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EVALUATION DU STOCK DE MORUE DU NORD DU GOLFE DU SAINT LAURENT  
(DIVISIONS DE L'OPANO 3Pn, 4R ET 4S) EN 1990

par

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## **RESUME**

Les débarquements de morues du stock de 3Pn, 4RS pour la saison de pêche de 1990 ont été de 40,000 t, alors que le TPA était de 58,000 t. Il s'agit des plus faibles débarquements enregistrés pour ce stock depuis 1961. Les captures par les engins fixes ont été plus particulièrement touchés. Les débarquements effectués par engins fixes ont passé d'une moyenne annuelle de 50,000 t pour les années 1980 à 1983 à 9,000 t en 1990. Les taux de captures de la flotte des chalutiers ont été rejetés comme indice de calibration pour l'analyse séquentielle de population. On considère que les changements technologiques disponibles pour cette flotte font qu'une unité d'effort en 1974 n'est pas comparable à une unité d'effort en 1990. Nous espérons pouvoir corriger cette situation grâce aux résultats d'un questionnaire adressé aux propriétaires de chalutiers.

L'estimé d'abondance obtenu lors de la mission de 1991 est plus élevé que ceux des 4 dernières années. Par contre, une quantité importante de la capture était composée d'individus de taille inférieure à 41 cm (la taille légale). Ceci a permis de confirmer la force des classes d'âges de 1986 et 1987.

L'analyse séquentielle de population a été calibrée à l'aide des estimés des effectifs de la mission d'hiver. Les résultats indiquent que la biomasse aurait doublé entre 1974 et 1983, pour chuter à un niveau inférieur à la biomasse de 1974 en 1990. Les résultats des projections au niveau de référence de  $F_{0.1}$  pour 1992 seraient de 24,000 t.

## **ABSTRACT**

Landings from the 3Pn, 4RS cod stock for 1990 were 40,000 t while the TAC was set at 58,000 t. These are the lowest landings for this stock since 1961. Landings from the fixed gear sector are the main contributors to this shortfall. Landings from the fixed gear sector have declined from an average of 50,000 t every year for the period 1980 to 1983 to 9,000 t in 1990. The mobile gear catch rate was rejected as an index for calibration of the sequential population analysis. We consider that changes in technology available for this fleet results that one unit of effort in 1974 is not comparable to one unit of effort in 1990. We hope to correct this situation with the use of a questionnaire that has been addressed to mobile gear owners.

The abundance estimate from the 1991 survey is higher than those from the last 4 years. However, a large part of the catch was composed of individuals of a size less than 41 cm (the legal size). This allowed to confirm the strength of the incoming 1986 and 1987 year classes.

The sequential population analysis was calibrated with abundance estimates of the winter survey. Results indicate that biomass would have doubled between 1974 and 1983 but has declined to a level lower than 1974 in 1990. Results of projections at the reference catch level  $F_{0.1}$  for 1992 would be 24,000 t.

## **1. INTRODUCTION**

### **1.1. DESCRIPTION DE LA PÊCHE**

La pêche à la morue de ce stock est effectuée par deux types d'engins, les engins mobiles et les engins fixes (palangres, filets maillants). En 1990, la pêche d'hiver a été arrêtée pendant plusieurs semaines à cause des glaces (tableau 1 et Fig. 1). La pêche par la palangre qui prend place durant les trois premiers mois de l'année dans la subdivision 3Pn a été un échec total. Ceci peut être expliqué en partie par un déplacement des bancs de morues vers les eaux plus profondes. La pêche au chalut pendant cette période a eu lieu à de grande profondeur (au delà de 230 brasses, Fig. 2). La diminution des prises est observée dans chaque division (tableau 2) et la plus forte diminution a été enregistrée par les engins fixes (tableaux 3,4 et Fig. 3).

A chaque année, le contingent alloué à la flotte d'engins mobiles a été atteint (tableau 5). Les débarquements indiqués ici peuvent être légèrement différents des données des tableaux précédents puisqu'ils sont basés sur le dernier rapport des contingents de l'année.

## **2. EVALUATION ANALYTIQUE**

### **2.1. ESTIMATION DES PARAMETRES**

#### **2.1.1. ECHANTILLONNAGE COMMERCIAL**

Divers programmes ont collaboré à l'échantillonnage des débarquements: le groupe de l'Institut Maurice-Lamontagne pour les débarquements effectués au Québec et le groupe de Pêches et Océans de Moncton pour les débarquements faits dans les Maritimes et sur la côte ouest de Terre-Neuve. Le programme des observateurs a permis de récolter les données pour la flotte de Saint-Pierre et Miquelon. Les données de fréquences de longueurs et d'otolithes provenant de divers engins, saisons et zones ont été adéquates par rapport aux normes de l'OPANO (Tableau 6). Les coefficients de variation pour les estimations des captures pour l'âge modal était de 3%.

#### **2.1.2. CAPTURE A L'AGE**

Le calcul de la capture à l'âge (ainsi que les longueurs moyennes, poids et variances) a été effectué en utilisant le programme "CATCH.AWS" (Anon, 1986) et la hiérarchie de regroupement des données est présentée à l'annexe 1. Pour la capture à l'âge de 1990, la relation longueur-poids qui permet de calculer les captures à l'âge (en nombre) à partir des débarquements (en poids) a été basée sur les résultats des missions de recherche. La capture à l'âge pour la période 1974 à 1989 avait été basée sur la relation longueur-poids de Minet (1978). Celles-ci étaient:

$$\begin{array}{ll} \text{Gadus: } \log(\text{kg}) = -7.627 + 3.156 * \log(\text{cm}) & R^2 = 0.99 \\ \text{Needler: } \log(\text{kg}) = -7.160 + 3.034 * \log(\text{cm}) & R^2 = 0.98 \end{array}$$

Ces relations nous semblent plus représentatives de la situation actuelle; de plus l'introduction de balances marines, qui compensent pour les mouvements du

navire limitent de beaucoup les variations. La relation du Gadus a servi au calcul de la capture à l'âge pour les deux premiers trimestres alors que celle du Needler a servi pour les deux derniers trimestres. La relation longueur-poids utilisée pour déduire les effectifs de 1974 à 1989 était celle décrite par Minet (1978). Une comparaison de ces trois relations est illustrée à la figure 4.

