

## Background

Since 1995, the 4S fixed gear Sentinel Fishery has been promoted by the Regroupment of Fishermen's Associations. This program is realized through a partnership between fishers and the Department of Fisheries & Oceans-Maurice Lamontagne Institute.

Three main objectives determine how the activities of the sentinel fishery are realized, which are: fishers fishing traditional gears; traditional seasons and traditional sites. From participating in the sentinel fishery, the Department of Fisheries and Oceans, is able to derive an index of abundance for the estimation of the northern gulf cod stock (3Pn, 4RS). The data collected through the sentinel program over the 11 years period does contribute to reference data in stock status reports.

This report includes results from the most current season of 2005, as well as a review and comparison of data obtained from 1995-2004.

#### Summary

- $\Rightarrow$  In 2005, the season was ongoing between June and September (11 weeks).
- $\Rightarrow$  For gillnet sites, between Harrington Harbour and Blanc Sablon, the catch rate of 28 kg/net in 2005 increased slightly from the seasonal level of 27 kg/net in 2004, and represents the highest cpue level in the time series between 1995 and 2005.
- $\Rightarrow$  For the time series 1995-2005, the highest landing (all gear types combined) was in 2000 at 217.3 mt of round cod.

#### Sampling protocol and data collection

The DFO science protocol requires that sentinel participants realize coverage of sites in 4S through three fishing activities per week. The protocol includes fishing with either 24 gillnets per activity (only 20 nets per activity in the Blanc Sablon sector) with 140mm (5  $\frac{1}{2}$ ") mesh and total fathom length of 1200 fathoms, or 1000 hooks (two longlines of 500 number 16 J-hooks each). For each sentinel activity realized, sentinel participants complete specially designed logbooks (date, gear soaking time, effort used, cod catches, bycatch species, observations) and perform length frequency measurements on cod (fish length, weight). As well, during the season, cod otoliths and frozen whole codfish are collected for subsequent aging and fish condition analysis.

The sentinel protocol is prepared by DFO Science, which is then applied and monitored by sentinel staff. Sentinel staff responsibilities include: science coordination. raw data collection/validation and overall project administration/management. An important component of sentinel is monitoring the protocol and managing the subsequent collection/validation of raw data. Various tasks realized in season are: season planning, water temperature recordings, field verification of data collection, coordinate a tag/recapture program, map fishing effort distribution, raw data verification/validation of logbooks & fish forms and subsequent data entry using specially designed DFO science software. Science protocol monitoring is also verified through regular direct field visits on sentinel boats during the hauling of gear and collection of catch and samples.

Samples collected during the season, frozen fish for fish condition, are analyzed at the laboratory in La Tabatiere. Otoliths are also cut at the lab using a low speed saw, which is later used for aging the fish. Project coordination and report production is also under the responsibility of the sentinel staff. Biological and technical support from DFO science personnel at Maurice Lamontagne Institute greatly assists is realizing these tasks.

# Sentinel description & performance

Data collected on distribution, effort, catches and catches per unit of effort (CPUE), provide the basic information to assess fishery performance. This report includes interpretation on raw data collected and excludes statistical treatment & analysis. The objective in presenting the data in this form is to provide preliminary results and to indicate general trends. The data reported here for catches and catch rates is for round codfish weighed in kg.

**Eleven sentinel sites were covered in 2005 between** Sept-Îles and Blanc Sablon involving 22 participants (Table 1). The distribution of sites in 2005 was modified slightly as such: the site in Natashquan changed temporal coverage. Sentinel activities began five weeks earlier than usual for the Natashquan site; in an attempt to monitor cod presence at an earlier date. For 2005, a new fisher realized activities for site SBC22 and the season was extended by one week. Also, for the site SBC19 activities started 2 weeks earlier and the season lasted six weeks instead of 4 weeks.

**Effort distribution using gillnet in** 2005 is shown in Figure 1 and is similar to that of previous sentinel seasons. Gillnet catches in 2005, as presented in Table 2, shows that June produced the highest weekly catches (kg of round codfish) and CPUE (kg of round codfish per net hauled). For 2005, both catches and catch rates remained relatively high in August in the western sector. Gillnet catches reached a total of 160.9 mt of round codfish for 2005. This level indicates a 23.5% increase in total catch versus 2004.

Seasonal variability in gillnet catches for all sites between Harrington and Blanc Sablon for the years 2004-5, is shown in Figure 2. Catch rates in July for 2005 seems higher than that recorded in 2004. Figure 3 shows the variability of individual catch rates for all sites between Sept-Îles and Blanc Sablon in 4S between 2004 and 2005.

For sites between Harrington Harbour and Blanc Sablon the seasonal catch rate in 2005 of 28 kg (61.7 lbs) of round codfish / gillnet is 3.7% higher than 2004. The combined results for catch rates at the Bradore Bay and Lourdes-de-Blanc-Sablon sites (Figure 3) indicates a 35% decrease versus 2004. Sites in the western sector, SBC01 and SBC11, represented increases in catch rates in the order of 37% and 113% respectively, between 2004 and 2005. The catch rates for sites SBC01 and SBC11 were situated at 20kg/net and 8 kg/net in 2003, respectively. Sites SBC01 and SBC11, between 2003 and 2005, has increased by 195% and 325%. The site SBC13, covering the sector between Old Fort Bay and St. Pauls River, represents a 52% decrease in catch rates between 2004 and 2005. The other sites indicated either slight increases or slight/moderate decreases. Thus, the season and site variability has influenced the resulting CPUE level for the complete zone of 4S.

