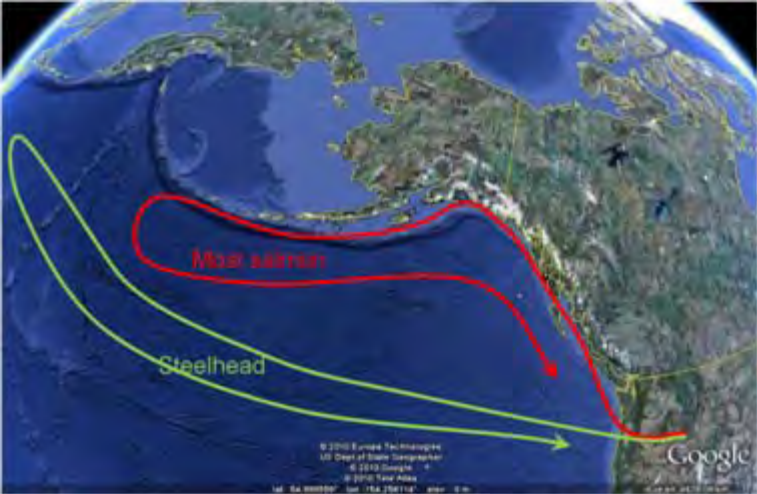


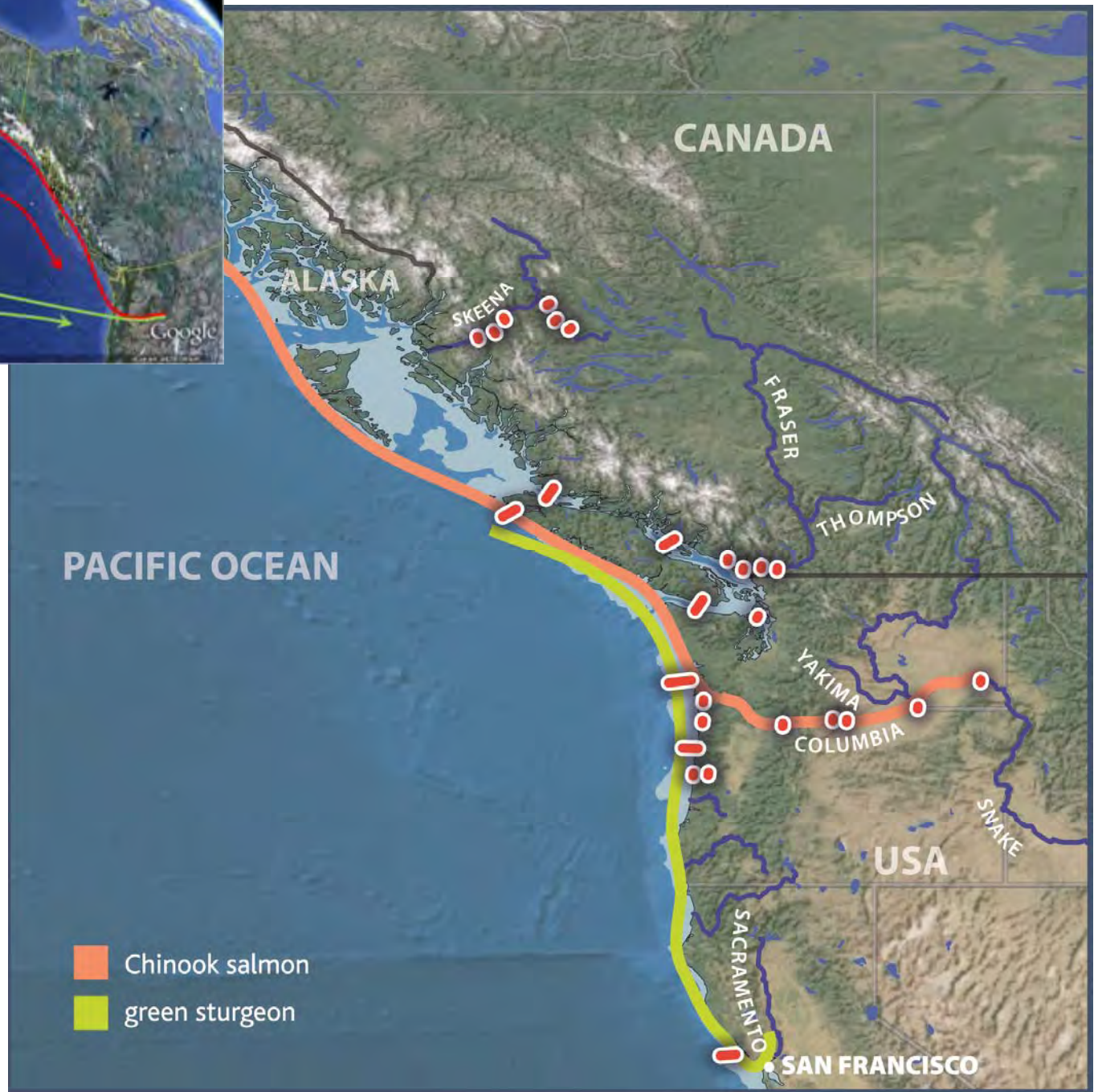


The future of The Pacific Ocean Shelf Tracking Project (POST)

John Payne

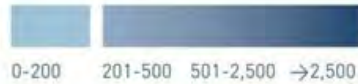


Continental shelves play a key role in the life histories of most marine species



EXTENT OF THE POST ACOUSTIC RECEIVER ARRAY

DEPTH
(METERS)



