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Tab E, No. 5

# Multi-year ACL benefits and risks for achieving management objectives

Gulf of Mexico Fisheries Management Council

June 5<sup>th</sup> – 8<sup>th</sup> , 2023

# Why consider multi-year ACL management?

- Averaging of annual landings estimates over multiple years reduces the impact of imprecise catch estimates on overfishing determinations
- Multi-year intervals for status determination reduce the impact of imprecise fishery closure times and reduce the need for timely reporting in all but last year
- There is an implicit carryover and payback between years during the multi-year period that comes from averaging over the annual variability in landings due to species demand and natural fluctuations in the availability of fish



# Is multi-year ACL management permissible?

- ***Multi-Year Approach to Determine Overfishing Status.*** Subparagraphs (e)(2)(ii)(A) (1) and (2) establish methods to determine overfishing status based on a period of 1 year. As stated in paragraph (e)(2)(ii)(A), a Council should specify, within the FMP, which of these methods will be used to determine overfishing status. **However, in certain circumstances, a Council may utilize a multi-year approach to determine overfishing status based on a period of no more than 3 years.** The Council should identify in its FMP or FMP amendment, circumstances when the multi-year approach is appropriate and will be used. Such circumstances may include situations where there is high uncertainty in the estimate of  $F$  in the most recent year, cases where stock abundance fluctuations are high and assessments are not timely enough to forecast such changes, or other circumstances where the most recent catch or  $F$  data does not reflect the overall status of the stock.



# How would multiyear ACL management work?

Exactly like annual ACL management except

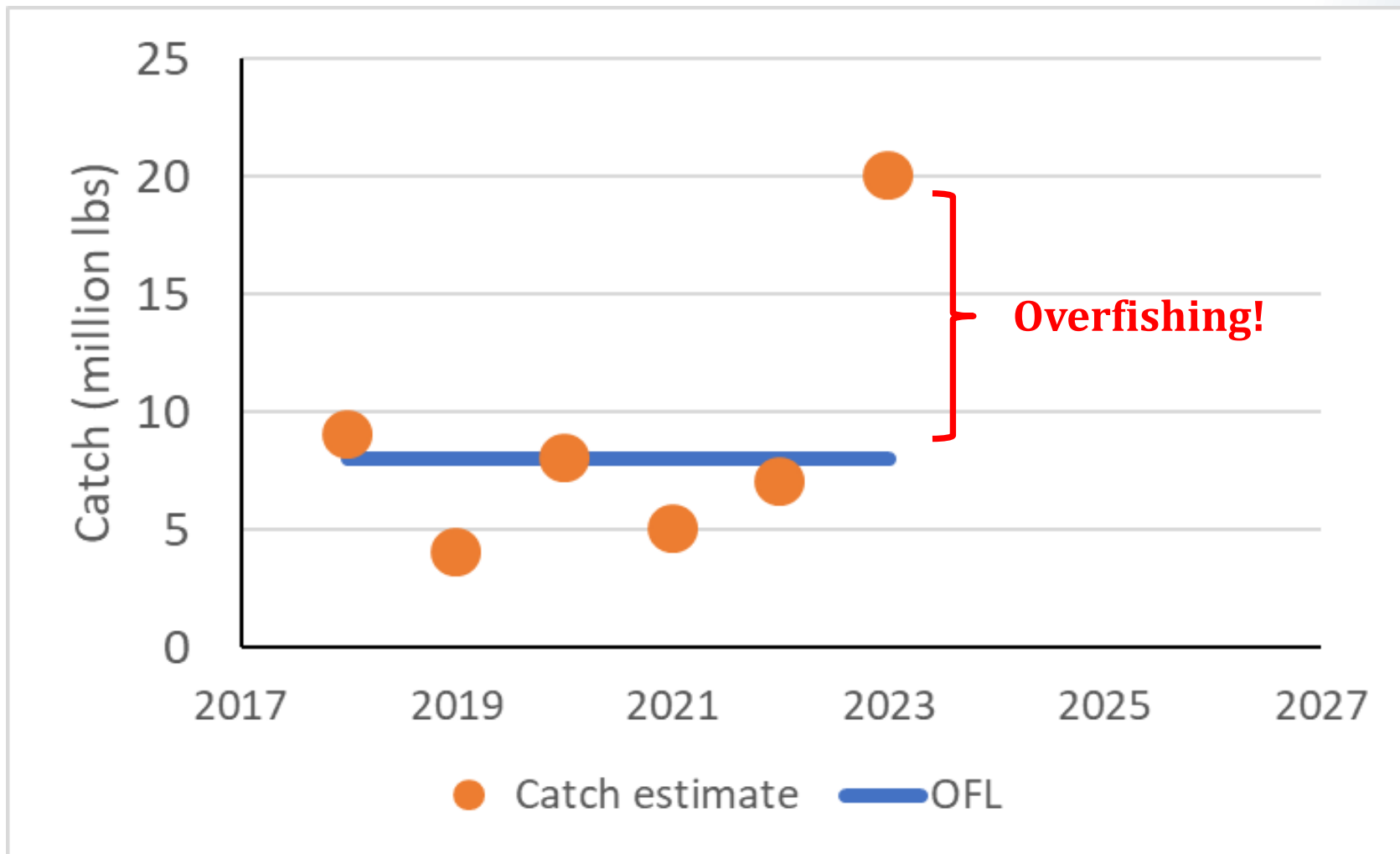
Method 1. The time period when compliance evaluations are made is after every 3 years and the quantity monitored is the average catch made during those 3 years or

Method 2. Catch calculations updated annually using 3-year moving averages (less practical to implement under high uncertainty)

