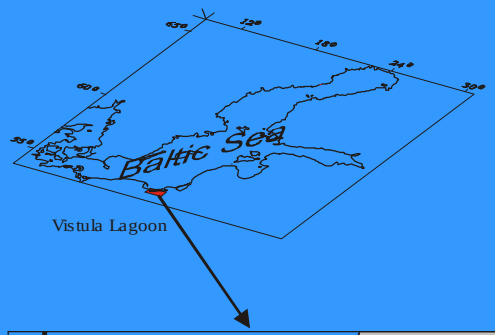
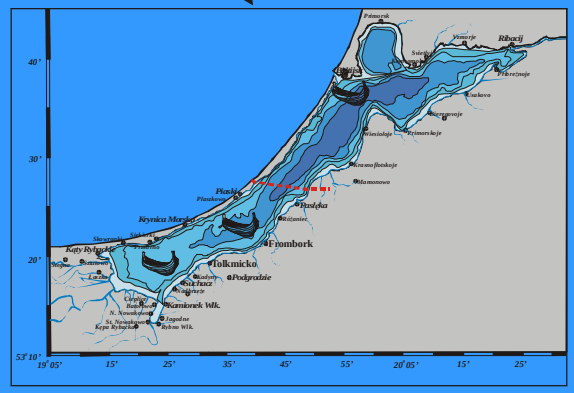
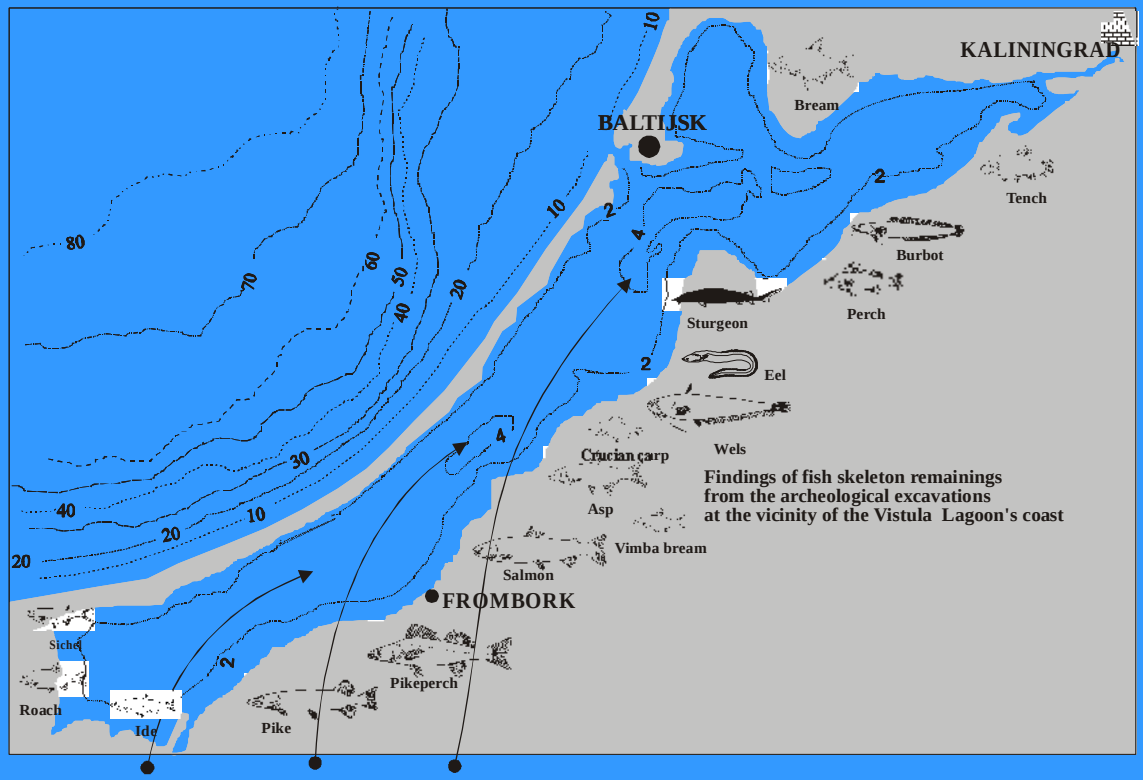




The results of studies on abundance the fish stocks supporting the fishery in the Vistula Lagoon in 1951-2001