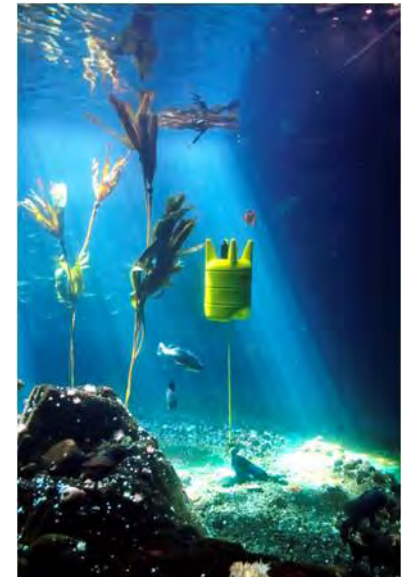
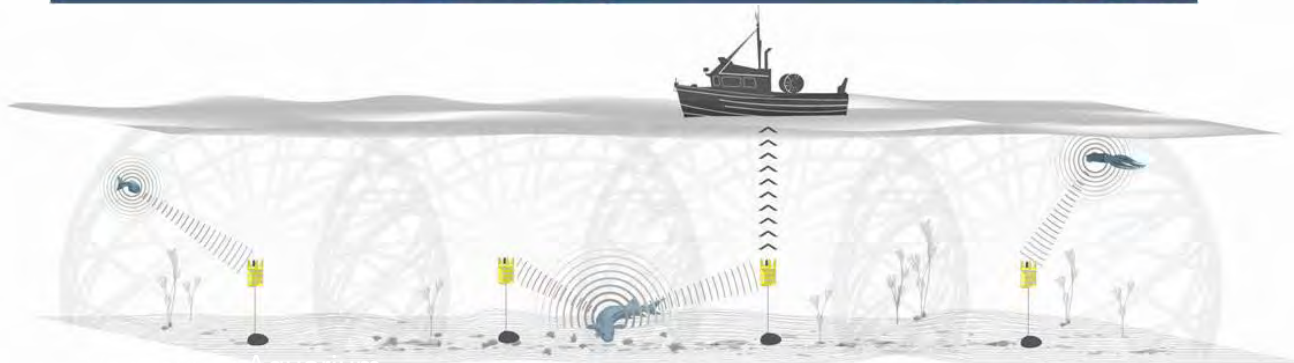
RECEIVER LINES



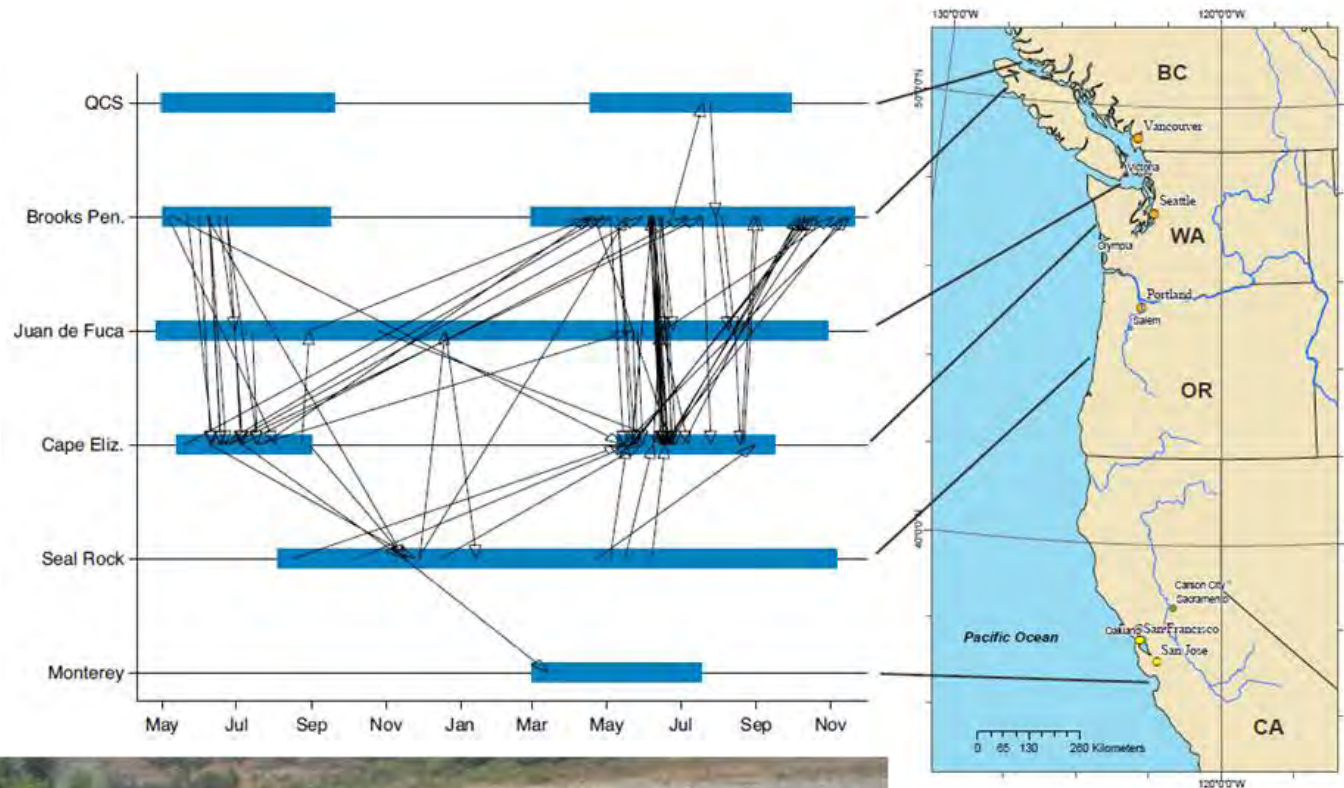
MAJOR RIVERS



*POST is public,
non-profit,
community-supported*



Green sturgeon move much further than expected, including northwards winter migrations



