

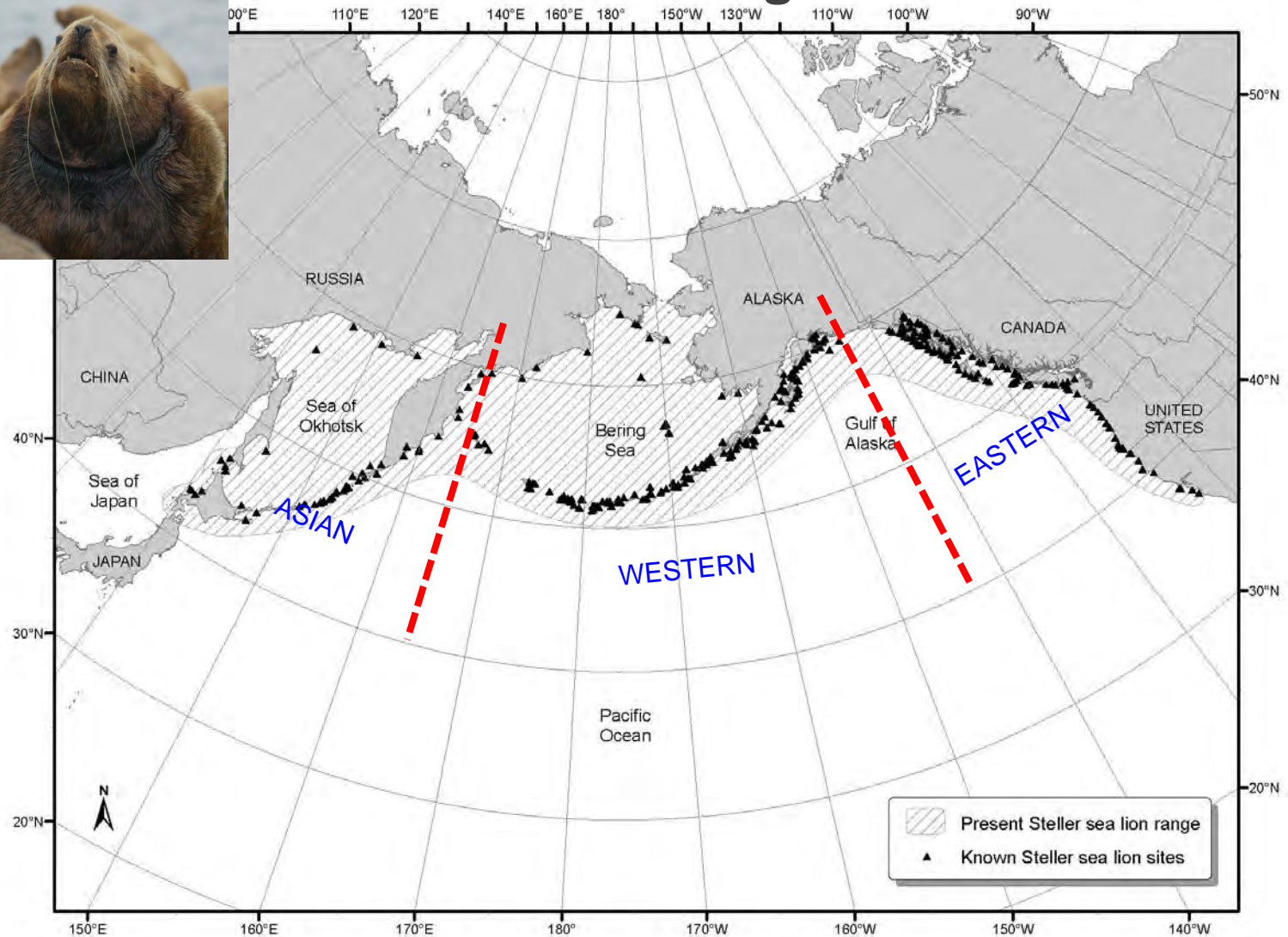
RUSSIAN SSL STUDIES UPDATE



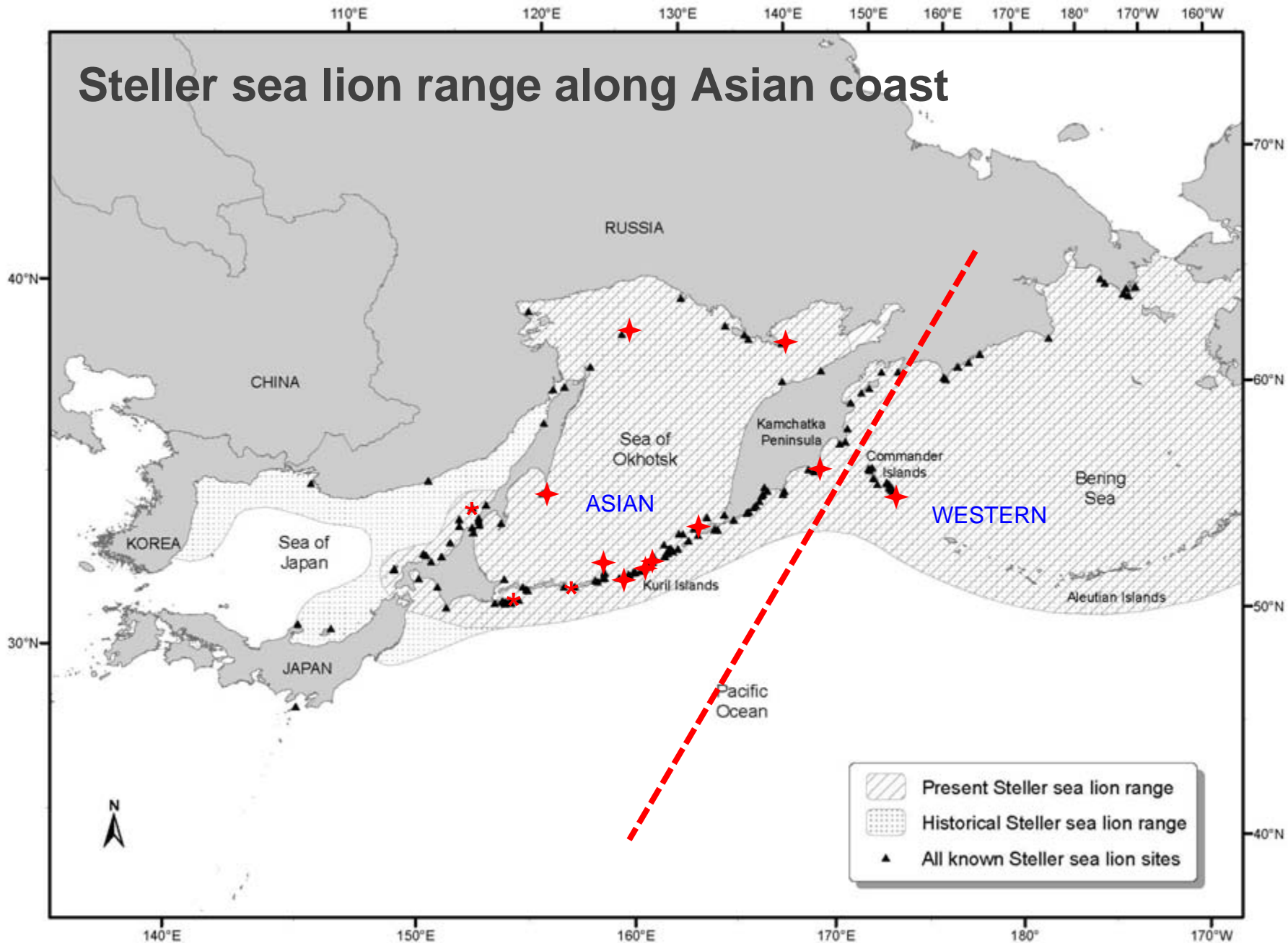
Vladimir Burkanov,
National Marine Mammal Laboratory, AFSC, NMFS,
NOAA, Seattle, USA
Kamchatka Branch of Pacific Institute of Geography
FEB RAS, Petropavlovsk-Kamchatsky, Russia



Steller sea lion range



Steller sea lion range along Asian coast



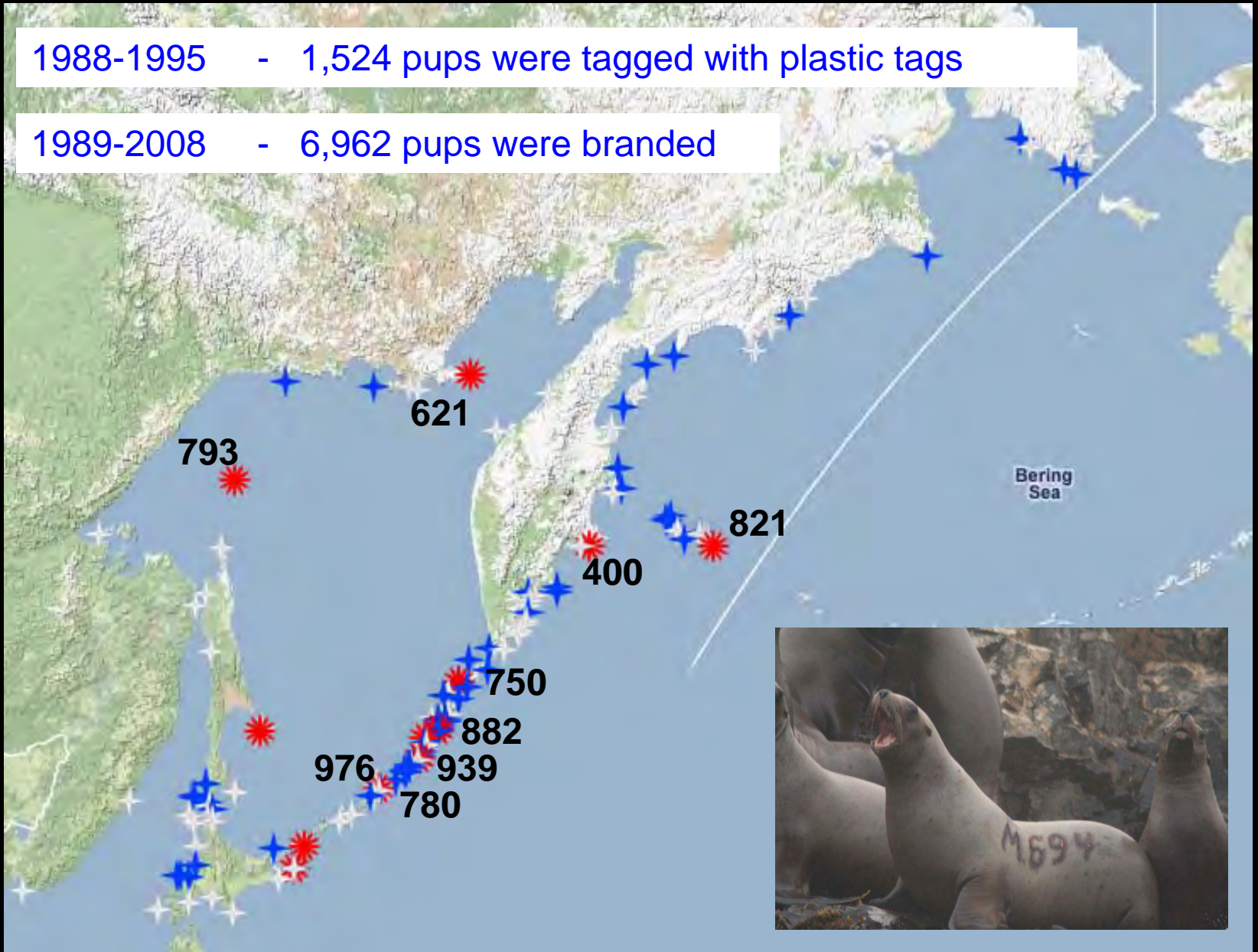
Research activities:

- Surveys during breeding season
- Pup branding & brand resight
- Sampling (blood, biopsies, scats, skulls, etc.)
- Behavior observation studies (attendance, reproduction activity, etc.)
- Telemetry studies of foraging ecology (fine scale movement, diving behavior, video recoding of foraging activity, etc.)

SSL PUP BRANDING PROGRAM RESULTS:

1988-1995 - 1,524 pups were tagged with plastic tags

1989-2008 - 6,962 pups were branded



2,603 branded animals resighted in 1990-2008 (37%)

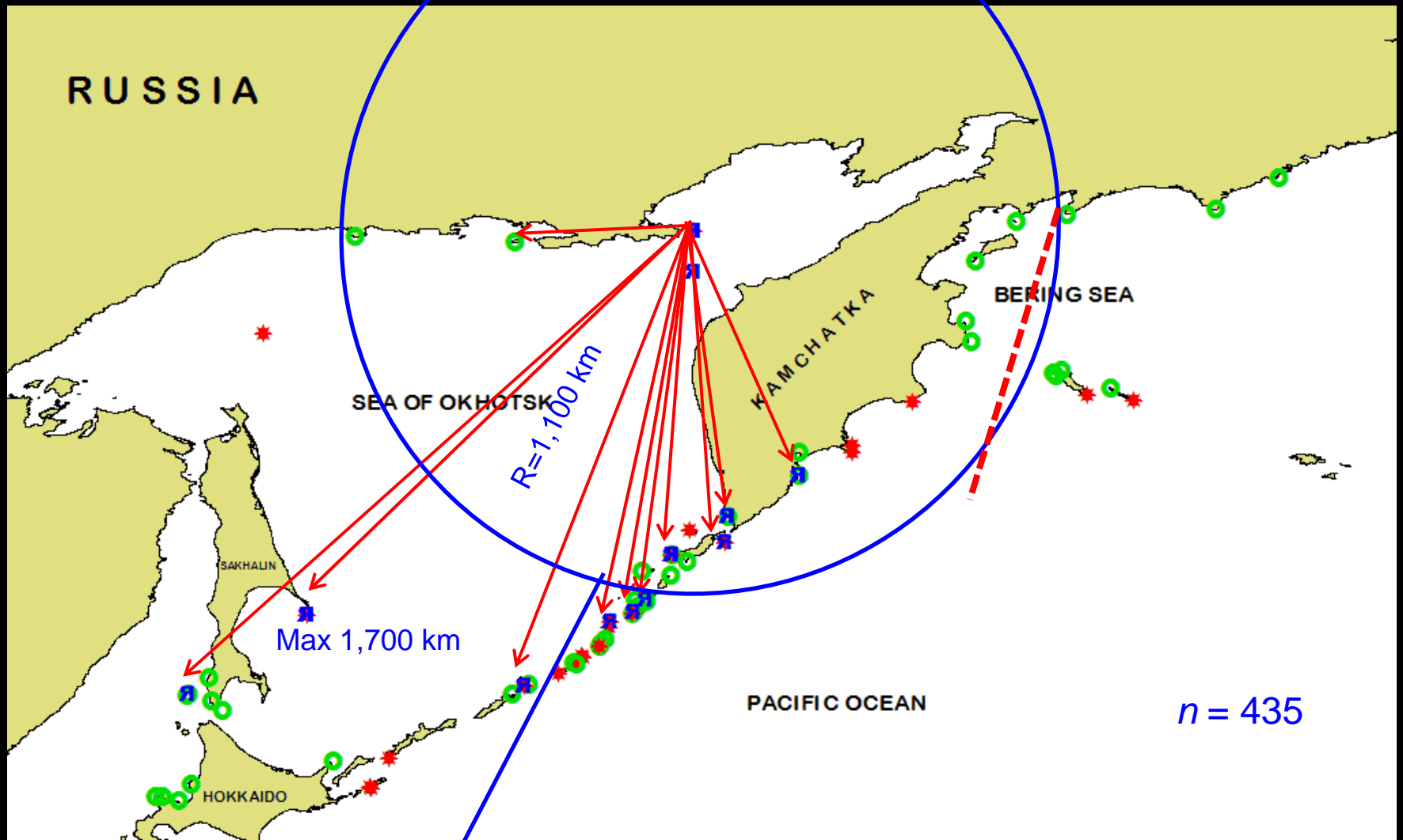
1,870 branded animals resighted in June-July 2002-2007 (72%)



