**Can human wellbeing at a port affect how fishermen affect revenues, yield and marine ecosystems (area swept and total catch)?**

1. **Define wellbeing as a poverty thing**
2. **Sociality of fishing: does sociality vary across ports that have differeces in humanw ell being**
3. **Is sociality related to CPUE**
4. **Is sociality related to overall yield across time frame or area swept (ecosystem impacts)**

Management motivation: Fisheries management often makes use of catch data standardized by effort (CPUE). Use of CPUE requires the assumption that effort can reasonably be standardized. Due to technological improvements in fishing gear and vessels, previous work has focused on developing metrics to better reflect effort. Differences in searching strategies (debatably “skill”) may also confound measures of CPUE however data on such fine scale foraging has been historically lacking. I propose to make use of new high resolution fishing data to quantify variation in foraging strategy and relate that to fishing efficacy.

1. Quantify variation in sociability of shrimp vessels across the US west coast measured as proportion of time spent fishing alone versus in the presence of another vessel. Interviews with west coast fishermen suggest that it should vary latitudinally with more social vessels further north. Further these interviews suggest that sociability may correlate with poverty, more affluent ports appeared to be more social than those with poorer ones.
2. Correlate sociability to catch efficacy: proxy measure calculated based on duration of trip, distance, pounds and revenue.
3. Correlate sociability with census data on poverty levels of each port

CPUE, area trawled, or shrimp biomass removed per year. Should talk to someone who can help us flesh out how do we expect social conditions to affect social interactions (Karma, Melissa, Josh, John Lynham). And in this case you lead with social conditions variability, some are super poor, some are more affluent. Some rich literature suggests that poverty conditions are one of many factors that influence sociality when it comes to resource extraction (we know that other things can too). We’re going to have to make the case that shrimp are not like John’s of example of ocean/lake. So ecological conditions are not predictive, but what might be predictive are the social conditions.

Social conditions vary, what do we see in terms of sociality on the water. And then what does that mean for socio-economics and area-trawled. Response variable is sociality, predictor is poor/affluent and region controls for differences in abundance. Ask if region/poverty affects. The problem might be if poverty depends on which region you’re in.

If Coos Bay and Astoria overlap more than they don’t, then this could be a pilot study. If they don’t, focus on purple area to see if Astoria is significantly more social Coos Bay. Try area and time windows and try a few different things and show robust to area and time windows.

It will be important to show that the distribution of the number of social fishing trips with vessels in same port relative to social fishing trips with vessels from another port. And if most social trips tend to be vessels from same port, that’s an entry to go forward with the way I was planning things. If I am just as likely to be fishing from another port than your port, then we need to think about what our next step is.