ADF&G STAFF PRESENTATION
King and Tanner Task Force

Golden King Crab Commercial Fisheries

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Summary – Recent History

- Beginning with the 2005/2006 season, golden king crab (GKC) guideline harvest levels (GHLs) were adjusted on a triennial basis.
- Less detailed analyses were conducted during the intervening years of each triennial cycle.
- GHLs were adjusted prior to the 2008/2009 season.
- A less detailed, intervening year analysis was planned prior to the 2009/2010 season, but this was expanded to a full three-year review to synchronize GHL adjustments with the new Board of Fisheries (BOF) schedule for Southeast king crab proposals.
- Southeast king crab proposals were addressed by the BOF in January of 2009, and guideline harvest ranges (GHRs) were adjusted upward for some areas at this meeting.
- No changes were made to GHRs at the 2012 BOF meeting.

Recent History (cont.)

- GHLs were adjusted prior to the 2012/2013 season.
- Poor fishery performance in the 2012/2013 season led to an interim review prior to the 2013/2014 season in which GHLs were cut in two fishery areas.
- Poor fishery performance was again documented in the 2013/2014 season, eventually resulting in the closure of three major fishery areas short of their respective GHLs.
- The rapidly declining trends in fishery performance led the department to inform the King and Tanner Task Force (KTTF) during the March 19, 2014 meeting that the department would evaluate GKC GHLs annually.
- An annual evaluation of GHLs was conducted prior to the 2014/2015 season.

Summary – GHL Review

- GHL recommendations are made annually employing a precautionary approach to minimize the risk of recruitment failure.
- Four reasons for this approach:
  1) Recent fishery performance has been poor.
  2) Data poor fishery with no fishery independent stock assessment program.
  3) Golden king crabs are a long-lived deep water species, on a 20-24 month reproductive cycle.

Data Sources and Limitations

- All data currently available to assess GKC in Southeast Alaska are fishery dependent:
  1) Onboard observer data.
  2) Commercial CPUE.
  3) Dockside sampling percentage of recruit and post-recruit class crab.
- Each data type has specific limitations.

Observer data

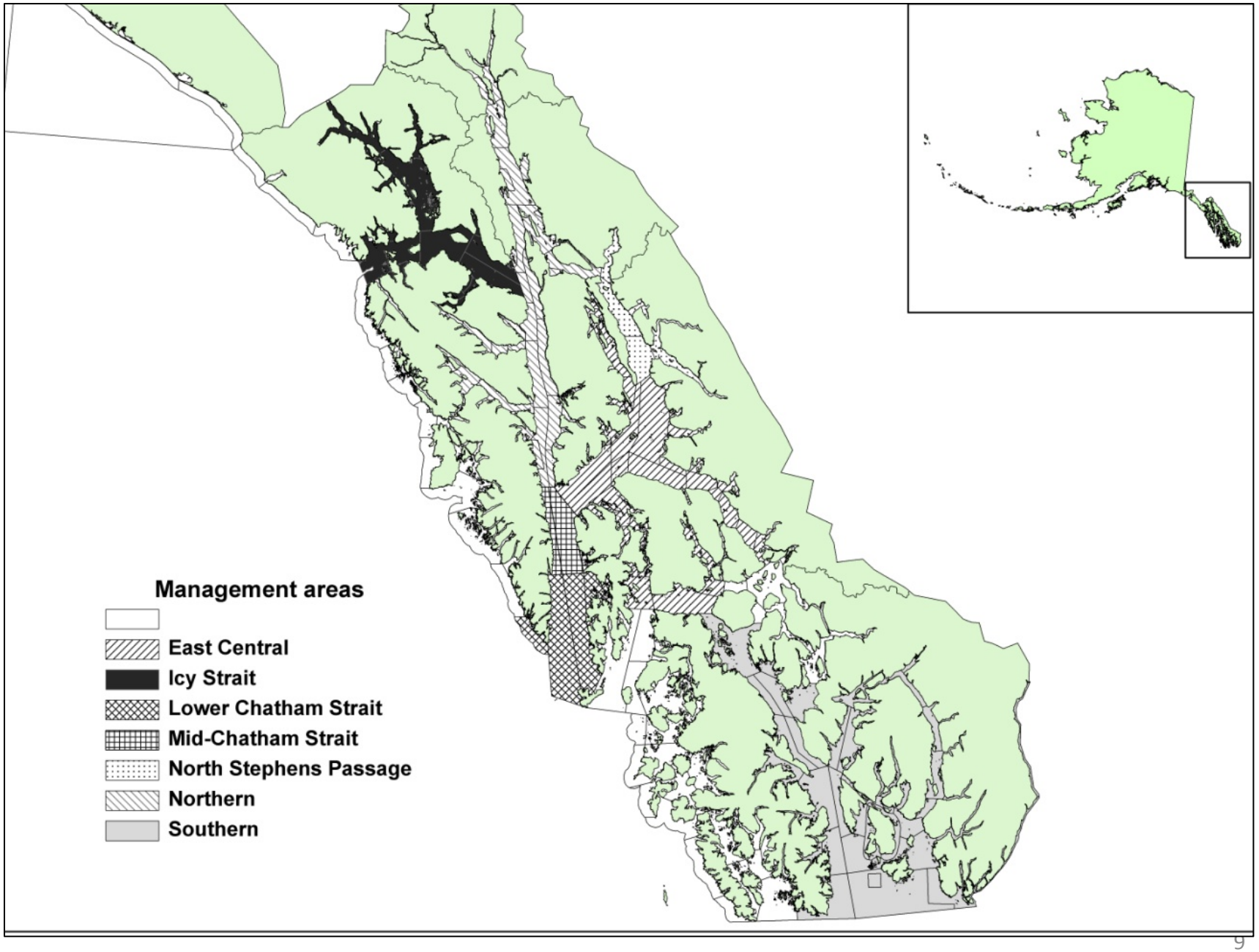
- Provide a detailed examination of a given fisherman's catch, but has specific limitations:
  1) Small sample size.
  2) Small percentage of fishing grounds covered.
  3) Timing of observer trip (early or late in the season).
  4) Individual variability in fishing efficiency from year to year if different vessels are used.
- Due to the short duration of some seasons, or low effort exhibited in a given season, observer data may be lacking.

Commercial CPUE from logbooks

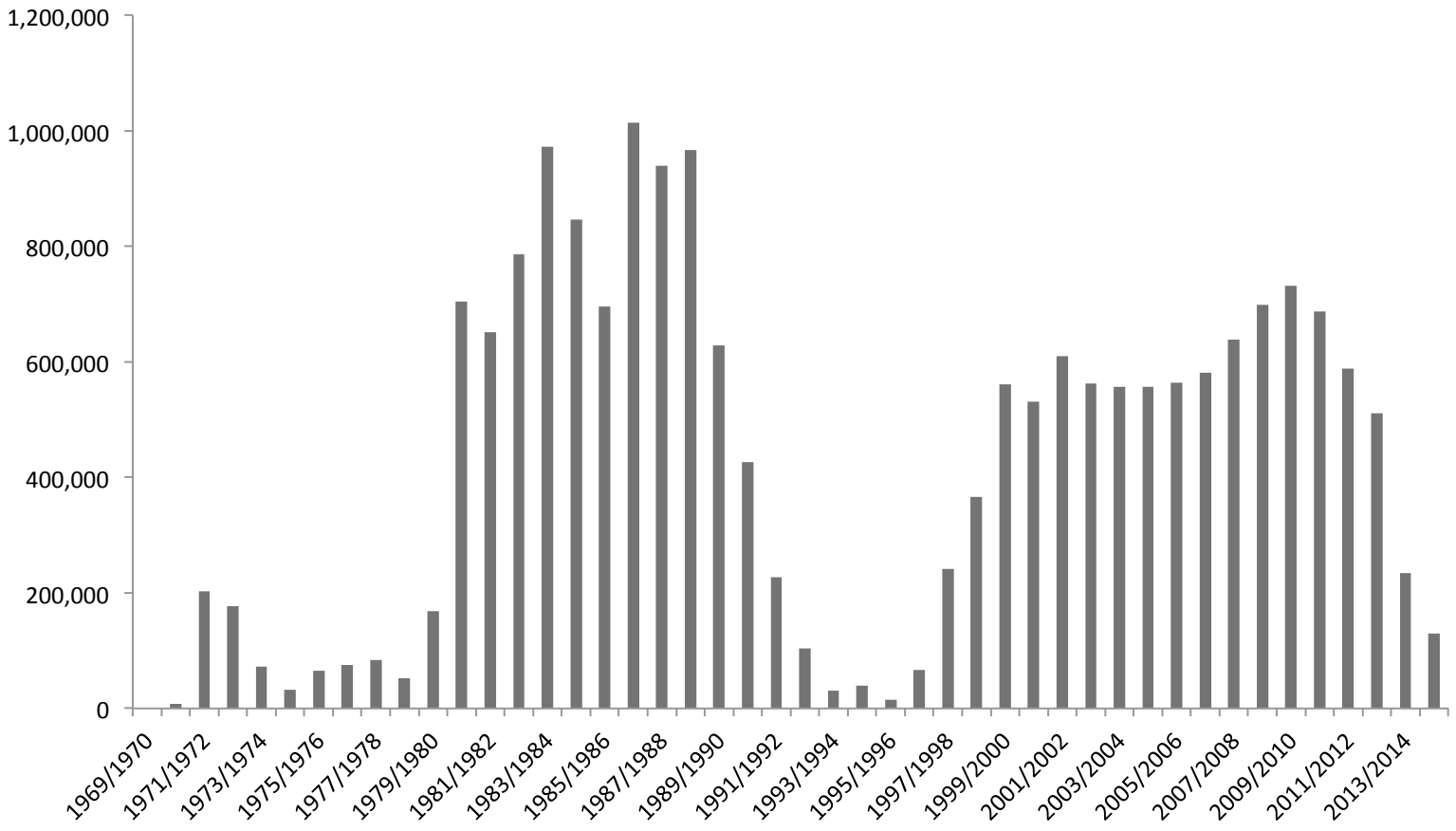
- Commercial CPUE from logbooks provides a much broader view of fishery performance, but has limitations:
  1) Potential reporting errors (numbers of crab, pots lifted, etc.).
  2) Neither fish ticket nor logbook databases account for soak times, so soak times cannot be factored into catch/pot or catch/pot/day calculations.

Port sampling

- Dockside sampling provides a wider look at the fishing grounds but depends to a great degree on a large number of trips being sampled each year.
- Dockside information on changes in the proportion of recruit to post-recruit crabs is difficult to interpret.
- Although significant carry-over of post-recruits is desirable, pulsed recruitment and changes in population abundance confounds the interpretation of changes in proportions.


