**Objectives**

* To investigate the differences between species of juvenile salmon ectoparasite communities
* To look at the potential of spatial patterning in lice communities on juvenile salmon in general
* To investigate the potential for species-specific patterning of lice communities
* Overall: to gain a better idea of how these parasites differ in their infective capacity of different species
  + Do different lice communities indicate something about the life history of each of these species that could be influencing which parasites are most likely to colonize them?
  + Do spatial patterns explain any potential in the variability of these communities?
  + Do temporal patterns explain any variability in the ectoparasite communities?
  + Which of these potential factors are interesting in terms of potentially describing better the ecology of this host-parasite interaction?
  + What implications do these potential factors have in management/conservation actions?
  + Does ‘licing’ protocol have an effect on the ectoparasite community observed? That is, is there a bias somehow in the data that we’re not currently accounting for?

**Hypotheses**

**Background that Lead me to Think This**

The issue of sea lice on salmon can be dated back in the literature to the middle of the nineteenth century with the description of the salmon louse ([Lepeophtheirus salmonis) by Kroyer (1837](http://apps.webofknowledge.com.myaccess.library.utoronto.ca/full_record.do?product=UA&search_mode=GeneralSearch&qid=1&SID=6DPDLNqAcNcU3dgOmSh&page=9&doc=90)). While there is undoubtably written account of them in the intervening period, a Web of Science All Databases Search, Sept. 20th, 2018 showed the earliest result of scientific account being noted by Ashby (1951) in a non-peer reviewed publication, giving account of a salmon in Norway which was carrying sea lice in a freshwater river.

**Current Questions**

1. Do we have the coordinates for all these sampling sites?
2. Is there any knowledge about temperature/salinity at the sites during sampling periods?
3. What are the four different lice-ing protocols that were used? Previously described in another paper? Do they have known drawbacks associated with each?
4. What’s going on with all the NAs in the first few lice-related columns
5. In the comments section, there’s a few things that aren’t immediately self-explanatory. Are these important, do they preclude any of the fish from the analysis?
   1. PS-BIRD
   2. H-EYE; PCF
   3. H-ANF
   4. H-EYE
   5. ISOPOD
   6. 0 ---- cole’s note: it’s a literal zero, assuming this is a typographical error
   7. Bird
   8. Flank
   9. Eye
   10. CP – wound/lesion
   11. Bird; ANF
   12. ANF
   13. Bird
   14. Bird
   15. Mouth
   16. Pelvic fin
   17. Caudal fin previous clip
   18. Grazed cal scar
   19. 3 louse sized zoops in bag
   20. Fish
   21. CP
   22. Fish scar
   23. PS:fish
   24. H:vent
   25. CM fell out of bag
   26. Anal fin
   27. Pelvic fin
   28. Lower jaw
   29. Scarred flank
   30. Eye
   31. ANF; VENT; OPERC
   32. OPERC
   33. ANF; LI
   34. PVF
   35. Lesion FL
   36. PVF
   37. Scaled
   38. Vent
   39. Lesion CP, VS
   40. Split CDF

Most of the comments won’t apply to me at all – mostly for explaining potential outliers or something like that

NA means ‘was not measured for this fish’