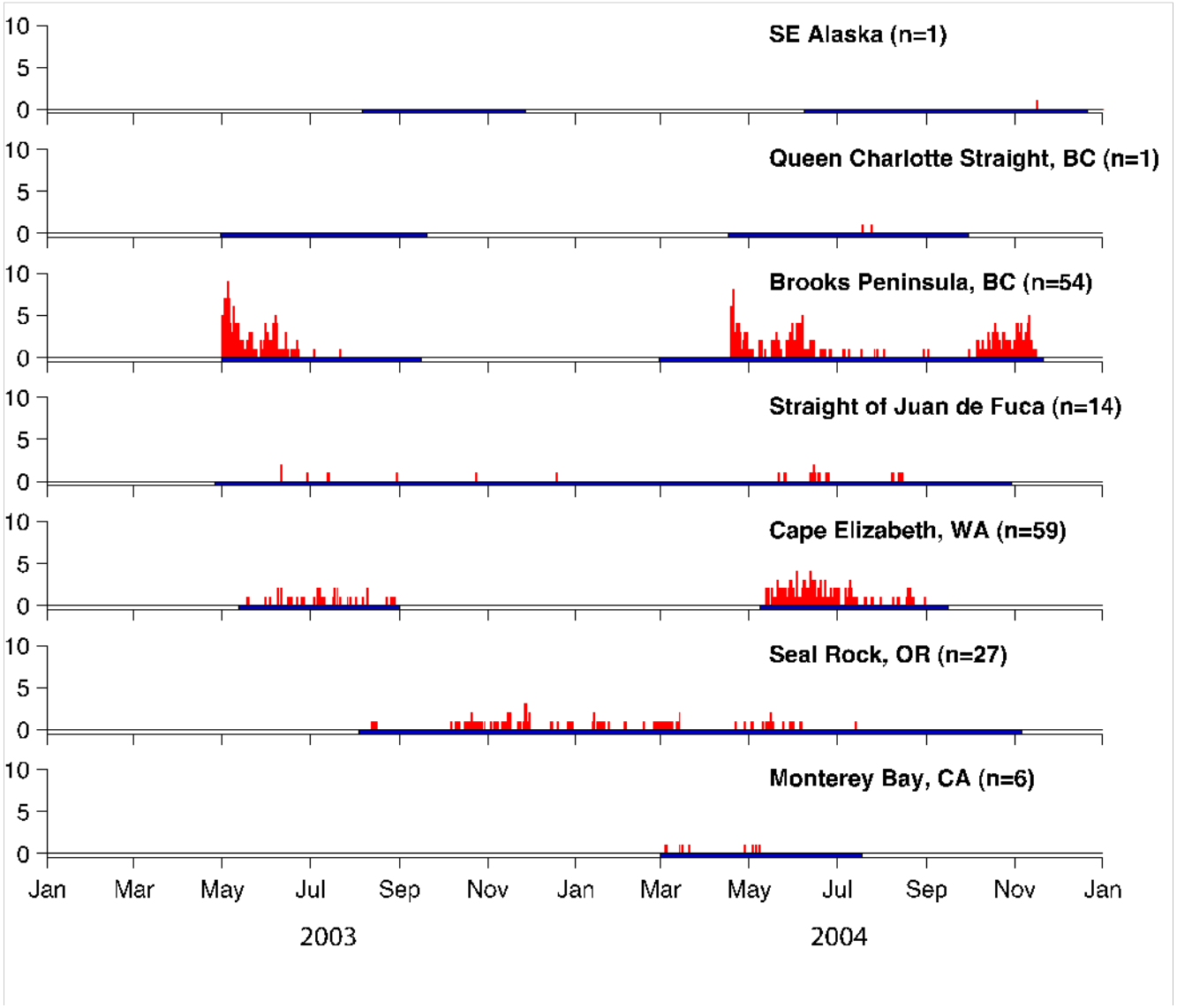
Movements and threats



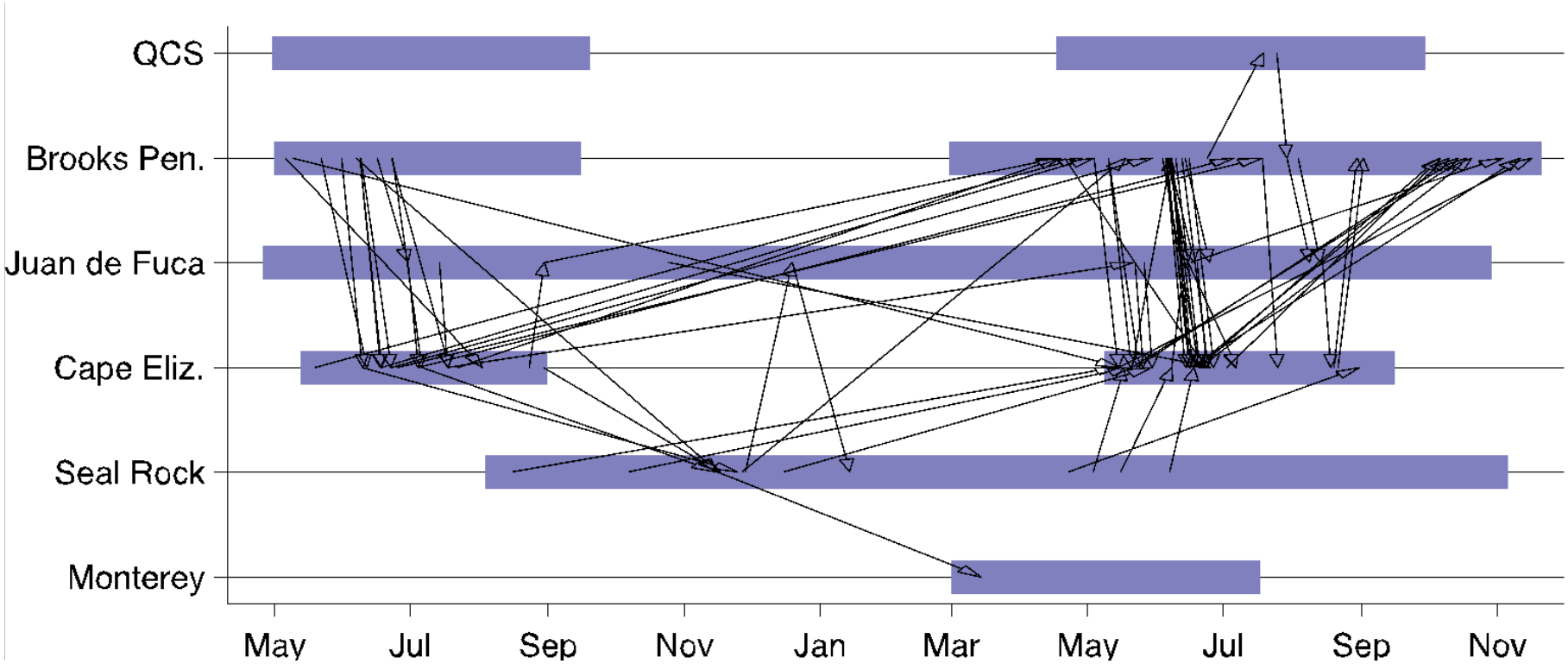



Temperature (°C)
25
20
15
10
5
0
50
100
150
200
250
300
350
Depth (m)
0
-50
-100
No. Tags Reporting
8
6
4
2
0
Day of Year


140°0'0"W
130°0'0"W
120°0'0"W
SE Alaska
AK
BC
50°0'0"N
Queen Charlotte St.
Northern Strait of Georgia
Brooks Pen.
50°0'0"N
Juan De Fuca
Cape Elizabeth
WA
Grays Harbor
Willapa Bay
Columbia R
