



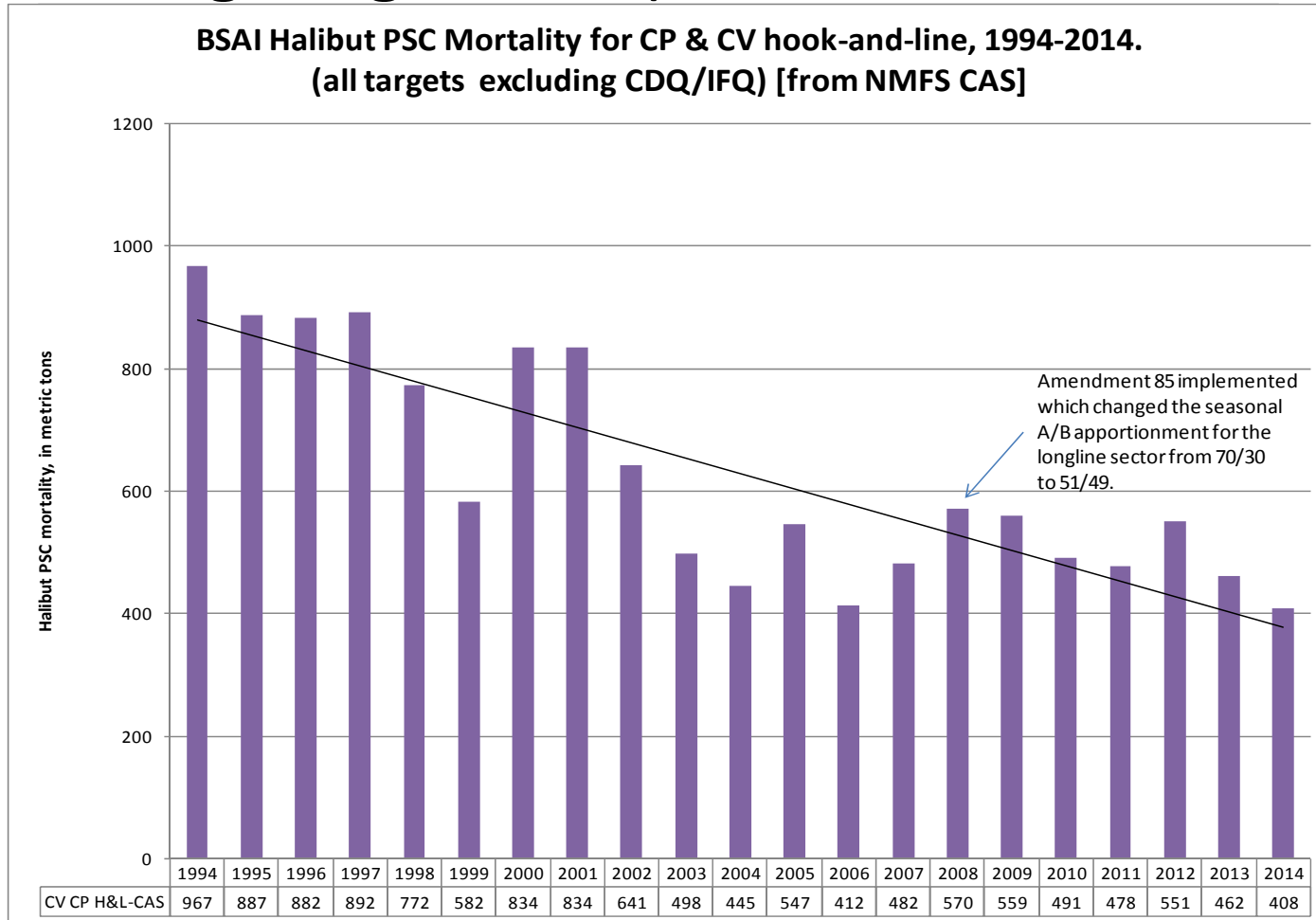
# C-5: Initial Review BSAI Halibut PSC Limits