Management areas
East Central
Icy Strait
Lower Chatham Strait
Mid-Chatham Strait
North Stephens Passage
Northern
Southern

GKC Harvest


1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
1969/1970
1971/1972
1973/1974
1975/1976
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1981/1982
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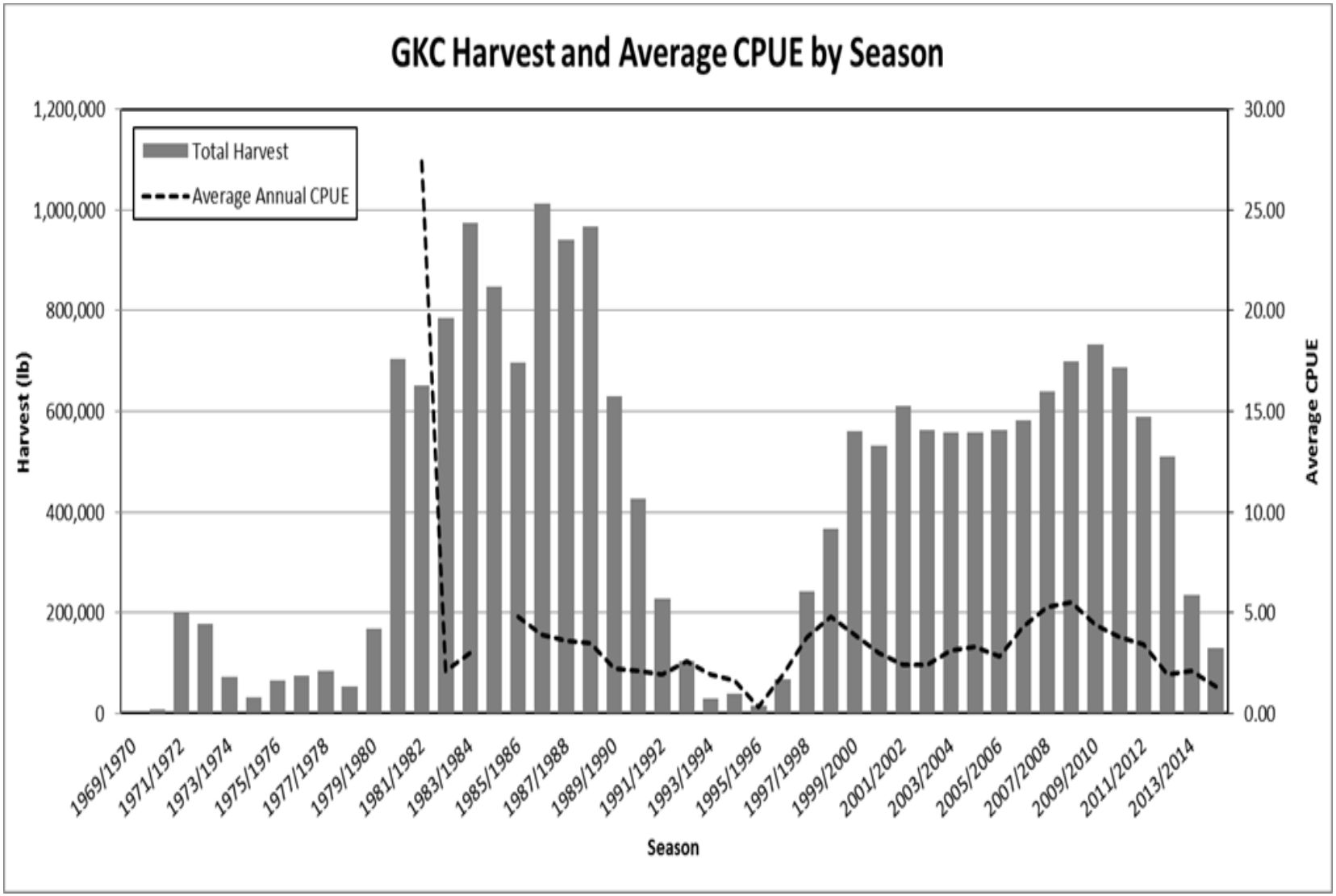
GKC Harvest and Average CPUE by Season
Total Harvest
Average Annual CPUE
Harvest (lb)
Average CPUE
Season
1,200,000
1,000,000
800,000
600,000
400,000
200,000
0
30.00
25.00
20.00
15.00
10.00
5.00
0.00
1969/1970
1971/1972
1973/1974
1975/1976
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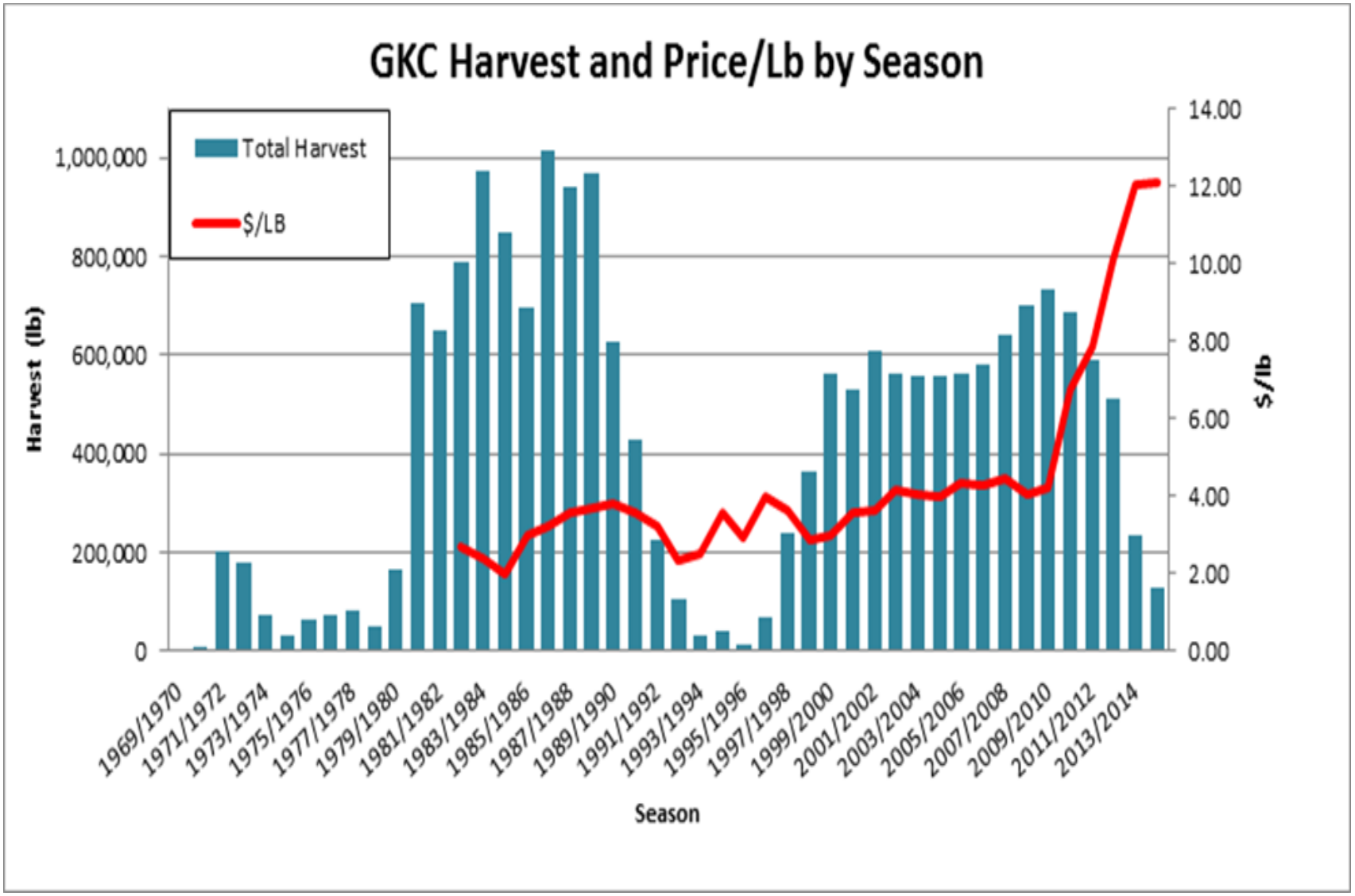
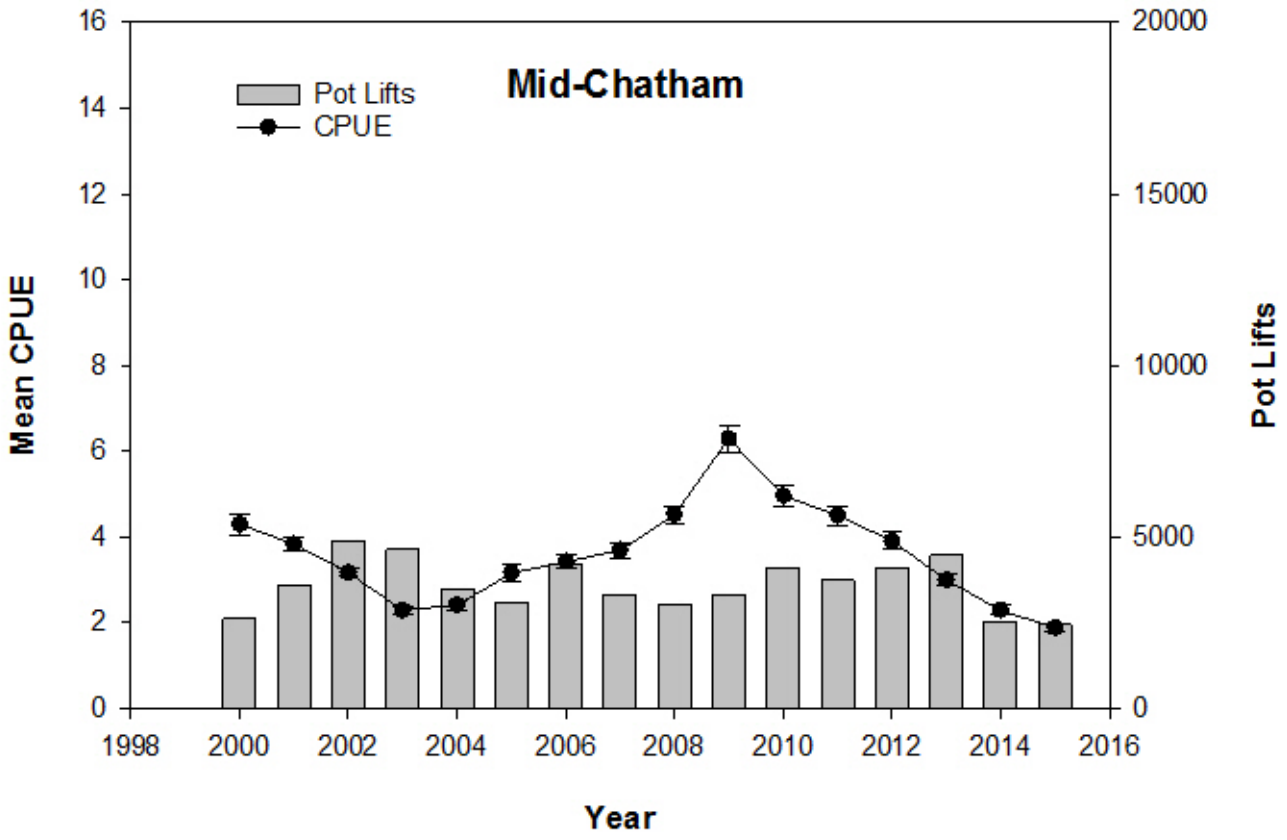
2011/2012
2013/2014

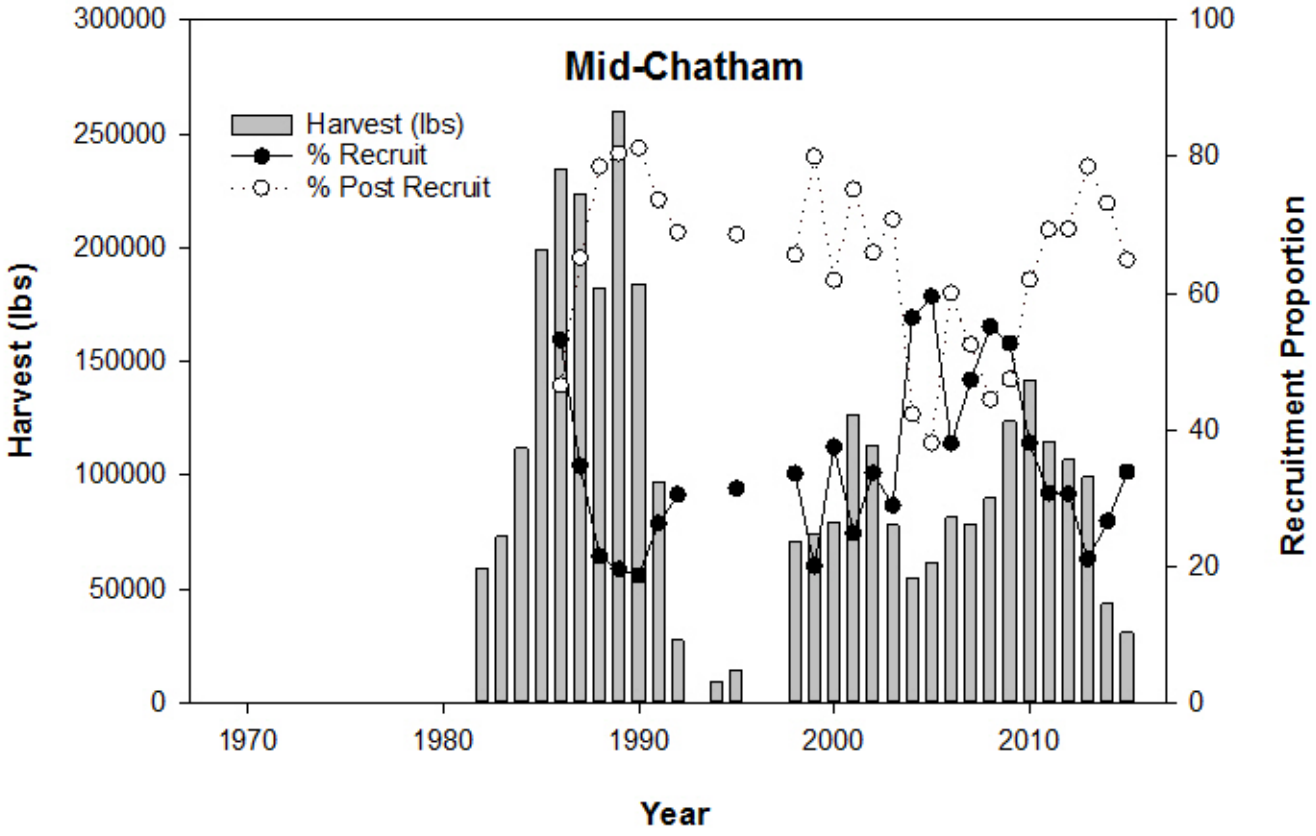

GKC Harvest and Price/Lb by Season
Total Harvest
$/LB
Harvest (lb)
$/lb
Season
1,000,000
800,000
600,000
400,000
200,000
0
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
1969/1970
1971/1972
1973/1974
1975/1976
1977/1978
1979/1980
1981/1982
1983/1984
1985/1986
1987/1988
1989/1990
1991/1992
1993/1994
1995/1996
1997/1998
1999/2000
2001/2002
2003/2004
2005/2006
2007/2008
2009/2010
2011/2012
2013/2014

