Draft Presentation
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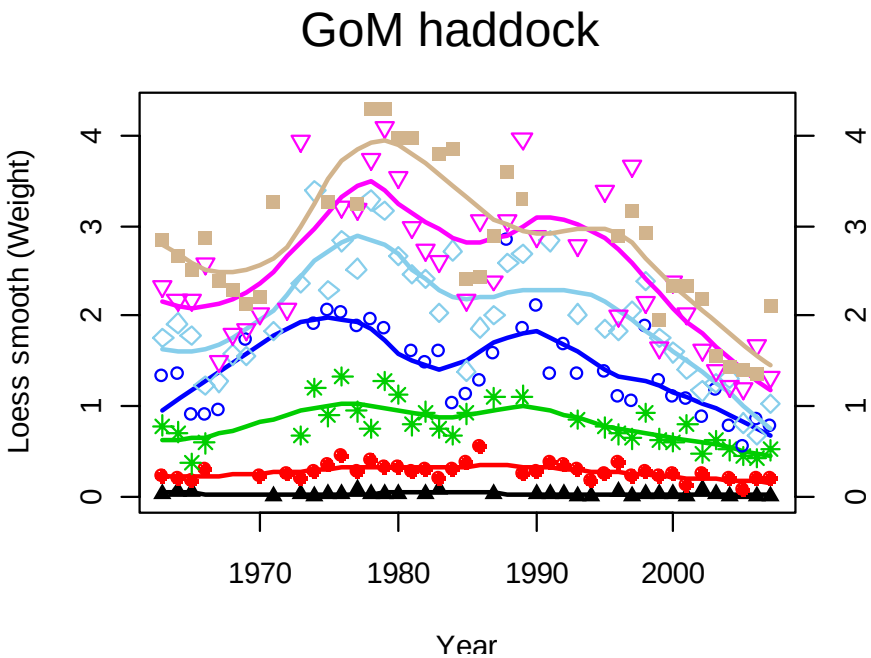
Does not represent
final NOAA Decision/Policy.
5/2/08

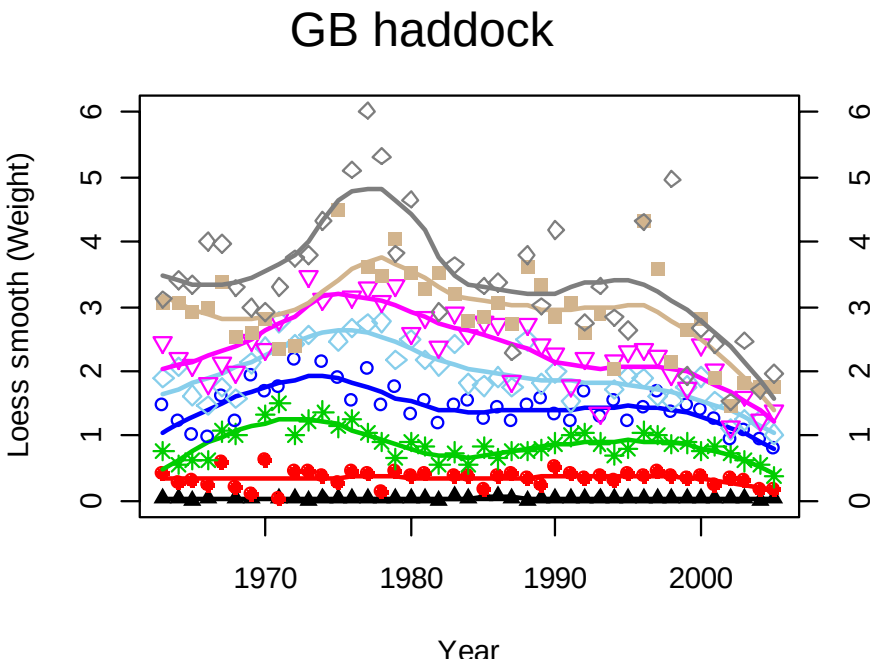
R. Gulf of Maine haddock (*Melanogrammus aeglefinus*) - addendum