DISPERSAL

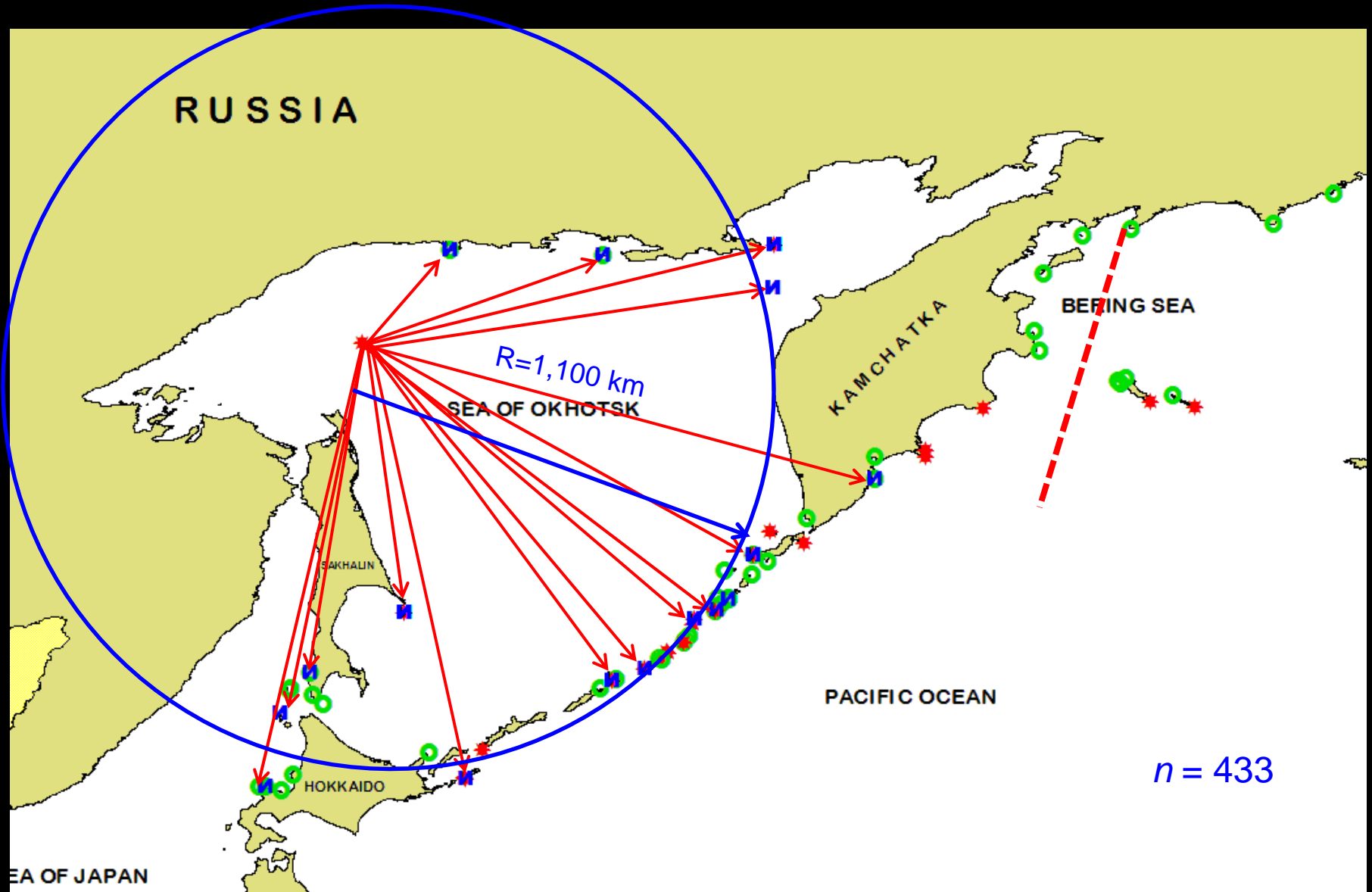
STELLER SEA LION DISPERSAL:

YAMSKY ISLANDS ROOKERY



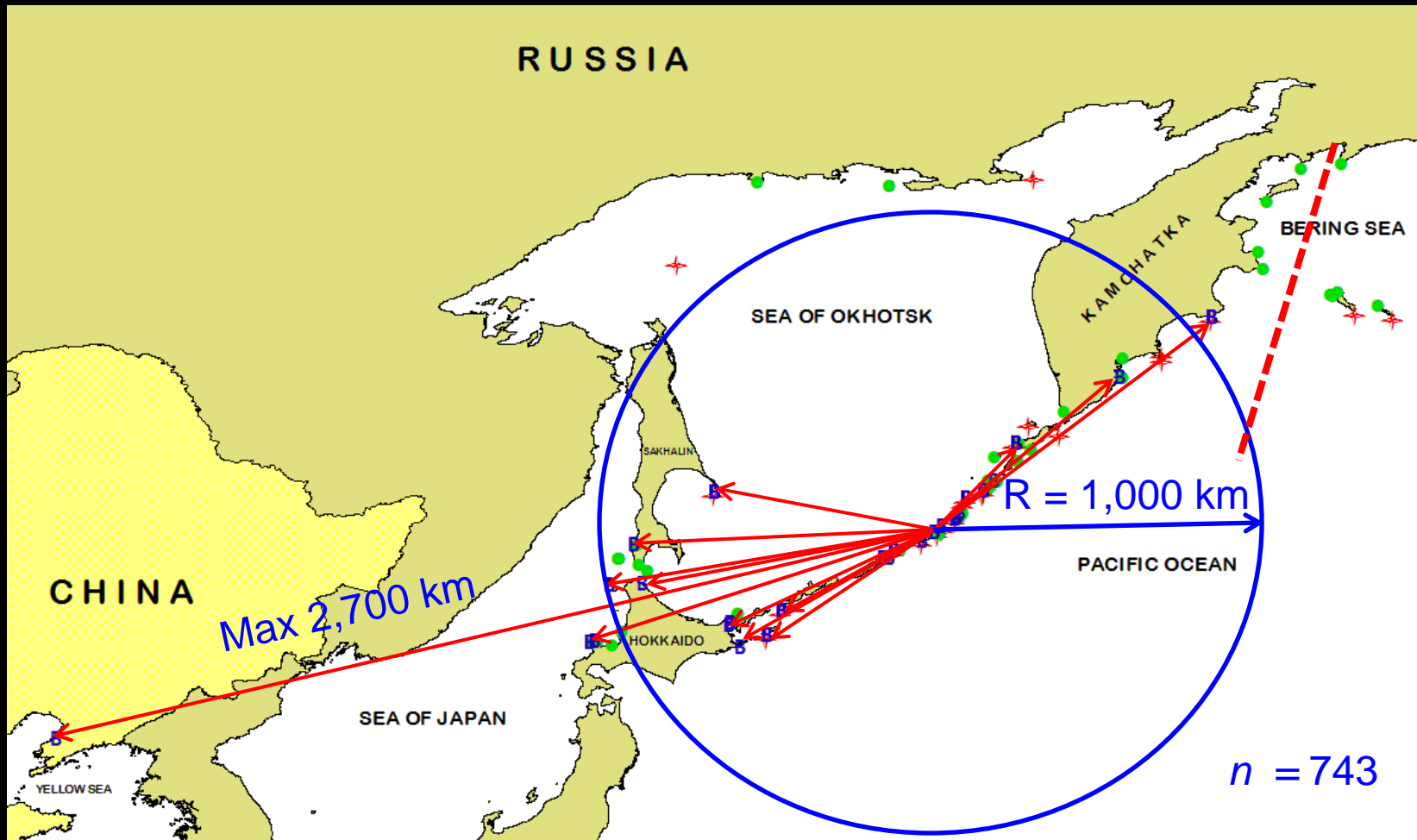
STELLER SEA LION DISPERSAL:

IONY ROOKERY



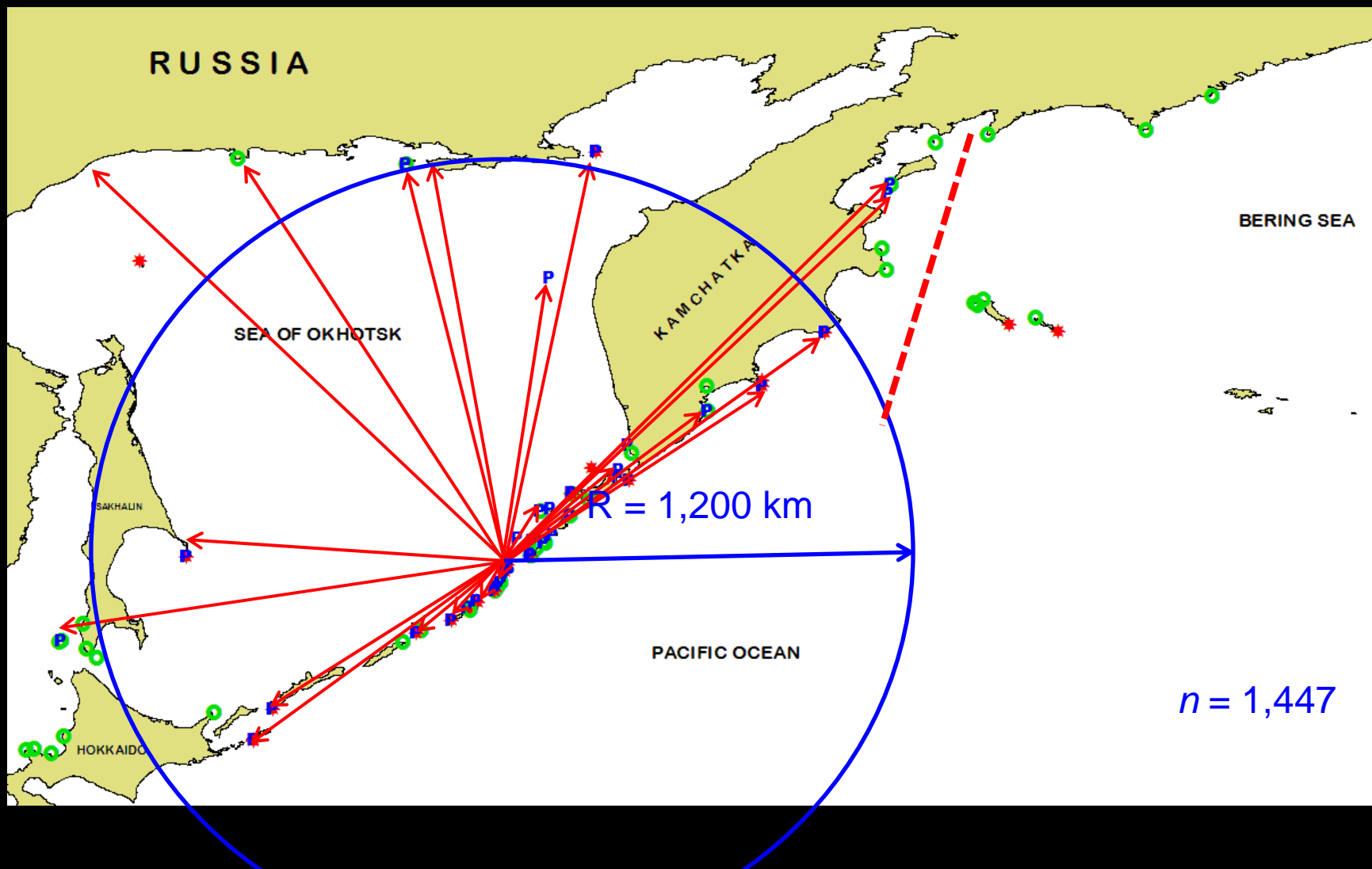
STELLER SEA LION DISPERSAL:

B. CHIRPOEV ROOKERY



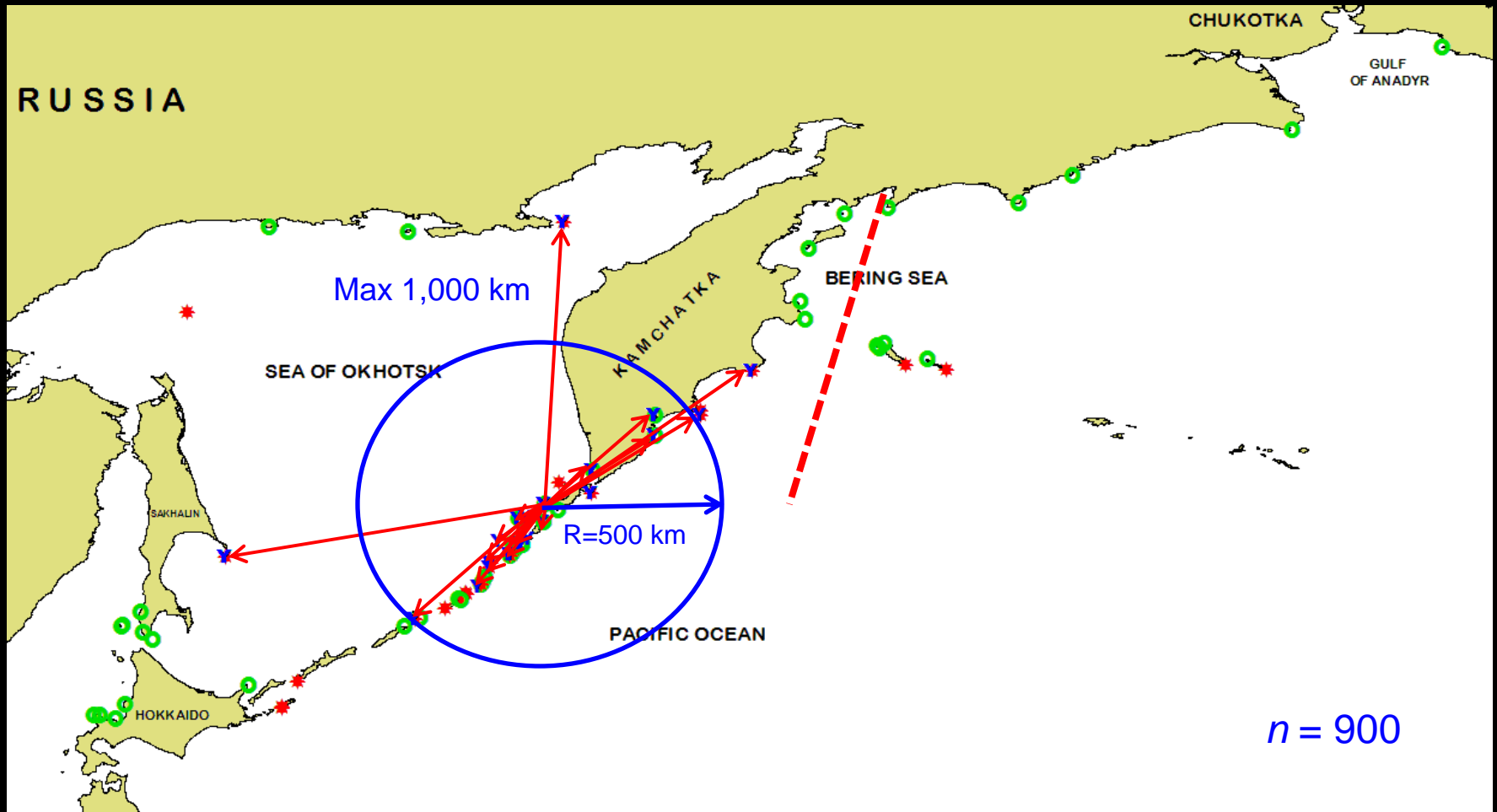
STELLER SEA LION DISPERSAL:

RAYKOKE ROOKERY



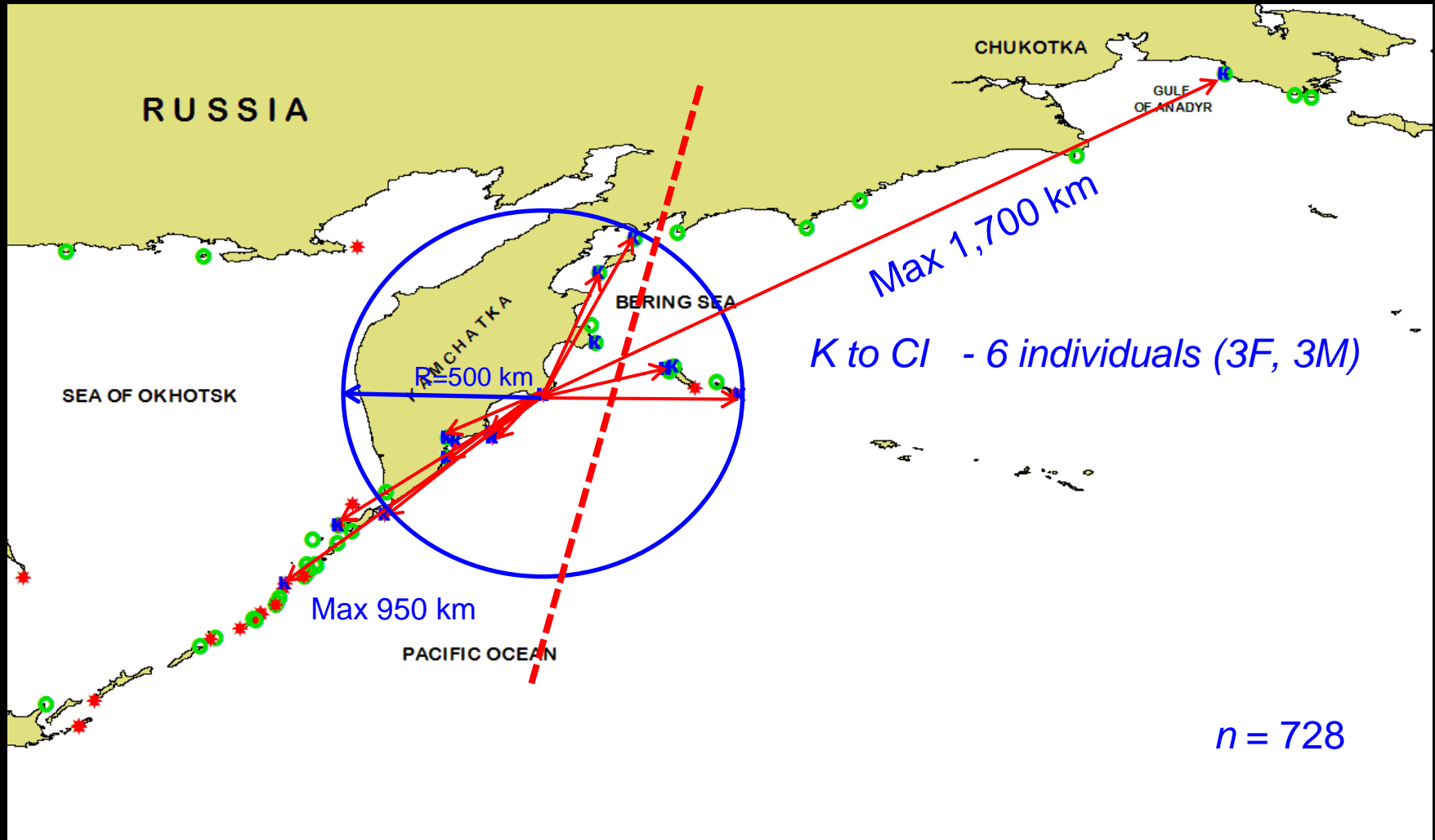
STELLER SEA LION DISPERSAL:

ANTSIFEROV ROOKERY



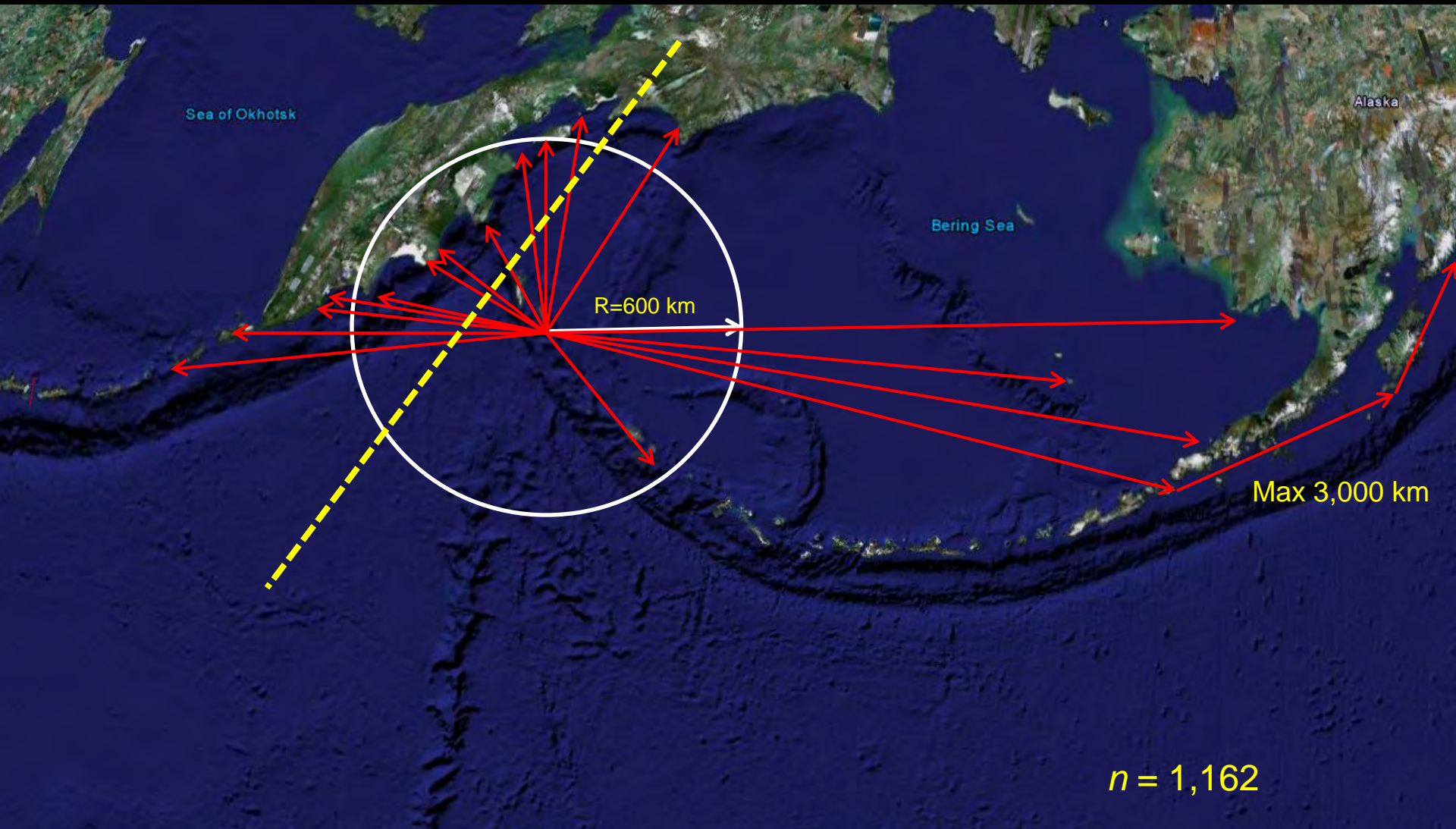
STELLER SEA LION DISPERSAL:

KOZLOVA CAPE ROOKERY



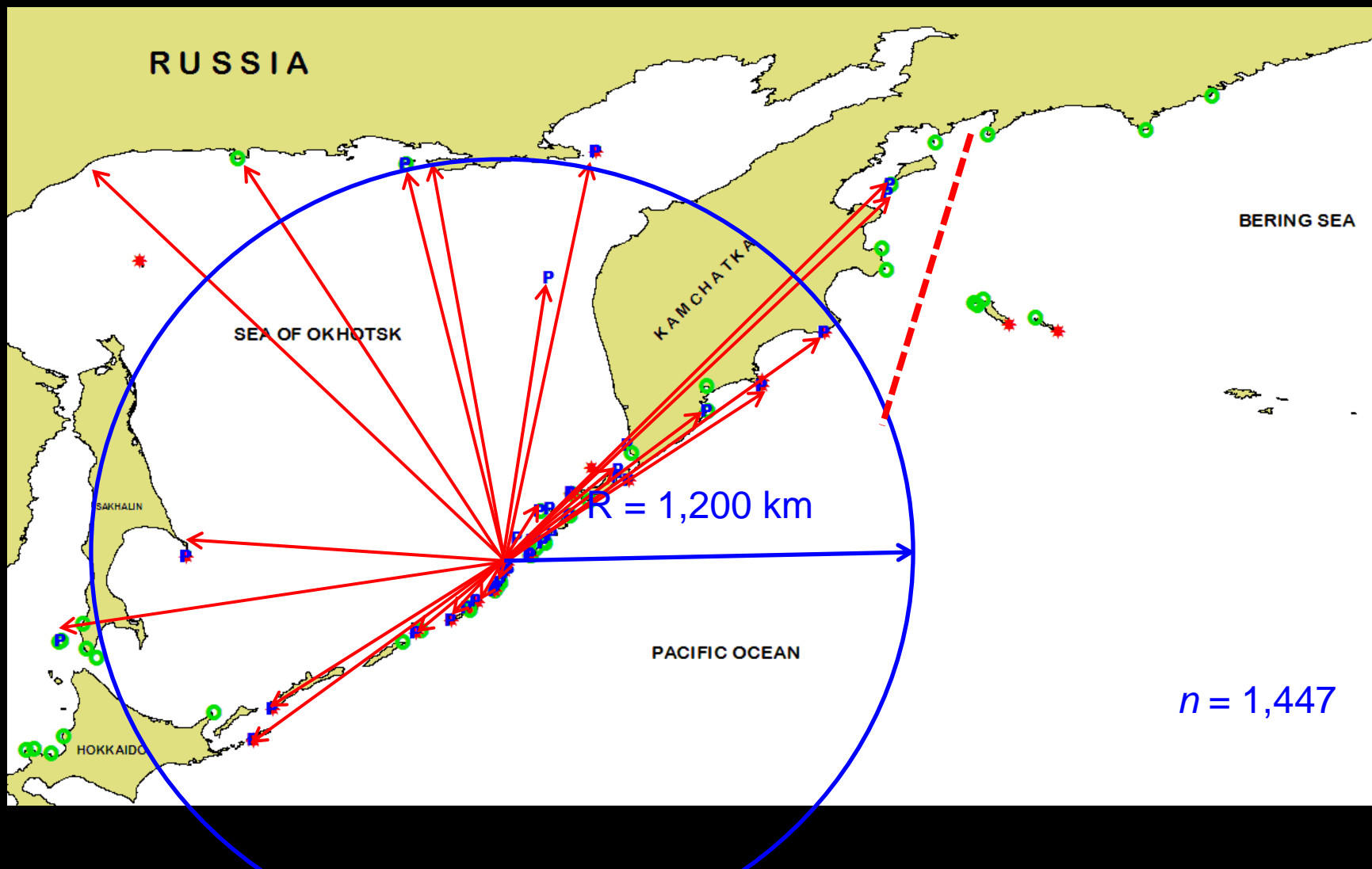
STELLER SEA LION DISPERSAL:

MEDNY ROOKERY



STELLER SEA LION DISPERSAL:

RAYKOKE ROOKERY



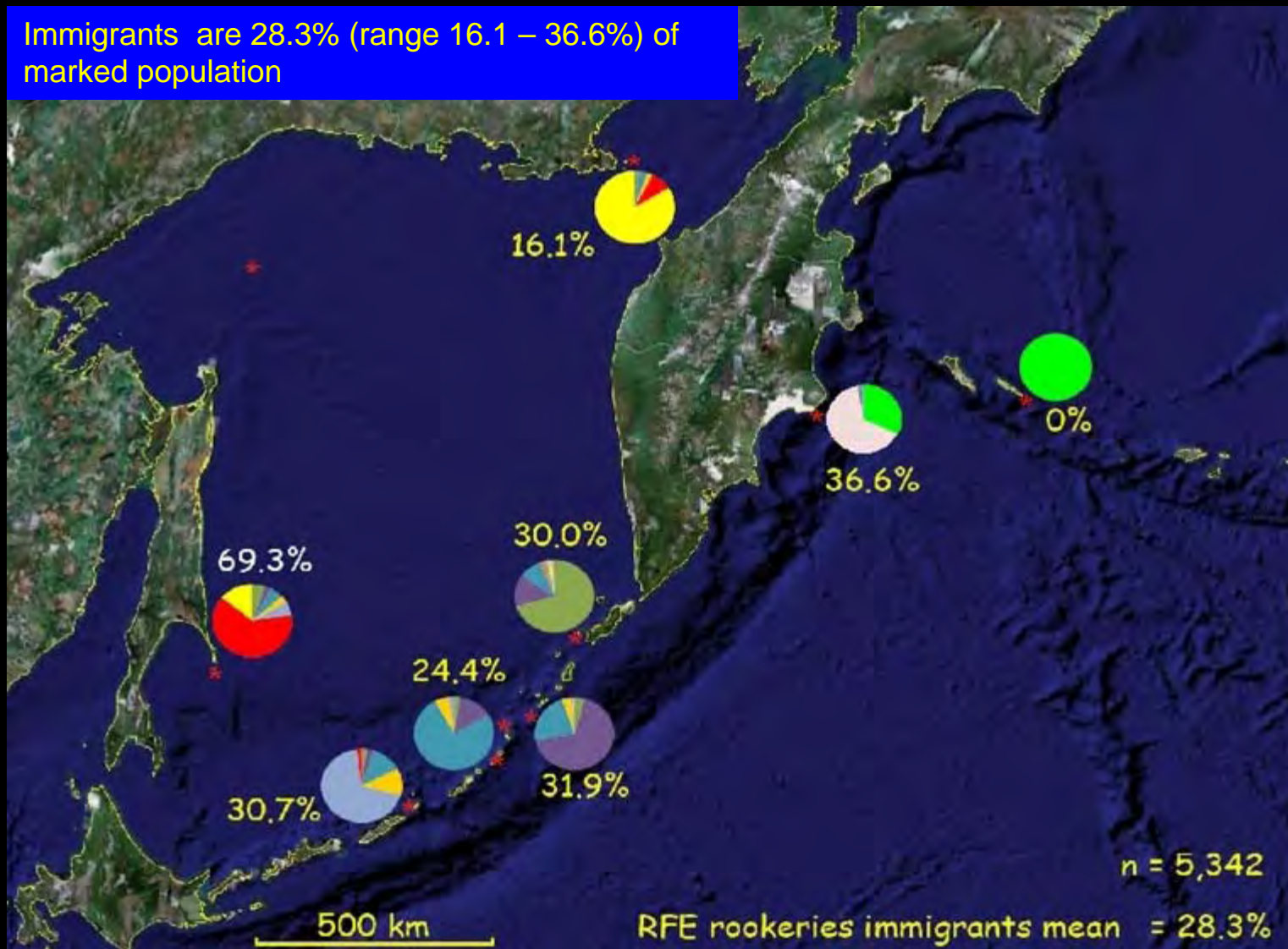
PHILOPATRY

&

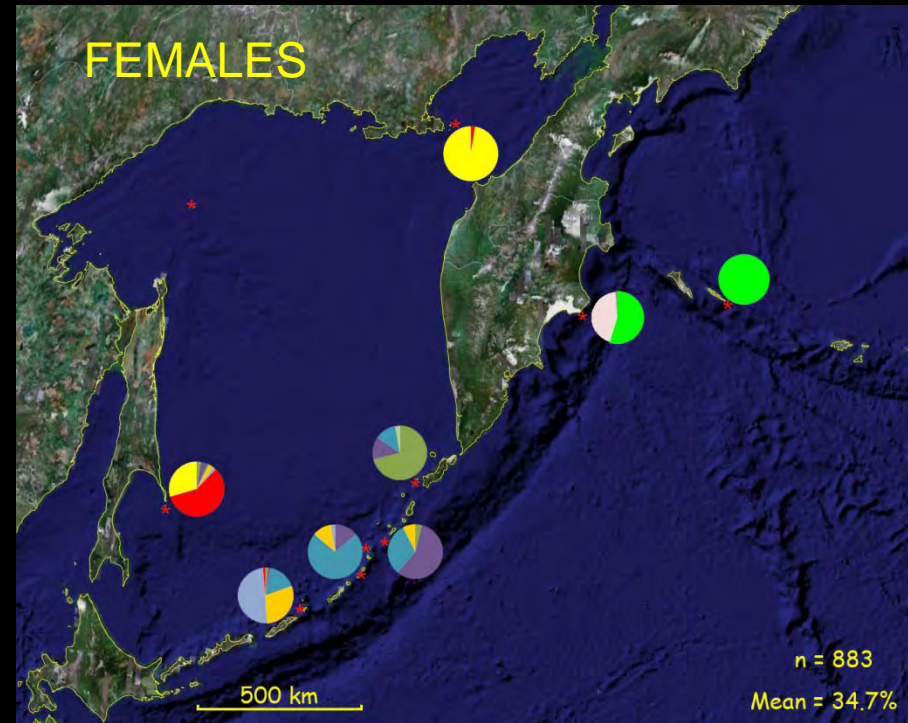
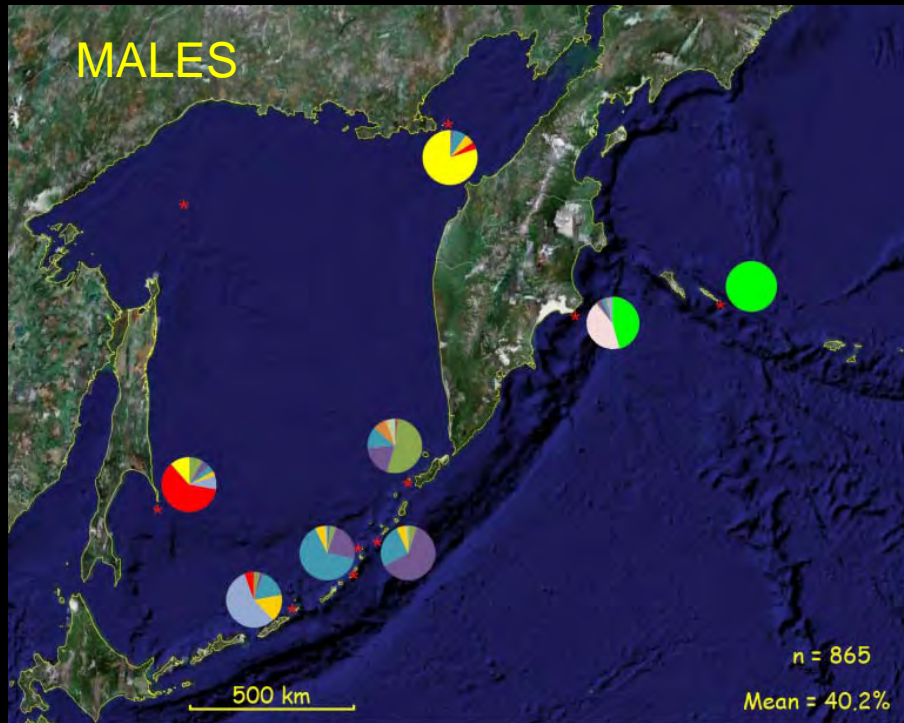
METAPOPULATION STRUCTURE

2002-2008: ALL MARKED ANIMALS (both sexes):

Immigrants are 28.3% (range 16.1 – 36.6%) of marked population

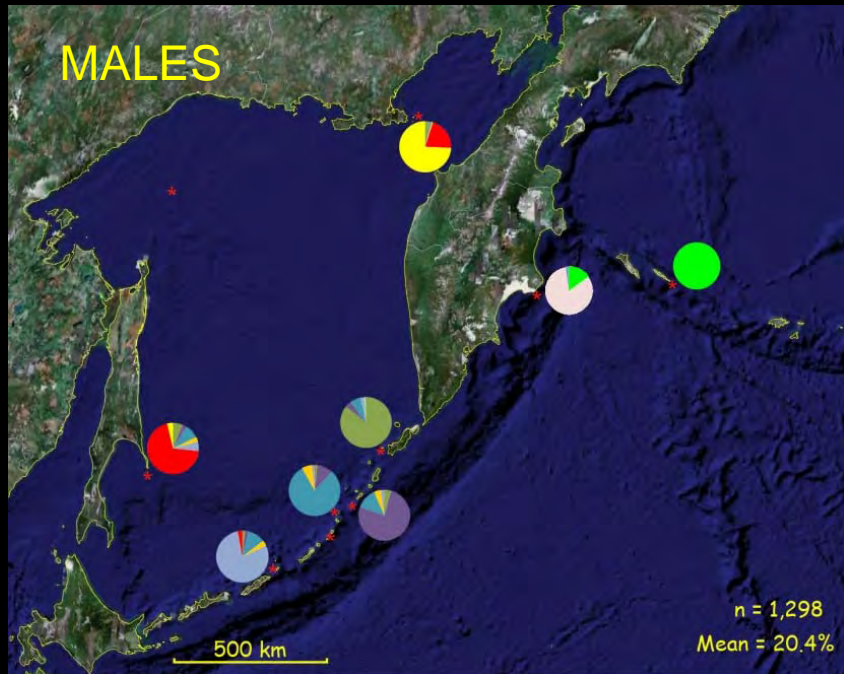


2002-2008: JUVENILE (age 1 - 3 years old)

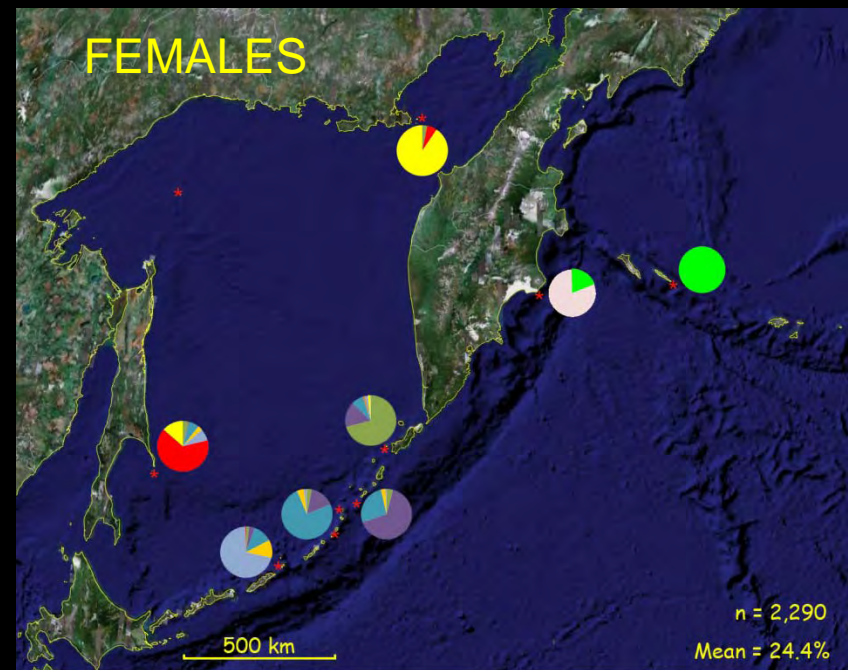


proportion of males immigrants was higher than females

2002-2008: MATURE ANIMALS (age 4+)



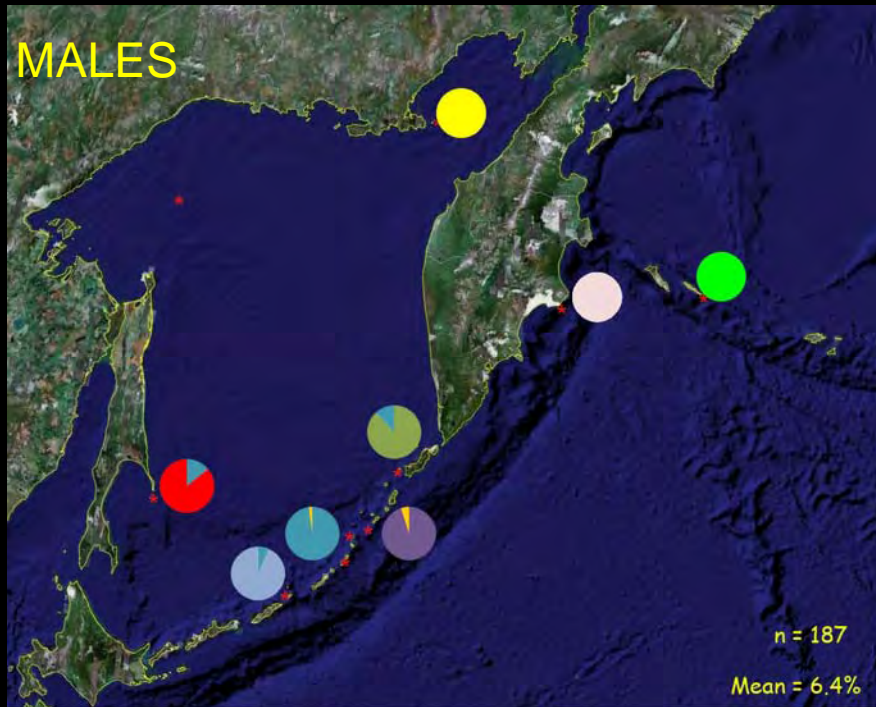
(range 17.2 - 25.7%)



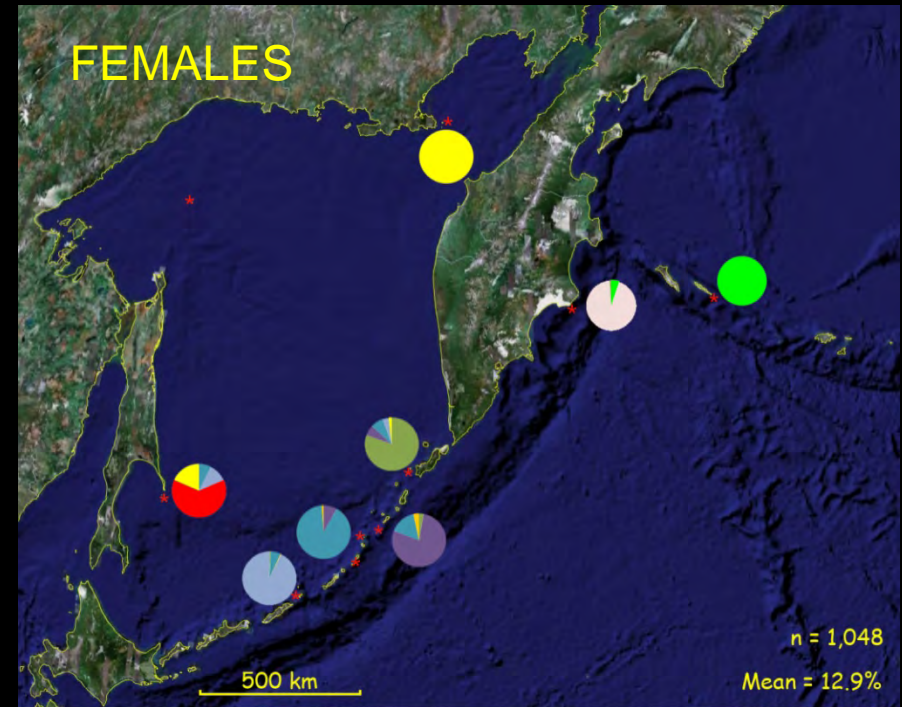
(range 9.5 - 34.2%)

