

Population structure of the Bering sea pollock and functional structure of it range in recent decades

Alexander I. Glubokov

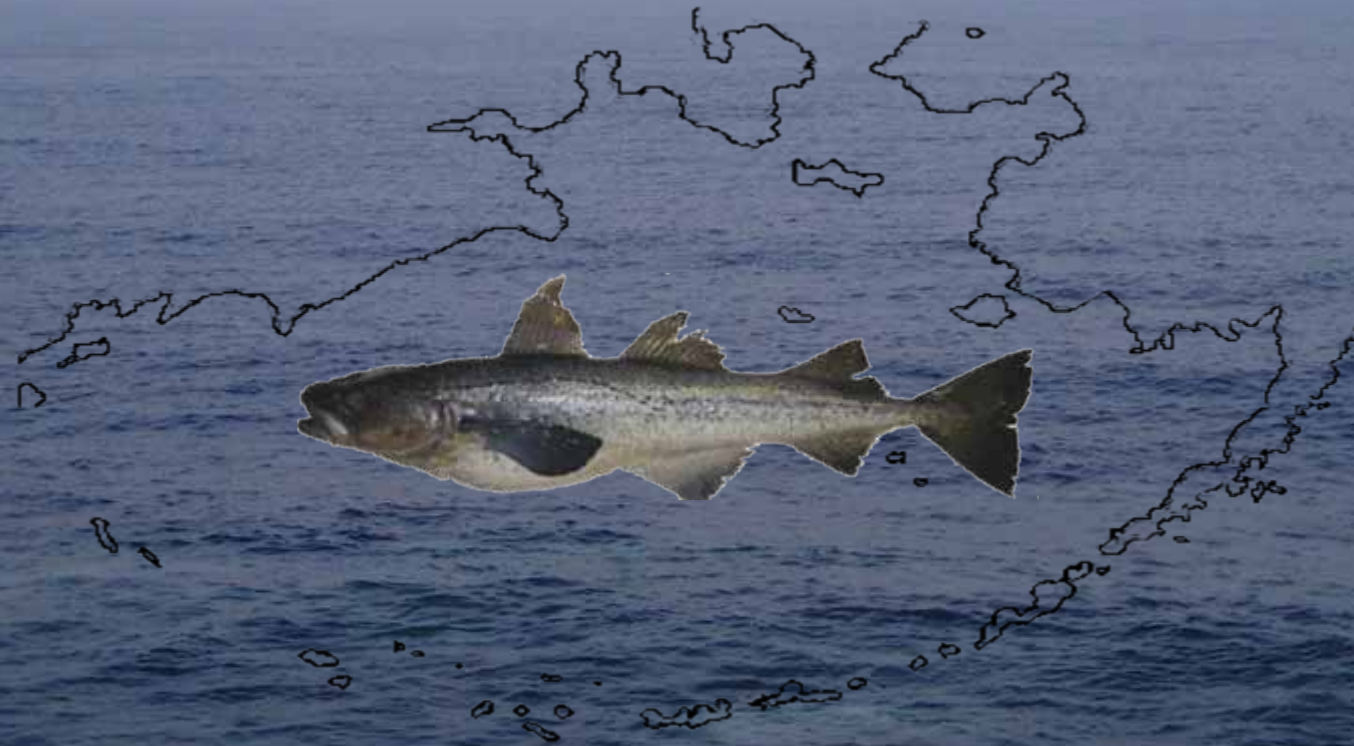
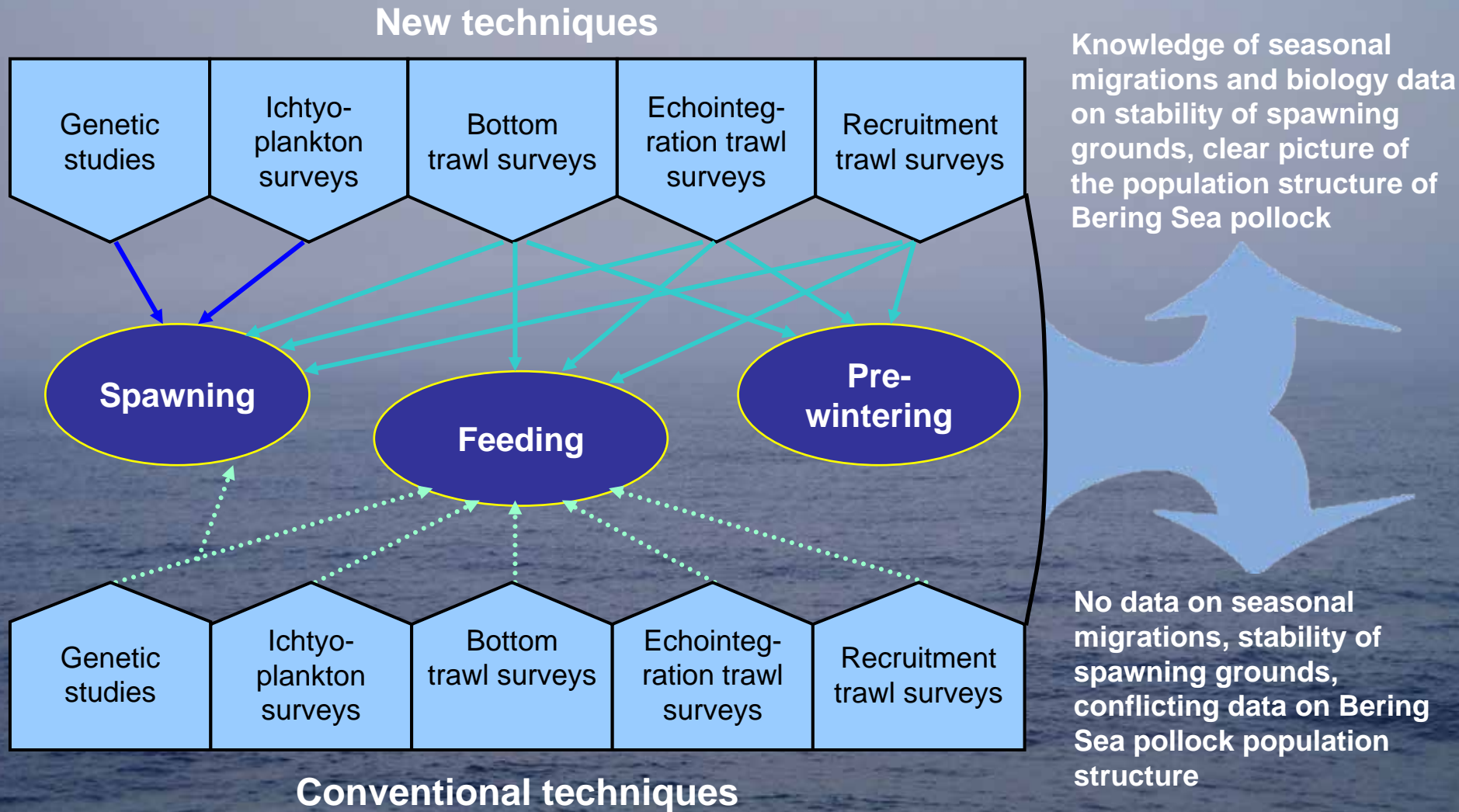