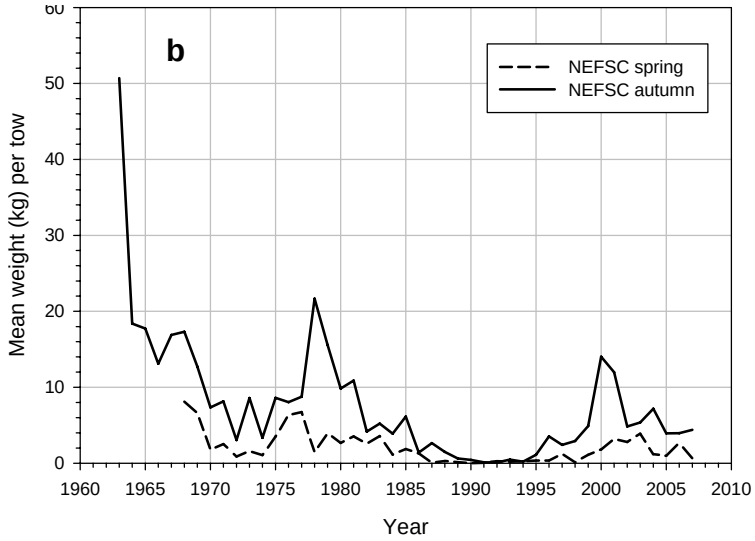
Michael Palmer

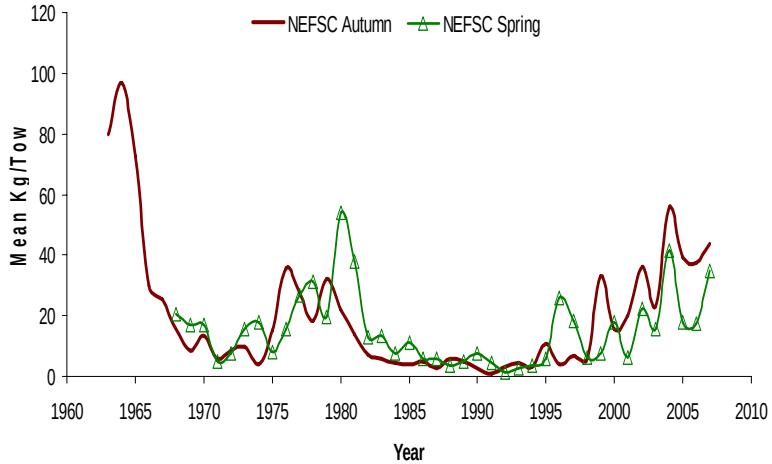
- Issues to investigate
  - Smaller weight at age in recent time period
  - Smaller weight at age relative to Georges Bank
  - Need to provide wider range of BRP given past evidence of greater productivity
    - 1998 year class has driven the SSB during the 2002 to 2006 period, no evidence of strong incoming year class to drive SSB in near term

R. Smaller weight at age in recent time period



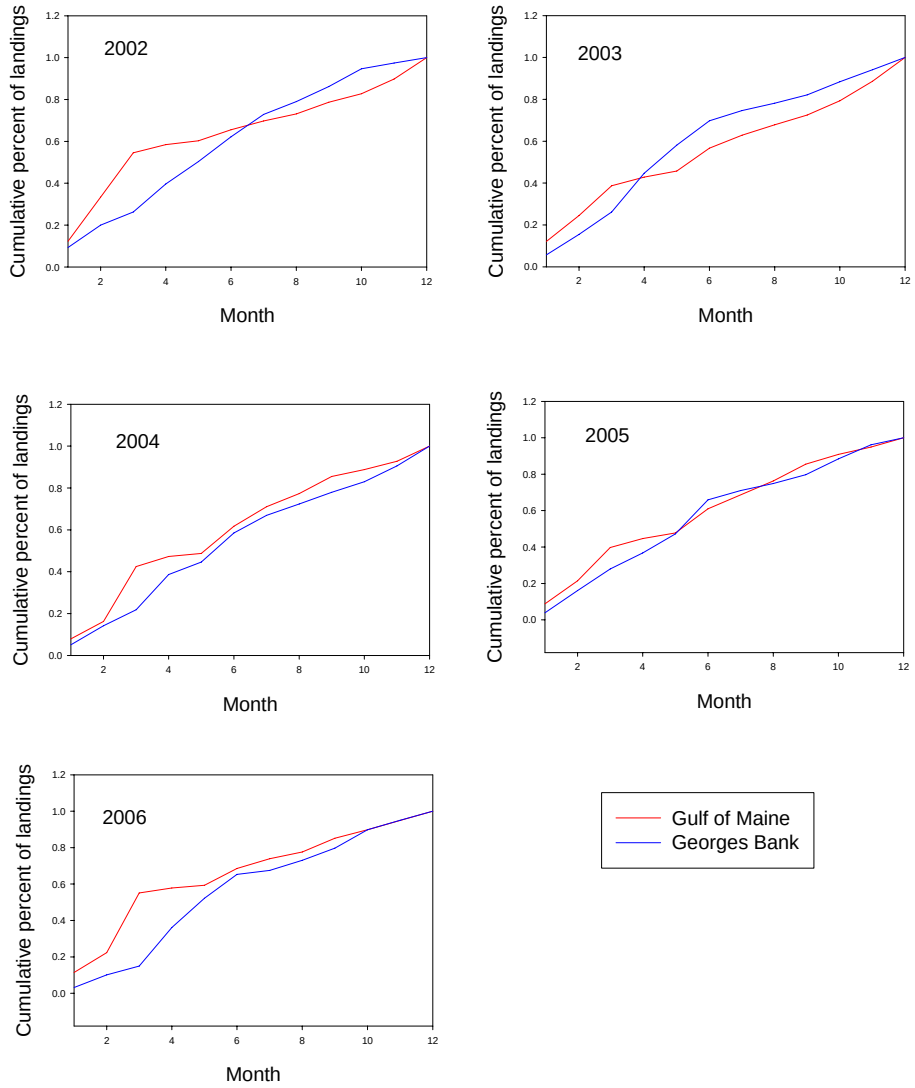






R. Smaller weight at age relative to Georges Bank

- Between 2002 and 2006 the GoM fishery has experienced a large late winter pulse not observed on Georges Bank