Each new species brings a new dimension to our discoveries



Ling cod



Sixgill sharks



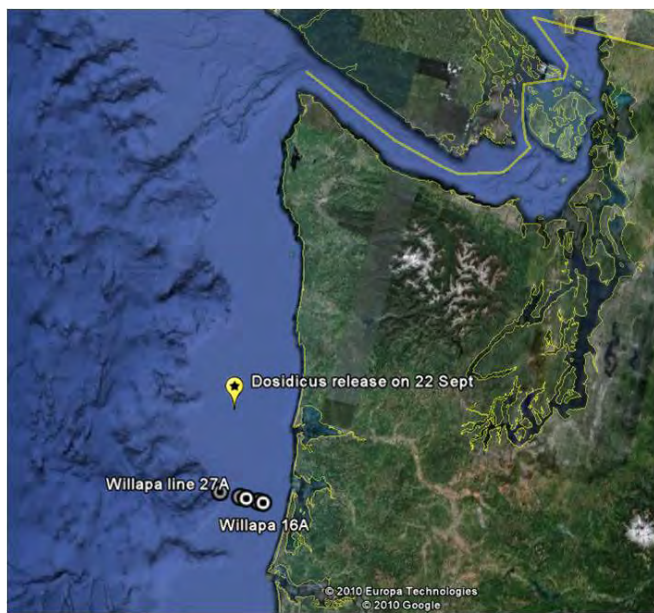
White sturgeon



Herring



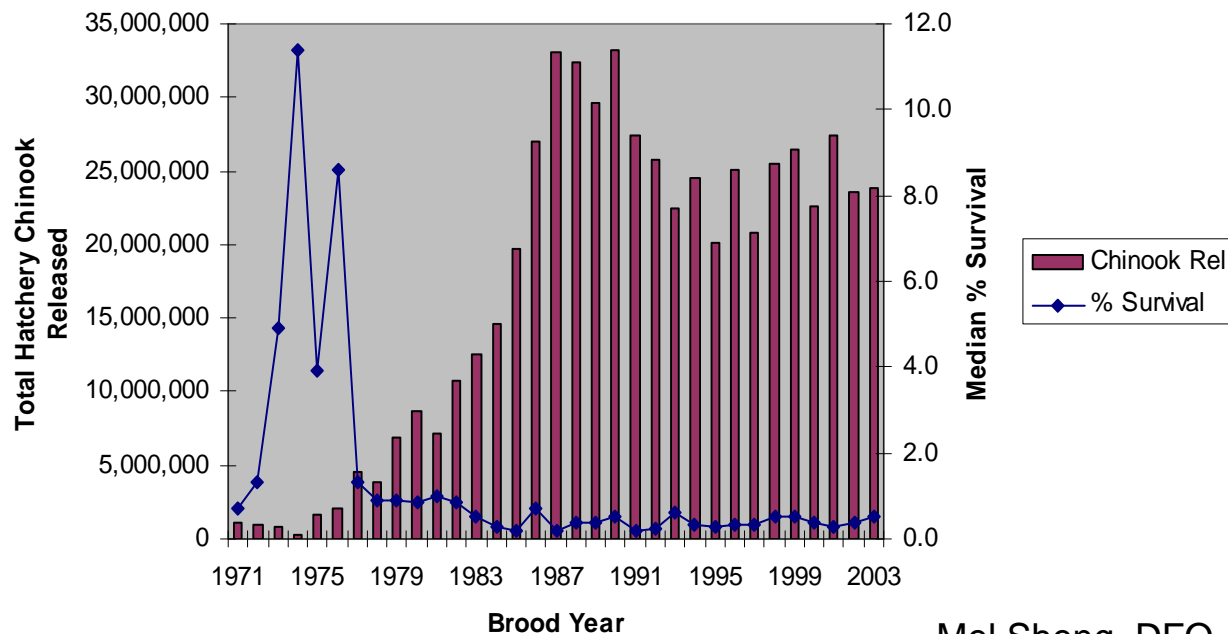
Humboldt squid, a deep water sub-tropical species, may threaten fisheries as it extends its range north.



*POST was created to answer the question:
When and where do juvenile salmon die in the ocean?*



Strait of Georgia Chinook Releases & Survival

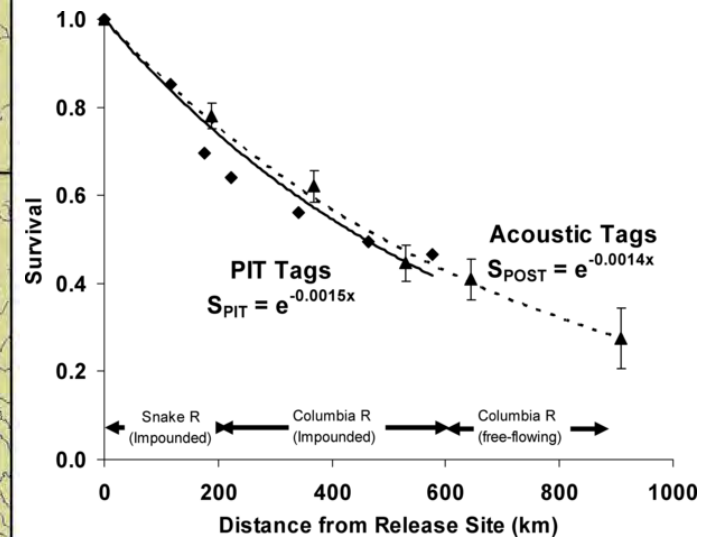
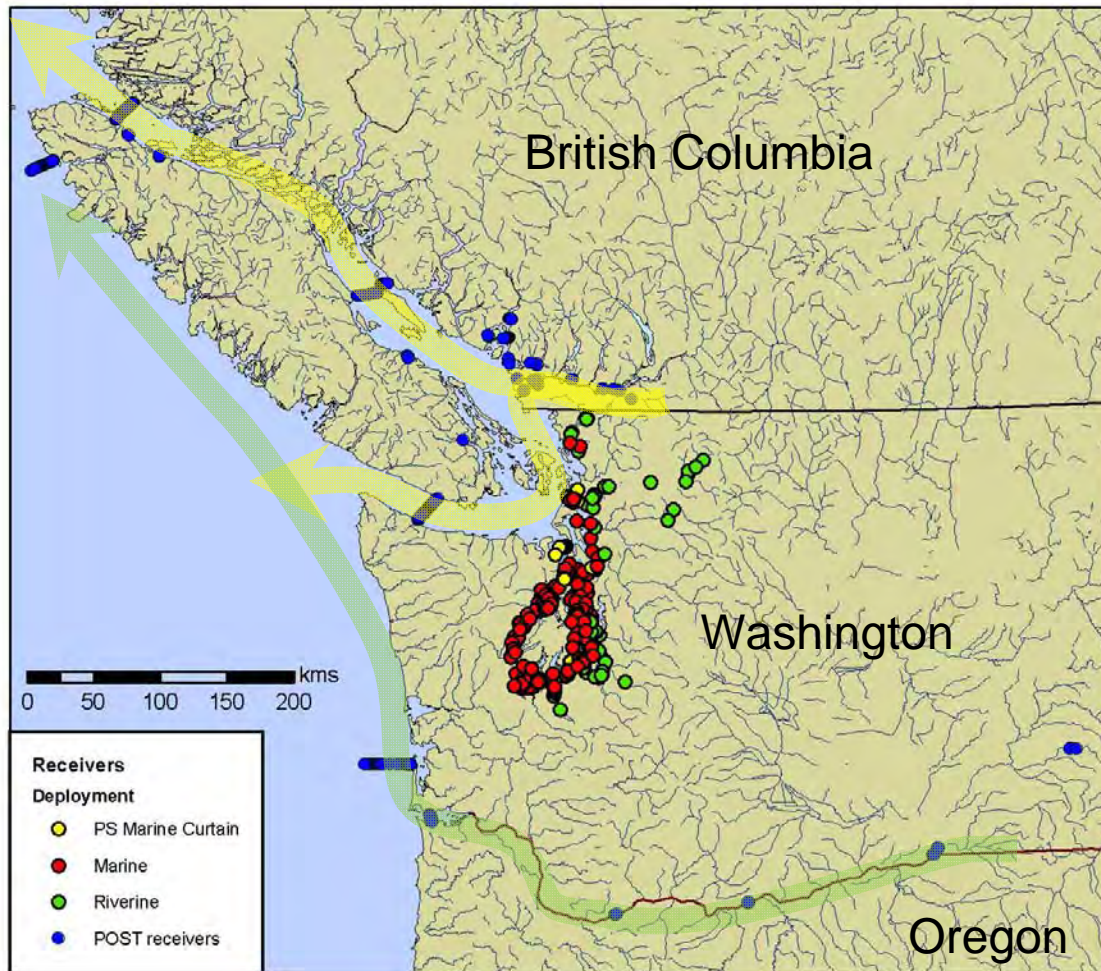