Chart of methods to study the North Bering Sea pollock

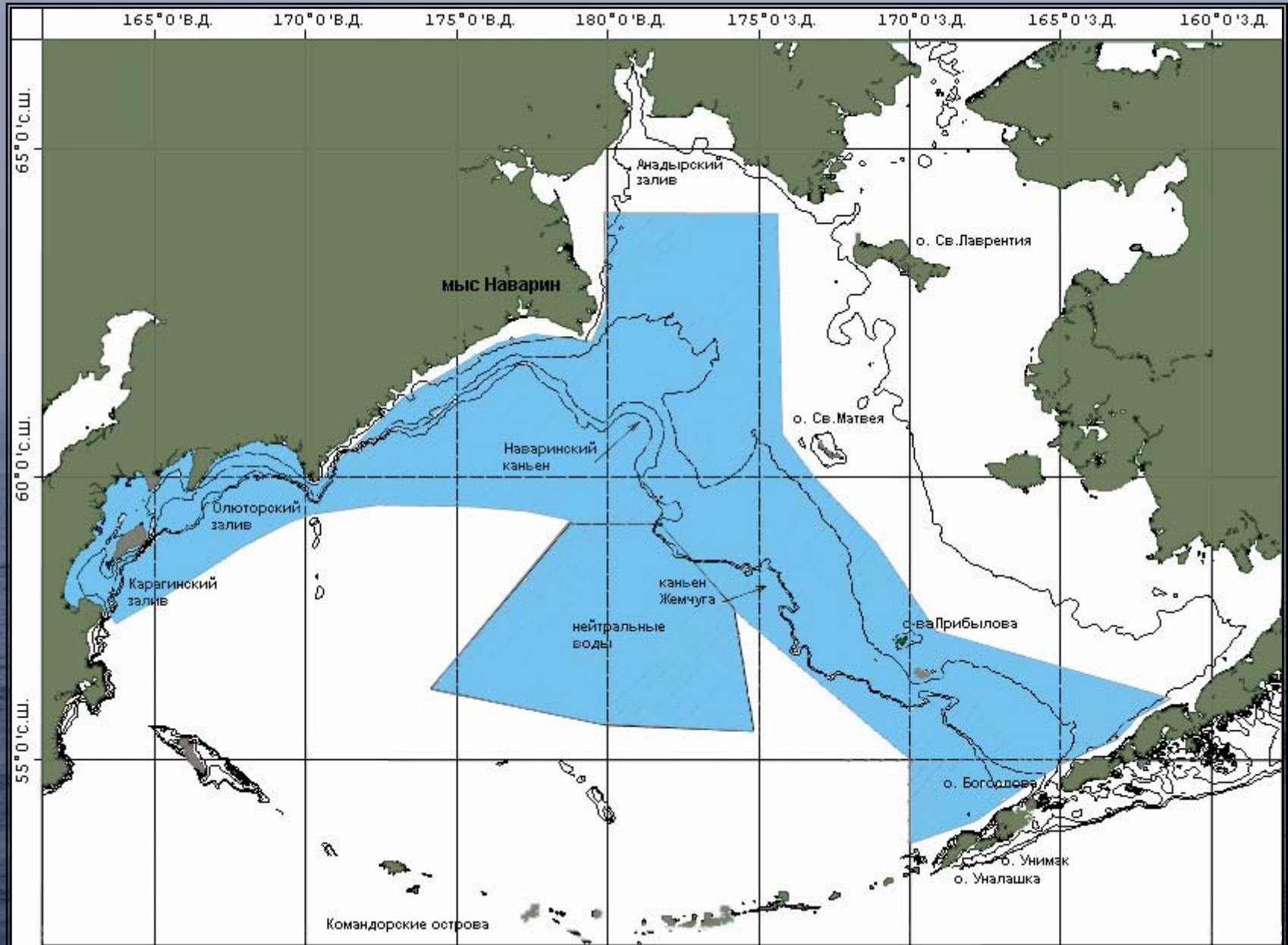


List of cruises and types of work the results of which were used

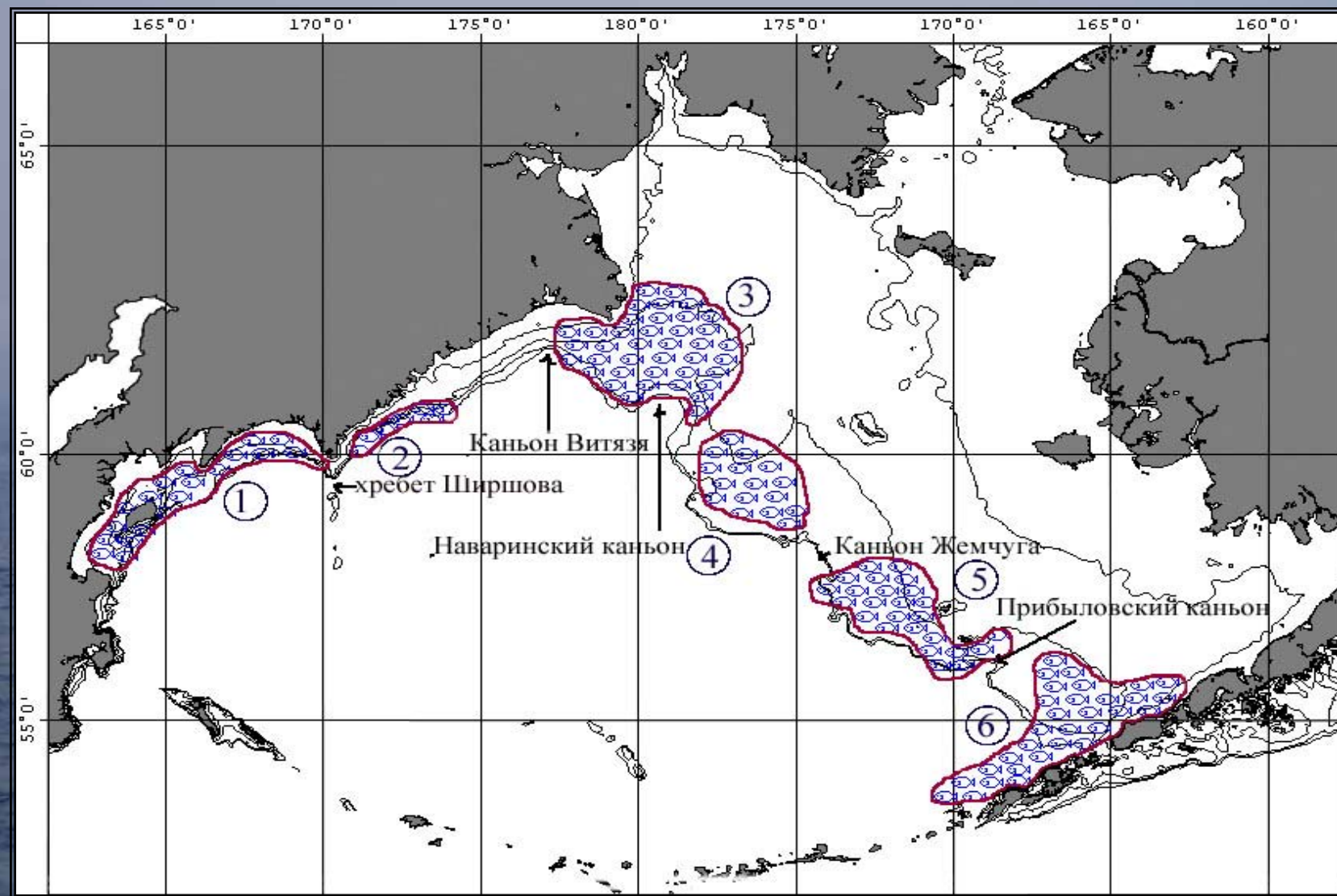
Totally:
 over 50 months duration
 21 trawl surveys
 11 echointegration trawl surveys
 8 recruitment trawl surveys
 5 ichthyoplankton surveys