For 2005, cod landings reached 7,076 kg with an effort of 1,432 nets and a catch rate of 5 kg/net (11.0 lbs) for gillnet sites between Sept-Îles and Kegaska (table 3). For this sector, catch rates have decreased by 37.5% between 2004 and 2005. The individual catch rate at the Natashquan site decreased by 81.5% from 27 kg/net in 2004 to 5 kg/net in 2005. The catch rate level is the lowest for this site in the time series to date.

Fluctuations in effort & catches between 1995 and 2005 is shown for gillnet sites between Harrington Harbour and Blanc Sablon in table 4. For these sectors, the effort in 2005 of 5,502 gillnets represents a 14% increase from 2004. The overall catch rate recorded for this site was highest in 2005 at 28 kg of round codfish / gillnet (Figure 4).

Gillnet catch rates for the years 1996, 2003-2005 represents above average levels for the period between 1995 and 2005. As a means to provide some explanation, the fishery moratorium was in place between 1994 to 1996 and 2003 and the sentinel fishery has been ongoing since 1995. For 2004-5, there were small commercial fisheries (3,500mt), which were caught in a few weeks through monthly allocations. Thus, the commercial fishery was realized quickly and fishers seem positive as to the results.

**Sentinel activities using longline in 2005**, were not realized by fishers. Longline activities were low in 2004 and further reduced to nil in 2005. Sentinel participants in the Blanc Sablon sector extended their gillnet season for 2004-5.

### Cod condition and water temperature

The condition of cod is monitored each year through the sentinel program by collecting round cod from various sites at the beginning, middle & end of season.

Verification of fish condition is conducted at the field laboratory in La Tabatiere and involves recording the following: fish length, total weight, weight of liver and reproductive organs (gonads), stomach contents, otolith removal & cutting, sexing and maturity state. DFO science is responsible for the subsequent treatment and analysis of data and results are presented at the cod stock assessment in February of 2006.

**Monitoring of water temperature** at fishing sites has been a continuous component since the beginning of the sentinel program in order to follow variables such as; water temperature versus date versus water depth versus catch rates. Water temperature monitoring is ongoing throughout the duration of the fishing season. Sentinel staff prepares, initiates and downloads data linked with the season. The temperature monitors are provided to DFO science for data extraction, calibration and subsequent treatment and analysis.

**From sentinel fisher comments** and direct field observation, cod seem to be in very good condition. Several fishers also indicated that cod stomachs had lots of capelin, along with some specific reference to deep-water capelin present in cod stomachs.

Sentinel participants as well mentioned the abundance of bait in cod stomachs and the presence of whales near fishing sites. Sentinel fishers as well recorded the presence of spawn in cod and at various times during the season, cod spawning was abundant.

Through comments received from fishers, review of comments recorded in logbooks and through direct observations in the field, it helps provide an additional indication as to the status of cod.

**Information return to fishers and various organizations** is an important component of the sentinel program and is usually realized through report production and participation at meetings. This sentinel report has the objective of providing preliminary results through reviewing the raw data collected throughout the season. Report distribution cover various groups, such as: sentinel fishers; fishermen associations; DFO management & science; and media.

The web site <u>www.osl.gc.ca</u> provides additional information for interested groups, which covers more details on the program. Following the collection of data through the 4S fixed gear sentinel program, this information is incorporated into the annual stock status report for northern cod of 3Pn, 4RS (DFO, 2004; Fréchet, A. et al., 2005).

# Outlook.

The results from gillnet catch rates, for the 2005 season, shows a level similar to 2004, and seems to remain stable even with the ongoing small commercial fishery (Figure 4). The gillnet trend does seem to be improving since 2001, with 2004-5 producing higher historical levels.

The raw data collected through the sentinel program is subsequently treated and analysis by DFO science in the upcoming months. The sentinel results, commercial data and other DFO research surveys are presented at the annual cod stock assessment in February of 2006.

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Reference.

- DFO, 2005. The Northern Gulf of St. Lawrence (3Pn, 4RS) cod in 2004. DFO Science Stock Status Report 2005/. . <u>http://www.dfo-mpo.gc.ca/csas</u>.
- Fréchet, A., J. Gauthier, P. Schwab, L. Pageau, C. Savenkoff, M. Castonguay, D. Chabot, C. Tournois, Jean-Francois Lussier, J. Spingle and F. Collier, 2005. The status of cod in the Northern Gulf of St. Lawrence (3Pn, 4RS) in 2004. CSAS. 2005/060. <u>http://www.dfo-mpo.gc.ca/csas</u>.

### La version française de ce document est disponible à l'adresse ci-dessus:

Att.: Sentinel Fisheries / Pêches Sentinelles Regroupment of Fishermen's Associations of the Lower North Shore P.O. Box 167, La Tabatiere, Quebec, GOG 1T0 Tel.: (418) 773-2234, Fax: (418) 773-2477/2626 Table 1: List of fishermen collaborators for 4S fixed gear sentinel fishery.Tableau 1: Liste des collaborateurs des pêcheurs pour la Pêche Sentinelle à engins fixes dans le 4S.