Fish species inhabiting the Vistula Lagoon

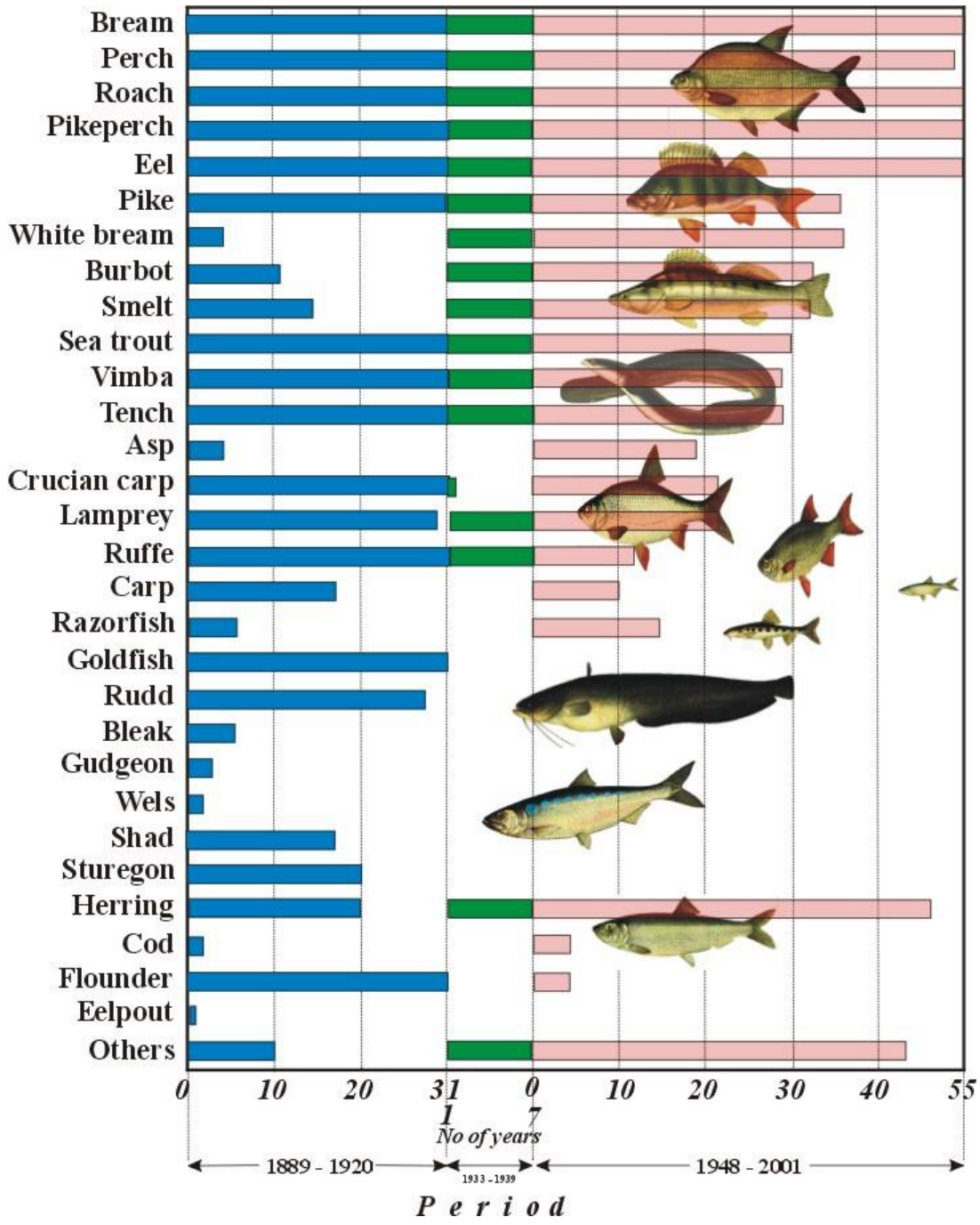


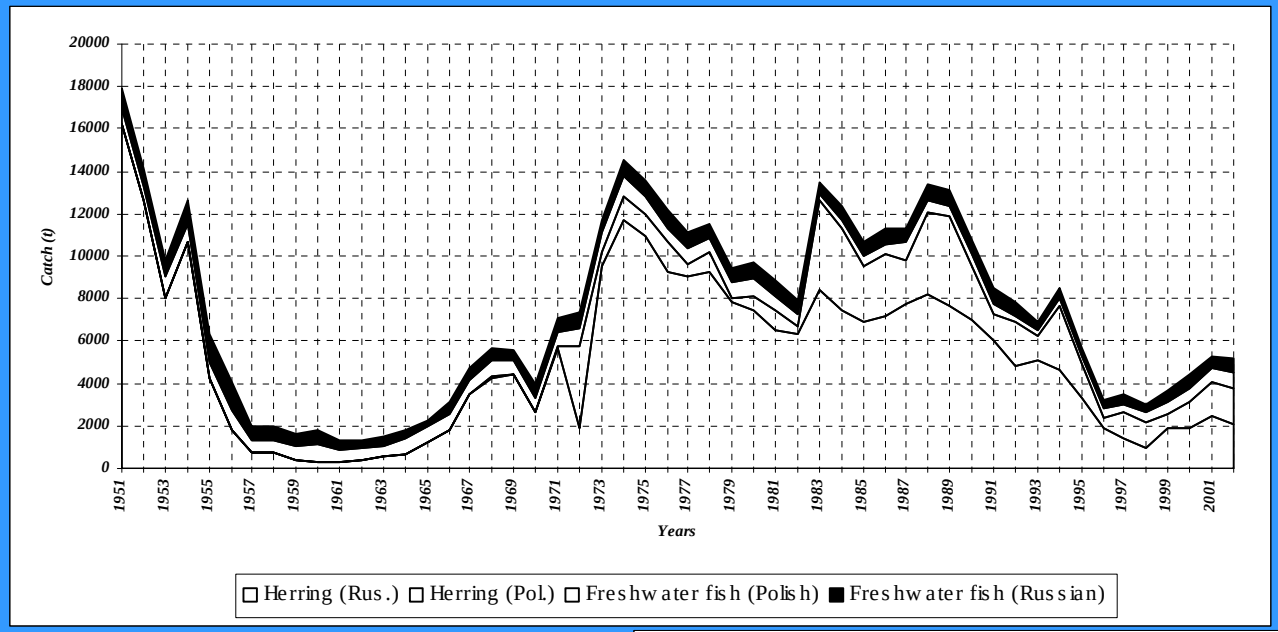
Anguilla anguilla
Alosa alosa
Alosa fallax
Abramis bjoerkna
Abramis brama
Alburnus alburnus
Aspius aspius
Barbatula barbatula
Carassius carassius
Clupea harengus
Coregonus albula
Coregonus lavaretus
Cobitis taenia
Ctenopharyngodon idella
Cyclopterus lumpus
Cyprinus carpio
Esox lucius
Gadus morhua
Gasterosteus aculeatus
Gobio gobio
Gymnocephalus cernuus
Leuciscus idus
Lota lota
Misgurnus fossilis
Neogobius melanostomus
Oncorynchus mykiss
Osmerus eperlanus
Pelecus cultratus
Perca fluviatilis
Platichthys flesus
Psetta maxima
Pungitius pungitius
Rodeus sericeus
Rutilus rutilus
Salmo salar
Salmo trutta
Scardinius erythrophthalmus
Silurus glanis
Stizostedion lucioperca
Tinca tinca
Vimba vimba
Zoarces viviparus

Fish species recorded in the last 50 years in the Vistula Lagoon

Fig. 3.1.1 Fish species recorded in the Vistula Lagoon

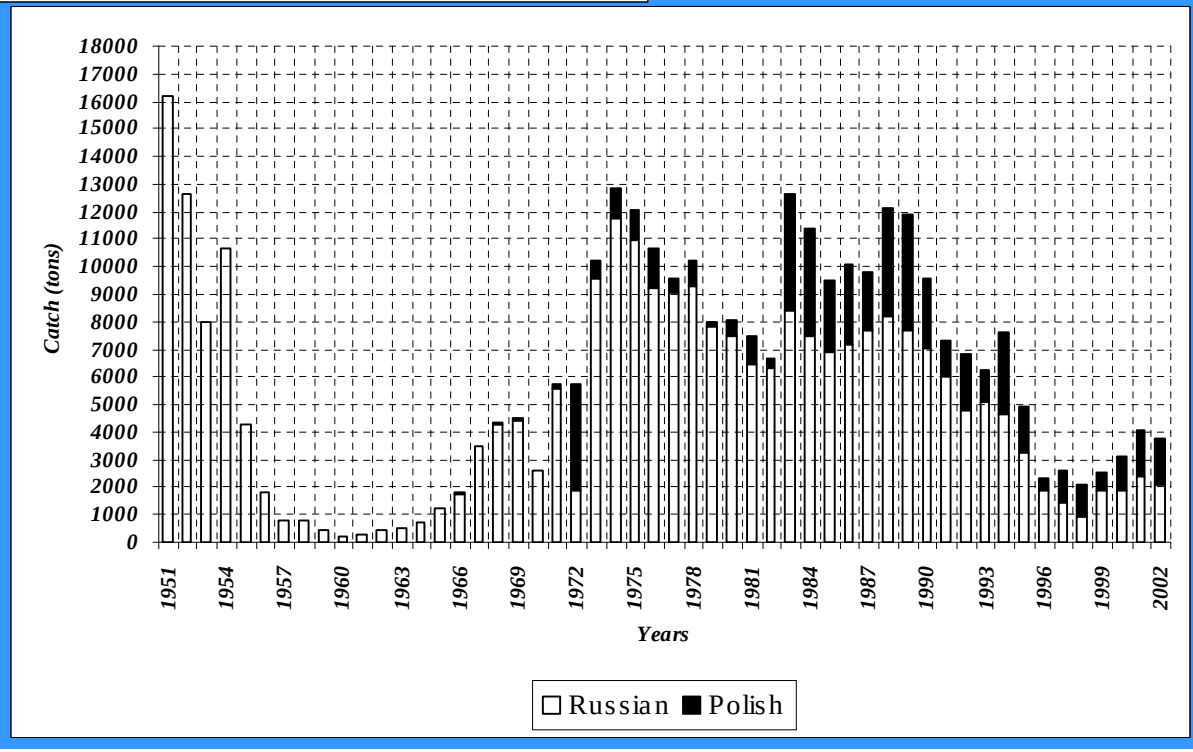
- Hensen (1878) – 18 species
- available sources in literatures – 40 species
- observed during lat 10 years – 36 species


Bream
Perch
Roach
Pikeperch
Eel
Pike
White bream
Burbot
Smelt
Sea trout
Vimba
Tench
Asp
Crucian carp
Lamprey
Ruffe
Carp
Razorfish
Goldfish
Rudd
Bleak
Gudgeon
Wels
Shad
Sturegon
Herring
Cod
Flounder
Eelpout
Others
0 10 20 31 0 10 20 30 40 55
1 7
No of years
1889 - 1920
1933 - 1939
1948 - 2001
Period

