**Supplementary materials**

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| **Table S1. Characteristics of first and recent years crab fishing** | | |
|  | First crab harvesting experiences (1926-1996) | Recent crab harvesting experiences (1997-2016) |
| Crab traps | 69.4% hoop trap  13.9% commercial trap  27.8% recreational trap  2.8% other trap | 14.3% hoop trap  48.6% commercial trap  45.7% recreational trap  0% other trap |
| Typical catches per trap that were kept (# crabs/trap) | Average: 24  Median: 22  Min: 7  Max: 55 | Average: 6.2  Median: 5.0  Min: 0  Max: 27.4 |
| Best catches per trap (# crabs/trap) | Average: 27.3  Median: 26.3  Min: 10  Max: 65 | Average: 22.4  Median: 20  Min: 2.5  Max: 100 |
| Worst catches per trap (# crabs/trap) | Average: 24.21  Median: 20  Min: 0  Max: 90 | Average: 1.1  Median: 0  Min: 0  Max: 12.5 |
| Number of traps | Average: 2.6 traps  Median: 2 traps  Min: 1 trap  Max: 10 traps | Average: 3.7 traps  Median: 2 traps  Min: 1 trap  Max: 20 traps |
| Length traps soaked | Average: 3.1 hrs  Median: 0.9 hrs  Min: 0.2 hrs  Max: 24 hrs | Average: 13.2 hrs  Median: 8 hrs  Min: .5 hrs  Max: 96 hrs |
| Depth traps set | Average: 15.24 m  Median: 10 m  Min: 5 m  Max: 64 m | Average: 18.9 m  Median: 13.7 m  Min: 6.1 m  Max: 73.2 m |
| Type of boats | Seine boat: 20%  Gillnetter: 40%  Skiff: 11.4%  Punt: 8.6%  Speed Boat: 5.7%  Other: 28.6% | Seine boat: 0%  Gillnetter: 30.6%  Skiff: 42.9%  Punt: 11.1%  Speed Boat: 38.9%  Other: 11.1% |
| Crab fishing trips per year | Average: 15.9  Median: 6  Min: 1  Max: 105 | Average: 13.7  Median: 4  Min: 1  Max: 96 |
| Species targeted | 100% Dungeness | 100% Dungeness |

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| **Table S2. Perceived changes to crab fishing and crab abundance** | | | |
|  | First years crab fishing | | Recent years crab fishing |
| Was it ever not worth crab fishing? | Yes: 9.1%  No: 90.9% | | Yes: 33.3%  No: 66.7% |
| Avoidance of commercial or recreational traps? | Yes: 6.1%  No: 9.1%  Not present: 84.8% | | Yes: 66.7%  No: 33.3%  Not present: 0% |
| Changes to catches in areas fished by commercial or recreational crab fishers? | Severe increases: 0%  Moderate increases: 0%  No change: 82.9%  Moderate declines: 11.4%  Severe declines: 5.7% | | Severe increases: 0%  Moderate increases: 0%  No change: 5.4%  Moderate declines: 24.3%  Severe declines: 75.7% |
| Threshold for a successful crab fishing trip (# legal males caught and kept) | (not asked for early years) | | Average: 17.7  Median: 15  Min: 1  Max: 60 |
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| Observations of change over lifetime experiences crab fishing | | | |
| Year change began | | Average: 2000.7  Median: 2001  Min: 1975  Max: 2014 | |
| Year change most severe | | Average: 2014.4  Median: 2016  Min: 2011  Max: 2016 | |
| Perceived reason for change | | 90.3% commercial crab fishing  83.9% recreational crab fishing  12.9% Lack of monitoring and management  9.7% Other (pollution, contamination) | |
| Changes to crab populations over time | | Severe increases: 0%  Moderate increases: 0%  No change: 0%  Moderate declines: 17.1%  Severe declines: 82.9% | |

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| **Table S3. Food, social and ceremonial consumption and needs for Dungeness crabs** | |
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| **Desired home meals** |  |
| Crabs desired per person (annually) | Average: 38 crabs  Range: 2-200 |
| People served | Average: 4.4 people  Range: 2-15 |
| Frequency of crab meals per year | Average: 13.7 times  Range: 1-144 |
| Extrapolated total number of crabs needed for home meals in Central Coast First Nations (combined estimated population ~4200) | 159,600 crabs |
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| **Feasts** (responses cover the lifetime experience of participants) | |
| Frequency of crabs consumed at feasts | 0% Never  51.4% Rarely  16.2% Some Feasts  32.4% Most Feasts  0% Always |
| Number of crabs served per feast | Average: 74.5 crabs  Range: 12-250 |