| SBC No.         | fisher name / nom pêcheur | years participation / années de participation | locality / localité |
|-----------------|---------------------------|---|---------------------|
| 01              | Keith Anderson            | 1995-2005                                     | Harrington Harbour  |
| crew / équipage | Rodney Jones              | 1995-2005                                     | Harrington Harbour  |
| 02              | Marty Etheridge           | 1995, 1999-2005                               | Bradore Bay         |
| crew / équipage | Garry Etheridge           | 1999-2005                                     | Bradore Bay         |
| 04              | William Bobbitt           | 1994-2005                                     | Mutton Bay          |
| crew / équipage | Philip Evans              | 2004-5  | Mutton Bay          |
| 06              | Ross Gallichon            | 1994-2005                                     | La Tabatiere        |
| crew / équipage | Stephen Gallichon         | 1999-2005                                     | La Tabatiere        |
| 11              | Ian Anderson              | 1996-2005                                     | Harrington Harbour  |
| crew / équipage | Eanes Cox                 | 2001-2005                                     | Harrington Harbour  |
| 13              | Dennis Keats              | 1995-2005                                     | St. Paul's River    |
| crew / équipage | Donald Keats              | 2005  | St. Paul's River    |
| 14              | Norman Keats              | 1995-2005                                     | St. Paul's River    |
| crew / équipage | Edward Keats              | 2001-2005                                     | St. Paul's River    |
| 15              | Wesley Etheridge          | 1999-2005                                     | Blanc Sablon        |
| crew / équipage | Bobby Etheridge           | 1999-2005                                     | Blanc Sablon        |
| 18              | Bertrand Monger           | 2003-5  | Natashquan          |
| crew / équipage | Mathieu Carbonneau        | 2003-5  | Natashquan          |
| 19              | Steve Balleine            | 2002-2005                                     | Sept-Iles           |
| crew / équipage | Chantel Bellefleur        | 2005  | Sept-Iles           |
| 22              | Jean-Louis Monger         | 2005  | Kegaska             |
| crew / équipage | Sylva Marcoux             | 2005  | Kegaska             |

Table 2: Landings of cod fish (round in kg) of 8 sites along the Lower North Shore using 5 1/2" mesh, 4S fixed gear sentinel fishery, 2005 (gillnets).Tableau 2. Les débarquements de morue (ronde en kg) de 8 sites en Basse Côte-Nord avec le filet maillant (5 1/2"), pêche sentinelle 4S engins fixes en 2005.