Mel Sheng, DFO

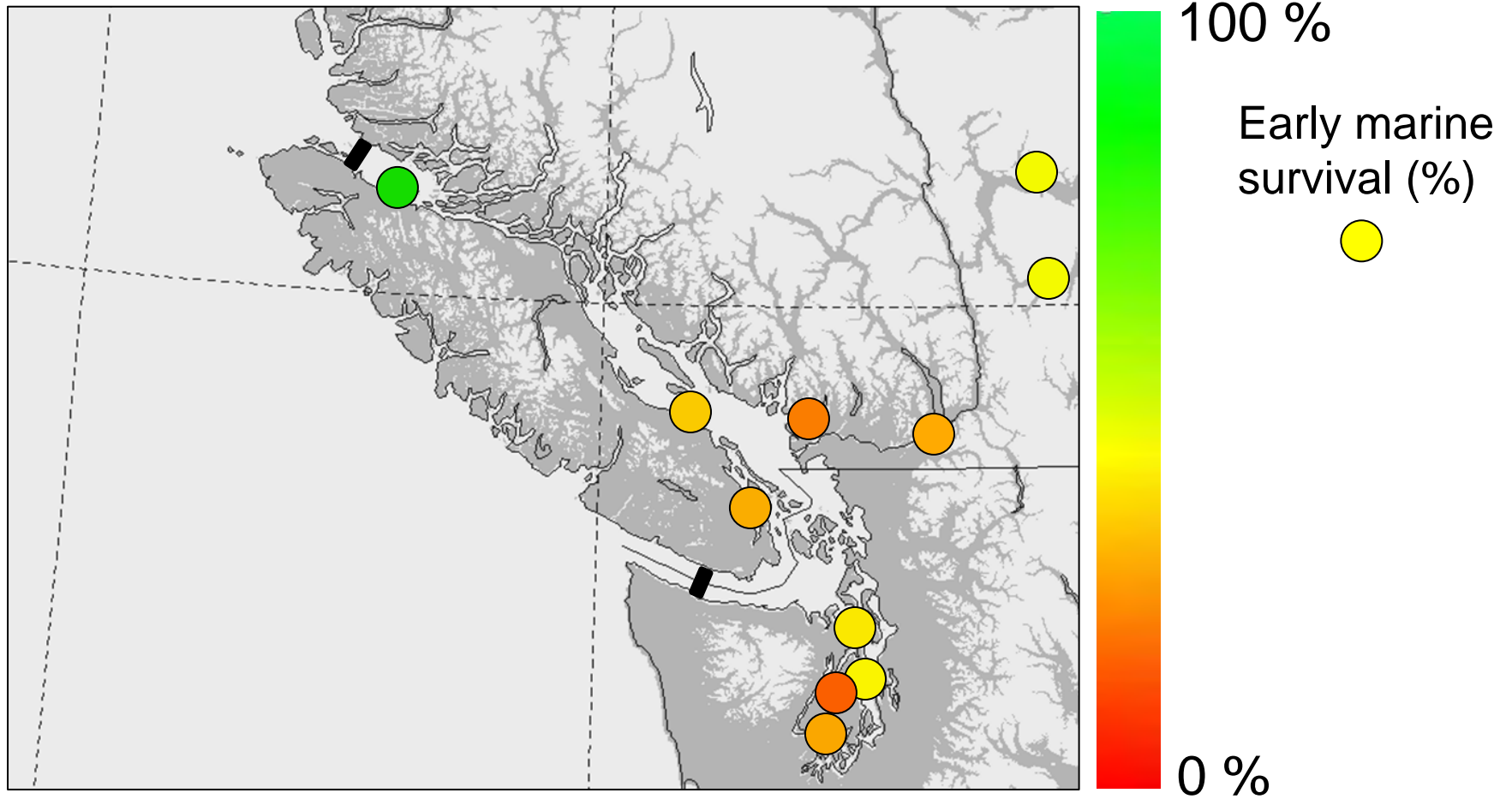




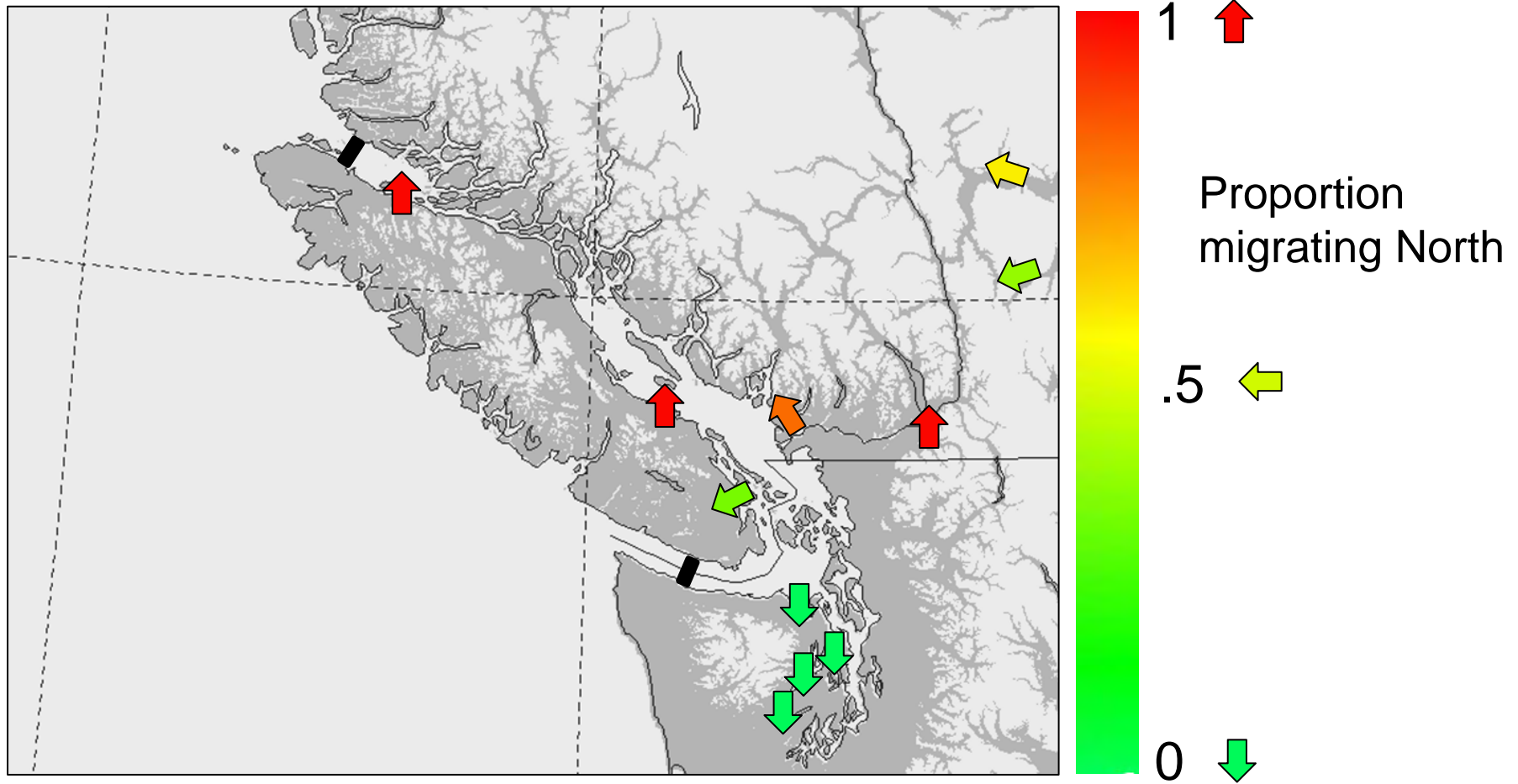
It is possible to estimate survival of migratory species like salmon, using receivers deployed in lines.



Salmon survival is a complex puzzle. Diversity exists at all scales.



Behavioral diversity means there are no “one-size-fits-all” answers for management.



Other recent salmon findings:



High mortality in WA and BC Steelhead

Diverse mortality and migration patterns in Strait of Georgia coho

No evidence of lingering effects on the survival of juvenile chinook that passed through Columbia River dams; also, barging fish around dams may not improve their overall survival

Marine migratory behavior of a steelhead-cutthroat hybrid was measurably distinct from both parent species.

Tagging effects evaluated (several species)

Last Year....

This Year....

ON TUESDAY, AUGUST 24, 2010

THE GLOBE AND MAIL

CANADA'S NATIONAL NEWSPAPER

INTERNATIONAL AID

Ottawa aims to undermine extremist schools with aid boost for Pakistan

Country's stability key to Afghan mission, Oda says, pledging \$25-million and emphasizing struggling public school system as 'priority'

BY STEPHEN YOUNG FOR THE GLOBE AND MAIL

Canada will provide aid to Pakistan's struggling public school system to help undermine extremist groups, the federal government announced Tuesday. The aid will be used to support the public school system, which is seen as a key to the country's stability.

The aid will be used to support the public school system, which is seen as a key to the country's stability. The aid will be used to support the public school system, which is seen as a key to the country's stability.

FRASER RIVER CRISIS

SALMON RUN DISASTER: 10.6 MILLION SOCKEYE EXPECTED...

ONLY 1.7 MILLION CAME: WHERE HAVE ALL THE SALMON GONE?

B.C.'s Fraser River is usually brimming with life as sockeye 'just boil through' this time of year. Just weeks ago there were predictions of a healthy run, but now 'the river seems dead' as more than nine million salmon mysteriously vanish, creating a fisheries catastrophe. STORY PAGE 6

THE VANCOUVER SUN

Fraser sockeye: Too much bounty?