Seal Rock
OR
Pacific Ocean
Rogue R
40°0'0"N
Klamath R
40°0'0"N
CA
San Pablo Bay
0 75 150 300 Kilometers
Monterey Bay
130°0'0"W
120°0'0"W

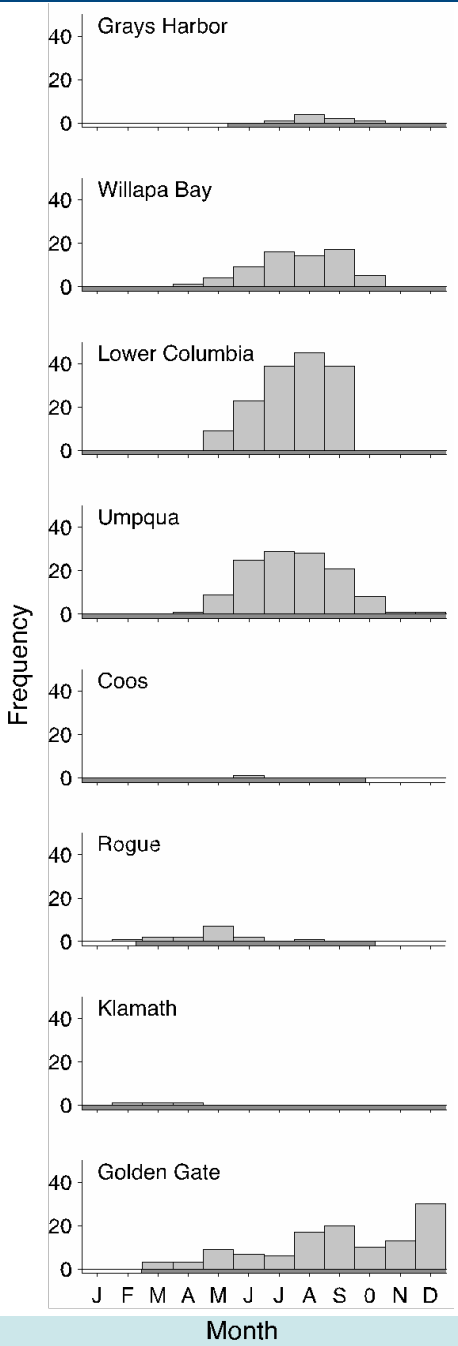

SE Alaska (n=1)
Queen Charlotte Straight, BC (n=1)
Brooks Peninsula, BC (n=54)
Straight of Juan de Fuca (n=14)
Cape Elizabeth, WA (n=59)
Seal Rock, OR (n=27)
Monterey Bay, CA (n=6)
10
5
0
Jan
Mar
May
Jul
Sep
Nov
Jan
Mar
May
Jul
Sep
Nov
Jan
2003
2004