| Shee (BBCNo)         SBC01         SBC04  |  | West / Ouest (Harrington Harbour) |       |       |       |       |           | East / est (Blanc Sablon) |          | Overall / Global |          |            |            |
|---|--|-----------------------------------|-------|-------|-------|-------|-----------|---------------------------|----------|------------------|----------|------------|------------|
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$   | Sites (SBCNo.)                           | SBC01                             | SBC11 | SBC04 | SBC06 | SBC13 | SBC14     | SBC02                     | SBC15    | Catch /          | Effort   | CPUE       | No.        |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$   |  |                                   |       |       |       |       |           |                           |          | Captures         | (nets)   | (kg/net)   | Activities |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $   | Date, catch (captures), effort, cpue     |                                   |       |       |       |       |           |                           |          | (Kg)             | (filets) | (kg/filet) |            |
| inflort (b. gillets (inter million))         72   | June 19 - June 25 (catch/captures kg)    | 1898                              | 3385  | 1211  | 893   | 2411  | 3062      | 2640                      | 889      | 16389            | × /      |            |            |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $  | Effort (nb. gillnets / filets maillants) | 72                                | 72    | 72    | 72    | 72    | 60        | 40                        | 16       | 10000            | 476      |            |            |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $   | CPUE (kg / gillnet (filet maillant))     | 26                                | 47    | 17    | 12    | 33    | 51        | 66                        | 56       |                  |          | 34         |            |
| June 26 - July 2 (cach/capures kg)         3479         2233         813         996         1619         19973         7812         25888         455         455           CPUE & g jelles / filets mailans)         48         31         11         14         22         36         42         47         47         53         53           CPUE & g jelles / filets mailans)         48         31         11         14         22         36         166         166         53         28           abs 1 - Jup jell (1) filets mailans)         23           | Number of Activities                     | 3                                 | 3     | 3     | 3     | 3     | 3         | 2                         | 1        |                  |          |            | 21         |
| Effort (ab., gibles / files mallani)         72         73         73         73         73   | June 26 - July 2 (catch/captures kg)     | 3479                              | 2235  | 813   | 996   | 1619  | 1961      | 6973                      | 7812     | 25888            |          |            |            |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $  | Effort (nb. gillnets / filets maillants) | 72                                | 72    | 72    | 72    | 72    | 36        | 42                        | 47       |                  | 485      |            |            |
| Number of Activities         3         3         3         3         3         3         4         4         -         -         -         26           Ibly 3-buy 9 (cath/capures kg)         254         1673         1658         1572         73         33            | CPUE (kg / gillnet (filet maillant))     | 48                                | 31    | 11    | 14    | 22    | 54        | 166                       | 166      |                  |          | 53         |            |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$   | Number of Activities                     | 3                                 | 3     | 3     | 3     | 3     | 3         | 4                         | 4        |                  |          |            | 26         |
| Effort (ub. gilnet /i files millants)         60         72         73         33         3         3  | July 3 - July 9 (catch/captures kg)      | 2354                              | 1673  | 1658  | 1572  | 645   | 1012      | 3089                      | 3925     | 15928            |          |            |            |
| CPUE (kg / gillet (filet maillant))       39       23       23       22       9       14       206       262       9       14       206       262       55       24         July 10 - July 16 (cath/captures kg)       1734       1320       1491       2147       886       729       5655       2567       14739       462       52       73       3 <td>Effort (nb. gillnets / filets maillants)</td> <td>60</td> <td>72</td> <td>72</td> <td>72</td> <td>72</td> <td>72</td> <td>15</td> <td>15</td> <td></td> <td>450</td> <td></td> <td></td>  | Effort (nb. gillnets / filets maillants) | 60                                | 72    | 72    | 72    | 72    | 72        | 15                        | 15       |                  | 450      |            |            |
| Number of Activities         3  | CPUE (kg / gillnet (filet maillant))     | 39                                | 23    | 23    | 22    | 9     | 14        | 206                       | 262      |                  |          | 35         |            |
|   | Number of Activities                     | 3                                 | 3     | 3     | 3     | 3     | 3         | 3                         | 3        |                  |          |            | 24         |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $   | July 10 - July 16 (catch/captures kg)    | 1734                              | 1320  | 1491  | 2347  | 886   | 729       | 3665                      | 2567     | 14739            |          |            |            |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $  | Effort (nb. gillnets / filets maillants) | 72                                | 72    | 72    | 72    | 72    | 72        | 15                        | 15       |                  | 462      |            |            |
| Number of Activities         3  | CPUE (kg / gillnet (filet maillant))     | 24                                | 18    | 21    | 33    | 12    | 10        | 244                       | 171      |                  |          | 32         |            |
|   | Number of Activities                     | 3                                 | 3     | 3     | 3     | 3     | 3         | 3                         | 3        |                  |          |            | 24         |
| Effort (h. gillents / filets maillants)         72         72         72         72         72         72         72         15         40         487         748           CPUE (kg / gillent (fillet maillants)         3 <t< td=""><td>July 17 - July 23 (catch/captures kg)</td><td>2403</td><td>2006</td><td>514</td><td>1376</td><td>562</td><td>579</td><td>1785</td><td>2271</td><td>11496</td><td></td><td></td><td></td></t<>                                | July 17 - July 23 (catch/captures kg)    | 2403                              | 2006  | 514   | 1376  | 562   | 579       | 1785                      | 2271     | 11496            |          |            |            |
| CPUE (kg / glinet (filet maillant))       33       28       7       19       8       8       119       57       24       25         July 24 - July 30 (catch/captures kg)       2789       1673       1887       1665       1351       1052       359       767       11523       494       23         CPUE (kg / glinet (filet maillant))       39       23       26       23       19       15       12       24       494       23         July 31 - Aug. 6 (catch/captures kg)       2174       1169       1331       1004       1006       1462       577       446       9169       225       24       24         Uy 31 - Aug. 6 (catch/captures kg)       2174       1169       1331       1004       1006       1462       577       446       9169       525       17       24         CPUE (kg / glinet (filet maillant))       36       16       18       14       14       20       13       7       26       28       85       10617       518       20       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24       24  | Effort (nb. gillnets / filets maillants) | 72                                | 72    | 72    | 72    | 72    | 72        | 15                        | 40       |                  | 487      |            |            |
| Number of Activities         3         3         3         3         3         3         3         4         10         225           Effort (nb. gillnets / filets millants)         72         73         74         72         72         72         72         72   | CPUE (kg / gillnet (filet maillant))     | 33                                | 28    | 7     | 19    | 8     | 8         | 119                       | 57       |                  |          | 24         |            |