Mid-Chatham Strait

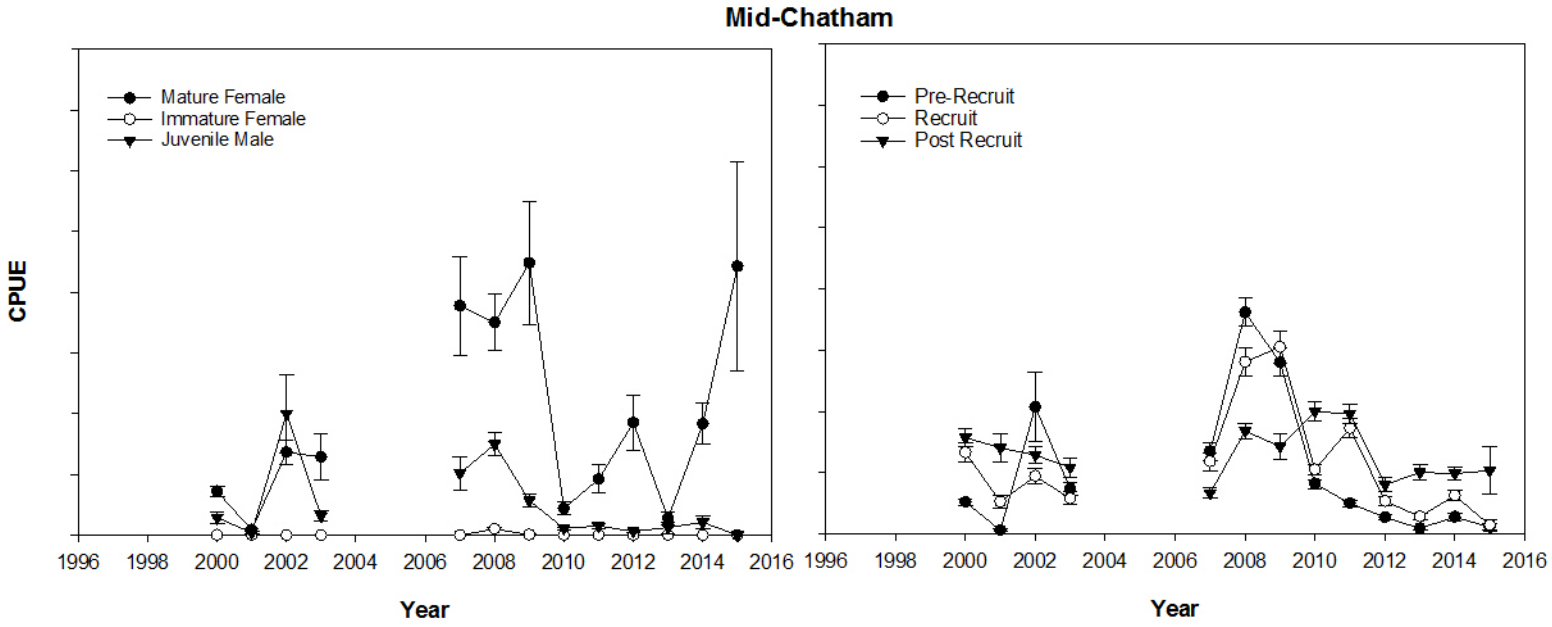
- After the 2008/2009 review, the GHL for Mid-Chatham Strait was raised from 80,000 to 100,000 lb.
- After the 2009/2010 review, The GHL for Mid-Chatham Strait was raised again from 100,000 to 110,000 lb.
- During the 2012/2013 and 2013/2014 reviews the GHL remained 110,000 lb.
- During the 2014/2015 review the GHL was lowered to 80,000 lb.



Logbook data show below average CPUE which is the lowest CPUE on record.



Port sampling data show the proportion recruits and post-recruits to be in line with historical averages.



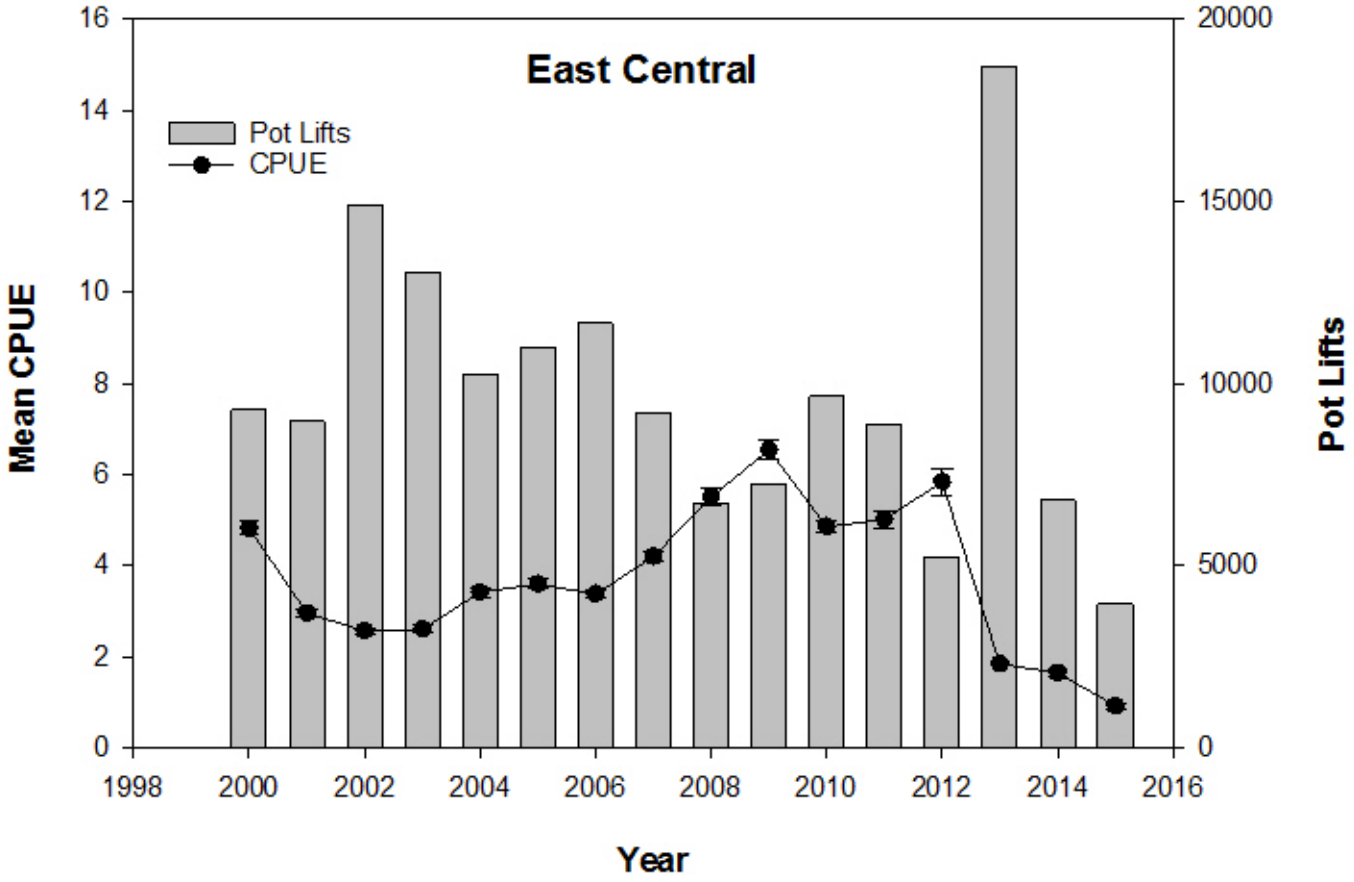
Observer data show low levels of all sex/size classes of male crab with only mature females to be trending up.

East Central

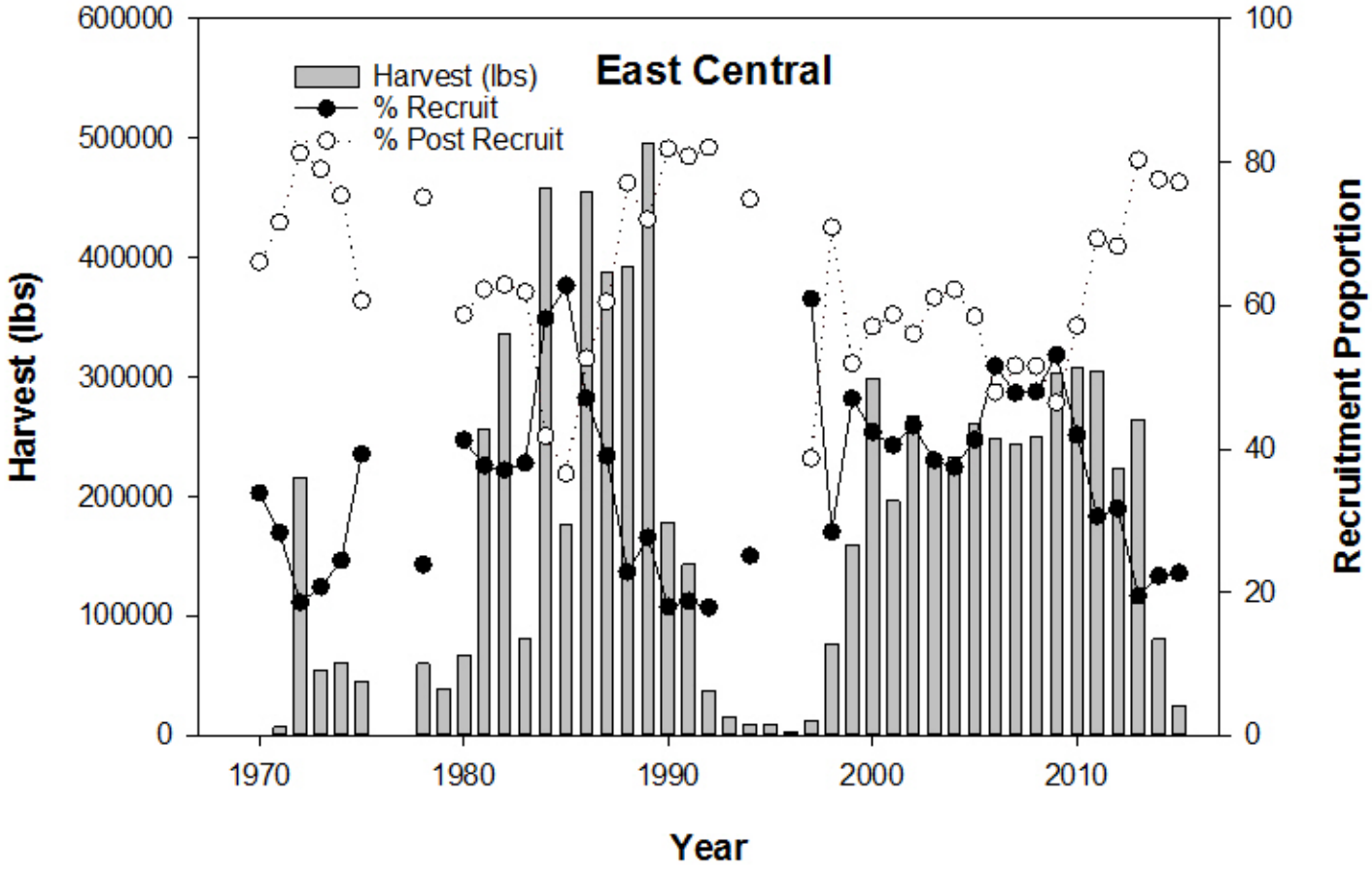
- The East Central GKC fishery has historically been the most important, in terms of total harvest, in Southeast Alaska. On average from the 1999/2000-2013/2014 seasons approximately 43% of the total regional GKC harvest has been from this area.
- The GHL for the East Central management area remained at the upper end of the GHR, 225,000 lb, after the 2008/2009 review.
- At the 2009 BOF meeting, the upper end of the GHR was raised from 225,000 to 300,000 lb.
- The GHL was raised to 260,000 lb after the 2009/2010 review.