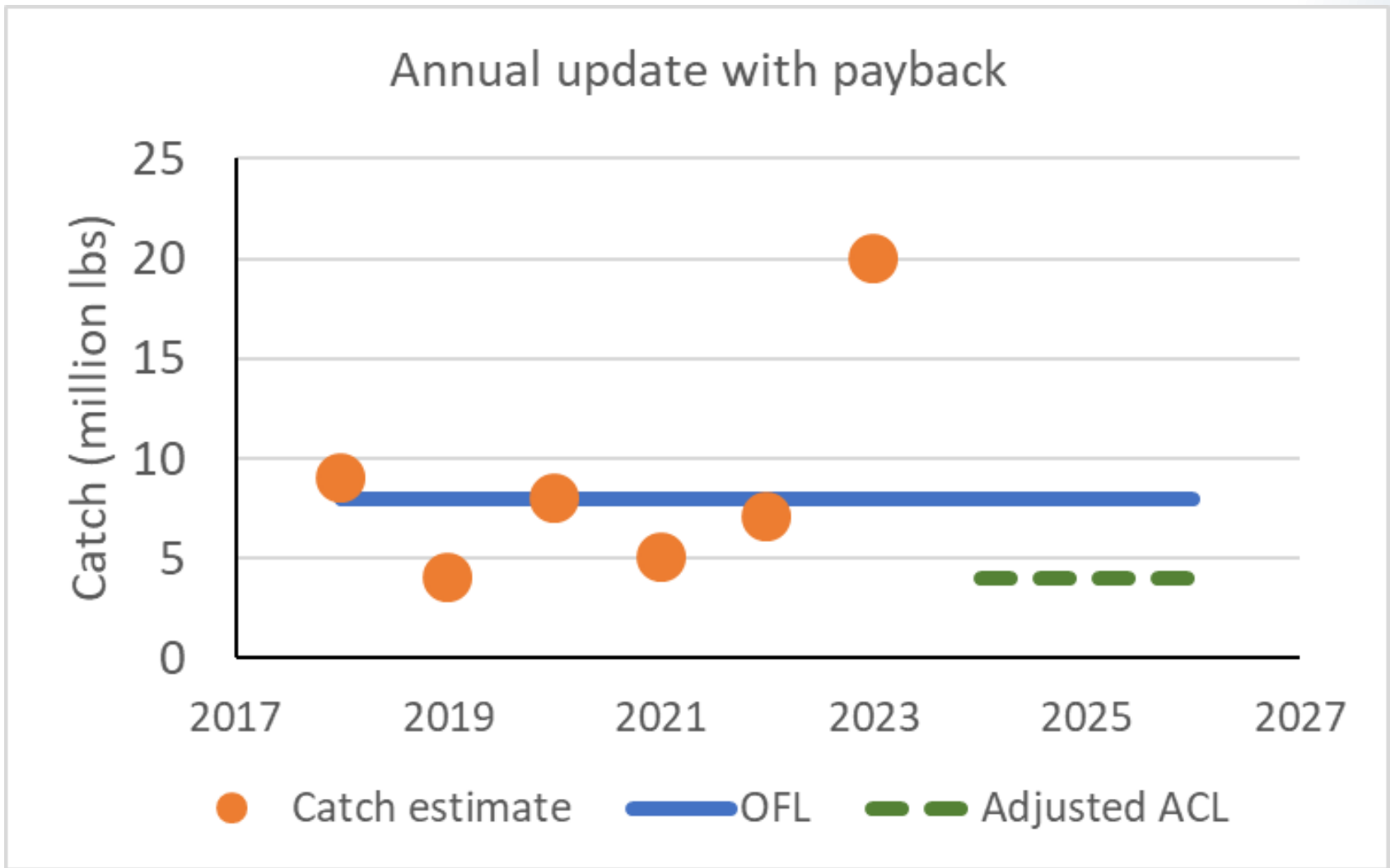


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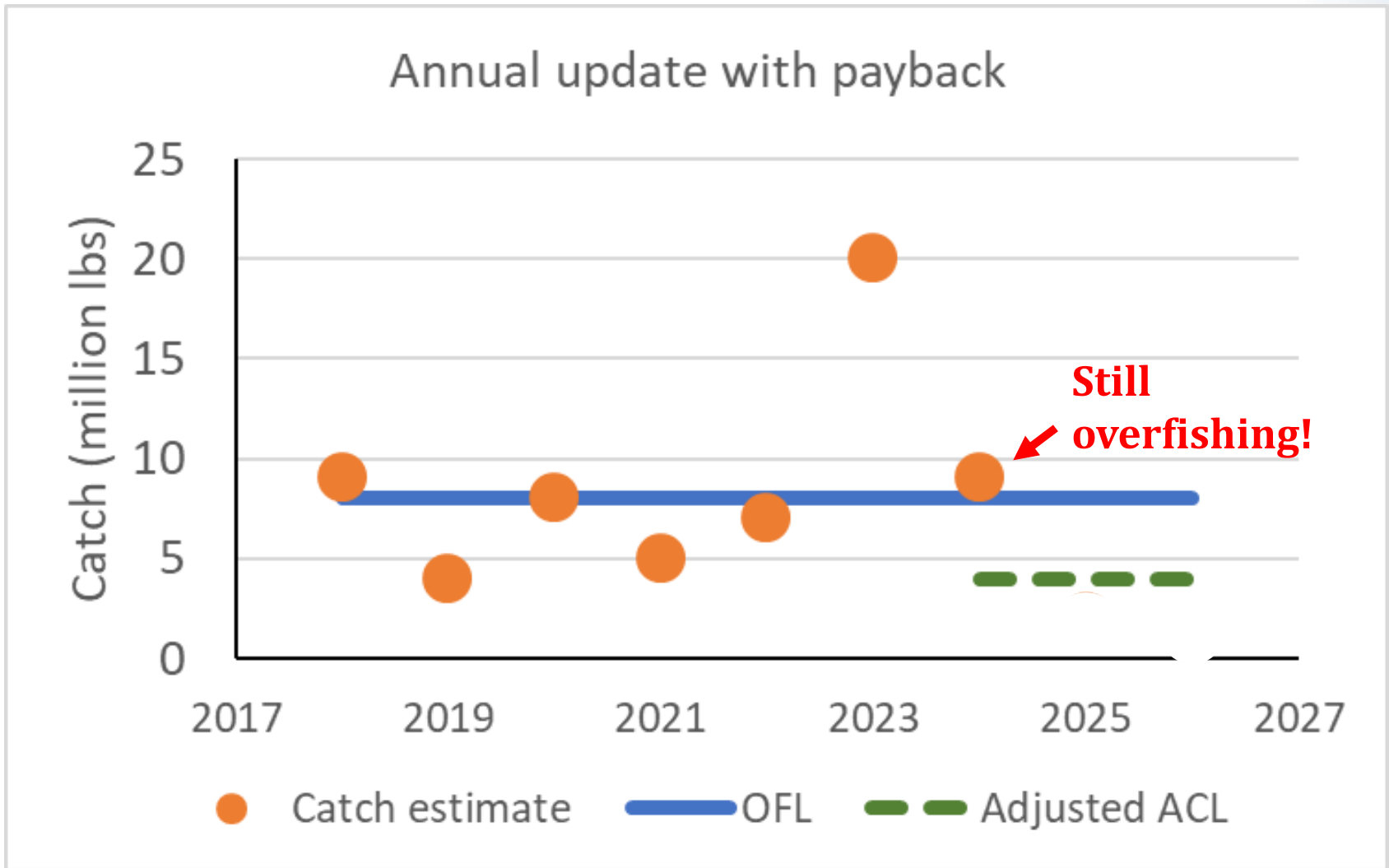
# Annual ACLs