Les captures à l'âge pour les années 1988, 1989 et 1990 ont été calculées. Celle de 1988 fut effectuée puisque suite à la publication du bulletin statistique de l'OPANO des différences dans les débarquements ont été notées. Elles étaient de 47,952 t au lieu de 47,624 t (différence de 1%). La capture à l'âge de 1989 a été refaite suite à la découverte d'un individu mal codé dans une clef âge-longueur (30 cm à 30 ans). Ceci n'a pas affecté la calibration puisqu'il s'agit d'individus qui ne font pas partie de l'analyse séquentielle de population.

Puisqu'il y a des changements dans la capture à l'âge de trois années, les captures à l'âge, poids moyens, longueur moyennes et coefficients de variation de la capture à l'âge sont présentés pour la flotte au total, les engins fixes et les engins mobiles pour fins de documentation (tableaux 7 à 19). L'âge modal dans les captures était de 5 ans en 1990. Il semblerait qu'il y aurait un léger gain en croissance pour les individus âgés de 2 à 6 ans en 1990 alors que pour les individus de plus de 6 ans, la croissance est faible (Fig. 5).

#### **2.1.3. TAUX DE CAPTURES**

Les données de prises et d'effort ont été standardisées en utilisant un modèle multiplicatif (Gavaris, 1980) avec le programme "STANDARD.AWS" (Anon, 1986). A cause d'erreurs possibles causées par arrondissement, les valeurs de prises et d'effort de moins de 10 unités ont été éliminées de l'analyse. Les résultats de la régression multiple sont présentés aux tableaux 20 à 22 et à la figure 6.

Les résultats indiquent une certaine stabilité dans les taux de capture des engins mobiles. Peu de confiance est placée sur ces taux de captures pour plusieurs raisons. Les taux de captures pour les différentes flottes n'indiquent pas les mêmes tendances. Nous croyons que les changements technologiques qui sont survenus dans cette flotte au cours des 17 dernières années font qu'une unité d'effort en 1974 n'est pas comparable à une unité d'effort en 1990. Nous croyons pouvoir résoudre ce problème par l'entremise des résultats provenant d'un questionnaire qui a été adressé en 1990 à tous les propriétaires de chalutiers. Enfin, avec les changements dans la distribution de la morue observés à partir des missions de recherche, l'aire où s'effectue cette pêche devient de plus en plus petit et peut avoir un effet sur les taux de captures prédits par la régression multiple.

#### **2.1.4. MISSIONS D'EVALUATION**

La Fig. 7 indique le schéma de stratification utilisé pour les missions. Une nouvelle méthode d'allocation des traits de pêche a été mise en place pour la mission de 1991 (Gagnon, 1991). Celle-ci vise à minimiser les variations entre les strates en utilisant les données observées dans le passé. Le tableau 23 décrit les allocations optimales avec l'inclusion des captures de morues d'années successives. L'allocation retenue est celle qui a été déduite des résultats des missions d'hiver de 1987 à 1990. Les résultats de la mission de 1991 sont

inscrits au tableau 24 et les détails de la procédure sont décrits dans le rapport du sous-comité SSS 90/8. Le nombre de traits effectués lors de la mission de 1991 est plus faible que ceux dans l'allocation suggérée, ceci est dû à des problèmes rencontrés lors de la mission (glaces, tempêtes etc.).

Les estimés d'abondance et de biomasse pour les missions de janvier sont présentés aux tableaux 25 et 26 et une carte de la distribution des captures à la Fig. 8. L'âge modal des captures effectuées lors de la mission de 1991 était de 5 ans, suivi de près par les individus de 6 ans. Les captures d'individus de 4 ans sont aussi très importantes (tableau 27 et 28). Il semble que la croissance ait quelque peu augmenté mais qu'elle demeure à un niveau très faible (Fig. 9). L'estimé de biomasse pour 1991 se situe légèrement sous la moyenne de la série mais à un niveau plus élevé que ceux observés pour la période de 1987 à 1990 (les plus faibles de la série) (Fig. 10). L'estimé d'abondance est particulièrement élevé par rapport à la série temporelle pour la Subdivision 3Pn.

Un changement régulier de distribution de la morue avec la profondeur a été observé depuis les premières missions à bord du Gadus Atlantica. Plus de 70% de la biomasse était observée dans les eaux de moins de 100 brasses en 1978, en 1984 plus de 80% de la biomasse était observée dans les eaux situées entre 100 et 200 brasses, enfin en 1991, 97% de la biomasse se retrouve dans les eaux de plus de 200 brasses (Fig. 11). Des tendances similaires ont été observées pour les stocks de morue de 3Ps (Bishop et. al., 1991), 2J,3KL (Baird et. al., 1990) et 4VSW (Fanning et Mac Eachern, 1990). Aucune explication plausible a été apportée pour expliquer ces changements. Par contre le déclin des pêches par la palangre qui s'effectue à des profondeurs de moins de 100 brasses en hiver dans la Subdivision 3Pn peut être un reflet de ce changement de distribution.

Une nouvelle mission a débuté en août 1990 avec le navire Alfred Needler en utilisant un chalut à crevette. Des traits comparatifs ont été faits avec le Lady Hammond qui effectuait ces missions par le passé. Les résultats indiquent qu'aucun facteur de conversion ne pouvait être appliqué à cause de changements de capturabilité avec la taille (rapport de sous-comité 90/8). Comme c'était le cas avec le Lady Hammond, le Alfred Needler n'échantillonne pas la Subdivision 3Pn ainsi que les eaux de moins de 50 brasses où une portion non négligeable de morues peut être présents durant cette période d'échantillonnage. Les résultats de la mission de 1990 sont présentés aux tableaux 29 et 30 ainsi qu'à la Fig. 12.

Une des recommandations de recherche émise l'an dernier était de recalculer les effectifs à l'âge du Lady Hammond en utilisant les clefs âge-longueurs des années 1987 à 1989 afin de confirmer la force des classes d'âges de 1986 et 1987. Aucun otolithe de morue n'avait été récolté au cours des trois premières missions. Les résultats (Tableau 31) indiquent que les classes d'âges de 1986 et 1987 sont les plus fortes de la série.