After three years of inactivity, B.C.'s fishery industry is already struggling to handle the biggest run since 1913

BY DERRICK PENNER, VANCOUVER SUN AUGUST 26, 2010

STORY PHOTOS (1)



STORY TOOLS

- E-mail this
- Print this
- Share this

Font: A A A

POST Legacies



- *A proven concept*
- *A growing physical infrastructure (465 receivers)*
- *Rapidly expanding base of users and data*
 - *49 PI's and 9 M detections of ~16,000 tags on 18 species*
- *An increasingly organized telemetry community that includes The Ocean Tracking Network*
- *Valuable baseline data on survival and migration*
- *New abilities to test hypotheses about population regulation of marine species on the continental shelves*

Looking forward

More observations...

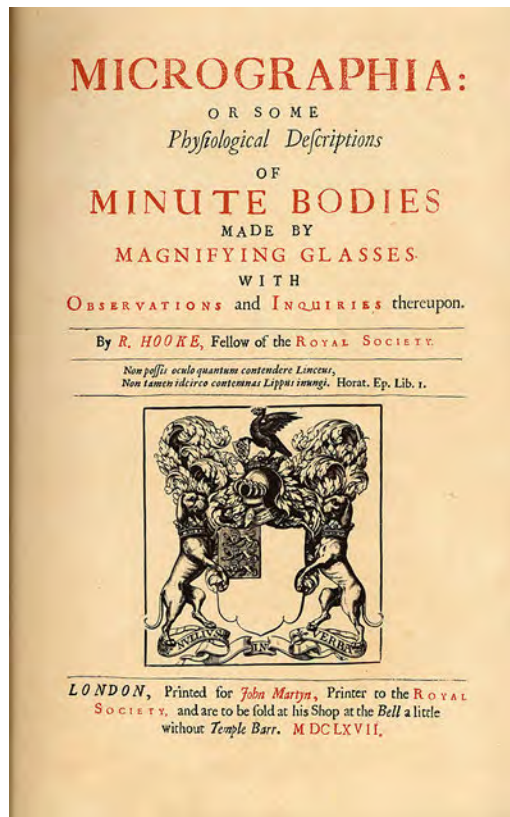


Table of Contents

Observ. **I.** *Of the Point of a sharp small Needle.*

Observ. **II.** *Of the Edge of a Razor.*

Observ. **III.** *Of fine Lawn, or Linnen Cloth.*

Observ. **VII.** *Of some Phænomena of Glass drops.*

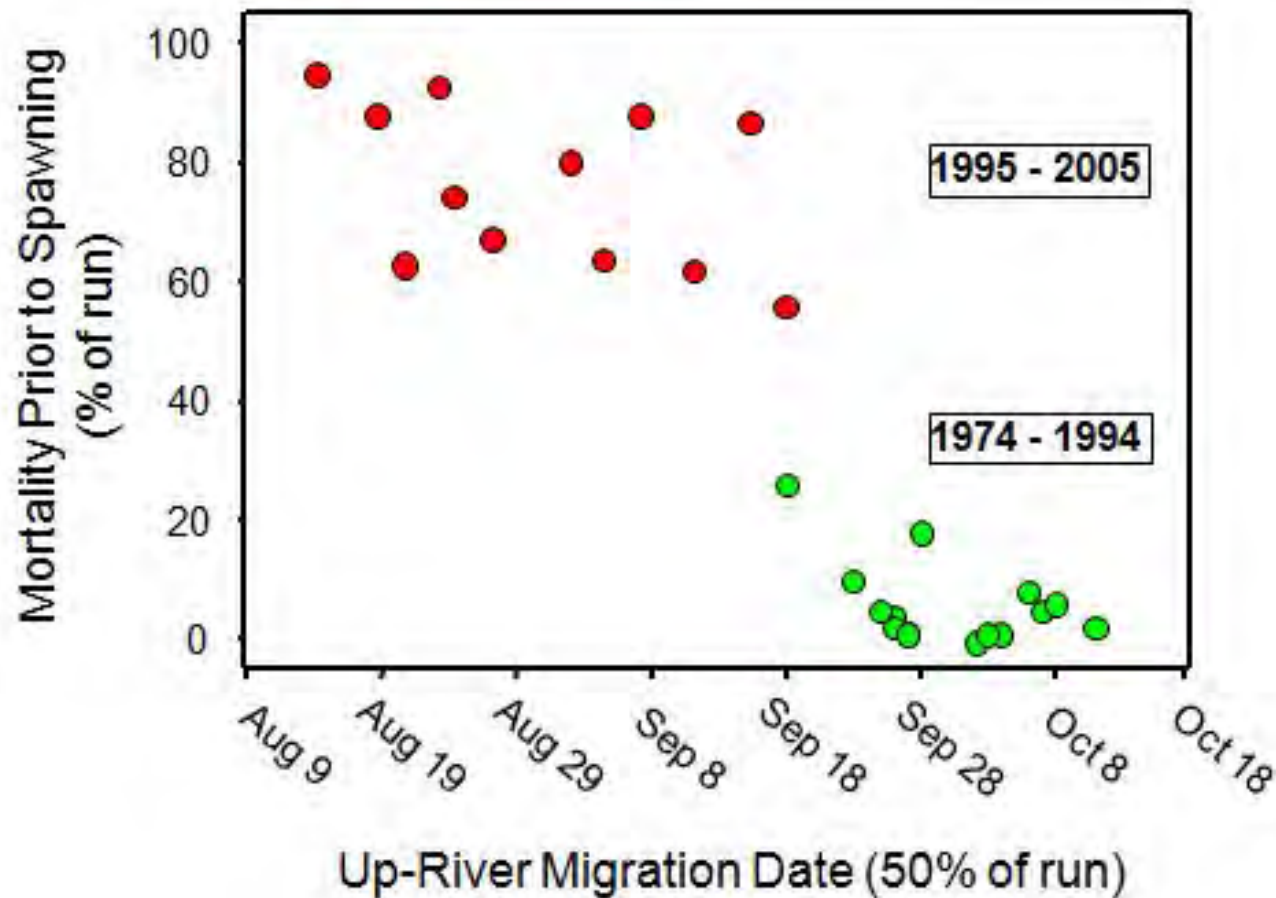
Observ. **VIII.** *Of the fiery Sparks struck from a Flint or Stone.*