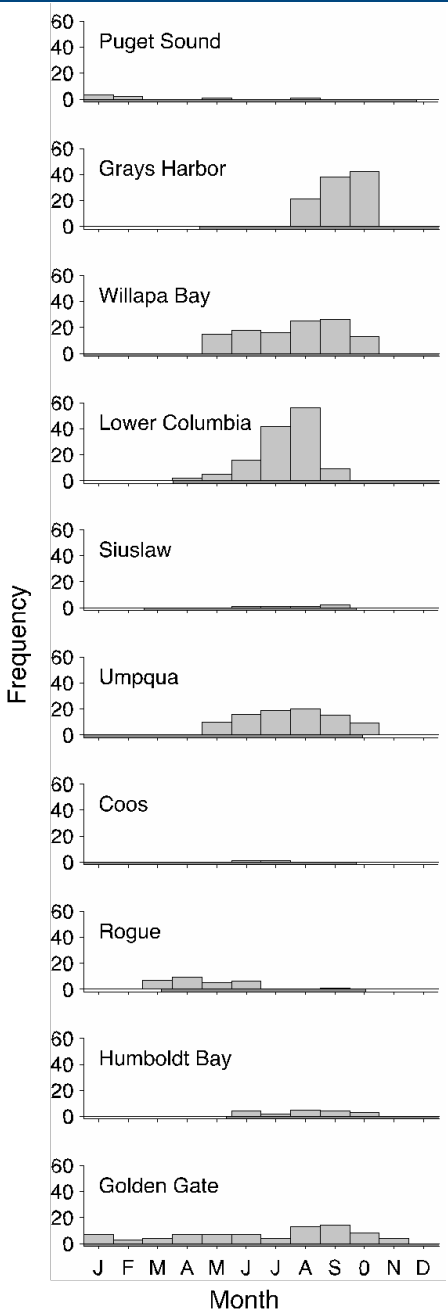
Coastal migrations



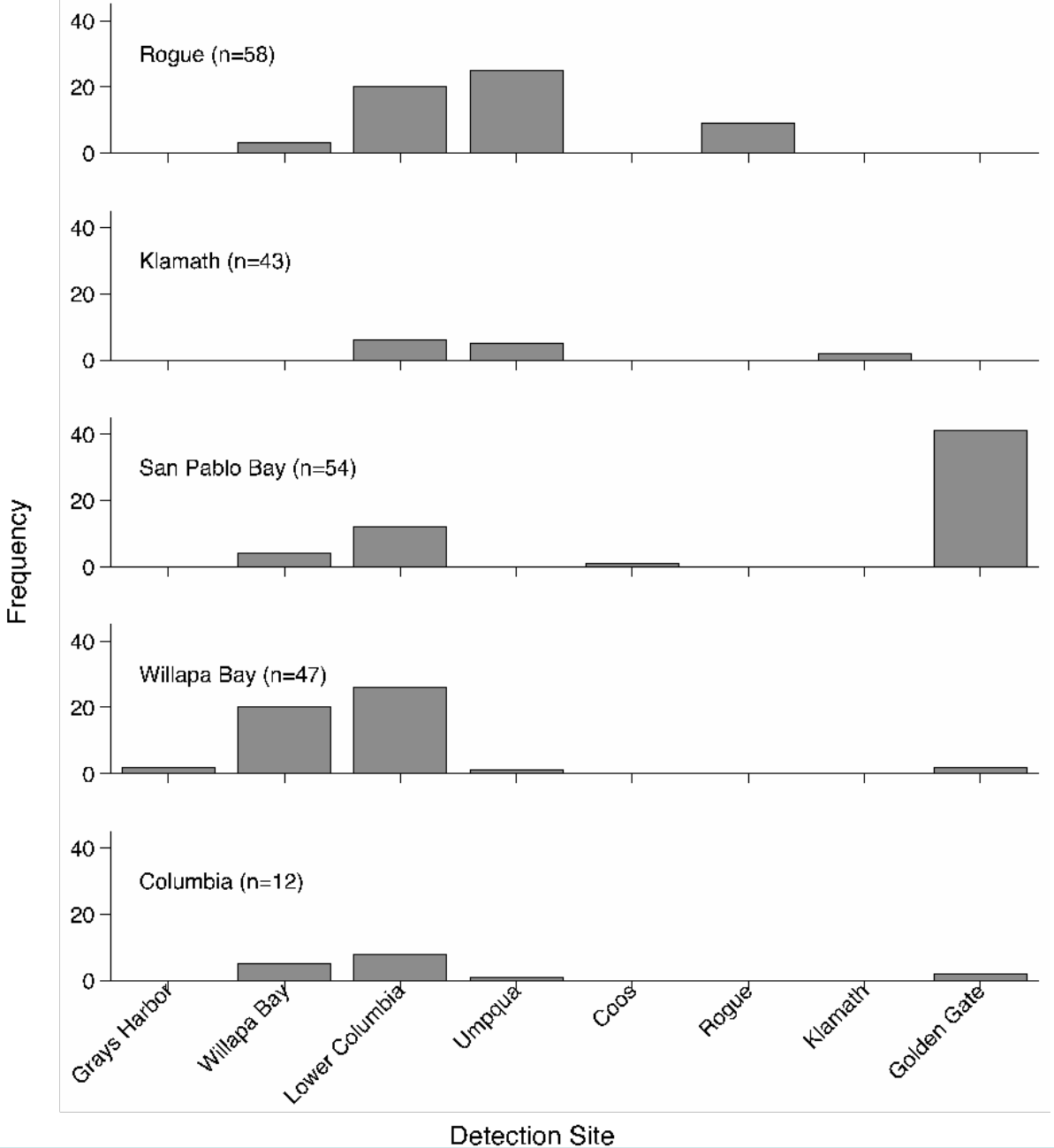