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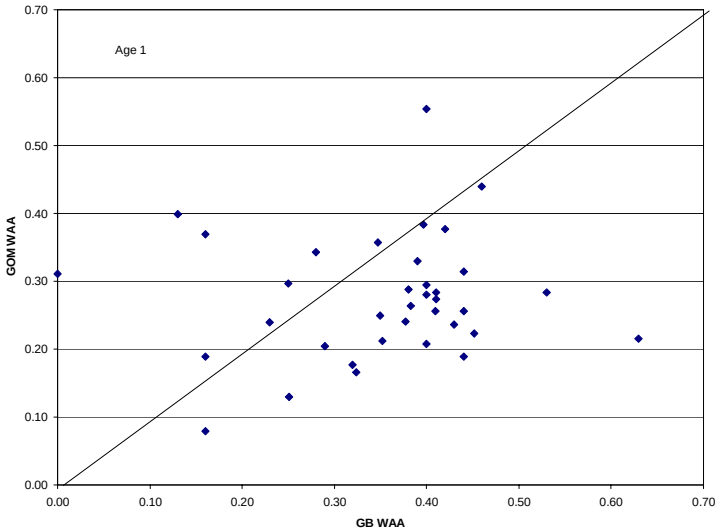
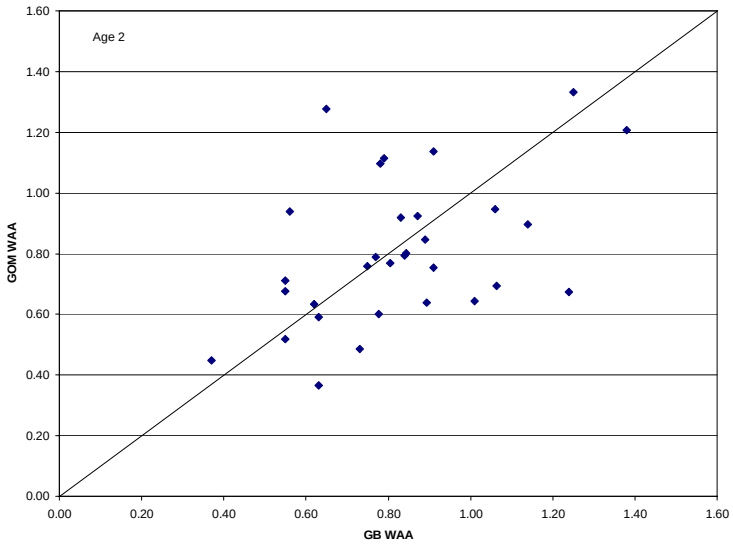
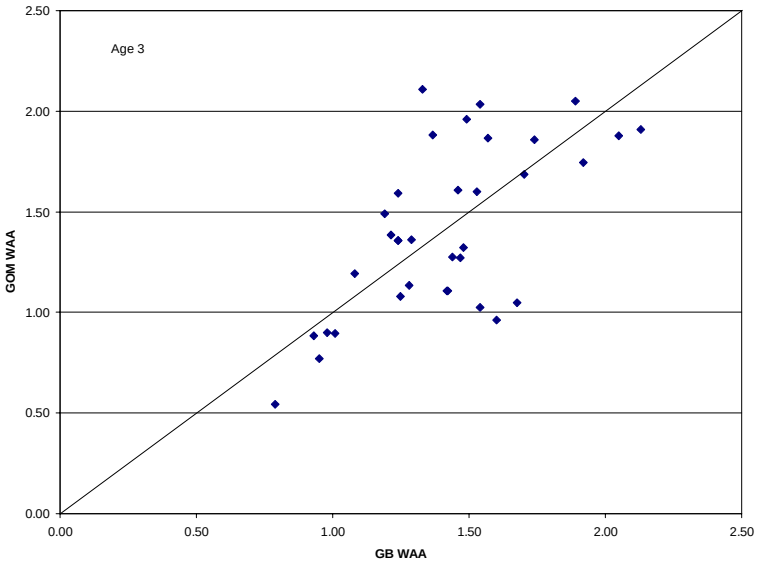
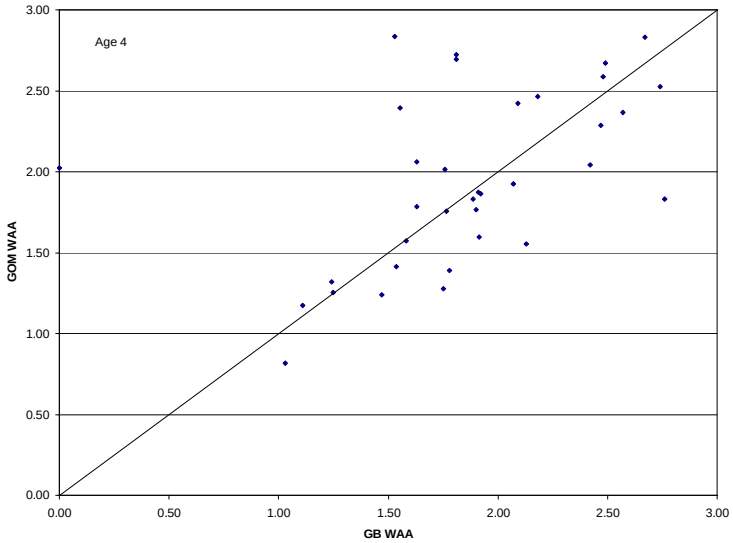
- Not much evidence of differences between stock in Spring survey weights at age