proportion of females immigrants was slightly higher than males

2002-2008: BREEDING IMMIGRANTS



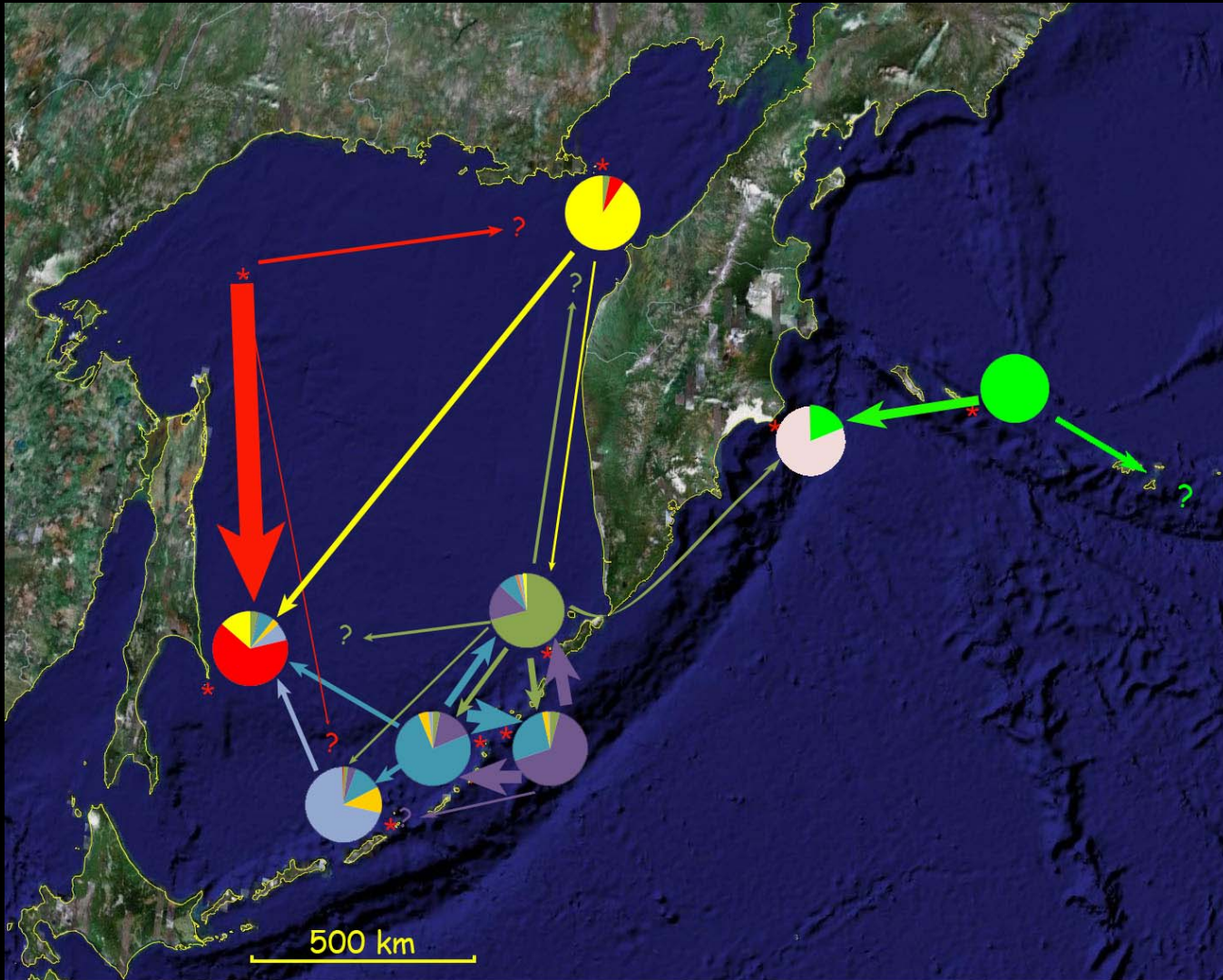
(range 2.0 – 12.0%)



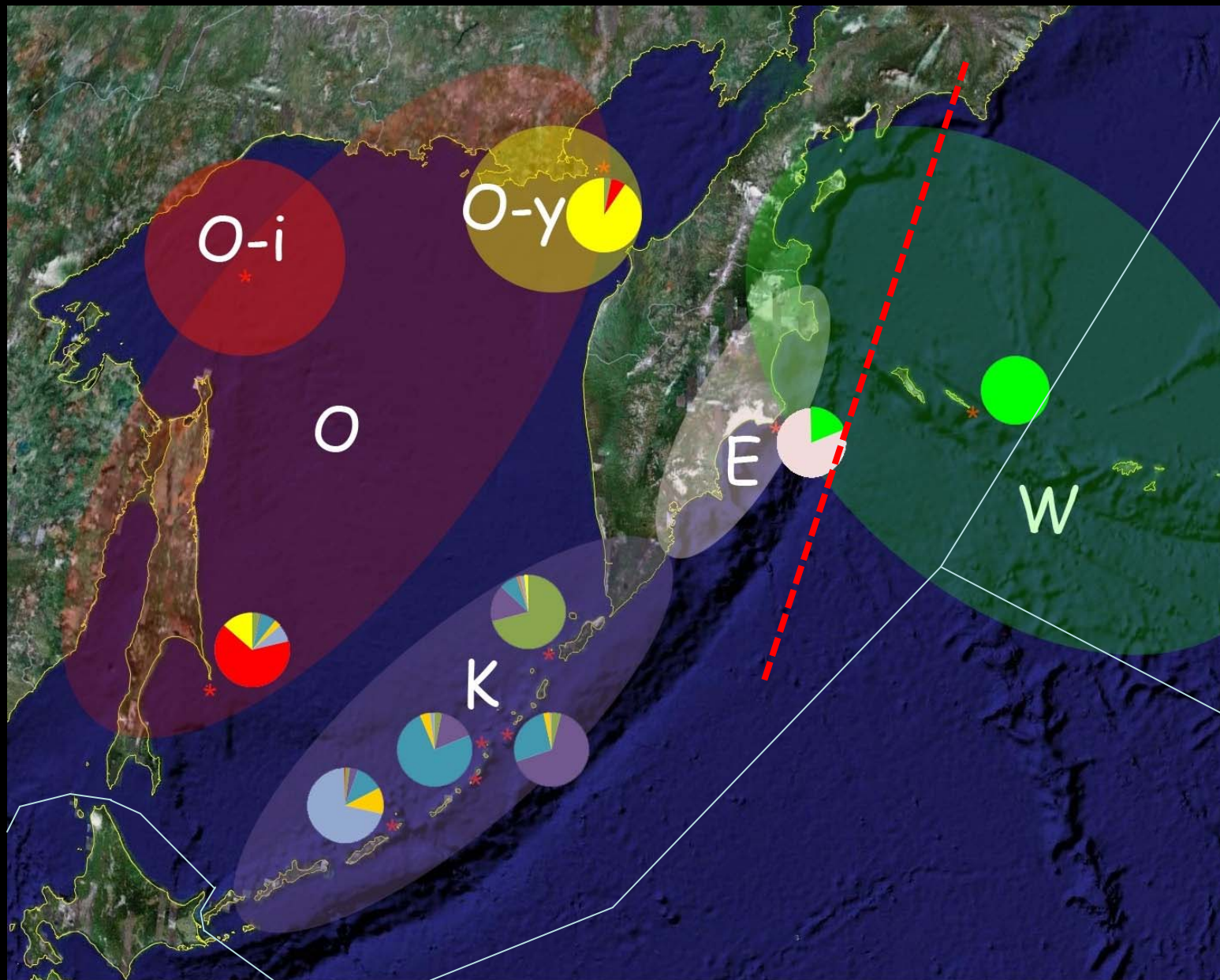
(range 6.2 - 22.4%)

proportion of immigrants among breeding females was 2-3 times higher than among males

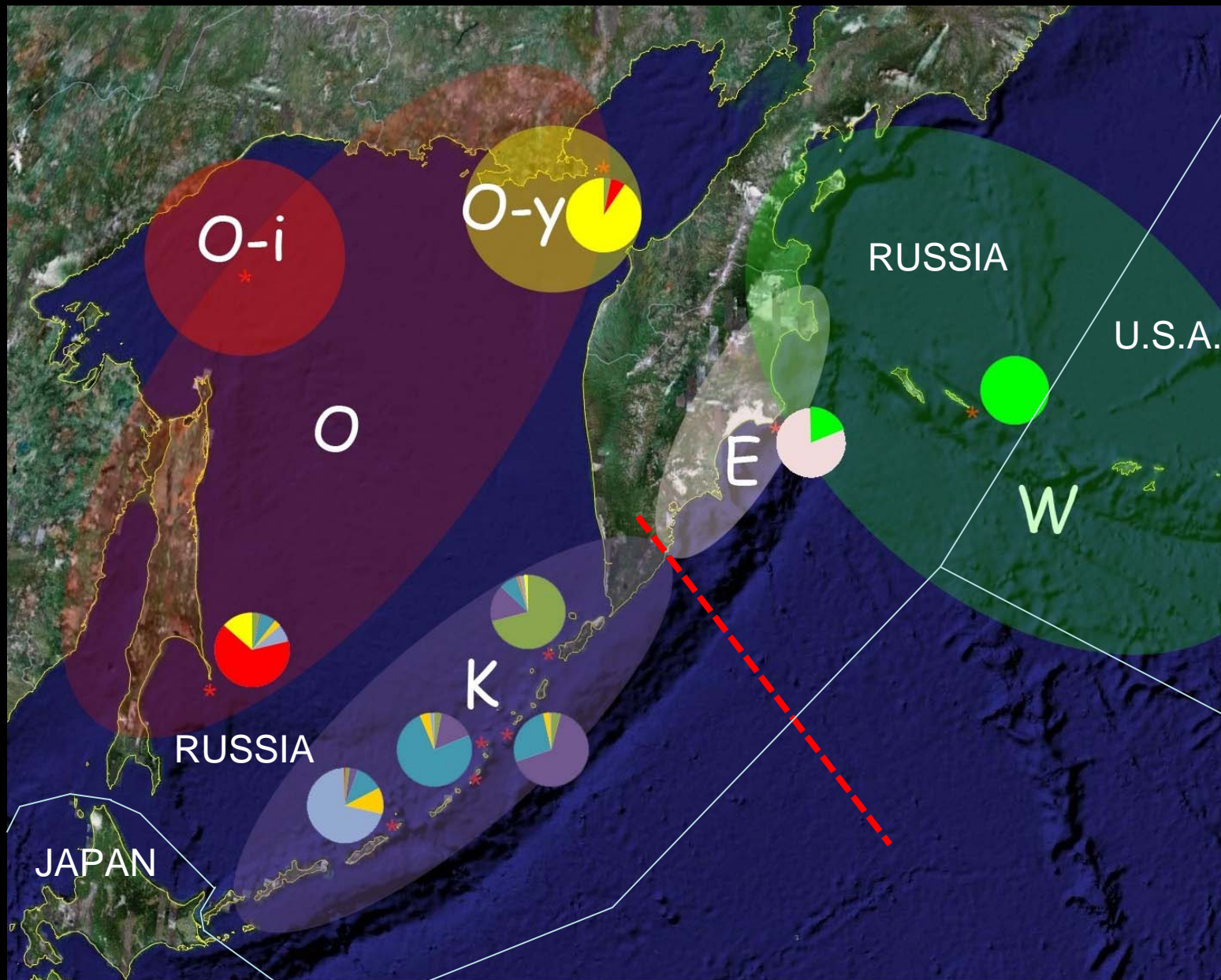
Relation between Steller sea lion rookeries in Russian Far East



Current Steller sea lion stock structure along Asian coast



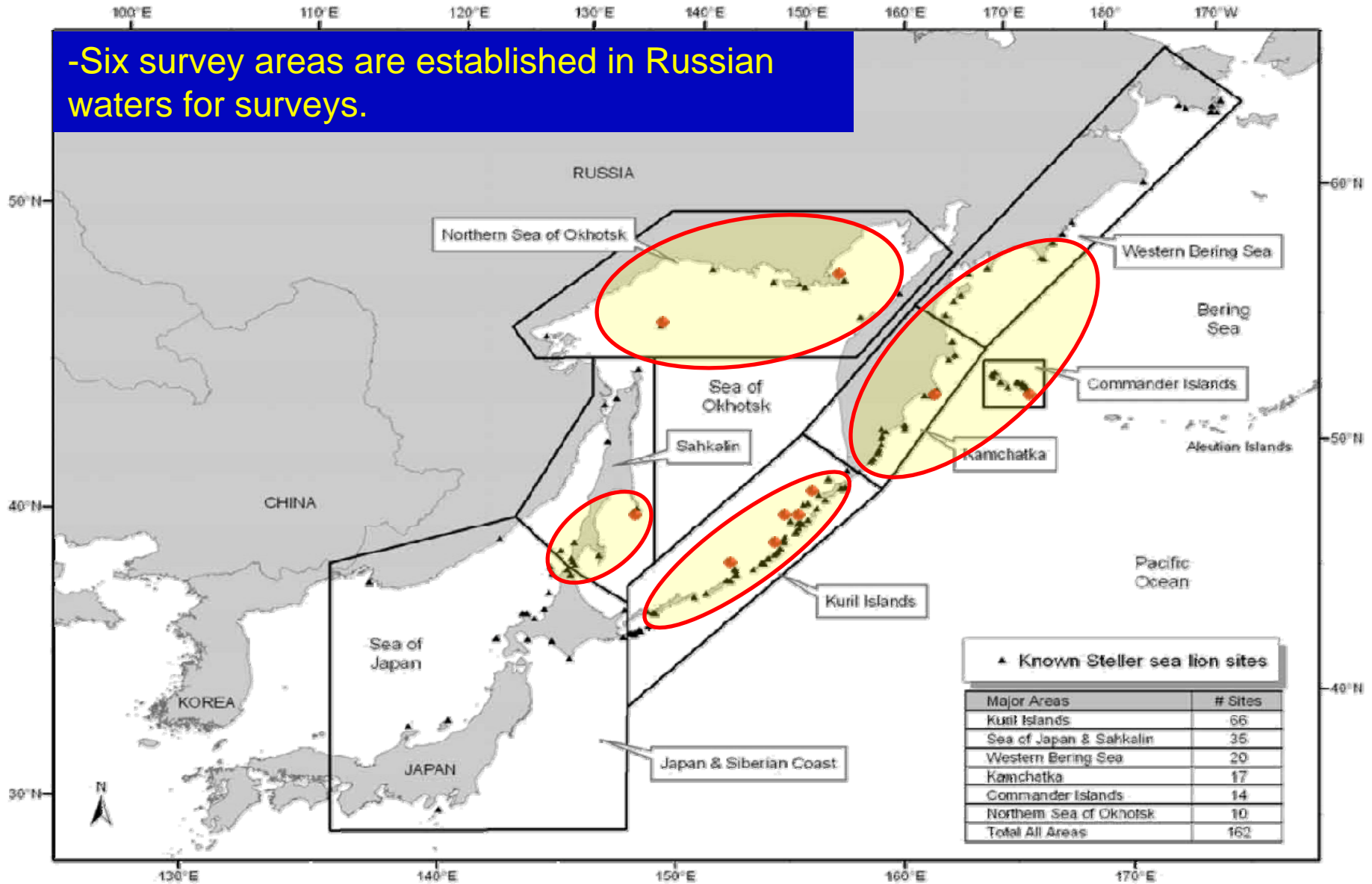
Current Steller sea lion stock structure along Asian coast



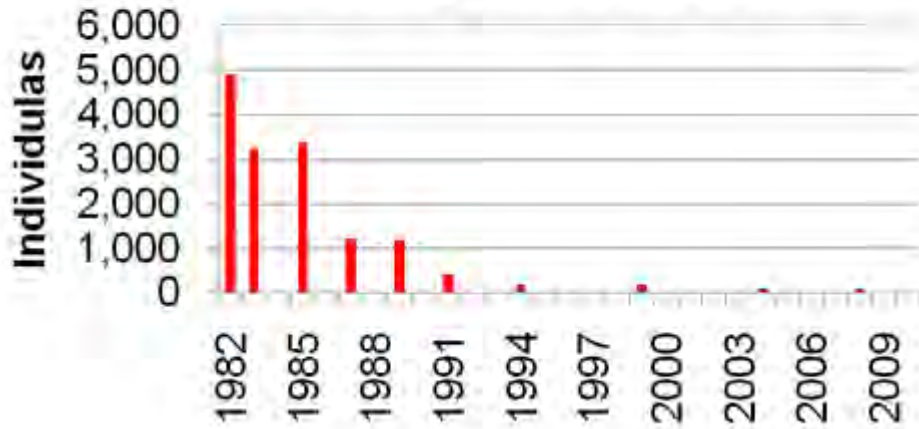
TRENDS

SSL survey areas in Russian waters

-Six survey areas are established in Russian waters for surveys.