East Central

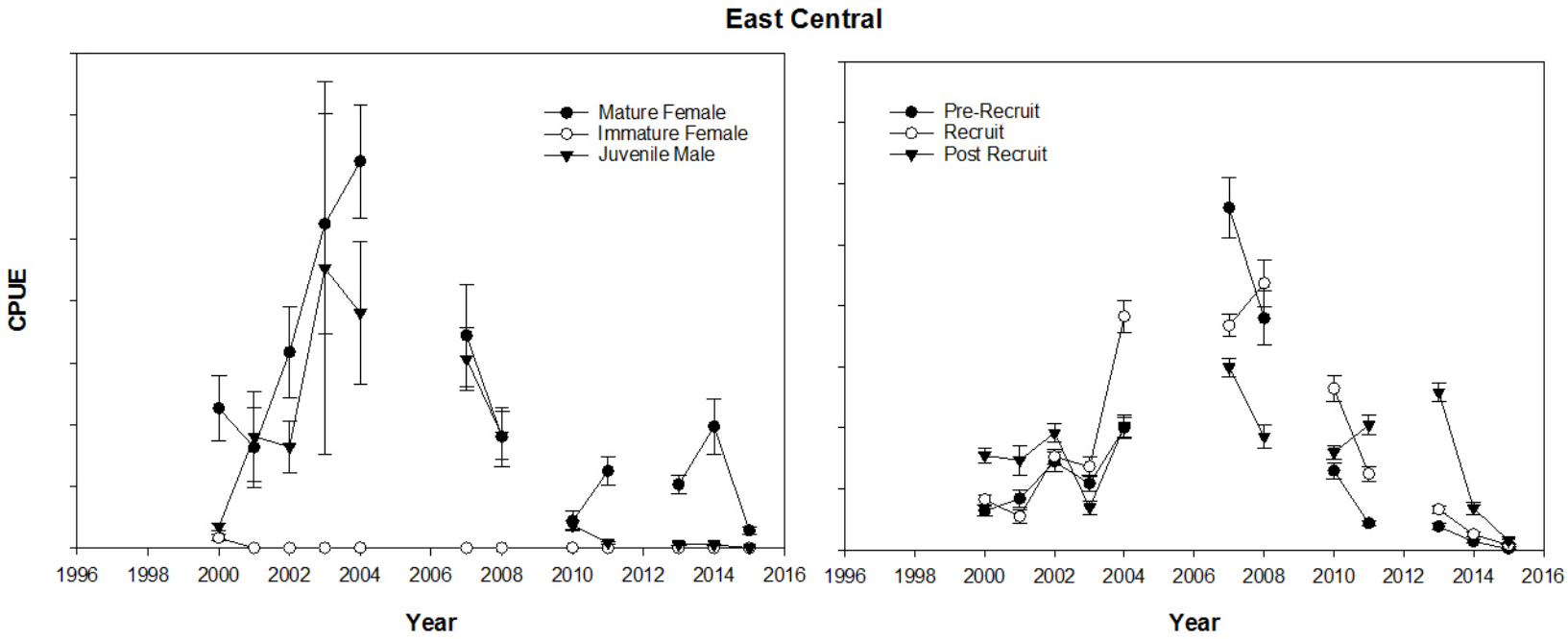
- After good fishery performance in the 2009/2010 - 2011/2012 seasons, the GHL was again raised in the 2012/2013 review to 285,000 lb.
- After poor fishery performance in the 2012/2013 season, the GHL was reduced to 200,000 lb during the 2013/2014 review.
- During the 2014/2015 review the GHL was reduced to 115,000 lb.



Logbook data show historically low CPUE, the lowest on record, reminiscent of the 1990s fishery collapse. Only 22% of the GHL was taken last season by the time the fishery was closed by EO due to poor fishery performance.



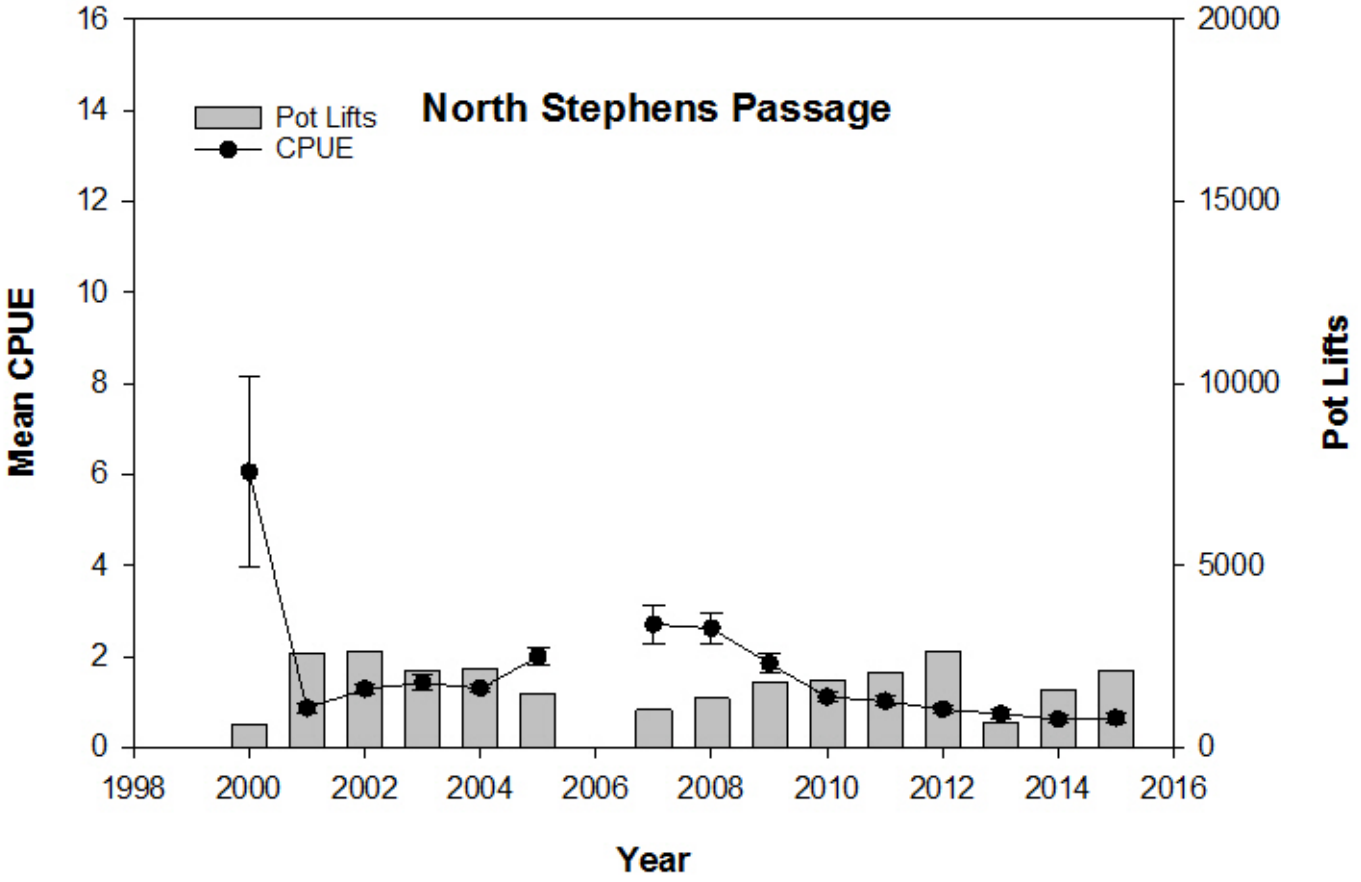
Dockside port sampling data revealed that the percentage of recruit crab increased slightly in the last two seasons, but is still below average



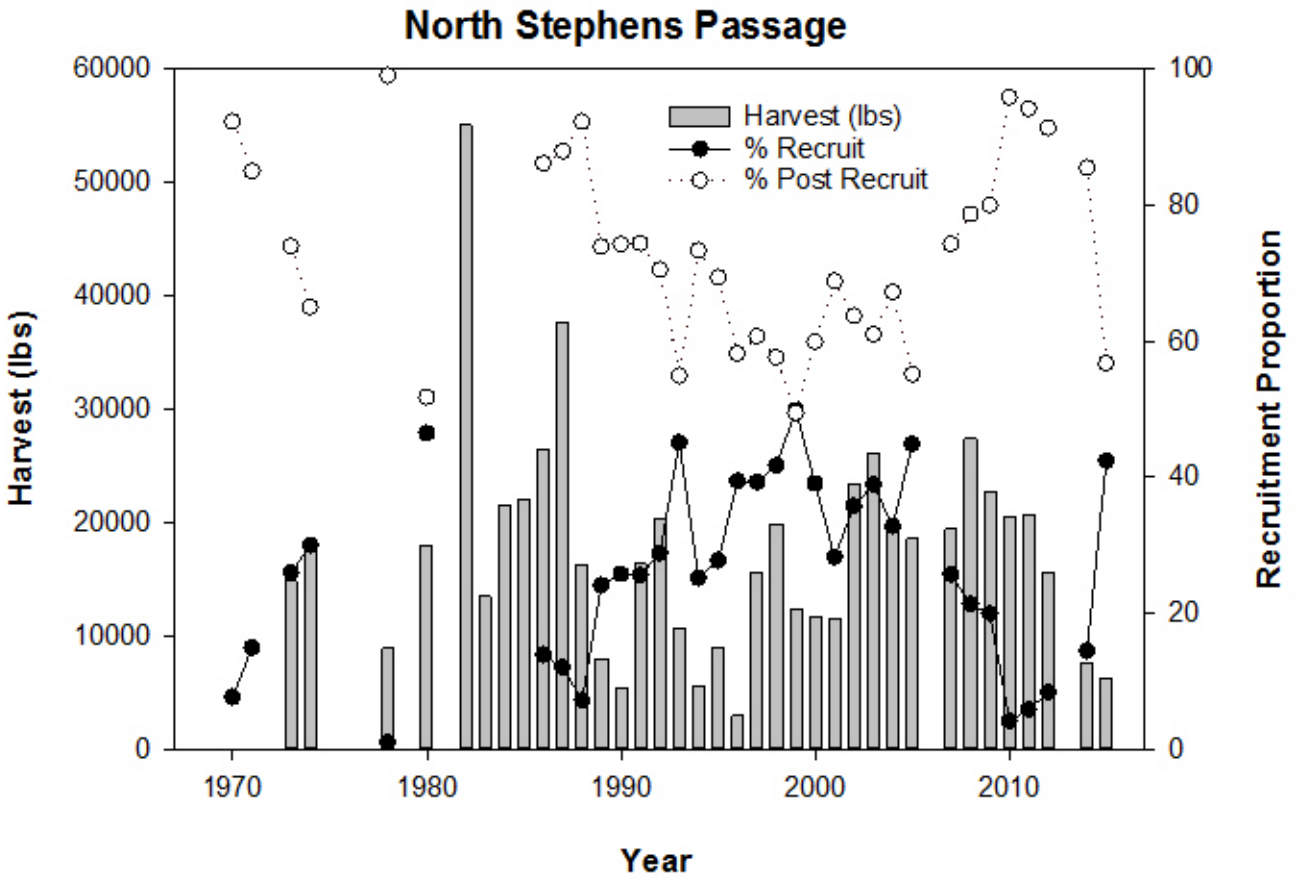
Observer data are lacking for 2012, but 2013 - 2015 data show pre-recruits, recruits, and post-recruits at very low levels .