February 2015

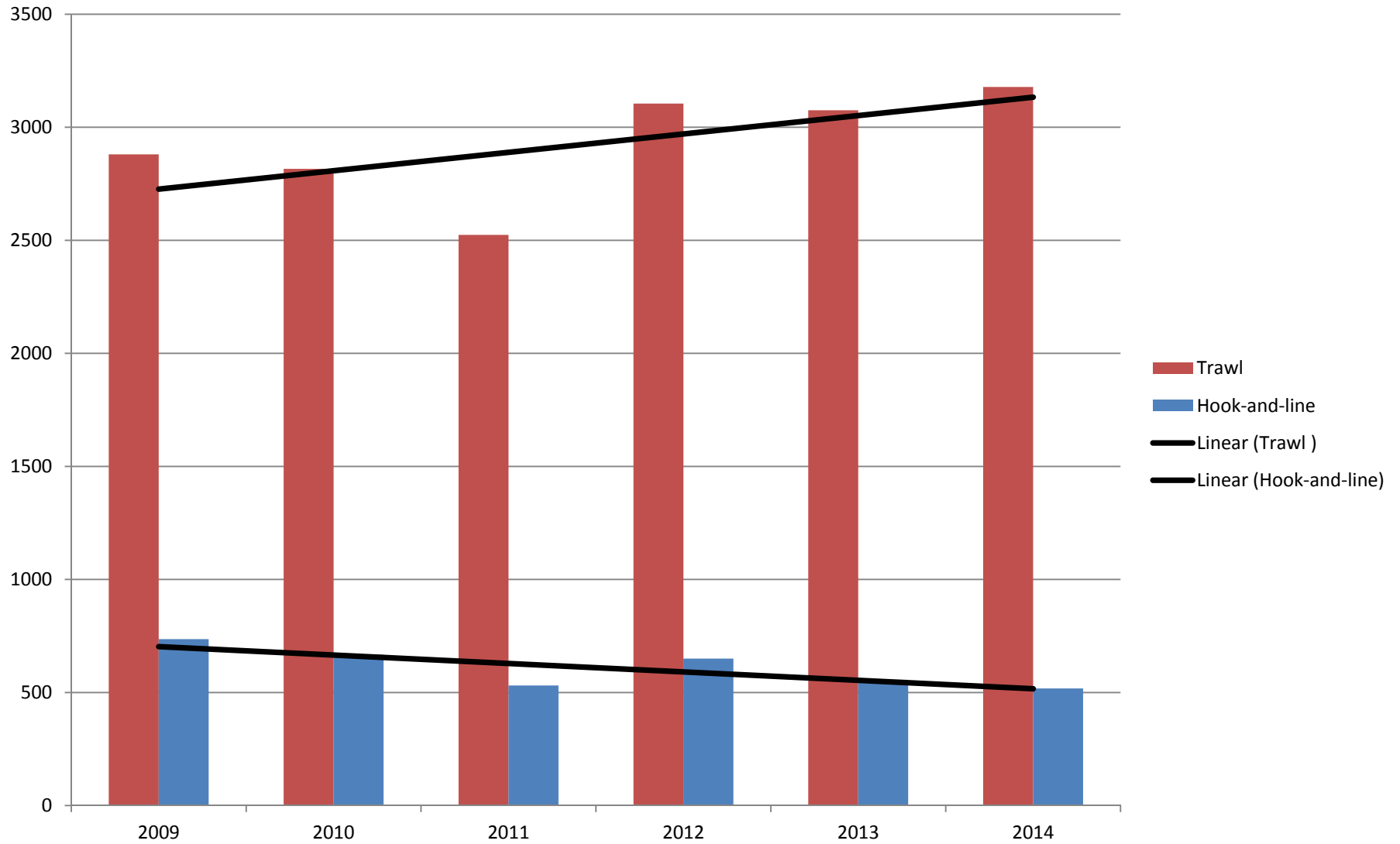
- 1.) Previous efforts in bycatch reduction affect the cost and magnitude of future reductions.
- 2.) Need for management flexibility in reducing encounter rates.
- 3.) Analysis of the potential effect from changes in DMRs on total mortality estimation.