SSL (non pups) Abundance in Western Bering Sea, 1982-2008

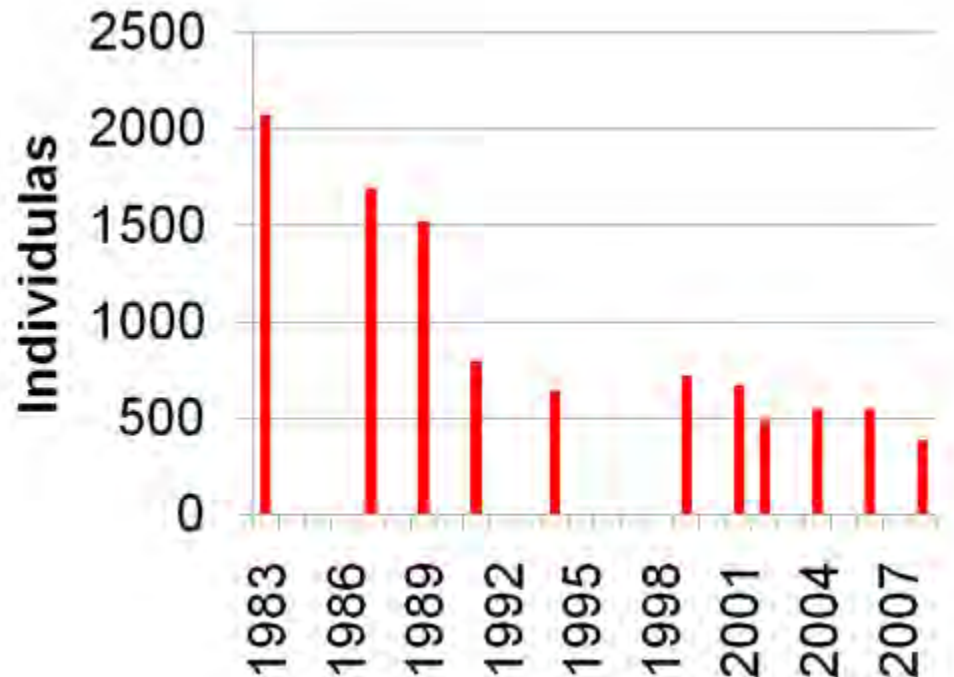
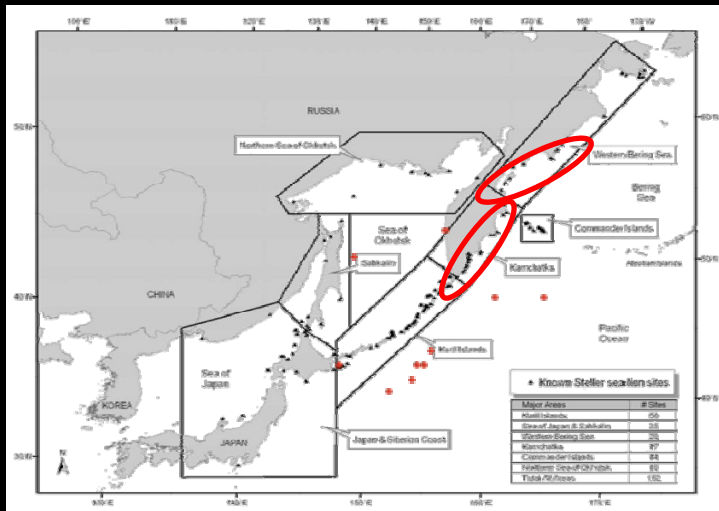


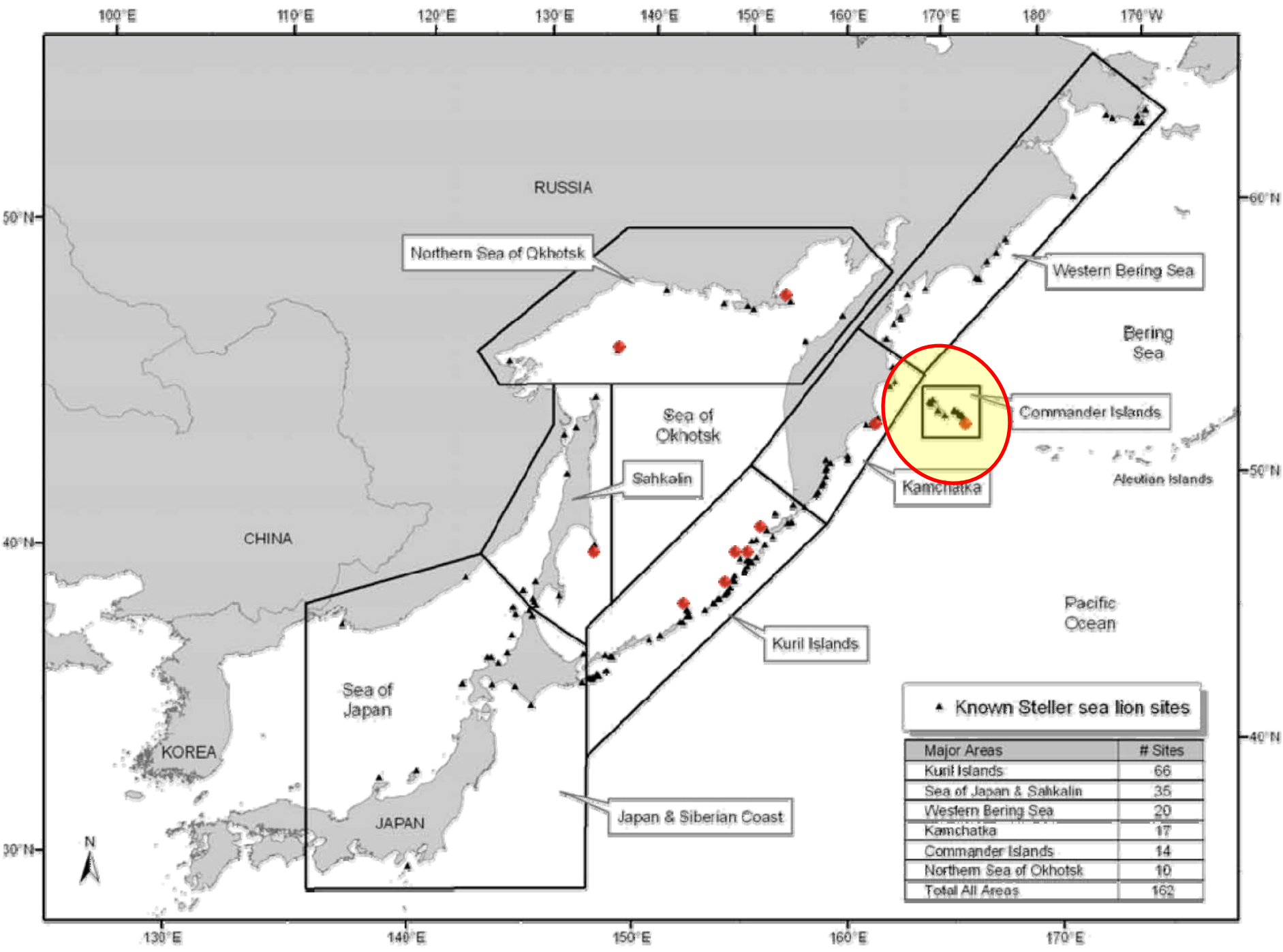
Western Bering Sea Non-Pups

98% decline since 1982

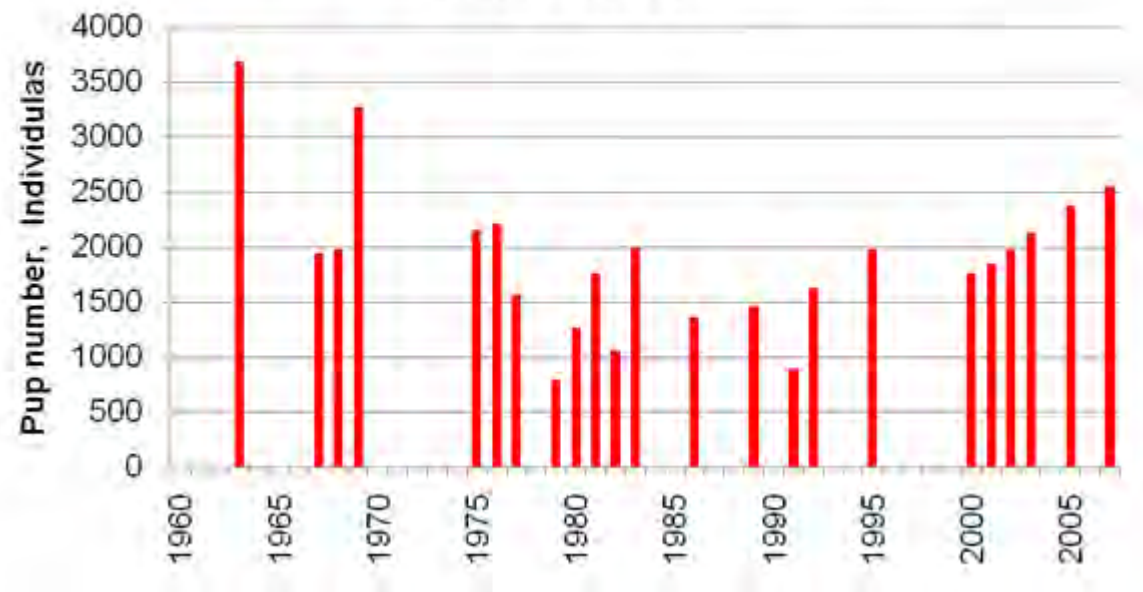
Eastern Kamchatka Non-Pups

81% decline since 1983





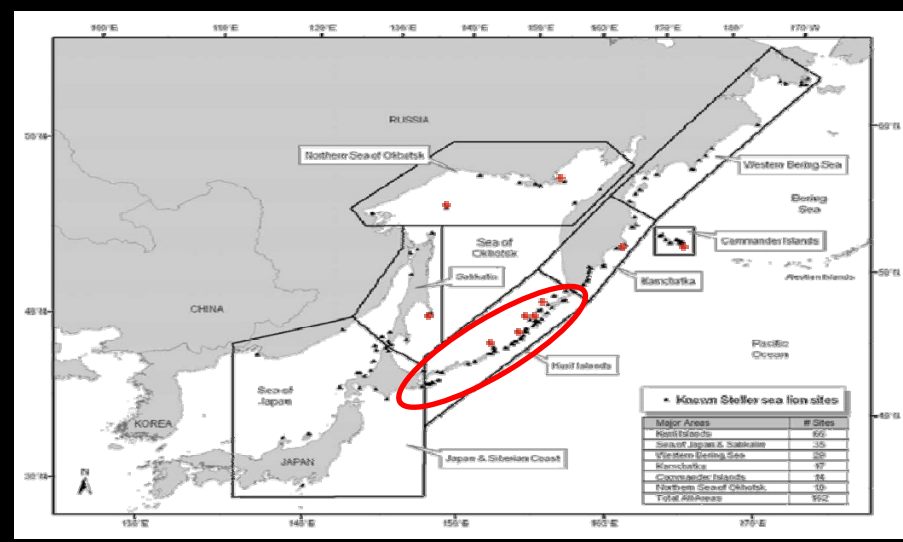
SSL pup production in Kuril Islands, 1960s-2008



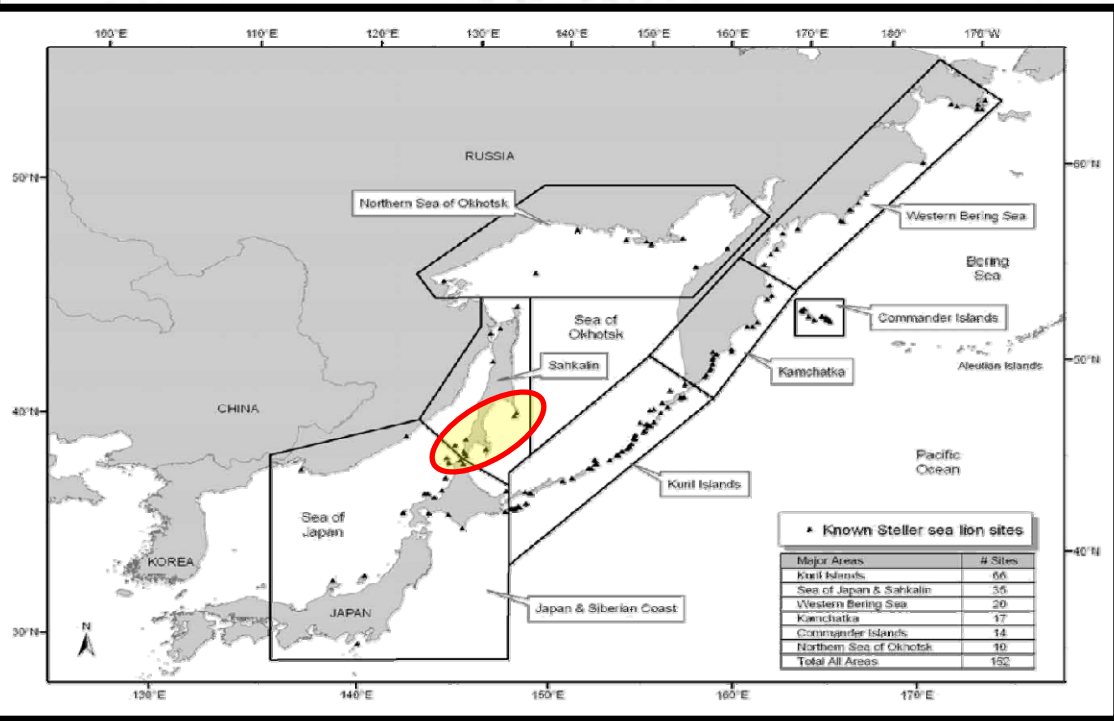
Kuril Island Pups:

2000 – 2007 increase 6% / year

2009 Positive trend continues (analysis in progress)



SSL Abundance in the Sakhalin, 1955-2009



2009 survey results:

- three more SUMMER SSL haulout sites reestablished in southern Sakhalin (they were only winter sites in the past)
- 2,000 non-pups and 11 pups were counted on the three haulout sites
- branded SSL were from northern Sea of Okhotsk and Kuril Islands

