2-14-2019

Timeline: end of week 2-22-2019

Operational Plan

Age composition:

$5000/day for a vessel (Sands)

$1000/day for airplane (Sands)

What level of sampling needed? Three levels for comparison (time, space, space/time)

Lengths are a good to confirm age compositions

Easier to sample scales onboard easier than freezing samples and sending samples back to Dillingham

1. During the seine season, when do you need age composition?
   1. Areas, day, gear type
      1. Gillnet
         1. Not by area
      2. Seine
         1. Not by area
         2. Every 3 days (time)
         3. Length distribution of purse seine catch
         4. Daily summaries of weight and age
         5. Not aging inseason
         6. Length compositions
         7. Weight bins and # of samples; mean forecasted weight
2. Scales, weights, lengths taken inseason
   1. Inseason age composition
      1. Length compositions during season to determine age composition daily inseason
      2. No ages taken inseason
3. Size of samples
   1. Gillnet
      1. 200/day
      2. Every 2 or 3rd day
      3. Only one processor (Silver Bay)
      4. Multiple boats combined by tender
   2. Seine
      1. 400/day
      2. Every day
      3. One boat can fill up tender
      4. East/west Bay?
         1. Tenders will have stat area
         2. Mostly one side of Bay
         3. Avoid tenders that sample both sides of Bay
   3. Trident
      1. Get top of sample while other plants sample inside the plant on the line
   4. Purse seine every day samples
   5. Gillnet every third day samples
   6. Priority on purse seine
   7. East and west side sample (spatial sample)
      1. Try and split between east and west Togiak Bay
   8. Purse seine fleet
      1. Age composition every day
      2. Towards end of fishery-need to shut fishery down fishery because of fishery need more information towards end of season
4. What level of precision do you want in your age compositions?
   1. Don’t care (Greg)
5. How many fish are discarded because unreadable scales?
   1. 25-50% unreadable (if need 200, take 400 samples); gillnet
   2. Do you use weight/length if discard age?
      1. Yes
6. Seine
   1. Look for tenders with quick turnaround
   2. Better; 85-95% ageable
7. Do you sample 400 fish or until you get 400 scales?
   1. Samplers try and get good scales; if bad scales then sample more fish
8. Fish tossed if poor looking fish
9. Ripe females lose a lot of weight
10. Sampling Bias
    1. Young fish lose scales more easily so may bias age comp if throw away fish with few scales
11. East/west
    1. 200-400 sample
12. Weight changes through time is more important than spatial (east/west Bay)
13. Age comps may differ spatially though but fisherman will chase large fish
14. Length and weight distributions inseason
15. Age compositions post season
16. Population Estimate Age Composition
    1. How to apply in forecast?
       1. Two samples peak and post-peak
       2. Combined samples from postseason
    2. Two rates
17. If age composition throughout fishery season changes quickly, what do you use for peak day?
    1. Start with peak biomass and then try and get best age estimate based on sample size (place and time try and get 400 samples nearest the peak day)
18. Age composition from multiple days or one day post-peak?
19. Timeline
20. Three levels
    1. Baseline-no extra
       1. Weight age comp every other day
    2. Increase time (charter vessel $5000/day)
       1. Samples from postseason-age comp late in season
    3. Increase time and space
       1. Spread samples out in space (charter vessel)
21. Aerial survey estimate
    1. Togiak 2 weeks
    2. Togiak 3 weeks
22. Impact on forecast more important than inseason management