Appendicularians around Kuroshio in winter-spring

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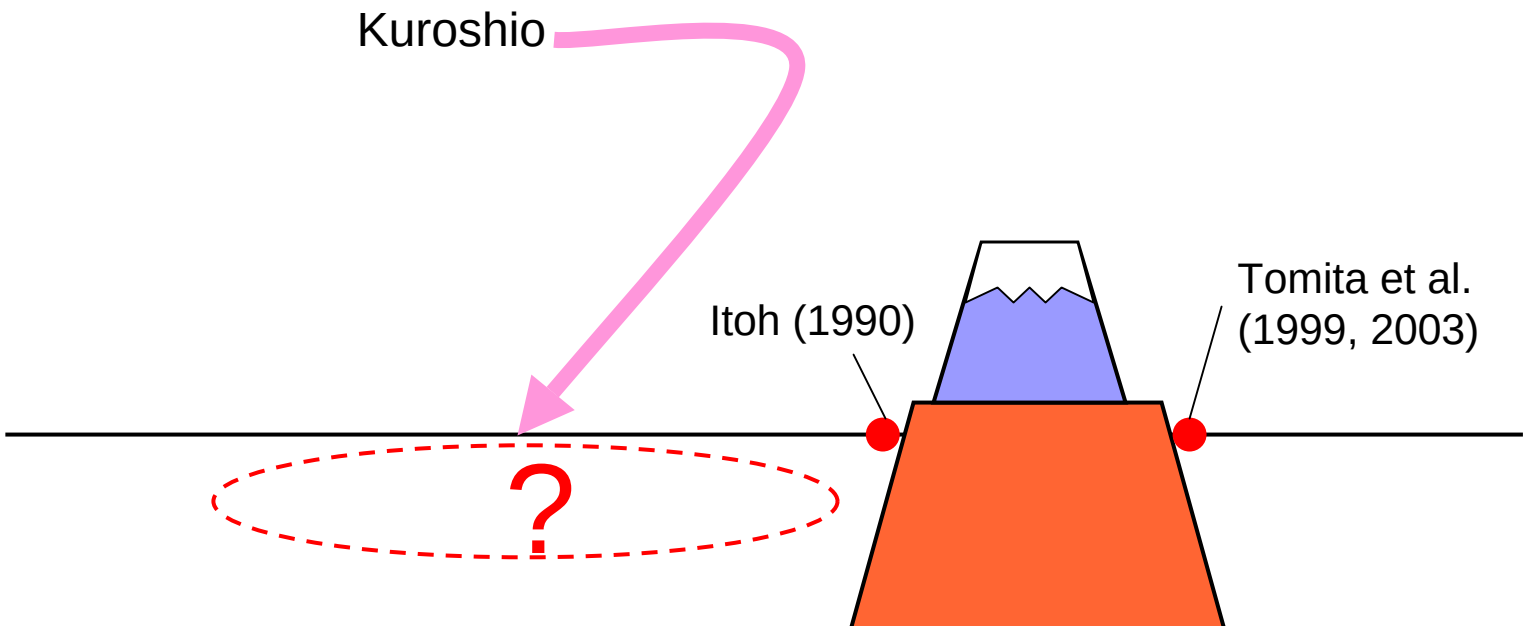
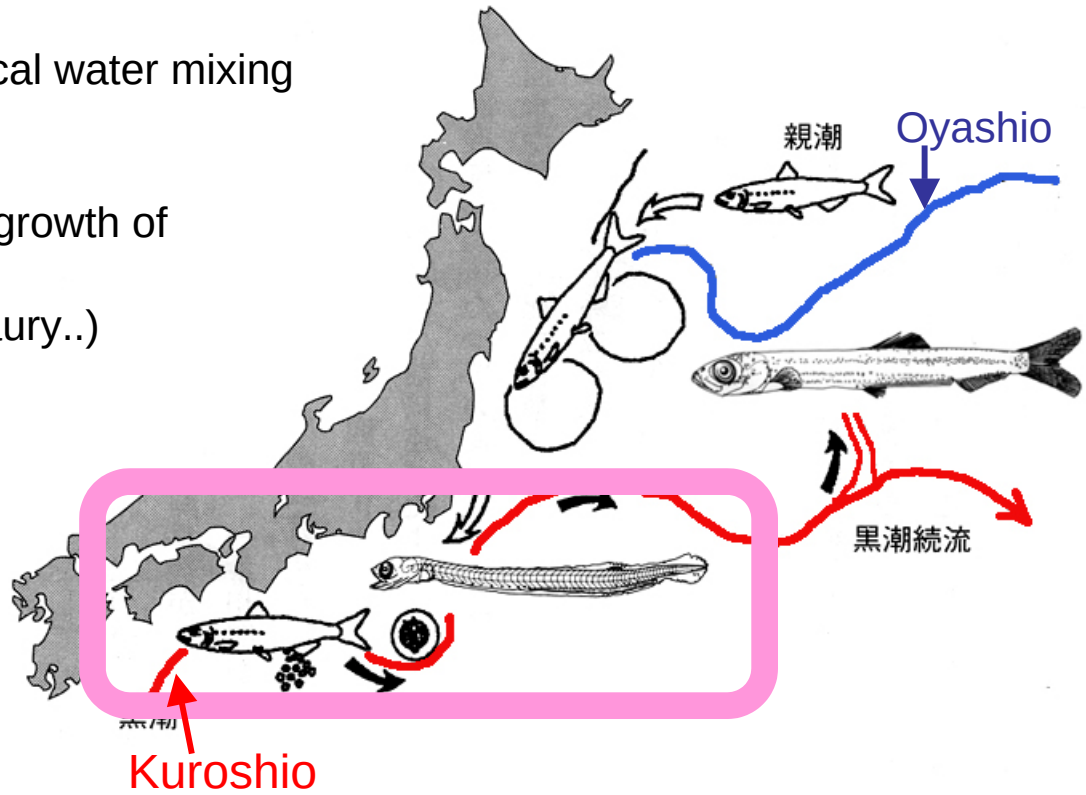
(National Research Institute of Fisheries Science)



Ecological events around Kuroshio in winter-spring

Development of vertical water mixing
Phytoplankton bloom

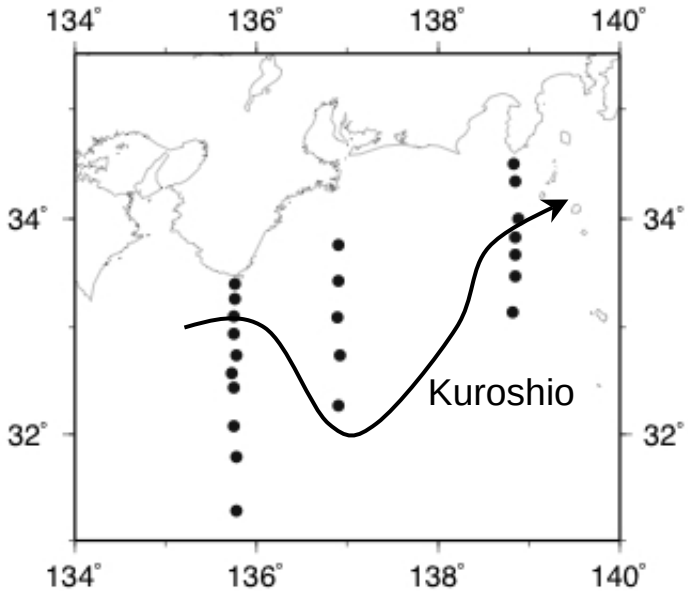
Spawning and larval growth of
pelagic fishes
(sardine, anchovy, saury..)