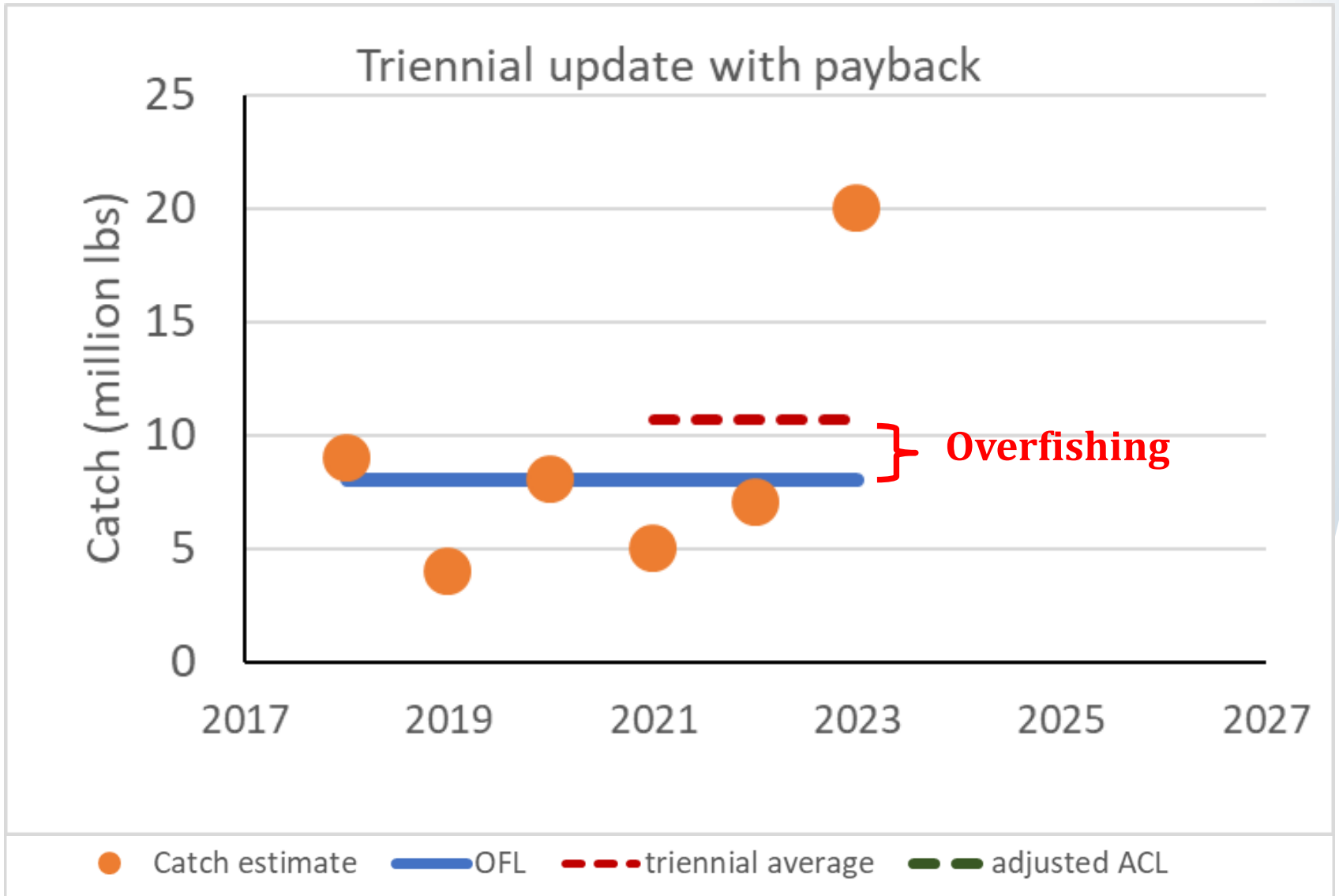
# Annual ACLs



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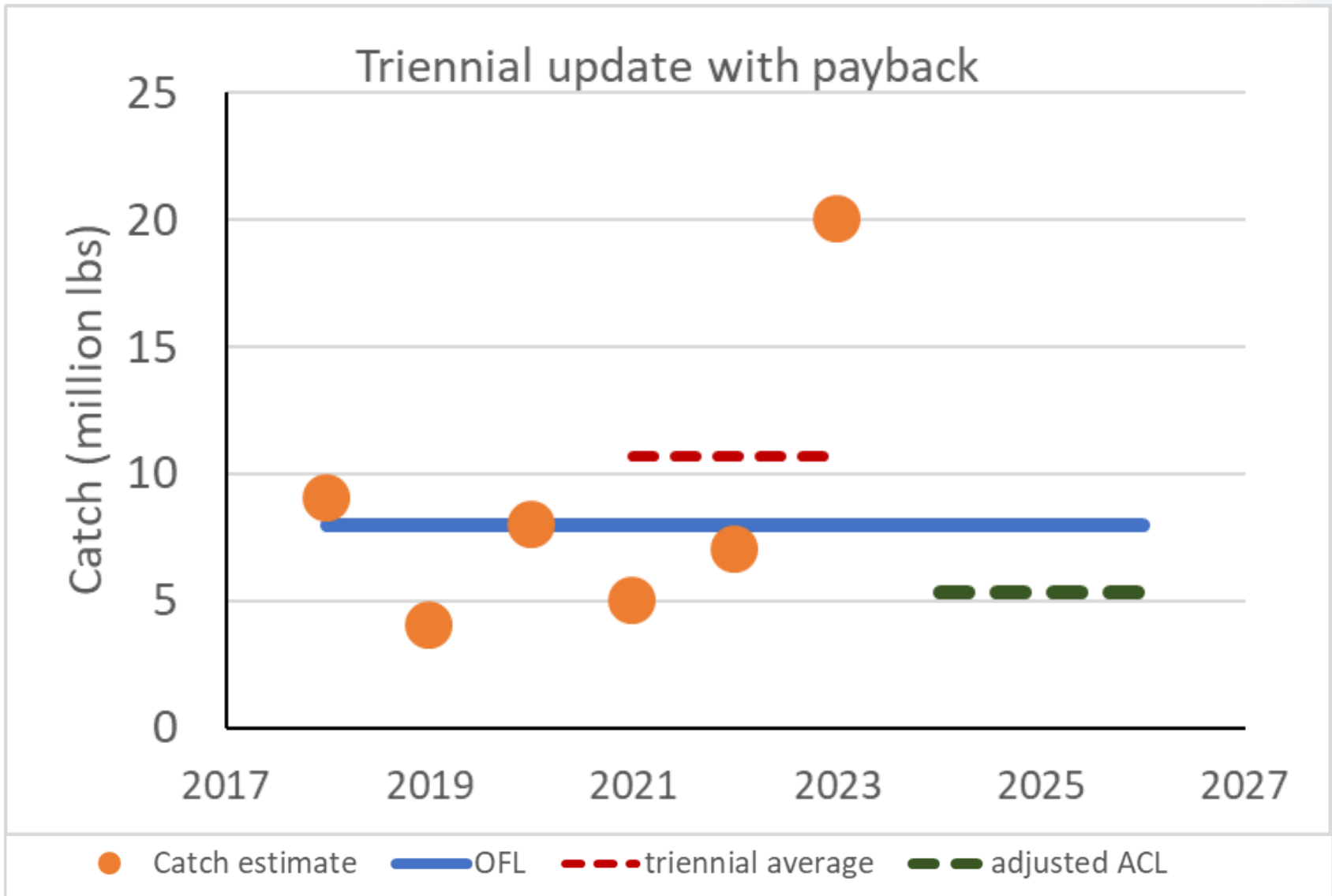