				Y.A.Fedorets ³
1999	November-December	JMT «Kaie-maru №28»	Bottom trawl, recruitment trawl surveys	D.O.Alekseev ¹ , V.A. Bizikov ¹
2000	April-May	RTMS «Novokievka»	Ichthyoplankton survey	A.M.Privalihin ¹ , A.V.Startsev ³
2000	June-August	JMT «Kaie-maru №28»	Bottom trawl, recruitment trawl surveys	D.O.Alekseev ¹ , A.I.Glubokov ¹
2000	September-October	JMT «Kaie-maru №28»	Bottom trawl, echo-integration trawl surveys	S.B.Popov ¹ , D.A.Terentiev ²
2000	October-December	JMT «Kaie-maru №28»	Bottom trawl, recruitment trawl surveys	S.V.Moiseev ¹ , E.V.Slobodskoy ³
2001	April-May	BMTR «Nil'olay Chepik»	Ichthyoplankton survey	I.N.Kireev ² , A.V.Hodokhov ¹
2001	May-July	JMT «Kaie-maru №28»	Bottom trawl, recruitment trawl surveys	A.I.Glubokov ¹ , Y.A.Fedorets ³
2001	July-August	RTMS «Hercules»	Ichthyoplankton survey	V.I.Kamshilov ¹ , G.V.Norvillo ¹
2001	August-October	JMT «Kaie-maru №28»	Bottom trawl, recruitment trawl surveys	D.O.Alekseev ¹ , R.N.Novikov ²
2001	October-December	JMT «Kaie-maru №28»	Bottom trawl, echo-integration trawl surveys	S.B.Popov ¹ , D.A.Terentiev ²
2002	March-April	JMT «Kaie-maru №28»	Ichthyoplankton survey	D.O.Alekseev ¹ , A.I.Glubokov ¹
2002	August-October	JMT «Kaie-maru №28»	Bottom trawl, recruitment trawl surveys	A.O.Zolotov ²
2002	October-December	JMT «Kaie-maru №28»	Bottom trawl, echo-integration trawl, recruitment trawl surveys	A.A.Bonk ² , S.B.Popov ¹
2003	October-November	BATM «Pioner Nikolaeva»	Bottom trawl, echo-integration trawl, mid-layer trawl surveys	A.I.Glubokov ¹ , S.B.Popov ¹
2003	October-November	RTMS «Bagration»	mid-layer trawl surveys	A.A. Balanov ⁴ , A.V.Buslov ² , A.O. Zolotov ² , G.V.Norvillo ¹ , A.V.Hodokhov ¹

