

**Phylogeography of the finless porpoise (genus *Neophocaena*):
testing the stepwise divergence hypothesis in the northwestern
Pacific**

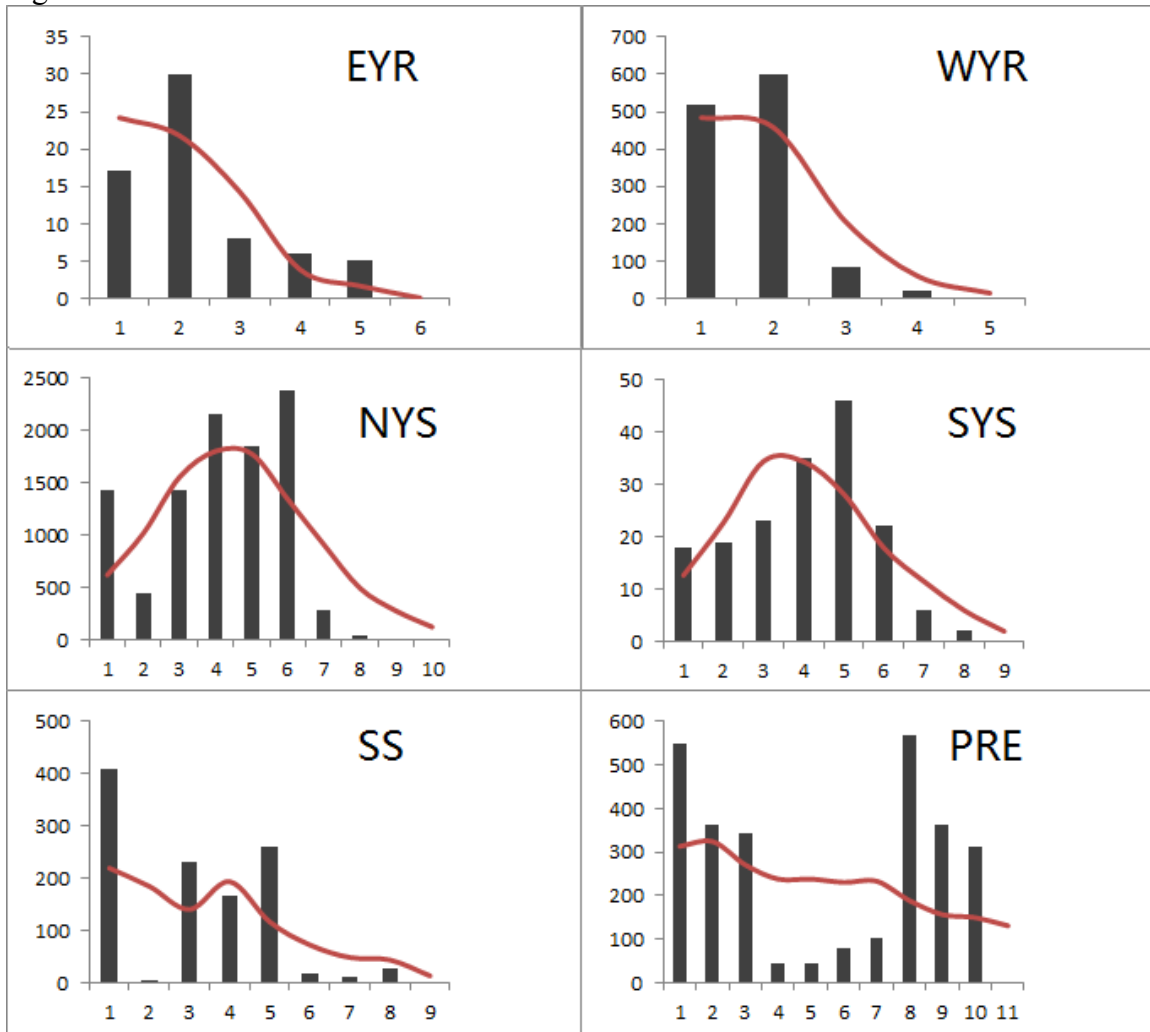
Wenzhi Lin^{1,2}, Céline H. Frère^{3,*}, Jia Xia¹, Duan Gui¹, Yuping Wu^{1,*}

1 State Key Laboratory of Biocontrol, School of Life Sciences, School of Marine Sciences, Sun Yat-Sen University, Guangzhou 510275, PR China;