# Triennial ACLs

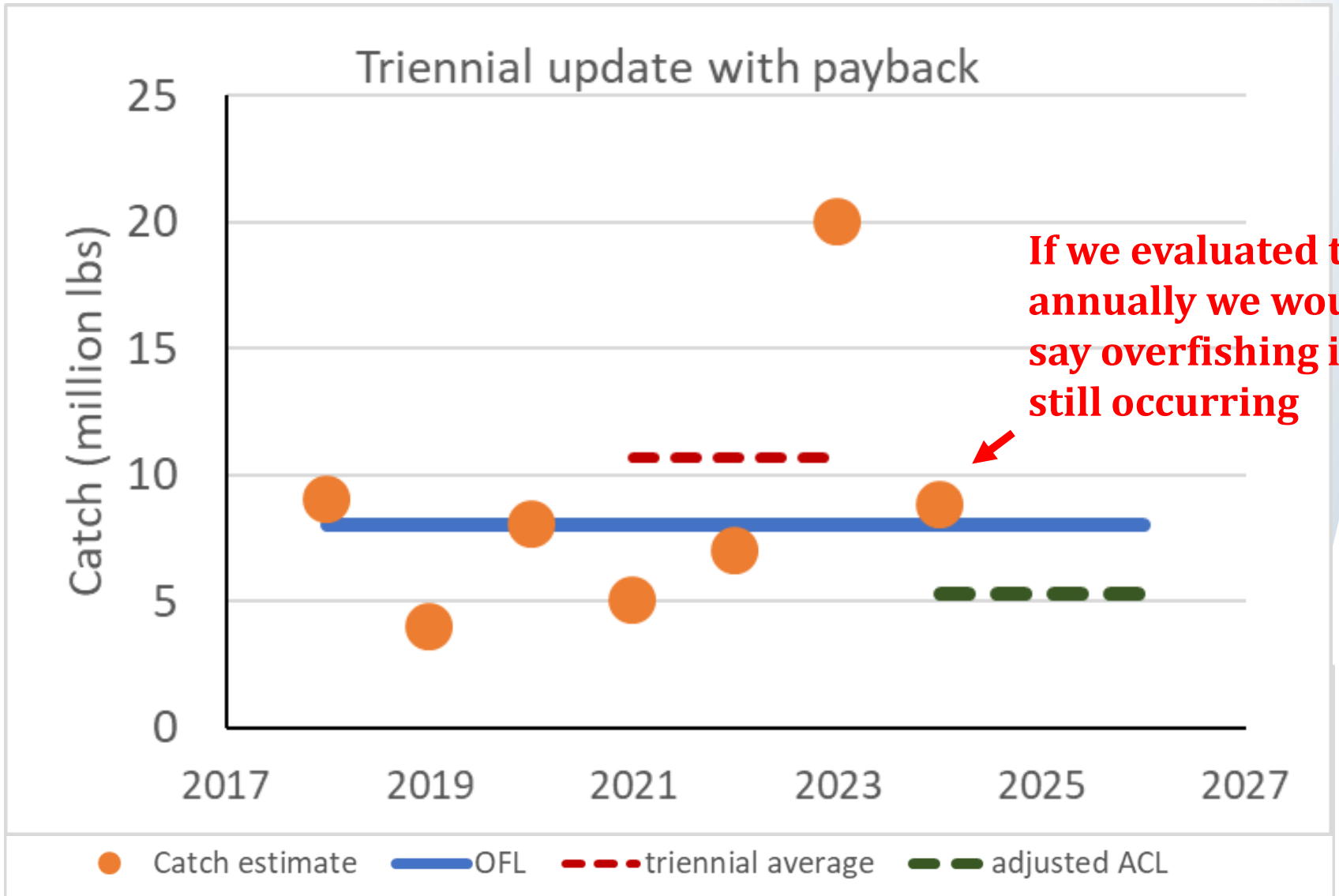




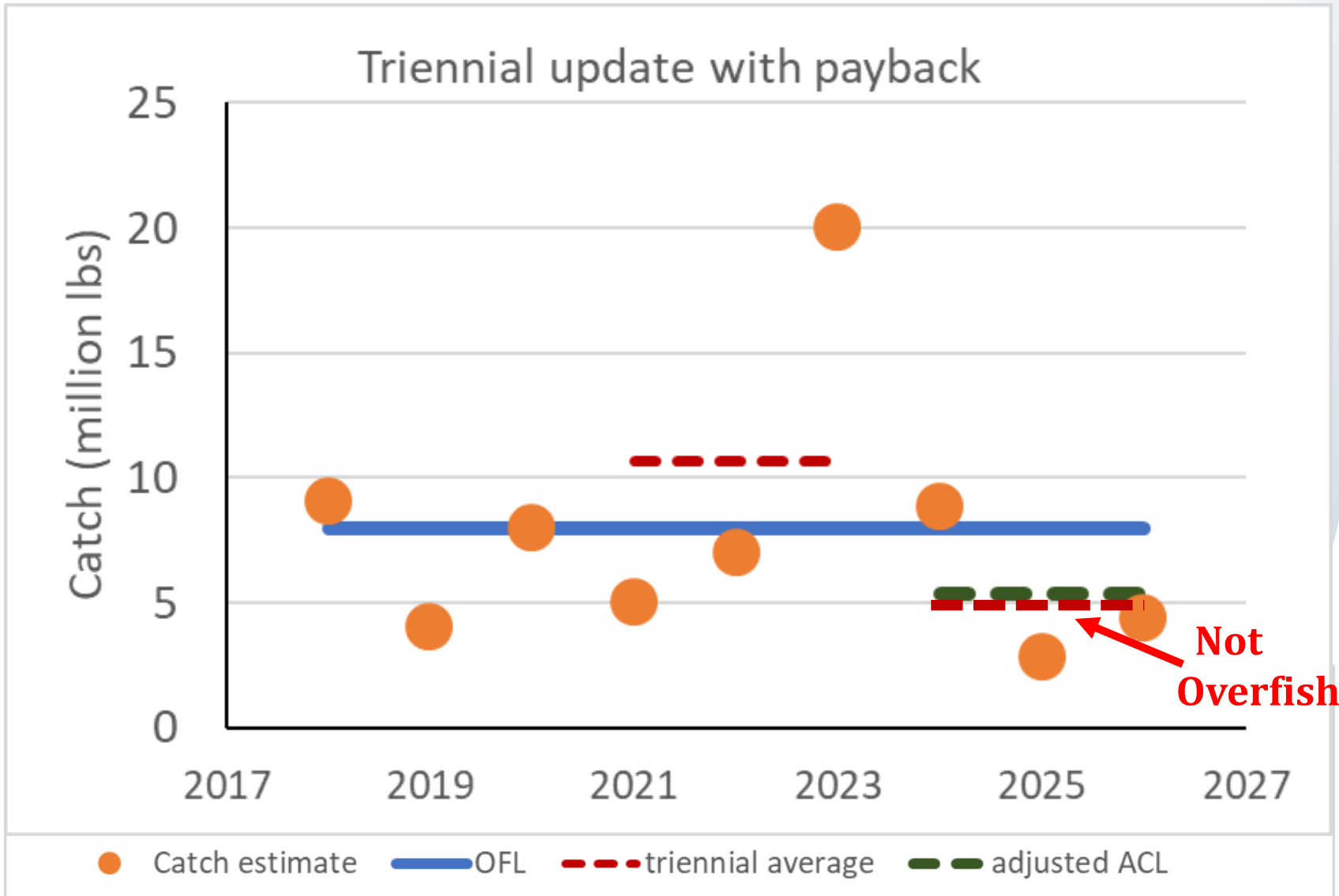
# Triennial ACLs



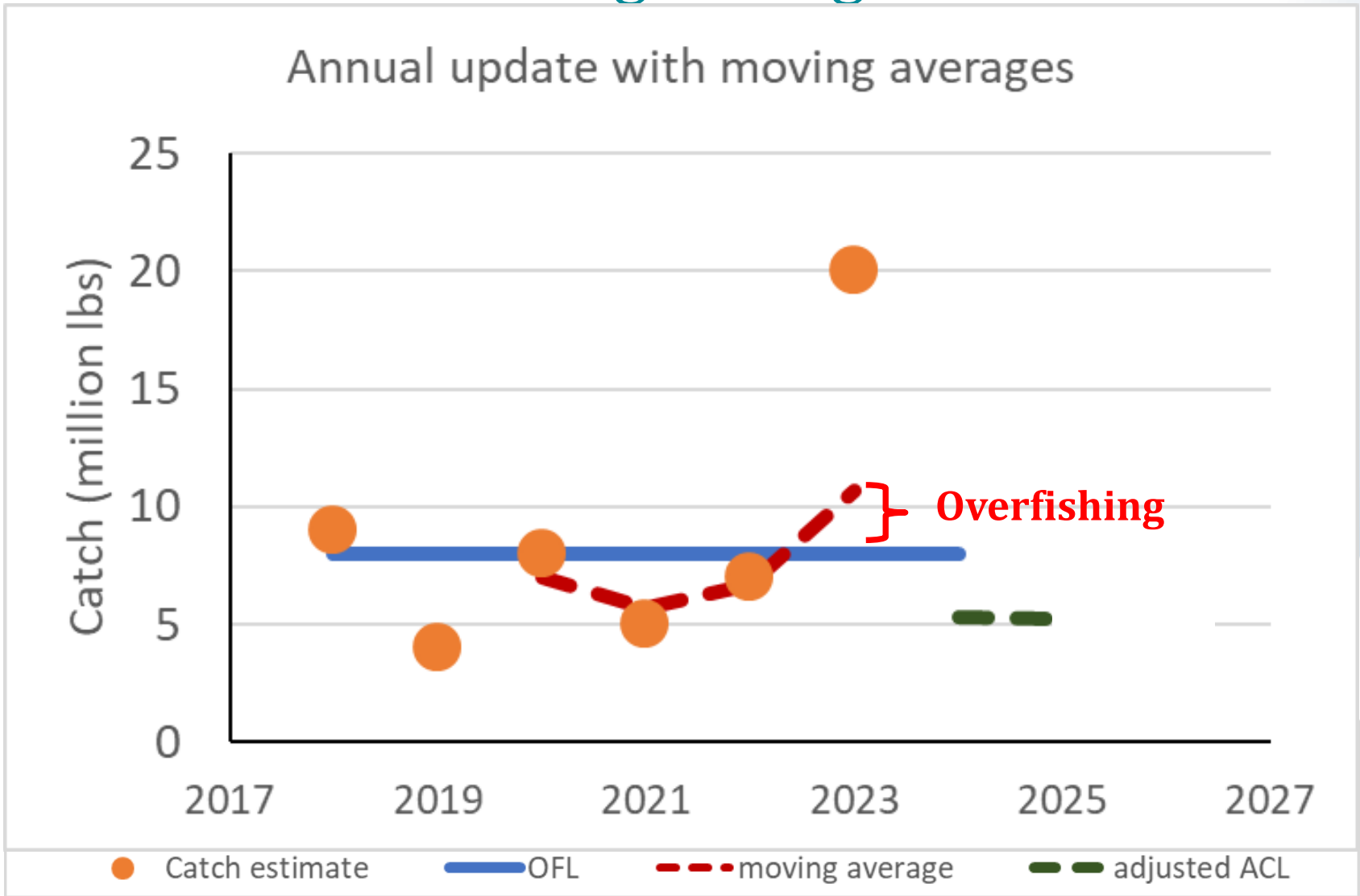
# Triennial ACLs



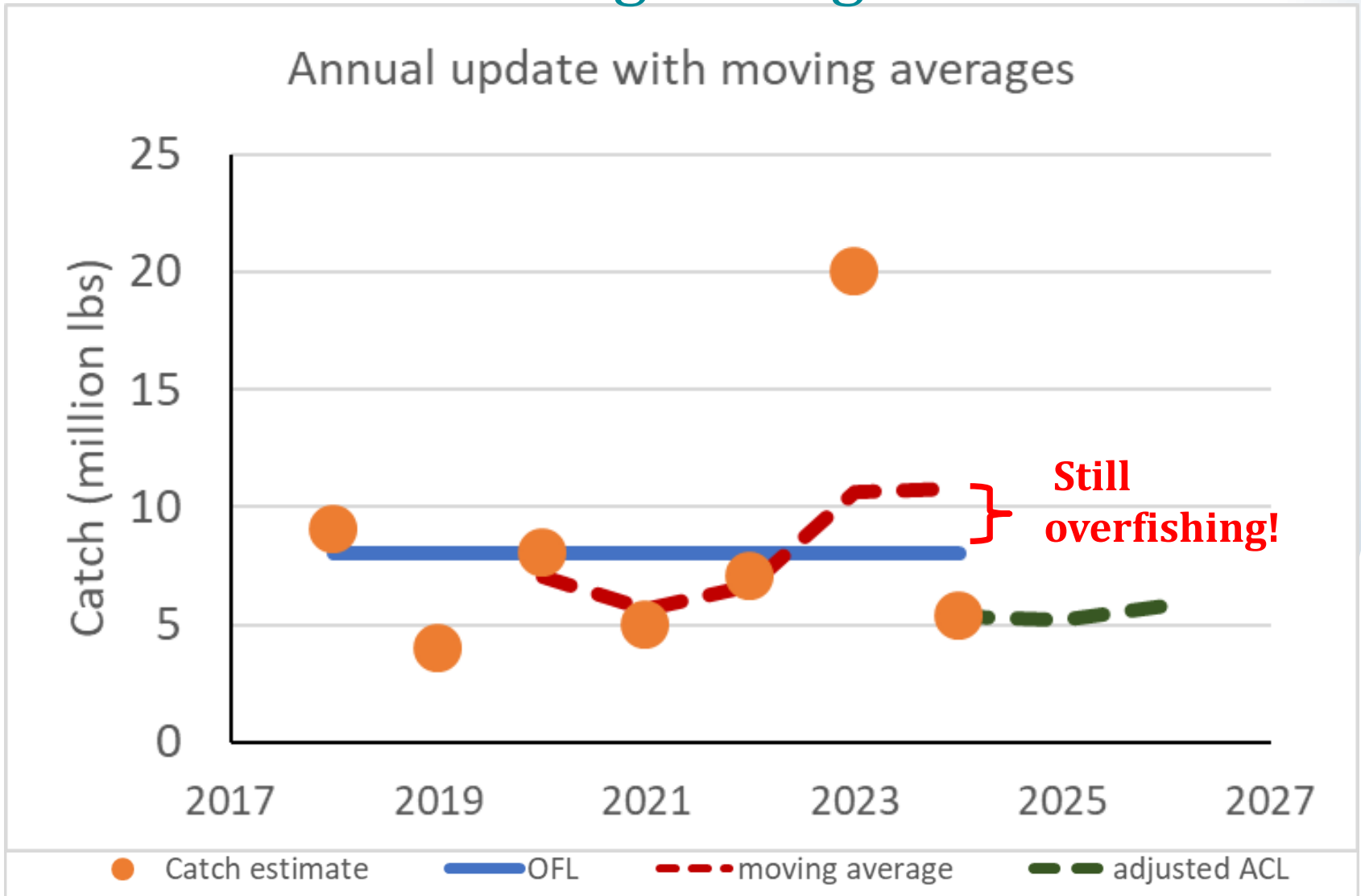
# Triennial ACLs



# Moving Averages

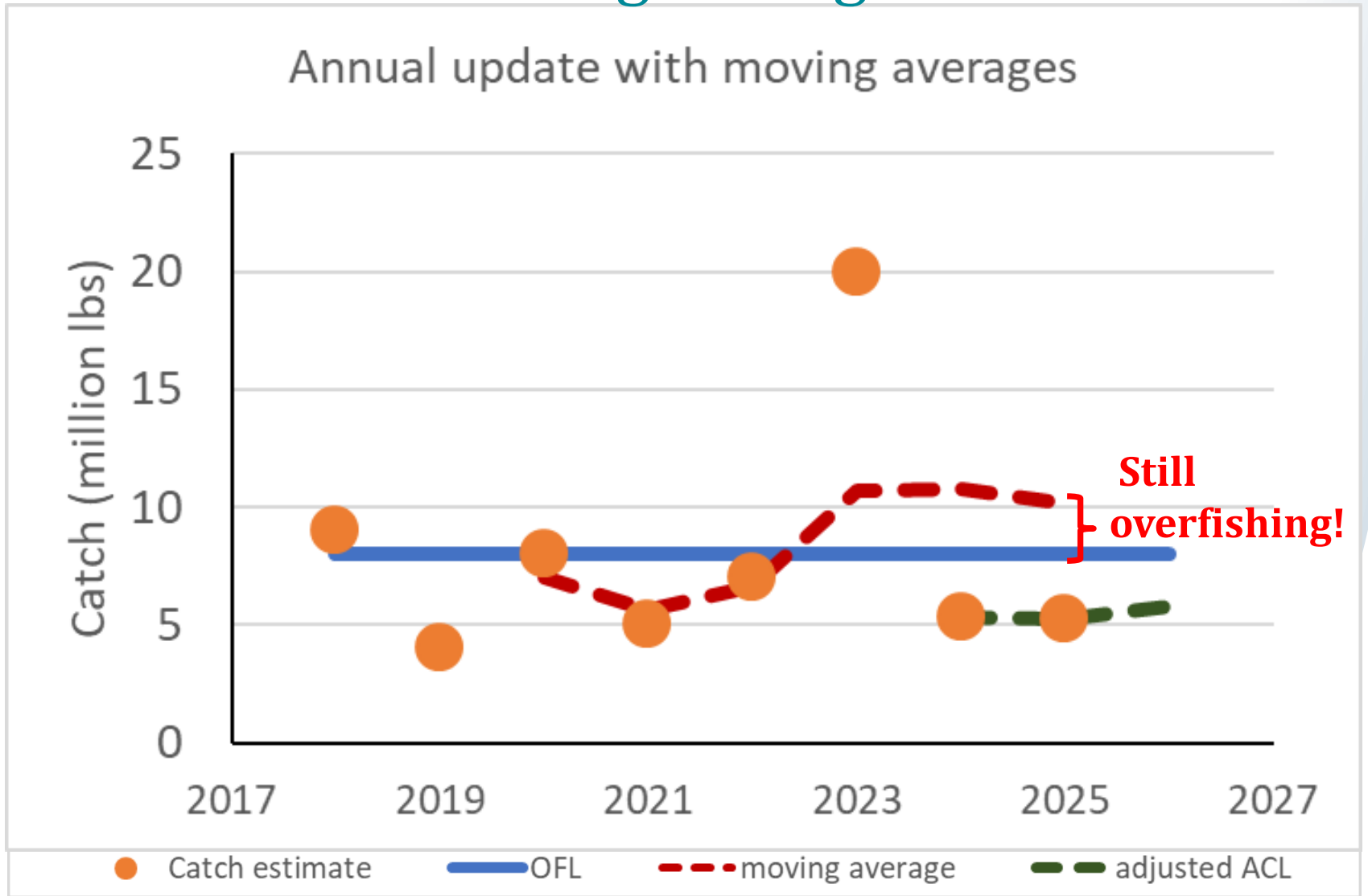


# Moving Averages

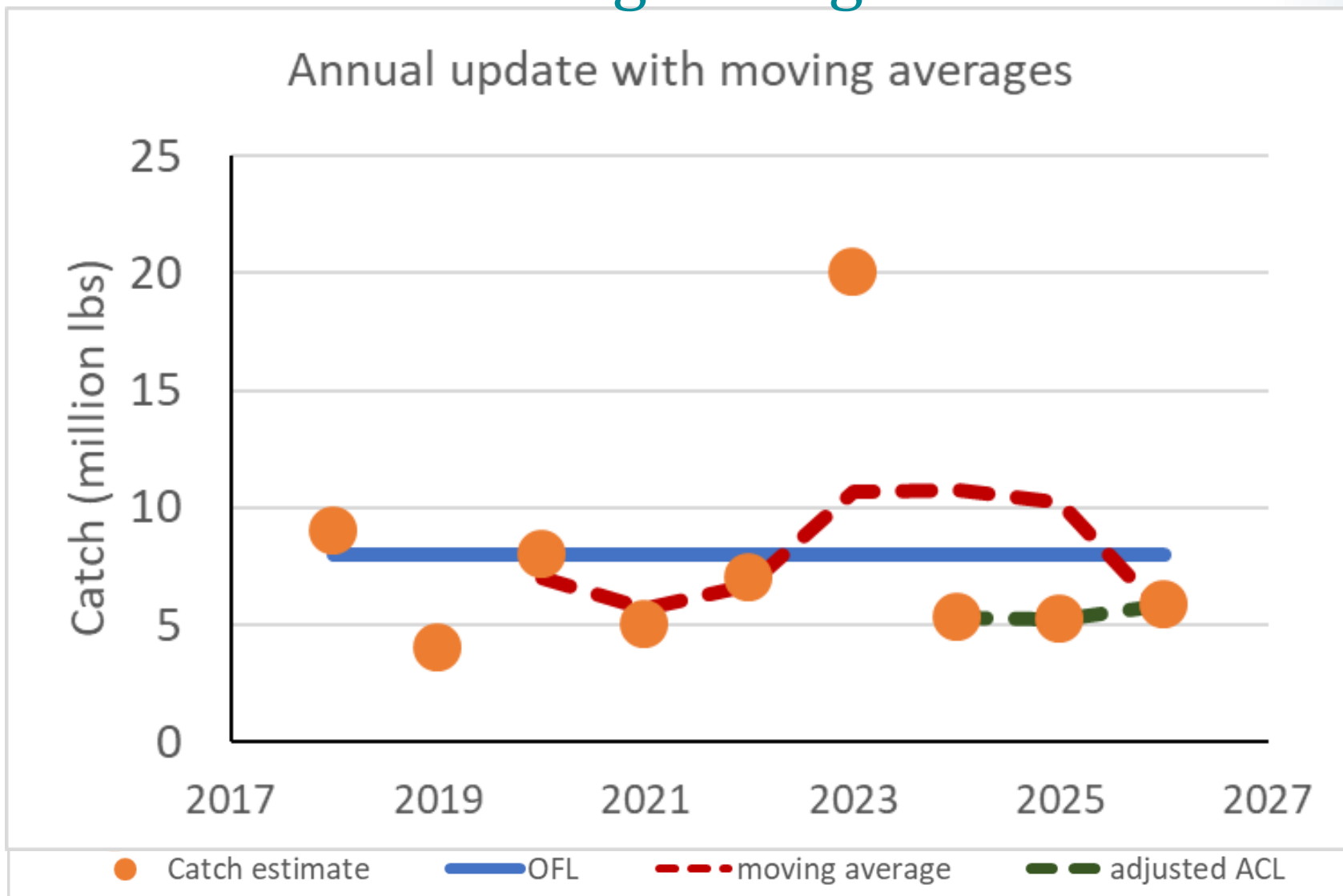


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# Moving Averages



# Moving Averages



# Advantages of Annual ACLs

1. Most responsive in case of much larger than expected catches
2. Already being implemented consistent with NS 1 Guidelines





# Advantages of Multi-year ACLs

1. Avoids over-reacting to imprecise catch estimates (multi-year averages are more precise)
2. Reduces data provision and rule-making burdens for the species in question, allowing managers to focus on other issues
  - Less frequent changes to ACL regulations