Area of studies

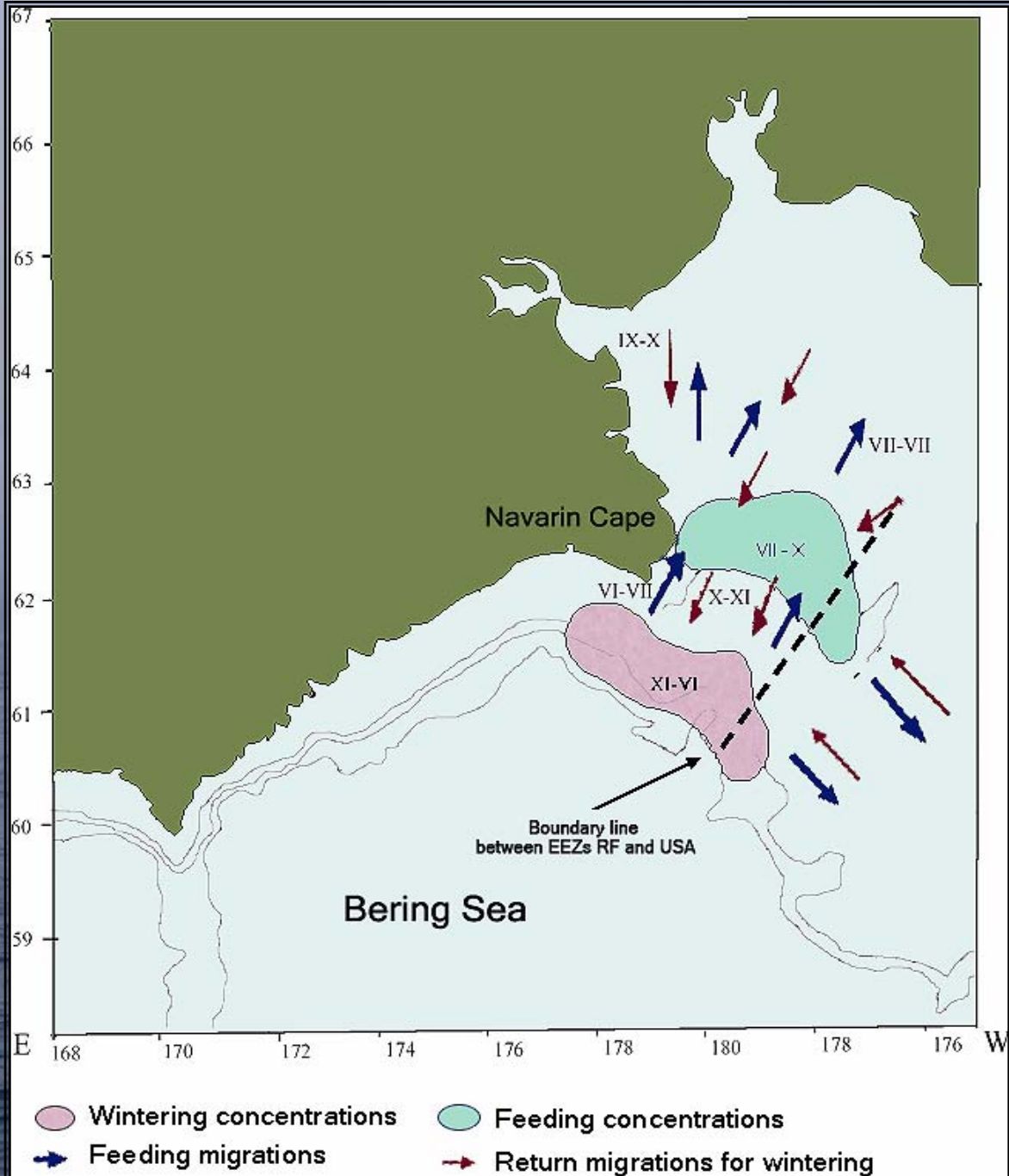


Spatial distribution of pollock in periods of low and medium abundance

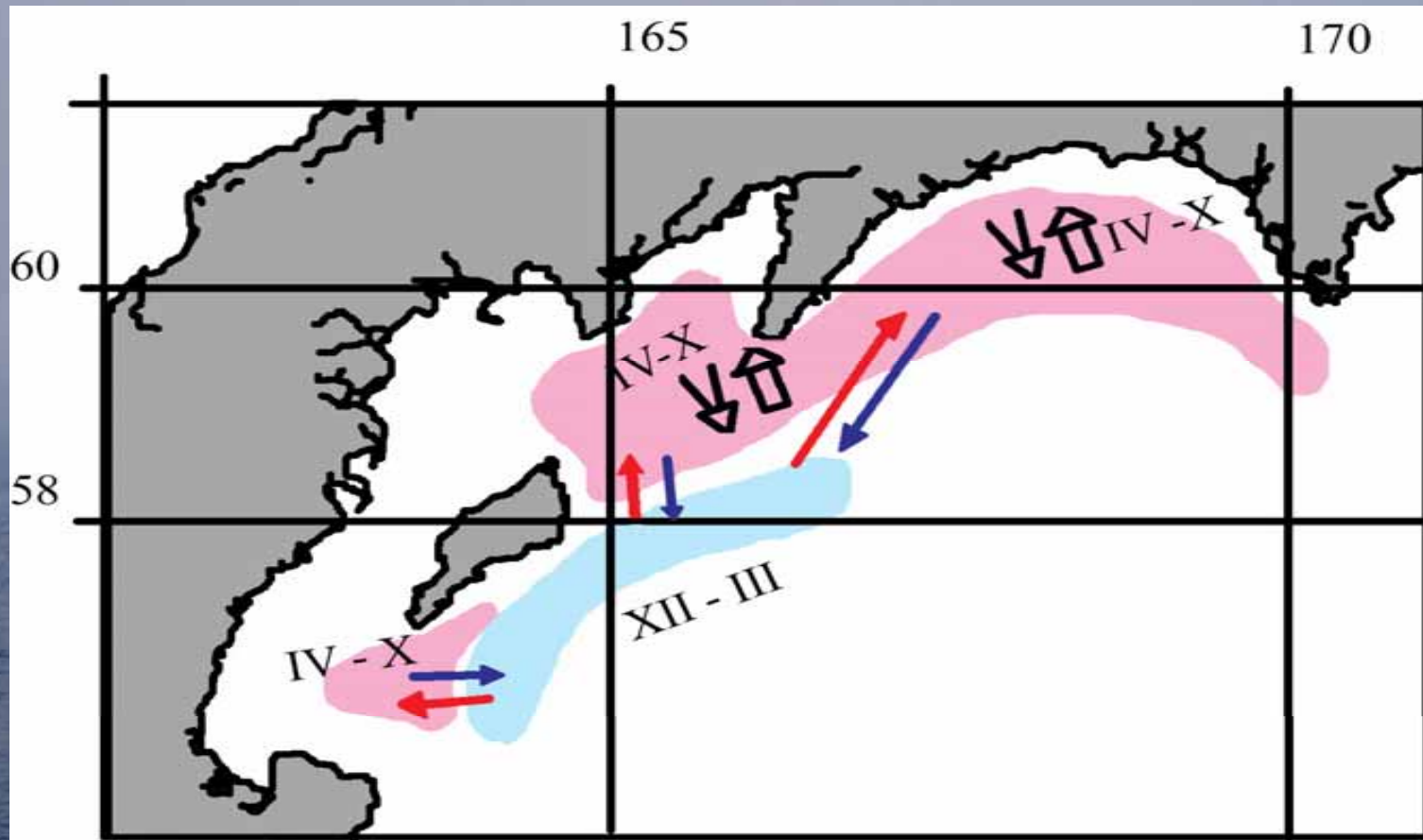


Concentration: ① - Olyutor – Karagin; ② - Koryak; ③ - Navarin; ④ - Matveev;
⑤ - Pribiloff; ⑥ - Unimak-Bristol

Migration routes of navarin pollock (late 20-th and early 21-st centuries)



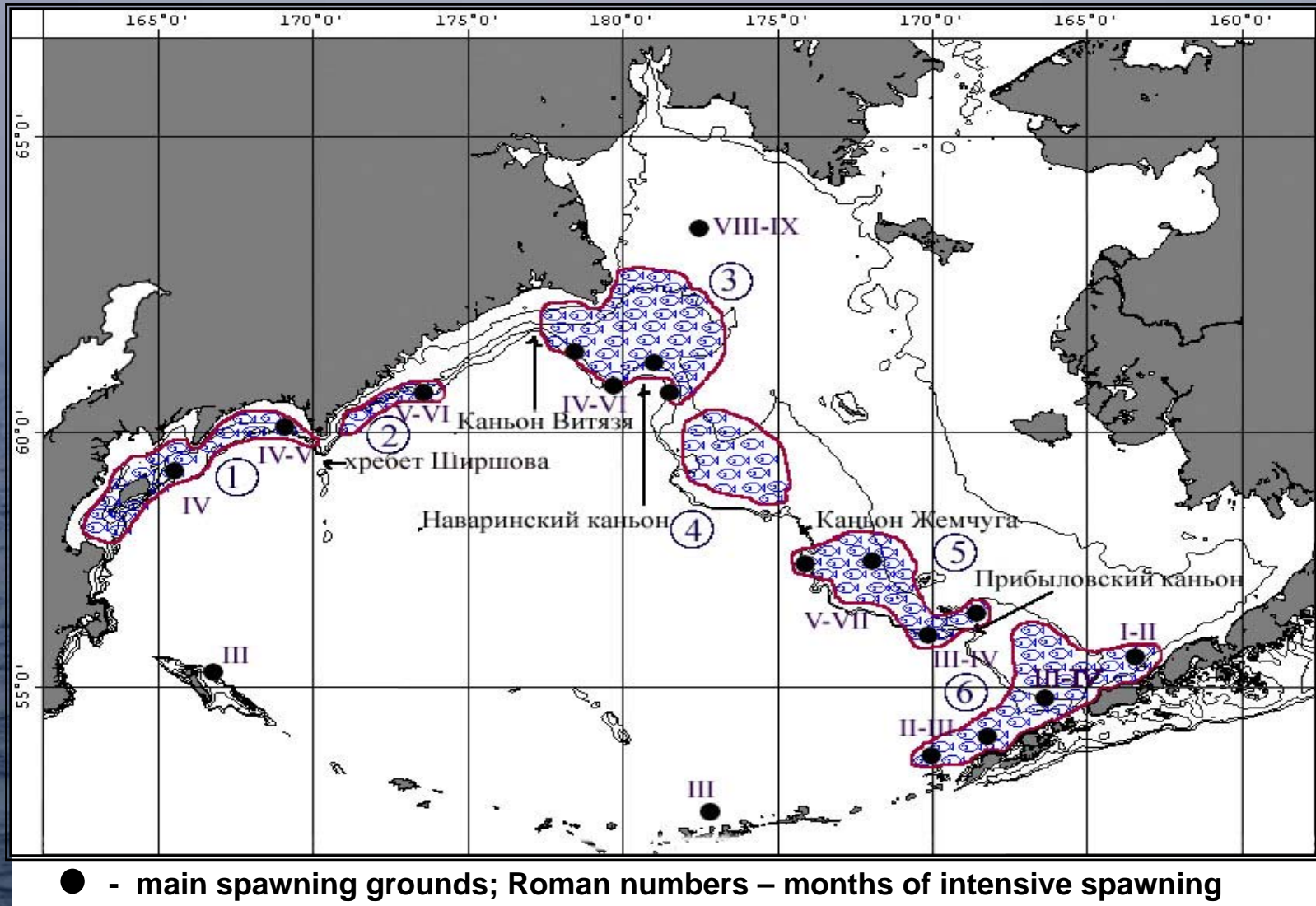
Migration routes of pollock in Karagin subzone in 1970-s.