2 Guangdong Pearl River Estuary Chinese White Dolphin National Nature Reserve, Zhuhai 519080, PR China;

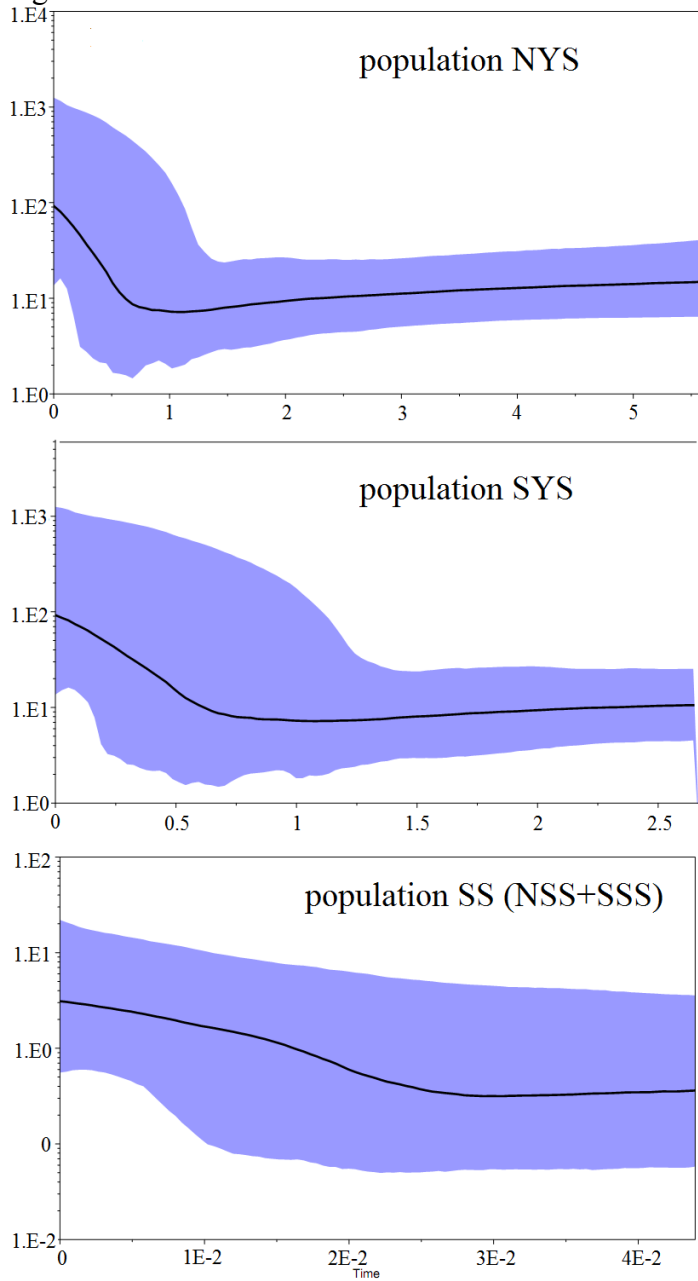
3 Center for Ecology and Conservation, College of Life and Environmental Sciences, University of Exeter, Cornwall Campus, TR10 9EZ UK