When considering bycatch issues, it is appropriate to look at a longer time series of reduction efforts. The ability to achieve additional incremental reductions in bycatch is directly related to previous efforts to reduce bycatch. Halibut bycatch mortality in the BSAI H&L sector has been incrementally reduced since 1994 (-**58%** reduction).

Incremental reductions in bycatch become increasingly more difficult to achieve and be of diminishing magnitude (the line will flatten out).

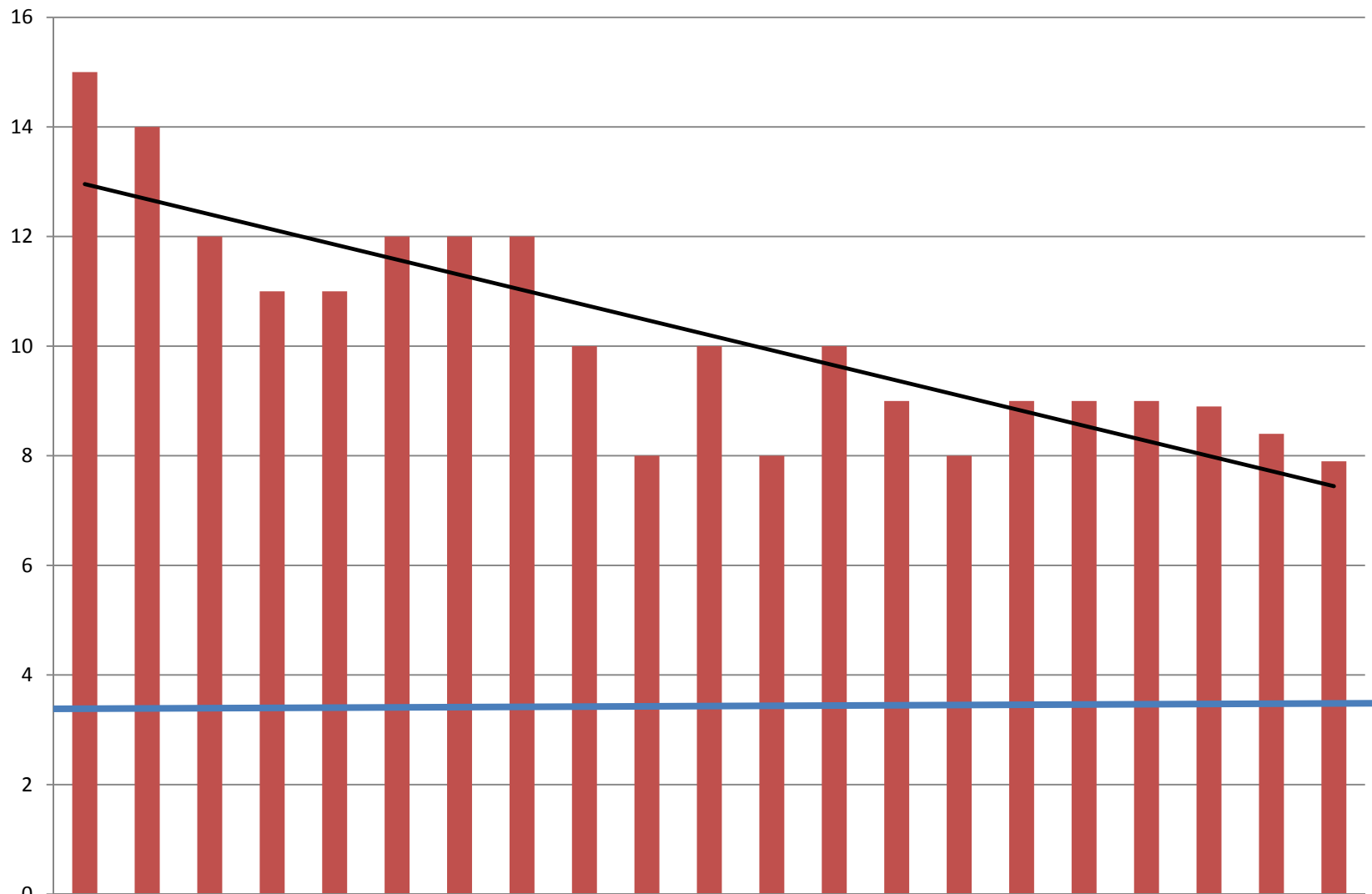


# BSAI Halibut Bycatch Mortality in all groundfish trawl and all H&L, 2009-2013 (from IPHC Table 7, p. 327, 2014 RARA)



Halibut mortality in the hook-and-line sector is the result of encounter rate (kg halibut/mt groundfish) and DMR (discard mortality rate). Reductions have been achieved in both metrics.

## Observed Discard Mortality Rate (DMR) for halibut in the BSAI non-CDQ CP H&L cod fishery (1994-2014)



■ BSAI DMR %	15	14	12	11	11	12	12	12	10	8	10	8	10	9	8	9	9	9	8.9	8.4	7.9
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Incremental reductions in actual DMR will be more difficult to achieve and will be of smaller magnitude (tenths of a percent).