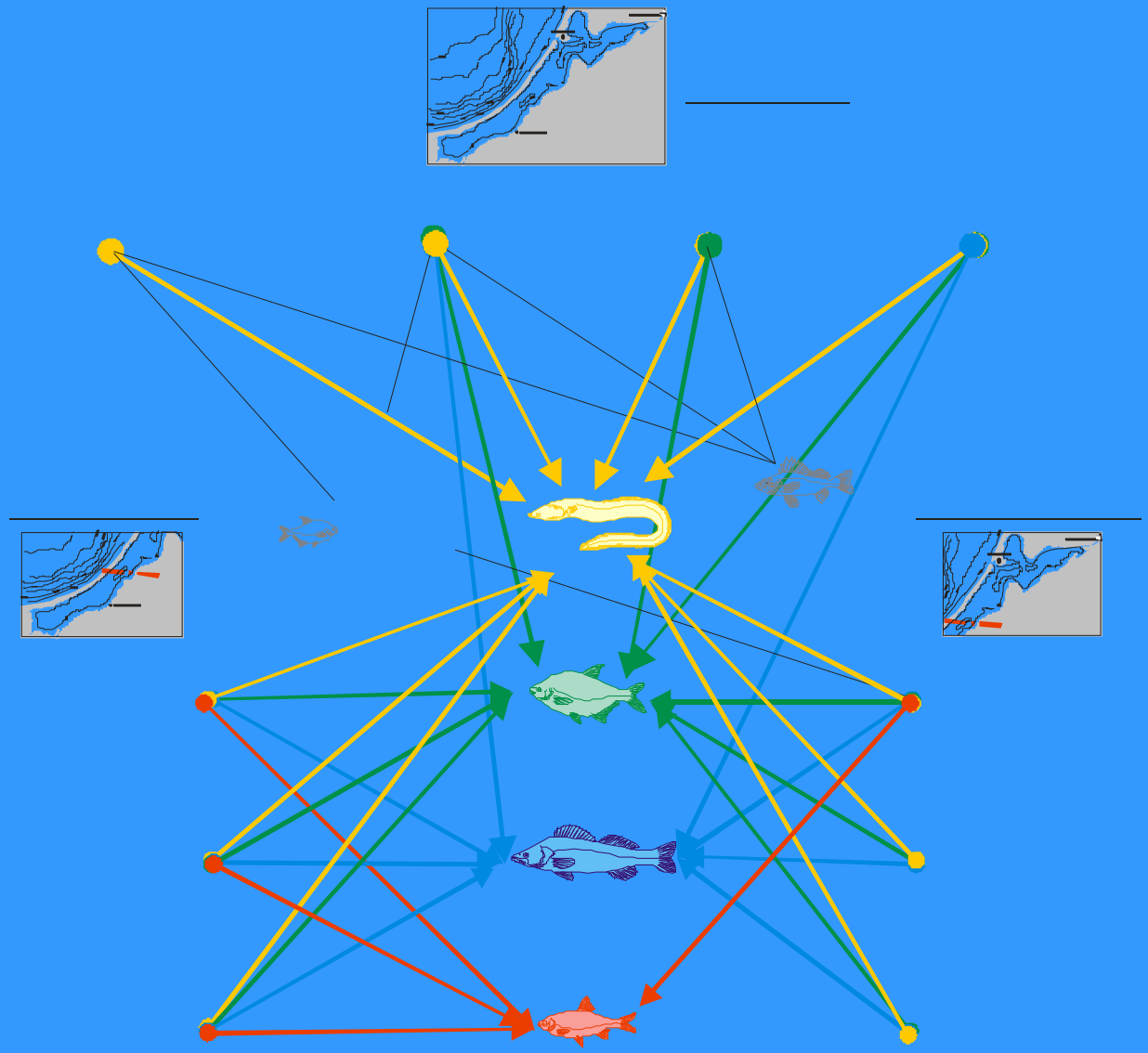


Total Catch

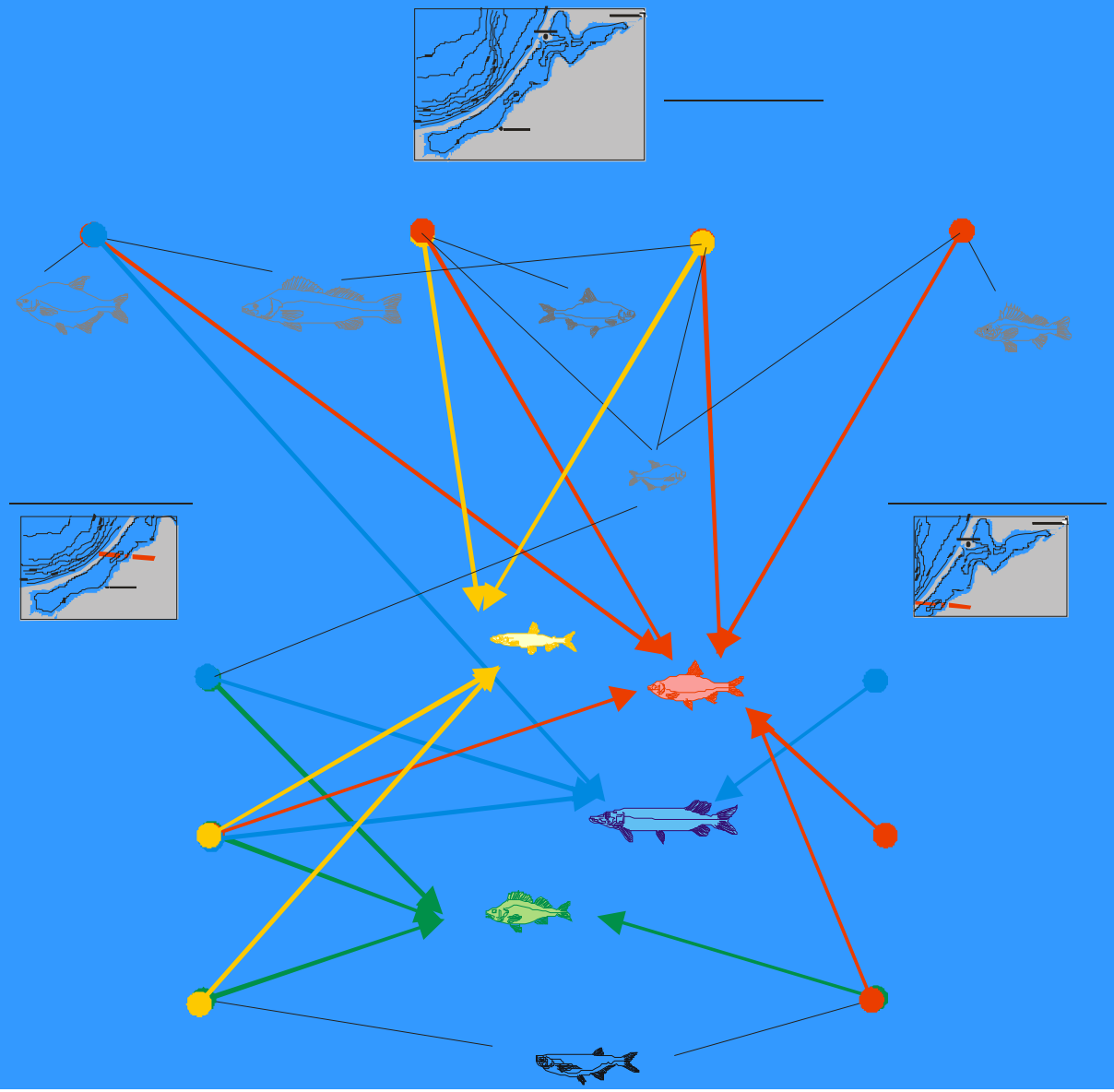
Herring



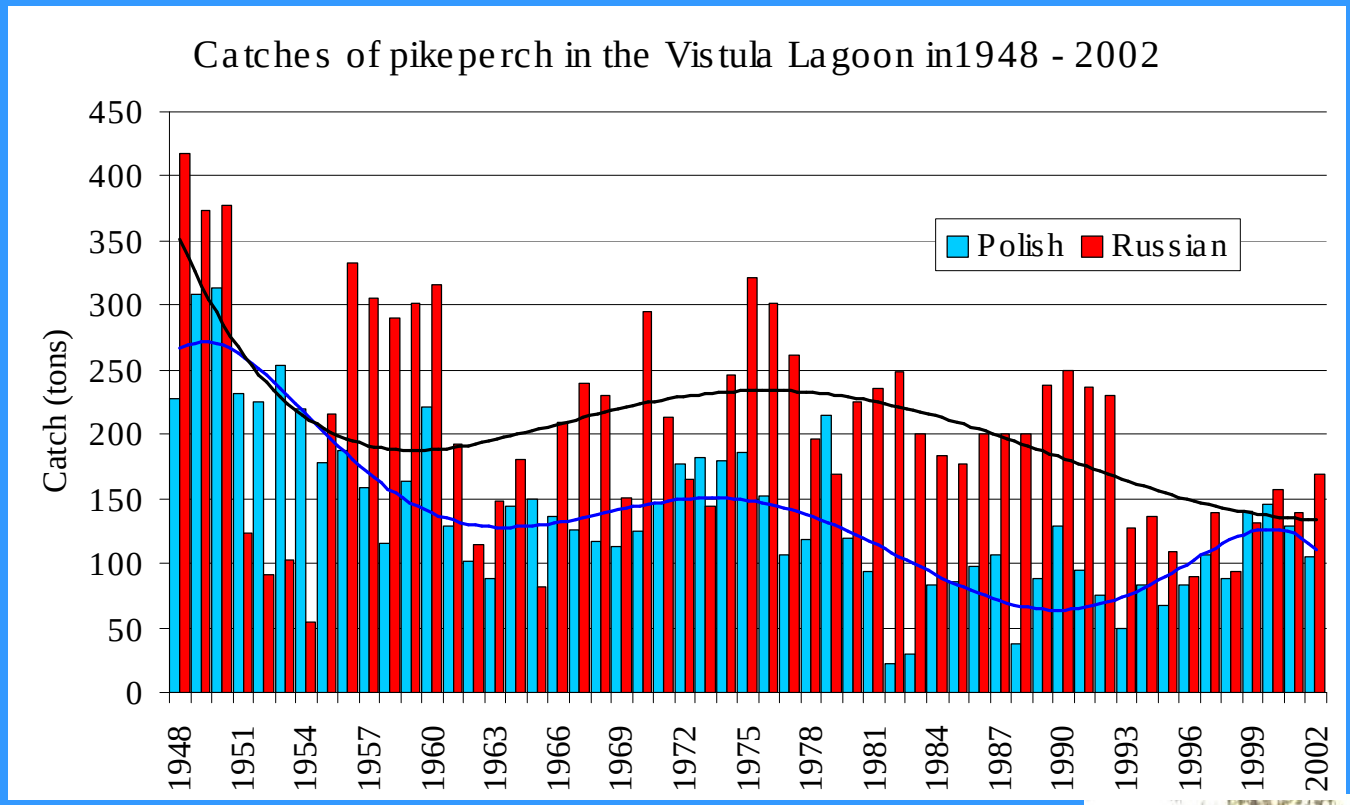
Apperance of the species in catching of fish in different periods >10% total catch