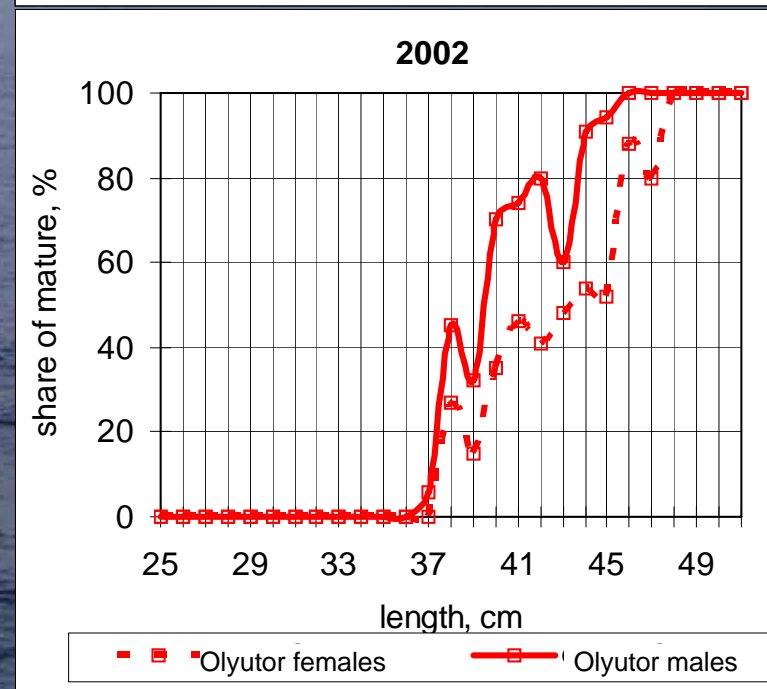
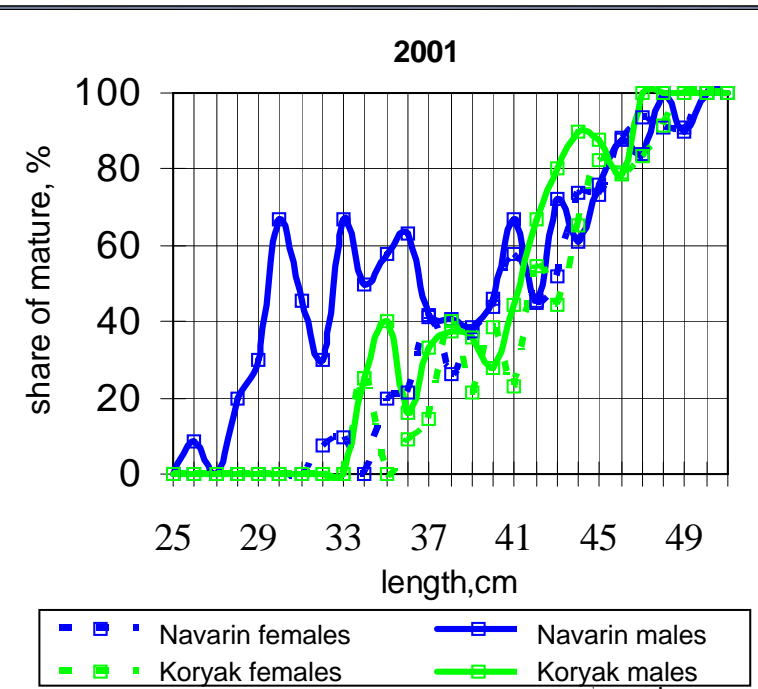
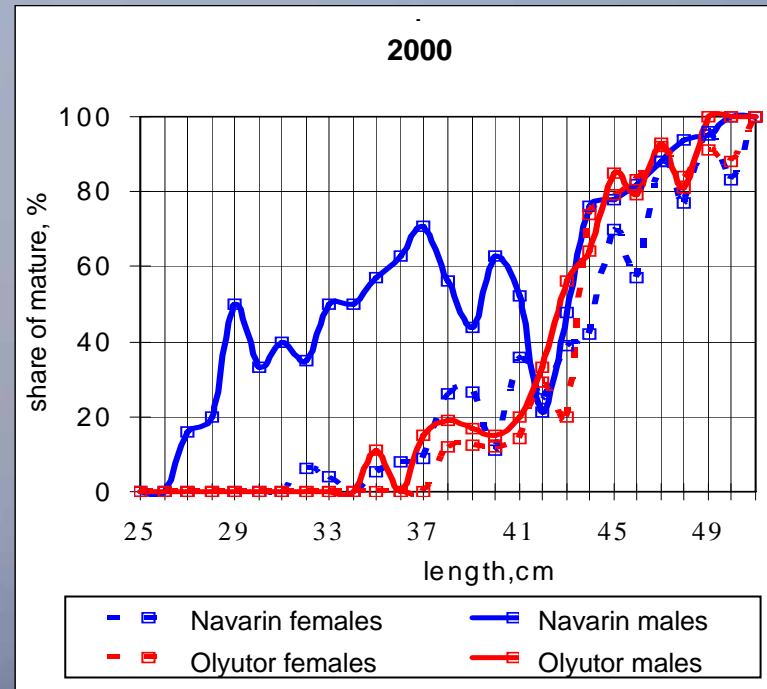
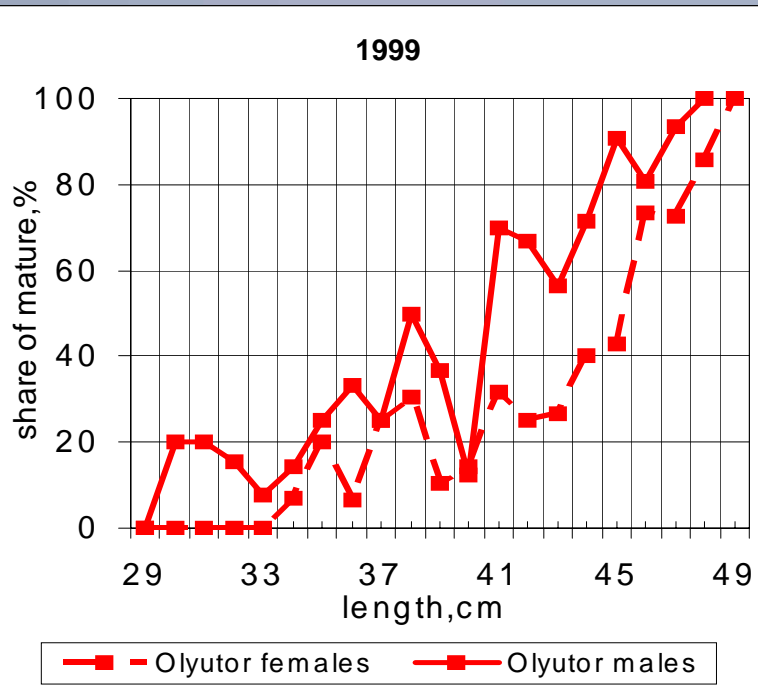
Migrations:

- | | |
|--|---|
|  wintering XI-XII |  after spawning feeding VI |
|  spawning III-IV |  late feeding VII |