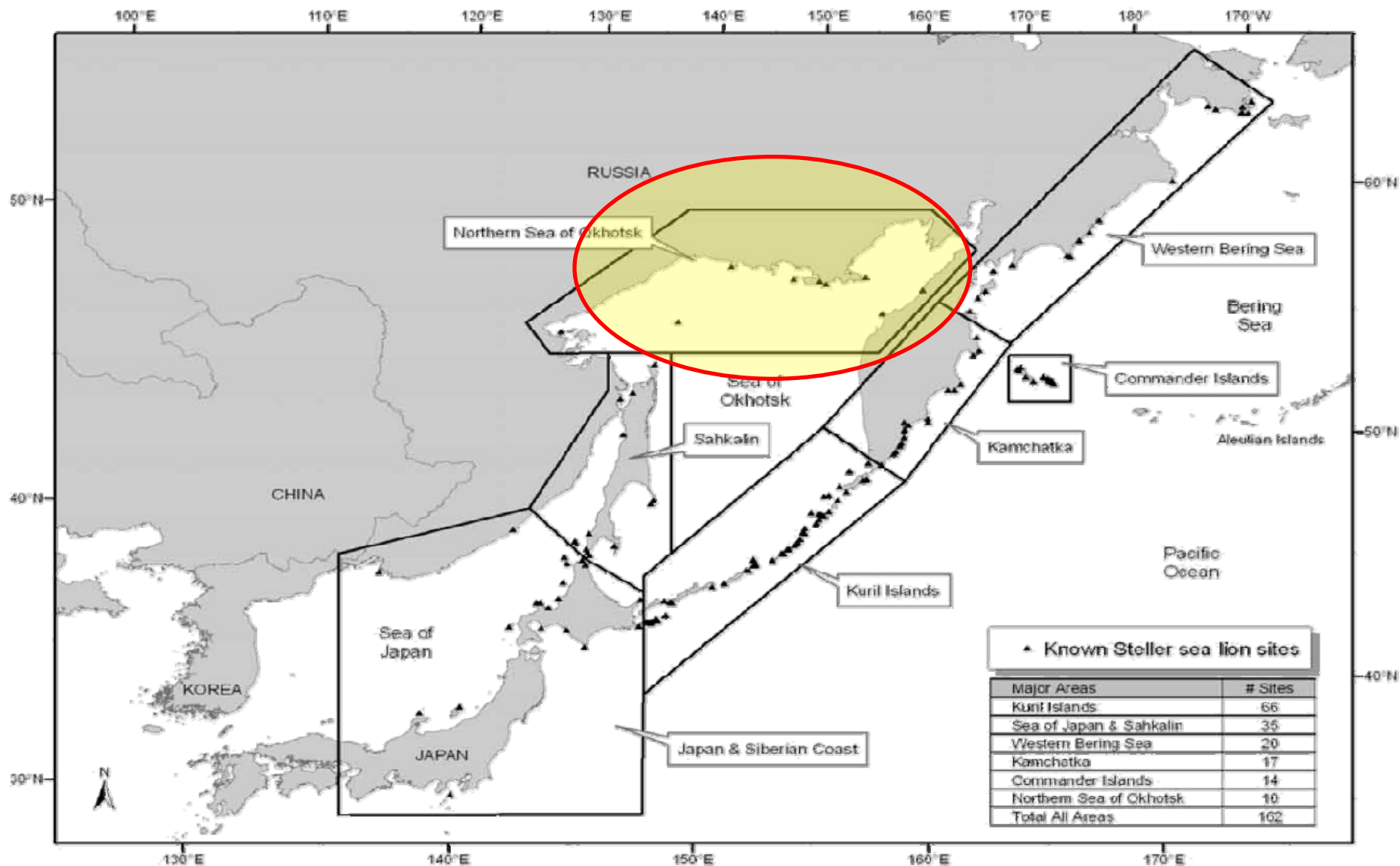
Sakhalin Island SSLs

VERY low number till early 80s.

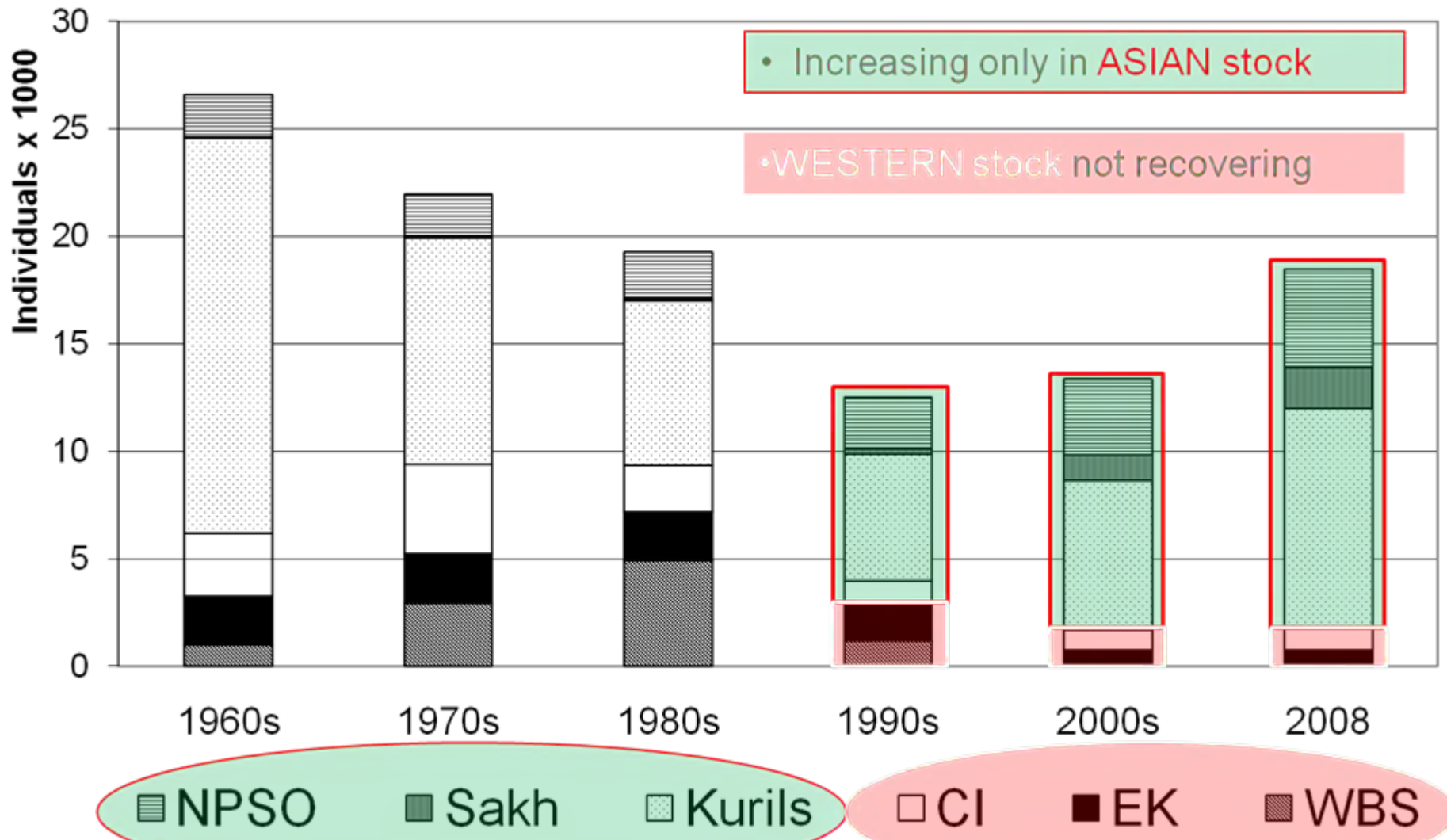
- One rookery established in early 80s on Tuleny (Robben) I.
- Pups number is growing rapidly through 1990s and 2000s. Mean trend in pup production 1983-2009 is **21%**
- High pup trend due to immigration SSL from Iony I. in northern Sea of Okhotsk (brand resight data)
- only one site in Sakhalin (Tuleny I.) monitored till 2009:

- ~ 1200 non-pups
- ~ 500-700 pups

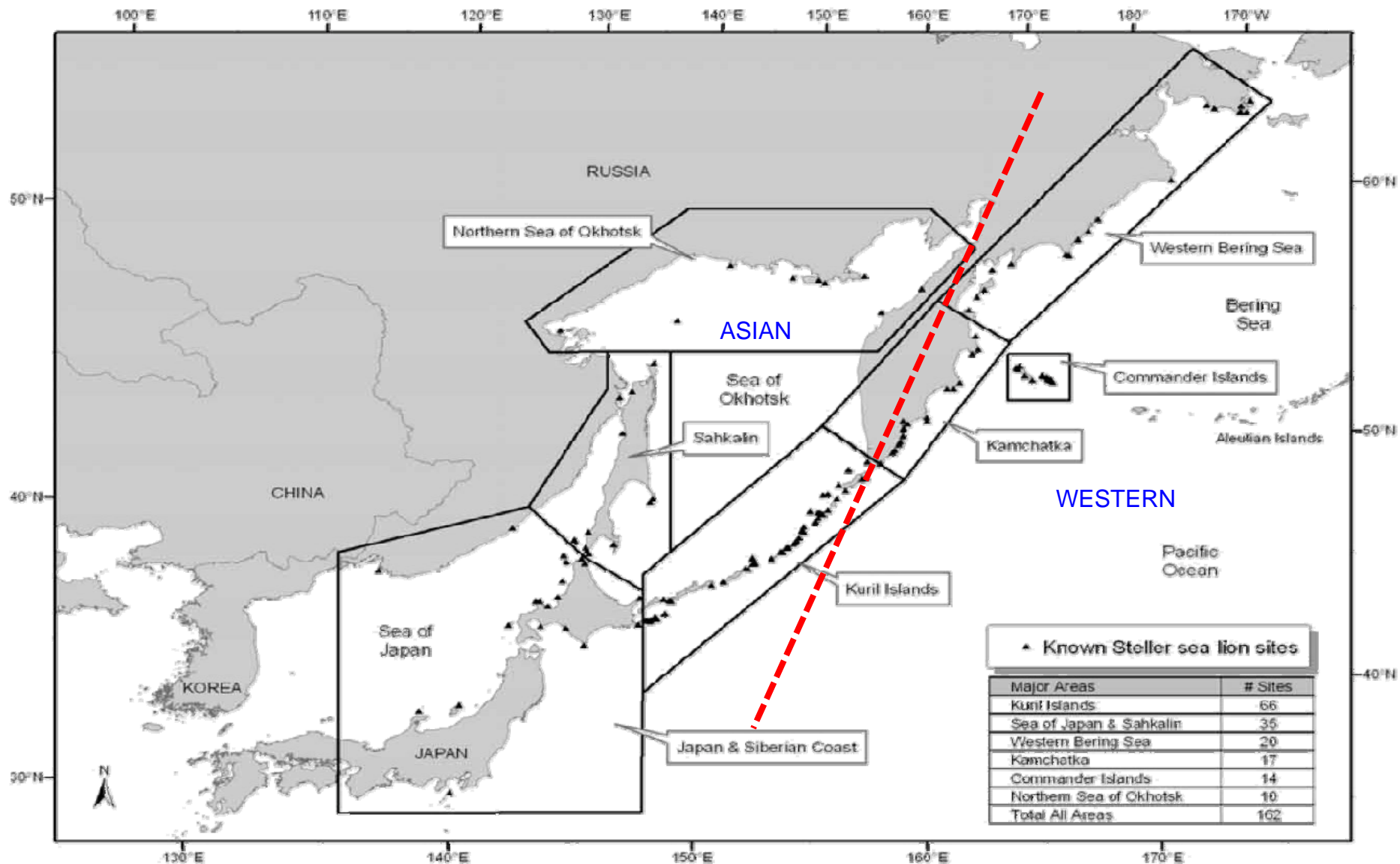
Northern part the Sea of Okhotsk, 1930 - 2006



Total SSL Abundance in Russia:

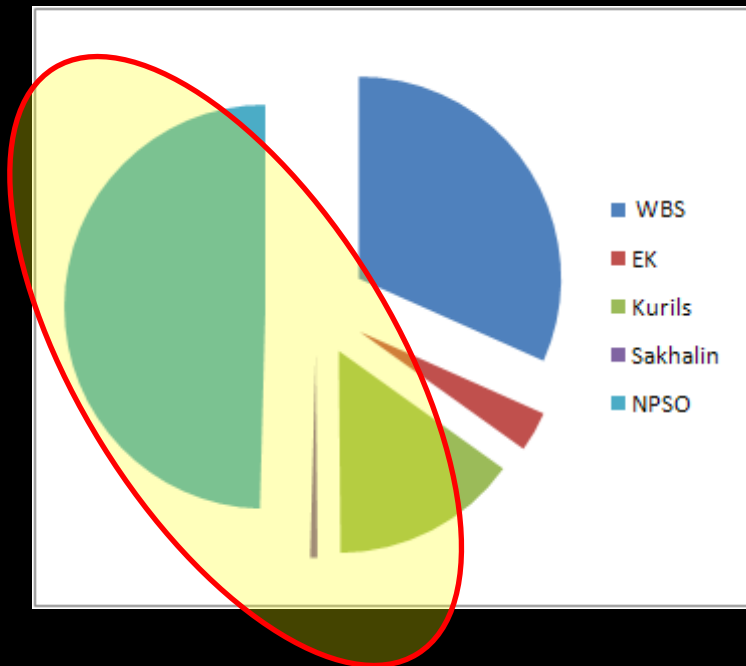


SSL survey areas along coast of Asia

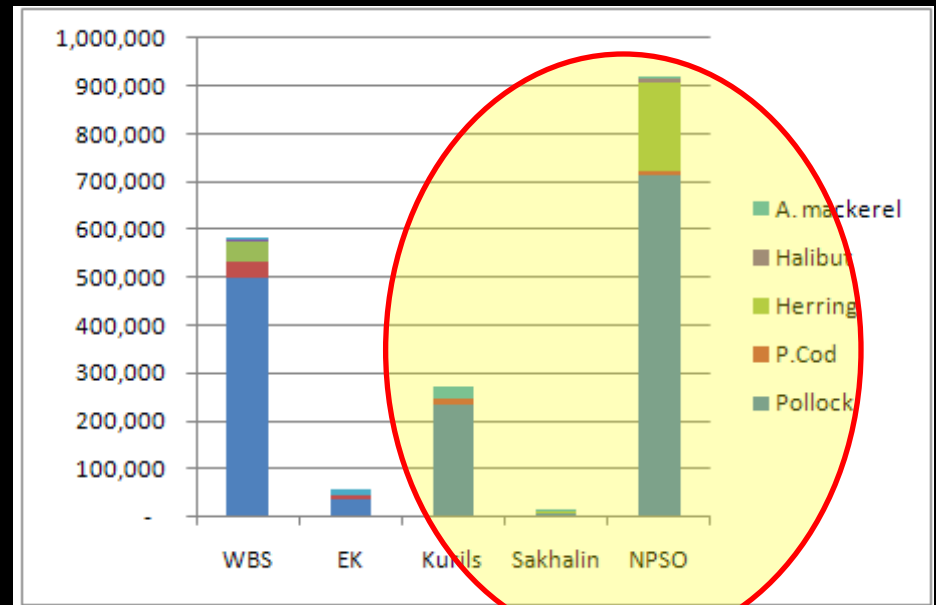


Groundfish fisheries catch in Russian Far East EEZ, 1995-2008

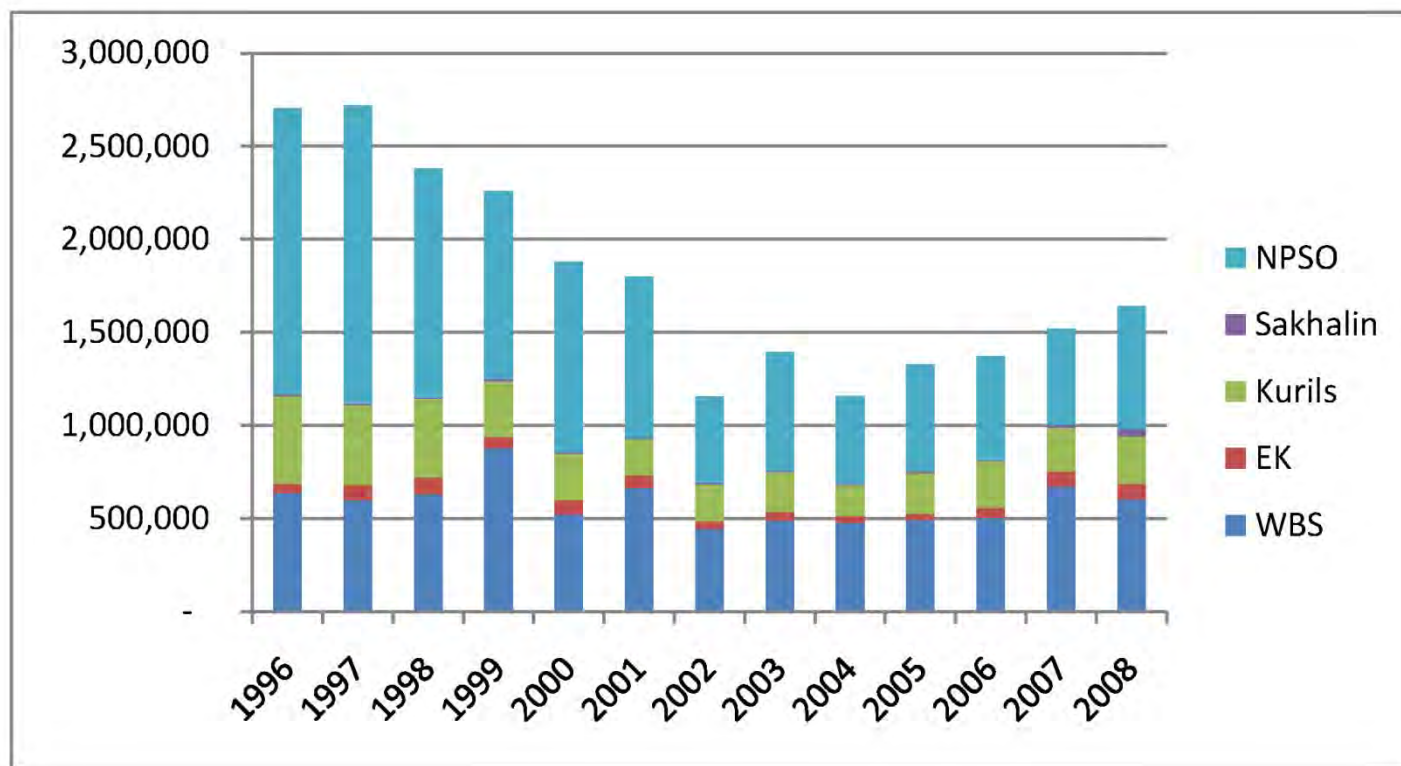
Total catch by area



Species composition by area



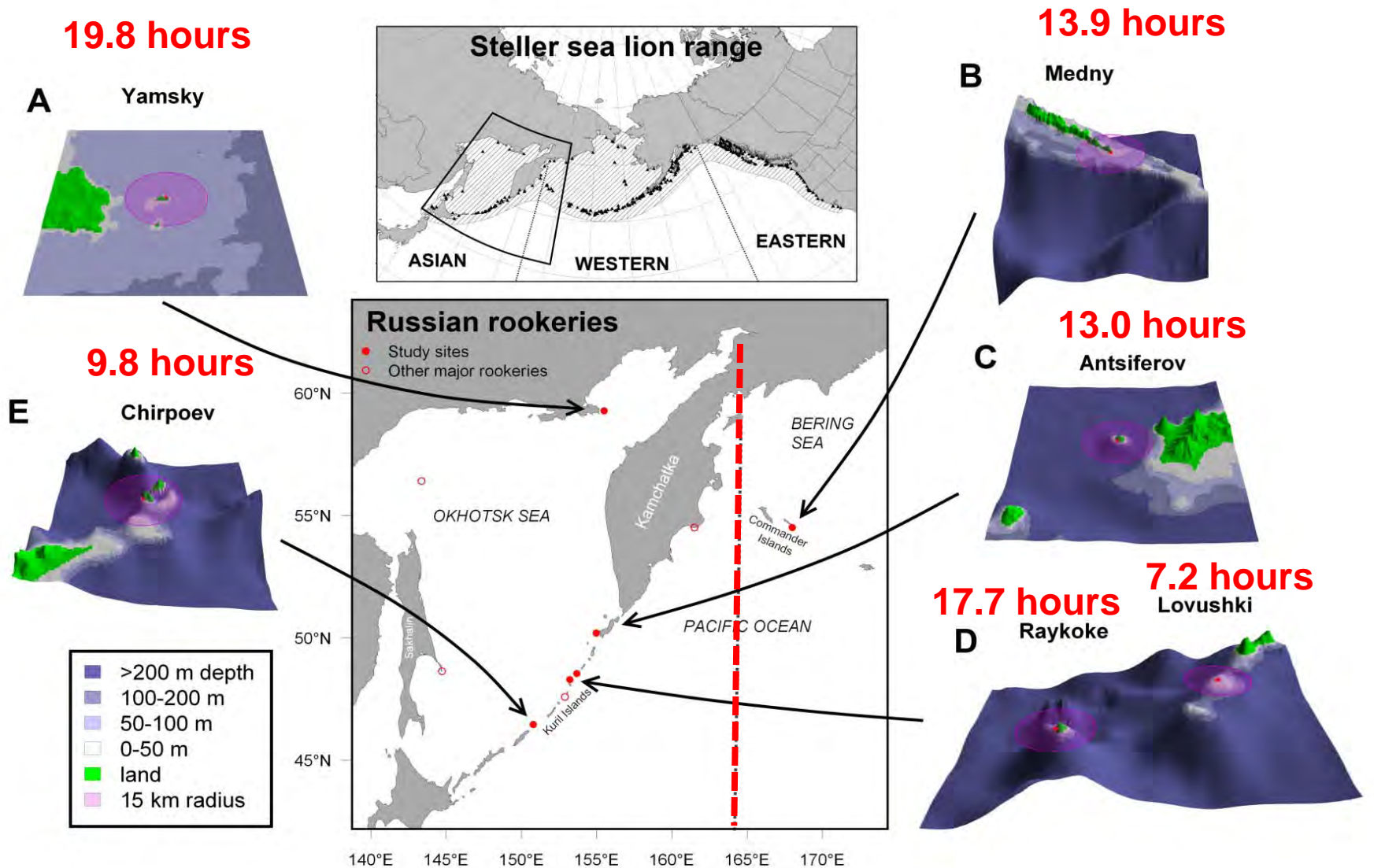
Five major groundfish fisheries in Russian Far East EEZ, 1996-2008 (total catch, mt)



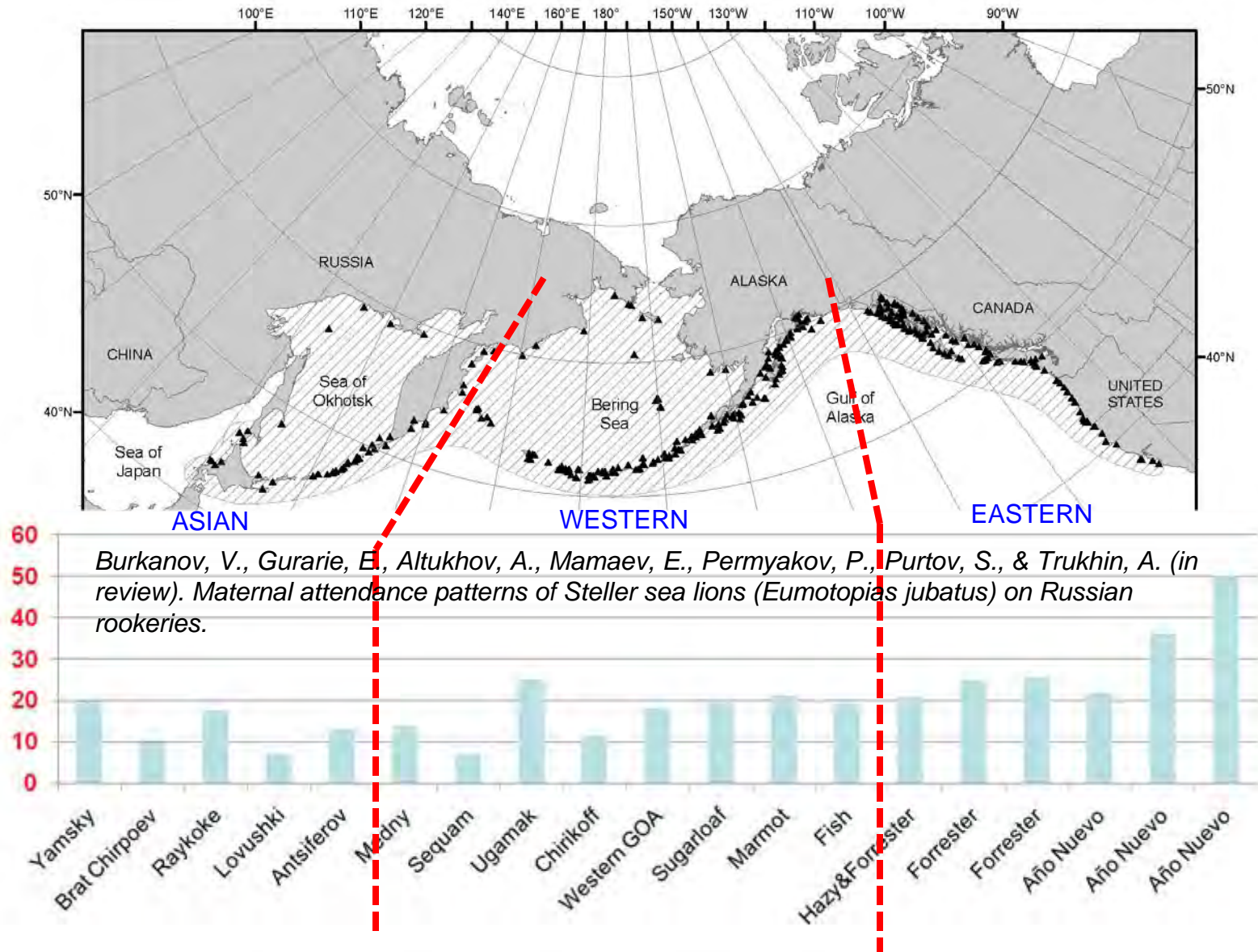
LACTATING FEMALE ATTENDANCE PATTERNS

SSL female attendance patterns, 2005-2007

Lactating female feeding trip durations:

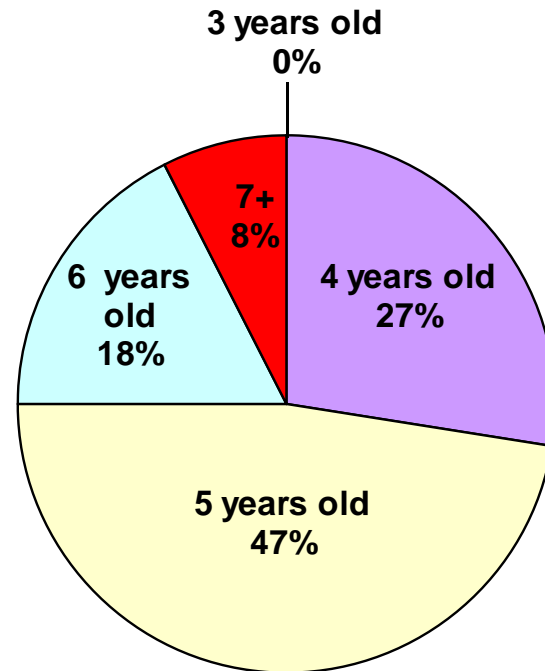
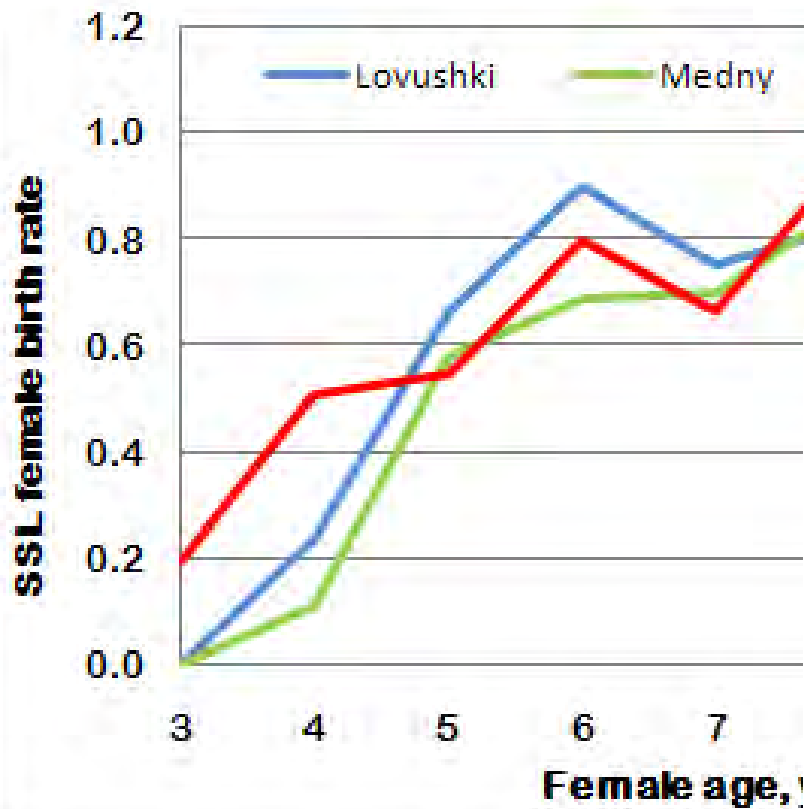


SSL lactating female trip duration across the range



FEMALE BIRTH RATES

SSL birth rates on Lovushki and Medny I., Russia



Where we are and where to go ?

**Fall & winter distribution and
movement patterns**

Winter ecology

SSL & fishery interactions

Questions? Вопросы?