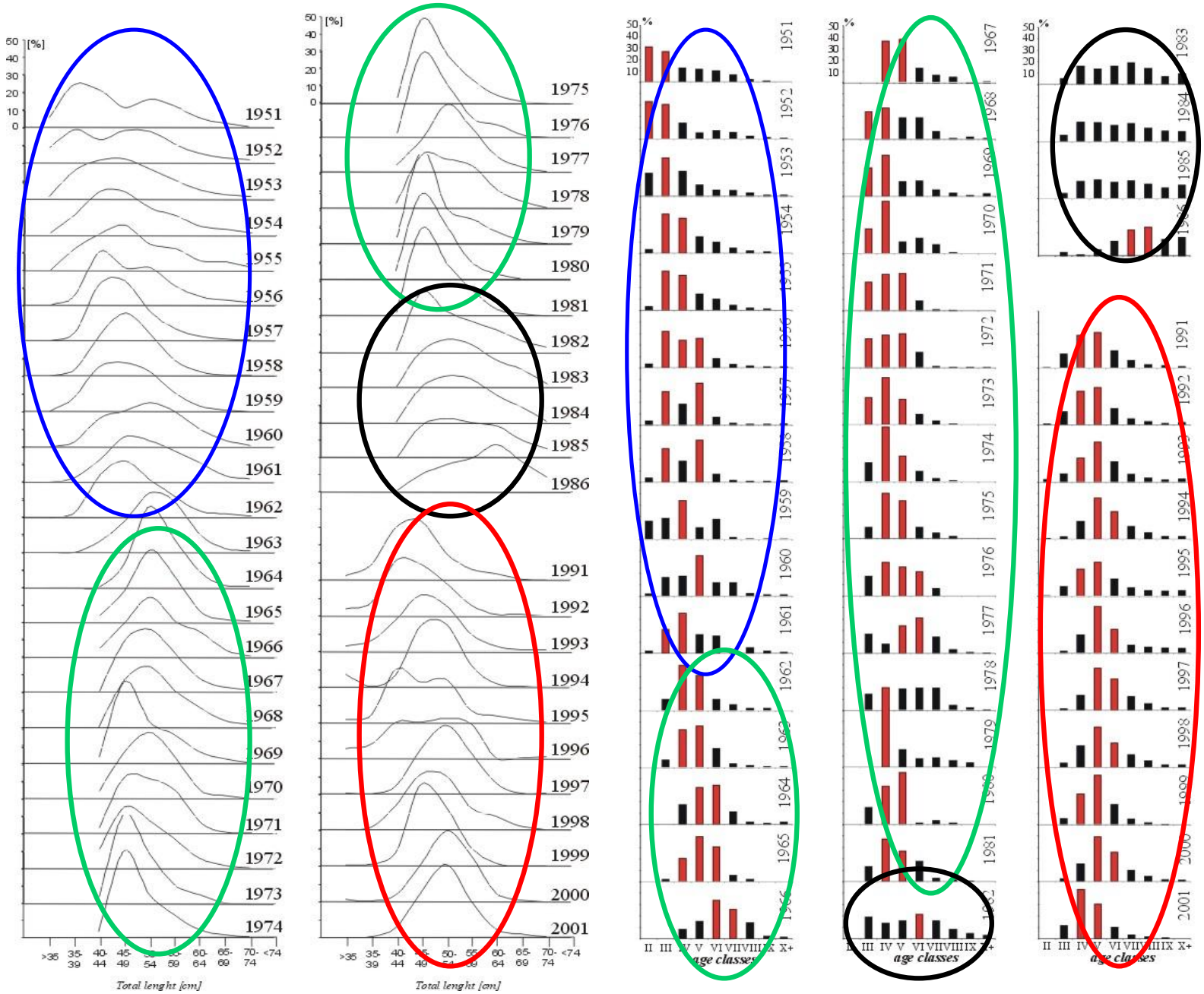


Apperance of the species in catching of fish in different periods 1-9% total catch