#### **2.1.5 PRISES ACCESSOIRES DE MORUE PAR LES CREVETTIERS.**

Il a été fréquemment invoqué, dans des réunions avec les pêcheurs qu'une grande quantité de petites morues étaient capturées par les crevettiers. Une vérification de cette assertion était difficile à faire parce que la couverture de cette flotte par des observateurs était faible. La taille minimale pour la

maille est de 40 mm, mais en fait plusieurs bateaux pêchent avec une maille de 44 mm. Quelques données ont été récoltées en 1990 à bord d'un crevettier qui pêchait dans la zone d'Esquiman. Un total de 4 échantillons de fréquences de longueurs ont été mesurés ( $n=1027$ ). Les résultats indiquent que 75% des captures de morues (en nombre) étaient sous la taille légale de 41 cm (Fig. 13). Ces poissons constituent 47% des captures de morue en poids. Nous croyons qu'avec la couverture plus extensive de cette flotte en 1991 qu'un calcul du nombre de retraits à l'âge pourra être fait.

## 2.2. ANALYSE SEQUENTIELLE DE POPULATION

### 2.2.1. CALIBRATION AVEC LE CADRE ADAPTATIF

L'analyse séquentielle de population a été calibrée en utilisant le cadre adaptatif. Voici le résumé de la formulation utilisée pour ajuster l'analyse séquentielle de population (Pope, 1972) à l'aide du cadre adaptatif en se basant sur les données des missions d'évaluation d'hiver:

#### Paramètres:

- . Estimé des effectifs  $N_{i,1990}$  ( $i=4, \dots, 14$ )
- . Pentas des régressions entre les effectifs générés par l'ASP et les effectifs estimés par la mission de janvier  $q_i$ , ( $i=5, \dots, 15$ ).

#### Données introduites:

- . Capture à l'âge  $i, t$ , ( $i=4, \dots, 15$ ;  $t=1974, \dots, 1990$ )
- . Effectifs à l'âge EFFJAN  $i+1, t+1$ , ( $i=5, \dots, 15$ ;  $t=1978, \dots, 1991$ ) des missions de janvier.

#### Structure imposée:

- . Erreur sur la capture à l'âge considérée négligeable.
- . Mortalité naturelle,  $M=0.2$ .
- . Modèle n'inclue pas d'ordonnée à l'origine.
- . Mortalité par pêche pour les âges pleinement recrutés est la moyenne pondérée (par les effectifs) des mortalités des individus âgés de 8 à 10 ans  $\times 0.4$ .
- . Les effectifs estimés par la mission de janvier sont comparés aux effectifs générés par l'ASP.

#### Fonction objective:

- . Modèle logarithmique.
- . Minimise  $\sum_{it} (\ln(\text{EFFJAN}_{it}) - \ln(q_i N_{it}))^2$
- . Nombre de paramètres 22.
- . Nombre d'observations 143.

### 2.2.3. RESULTATS

Pour la première fois l'analyse séquentielle de population a été basé sur les indices d'abondance provenant des missions. Un examen des différentes séries de

taux de captures indiquait des tendances divergentes. Les résultats d'un sondage effectué en 1990 saura peut être rétablir l'utilité de cet indice pour fins de calibration. L'utilisation des indices provenant des missions résulte en une vue plus pessimiste de la ressource (Fréchet et Schwab, 1990). Par contre elle est plus conséquente avec le déclin des captures des engins fixes.

La calibration de l'analyse séquentielle de population à partir des estimés d'abondance de la mission d'hiver est présenté aux tableaux 32 à 37. L'estimé de la classes d'âge de 1986 à 4 ans en 1990 est de 178 millions d'individus. Un tel recrutement n'a jamais été observé depuis 1974. Les indices provenant de la pêche commerciale et des missions supportent l'idée que cette classe d'âge est abondante mais il est difficile pour l'instant de l'estimer adéquatement. Elle a donc été fixée à la moyenne géométrique du recrutement observé entre 1974 à 1989 (90 millions). Le coefficient de variation pour cet estimé est de 66%. La biomasse pour l'âge 4 en 1990 du tableau 33 est celle qui serait associée à la moyenne géométrique de 90 millions d'individus.

L'ensemble des estimés (effectifs du début d'année en 1990 et les pentes reliant l'indice d'abondance et les effectifs pour chaque âge) sont significatifs. Aucune valeur particulièrement élevée est observée dans la matrice des corrélations partielles.

### **3. PERSPECTIVES**

#### **3.1. PROJECTIONS**

Des projections des prises et des effectifs pour 1992 ont été effectuées à partir des résultats de l'analyse séquentielle de population du tableau 32. Les classes d'âges de 1986 et 1987 à 4 ans en 1990 et 1991 ont été établies à la moyenne géométrique des effectifs de 4 ans entre 1974 et 1989 (90 millions d'individus). Les poids moyens observés entre 1988 et 1990 ont été utilisés pour fins de projections. Le recrutement partiel est basé sur les mortalités par pêche des années 1988 à 1990. Ces données sont résumées ci-dessous:

| Age | Effectifs du début<br>d'année en 1991 ('000) | Poids moyens<br>(1988-1990) | Recrutement<br>partiel |
|-----|----------------------------------------------|-----------------------------|------------------------|
| 4   | 90000                                        | 0.721                       | 0.06                   |
| 5   | 70772                                        | 0.915                       | 0.30                   |
| 6   | 51065                                        | 1.168                       | 0.67                   |
| 7   | 11474                                        | 1.436                       | 0.85                   |
| 8   | 9739                                         | 1.711                       | 1.00                   |
| 9   | 6248                                         | 2.049                       | 1.00                   |
| 10  | 1490                                         | 2.406                       | 1.00                   |
| 11  | 2468                                         | 2.789                       | 0.88                   |
| 12  | 184                                          | 3.354                       | 0.76                   |
| 13  | 202                                          | 3.987                       | 0.64                   |
| 14  | 25                                           | 3.974                       | 0.52                   |
| 15  | 12                                           | 5.379                       | 0.40                   |