Lindley et al 2008

Patterns of estuarine residency

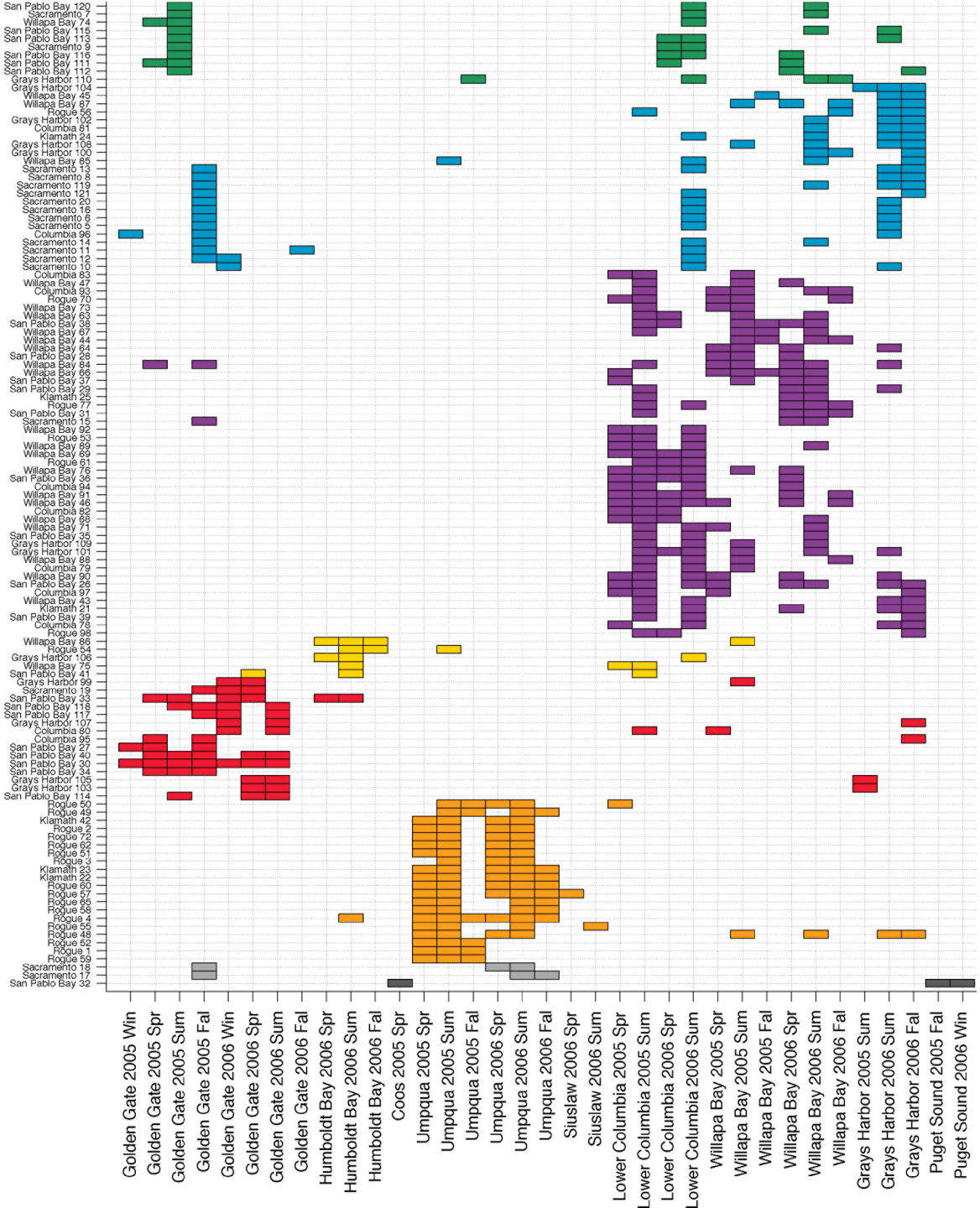