| July 24 - July 30 (catch/captures kg)       2789       1673       1867       1665       1351       1052       359       767       11523       494       23         Effor (ub, gillnet, filets maillants)       39       23       26       23       19       15       12       24       494       23         July 31 - Aug, 5 (catch/captures kg)       2174       1169       1331       1004       1006       1462       577       446       9169       525       24         Effor (ub, gillnets / filets maillants)       60       72 <td< td=""><td>Number of Activities</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>4</td><td></td><td>-</td><td></td><td>25</td></td<>   | Number of Activities                     | 3                                 | 3     | 3     | 3     | 3     | 3         | 3                         | 4        |                  | -        |            | 25         |
| Effort (ab. glinets / fiels maillants)       72       72       72       72       72       72       72       72       72       72       72       72       72       72       72       72       72       73       33       32       494       23         Number of Activities       3  | July 24 - July 30 (catch/captures kg)    | 2789                              | 1673  | 1867  | 1665  | 1351  | 1052      | 359                       | 767      | 11523            |          |            |            |
| CPUE (kg / glinet (het mailmant))       39       23       20       23       19       15       12       24       C       23       24         July 31 - Aug. 6 (auch/captures kg)       2174       1169       1331       1004       1006       1462       577       446       9169       525       17       24         Duly 31 - Aug. 6 (auch/captures kg)       66       16       18       14       14       20       13       7       17       24         Mumber of Activities       3  | Effort (nb. gillnets / filets maillants) | 72                                | 72    | 72    | 72    | 72    | 72        | 30                        | 32       |                  | 494      |            |            |
| Number of Activities         3  | CPUE (kg / gillnet (filet maillant))     | 39                                | 23    | 26    | 23    | 19    | 15        | 12                        | 24       |                  |          | 23         |            |
| July 31 - Aug. 0 (catch captures kg)       21/4       1169       1331       1004       10006       1462       577       446       9169       525       17         CPUE (kg / gillnet (filet maillant))       36       16       18       14       14       20       13       7       17       24         Aug. 7 - Aug. 13 (catch/captures kg)       7544       1548       261       445       142       564       28       85       10617       518       20         CPUE (kg / gillnet (filet mailant))       126       22       4       6       2       8       1       2       20       20         Number of Activities       3 <t< td=""><td>Number of Activities</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>3</td><td>0.1.60</td><td></td><td></td><td>24</td></t<>  | Number of Activities                     | 3                                 | 3     | 3     | 3     | 3     | 3         | 3                         | 3        | 0.1.60           |          |            | 24         |
| Entort (in), guinets / titles mainans)       60       1/2 </td <td>July 31 - Aug. 6 (catch/captures kg)</td> <td>2174</td> <td>1169</td> <td>1331</td> <td>1004</td> <td>1006</td> <td>1462</td> <td>5//</td> <td>446</td> <td>9169</td> <td>595</td> <td></td> <td></td>   | July 31 - Aug. 6 (catch/captures kg)     | 2174                              | 1169  | 1331  | 1004  | 1006  | 1462      | 5//                       | 446      | 9169             | 595      |            |            |
| CPC0E (g / glinet (thet mailiant))       36       16       18       14       14       14       13       7       6       17       24         Aug. 7 - Aug. 13 (catch/captures kg)       7544       1548       261       445       142       564       28       85       10617       24         Effort (nb. gillnets / filets maillants)       60       72       72       72       72       72       50       48       518       20       24         CPUE (g / glinet (filet maillant))       126       22       4       6       2       8       1       2       60       60       24       8       1       20       24       20       24         Number of Activities       3  | CDUE (he / sillest (filet maillants)     | 60                                | 72    | 72    | 72    | 72    | 72        | 45                        | 60       |                  | 525      | 17         |            |
| Number of Activities         3  | Number of Activities                     | 30                                | 10    | 18    | 14    | 14    | 20        | 13                        | 1        |                  |          | 1 /        | 24         |
| Aug. 1-Aug. 10 (ab. gillents) filets millants)       60       72       72       72       72       50       48       10017       10017       20       20         CPUE (kg / gillnet (filet maillants))       126       22       4       6       2       8       1       2       20       20       24         Number of Activities       3       3       3       3       3       3       3       3       3       3       3       24       20       24         Aug. 14 - Aug. 20 (catch/captures kg)       5928       1450       129       1932       474       1004       0       132       11049       20       24         Effort (nb. gillnets / filets maillants)       60       72       72       72       72       60       600       60       20       20       20         Number of Activities       3       3       3       3       3       3       3       3       3       3       20  | Aug. 7 Aug. 12 (actab/contures kg)       | 7544                              | 1549  | 3     | 3     | 5     | 5         | 3                         | )<br>05  | 10617            |          |            | 24         |
| Libre (ub. ginites / intest minites)       00       12       13         | Effort (nh. gillnets / filets maillants) | 60                                | 1348  | 201   | 445   | 142   | 304<br>72 | 28                        | 83<br>48 | 10017            | 519      |            |            |
| Crob (xg / glinet (nint namality))       120       22       4       0       2       6       1       2       6       1       2       6       1       2       6       1       2       6       1       2       6       1       2       6       1       2       6       1       2       6       1       2       6       1       2       6       1       2       1       6       24         Aug. 14 - Aug. 20 (catch/captures kg)       5928       1450       129       1932       474       1004       0       132       11049       540       24         CPUE (kg / gillnet (filet maillant))       90       20       2       27       7       14       00       2       20       24         Aug. 21 - Aug. 27 (catch/captures kg)       6775       6583       720       1030       187       210.5       500       136       15692       24       24       24         Aug. 21 - Aug. 27 (catch/captures kg)       6304       2981       100       14       3       3       3       3       3       3       24         Mumber of Activities       3       3       3       3       3       3       3<   | CPUE $(kg / gillnet (filet maillant))$   | 126                               | 22    | 12    | 6     | 2     | 8         | 30                        | 40       |                  | 518      | 20         |            |
| Aug. 14 - Aug. 20 (catch/captures kg)       5928       1450       129       1932       474       1004       0       132       11049       20       24         Effort (nb. gillnets / filets maillants)       60       72       72       72       72       72       60       60       104       20       20       24         CPUE (kg / gillnet (filet maillant))       99       20       2       27       7       14       0       2       20       24         Aug. 21 - Aug. 27 (catch/captures kg)       6775       6583       720       1030       187       210.5       50       136       15692       29       24         Aug. 21 - Aug. 27 (catch/captures kg)       6775       6583       720       1030       187       210.5       50       136       15692       29       29       24         Aug. 28 - Sept. 3 (catch/captures kg)       6304       2981       566       698       74       637       8       101       11369       29       24         Aug. 28 - Sept. 3 (catch/captures kg)       6304       2981       566       698       74       637       8       101       11369       22       24         Mug. 28 - Sept. 3 (catch/captures kg)   | Number of Activities                     | 3                                 | 3     | 4     | 3     | 3     | 3         | 1                         | 2        |                  |          | 20         | 24         |
| Indig. 10                                     | Aug 14 - Aug 20 (catch/captures kg)      | 5928                              | 1450  | 129   | 1932  | 174   | 1004      | 0                         | 132      | 11049            |          |            | 24         |