En assumant que le TPA de 35,000 t pour 1991 sera atteint ceci résulterait en une mortalité par pêche de 0.372 en 1991. Ainsi la capture au niveau  $F_{0.1}$  en 1992 serait de 24,000 t (Tableau 38). D'autres alternatives sont décrites:

| Option                                      | F     |       |       | Biomasse 4+<br>début d'année ('000t) |      |      |      | Captures<br>('000t) |      |      |
|---------------------------------------------|-------|-------|-------|--------------------------------------|------|------|------|---------------------|------|------|
|                                             | 1990  | 1991  | 1992  | 1990                                 | 1991 | 1992 | 1993 | 1990                | 1991 | 1992 |
| 35,000t<br>en 1991<br>$F_{0.1}$ en<br>1992  | 0.485 | 0.372 | 0.2   | 197                                  | 221  | 249  | 287  | 40                  | 35   | 24   |
| 35,000 t<br>en 1991<br>règle 50%<br>en 1992 | 0.485 | 0.372 | 0.286 | 197                                  | 221  | 248  | 278  | 40                  | 35   | 33   |
| 35,000 t<br>en 1991 et<br>1992              | 0.485 | 0.372 | 0.302 | 197                                  | 221  | 248  | 276  | 40                  | 35   | 35   |

Soixante-dix pour-cent de la capture projetée en 1992 provient des classes d'âges de 1985 à 1987. Les coefficients de variation des effectifs de 1985 et 1986 sont de 45% et 66% respectivement. Ces classes d'âges ont donc été fixées au recrutement moyen de 90,000 individus même si certaines informations suggèrent que les classes d'âges de 1986 et 1987 sont abondantes. Le rétablissement de ce stock pourrait être plus rapide si ces classes d'âges sont effectivement abondantes.

#### 4. CONCLUSION

Les indications des missions et de l'analyse séquentielle de population sont que la biomasse de ce stock est très basse. Par contre, les classes d'âges de 1986 et 1987 semblent abondantes. Cette perception est partagée avec plusieurs intervenants dans la pêcherie. Le TPA de 1991 (35,000 t) et les mesures de gestion pour protéger les classes d'âges partiellement recrutées sont des facteurs positifs qui devraient aider au rétablissement de ce stock. Les projections indiquent que malgré une capture de 35,000 t au cours des prochaines années, la biomasse du stock devrait augmenter.

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Tableau 1: Morue 3Pn, 4RS. Historique des statistiques de débarquements (t) mensuels pour la période 1961-1990 (Inc.:inconnu).

| ANNEE  | Jan.   | Fév.   | Mar.   | Avr.   | Mai    | Juin   | Juil.  | Août   | Sep.  | Oct.  | Nov.  | Déc.  | Inc.  | TOTAL   | TPA     |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|---------|---------|
| 1961 1 | 364    | 12,375 | 44,543 | 8,745  | 1,473  | 5,761  | 14,341 | 6,752  | 2,490 | 1,408 | 1,305 | 453   |       | 100,010 |         |
| 1962 1 | 316    | 12,903 | 24,720 | 4,656  | 1,565  | 6,951  | 16,717 | 11,738 | 3,513 | 1,535 | 1,016 | 291   |       | 85,921  |         |
| 1963 1 | 649    | 7,661  | 13,336 | 2,478  | 1,623  | 17,419 | 14,870 | 10,698 | 3,104 | 1,916 | 692   | 300   |       | 74,746  |         |
| 1964   | 1,104  | 24,423 | 15,761 | 6,058  | 3,106  | 10,350 | 12,527 | 5,853  | 2,153 | 1,385 | 863   | 651   |       | 84,234  |         |
| 1965   | 792    | 12,506 | 21,171 | 3,698  | 2,216  | 5,267  | 10,422 | 5,945  | 3,636 | 1,359 | 927   | 990   |       | 68,929  |         |
| 1966   | 1,965  | 22,817 | 8,929  | 2,516  | 1,638  | 8,371  | 7,482  | 4,744  | 2,490 | 1,146 | 1,779 | 1,208 |       | 65,085  |         |
| 1967   | 7,872  | 7,028  | 14,792 | 8,447  | 2,017  | 7,525  | 12,664 | 5,232  | 7,154 | 3,315 | 1,356 | 1,909 | 1     | 79,312  |         |
| 1968   | 725    | 7,980  | 22,799 | 9,061  | 3,087  | 10,717 | 17,216 | 9,400  | 4,914 | 1,781 | 1,172 | 819   |       | 89,671  |         |
| 1969   | 875    | 4,654  | 9,675  | 4,220  | 5,192  | 10,958 | 12,103 | 8,639  | 7,866 | 3,557 | 2,035 | 1,366 |       | 71,140  |         |
| 1970   | 1,637  | 25,487 | 18,115 | 27,995 | 4,803  | 6,020  | 8,974  | 3,897  | 2,130 | 3,170 | 1,936 | 1,301 |       | 105,465 |         |
| 1971   | 845    | 44,590 | 7,580  | 5,250  | 2,338  | 5,839  | 8,420  | 3,039  | 2,374 | 1,616 | 1,004 | 915   |       | 83,810  |         |
| 1972   | 1,494  | 14,961 | 5,337  | 7,400  | 7,334  | 4,594  | 6,818  | 3,296  | 2,365 | 1,406 | 994   | 212   | 2,026 | 58,237  |         |
| 1973   | 16,472 | 10,556 | 7,586  | 4,826  | 3,235  | 5,860  | 5,125  | 4,145  | 2,365 | 1,459 | 1,016 | 567   | 2,593 | 65,805  |         |
| 1974   | 12,995 | 10,753 | 5,959  | 5,665  | 6,231  | 5,021  | 6,235  | 5,396  | 2,214 | 1,331 | 1,009 | 479   | 3,148 | 66,436  |         |
| 1975   | 8,232  | 19,486 | 2,702  | 2,616  | 5,316  | 5,122  | 5,042  | 4,488  | 2,767 | 1,267 | 819   | 704   | 1,672 | 60,233  |         |
| 1976   | 15,637 | 15,204 | 3,610  | 3,437  | 7,071  | 6,930  | 6,978  | 4,310  | 3,348 | 2,286 | 1,537 | 578   | 6,055 | 76,981  |         |
| 1977   | 11,143 | 8,603  | 3,790  | 11,312 | 10,057 | 7,368  | 8,133  | 5,780  | 3,361 | 1,751 | 1,814 | 454   |       | 73,566  | 55,000  |
| 1978   | 20,754 | 6,307  | 5,161  | 3,156  | 6,717  | 9,796  | 13,255 | 7,000  | 2,836 | 1,979 | 1,309 | 236   |       | 78,506  | 55,000  |
| 1979   | 15,543 | 4,273  | 6,475  | 6,647  | 8,517  | 12,890 | 12,085 | 8,660  | 2,971 | 2,449 | 1,816 | 451   |       | 82,777  | 75,000  |
| 1980   | 5,280  | 8,965  | 9,925  | 8,087  | 7,147  | 14,096 | 23,158 | 10,719 | 5,687 | 2,773 | 1,311 | 431   |       | 97,579  | 75,000  |
| 1981   | 9,156  | 15,368 | 3,170  | 3,763  | 12,835 | 17,257 | 16,344 | 10,343 | 5,676 | 2,550 | 1,172 | 277   |       | 97,911  | 75,000  |
| 1982   | 2,289  | 11,671 | 10,122 | 5,544  | 12,723 | 16,826 | 22,492 | 9,136  | 8,412 | 4,463 | 1,229 | 32    |       | 104,939 | 93,300  |
| 1983   | 4,152  | 10,213 | 11,335 | 6,251  | 21,049 | 18,341 | 16,228 | 8,173  | 5,698 | 3,956 | 530   | 154   |       | 106,080 | 100,000 |
| 1984   | 5,002  | 11,079 | 9,494  | 4,260  | 15,205 | 13,349 | 22,300 | 10,962 | 5,238 | 4,644 | 1,113 | 997   |       | 103,643 | 100,000 |
| 1985   | 2,436  | 16,749 | 7,306  | 3,516  | 7,139  | 12,693 | 13,725 | 11,026 | 7,713 | 3,038 | 962   | 1,986 |       | 88,289  | 100,000 |
| 1986   | 2,508  | 18,550 | 10,011 | 4,227  | 11,871 | 7,903  | 12,418 | 5,763  | 4,181 | 2,737 | 803   | 974   | 870   | 82,816  | 92,100  |
| 1987   | 8,657  | 7,701  | 4,938  | 3,294  | 6,627  | 8,323  | 9,222  | 7,501  | 5,293 | 2,871 | 1,027 | 1,093 |       | 66,547  | 80,300  |
| 1988   | 1,440  | 2,786  | 4,313  | 2,671  | 9,955  | 5,072  | 7,848  | 6,056  | 3,243 | 1,782 | 1,178 | 1,608 |       | 47,952  | 73,900  |
| 1989 2 | 6,212  | 7,434  | 2,038  | 892    | 7,500  | 6,594  | 6,261  | 4,730  | 1,936 | 2,136 | 738   | 199   |       | 46,668  | 76,540  |
| 1990 2 | 5,722  | 2,849  | 1,222  | 383    | 7,306  | 8,424  | 4,614  | 2,996  | 1,990 | 1,504 | 2,068 | 481   |       | 39,558  | 58,000  |
| 1991   |        |        |        |        |        |        |        |        |       |       |       |       |       |         | 35,000  |