North Stephens Passage

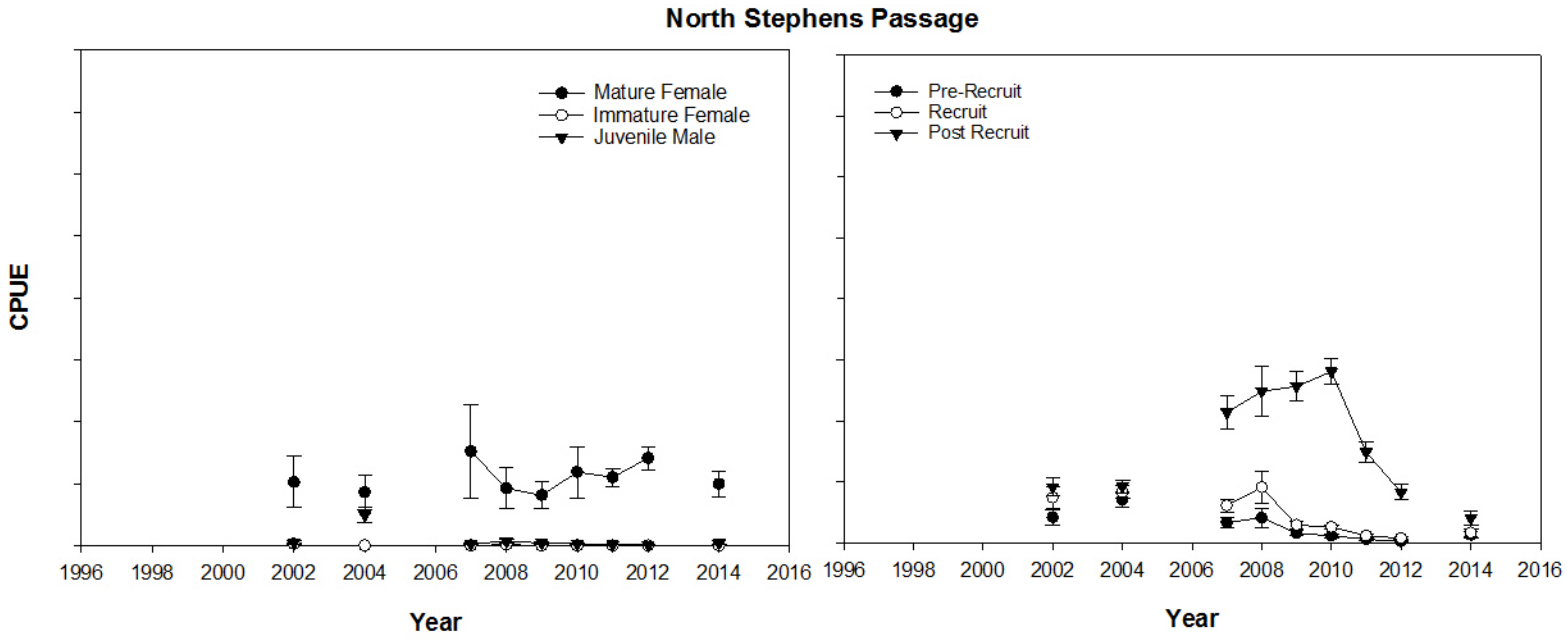
- The GHL for the North Stephens Passage management area remained at 20,000 lb after both the 2008/2009 review and the 2009/2010 review.
- During the 2012/2013 review the GHL was lowered to 10,000 lb.
- During the 2013/2014 review the GHL remained 10,000 lb.
- During the 2014/2015 review the GHL was lowered to 8,000 lb.



Logbook data show lowest CPUE on record for 2013/2014 and 2014/2015 seasons.



Port sampling data show recruit percentage is trending up over the past six seasons, with a large increase in recruit percentage last season.



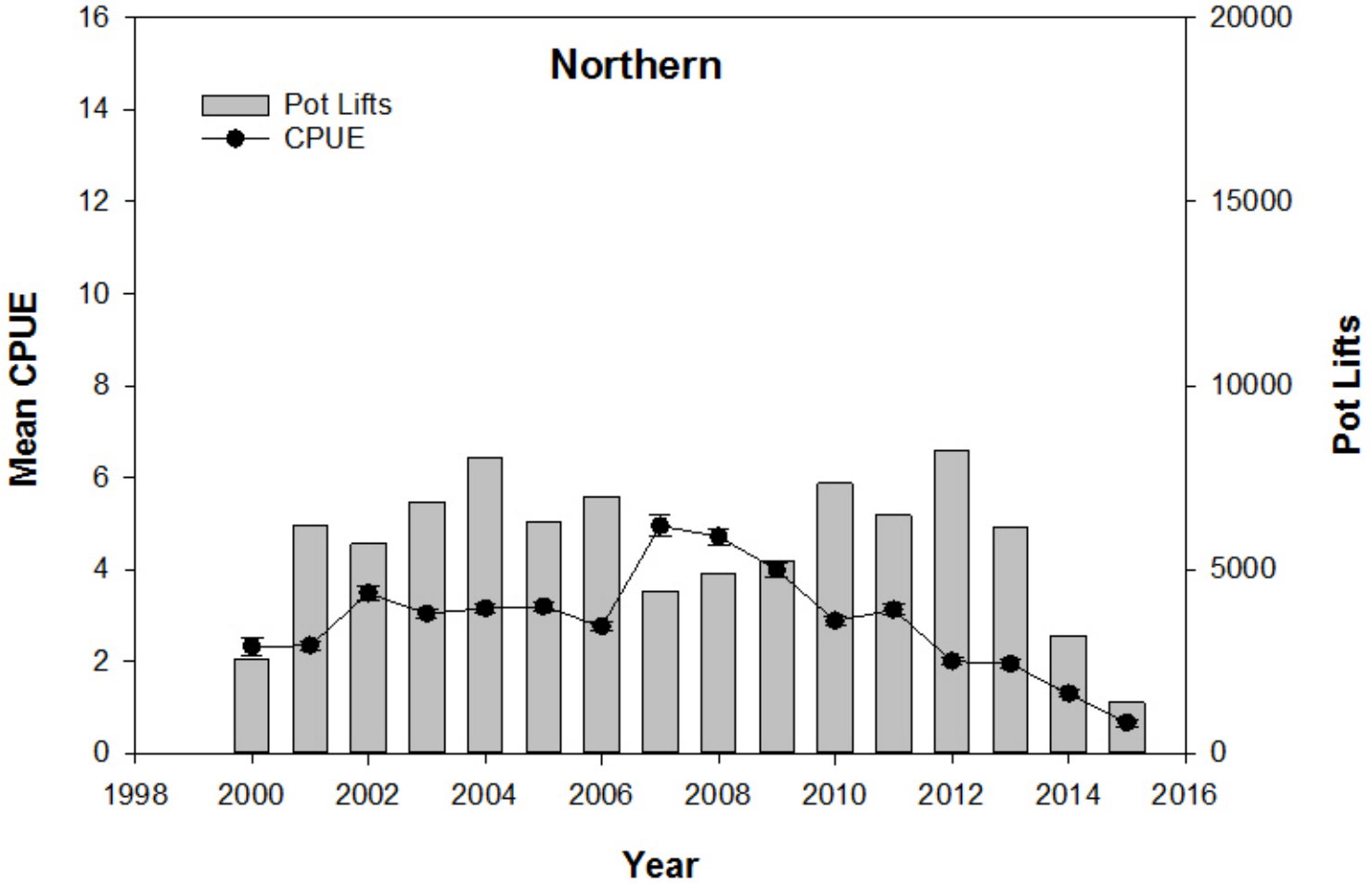
Observer data are lacking for the most recent season, but show low pre-recruit, recruit, and post-recruit CPUEs in the 2013/2014 season.

Northern

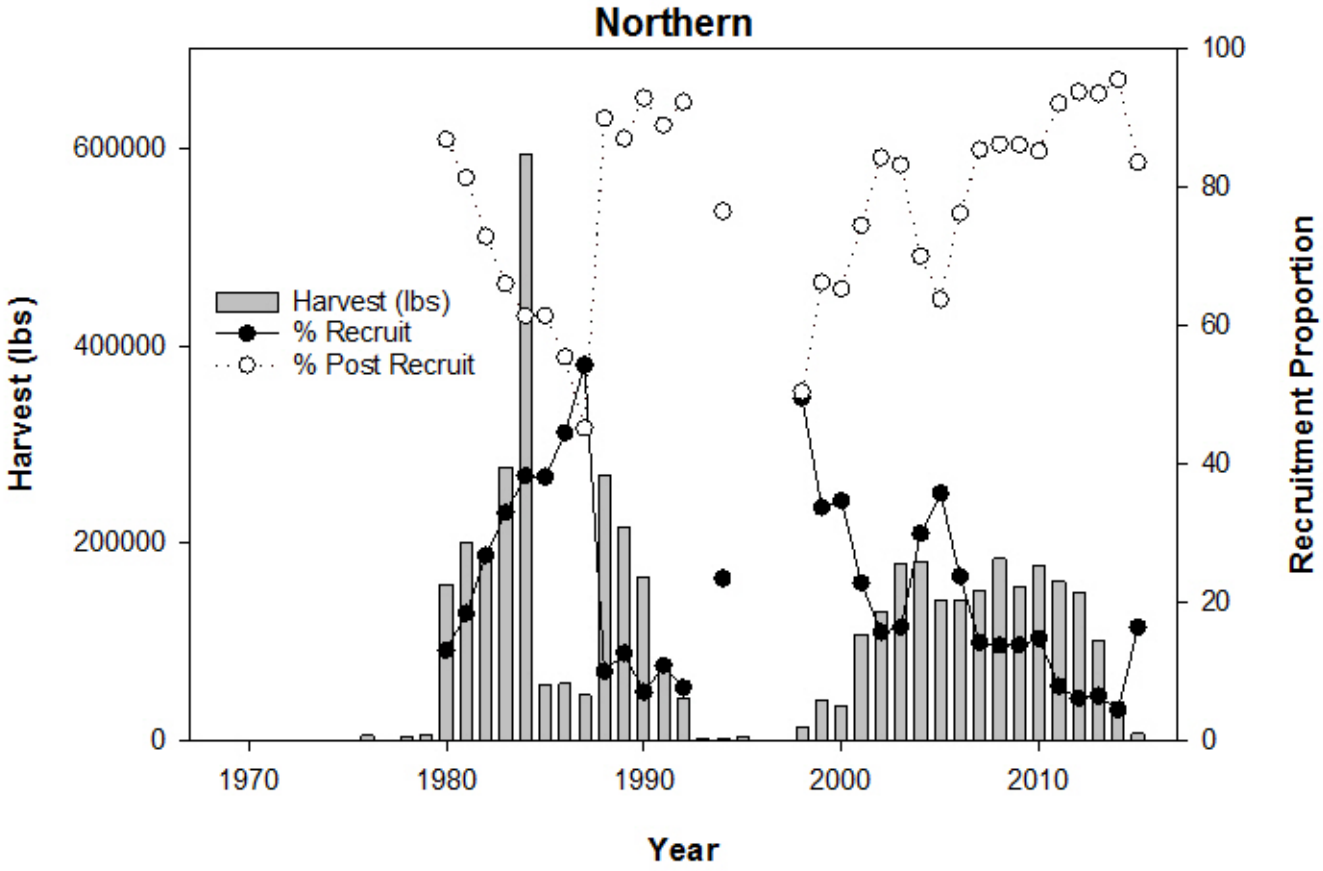
- After the 2008/2009 triennial review, the GHL for the Northern management area was raised from 120,000 to 145,000 lbs, the upper end of the GHR.
- At the 2009 meeting of the BOF, the upper end of the GHR for the Northern management area was raised from 145,000 to 175,000 lbs.
- The GHL remained 145,000 lbs after the 2009/2010 review.

Northern (cont.)