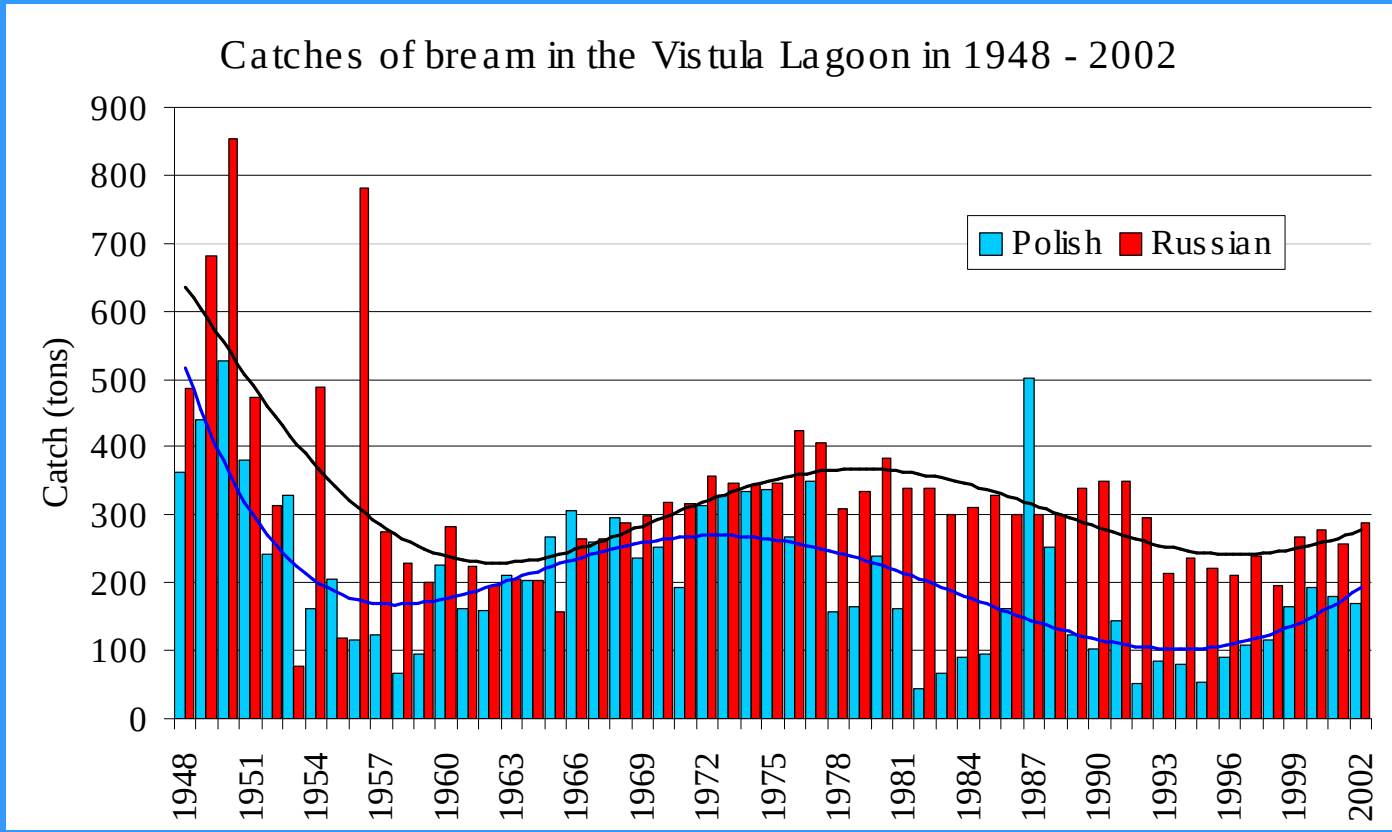


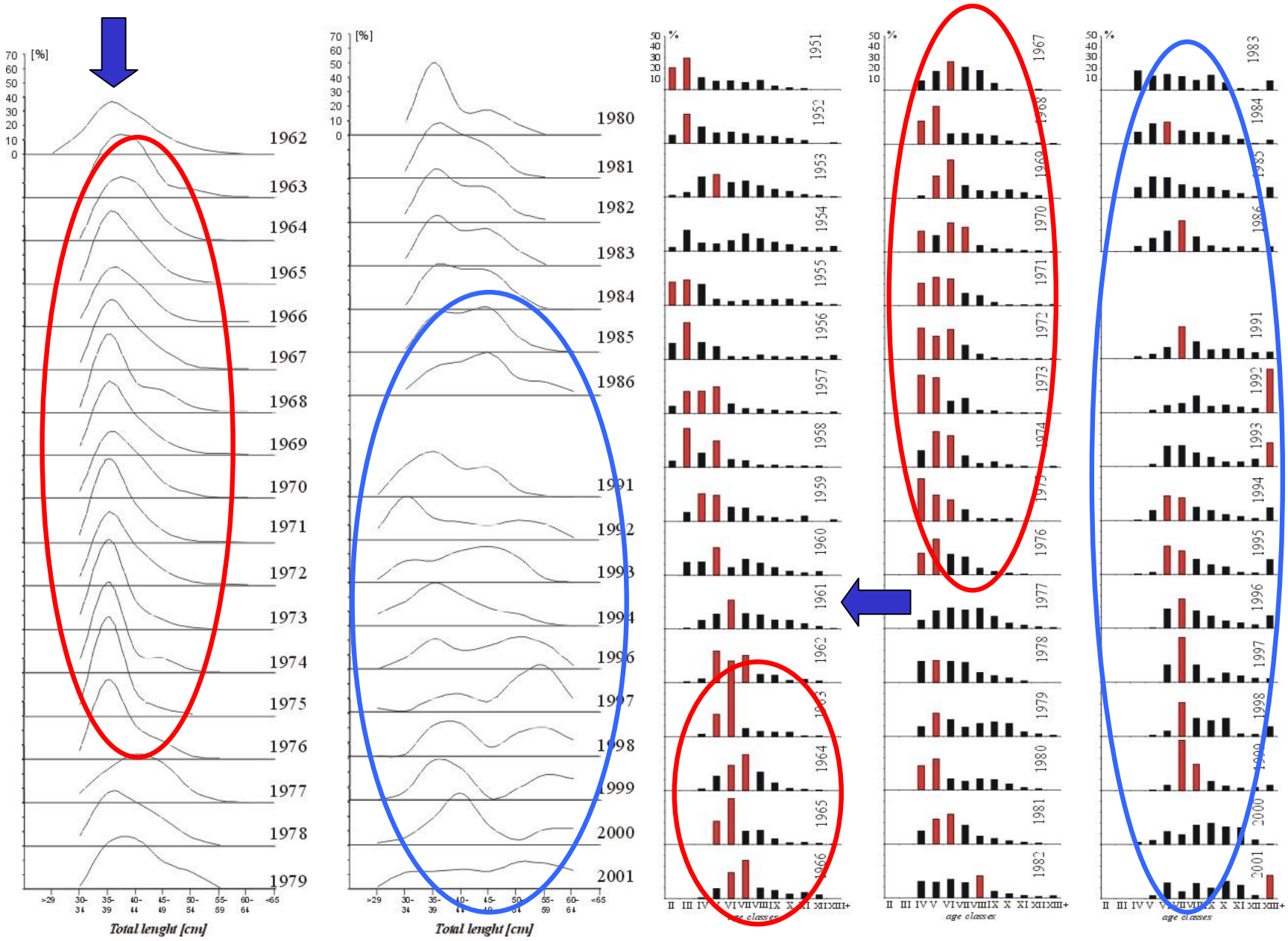
PIKEPERCH


Catches of pikeperch in the Vistula Lagoon in1948 - 2002
Catch (tons)
450
400
350
300
250
200
150
100
50
0
Polish
Russian
1948
1951
1954
1957
1960
1963
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002

