**Crab Integration by Parts – Protocol (Surette)**

**Reason** : We need a way to estimate crab weight from carapace width which accounts for missing legs, which is a common occurrence in sampled crab.

**Goal** : Obtain weight and size measurement for each separate part of a snow crab: for each individual leg and the central body.

**Method** : Freeze whole crab, then remove each leg and weigh them. Freezing them prevents the loss of hemolymph, which would bias weight measurements.

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| Details are in the caption following the image |
| **Figure :** Snow crab external anatomy. Left-hand side shows the dorsal view and the right-hand side shows the ventral view. |

**Crab sampling:**

* Only male crab larger than 75 mm carapace width are to be measured.
* Sample **intact crab only.** Don’t sample crab with cracked shells or legs, or crab which have lost legs during trawling or sampling. Crabs which **lost legs** **naturally** (i.e. leg joint is covered by a black cap) **can be sampled**.
* Sample crab opportunistically.
* A total sample size of 50-100 crab is wanted.

**Crab measurement:**

1. Record crab **sample number** on recording sheet.
2. Take a **dorsal** and **ventral photo** for each crab. Make sure to include crab sample number in photo or in photo file name. Take photo on measuring board or include ruler in photo.
3. Using a caliper, **measure** each crab for **carapace width**, **chela height**, and the **merus lengths** for each walking legs.
4. **Freeze** whole crab (e.g. freezer, dry ice, liquid nitrogen). If placing crab in freezer, place crab in plastic bag with a paper tag containing crab ID info.
5. Crab should not be left in freezer too long as they could dry out.
6. Once frozen, **weigh whole crab**.
7. For each crab **leg**, **cut off** at the attachment joint to the body (mimicking natural leg loss) and **weigh**. Don’t let legs thaw out : water loss would bias weight measurements.

**Table 1 : Summary of crab measurements**

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| **Body part** | **Size (mm)** | **Weight (g)** |
| Whole body | *----* | *whole body* |
| L1 - cheliped | *claw height + merus* | *whole leg* |
| L2 - leg | *merus* | *whole leg* |
| L3 - leg | *merus* | *whole leg* |
| L4 - leg | *merus* | *whole leg* |
| L5 - leg | *merus* | *whole leg* |
| R1 - cheliped | *claw height + merus* | *whole leg* |
| R2 - leg | *merus* | *whole leg* |
| R3 - leg | *merus* | *whole leg* |
| R4 - leg | *merus* | *whole leg* |
| R5 - leg | *merus* | *whole leg* |
| Body - disc | *carapace width* | *disc only* |

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