| Lifter (kg / gillet (filet maillant))       00       12       12       12       12       12       12       12       10       11       10       10       11       11       10       10       10       11       10       11       10       11       10       11       10       11       10       11       10       11       11       11       10       11  | Effort (nh. gillnets / filets maillants) | 60                                | 72    | 72    | 72    | 72    | 72        | 60                        | 60       | 11049            | 540      |            |            |
| Of O Number of Activities       3<  | CPUE (kg / gillnet (filet maillant))     | 99                                | 20    | 2     | 27    | 7     | 14        | 0                         | 2        |                  | 540      | 20         |            |
| Aug. 21 - Aug. 27 (catch/captures kg)       6775       6583       720       1030       187       210.5       50       136       15692       549       29         Effort (nb. gillnets / filets maillants)       72       72       72       72       72       72       69       60       29       24         Aug. 28 - Sept. 3 (catch/captures kg)       6304       2981       566       698       74       637       8       101       11369       60       60       60       60       60       60       60       60       60       60       22       24       637       8       101       11369       33       33       33       33       33       33       33       33       33       33       33       33<   | Number of Activities                     | 3                                 | 3     | 3     | 3     | 3     | 3         | 3                         | 3        |                  |          | 20         | 24         |
| Effort (nb. gillnets / filets maillants)       72       73       3       3       1       2       29       29       24         Number of Activities       3  | Aug. 21 - Aug. 27 (catch/captures kg)    | 6775                              | 6583  | 720   | 1030  | 187   | 210.5     | 50                        | 136      | 15692            |          |            |            |
| CPUE (kg / gillnet (filet maillant))       94       91       10       14       3       3       1       2       10       29       24         Number of Activities       3       <  | Effort (nb. gillnets / filets maillants) | 72                                | 72    | 72    | 72    | 72    | 69        | 60                        | 60       |                  | 549      |            |            |
| Number of Activities         3  | CPUE (kg / gillnet (filet maillant))     | 94                                | 91    | 10    | 14    | 3     | 3         | 1                         | 2        |                  |          | 29         |            |
| Aug. 28 - Sept. 3 (catch/captures kg)       6304       2981       566       698       74       637       8       101       11369       516       22         Effort (nb. gillnets / filets maillants)       60       48       72       72       72       72       60       60       60       516       22       24         CPUE (kg / gillnet (filet maillant))       105       62       8       10       1       9       0       2       24       24         Total catch/captures totales (kg)       43382       26023       10561       13958       9357       12273       19174       19131       153858       2502       24         Total catch/captures totales (kg)       732       768       792       792       741       432       453       5502       28       264         CPUE (kg/gillnet (filets maillants))       59       34       13       18       12       17       444       42       28       264   | Number of Activities                     | 3                                 | 3     | 3     | 3     | 3     | 3         | 3                         | 3        |                  |          |            | 24         |
| Effort (nb. gillnets / filets maillants)       60       48       72       72       72       72       60       60       516       22       24         CPUE (kg / gillnet (filet maillant))       105       62       8       10       1       9       0       2       24       24         Total catch/captures totales (kg)       43382       26023       10561       13958       9357       12273       19174       19131       153858       26023       24         Total no. nets / nb. filets totale       732       768       792       792       792       741       432       453       5502       28       2602       28       2602       28       2602       26  | Aug. 28 - Sept. 3 (catch/captures kg)    | 6304                              | 2981  | 566   | 698   | 74    | 637       | 8                         | 101      | 11369            |          |            |            |
| CPUE (kg / gillnet (filet maillant))<br>Number of Activities       105<br>3       62<br>3       8<br>3       10<br>3       1<br>3       9<br>3       0<br>3       2<br>3       2<br>3       22       22       24         Total catch/captures totales (kg)<br>Total no. nets / nb. filets totale       43382       26023       10561       13958       9357       12273       19174       19131       153858       2602       24         CPUE (kg/gillnet (filets maillants))       732       768       792       792       792       741       432       453       5502       28       2602       28       2602       2602       2602       2602       2602       2602       2602       792       792       741       432       453       5502       28       28       2602   | Effort (nb. gillnets / filets maillants) | 60                                | 48    | 72    | 72    | 72    | 72        | 60                        | 60       |                  | 516      |            |            |
| Number of Activities         3         3         3         3         3         3         3         3         24           Total catch/captures totales (kg)         43382         26023         10561         13958         9357         12273         19174         19131         153858         26023         10         4         4         4         4         4         4         4         4         28         4         26023         10         13         18         12         17         44         42         28         28         26023         26023         33         33         33         33         33         33         33         26023         10         10         11         153858         5502         10 </td <td>CPUE (kg / gillnet (filet maillant))</td> <td>105</td> <td>62</td> <td>8</td> <td>10</td> <td>1</td> <td>9</td> <td>0</td> <td>2</td> <td></td> <td></td> <td>22</td> <td></td> | CPUE (kg / gillnet (filet maillant))     | 105                               | 62    | 8     | 10    | 1     | 9         | 0                         | 2        |                  |          | 22         |            |
| Total catch/captures totales (kg)       43382       26023       10561       13958       9357       12273       19174       19131       153858         Total no. nets / nb. filets totale       732       768       792       792       792       741       432       453       5502       28         CPUE (kg/gillnet (filets maillants))       59       34       13       18       12       17       44       42       28       264  | Number of Activities                     | 3                                 | 3     | 3     | 3     | 3     | 3         | 3                         | 3        |                  |          | l          | 24         |
| Total no. nets / nb. filets totale       732       768       792       792       741       432       453       5502         CPUE (kg/gillnet (filets maillants))       59       34       13       18       12       17       44       42       28         Number of Activities       33       33       33       33       33       33       33       33       264  | Total catch/captures totales (kg)        | 43382                             | 26023 | 10561 | 13958 | 9357  | 12273     | 19174                     | 19131    | 153858           |          |            |            |
| CPUE (kg/gillnet (filets maillants))         59         34         13         18         12         17         44         42         28           Number of Activities         33         33         33         33         33         33         33         264   | Total no. nets / nb. filets totale       | 732                               | 768   | 792   | 792   | 792   | 741       | 432                       | 453      |                  | 5502     |            |            |
| Number of Activities 33 33 33 33 33 33 33 33 33 264   | CPUE (kg/gillnet (filets maillants))     | 59                                | 34    | 13    | 18    | 12    | 17        | 44                        | 42       |                  |          | 28         |            |
|   | Number of Activities                     | 33                                | 33    | 33    | 33    | 33    | 33        | 33                        | 33       |                  |          |            | 264        |