1 Données incomplètes. Certaines statistiques pour la division 3P seulement.

2 Statistiques préliminaires.

Tableau 2: Morue 3Pn, 4RS: Historique des statistiques de débarquement par pays dans les divisions  
a) 3Pn, b) 4R, c) 4S, d) combinés. [CAN-(T)=Terre-Neuve, CAN-(N)=Maritimes, CAN-(Q)=Québec,  
FR(M)=France métropolitaine, FR(SPM)=Saint-Pierre et Miquelon, PORT.=Portugal.]

| e)     | 3Pn   | Pays    |         |         |        |          |         |       |        |        |
|--------|-------|---------|---------|---------|--------|----------|---------|-------|--------|--------|
|        | Année | CAN-(T) | CAN-(N) | CAN-(Q) | FR-(N) | FR-(SPN) | ESPAGNE | PORT. | AUTRES | TOTAL  |
| 1954 1 |       |         |         |         |        |          |         |       |        | 0      |
| 1955 1 |       |         |         |         |        |          |         |       |        | 0      |
| 1956 1 |       |         |         |         |        |          |         |       |        | 0      |
| 1957 1 |       |         |         |         |        |          |         |       |        | 0      |
| 1958 1 |       |         |         |         |        |          |         |       |        | 0      |
| 1959 1 |       | 4,901   |         |         | 651    |          | 59      | 1,162 |        | 6,773  |
| 1960 1 |       | 5,181   |         | 2       | 3,694  |          | 1,428   | 976   |        | 11,281 |
| 1961 1 |       | 5,728   |         | 42      | 8,515  |          | 15,551  | 8,282 | 100    | 38,218 |
| 1962 1 |       | 8,022   |         | 3       | 3,807  |          | 9,310   | 3,506 |        | 24,648 |
| 1963 1 |       | 8,076   |         | 65      | 2,148  |          | 5,764   | 4,139 | 12     | 20,204 |
| 1964   |       | 8,502   |         |         | 2,015  |          | 1,663   | 2,116 | 836    | 15,132 |
| 1965   |       | 8,344   |         | 2       | 5,206  | 277      | 1,466   | 1,009 | 431    | 16,735 |
| 1966   |       | 6,876   |         | 2       | 3,470  | 450      | 1,675   | 559   | 592    | 13,624 |
| 1967   |       | 4,546   |         |         | 6,622  |          | 2,512   | 1,273 | 5,475  | 20,428 |
| 1968   |       | 5,640   |         |         | 3,207  | 13       | 2,223   | 680   | 146    | 11,909 |
| 1969   |       | 4,763   |         |         | 47     | 5        | 102     |       |        | 4,917  |
| 1970   |       | 4,930   |         |         | 90     | 1        | 184     |       |        | 5,205  |
| 1971   |       | 6,661   |         |         |        | 26       | 167     | 990   |        | 7,844  |
| 1972   |       | 6,521   |         |         | 2,687  | 3        | 269     | 877   |        | 10,357 |
| 1973   |       | 5,885   |         |         | 1,008  |          | 515     | 3,841 | 51     | 11,300 |
| 1974   |       | 2,941   |         | 8       | 3,913  | 557      | 1,507   | 4,149 | 938    | 14,013 |
| 1975   |       | 2,758   |         | 18      | 2,612  | 295      |         | 538   | 12     | 6,233  |
| 1976   |       | 6,041   |         | 56      | 1,452  | 280      |         |       | 636    | 8,465  |
| 1977   |       | 7,109   |         | 247     | 167    | 42       |         |       |        | 7,565  |
| 1978   |       | 6,271   |         | 34      | 497    |          |         |       |        | 6,802  |
| 1979   |       | 10,208  | 151     |         | 557    |          |         |       |        | 10,916 |
| 1980   |       | 8,150   | 174     |         | 271    | 204      |         |       |        | 8,799  |
| 1981   |       | 11,191  | 60      | 3       | 2,869  | 1,006    |         |       |        | 15,129 |
| 1982   |       | 14,703  | 152     |         | 341    | 289      |         |       |        | 15,485 |
| 1983   |       | 11,959  | 104     |         |        | 4,044    |         |       |        | 16,107 |
| 1984   |       | 15,631  | 74      |         |        | 236      |         |       |        | 15,941 |
| 1985   |       | 13,157  | 668     |         | 624    |          |         |       |        | 14,449 |
| 1986   |       | 16,759  | 197     | 1       | 3,425  | 1,829    |         |       |        | 22,211 |
| 1987   |       | 15,526  | 1,305   |         |        | 1,526    |         |       |        | 18,357 |
| 1988   |       | 7,809   | 1,097   | 152     |        |          |         |       |        | 9,058  |
| 1989 2 |       | 6,649   | 471     | 2       |        |          |         |       |        | 7,122  |
| 1990 2 |       | 5,423   | 327     | 3       |        | 750      |         |       |        | 6,503  |