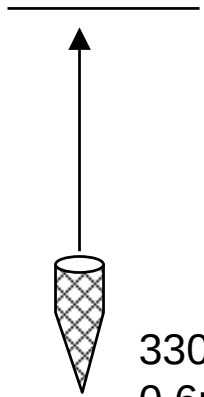
Contents

Sample collection (1)

Egg sensus (National Research Institute of Fisheries Science)

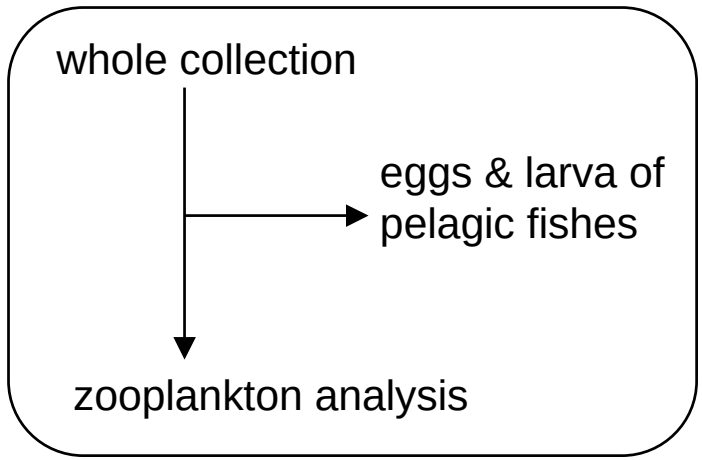


(1947-)



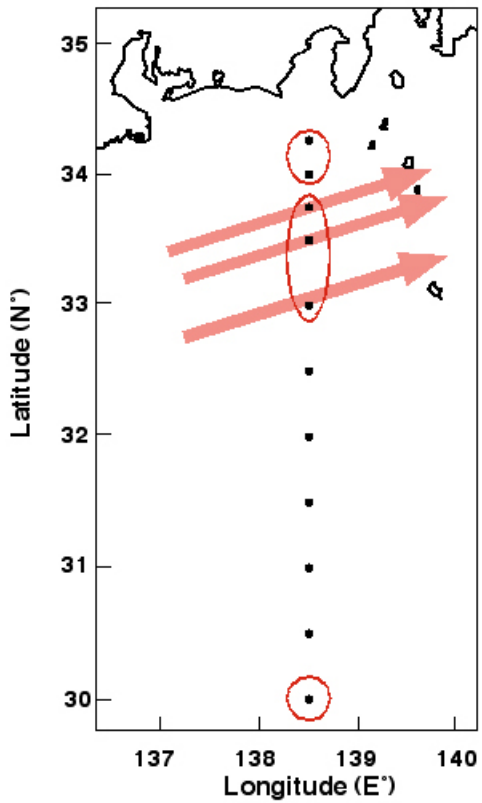
- February-March
- Net sampling (0-150 m)
- CTD casts

330μm mesh
0.6m diameter



Sample collection (2)
Omaezaki line (O-line) monitoring

(National Research Institute of Fisheries Science)



Each season (January in winter)

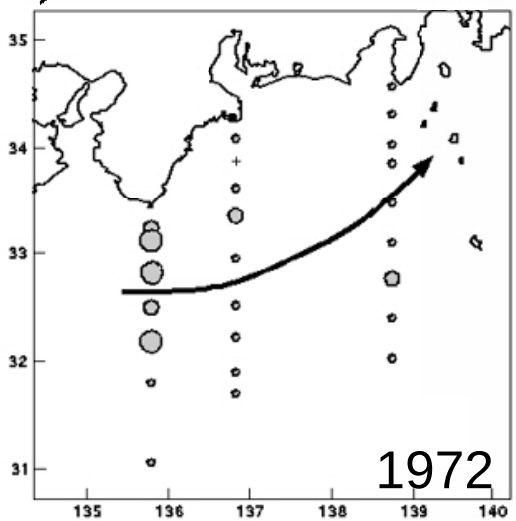
CTD cast
Chl. a
NORPAC Net (0-200m)
MOCNESS (0-200m, 8 layers)

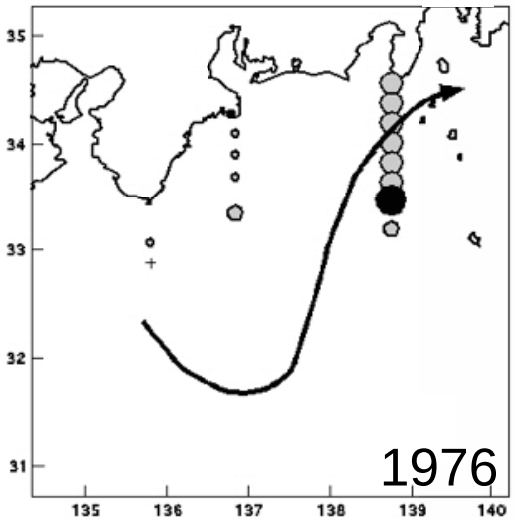
Species composition of appendicularians (1972, '76, '77, '78, '80, '82, '86)

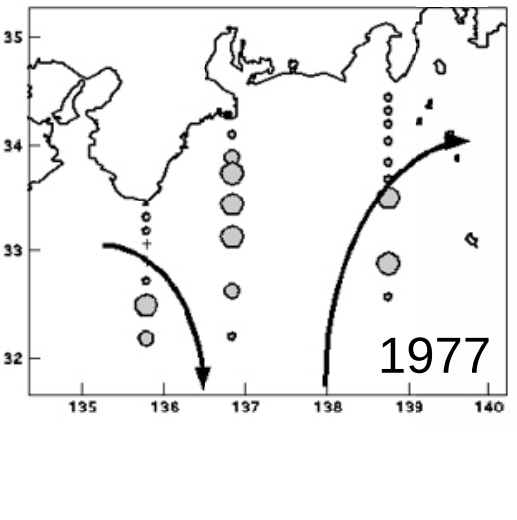
	abundance (%)	abundance (%)	abundance (%)
genus *Oikopleura*			
O. longicauda	693.8 (53.0)	965.7 (54.4)	1417.9 (71.8)
O. dioica	58.9 (4.5)	3.7 (0.2)	0.4 (0.0)
O. fusiformis	64.2 (4.9)	67.3 (3.8)	101.8 (5.2)
O. rufescens	95.2 (7.3)	133.2 (7.5)	121.6 (6.2)
O. parva	60.1 (4.6)	75.4 (4.2)	14.5 (0.7)
O. cophocerca	76.7 (5.9)	211.8 (11.9)	53.4 (2.7)
genus *Fritillaria*			
F. pellucida	152.3 (11.6)	141.4 (8.0)	233.1 (11.8)
others	108.4 (8.3)	177.0 (10.0)	31.3 (1.6)
Total	1309.7 (100.0) (inds./m2)	1775.6 (100.0) (inds./m2)	1973.9 (100.0) (inds./m2)

