

USM General Protocol for Crayfish Collections

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Crayfish Website: <https://sites.google.com/site/mainecrayfish/>

Goals:

- To collect specimens throughout Maine to determine distributions of native and invasive species.
- To collect qualitative information on crayfish abundance.

Materials:

- Ziploc bags or jars
- Freezer or Preservative (alcohol is fine/preferred)
- Specimen labels (on rite-on-rain paper if possible) – see provided labels.
- Pencil (do NOT use Sharpies to label samples – Sharpie ink is soluble in alcohol)
- Ice for killing specimens

Protocol:

1. Collecting crayfish:

a. Trapping:

- i. Ideally, trapping season is later summer (August); by then the females are no longer guarding young or eggs, and both males and females have generally molted. (When crayfish molt their new shell is soft leaving them vulnerable to predation, so they tend to hide while their new shell hardens - and not venture out to eat in a crayfish trap.) That said, any time is better than not at all, though the rule of thumb is to wait until the water has warmed to at least 16° C/ 60° F.
- ii. Modified minnow traps (~3.5 cm dia opening) should be in ~ 6 feet of water, usually (but not always) rocky or vegetated sandy bottom is preferred.
- iii. Traps can be baited with a small handful of dry cat or dog food, cans of cat food with holes poked in the lid, or with beef liver or parts of dead fish. (Don't throw used bait back in the water!)
- iv. Note that several common Maine crayfish do not trap well – traps need to be left “soaking” for 2 or more nights, and hand collection may be needed. Traps can be checked daily.

b. Hand collection: turn over rocks and logs and use hand nets to catch crayfish as they swim away (backwards). They are also out at night in the shallows, so you might try shining a bright light into the water.

c. Specimens can be kept alive in a frig for some time; use only enough water to barely cover the crayfish (crayfish can quickly dirty water that does not have filtration so it's best to maximize air-water oxygen exchange)

- d. If temporarily storing outside, put crayfish aside in a bucket with ½ inch clean water in it (just enough to moisten their gills) in the shade.
- e. When collecting crayfish in the field, please note:
 - i. any distinguishing **behavior** (aggressive, not) and **habitat usage** (under rocks, burrows, mucky areas, vegetation)
 - ii. Note **abundance** (rare, common, abundant)
 1. **Rare:** one or two crayfish seen
 2. **Common:** common with electrofishing, but not readily visible moving on the substrate
 3. **Abundant:** readily visible moving on the substrate
 4. **Absent:** no crayfish seen, no evidence of burrows, etc – this is also important info which I'd be happy to have.
2. Choosing specimens (vouchers)
 - a. Examine **males** to see if they are of all the same species – pay particular attention to the structure of the first pleopod (otherwise known as the copulatory stylet or gonopod). Shape of the claws and presence or absence of spines on the carapace can be useful.
 - b. Preserve **males** in alcohol or by freezing. It is more humane to freeze or ice crayfish before putting them in alcohol.
 - c. Preserve only 1 individual if all crayfish are the same species.
 - d. Preserve more than 1 individual if you are not sure.
 - e. If you only have **females**, preserve 1 female if they all look the same; preserve more than one if you are not sure.
3. Fill out specimen label as completely as possible, and place in storage container along with the crayfish. Some labeling notes:
 - a. Waterbody & GPS (latitude/longitude) coordinates: very important.
 - b. Abundance information is helpful, especially for spotting possible invasive populations.
 - c. Any additional information (behavior, habitat) can be written on the back of the specimen label.
4. Ship labeled specimens to: (be sure to let me know they are coming!)
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Many thanks for your help & interest.

Any questions or interesting observations? Please contact anytime:

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