| b) | 4R     | Pays  |         |         |         |        |          |         |        |        |        |
|----|--------|-------|---------|---------|---------|--------|----------|---------|--------|--------|--------|
|    |        | Année | CAN-(T) | CAN-(M) | CAN-(Q) | FR-(M) | FR-(SPM) | ESPAGNE | PORT.  | AUTRES | TOTAL  |
|    | 1954 1 |       |         |         | 16,571  | 14,050 |          |         | 1,598  | 7      | 32,226 |
|    | 1955 1 |       | 15,631  |         | 252     | 20,642 |          | 46      | 9,628  | 35     | 46,234 |
|    | 1956 1 |       | 15,635  |         | 4,076   | 10,568 |          | 14      | 8,737  | 32     | 39,062 |
|    | 1957 1 |       | 25,133  |         | 1,974   | 13,512 |          |         | 7,252  | 1      | 47,872 |
|    | 1958 1 |       | 18,832  |         | 7,139   | 30,037 |          | 314     | 15,334 |        | 71,656 |
|    | 1959 1 |       | 26,099  |         | 7,174   | 7,099  |          | 392     | 166    |        | 40,930 |
|    | 1960 1 |       | 17,302  |         | 5,937   | 21,970 | 4        | 7,331   | 13,418 | 604    | 66,566 |
|    | 1961 1 |       | 15,737  |         | 2,904   | 18,706 |          | 2,374   | 7,626  |        | 47,347 |
|    | 1962 1 |       | 21,984  |         | 3,482   | 7,043  |          | 5,451   | 10,142 |        | 48,102 |
|    | 1963 1 |       | 26,799  |         | 2,984   | 1,628  |          | 3,019   | 7,936  |        | 42,366 |
|    | 1964   |       | 20,162  |         | 3,197   | 16,264 | 38       | 6,806   | 12,492 | 1      | 58,960 |
|    | 1965   |       | 20,037  |         | 1,715   | 10,084 | 70       | 219     | 11,714 |        | 43,839 |
|    | 1966   |       | 21,202  |         | 1,813   | 9,735  |          | 1,097   | 10,361 |        | 44,208 |
|    | 1967   |       | 22,398  |         | 3,511   | 10,460 | 1        | 3,806   | 6,180  | 3,585  | 49,941 |
|    | 1968   |       | 32,810  |         | 4,415   | 22,963 | 169      | 2,779   | 6,905  |        | 70,041 |
|    | 1969   |       | 27,342  |         | 8,784   | 16,318 | 165      | 2,693   | 1,330  |        | 56,632 |
|    | 1970   |       | 23,337  |         | 11,337  | 30,303 | 120      | 8,053   | 17,993 | 3      | 91,146 |
|    | 1971   |       | 17,095  |         | 2,239   | 24,363 | 68       | 5,451   | 17,144 | 4      | 66,362 |
|    | 1972   |       | 11,664  |         | 3,348   | 10,608 | 3        | 1,357   | 8,144  | 2,459  | 37,583 |
|    | 1973   |       | 13,222  |         | 1,086   | 16,525 | 109      | 502     | 11,232 | 418    | 43,094 |
|    | 1974   |       | 16,348  |         | 5,538   | 11,679 | 395      |         | 5,302  | 184    | 39,446 |
|    | 1975   |       | 14,897  |         | 2,727   | 13,206 | 625      |         | 9,879  | 235    | 41,569 |
|    | 1976   |       | 20,004  |         | 6,648   | 15,392 | 918      |         | 9,034  | 4,034  | 56,030 |
|    | 1977   |       | 9,907   |         | 25,568  | 15,815 | 2,097    |         |        |        | 53,387 |
|    | 1978   |       | 35,376  |         | 6,290   | 13,252 | 2,022    |         |        |        | 56,940 |
|    | 1979   |       | 37,096  | 4,423   | 1,038   | 11,040 | 2,171    |         |        |        | 55,768 |
|    | 1980   |       | 52,358  | 2,822   | 582     | 8,275  | 646      |         |        |        | 64,683 |
|    | 1981   |       | 49,479  | 2,291   | 775     | 7,466  | 1,167    |         |        |        | 61,178 |
|    | 1982   |       | 51,248  | 2,024   | 882     | 9,875  | 1,458    |         |        |        | 65,487 |
|    | 1983   |       | 59,842  | 3,271   | 2       |        | 6,630    |         |        |        | 65,745 |
|    | 1984   |       | 50,152  | 1,660   | 94      |        | 11,387   |         |        |        | 63,293 |
|    | 1985   |       | 43,751  | 2,125   | 7       | 8,561  |          |         |        |        | 54,444 |
|    | 1986   |       | 34,152  | 1,354   | 443     | 7,002  | 866      |         |        |        | 43,817 |
|    | 1987   |       | 32,075  | 1,296   | 381     |        | 9        |         |        |        | 33,761 |
|    | 1988   |       | 27,278  | 1,809   | 586     |        |          |         |        |        | 29,673 |
|    | 1989 2 |       | 25,647  | 841     | 502     | 2,594  |          |         |        |        | 29,584 |
|    | 1990 2 |       | 22,000  | 1,305   | 628     |        | 1,728    |         |        |        | 25,661 |