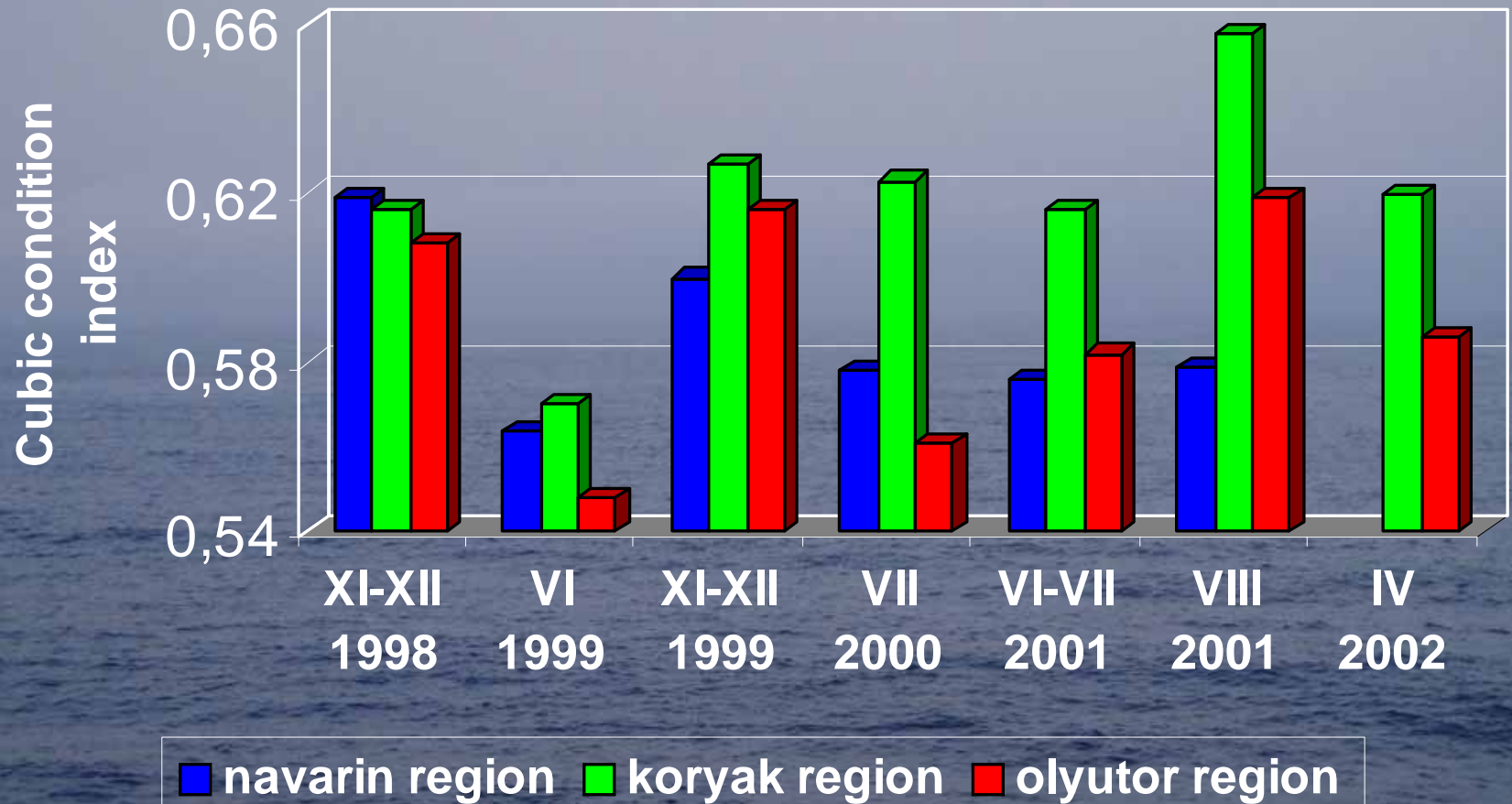
Spatial differentiation of the main spawning grounds of pollock in the Bering Sea (after Stepanenko, 2003; Bulatov, 2004; Glubokov, 2005)



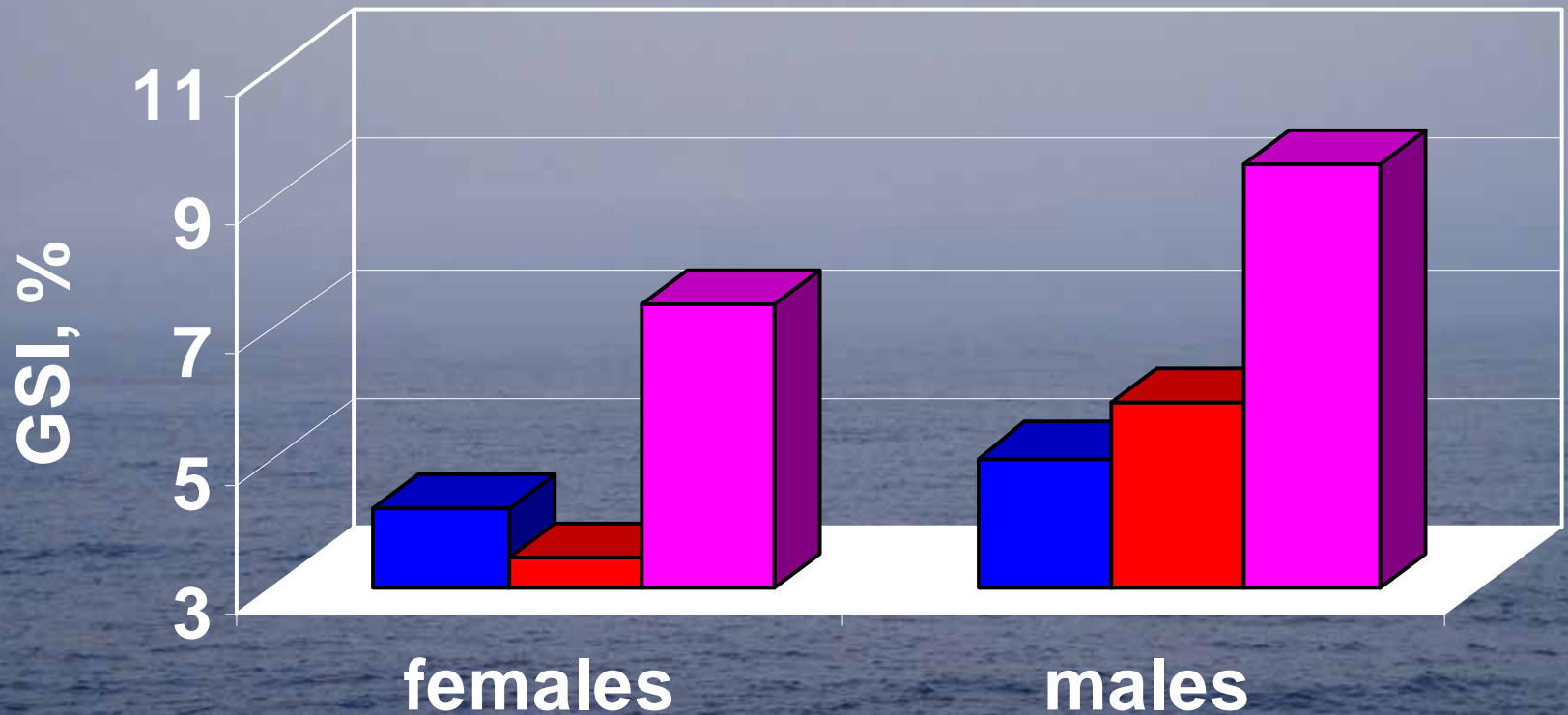
North and West Bering Sea pollock ogyvas, by areas (author's data).