Observ. **XII.** *Of Gravel in Urine.*

Observ. **XIV.** *Of several kindes of frozen Figures.*

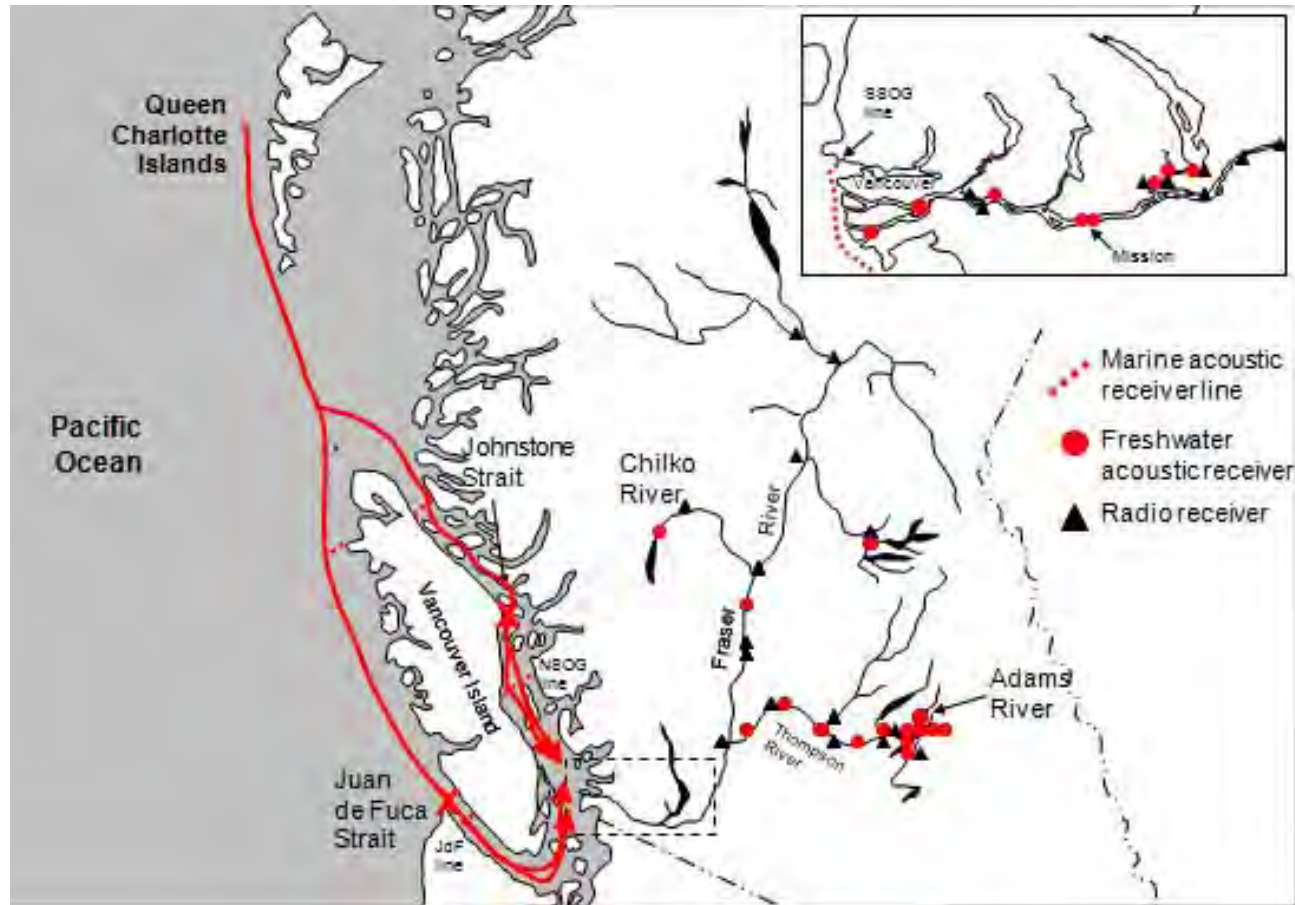
...particularly on small species

Making best use of tracking data (an example)



Crossin, Hinch, Farrell, Cooke et al.

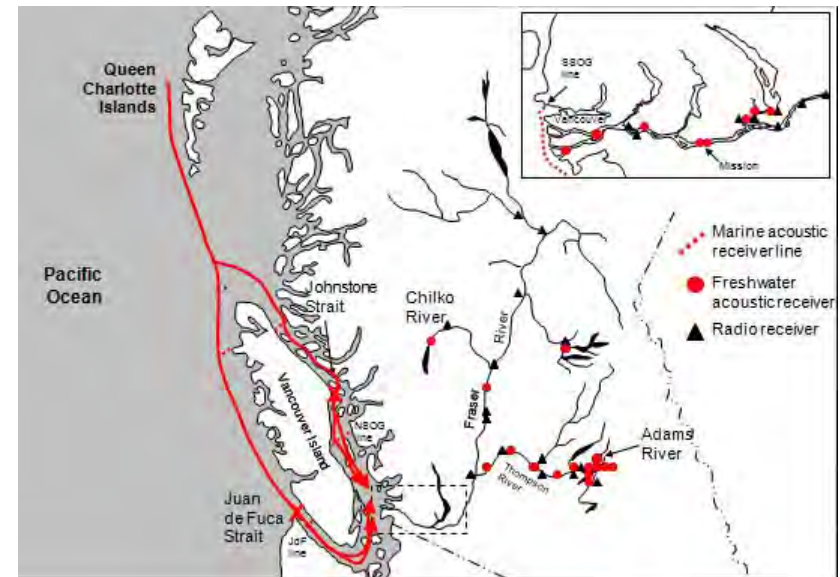
Acoustic arrays are most powerful when used in combination with other methods to test hypotheses



Crossin, Hinch, Farrell, Cooke et al.