Tableau 2: (suite).

| c)   | Année | Pays    |         |         |        |          |         |              | TOTAL  |
|------|-------|---------|---------|---------|--------|----------|---------|--------------|--------|
|      |       | CAN (T) | CAN (M) | CAN (Q) | FR (M) | FR (SPM) | ESPAGNE | PORT. AUTRES |        |
| 1954 | 1     |         |         | 2,928   |        |          |         |              | 2,928  |
| 1955 | 1     | 1       |         | 4,487   | 30     |          |         | 717          | 5,235  |
| 1956 | 1     | 11      |         | 2,318   | 319    |          |         |              | 2,648  |
| 1957 | 1     | 23      |         | 5,417   | 254    |          |         | 119          | 5,813  |
| 1958 | 1     | 157     |         | 7,597   | 38     |          |         | 20           | 7,812  |
| 1959 | 1     | 7       |         | 10,224  |        |          | 126     |              | 10,357 |
| 1960 | 1     |         |         | 16,057  | 18     |          | 428     |              | 16,503 |
| 1961 | 1     | 1       |         | 13,814  | 495    |          | 74      | 61           | 14,445 |
| 1962 | 1     |         |         | 13,171  |        |          |         |              | 13,171 |
| 1963 | 1     | 22      |         | 11,794  |        |          |         | 360          | 12,176 |
| 1964 | 1     | 45      |         | 10,077  | 18     |          |         | 2            | 10,142 |
| 1965 | 1     | 108     |         | 7,241   | 57     |          |         | 1,006        | 8,355  |
| 1966 | 1     | 88      |         | 6,777   | 57     |          |         | 331          | 7,253  |
| 1967 | 1     | 50      |         | 6,859   | 22     |          |         | 920          | 8,943  |
| 1968 | 1     | 146     |         | 7,558   |        | 17       |         |              | 7,721  |
| 1969 | 1     | 307     |         | 9,241   |        | 1        | 42      |              | 9,591  |
| 1970 | 1     | 443     |         | 8,175   |        |          | 198     | 298          | 9,114  |
| 1971 | 1     | 182     |         | 9,161   |        | 1        | 259     |              | 9,604  |
| 1972 | 1     | 189     |         | 9,130   | 27     |          | 338     | 1            | 10,297 |
| 1973 | 1     | 434     |         | 7,942   |        |          |         | 613          | 10,297 |
| 1974 | 1     | 366     |         | 8,970   | 86     | 4        |         | 911          | 11,411 |
| 1975 | 1     | 381     |         | 7,808   | 401    | 16       |         | 1,674        | 12,977 |
| 1976 | 1     | 726     |         | 9,231   | 22     | 23       |         | 2,400        | 12,431 |
| 1977 | 1     | 171     |         | 12,426  | 10     | 7        |         | 1,099        | 12,486 |
| 1978 | 1     | 229     |         | 14,535  |        |          |         |              | 12,614 |
| 1979 | 1     | 47      | 851     | 15,194  |        | 1        |         | 14,764       | 16,093 |
| 1980 | 1     | 1,437   | 1,417   | 21,243  |        |          |         | 24,097       | 24,097 |
| 1981 | 1     | 336     | 229     | 21,038  |        |          |         | 21,603       | 23,967 |
| 1982 | 1     | 141     | 1,386   | 22,390  | 50     |          |         | 24,228       | 24,228 |
| 1983 | 1     | 505     | 1,328   | 22,385  |        | 10       |         | 24,409       | 19,306 |
| 1984 | 1     | 236     | 2,409   | 21,764  |        |          |         | 16,788       | 16,788 |
| 1985 | 1     | 69      | 861     | 18,466  |        |          |         | 9,221        | 9,963  |
| 1986 | 1     | 132     | 1,808   | 14,848  |        |          |         | 7,394        | 7,394  |
| 1987 | 1     | 155     | 1,135   | 13,139  |        |          |         |              |        |
| 1988 | 1     | 168     | 495     | 8,558   |        |          |         |              |        |
| 1989 | 2     | 398     | 19      | 9,547   |        |          |         |              |        |
| 1990 | 2     | 945     | 57      | 6,392   |        |          |         |              |        |