Horizontal distributions

Oikopleura longicauda



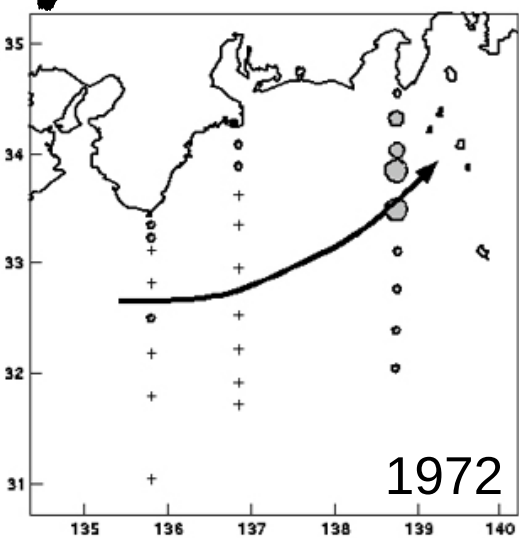


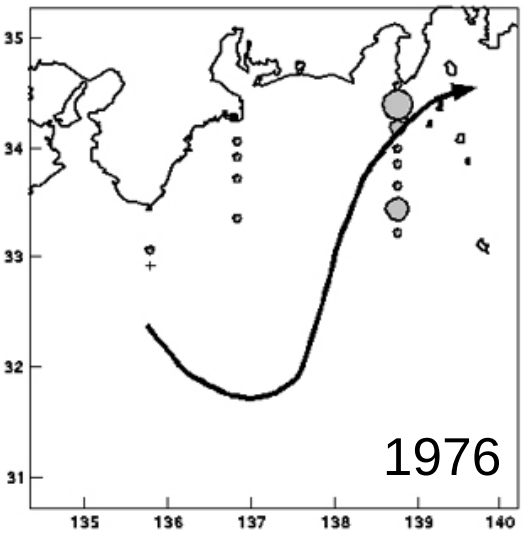


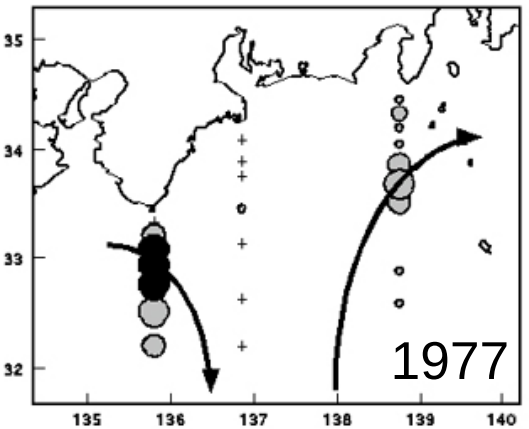
>10000
10000-5000
5000-1000
1000-500
<500
\+ no catch

(inds./m2)