Cubic condition index by Clark in mature pollock, by area and year

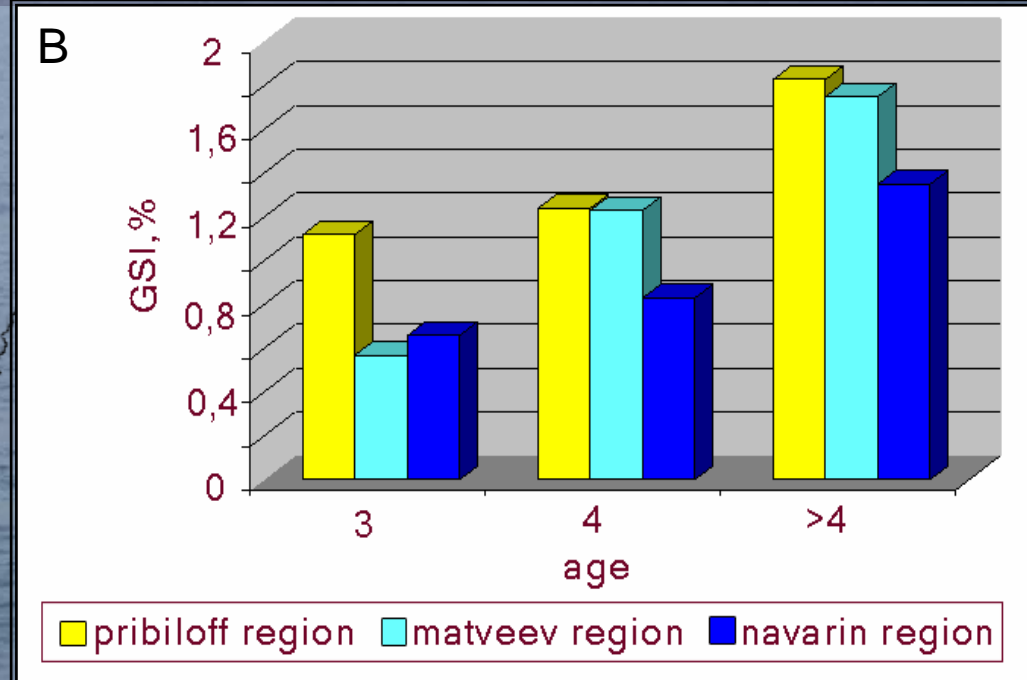
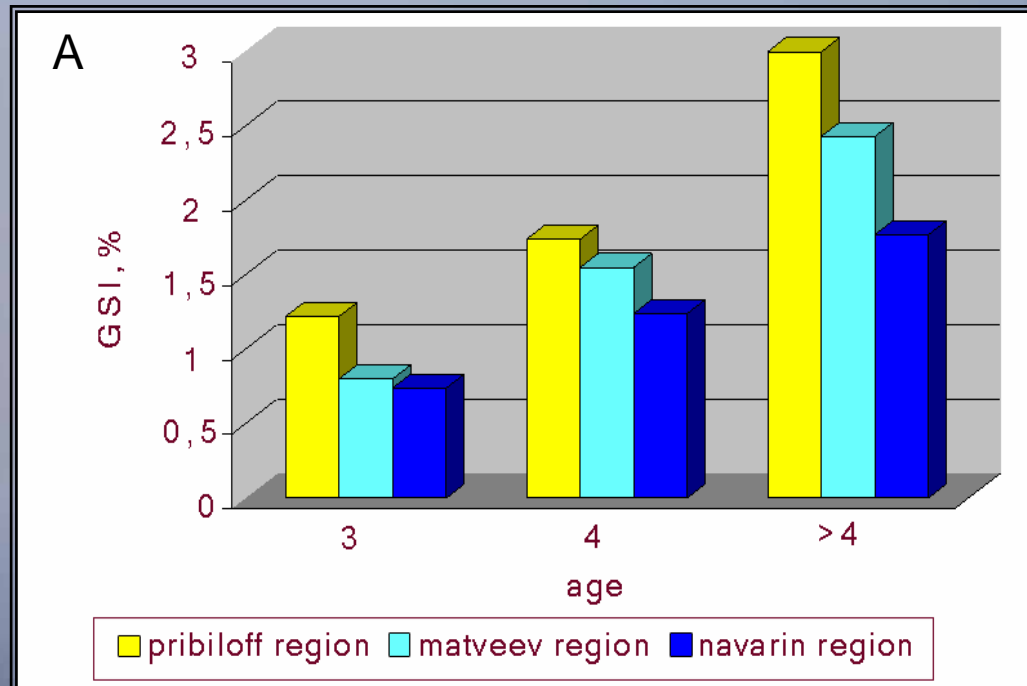


Gonadosomatic index in mature pollock in October – November 2003 in northern and western regions of the North Pacific