  - Reduces the importance of precise estimation of fishery closure dates in years 1 and 2 of a monitoring period will allow effort to be concentrated in the critical year 3.
  - Placing species in one of 3 different cycles for monitoring end year could allow a constant level of total management effort to be maintained year to year.



# Advantages of Multi-year ACLs

1. Avoids over-reacting to imprecise catch estimates (multi-year averages are more precise)
2. Reduces data provision and rule-making burdens for the species in question, allowing managers to focus on other issues
3. Multi-year ACL's are expected to allow the fishery to be more adaptable to variations in market demands and stock availability (e.g., boom and bust recruitment dynamics)



# Multi-year ACLs concerns

## **Is the implicit carryover and payback of landings during 3 year monitoring periods sustainable**

- Previous simulation studies performed by the science center support the sustainability of 1:1 carryover/payback provisions provided they are performed on a fleet specific basis.
- These 1:1 provisions were found to be robust for a wide range of species life histories, initial stock status levels, and to natural variability in annual recruitment.



# Multi-year ACLs concerns

## **Do species specific sector allocations and/or management approaches (IFQ, no IFQ) impact the merits/drawbacks of this approach**

- Sector specific allocations are not expected to impact the benefits or risks of multi-year ACLs.
- Monitoring IFQ utilization in a multi-year fashion like the ACL, with quota allocated on an annual basis, but reconciled in aggregate at the end of each 3 year monitoring period could provide IFQ participants additional flexibility to match effort to market demand.