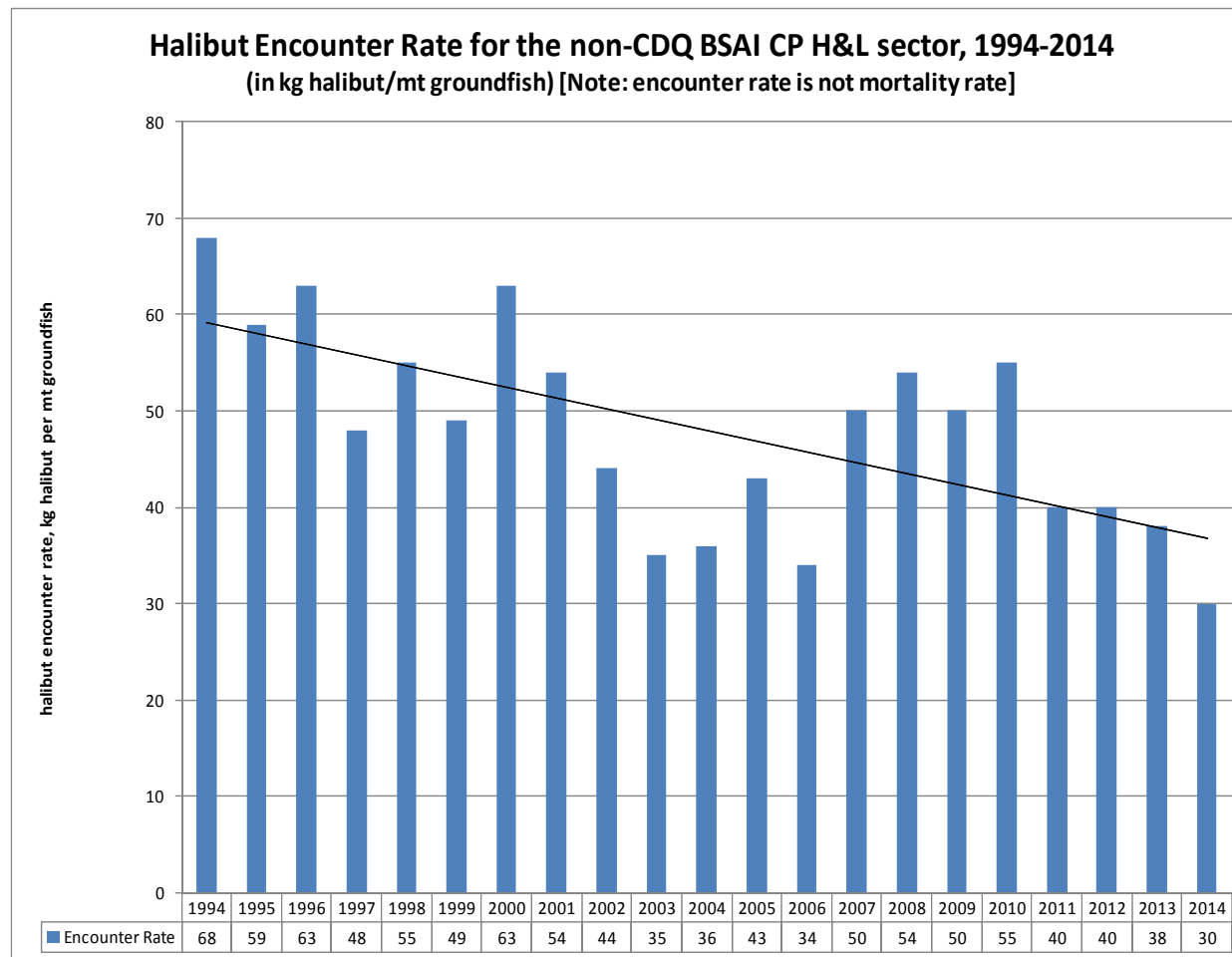
1991 = 23%

2014 = 7.9%

Perfect score DMR = 3.5%