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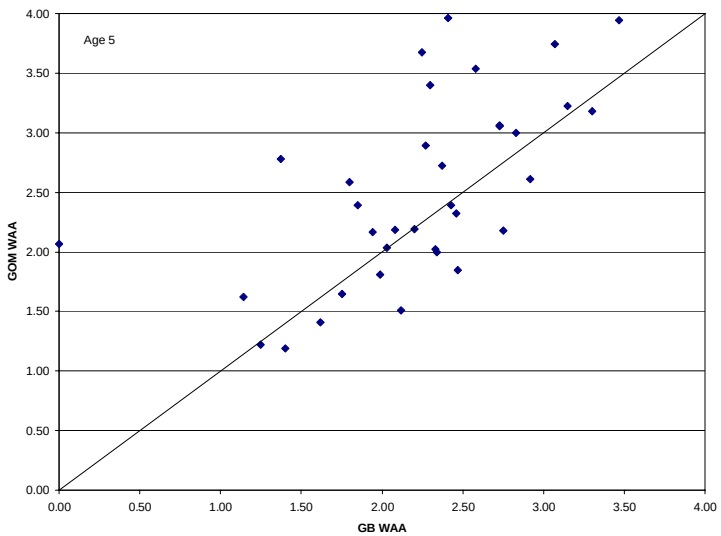

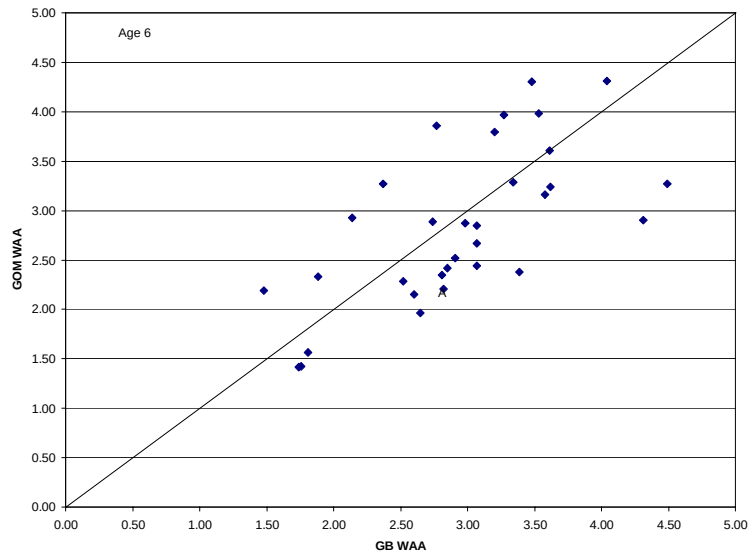

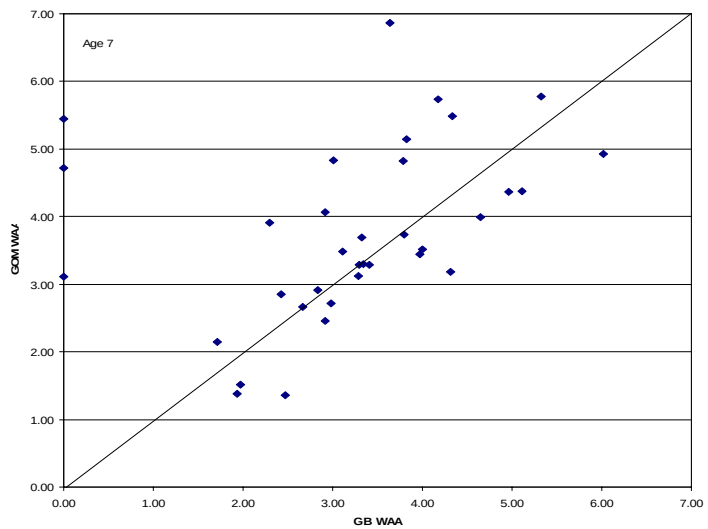

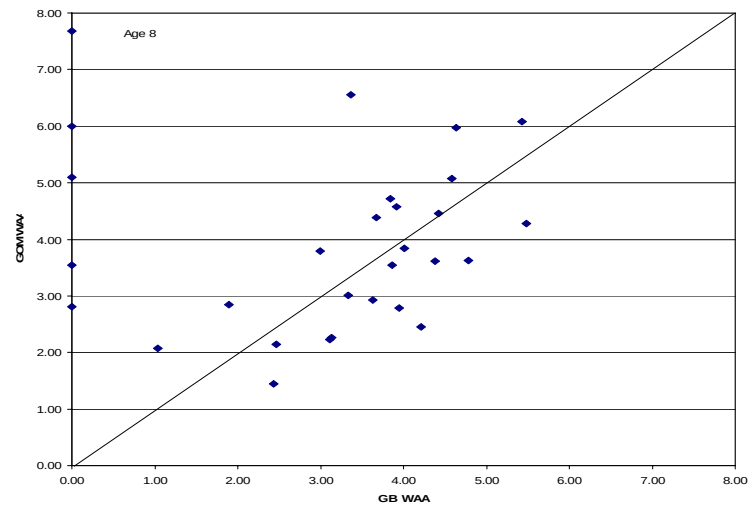

R. Wider range of reference points

- Calculate empirical BRPs (AgePro) using 1962 – 2006 recruitment series
  - Exclude “bonanza” 1962 YC
  - Exclude 1986 – 1996 recruitment where SSB < 3,000 mt

