

Supplementary Table. Visibility of marks from chemical injections in different aging structures for specimens of goosefish (*Lophius americanus*) that lived more than 6 months after they were injected with oxytetracycline (OTC) or fluorexon (FL). Specimens, collected in waters of southern New England and the Gulf of Maine 2009–2015, were held in the laboratory or tagged and released in the field after injection. The location of injection was either intramuscular (IM) or intraperitoneal (IP). Structures from some specimens were not available for analysis (N/A). For some specimens, no mark was visible on the structure (No).

| LABORATORY FISH | | | | | | | | MARK VISIBLE | | | | |
|-----------------|----------------------------|--------------------|------------------------------|----------------------------|-------------|-----|----------------------------|--------------|--------------|------------------------------|--------------------------------------|---------|
| FISH ID | INJECTION CHEMICAL (mg/kg) | INJECTION LOCATION | TOTAL LENGTH AT RELEASE (cm) | TOTAL LENGTH AT RECAP (cm) | GROWTH (cm) | SEX | DAYS ALIVE AFTER TREATMENT | VERT WHOLE | VERT SECTION | OTOLITH WHOLE (LATERAL VIEW) | OTOLITH SECTION (TRANSVERSE SECTION) | ILLCIUM |
| B | 25 OTC | IP | 52.0 | 53.0 | 1 | M | 211 | No | Yes | N/A | No | Yes |
| M | 25 FL | IP | 57.0 | 60.0 | 3 | F | 251 | Yes | Yes | N/A | No | Yes |
| W | 25 FL | IP | 33.0 | 41.0 | 8 | F | 298 | Yes | Yes | No | No | No |
| J | 25 FL | IP | 48.0 | 50.0 | 2 | F | 398 | Yes | Yes | Yes | Yes | Yes |
| S | 25 OTC | IP | 51.0 | 57.0 | 6 | M | 467 | Yes | Yes | Yes | Yes | Yes |
| T | 50 OTC | IP | 49.0 | 54.0 | 5 | F | 606 | Yes | Yes | N/A | Yes | Yes |
| F | 75 OTC | IP | 40.0 | 58.0 | 18 | M | 767 | Yes | Yes | No | No | Yes |
| O | 25 FL | IP | 63.0 | 60.0 | -3 | F | 312 | Yes | Yes | N/A | N/A | Yes |
| G | 25 FL | IP | 43.5 | 51.5 | 8 | M | 824 | Yes | N/A | N/A | N/A | Yes |
| L | 25 FL | IP | 28.9 | 61.2 | 32.3 | M | 860 | Yes | N/A | N/A | N/A | Yes |
| C | 25 FL | IP | 14.9 | 35.5 | 20.6 | M | 223 | Yes | N/A | N/A | N/A | No |

| FISH RECAPTURED IN FIELD | | | | | | | | MARK VISIBLE | | | | |
|--------------------------|----------------------------|--------------------|------------------------------|----------------------------|-------------|-----|----------------------------|--------------|--------------|------------------------------|--------------------------------------|-------------|
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| 7 | 50 OTC | IP | 59.0 | 63.0 | 4 | F | 185 | Yes | Yes | N/A | N/A | Yes |
| 4114 | 75 OTC | IM | 58.0 | 60.5 | 2.5 | M | 213 | No | Yes | N/A | No | Yes |
| 1 | 75 OTC | IM | 68.0 | 75.5 | 7.5 | F | 248 | Yes | No | N/A | No | Yes |
| 4 | 25 FL | IP | N/A | 71.0 | N/A | M | 333 | Yes | No | N/A | No | No |
| 2 | 25 FL | IP | N/A | 67.0 | N/A | F | 365 | Yes | Yes | N/A | Yes | Yes |
| 5 | 25 FL | IP | N/A | 76.5 | N/A | F | 537 | Yes | Yes | Yes | N/A | Yes |
| 8 | 25 FL | IP | 80.0 | 83.0 | 3 | N/A | 239 | Yes | N/A | N/A | N/A | Yes |
| 9 | 25 FL | IP | 78.0 | 82.0 | 4 | F | 263 | Yes | N/A | No | N/A | N/A |
| 10 | 25 FL | IP | 70.0 | 77.5 | 7.5 | F | 347 | Yes | N/A | No | N/A | Yes |
| 11 | 25 FL | IP | 75.0 | 79.0 | 4 | F | 360 | Yes | N/A | N/A | N/A | Yes |
| 12 | 25 FL | IP | 66.0 | 67.0 | 1 | F | 222 | Yes | N/A | N/A | N/A | Yes |
| | | | | | | | | n=22 | n=14 | n=7 | n=11 | n=21 |
| | | | | | | | | 91% | 86% | 43% | 36% | 86% |