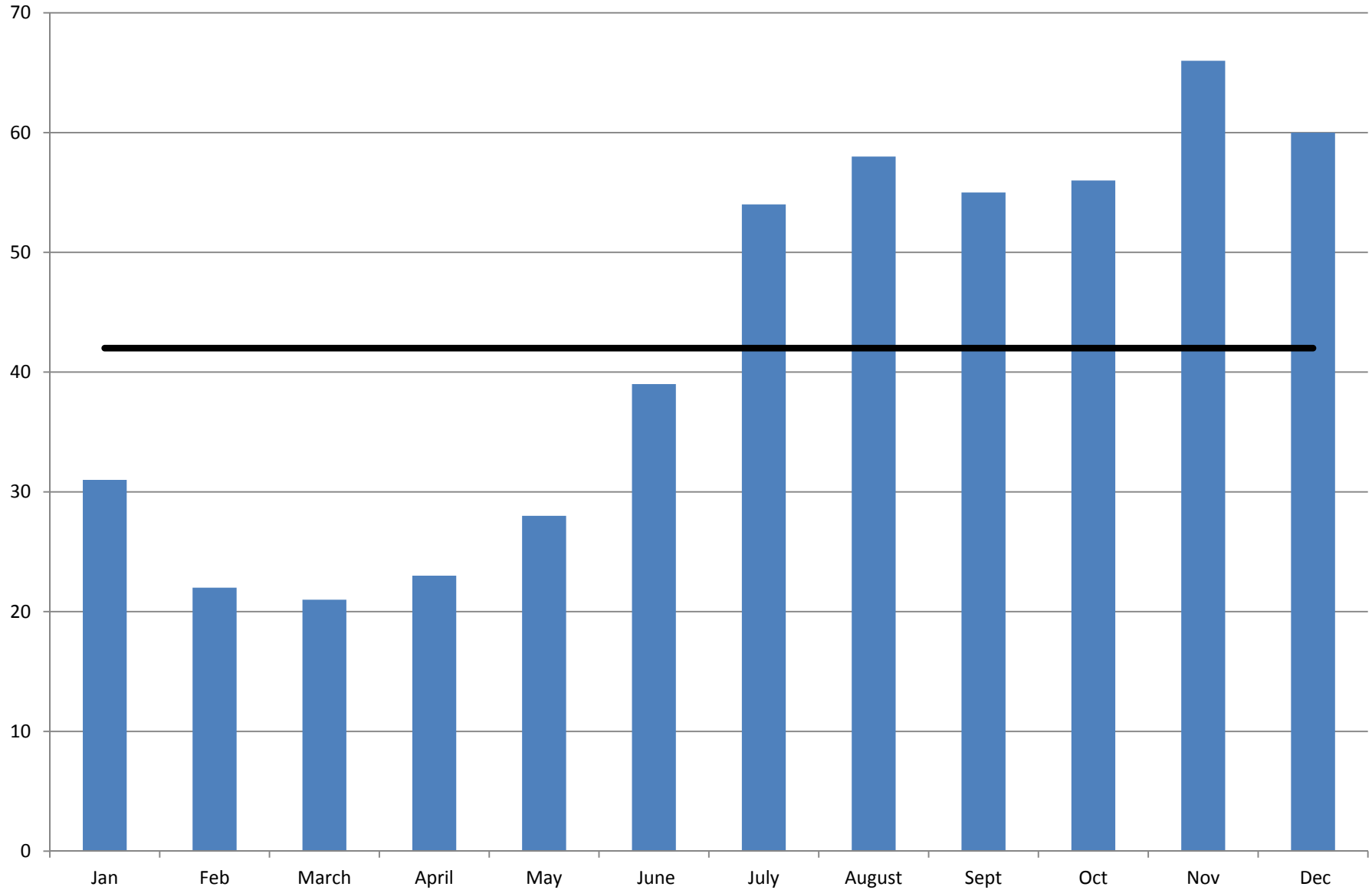
Incremental reductions in encounter rate may also be more difficult to achieve.