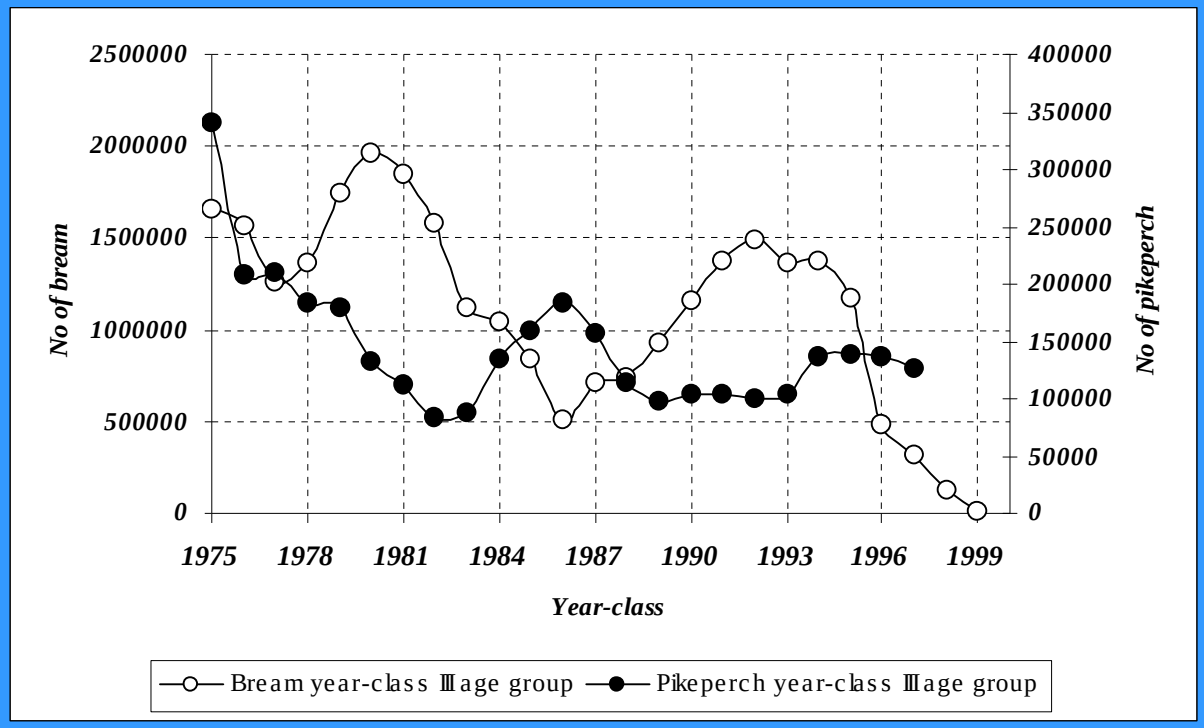

[%]
Total lenght [cm]
age classes

BREAM

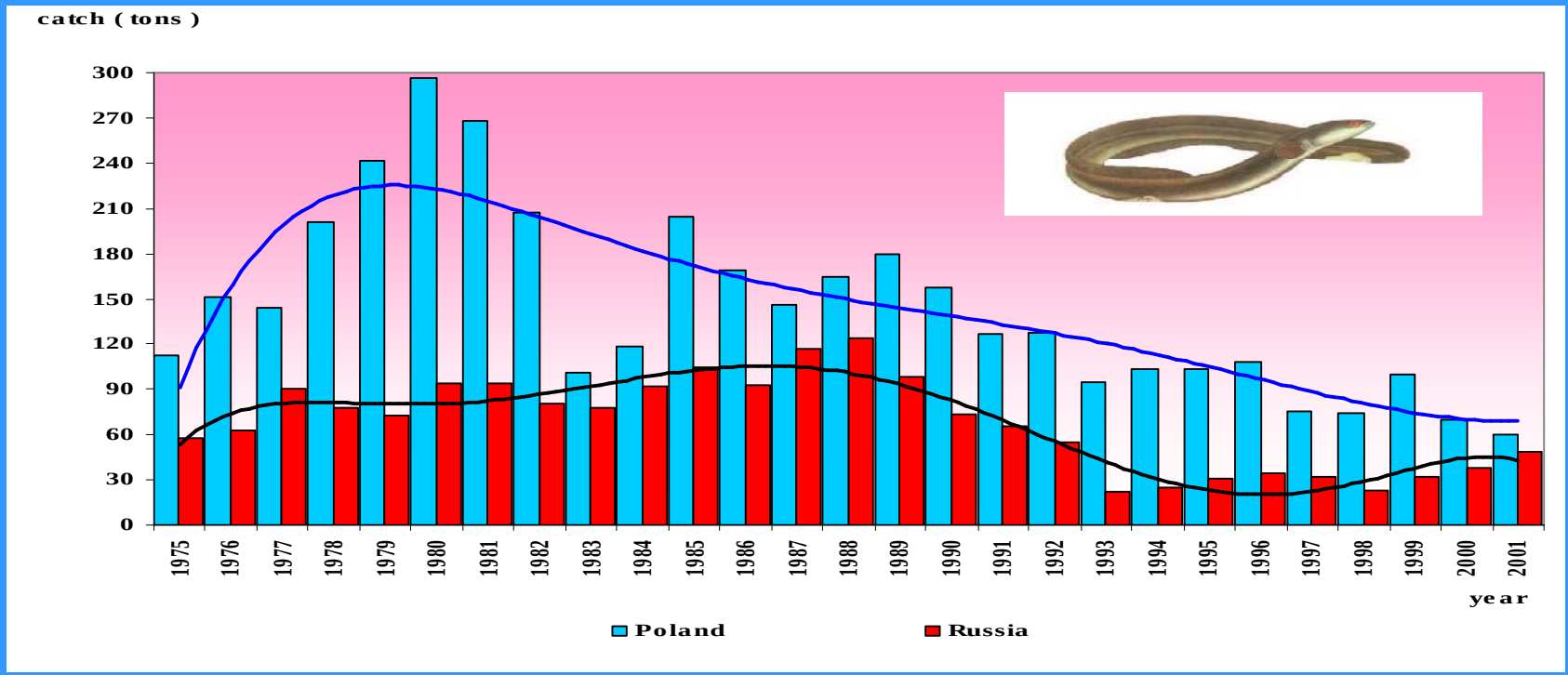

Catches of bream in the Vistula Lagoon in 1948 - 2002
Catch (tons)
900
800
700
600
500
400
300
200
100
0
Polish
Russian
1948
1951
1954
1957
1960
1963
1966
1969
1972
1975
1978
1981
1984
1987
1990
1993
1996
1999
2002


[%]
70
60
50
40
30
20
10
0
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
>29
30-34
35-39
40-44
45-49
50-54
55-59
60-64
<65
Total lenght [cm]
[%]
1980
1981
1982
1983
1984
1985
1986
1991
1992
1993
1994
1996
1997
1998
1999
2000
2001
Total lenght [cm]
%
50
40
30
20
10
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1964
1965
1966
II III IV V VI VII VIII IX X XI XII XIII+
age classes
%
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
II III IV V VI VII VIII IX X XI XII XIII+
age classes
%
1983
1984
1985
1986
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
II III IV V VI VII VIII IX X XI XII XIII+
age classes

Pikeperch and Bream year-class at III age group



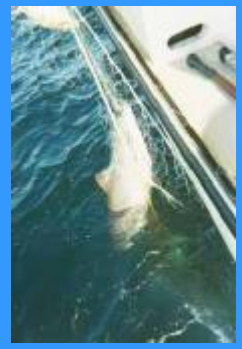
EEL

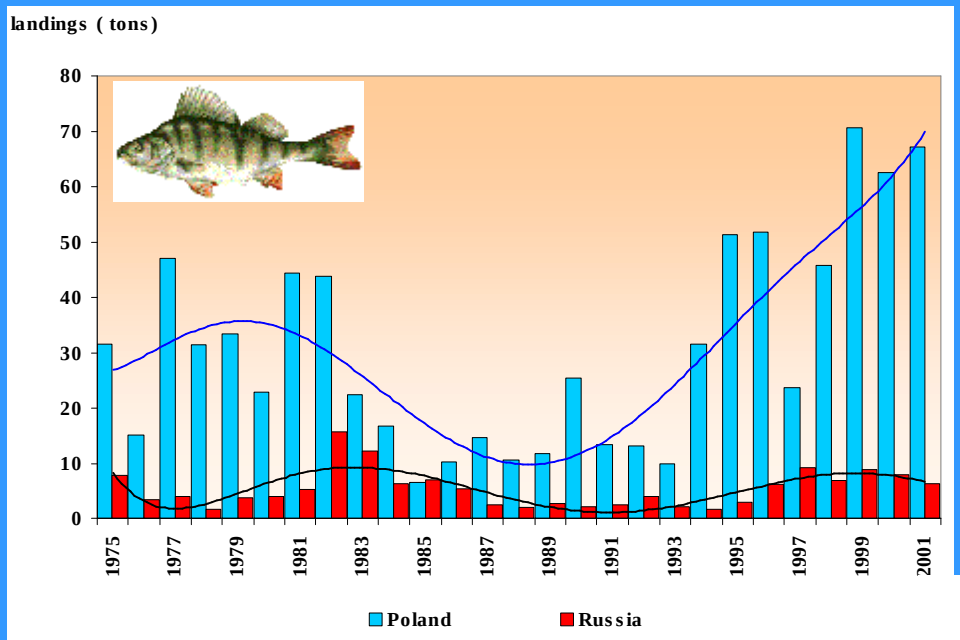

catch (tons)
300
270
240
210
180
150
120
90
60
30
0
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
year
Poland
Russia

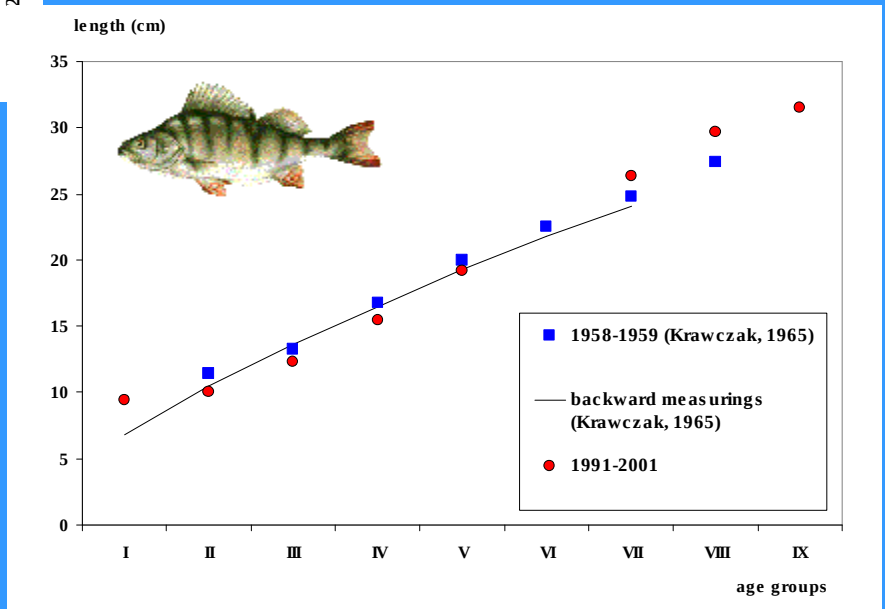
Stocking volume in Vistula Lagoon waters of glass eel with juxtaposition of total catch.