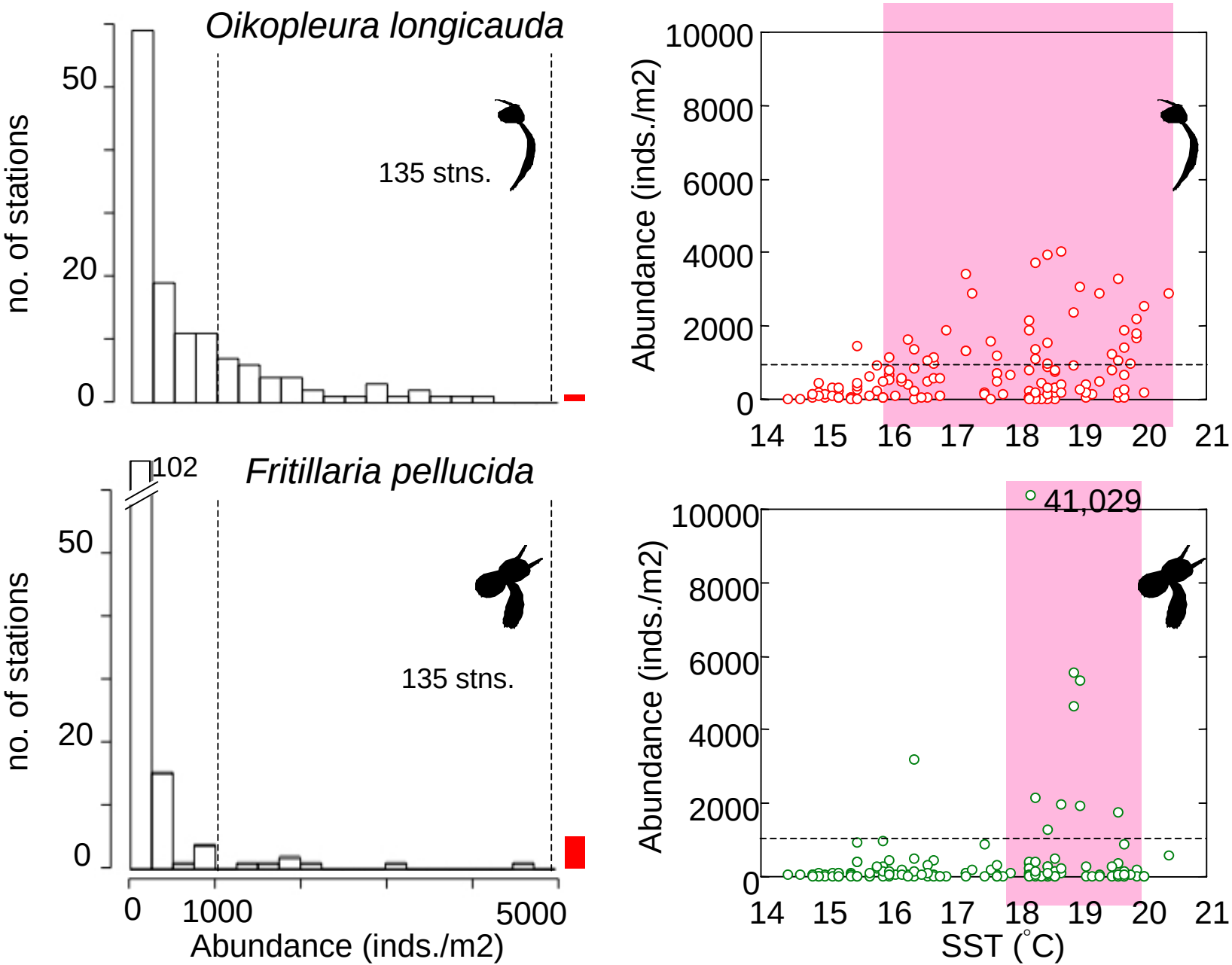
Fritillaria pellucida





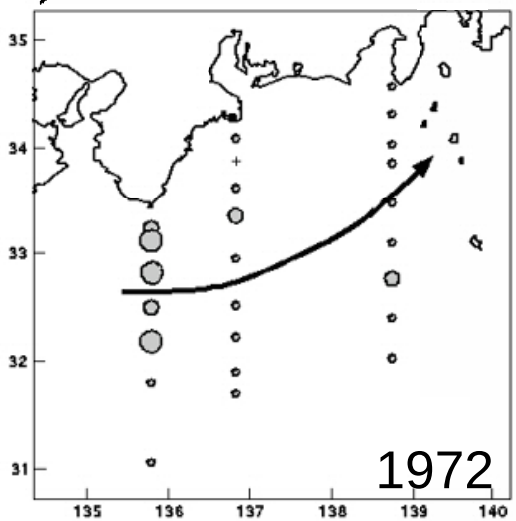


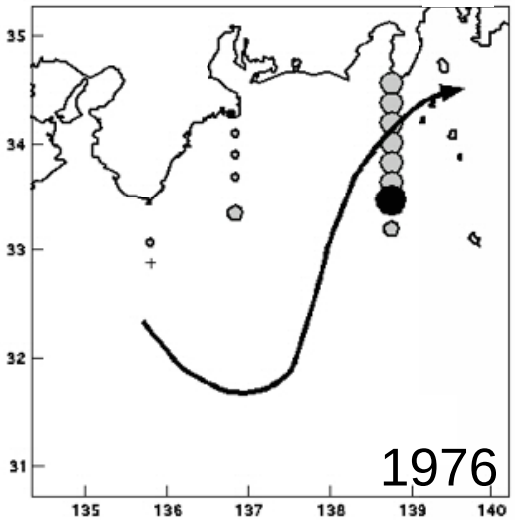
Occurrence patterns (total samples)

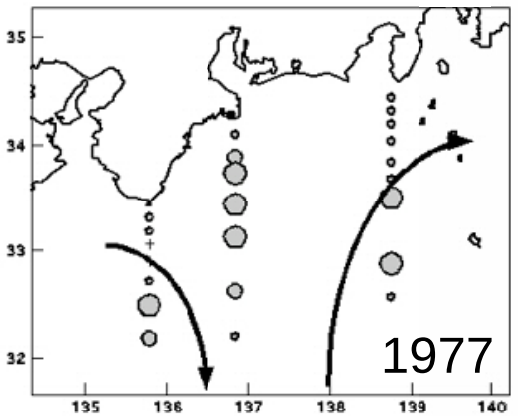


Horizontal distributions

Oikopleura longicauda



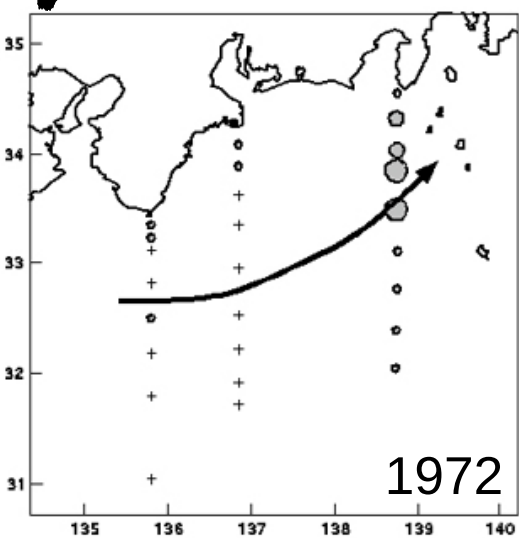


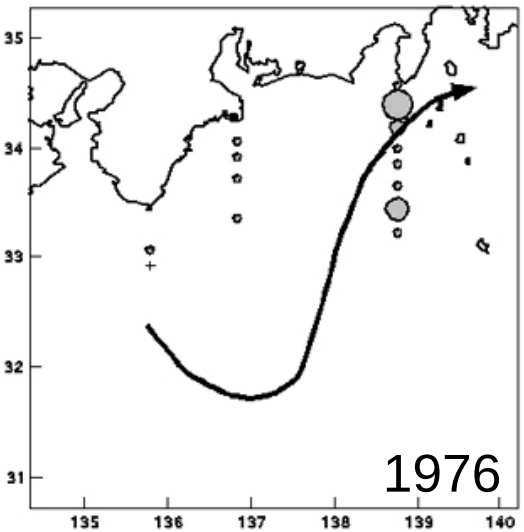


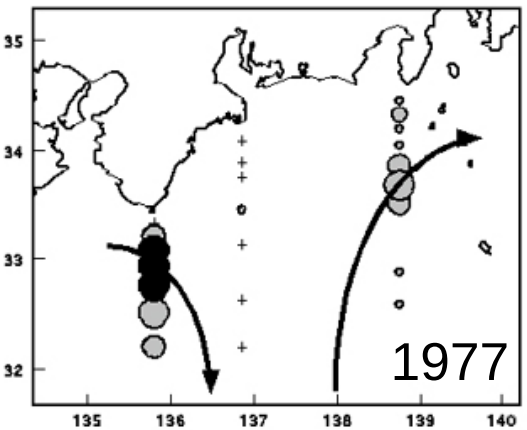
>10000
10000-5000
5000-1000
1000-500
<500
\+ no catch

(inds./m2)