Table 3: Landings for sites between Sept-Îles and Kegaska, 4S fixed gear in 2005 (5 1/2" gillnets). Tableau 3: Les débarquements pour les sites entre Sept-Îles et Kegaska, 4S engins fixes en 2005 (filet maillant 5 1/2").

|  | Kegaska   | Natashquan    | Sept-Iles |          | Overall  |            |            |
|--|-----------|---------------|-----------|----------|----------|------------|------------|
| Sites (SBCNo.)                           | SBC22     | SBC18         | SBC19     | Catch /  | Effort   | CPUE       | No.        |
|  |           |               |           | Captures | (nets)   | (kg/net)   | Activities |
| Date, catch (capture), effort, cpue      |           |               |           | (Kg)     | (filets) | (kg/filet) |            |
| July 3 - July 9 (catch/captures kg)      |           | 316           |           | 316      |          |            |            |
| Effort (nb. gillnets / filets maillants) |           | 72            |           |          | 72       |            |            |
| CPUE (kg / gillnet (filet maillant))     |           | 4             |           |          |          | 4          |            |
| Number of Activities                     |           | 3             |           |          |          |            | 3          |
| July 10 - July 16 (catch/captures kg)    |           | 620           |           | 620      |          |            |            |
| Effort (nb. gillnets / filets maillants) |           | 72            |           |          | 72       |            |            |
| CPUE (kg / gillnet (filet maillant))     |           | 9             |           |          |          | 9          |            |
| Number of Activities                     |           | 3             |           |          |          |            | 3          |
| July 17 - July 23 (catch/captures kg)    |           | 769           |           | 769      |          |            |            |
| Effort (nb. gillnets / filets maillants) |           | 72            |           |          | 72       |            |            |
| CPUE (kg / gillnet (filet maillant))     |           | 11            |           |          |          | 11         |            |
| Number of Activities                     |           | 3             |           |          |          |            | 3          |
| July 24 - July 30 (catch/captures kg)    |           | 600           | 31        | 631      |          |            |            |
| Effort (nb. gillnets / filets maillants) |           | 72            | 72        |          | 144      |            |            |
| CPUE (kg / gillnet (filet maillant))     |           | 8             | 0         |          |          | 4          |            |
| Number of Activities                     |           | 3             | 3         |          |          |            | 6          |
| July 31 - Aug. 6 (catch/captures kg)     | 1573      | 240           | 39        | 1852     |          |            |            |
| Effort (nb. gillnets / filets maillants) | 72        | 72            | 72        |          | 216      |            |            |
| CPUE (kg / gillnet (filet maillant))     | 22        | 3             | 1         |          |          | 9          |            |
| Number of Activities                     | 3         | 3             | 3         |          |          |            | 9          |
| Aug. 7 - Aug. 13 (catch/captures kg)     | 718       | 209           | 29        | 956      |          |            |            |
| Effort (nb. gillnets / filets maillants) | 72        | 72            | 72        |          | 216      |            |            |
| CPUE (kg / gillnet (filet maillant))     | 10        | 3             | 0         |          |          | 4          |            |
| Number of Activities                     | 3         | 3             | 3         |          |          |            | 9          |
| Aug. 14 - Aug. 20 (catch/captures kg)    | 632       | 228           | 16        | 876      |          |            |            |
| Effort (nb. gillnets / filets maillants) | 72        | 72            | 72        |          | 216      |            |            |
| CPUE (kg / gillnet (filet maillant))     | 9         | 3             | 0         |          |          | 4          |            |
| Number of Activities                     | 3         | 3             | 3         | (71      |          |            | 9          |
| Aug. 21 - Aug. 27 (catch/captures kg)    | 239       | 416           | 16        | 0/1      | 216      |            |            |
| CDUE (he / sillest (filet maillants)     | 12        | 12            | 72        |          | 216      | 2          |            |
| Number of Activities                     | 3         | 0             | 0         |          |          | 3          | 0          |
| Aug. 28 Sept. 3 (astab/aanturaa ka)      | 3         | <u> </u>      | 5<br>0    | 295      |          |            | 9          |
| Fifort (nh. gillnets / filote moillents) | 21/<br>61 | 100           | 0<br>70   | 363      | 200      |            |            |
| CDIF (kg / gillnet (filet maillant))     | 04        | 2             | 12        |          | 208      | 2          |            |
| Number of Activities                     | 3         | $\frac{2}{3}$ | 3         |          |          | 2          | q          |
| Total catch/cantures totales (kg)        | 3270      | 3550          | 120       | 7076     |          |            | 5          |
| Total no nets / nh filets totale         | 3519      | 5550<br>648   | 139       | /0/0     | 1422     |            |            |
| CDUE (kg/gillnot (filets moillents))     | 10        | 5             | 454       |          | 1434     | -          |            |
| Number of Astimities                     | 10        | 5             | U<br>10   |          |          | 2          | 60         |
| Number of Activities                     | 15        | 27            | 18        |          |          |            | 60         |