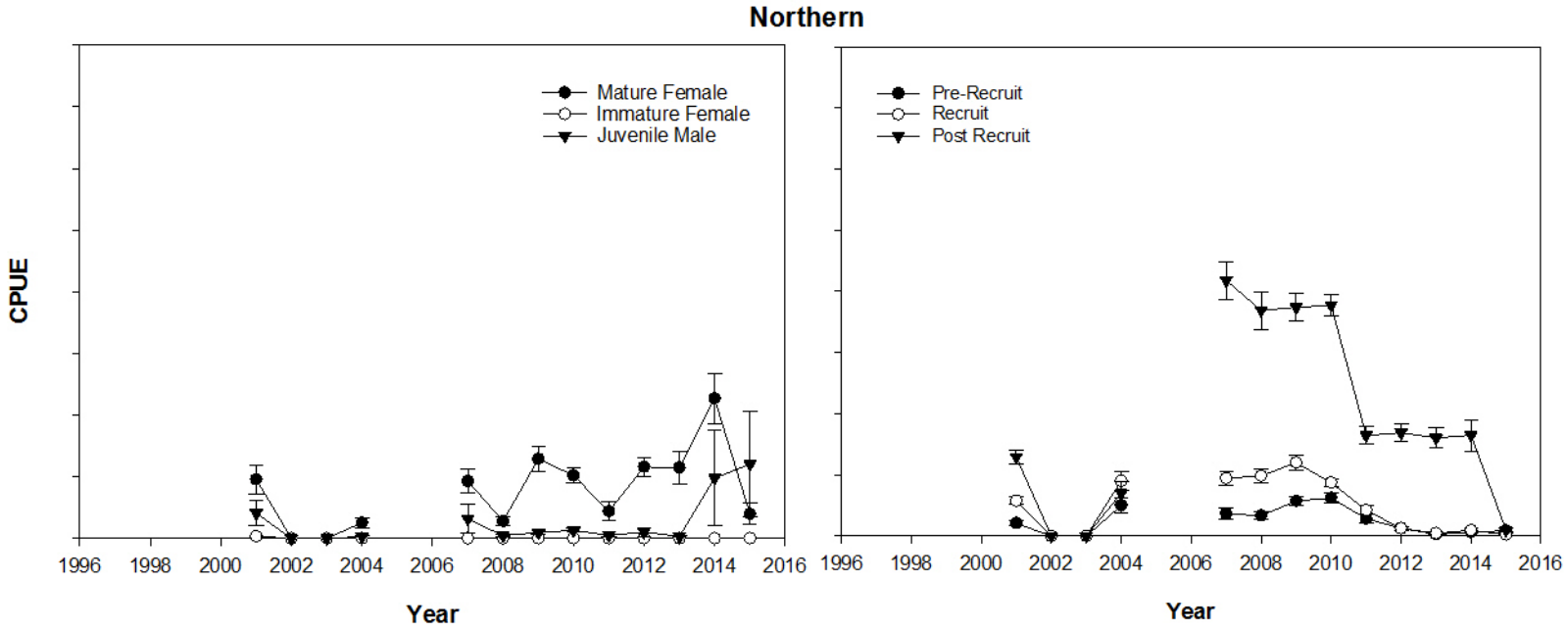
- During the 2012/2013 review the GHL was lowered to 105,000 lb.
- During the 2013/2014 review the GHL remained 105,000 lb.
- During the 2014/2015 review the GHL was lowered to 65,000 lb.



Logbook data show well below average CPUE, with six straight seasons of declining CPUE with the 2014/2015 CPUE the lowest on record. Only 11% of the GHL was taken last season by the time the fishery was closed by EO due to poor fishery performance.



Port sampling data show below average percentage recruit.



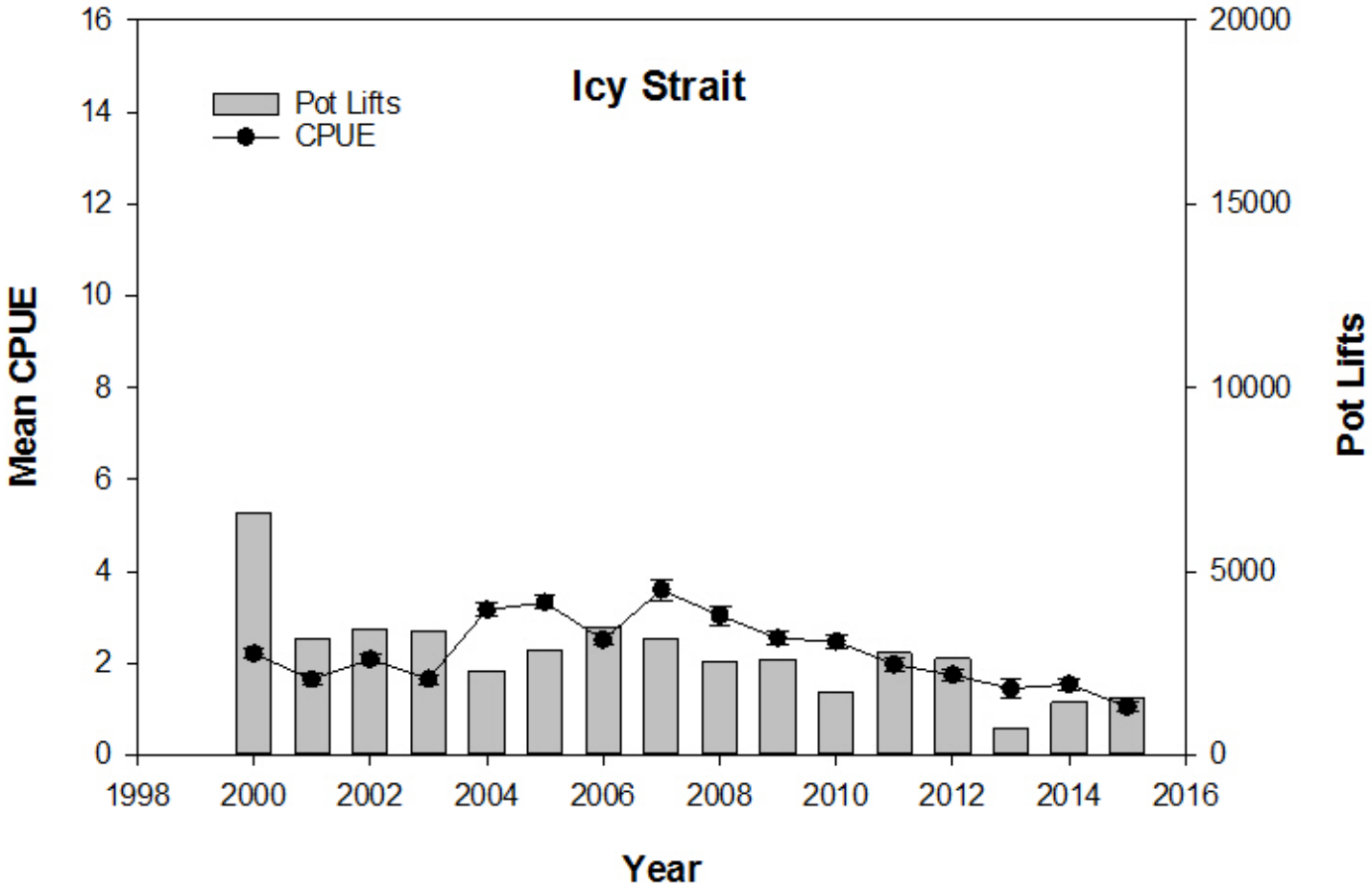
Observer data show only juvenile male CPUE to be increasing. All other size/sex classes except juvenile males show declines or no improvement.

Icy Strait

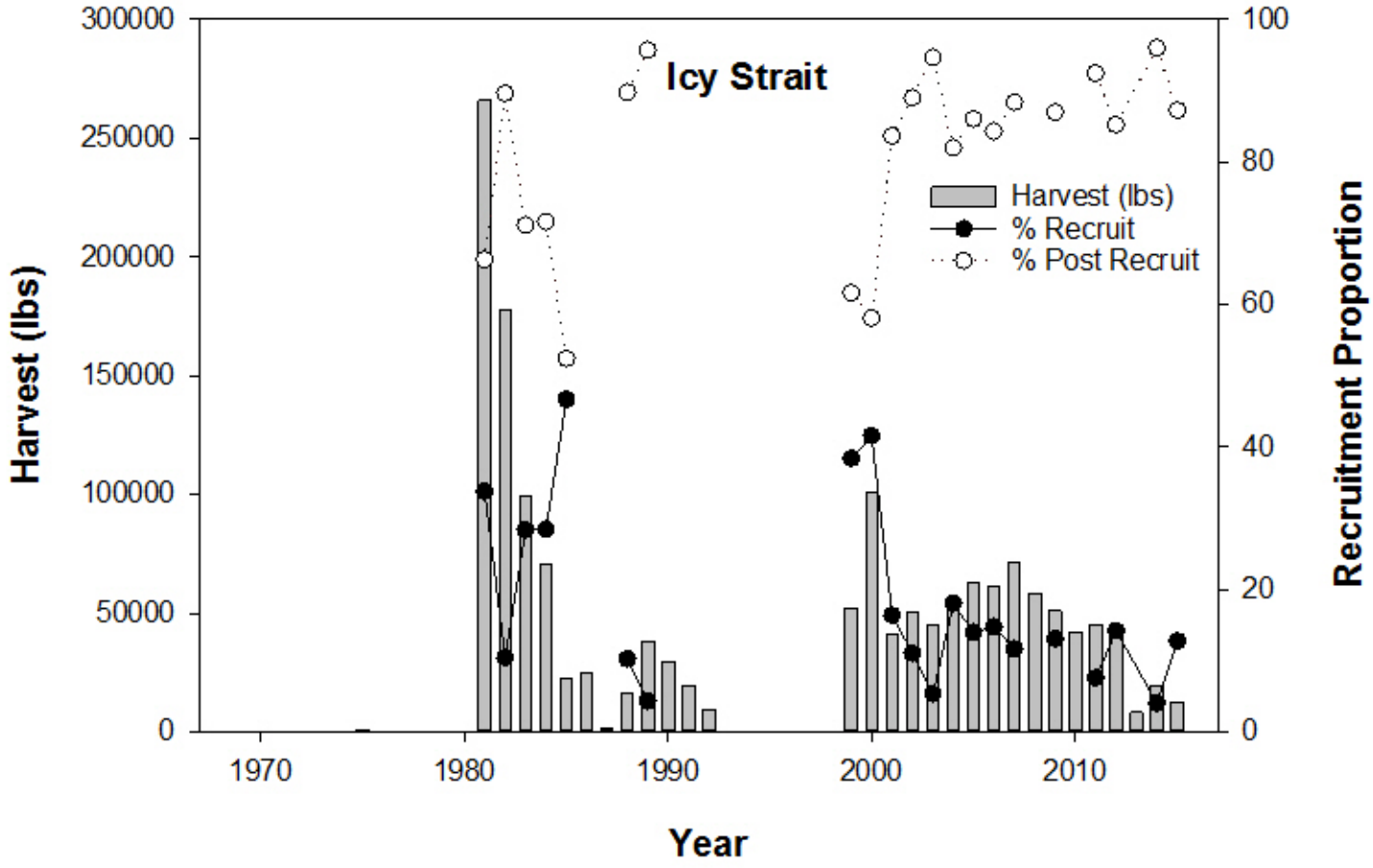
- The GHL for the Icy Strait management area remained at 55,000 lbs after the 2008/2009 triennial review.
- At the 2009 meeting of the BOF, the upper end of the GHR was raised from 55,000 to 75,000 lbs.
- The GHL for the Icy Strait management area was lowered from 55,000 lbs to 45,000 lbs after the 2009/2010 review.

Icy Strait (cont.)