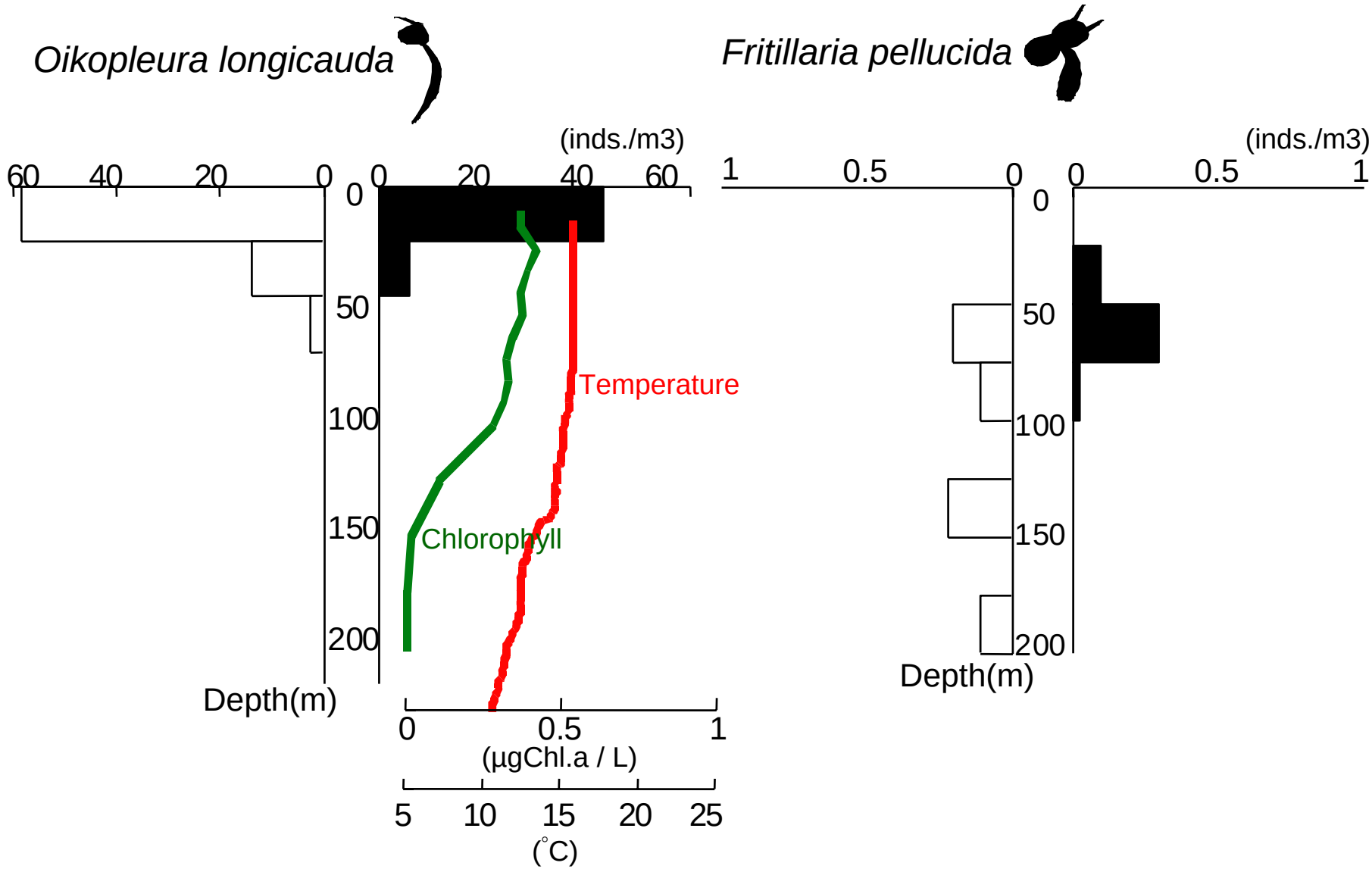
Fritillaria pellucida



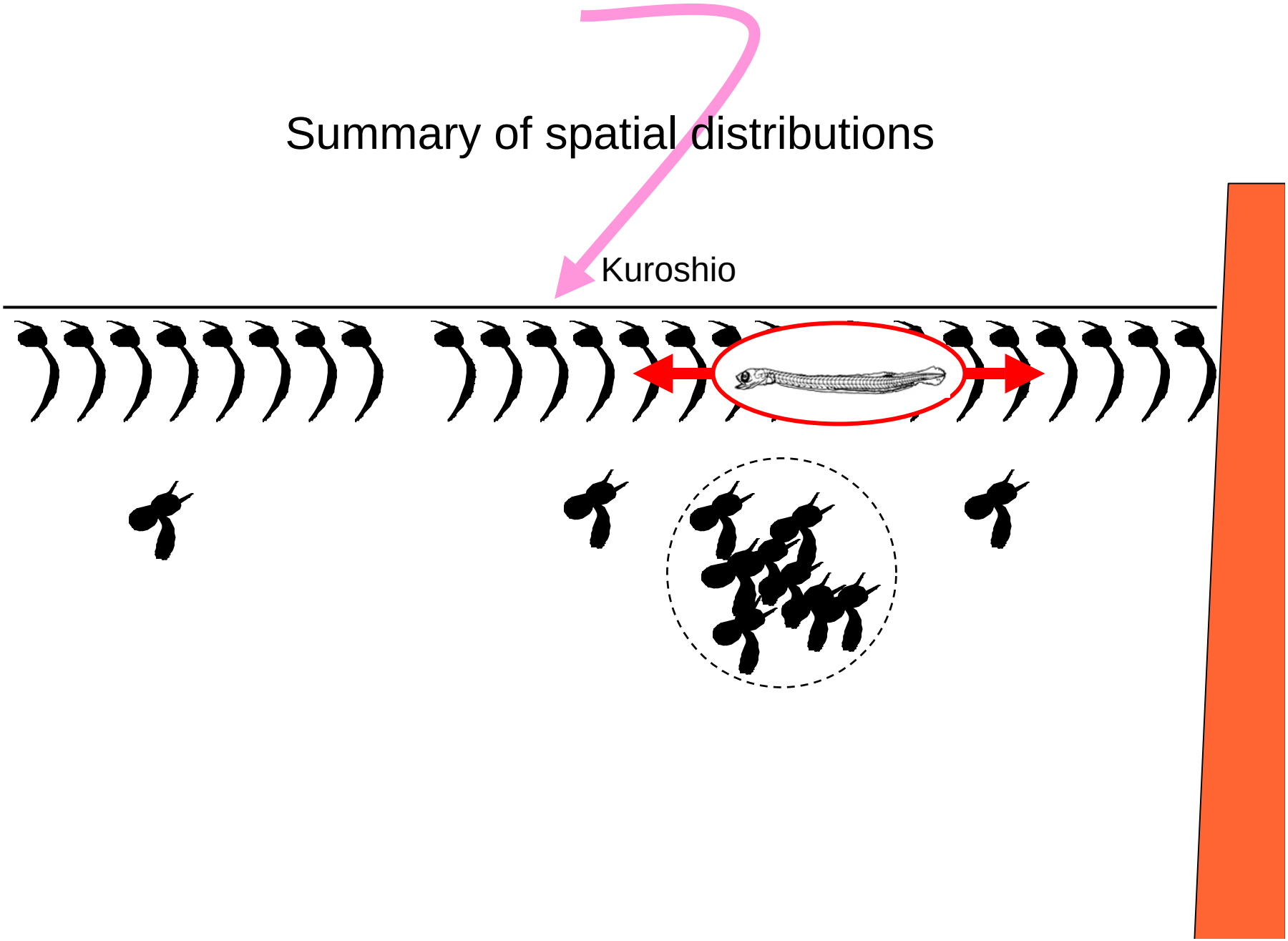




Vertical distributions (2003/1, 30°N, 138°E)