#### Table 4. Activities from 1995-2005 for 4S fixed gear sentinel fishery.

Tableau 4. Les activités entre 1995-2005 pour la pêche sentinelle à engins fixes 4S.

| Fishery / Pêche   | 1995           | 1996            | 1997             | 1998             | 1999            | 2000            | 2001             | 2002             | 2003             | 2004            | 2005           |
|---|----------------|-----------------|------------------|------------------|-----------------|-----------------|------------------|------------------|------------------|-----------------|----------------|
| Fishery duration / durée de pêche   |                |                 |                  |                  |                 |                 |                  |                  |                  |                 |                |
| Weeks / semaines (all sites / tous sites)   | 12             | 13              | 14               | 16               | 13              | 13              | 13               | 13               | 11               | 11              | 11             |
| Dates (all sites / tous sites)  | AugOct.        | July-Sept.      | June-Sept        | June-Sept        | June-Sept.      | June-Sept.      | June-Sept.       | June-Sept.       | July-Sept.       | June-Sept.      | June-Sept.     |
| Sites: Harrington Harbour-Blanc Sablon<br>(gillnets / filets maillants)   |                |                 |                  |                  |                 |                 |                  |                  |                  |                 |                |
| Catch gillnets / Captures filets maillants en kg*   | 31,102         | 203,383         | 87,728           | 128,405          | 61,935          | 199,389         | 67,296           | 101,475          | 94,671           | 130,285         | 153,858        |
| Effort (no. nets / nb. filets)*   | 4,634          | 10,753          | 10,676           | 9,782            | 10,140          | 14,463          | 14,902           | 11,657           | 4,946            | 4,827           | 5,502          |
| CPUE (kg (lbs)/gillnet (filet maillant))*   | 7 kg (15 lbs)  | 19 kg (42 lbs)  | 8 kg (18 lbs)    | 13 kg (29 lbs)   | 6 kg (13 lbs)   | 14 kg (31 lbs)  | 5 kg (11 lbs)    | 9 kg (20 lbs)    | 19 kg (42 lbs)   | 27 kg (59 lbs)  | 28 kg (62 lbs) |
| Sites: Sept-Iles-Kegaska (gillnets / filets<br>maillants)**   |                |                 |                  |                  |                 |                 |                  |                  |                  |                 |                |
| Catch gillnets / Captures filets maillants en kg  | 186            | 2,161           | 137              | 222              | 3,100           | 9,606           | 648              | 2,255            | 6,985            | 3,815           | 7,076          |
| Effort (no. nets / nb. filets)  | 210            | 440             | 600              | 1,140            | 1,860           | 1,550           | 636              | 960              | 846              | 492             | 1,432          |
| CPUE (kg (lbs)/gillnet (filet maillant))  | 1 kg (2.2 lbs) | 5 kg (11 lbs)   | 0.2 kg (0.5 lbs) | 0.2 kg (0.5 lbs) | 2 kg (4 lbs)    | 6 kg (13 lbs)   | 1 kg (2.2 lbs)   | 2 kg (4.4 lbs)   | 8 kg (17.6 lbs)  | 8 kg (17.6 lbs) | 5 kg (11 lbs)  |
| Sites: Harrington Harbour to Blanc Sablon<br>(longline / palangre - J hooks)  |                |                 |                  |                  |                 |                 |                  |                  |                  |                 |                |
| Catch longline / Captures palangre en kg  | 3,596          | 3,106           | 1,174            | 2,763            | 1,774           | 3,630           | 9,935            | 9,217            | 3,126            | 568             | n/a            |
| Effort (1000's of hooks / de hameçons)  | 120,500        | 59,000          | 21,500           | 54,000           | 27,500          | 64,400          | 98,350           | 83,446           | 29,219           | 8,180           | n/a            |
| CPUE (kg (lbs)/1000 hooks (hameçons)  | 30 kg (66 lbs) | 53 kg (117 lbs) | 55 kg (121 lbs)  | 51 kg (112 lbs)  | 65 kg (139 lbs) | 56 kg (123 lbs) | 101 kg (223 lbs) | 110 kg (243 lbs) | 107 kg (236 lbs) | 69 (151.8 lbs)  | n/a            |
|   |                |                 |                  |                  |                 |                 |                  |                  |                  |                 |                |
| * Effort no. gillnets or 1000's of hooks hauled, catch in kg for round cod (not gutted), & CPUE (kg/gear hauled). n/a: Not available (pas disponsible)<br>* Effort en nombre de filets ou 1000 hameçons levés, capture en kg pour morue ronde, et PUE (kg de morue / engin) |                |                 |                  |                  |                 |                 |                  |                  |                  |                 |                |

\*\*Sites at Sept-Iles, Natashquan, & Kegaska have different seasonal coverage.

\*\*Sites à Sept-Iles, Natashquan, et Kégaska sont présentés separément dans le tableau (pas la même saison).



Figure 1. Distribution of fishing effort for gillnet in 2005. Distribution de l'effort pour filets maillant en 2005.



- Figure 2. CPUE in kg (round cod) / gillnet for sites between Harrington Harbour and Blanc Sablon for years 2004-2005, 4S fixed gear sentinel fishery.
- Figure 2. CPUE en kg (morue ronde) / filet maillant pour les sites entre Harrington et Blanc Sablon pour les années 2004-2005, 4S engin fixe pêche sentinelle.



Figure 3. Catch rates (kg/gillnet) for 11 sites for 4S fixed gear, sentinel fishery between Sept-Îles and Blanc Sablon for 2004-5.

Figure 3. Les taux de captures en (kg/filet maillant) pour 11 sites pour pêche sentinelle entre Sept-Îles-Blanc Sablon pour 2004-5.



Figure 4. CPUE & catch levels for gillnet for 1995-2005, 4S fixed gear sentinel fishery, Lower North Shore (Harrington Harbour to Blanc Sablon).
Figure 4. CPUE et captures pour filet maillant en 1995-2005, pêche sentinelle 4S engin fixe, Basse Côte Nord (Harrington Harbour à Blanc Sablon).