# Conflicting management directives: Halibut bycatch reduction and SSLs

From A. 85, the SSL seasonal A/B apportionment for BSAI fixed gear p-cod is 51/49 – which requires half the harvest to occur when encounter rates are higher. [Note: encounter rate is not mortality rate.]

**Encounter Rates by Month (2009-2013 average) for BSAI CP H&L**  
In 2008, A.85 changed the BSAI fixed gear seasonal apportionment from 70/30 to 51/49

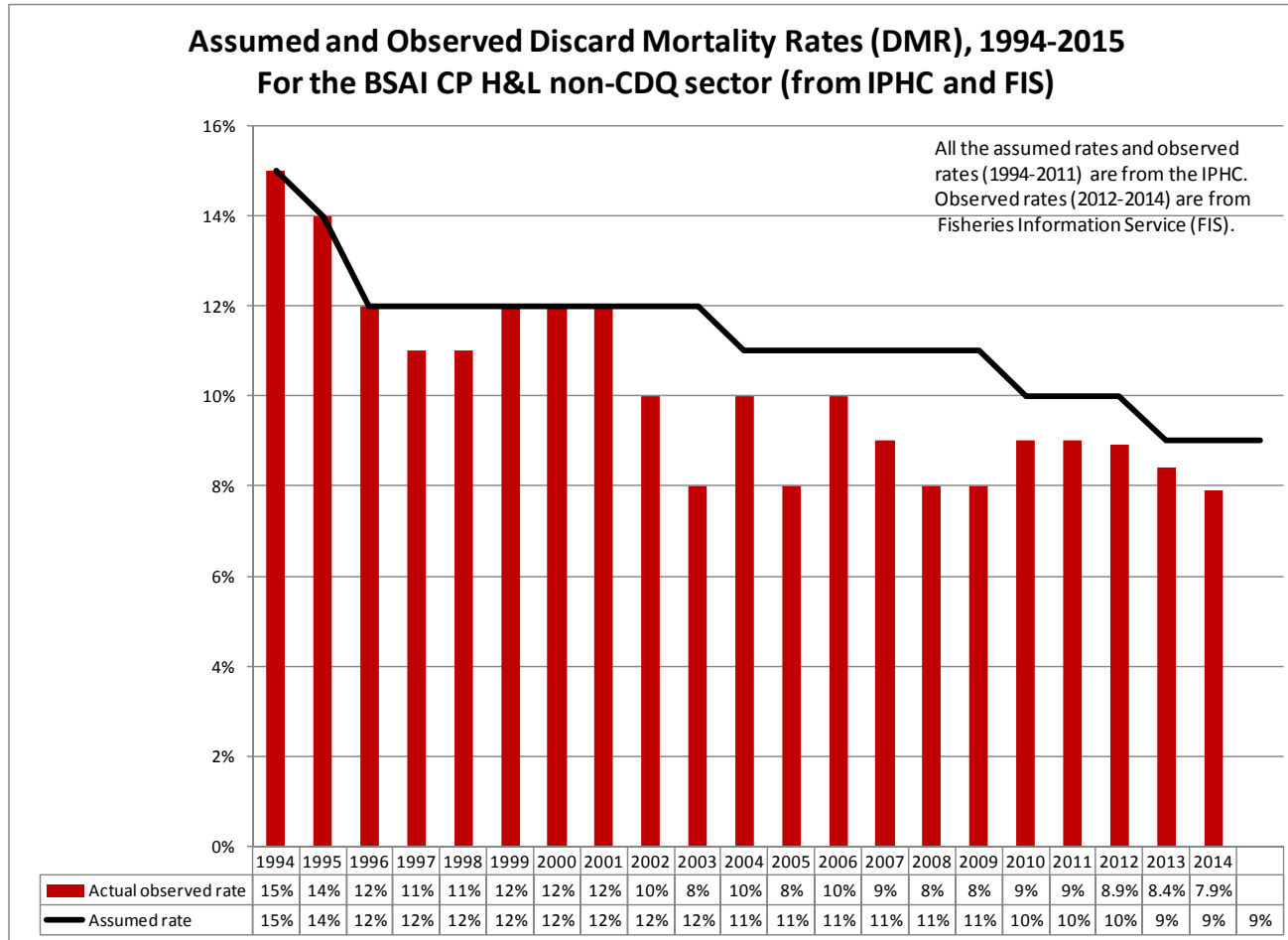


The FLC requests the Council to include an option to revise the SSL apportionment for BSAI p-cod from 51/49 back to 70/30 to allow for flexibility in lowering encounter rates (with rollover of p-cod from A to the B season, as is now). In particular, this is necessary for options that reduce the PSC cap -30% or greater.



The analysis should include a discussion on the potential effects of DMR revision of PSC mortality estimates. Example: If the 3.5% “perfect score” is revised to 7%, it appears that the CP H&L mortality in 2014 would increase +39%. Changes in DMR will have significant effects.