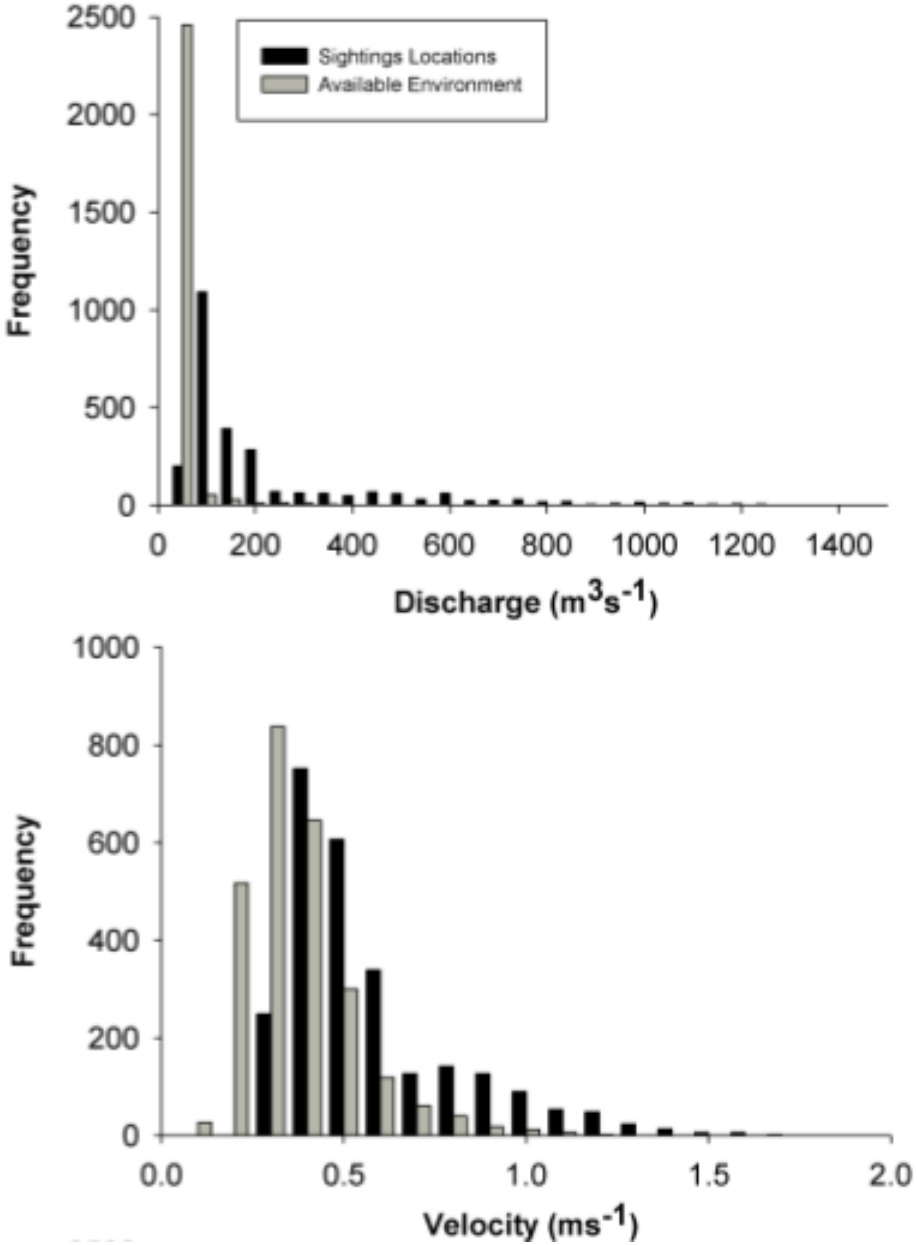
Movements among estuaries

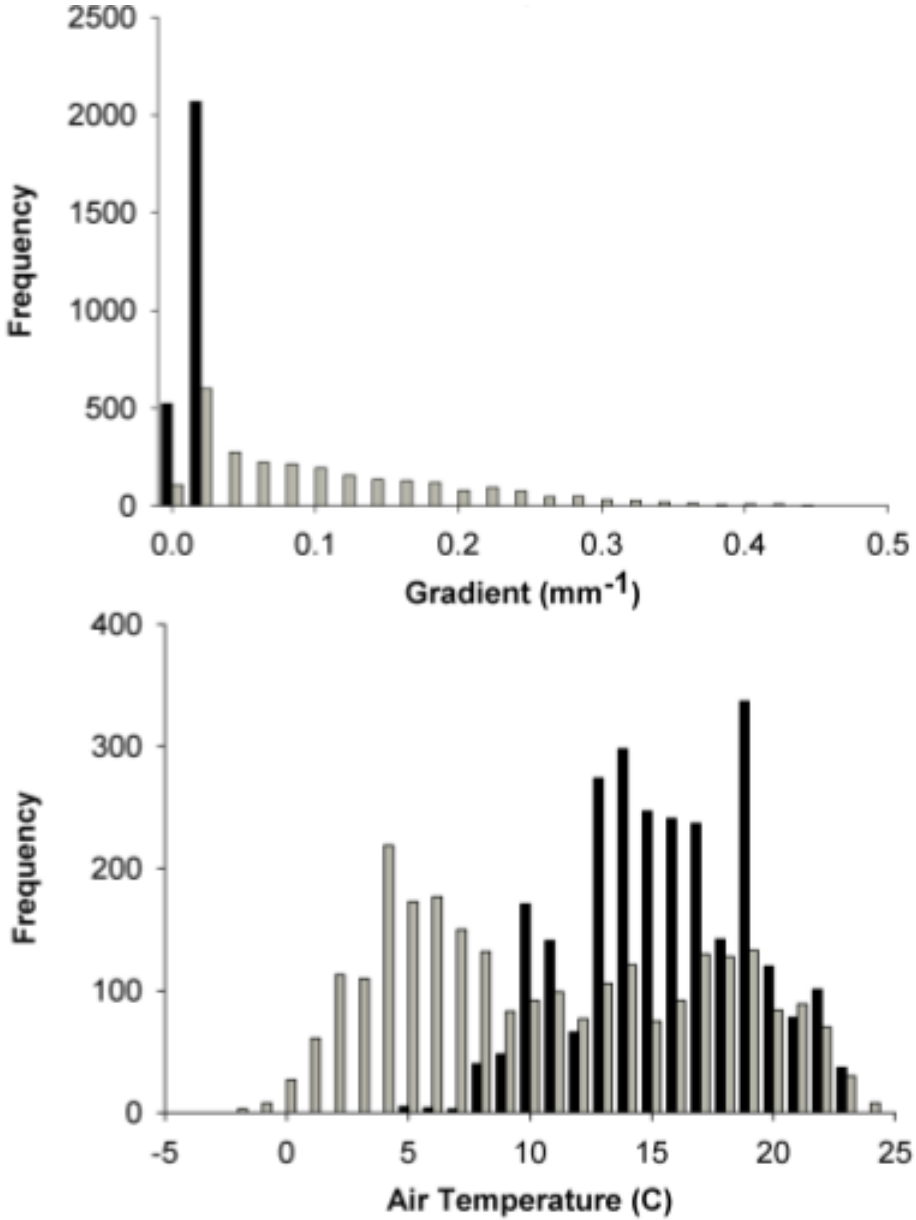