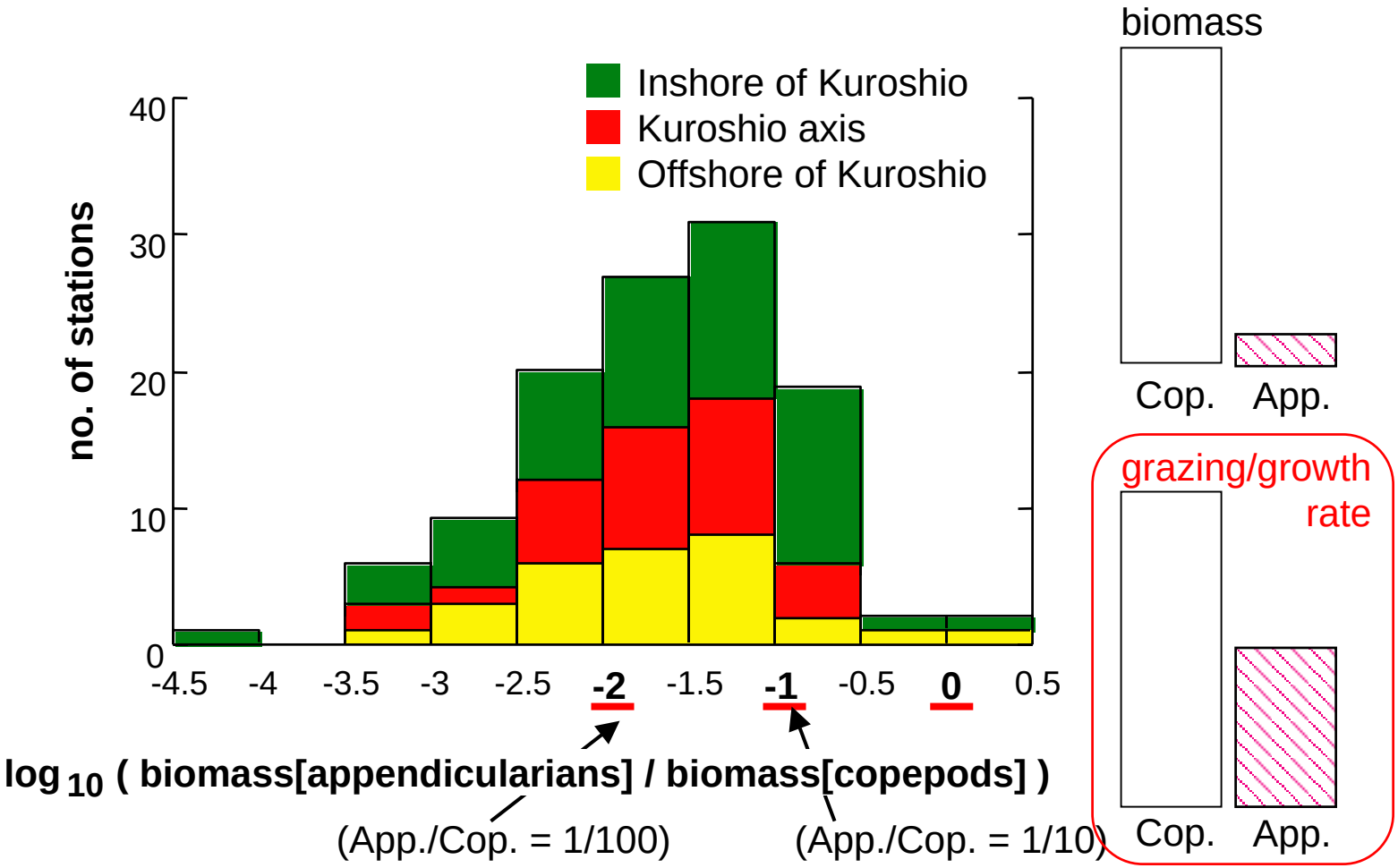


Summary of spatial distributions

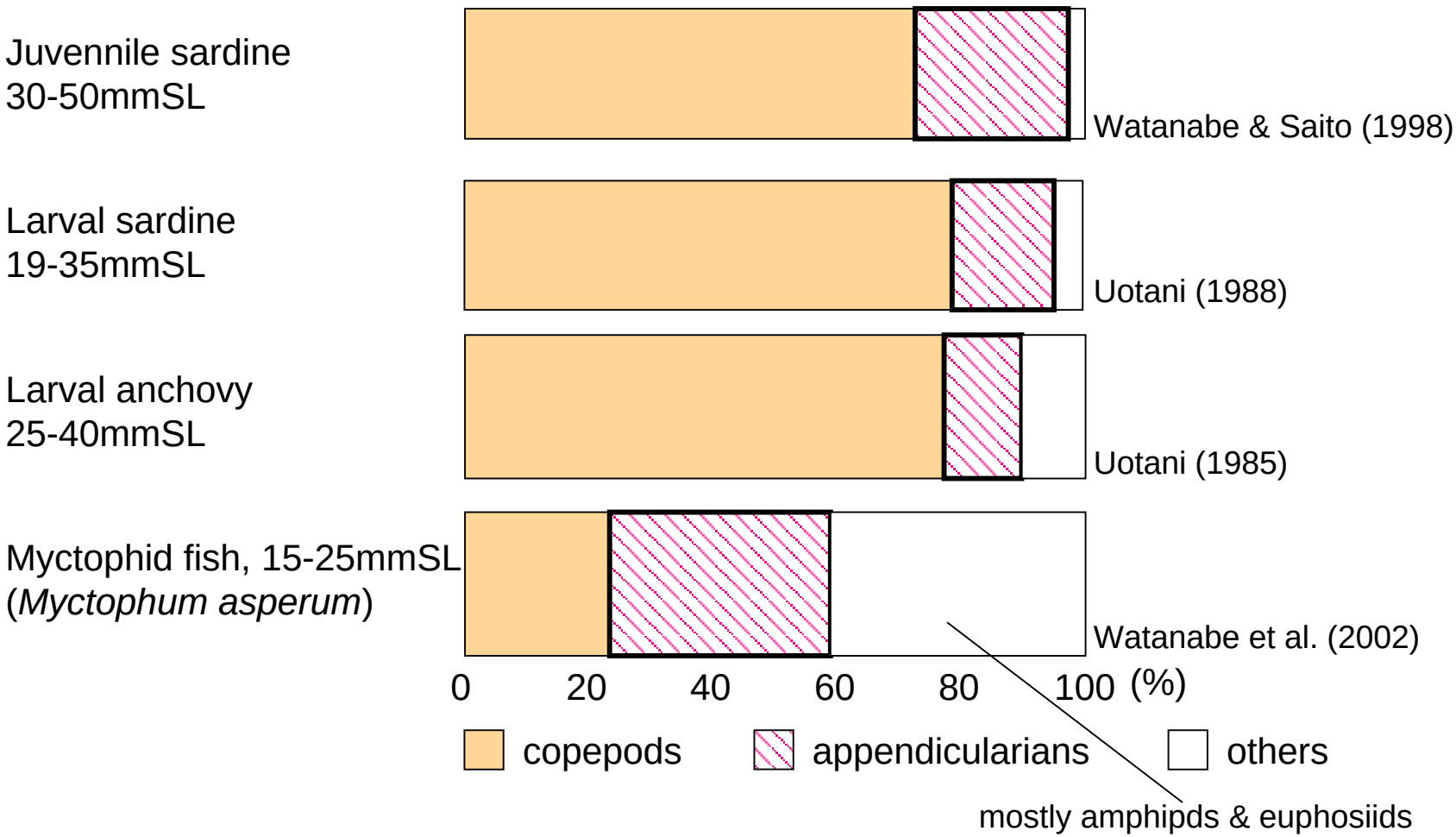


Appendicularians in the Kuroshio food-web

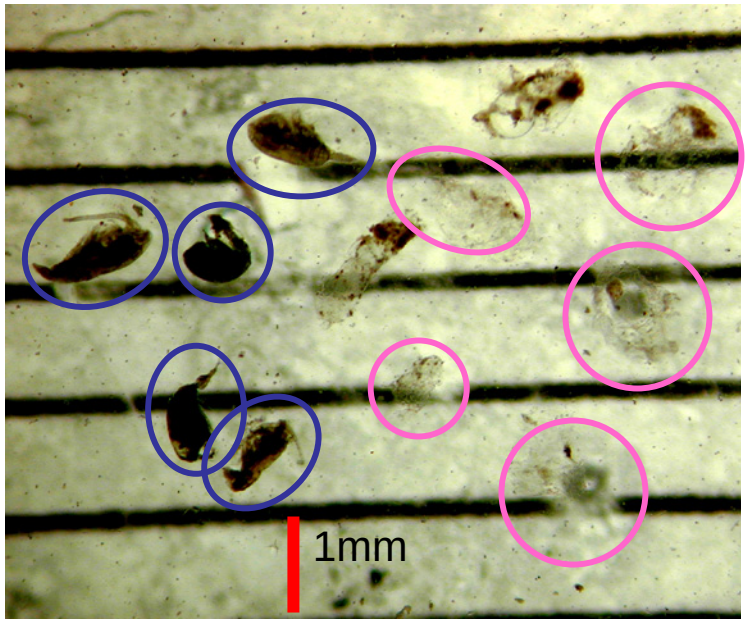
Appendiculan biomass vs. copepod biomass

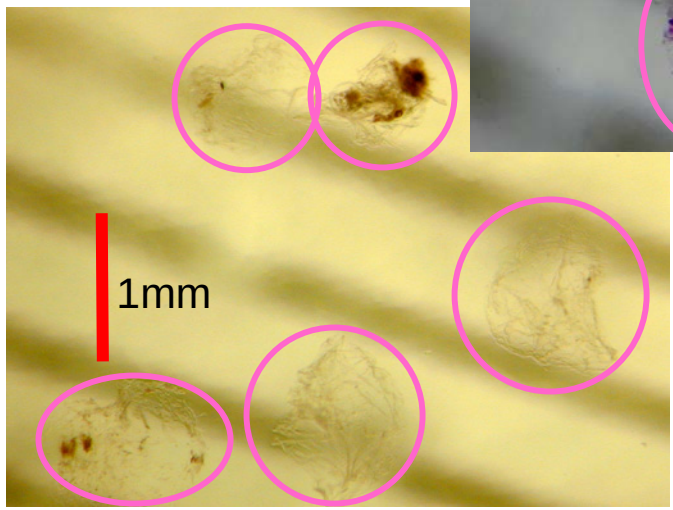


