**Equation for cut lines to determine male maturity in EBS Chionoecetes bairdi & opilio**

**Manuscripts in prep (Jon Richar, Bob Foy, & Mike Litzow)**

**See 2019 BCS Index Station Collection Data MASTER PCJ.xlsx for example (Tab: 2019 Collection data).**

How to use:

1. Use ln transformed data for all calculations.
2. Plot x as ln(CW) & y as ln(CH) using measured data.
3. Solve for ln(Ch) using equation & measured ln(CW).
4. Add cut line by plotting x as ln(CW) from data and y as ln(CH) solved.
5. All data pts above line are from mature crabs. To classify individual crabs, the solved ln(CH) marks the transition point of the line for each crab. If m'd ln(CH) exceeds the solved ln(CH), the crab is mature.
6. Use if/then to id individ crabs: =IF(D2>F2,"mat","imm")

**10/02/18 called Jon, revision at some point:**

All opie **males below 40 mm** are considered immature as mature females are larger than 40 mm CW.

**As of 2/9/2018 EBS data, new cut lines:**

For Bairdi, the latest cutline equation is LN(chela height) = [1.189 \*LN(carapace width)] - 2.674

All bairdi **males below 60 mm** are considered immature.

For Opilio; the latest is LN(chela height) = [1.143 \*LN(carapace width)] - 2.241

All opie **males below 50 mm** are considered immature.

**As of 12/18/2017 EBS data, new cut line:**

Tanner crab: ln(CH) = [1.192\*ln(CW)]-2.689

**020217 for all EBS**

Old cut lines:

Tanner crab: ln(CH) = ln(CW)-1.743

Cut line:

Snow crab: ln(CH) = [1.2899\*ln(CW)]-2.8628