Methods

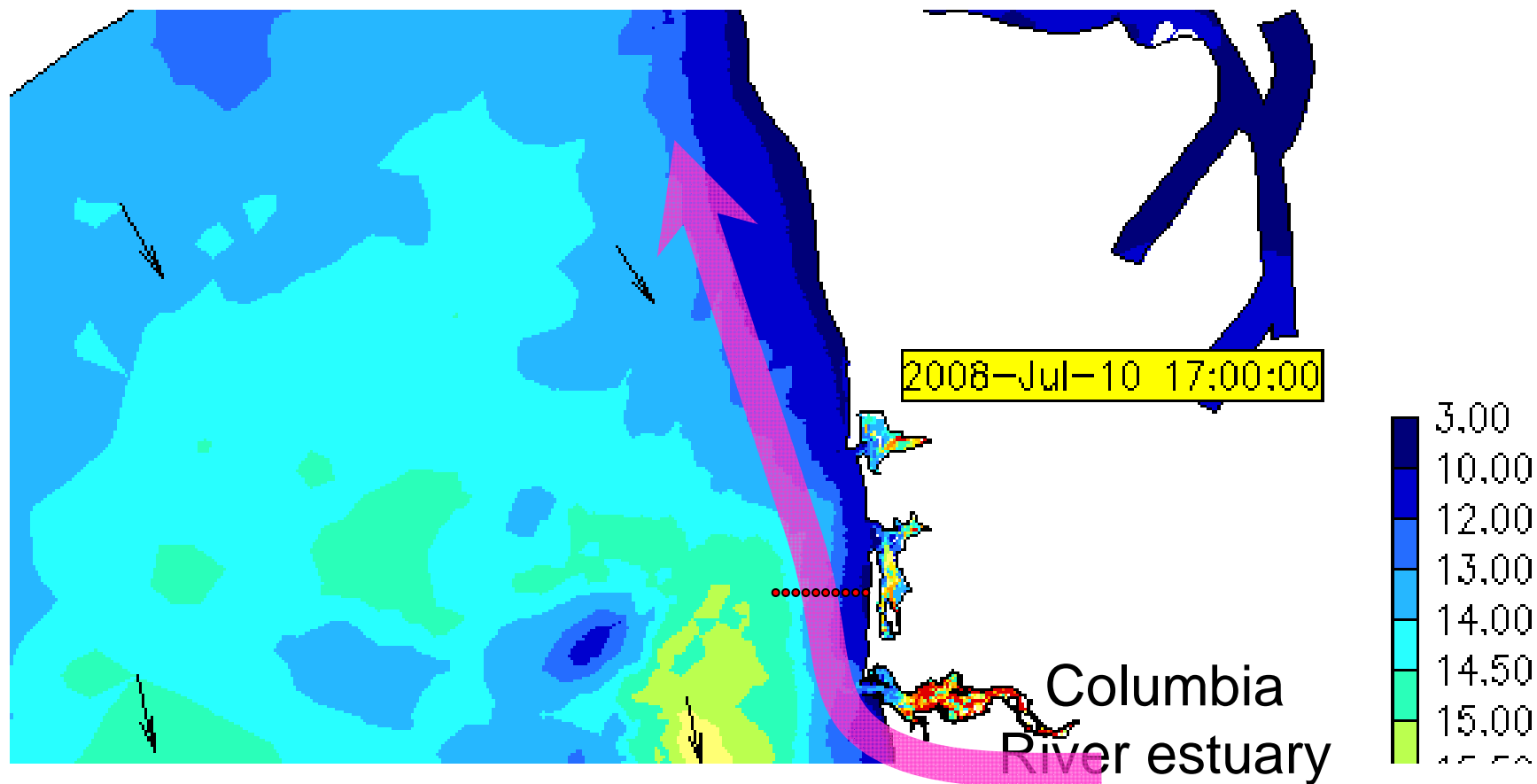
1. Non-lethal biopsy for physiological markers
(gross somatic energy, plasma ions (Na^+ , Cl^-), metabolites (lactate, glucose), sex hormones (T , E_2), stress hormones (cortisol), gill Na^+ , K^+ -ATPase, adipose clip for DNA)
2. Acoustic transmitters attached
3. Manipulations
 - Fish held at different temperatures on their way upriver
 - Hormone (GnRH) implants



Results

- Early-entry fish exceed their thermal limits (aerobic capacity)
- Strong correlations between reproductive maturity, preparedness for freshwater, and early entry
- Evidence that fate is set when salmon are >600 km from the river

Another way to integrate tracking data



[http://www.ccalmr.ogi.edu/CORIE/hindcasts/database/
base_frame.html](http://www.ccalmr.ogi.edu/CORIE/hindcasts/database/base_frame.html)

(July 2008 salinity estuary)

Improving the macroscope



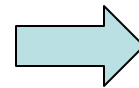
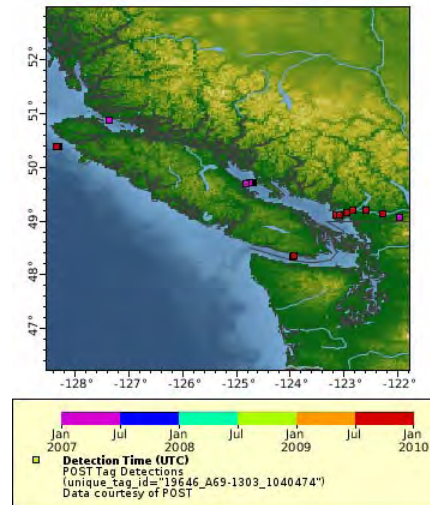
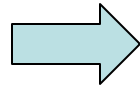
Smaller tags, better knowledge of tag effects



Mobile receivers carried by animals or seaglidors



Integration with other data



*OBIS
IOOS
OTN
TOPP
etc.*

THANKS to the many friends and collaborators who
have made *POST* a success.