Fig. S1



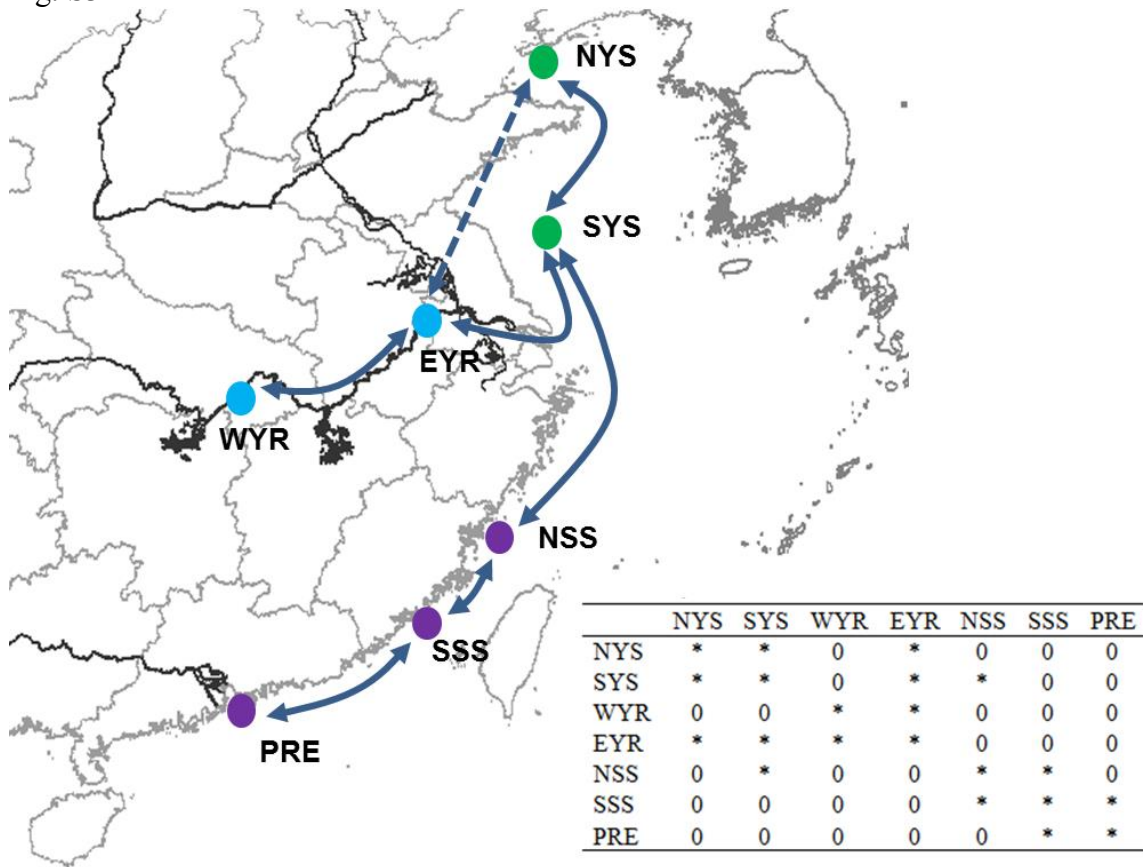
Mismatch distribution for the six studied populations of *Neophocaena*. The bars and lines represented the observed and simulated data. Since the F_{st} suggested not differentiation between the NSS and SSS population⁴⁹, they were combined into one population (SS) during the mismatch analyses.

Fig. S2



Skyline plots of the NYS, SYS and SS (NSS plus SSS) populations illustrating a demographic expansion signal. The historical N_e before the expansion was estimated as a proportion of the current N_e , roughly as 10%, 10% or 15%, separately.

Fig. S3



The stepping-stone model used for estimating the migration rate of *Neophocaena* spp. in the northwestern Pacific. M was estimated between neighboring populations because animals were expected to migrate along the coastline or river way. M between the NYS and EYR populations (shown with dashed line) was also calculated since the river mouths of the Yangtze River expanded during the marine regression. The table in the bottom right presents the corresponding matrix used for Migrate-n analyses. 0: not estimated; *: estimated without restriction. The map was generated using ArcGIS 9.2. The coastline and hydrologic data was available on web at <http://www.natureearthdata.com/downloads/> (Date accessed: Jun, 2011) and <http://www.mapcruzin.com/download-shapefile/asia-waterways-shape.zip> (Date accessed: Jun, 2011).

Table S1. The θ and N_e used for the Stepwise-divergence-hypothesis (SDH) and Recent-divergence-hypothesis (RDH) testing.

Populations	θ			N_e		
	25.00%	mode	75.00%	25.00%	mode	75.00%
SDH						
NYS	0.00433	0.00543	0.00647	23032	28883	34415
SYS	0.00587	0.00990	0.01800	31223	52660	95745
WYR	0.00100	0.00203	0.00293	5319	10798	15585
EYR	0.00193	0.00317	0.00460	10266	16862	24468
SS	0.00340	0.00463	0.00580	18085	24628	30851
PRE	0.00453	0.00577	0.00707	24096	30691	37606
RDH						
SS+PRE	0.00580	0.00710	0.00853	30851	37766	45372
EYR+WYR	0.00200	0.00310	0.00420	10638	16489	22340
NYS+SYS	0.00807	0.00957	0.01113	42926	50904	59202