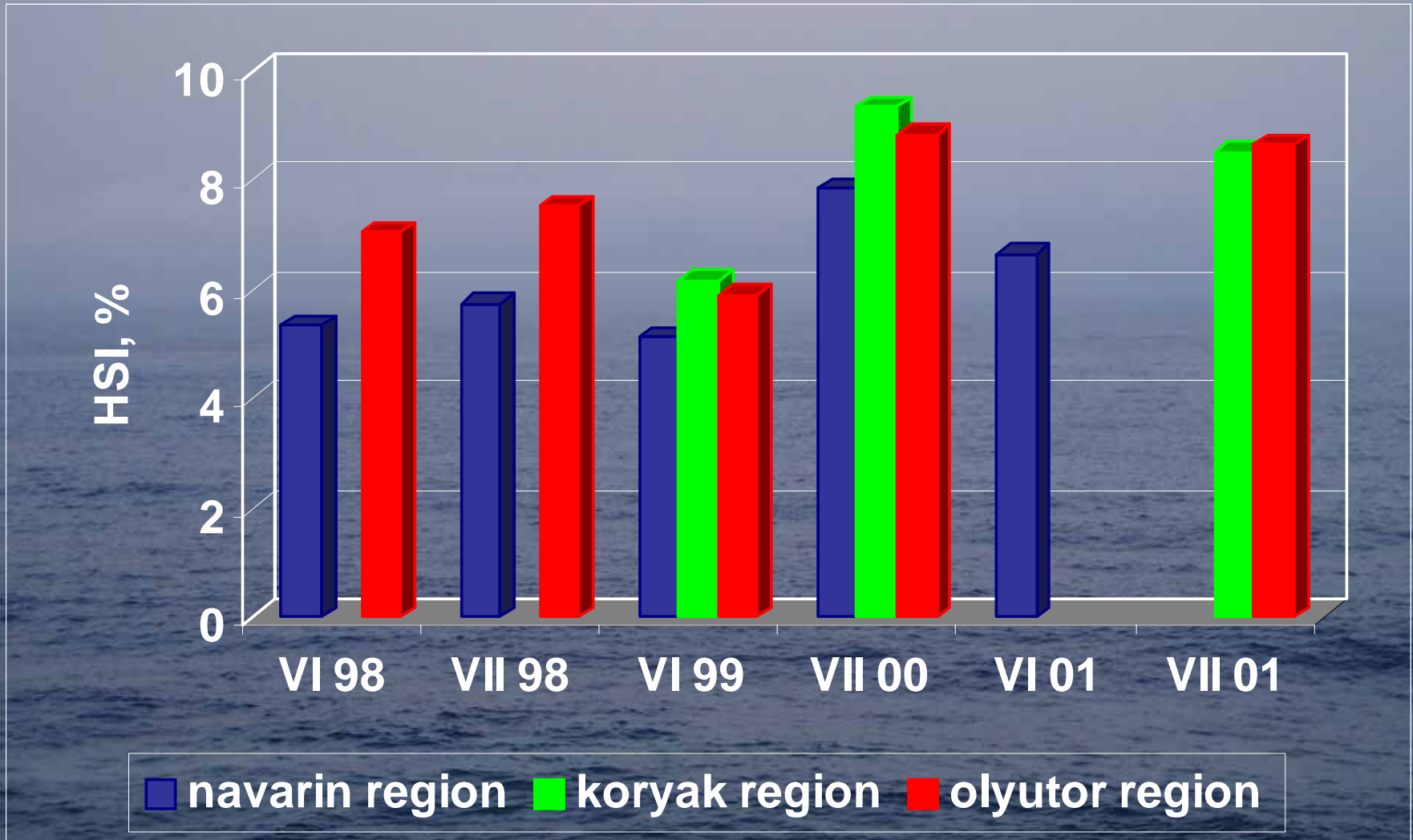


■ navarin region ■ olyutor region
■ kronotskiy bay

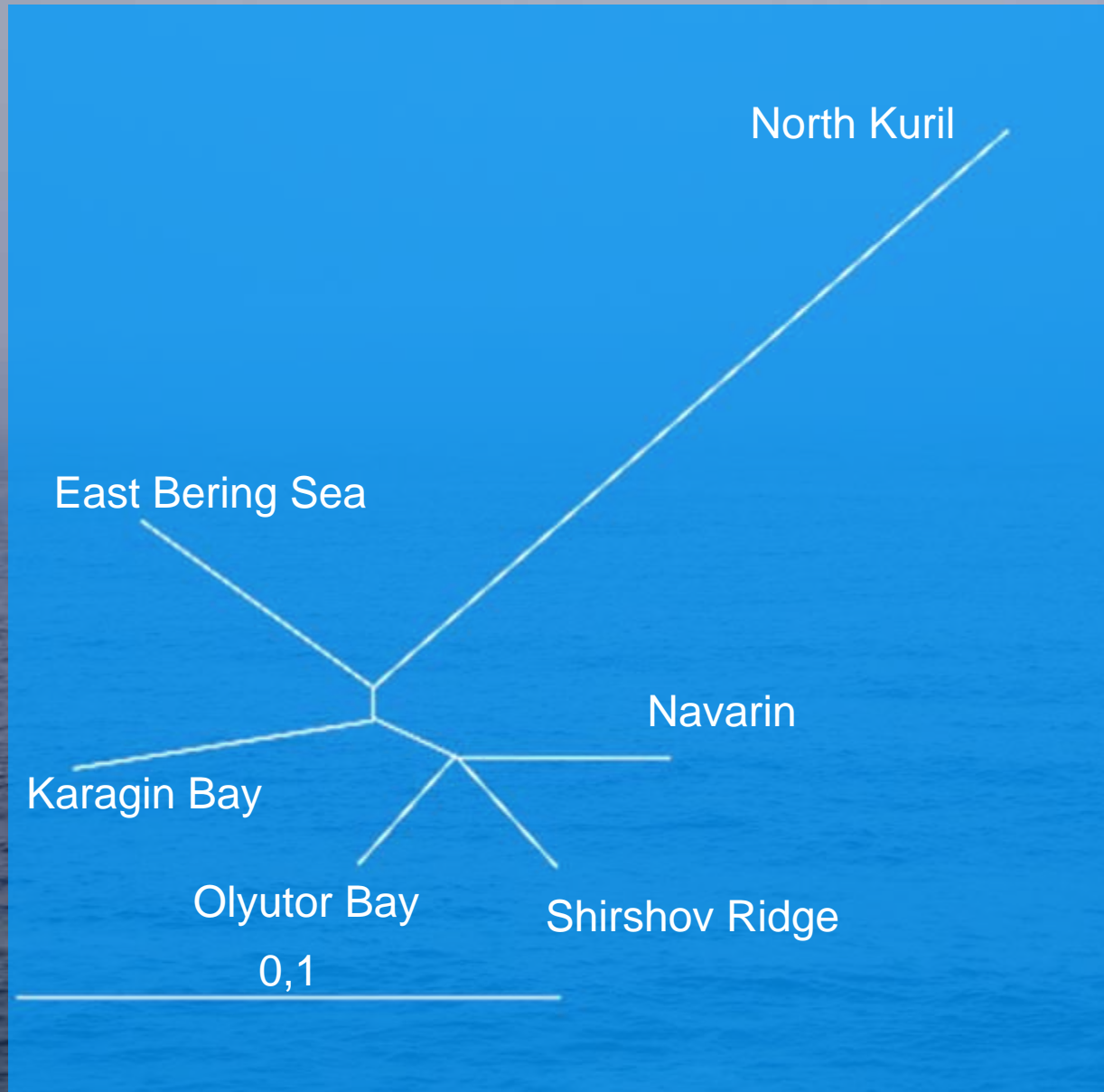
Gonadosomatic index in females (A) and males (B) of pollock from various areas of the North and East Bering Sea, by age (July 2004)



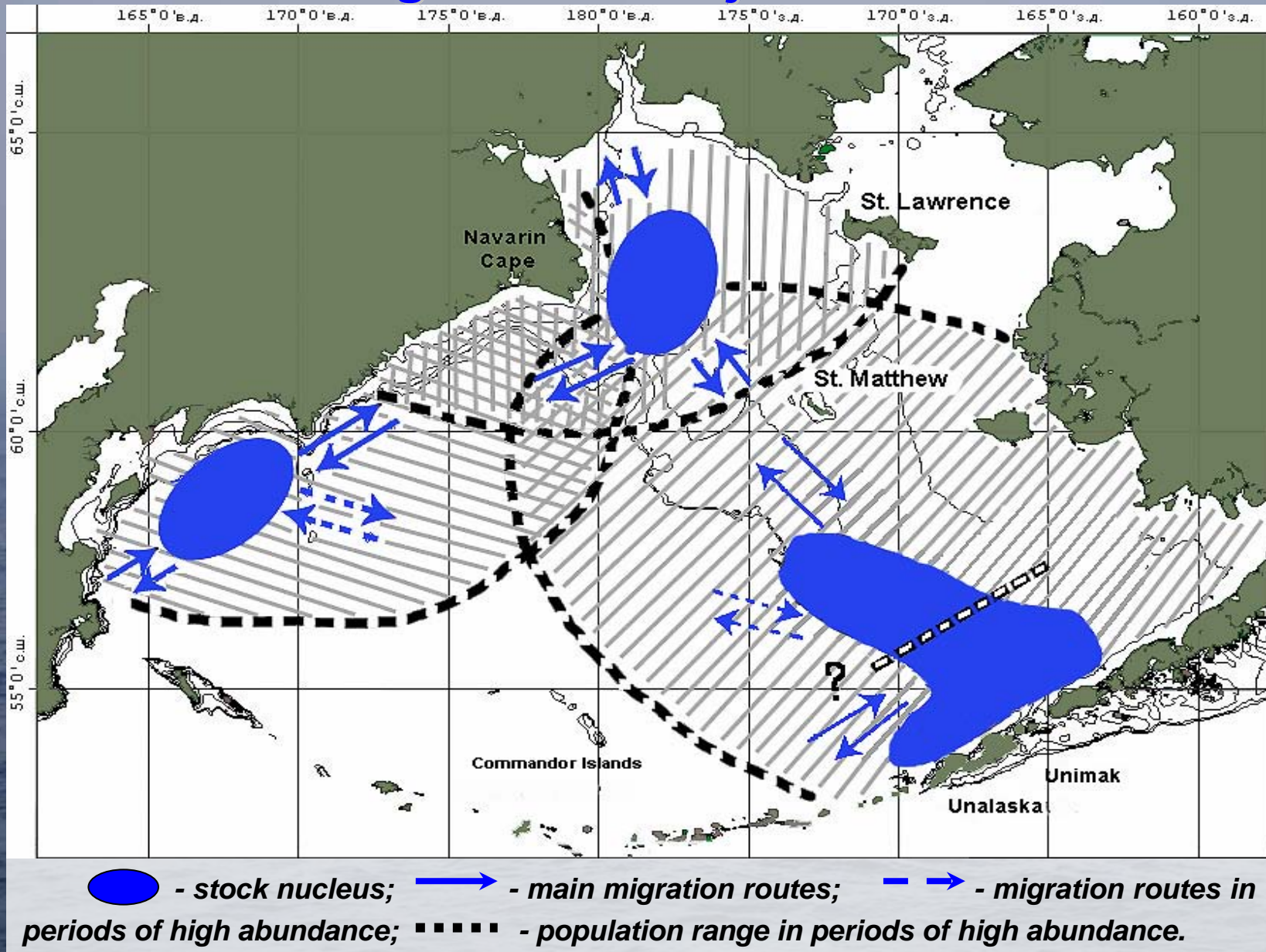
Hepatosomatic index in mature female pollock in the early feeding period in the Northwest Bering Sea, by area



Unrooted Nei genetic distance tree between various concentrations of pollock



Scheme of pollock population structure in the North Bering Sea and adjacent waters



Thank you

for your attention