Perch *(Perca fluviatilis L.)*

Landings



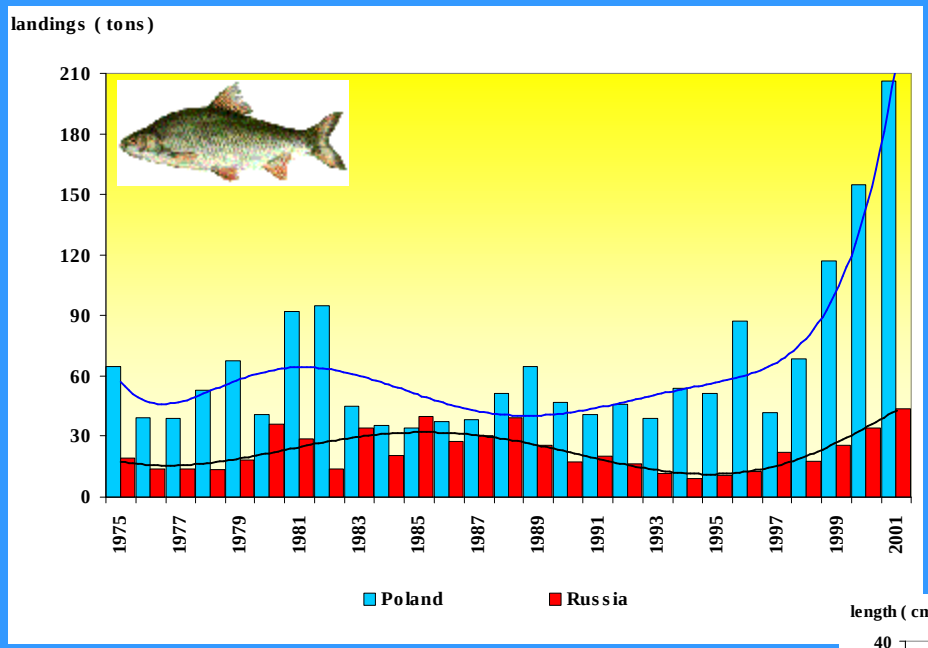


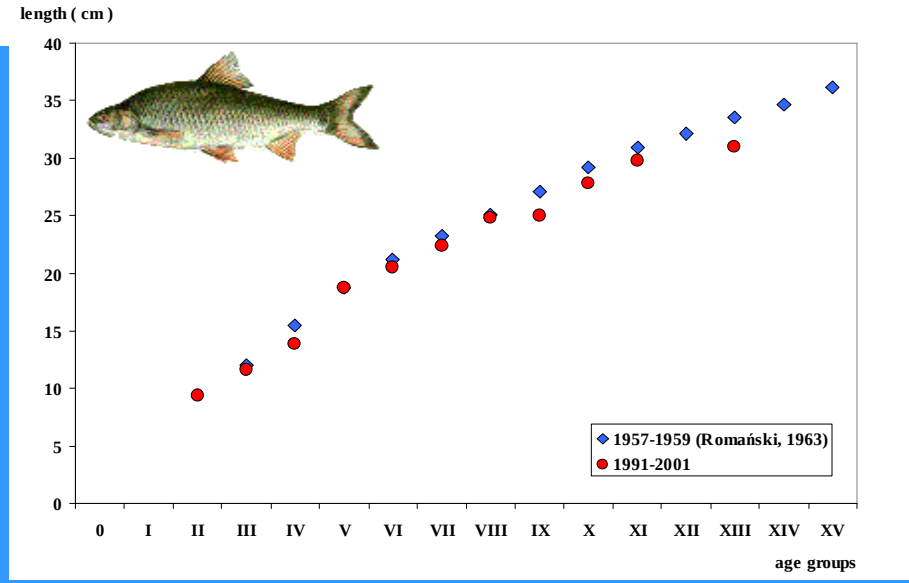


Average Vistula Lagoon perch lengths at various age groups

Roach *(Rutilus rutilus L.)*

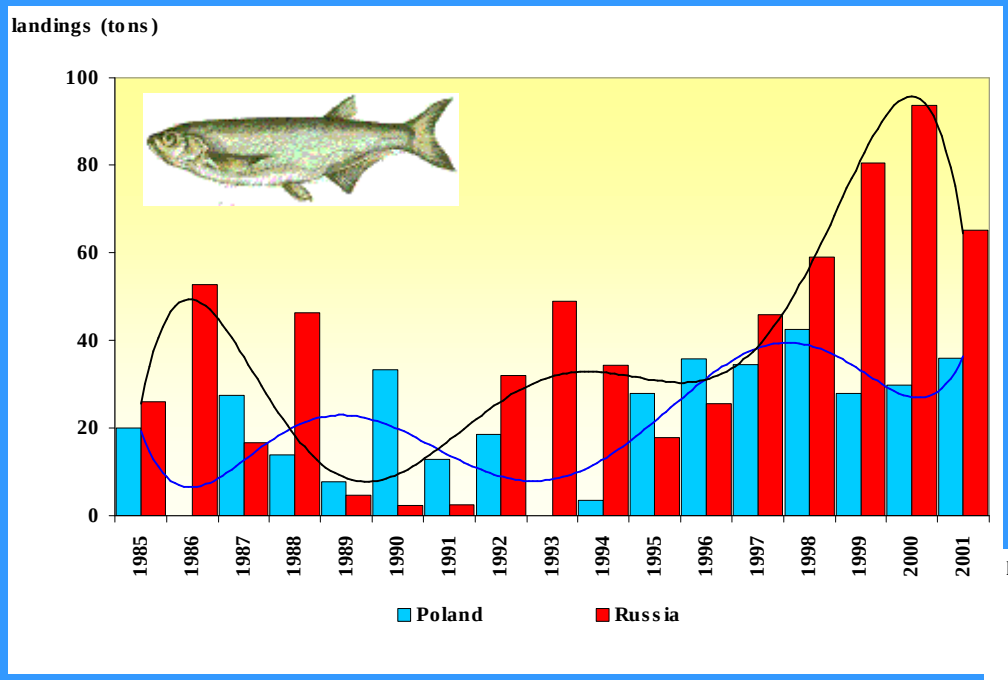
Landings



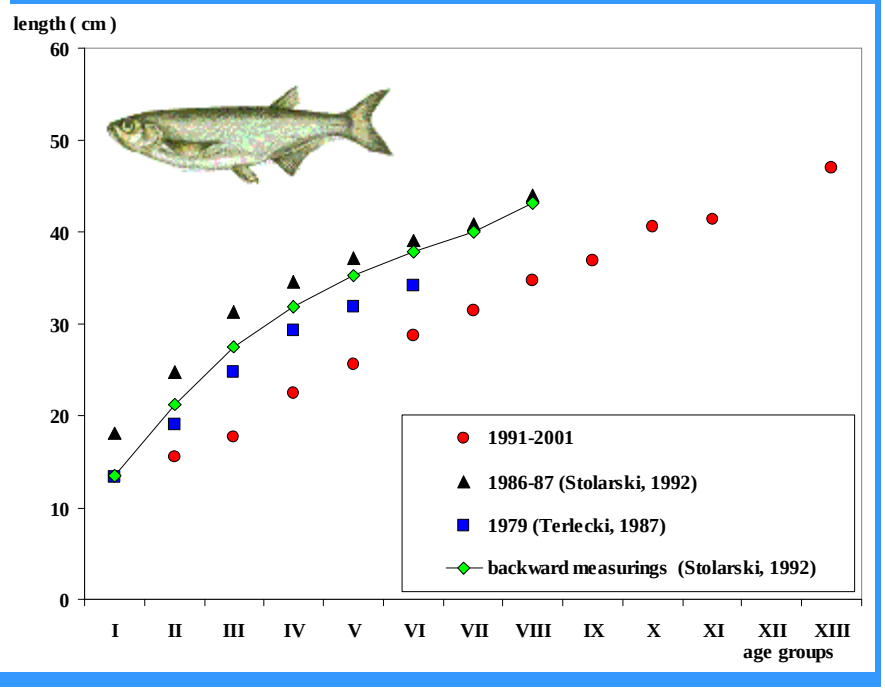


Average Vistula Lagoon roach lengths at various age groups

Razorfish *(Pelecus cultratus L.)*

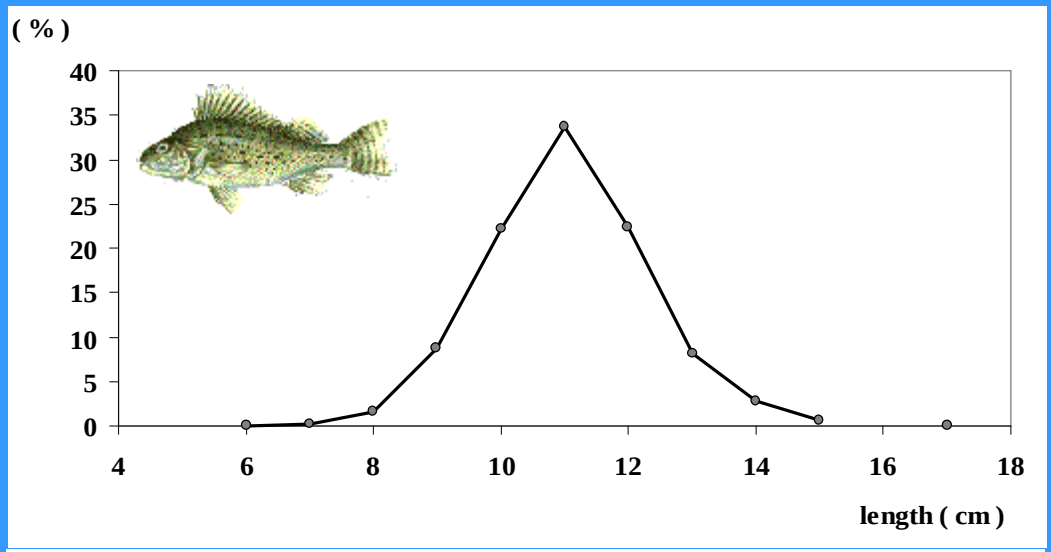


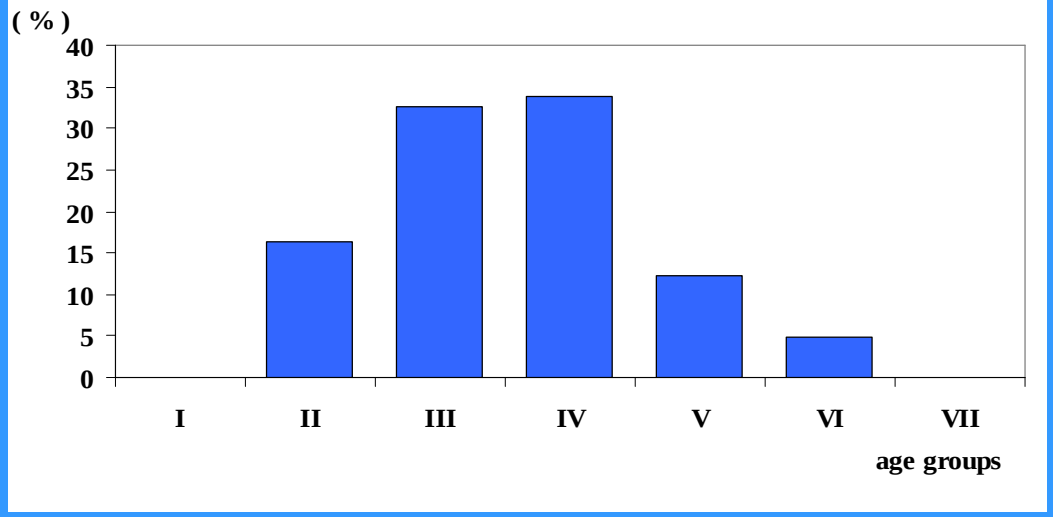
Landings

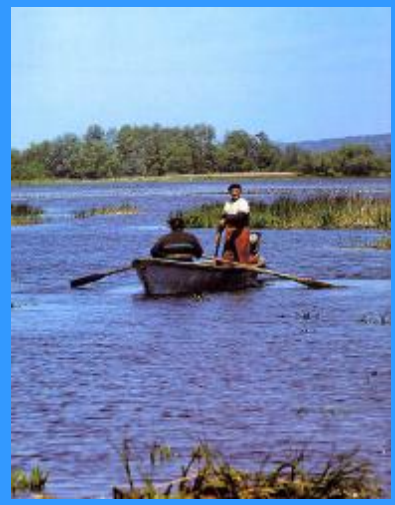


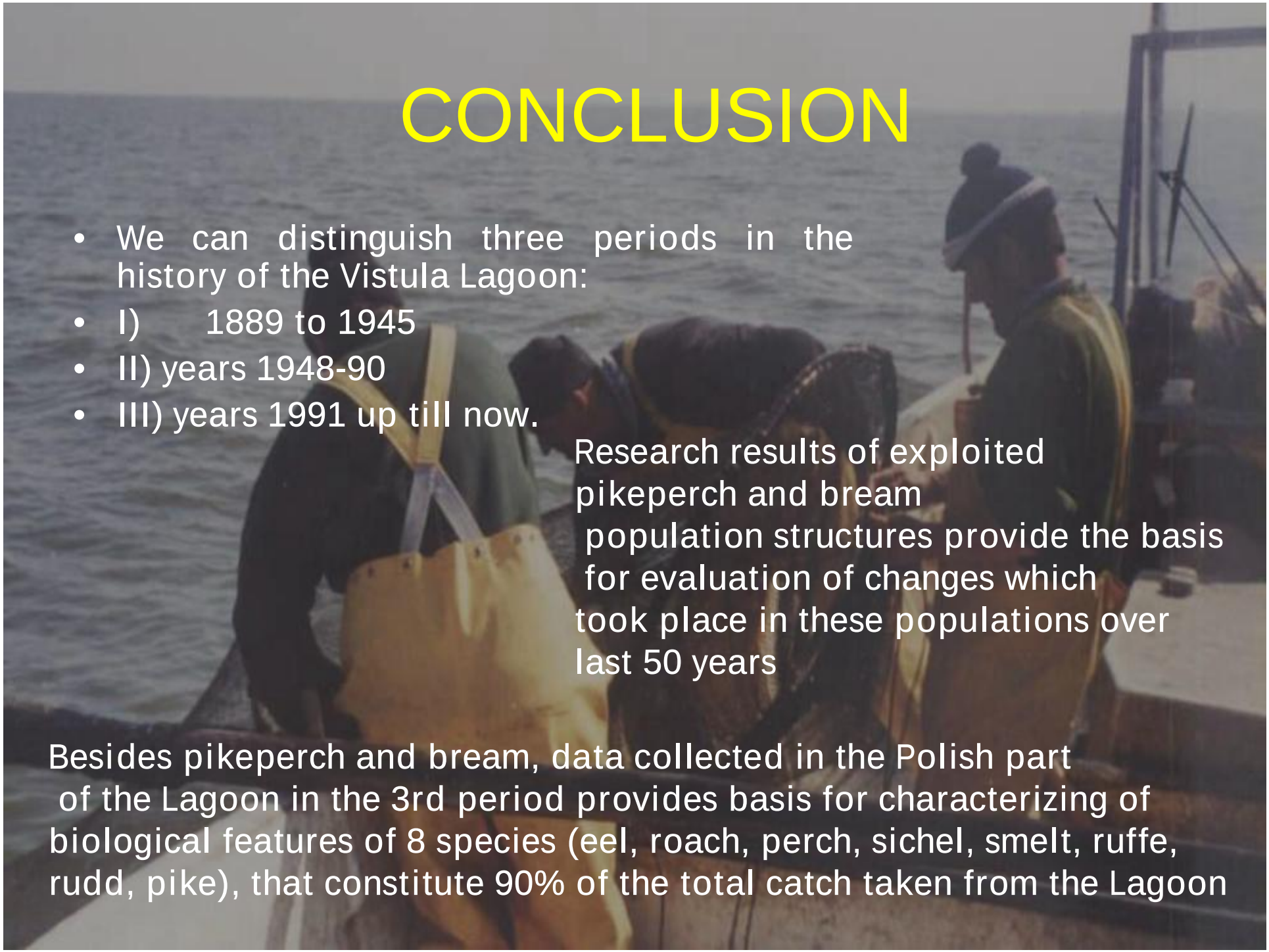
Average Vistula Lagoon razorfish lengths at various age groups

Ruffe (*Acerina cernua* L.)









CONCLUSION

- We can distinguish three periods in the history of the Vistula Lagoon:
- I) 1889 to 1945
- II) years 1948-90
- III) years 1991 up till now.

Research results of exploited pikeperch and bream population structures provide the basis for evaluation of changes which took place in these populations over last 50 years

Besides pikeperch and bream, data collected in the Polish part of the Lagoon in the 3rd period provides basis for characterizing of biological features of 8 species (eel, roach, perch, sichel, smelt, ruffe, rudd, pike), that constitute 90% of the total catch taken from the Lagoon

End of presentation