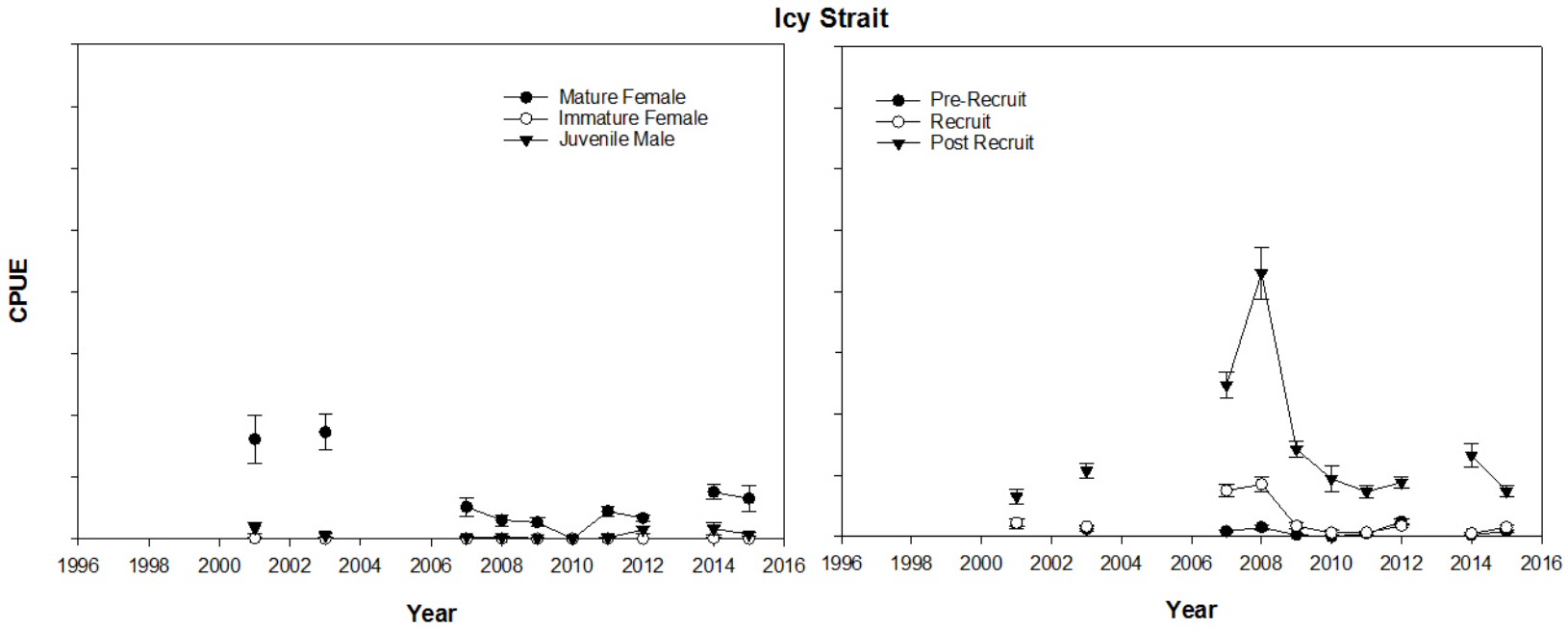
- During the 2012/2013 review the GHL was lowered to 30,000 lb, and again lowered during the 2013/2014 GHL review to 20,000 lb.
- During the 2014/2015 review the GHL was reduced to 18,000 lb.



Logbook data show below average CPUE. The 2014/2015 commercial fishery CPUE was the lowest on record.



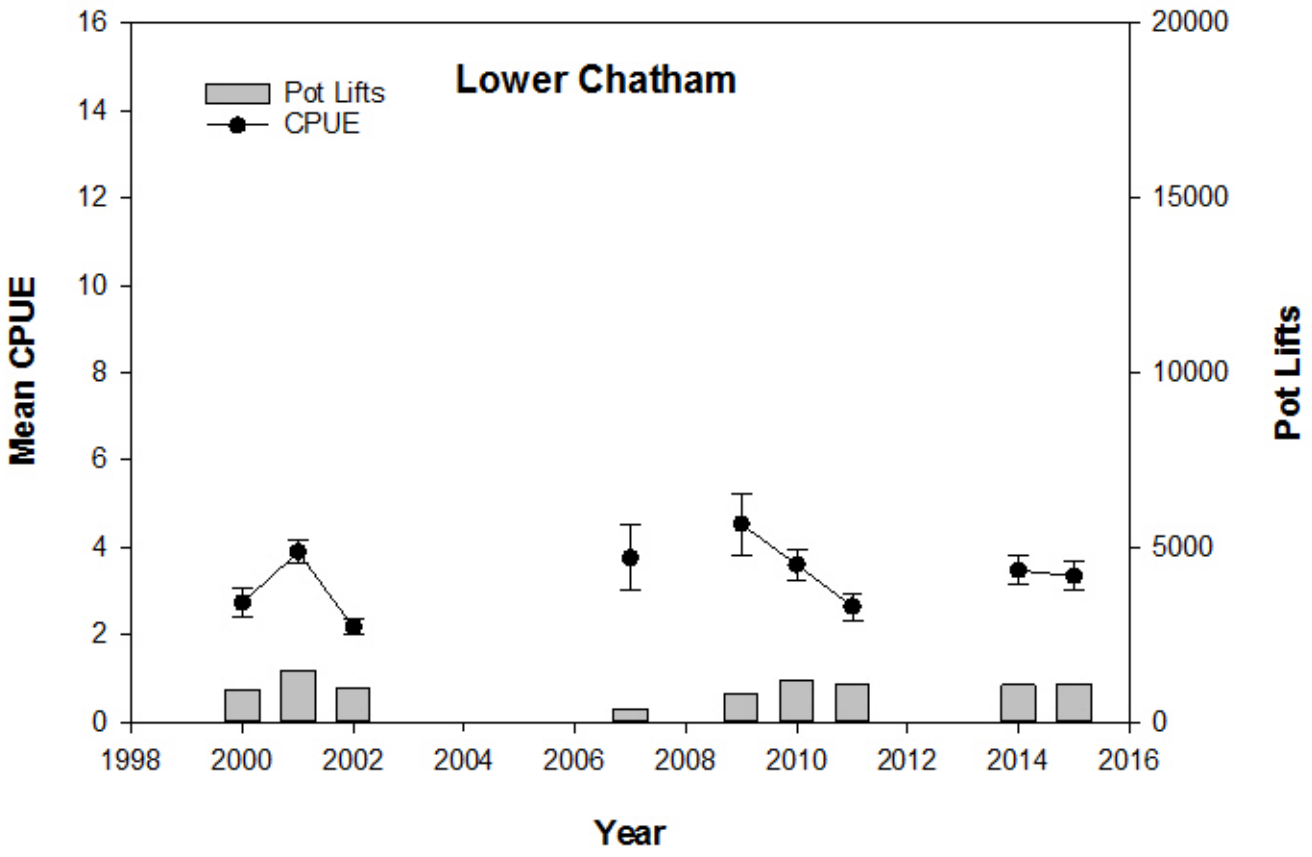
Port sampling data show percentage of recruits and to be below average.



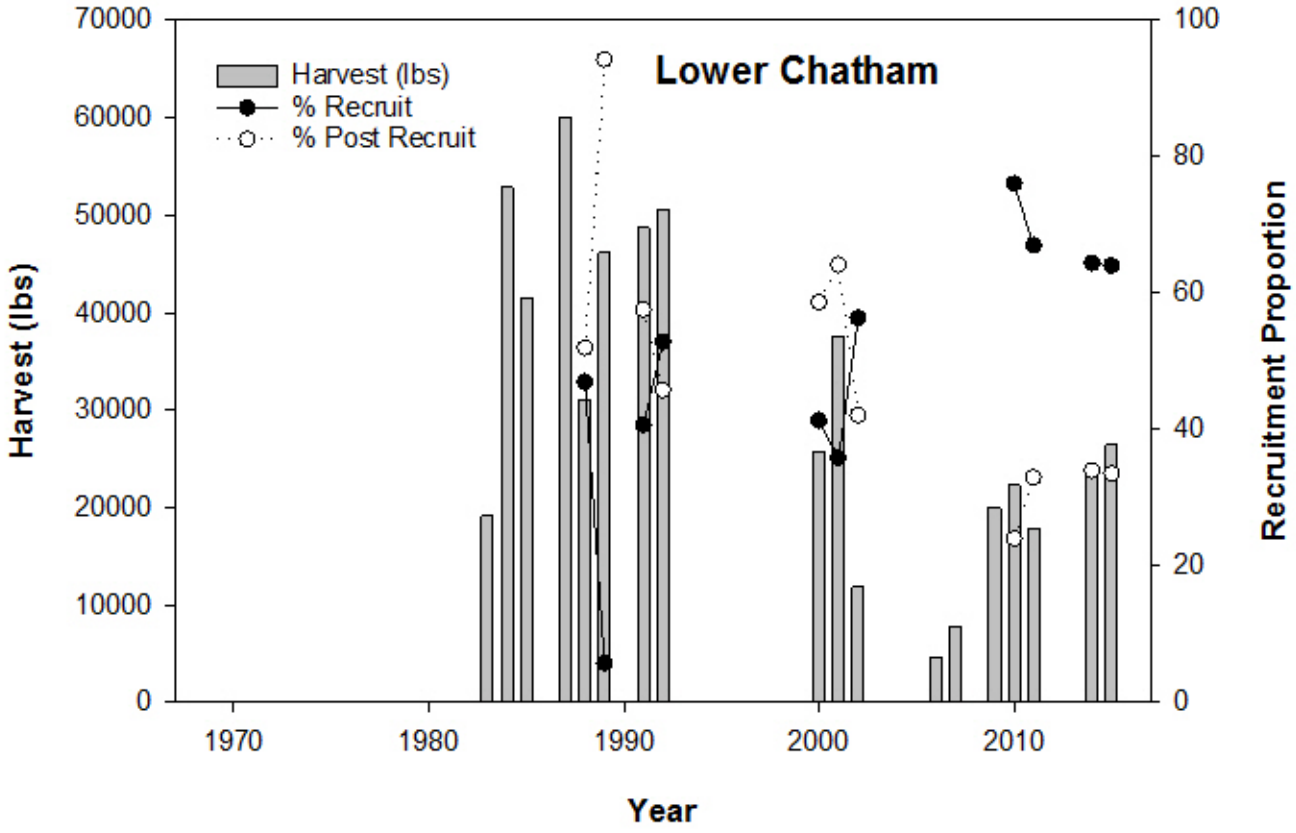
Observer data show continuing low levels of pre-recruits, recruits, and post-recruits.

Lower Chatham Strait

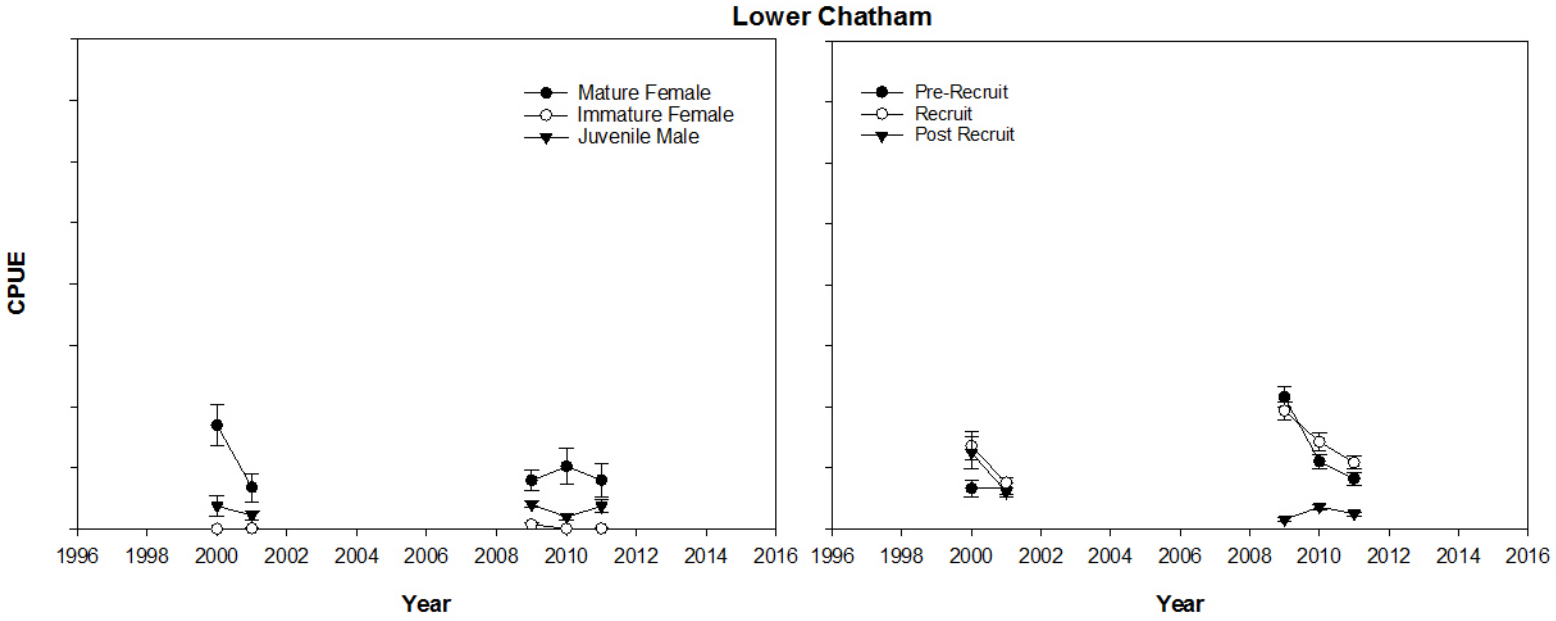
- The GHL for the Lower Chatham management area was raised from 15,000 to 25,000 lbs after the 2008/2009 triennial review.
- The GHL remained unchanged after the 2009/2010 review.
- During the 2012/2013 review the GHL was increased to 28,000 lb.
- During the 2013/2014 and 2014/2015 reviews the GHL remained 28,000 lb.