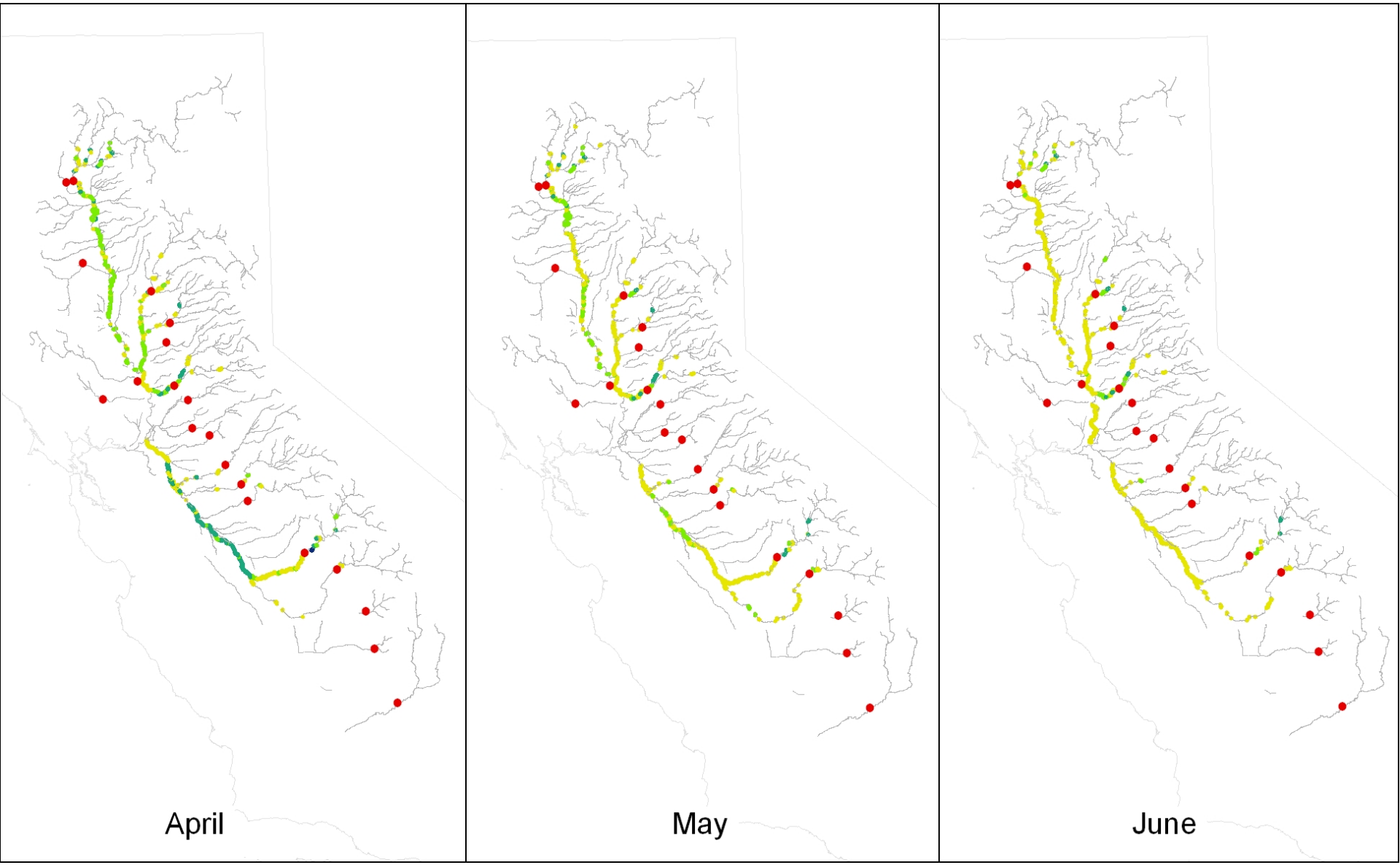
Variation in migratory behavior
Among individuals