- Justification may be difficult for IFQ or other well-monitored fisheries as catches are more precisely known



# Multi-year ACLs concerns

## **Does stock status and/or the existence of a rebuilding plan impact the merits/drawbacks**

- The utility of multi-year ACLs is not expected to be impacted by current stock status or rebuilding plans.
- Multi-year ACLs can be adjusted by interim assessment methods if needed



# Multi-year Concerns: Example Greater amberjack

- Multi-year ACL's are expected reduce the risk of overfishing due to the precision of seasonal closures.
- Allowing implicit carryover/payback within monitoring periods could reduce the impact of strict payback provisions.
- Similar to averaging model predicted catches to produce constant OFL/ABC/ACL estimates, multi-year monitoring approaches could lead to prolonged overfishing if assessment model predictions of population rebuilding are overly optimistic
  - The current approach of using recent mean recruitment to predict rebuilding for OFL/ABC/ACL should minimize this risk.



# Is multi-year ACL management permissible?

- ***AMs based on multi-year average data.*** Some fisheries have highly variable annual catches and lack reliable inseason or annual data on which to base AMs. If there are insufficient data upon which to compare catch to ACL, AMs could be based on comparisons of average catch to average ACL **over a three-year moving average period** or, if supported by analysis, some other appropriate multi-year period. Councils should explain why basing AMs on a multi-year period is appropriate. **Evaluation of the moving average catch to the average ACL must be conducted annually, and if the average catch exceeds the average ACL, appropriate AMs should be implemented** consistent with [paragraph \(g\)\(3\)](#) of this section.