Logbook data show stable CPUE.



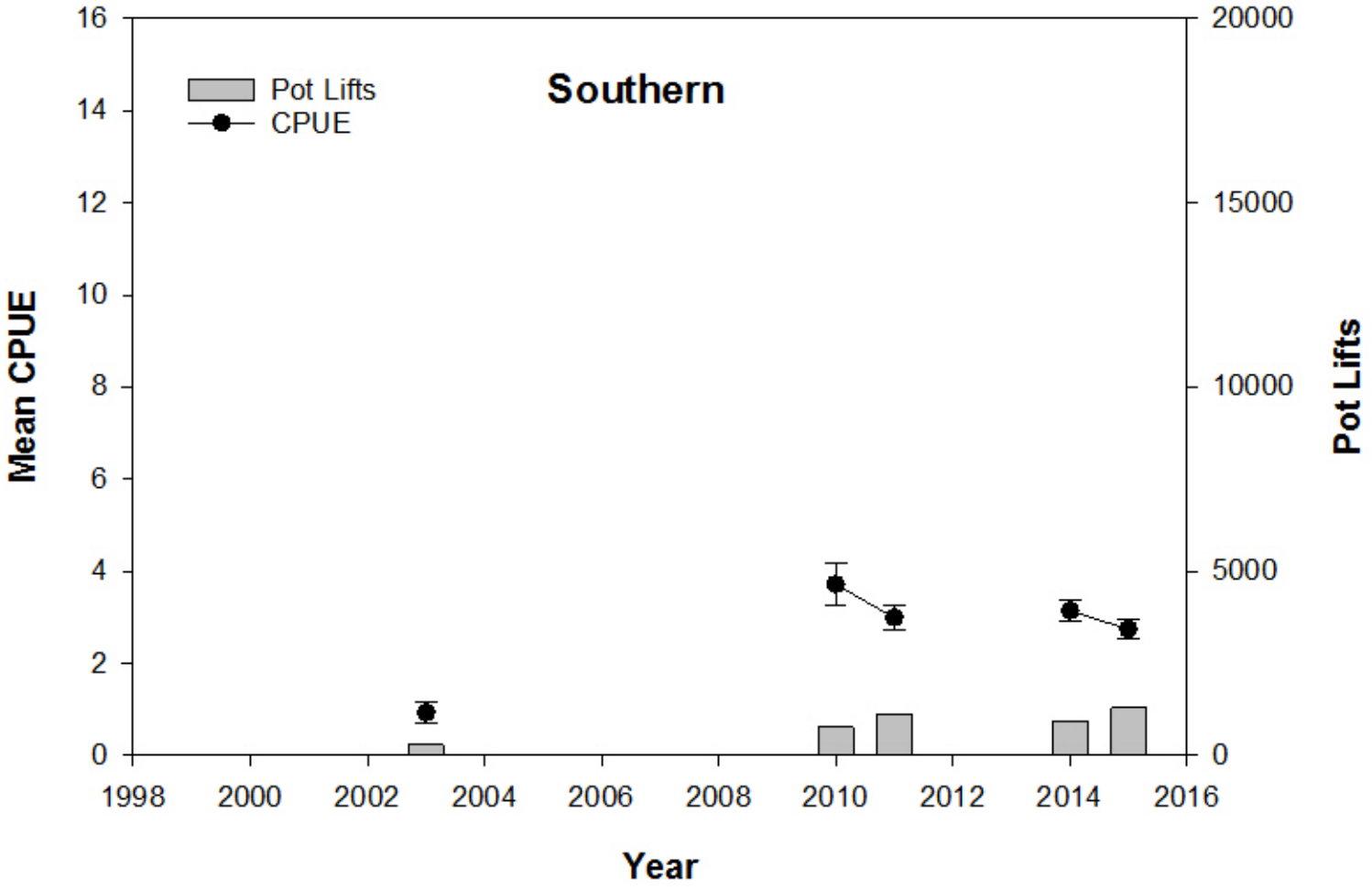
Port sampling data show a high percentage of recruit class crab .



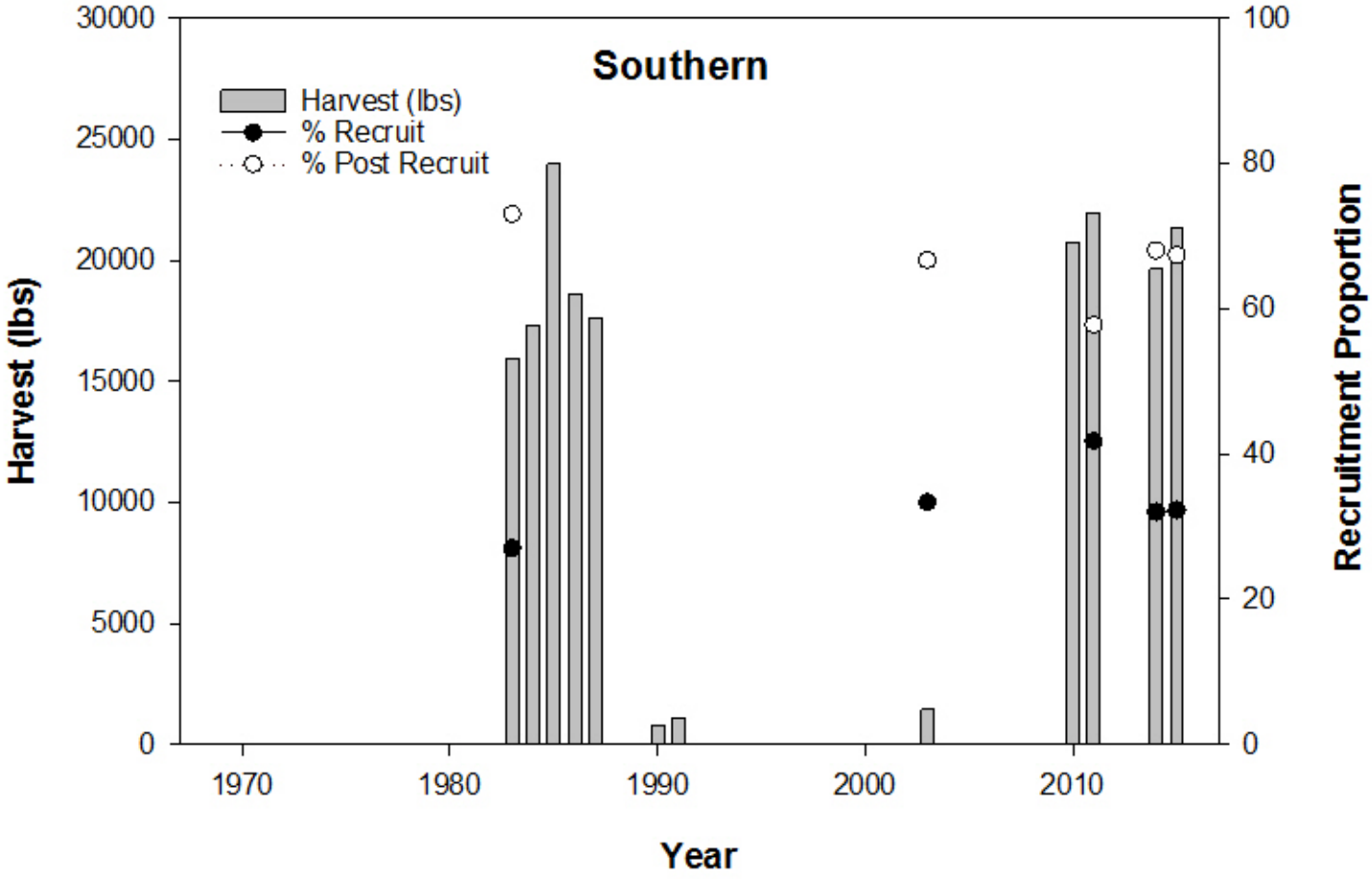
Observer data are lacking for recent seasons.

Southern

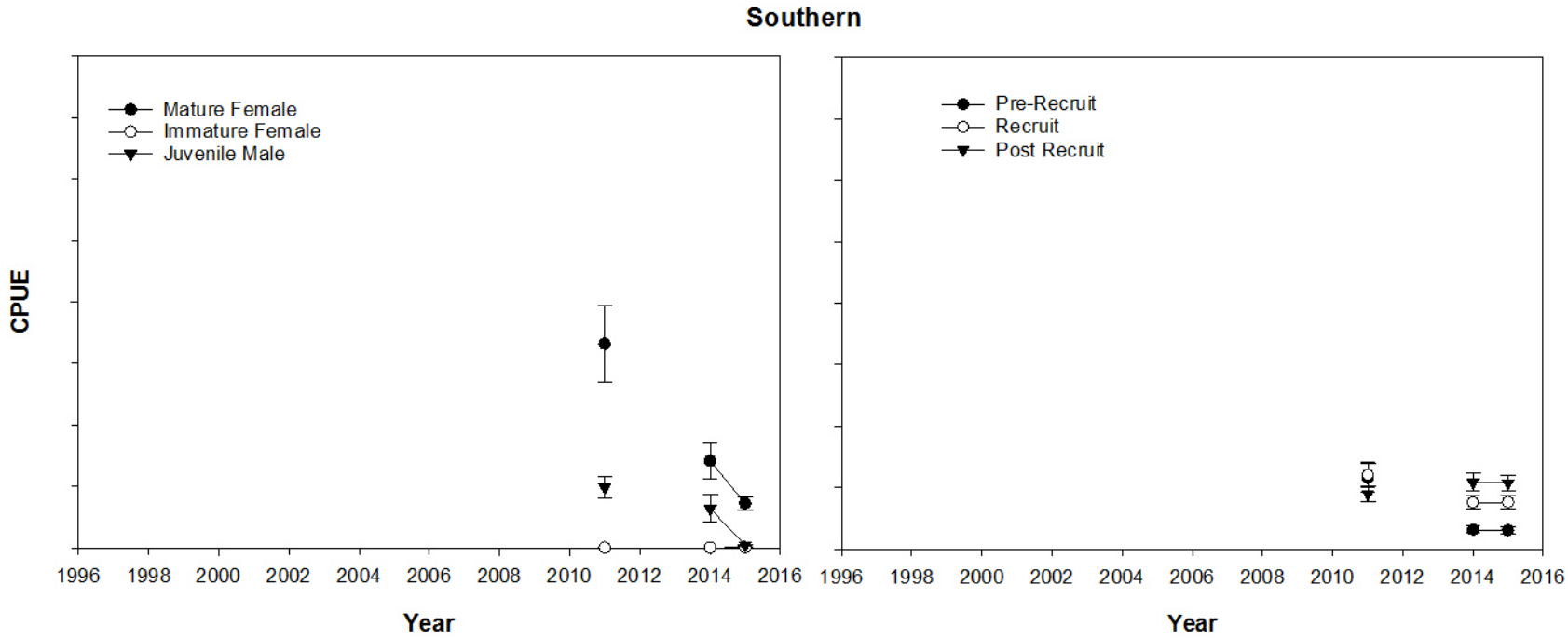
- The GHL for the Southern management area was raised from 10,000 to 20,000 lbs after the 2008/2009 triennial review
- The GHL remained unchanged after the 2009/2010 review.
- During the 2012/2013 review the GHL was increased to 22,000 lb.
- During the 2013/2014 and 2014/2015 reviews the GHL remained 22,000 lb.



Logbook data show relatively stable CPUE.



Port sampling data show recruit and post-recruit percentages holding steady.



Trends for pre-recruits, recruits, and post-recruit class crab in observer data over the past two seasons have been relatively stable.

In Conclusion

- The department has not finalized GHLs for the upcoming 2015/2016 GKC season, but is rather considering a range of options at this point.
- For the four major fishing areas (East Central, Northern, Mid-Chatham, and Icy Strait) the department is considering substantial GHL reductions due to poor fishery performance, including pre-season closures for East Central and Northern.
- GHLs will be finalized the week of February 1 – 5. The department plans to issue a news release with GKC GHLs for the 2015/2016 season by February 5, 2016.