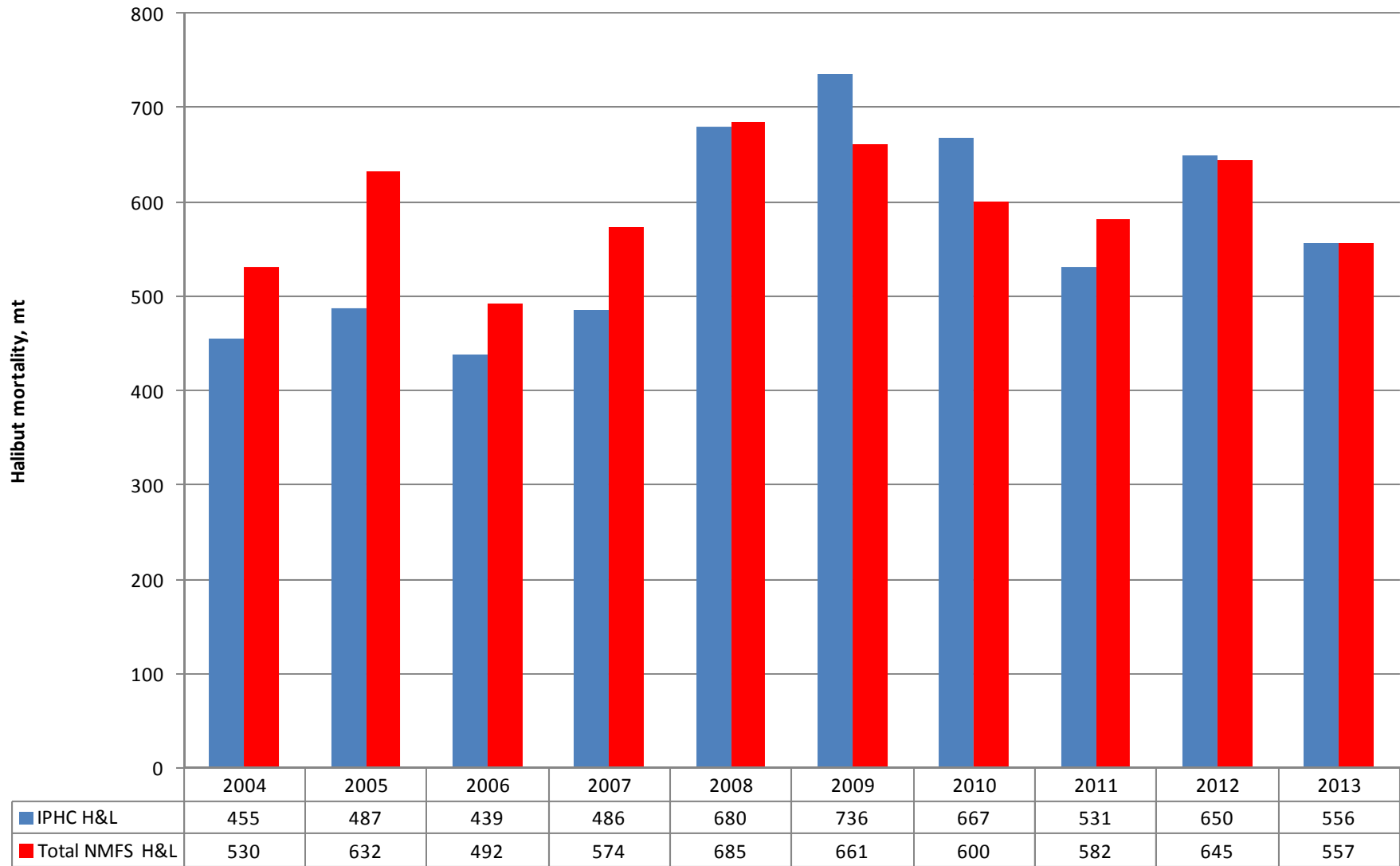
# Assumed and Observed DMR (1994-2014). Assumed DMR over-estimates mortality +21%/yr (2002-2014)



The assumed mortality has been higher than the actual mortality (from the observed DMR). NMFS uses the assumed DMR in calculating mortality. The IPHC stated it uses the actual mortality in the annual TCEY/FCEY calculation. However, it is not clear that is the case for the IPHC in recent years. The use of mortality from the assumed rate in TCEY would overestimate mortality (and lower the FCEY).



**Comparison of BSAI H&L halibut bycatch estimates from IPHC and NMFS (2004 -2013). Both include non-CDQ H&L groundfish; CDQ H&L groundfish: and IFQ sablefish. NMFS uses assumed DMR; IPHC uses ?**



The FLC also concurs with the intent of the AP motion for the Council to initiate a discussion paper on establishing halibut PSC caps based on halibut biomass.