Option	Recruitment	SSBmsy	Fmsy	MSY
1	1977 - 2006	4,000 mt (2,280 - 7,260)	0.454	900 mt (510 - 1680)
2	1977 - 1985, 1997 - 2006 (exclude recruitment where SSB < 3000 mt)	5,260 mt (2,940 - 8,850)	0.454	1,180 mt (660 - 2073)
3	1962 - 2006	5,520 mt (2,840 - 12,450)	0.454	1,250 mt (640 - 2,790)
4	1962 - 2006 (exclude 1962, 1963, 1998 YC)	4,180 mt (2,450 - 6,690)	0.454	930 mt (550 - 1,560)
5	**1962 - 2006 (exclude 1962 and 1986 - 1996)**	**5,995 mt (3,300 - 10,670)**	**0.454**	**1,360 mt (740 - 2,480)**

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- Calculate empirical BRPs (AgePro) using some estimate of presumed pre-1963 stock productivity
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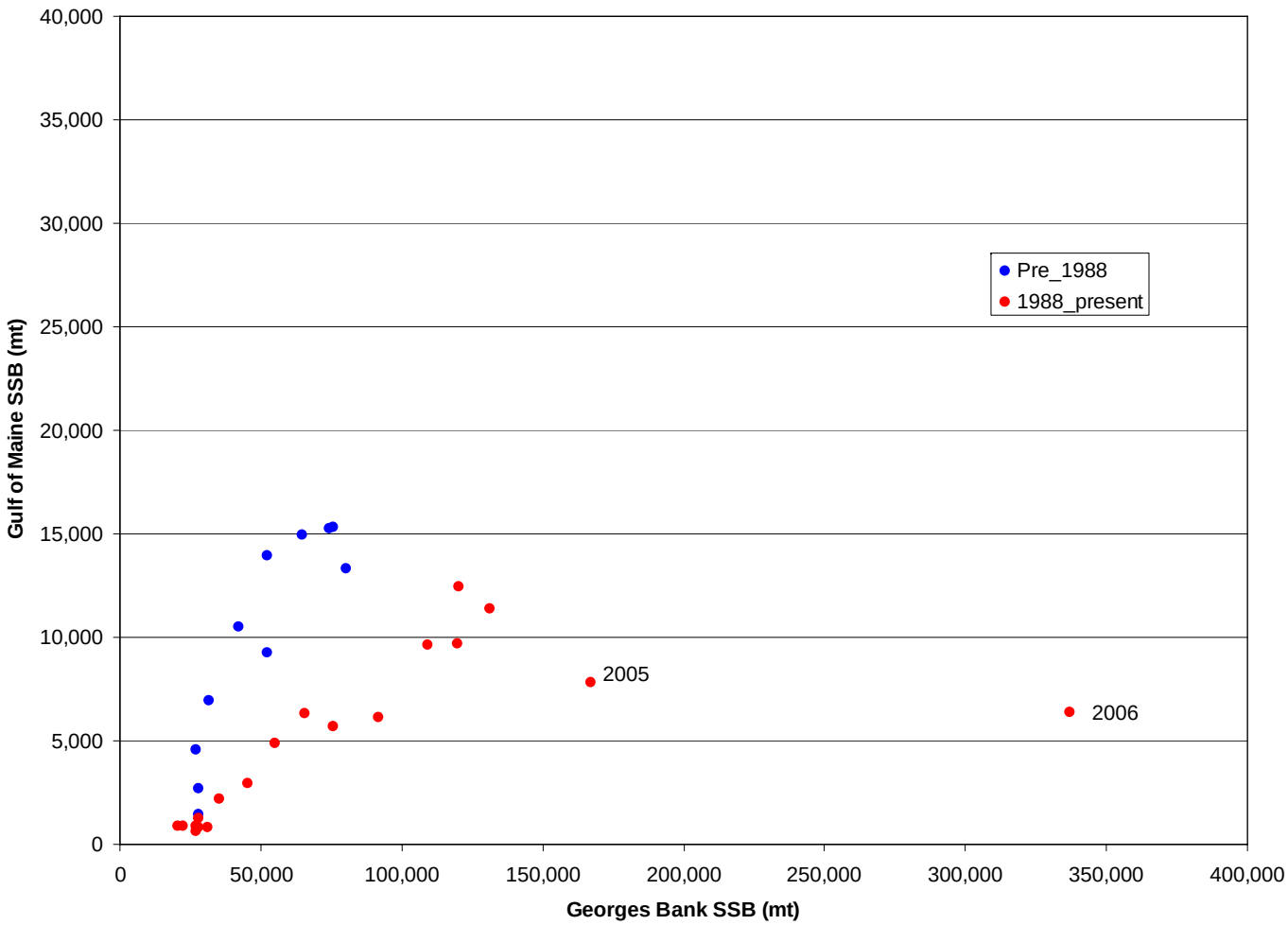