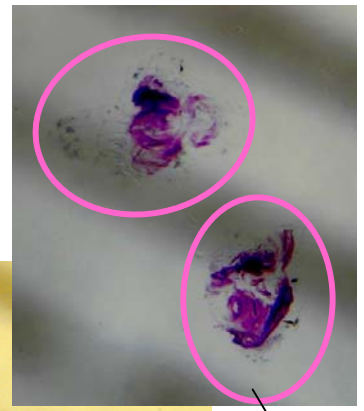
Appendicularians as diet of pelagic fishes around Kuroshio



Appendicularian houses fed by a juvenile sardine (28.2mmSL)

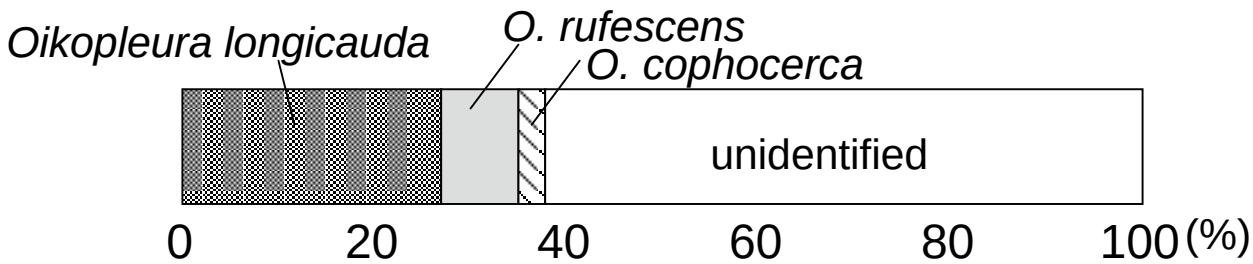




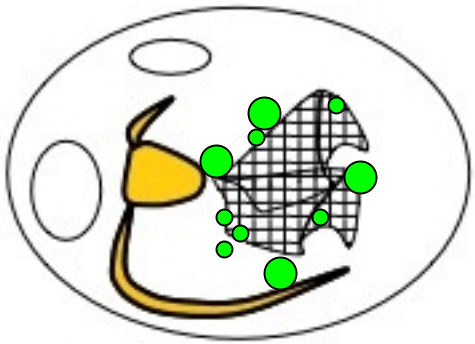


stained with
0.03%
trouidine blue aq.