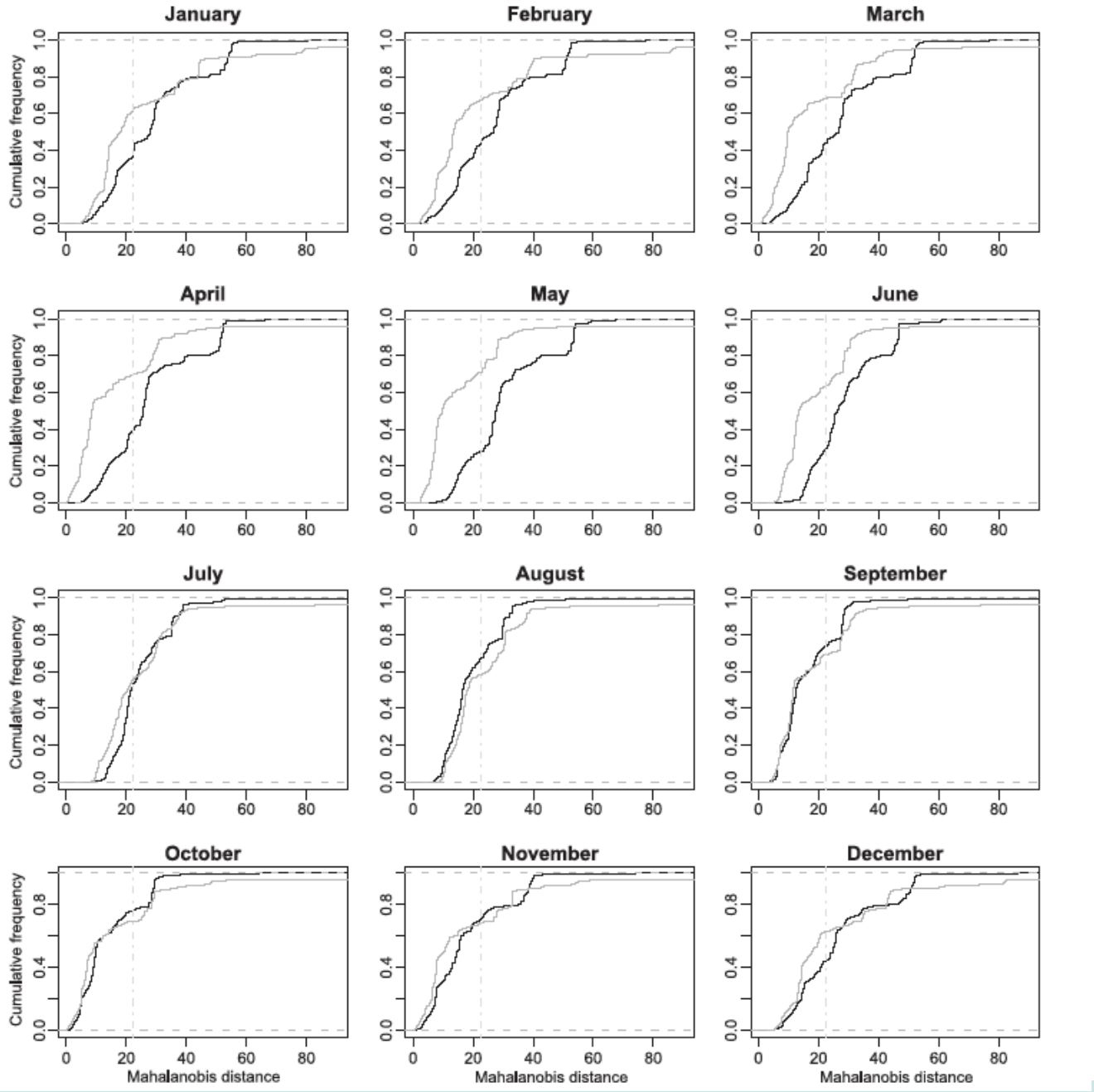


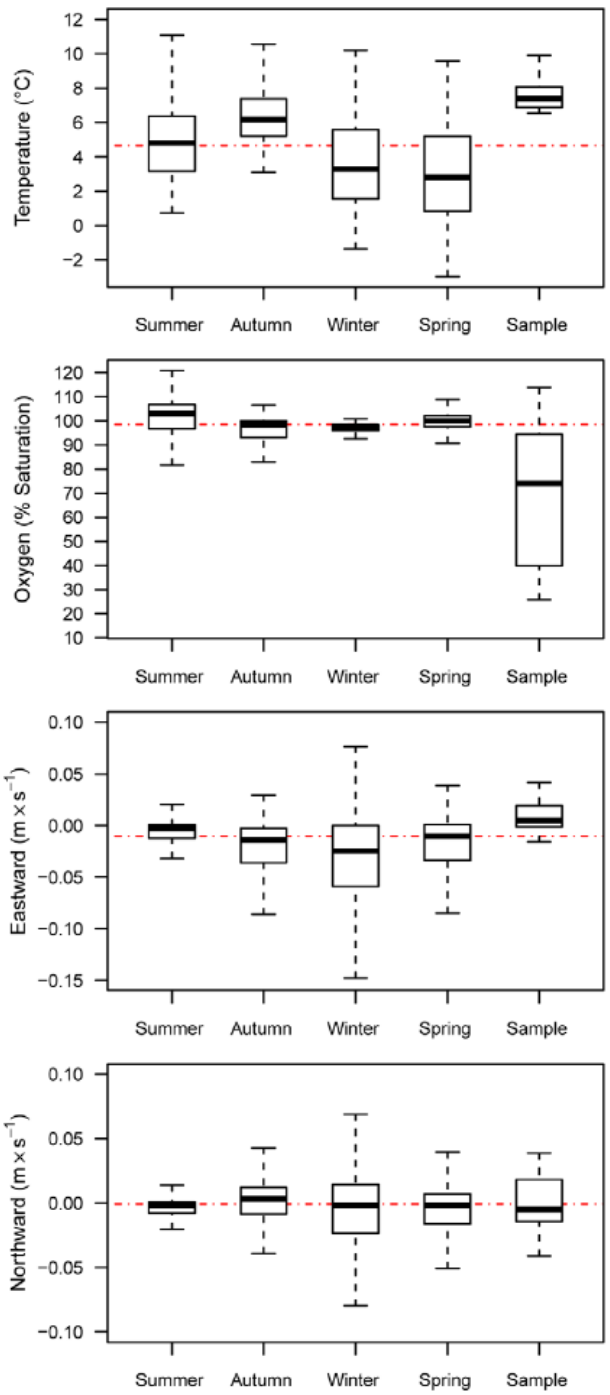
Mora et al 2009

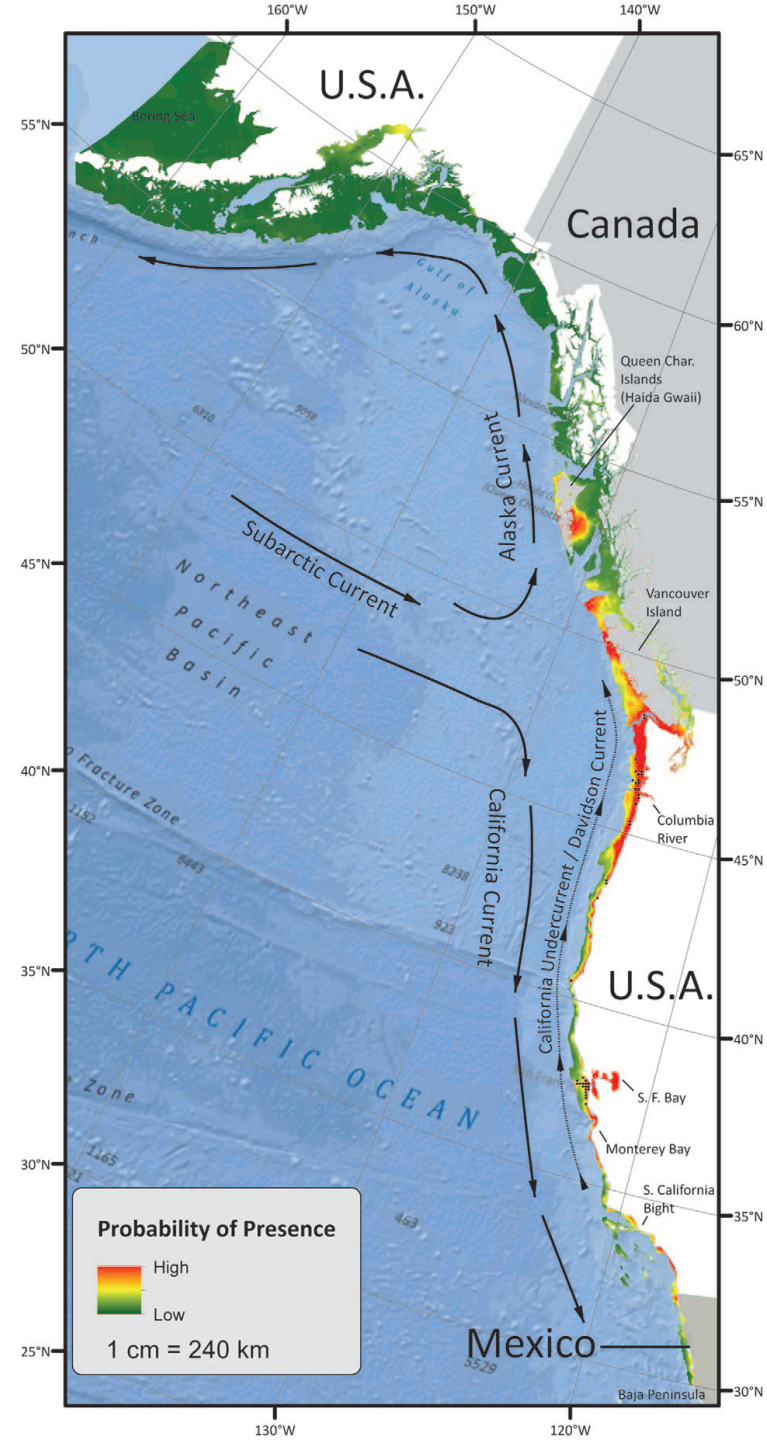





April
May
June


January
February
March
April
May
June
July
August
September
October
November
December
Cumulative frequency
Mahalanobis distance
0.0
0.2
0.4
0.6
0.8
1.0
0
20
40
60
80



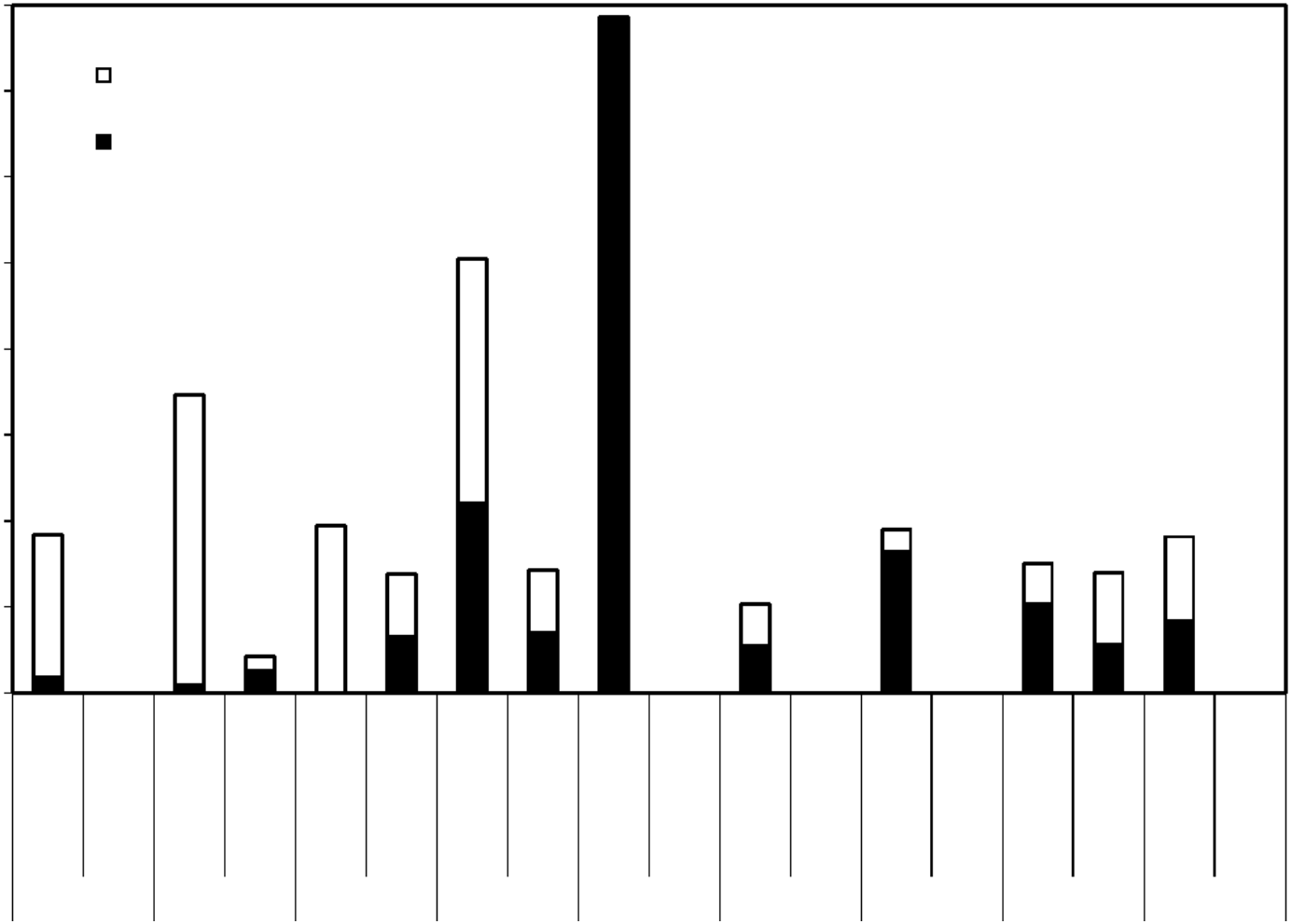


Huff et al 2012

Opportunities, Challenges and Strategies

- Recruitment or subadult/adult survival?
  - Bycatch research
  - Larval performance: conflict with salmon conservation?
- Recovery plan finalization

Green Sturgeon Bycatch (N)



Estimated Green Sturgeon bycatch in California Halibut fisheries by fishery type and season between 2002 and 2010. Data from Al-Humaidhi et al. (2012).