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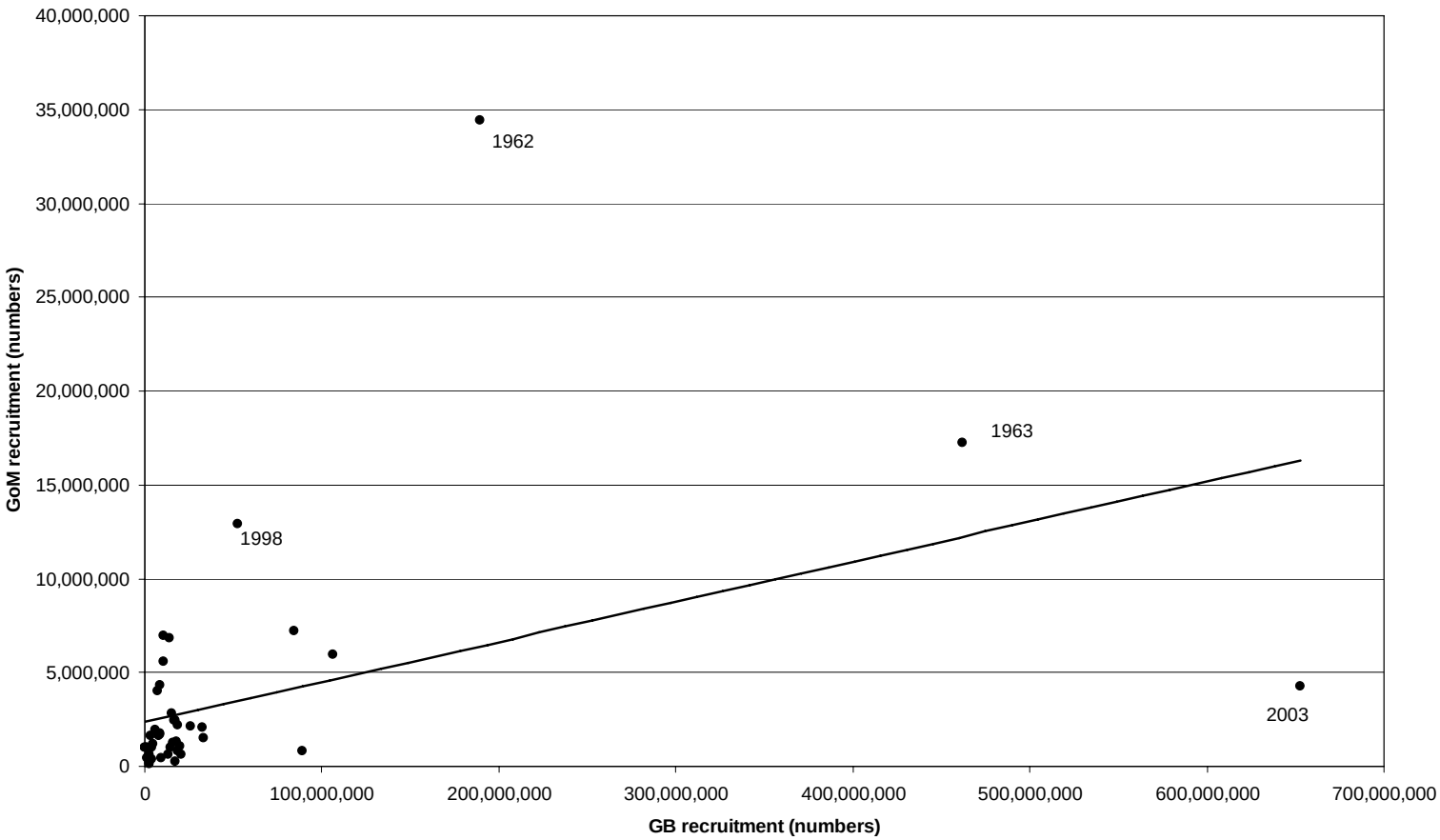