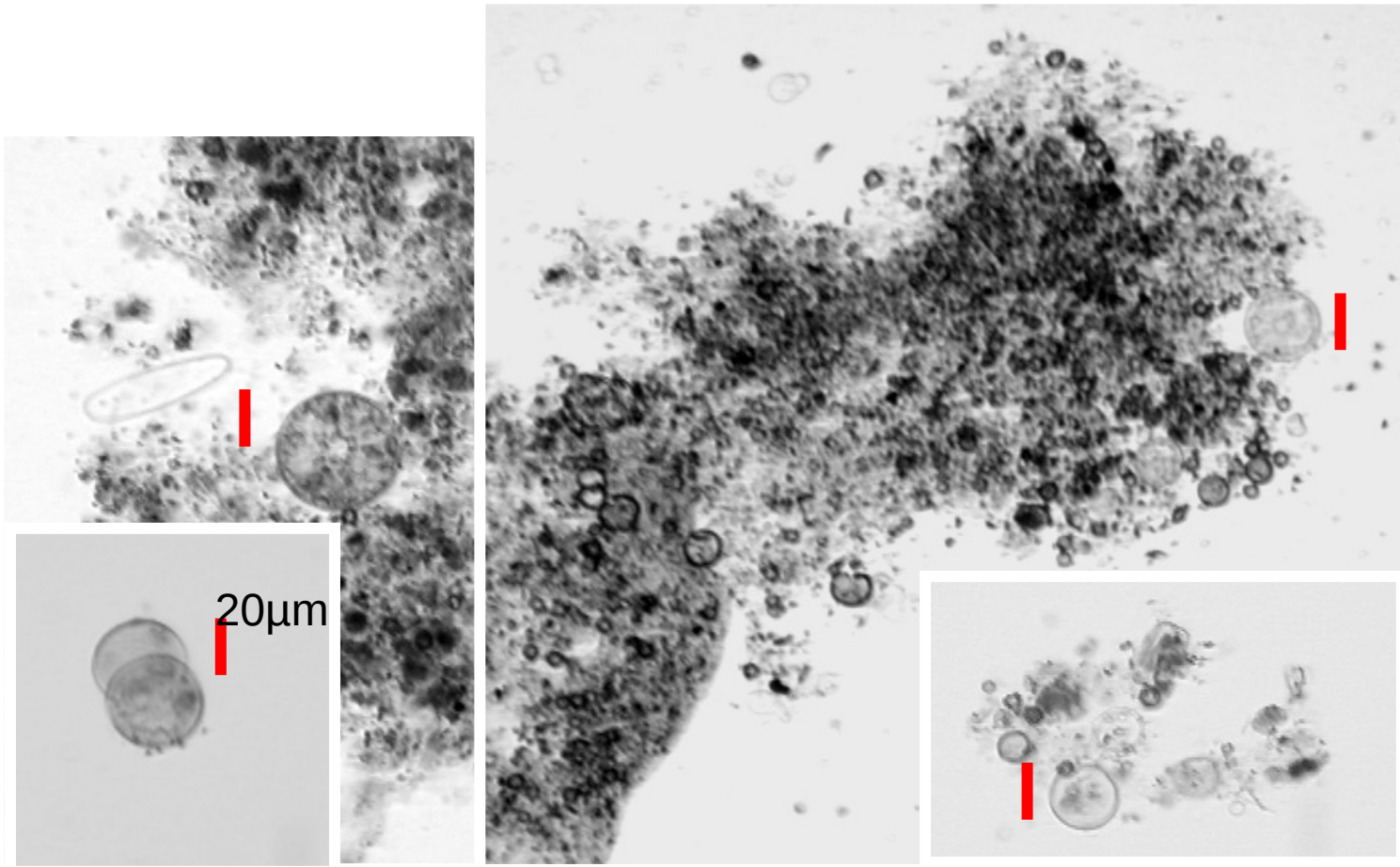
Species composition of appendicularians eaten by *Myctophum asperum* (myctophid fish)



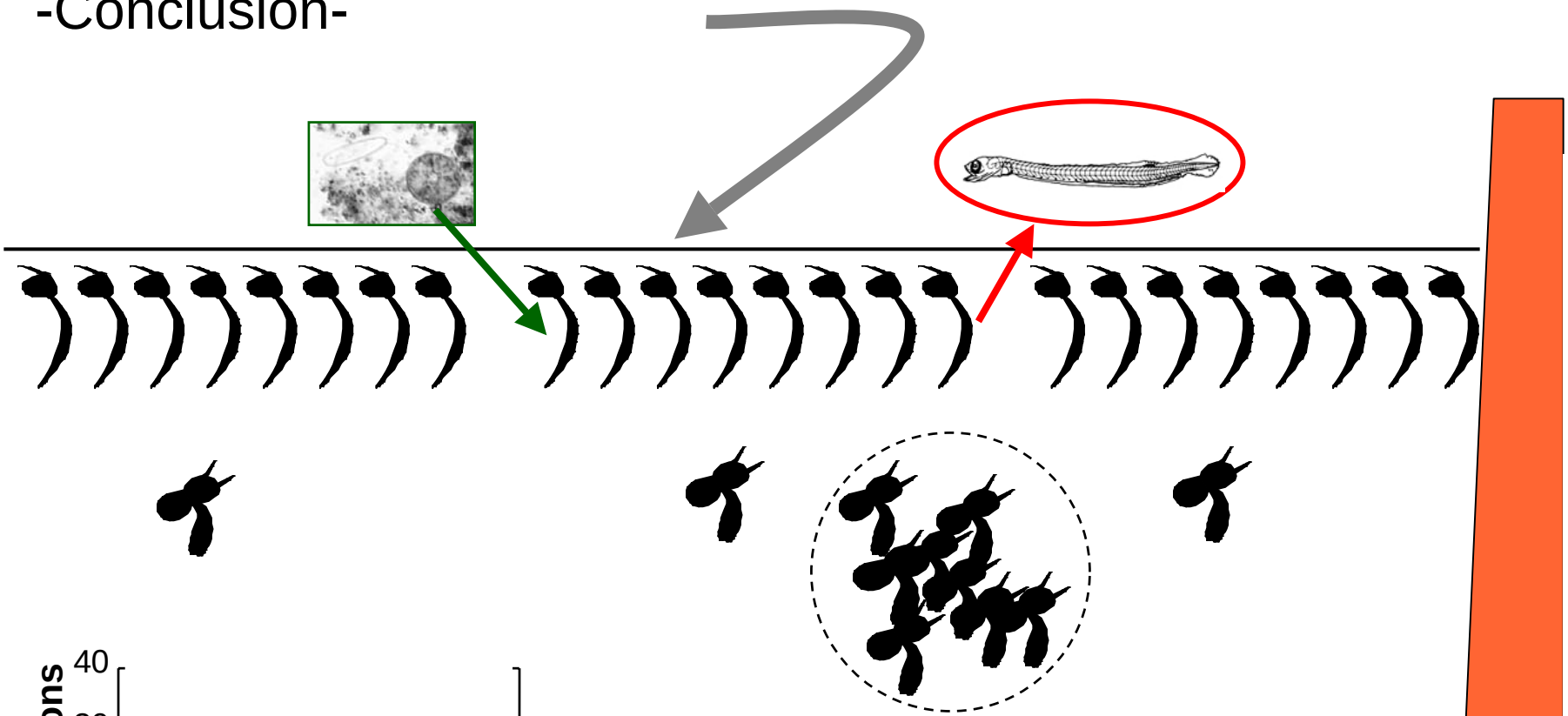
"House" of *Oikopleura longicauda*

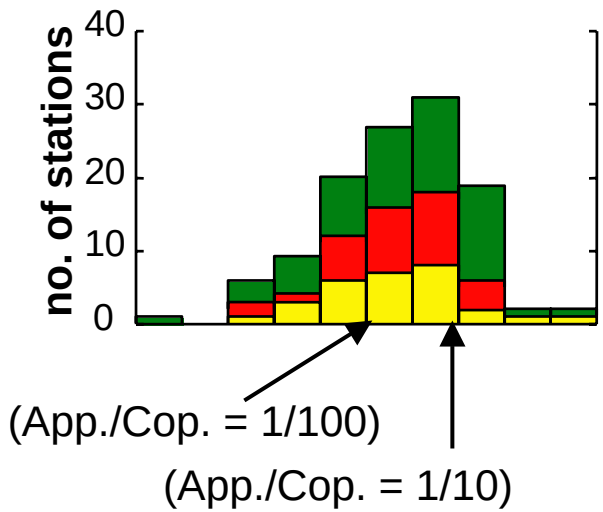


Diet of *Oikopleura longicauda* (2004/1, 34°N, 138°E)



-Conclusion-





Appendicularians around Kuroshio in winter are...

- dominated by *O. longicauda* and *F. pellucida*,
- which have different distributional character,
- having biomass of 1/100-1/10 of copepods',
- one of trophic links between diatoms/other phytoplankton and pelagic fish larva.