

## Crab Shell Hardness / Age Codes

**1 = rock hard new shell**, no deflection of underside of carapace with heavy pressure from thumb. Few signs of wear or abrasion on carapace. May have barnacles but these will be small. Very little claw wear and tips of claws are sharp and hooked. Age of shell less than 1 year.

**2 = springy hard new shell**; slight shell deflection with heavy pressure on underside of carapace. Little epiphytic growth, fouling or abrasion. Barnacles if present will be small. Underside of carapace still with dense orange or yellowish hair. Approximate age of shell 1 - 4 months.

**3 = crackly soft** or like an oil can. Usually bright orange downy hair on underside of carapace which is easily deformed with moderate pressure of thumb. ( this is a soft-shell crab ) Approximate age of shell 2 days to 1 month.

**4 = plastic soft**, newly moulted. 1 - 2 days old. As soft as they get!

**5 = moulting** - old shell which is splitting and is actually in process of moult. Suture (joint line between upper and lower halves of the shell ) *must be opening at time of observation*. Fairly rare - this phase lasts less than 1 day. Crabs about to moult usually do not enter traps.

**6 = old worn shell** showing claw wear and *usually* barnacle encrustation or other fouling growth but otherwise a healthy, viable crab. Used to designate crabs which have not moulted for 1 year or more but which appear lively and likely to carry on for a bit. Typically the shell will be hard although prior to a moult the shell will soften so the hardness cannot be taken as a reliable indicator. There are frequently mating marks on the claws of the males although these are not ulcerated or worn through. In exposed conditions the shell may appear very clean and bright but the claws will show unmistakable signs of wear - i.e. worn cusps, ivory coloured, frequently broken claw tips. Carapace spines will also be blunted as may be the tips of the walking legs.

**7 = really old**, barnacle encrusted shell, extreme shell and claw wear, males typically show old mating marks which have worn through claw; may have shell disease; tips of walking legs may be black or rotting off. These crabs always appear lethargic and moribund. The crab probably has not moulted for 2 or more years. Unlikely to live long let alone moult up a size.

He (or she) has done his dash; is pining for the fjords; awaiting entry into crab Valhalla etc. but is not quite actually technically dead. They rarely occur as legal sized crabs in an intensely fished area and are typically several mm below legal size. Where present they tend also to be found in marginal crab habitat such as on soft mud or at depth. This shell condition is rarely recorded in lightly fished or unfished areas

**8 = not sure** - can't make up your mind whether it is an old shell or a new shell. Shell shows signs of wear, especially on cusps and tips of claws, but the crab is still relatively clean and vigorous. Most useful just prior to annual moult. A lot of crabs with shell 8 indicate the moult is imminent. Age of shell is about 1 year and will become a shell 6 if moult does not occur soon (i.e. if the crab skip moults). Takes the guesswork out of shell new/old dilemma.

**9 = moulted shell** - the new (larger) crab *may or may not* be present. If the moult and the new crab can be linked, then it is a moulted pair - before and after. We need this info. Record the data as if they were 2 separate crabs one after the other. The moulted shell will be shell 9, the new crab will be shell 4. In the observation column enter 1 for both crabs. If there is no observation column on your form, link the two shells with a bracket and note in the margin - *moulting pair*

*Often it is difficult to determine shell age at a glance. The most telling feature is claw abrasion. In a new shelled crab, the claw cusps will be sharp and the tips of the claws sharp and hooked. As the crab ages, wear takes place on the claws during feeding activity which gradually blunts the cusps of the claws and causes the tips to wear smooth or break off. Diet will affect the speed of this process. Old claw tips are ivory coloured and the whole claw becomes yellowish. Taken in conjunction with the general appearance of the carapace, a decision can usually be made. Very new shells and very old shells are very obvious once you have seen several hundred crabs. Small crabs (< 120 mm) seldom have old shells because the frequency of moulting is 1 year or less.*

With respect to shell age codes above; 1, 2 and 6 and 8 are generally considered hard and marketable as opposed to 3,4 or 5 that are soft shell.