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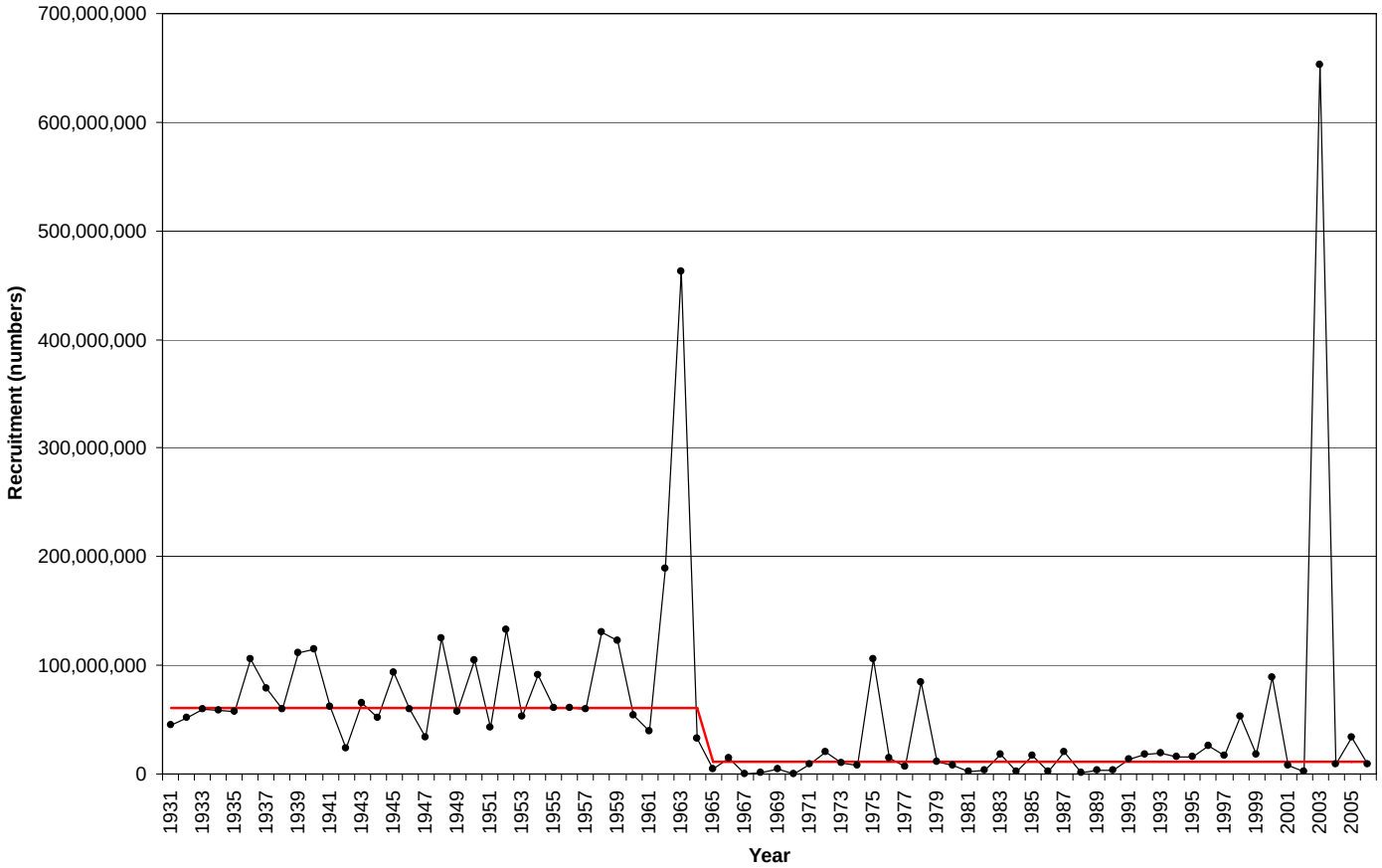
- Calculate empirical BRPs (AgePro) using some estimate of presumed pre-1963 stock productivity
    - Two stanzas of GB recruitment:
    - 1931 to 1964 (median R = 60.3 million)
    - 1965 to 2006 (median R = 10.7 million)



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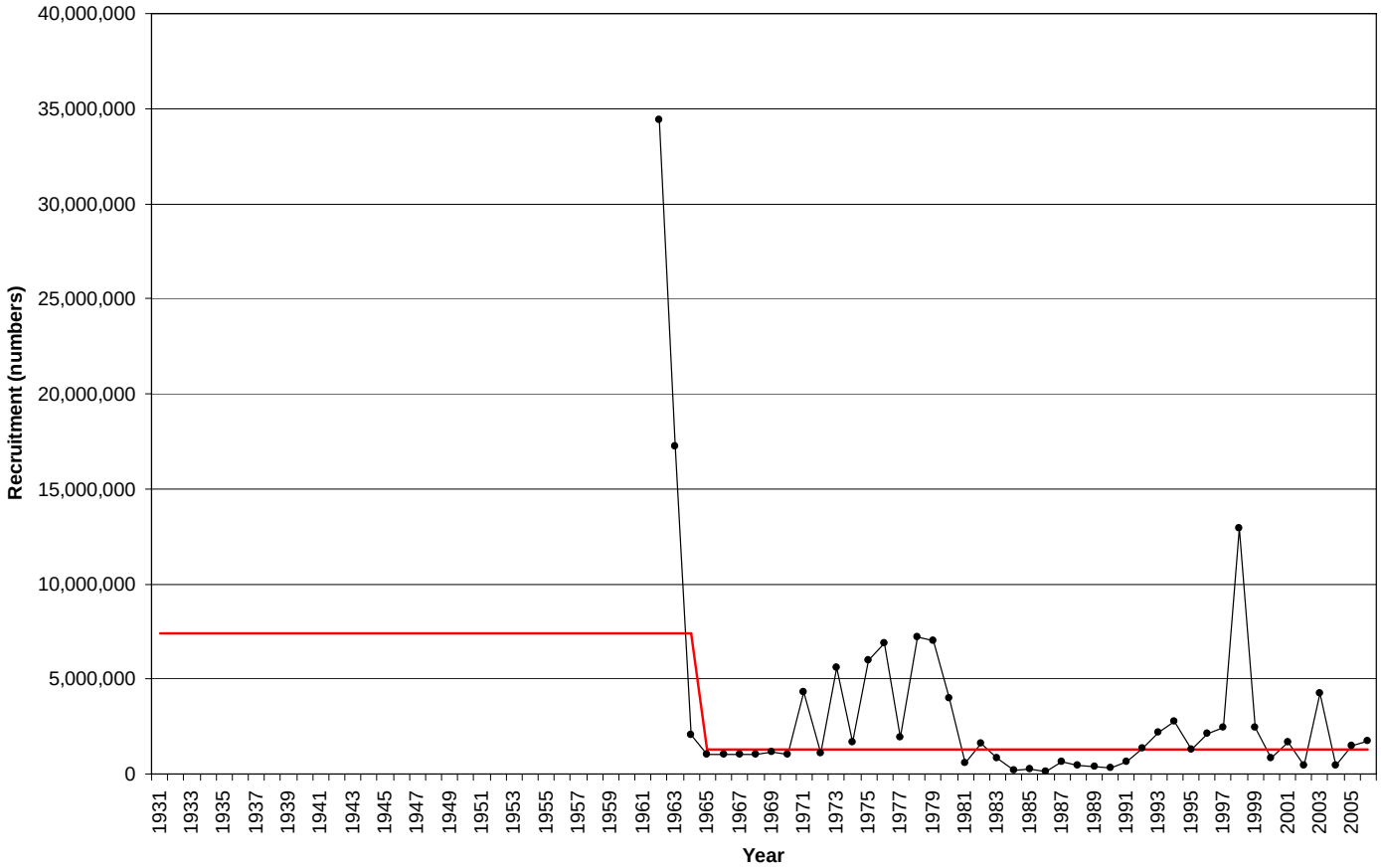
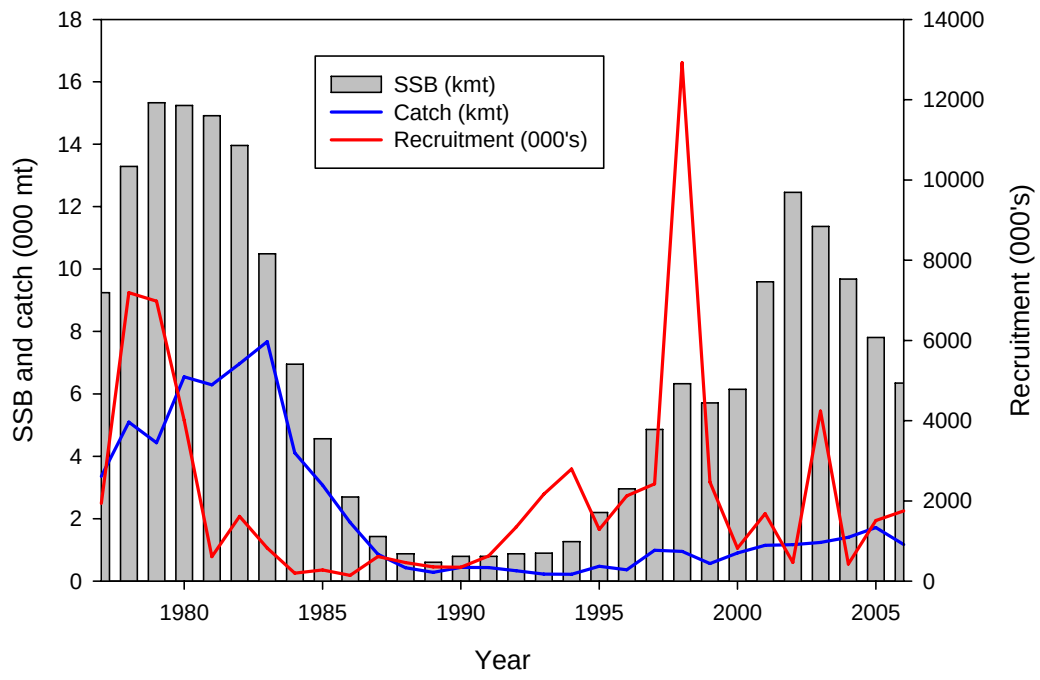
- Calculate empirical BRPs (AgePro) using some estimate of presumed pre-1963 stock productivity
    - During 1965 to 2006 period median GoM recruitment (1.3 million) was approx. 12% of median GB recruitment (10.7 million)
    - Apply the 12% to estimate historical median recruitment (7.4 million)



R. Wider range of reference points

- Calculate empirical BRPs (AgePro) using some estimate of presumed pre-1963 stock productivity
    - Calculate BRP using YPR = 0.540 kg and SSB/R = 2.120 kg at estimated historical recruitment levels of 7.4 million fish.

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5	1962 - 2006 (exclude 1962 and 1986 - 1996)	5,995 mt (3,300 - 10,670)	0.454	1,360 mt (740 - 2,480)
6	**Pre-1965 estimated median recruitment (7.4 million)**	**15,688 mt**	**0.454**	**4000 mt**