| d)   | Année | Pays    |         |         |        |          |         |        |        |         |         | TOTAL |
|------|-------|---------|---------|---------|--------|----------|---------|--------|--------|---------|---------|-------|
|      |       | CAN (T) | CAN (M) | CAN (Q) | FR (M) | FR (SPM) | ESPAGNE | PORT.  | AUTRES |         |         |       |
| 1954 | 1     |         |         | 19,499  | 14,050 |          |         | 1,598  | 7      |         | 35,154  |       |
| 1955 | 1     | 15,632  |         | 4,739   | 20,672 |          |         | 10,345 | 35     | 51,469  |         |       |
| 1956 | 1     | 15,646  |         | 6,394   | 10,887 |          |         | 8,737  | 32     | 41,710  |         |       |
| 1957 | 1     | 25,156  |         | 7,391   | 13,766 |          |         | 7,371  | 1      | 53,685  |         |       |
| 1958 | 1     | 18,989  |         | 14,736  | 30,075 |          |         | 15,354 |        | 79,468  |         |       |
| 1959 | 1     | 31,007  |         | 17,398  | 7,750  |          |         | 577    | 1,328  | 58,060  |         |       |
| 1960 | 1     | 22,483  |         | 21,996  | 25,682 | 4        |         | 9,187  | 14,394 | 604     | 94,350  |       |
| 1961 | 1     | 21,466  |         | 16,760  | 27,716 |          |         | 17,999 | 15,669 | 100     | 100,010 |       |
| 1962 | 1     | 30,006  |         | 16,656  | 10,850 |          |         | 14,761 | 13,648 | 85,921  |         |       |
| 1963 | 1     | 34,897  |         | 13,843  | 3,776  |          |         | 8,783  | 12,435 | 12      | 74,746  |       |
| 1964 | 1     | 28,709  |         | 13,274  | 18,297 | 38       |         | 8,469  | 14,610 | 837     | 84,234  |       |
| 1965 | 1     | 28,489  |         | 8,958   | 15,290 | 347      |         | 1,685  | 13,729 | 431     | 68,929  |       |
| 1966 | 1     | 28,166  |         | 8,592   | 13,262 | 450      |         | 2,772  | 11,251 | 592     | 65,085  |       |
| 1967 | 1     | 26,994  |         | 10,370  | 17,104 | 1        |         | 6,318  | 8,545  | 9,980   | 79,312  |       |
| 1968 | 1     | 32,412  |         | 18,025  | 16,365 | 171      |         | 2,837  | 1,330  | 146     | 89,671  |       |
| 1969 | 1     | 28,710  |         | 19,512  | 30,393 | 121      |         | 8,435  | 18,291 | 3       | 105,465 |       |
| 1970 | 1     | 23,938  |         | 11,398  | 24,363 | 95       |         | 5,877  | 18,134 | 5       | 83,810  |       |
| 1971 | 1     | 18,374  |         | 12,478  | 13,322 | 6        |         | 1,964  | 9,634  | 2,459   | 58,237  |       |
| 1972 | 1     | 19,541  |         | 9,028   | 17,533 | 109      |         | 1,017  | 15,984 | 2,593   | 65,805  |       |
| 1973 | 1     | 19,655  |         | 14,516  | 15,678 | 956      |         | 1,507  | 10,925 | 3,199   | 66,436  |       |
| 1974 | 1     | 18,036  |         | 10,553  | 16,219 | 936      |         | 12,817 | 1,672  | 60,233  |         |       |
| 1975 | 1     | 26,771  |         | 15,935  | 16,866 | 1,221    |         | 10,133 | 6,055  | 76,981  |         |       |
| 1976 | 1     | 17,187  |         | 38,241  | 15,992 | 2,146    |         |        |        | 73,566  |         |       |
| 1977 | 1     | 41,876  |         | 20,859  | 13,749 | 2,022    |         |        |        | 78,506  |         |       |
| 1978 | 1     | 47,351  |         | 5,425   | 16,232 | 11,597   |         | 2,172  |        | 82,777  |         |       |
| 1979 | 1     | 61,945  |         | 2,580   | 21,816 | 10,335   |         | 2,173  |        | 97,910  |         |       |
| 1980 | 1     | 66,092  |         | 3,562   | 23,272 | 10,266   |         | 1,747  |        | 104,939 |         |       |
| 1981 | 1     | 68,306  |         | 4,143   | 21,858 | 11,623   |         |        |        | 106,080 |         |       |
| 1982 | 1     | 56,977  |         | 3,654   | 18,473 | 9,185    |         |        |        | 88,289  |         |       |
| 1983 | 1     | 51,043  |         | 3,359   | 15,292 | 10,427   |         | 2,695  |        | 82,816  |         |       |
| 1984 | 1     | 47,756  |         | 3,736   | 13,520 | 1,535    |         |        |        | 66,547  |         |       |
| 1985 | 1     | 35,255  |         | 3,401   | 9,296  |          |         |        |        | 47,952  |         |       |
| 1986 | 1     | 32,693  |         | 1,331   | 10,050 | 2,594    |         |        |        | 46,668  |         |       |
| 1987 | 1     | 28,368  |         | 1,689   | 7,023  | 2,478    |         |        |        | 39,558  |         |       |

1 Données incomplètes. Certaines statistiques pour le division 3p seulement.

2 Statistiques préliminaires.

12  
Tableau 3: Morue 3pn, 485: Débarquements par divisions et catégorie d'engin (DV =doris; T =trappes; CM =fillets  
maille; HL =fillets à main; LL =palanques; JM =divers côtier; DS =selles doublées; PT =chaluts; boeufs; OT =chaluts  
NK =incrimés)

| a) 3pn Engins | DV  | T | CM | HL     | LL | JM | DS | PT | OT | TOTAL<br>FIXE | TOTAL<br>MOBILE | TOTAL |
|---------------|-----|---|----|--------|----|----|----|----|----|---------------|-----------------|-------|
| Années        |     |   |    |        |    |    |    |    |    |               |                 |       |
| 1954 1        |     |   |    |        |    |    |    |    |    | 0             | 0               | 0     |
| 1955 1        |     |   |    |        |    |    |    |    |    | 0             | 0               | 0     |
| 1956 1        |     |   |    |        |    |    |    |    |    | 0             | 0               | 0     |
| 1957 1        |     |   |    |        |    |    |    |    |    | 0             | 0               | 0     |
| 1958 1        |     |   |    |        |    |    |    |    |    | 0             | 0               | 0     |
| 1959 1        |     |   |    |        |    |    |    |    |    | 0             | 0               | 0     |
| 1960 1        |     |   |    | 1,016  |    |    |    |    |    | 0             | 0               | 0     |
| 1961 1        |     |   |    | 1,246  |    |    |    |    |    | 0             | 0               | 0     |
| 1962 1        |     |   |    | 2,083  |    |    |    |    |    | 0             | 0               | 0     |
| 1963 1        | 53  |   |    | 3,645  |    |    |    |    |    | 0             | 0               | 0     |
| 1964 1        | 558 |   |    | 2,988  |    |    |    |    |    | 0             | 0               | 0     |
| 1965 1        | 113 |   |    | 3,062  |    |    |    |    |    | 0             | 0               | 0     |
| 1966 1        | 16  |   |    | 3,416  |    |    |    |    |    | 0             | 0               | 0     |
| 1967 1        |     |   |    | 2,702  |    |    |    |    |    | 0             | 0               | 0     |
| 1968 1        |     |   |    | 4,815  |    |    |    |    |    | 0             | 0               | 0     |
| 1969 1        |     |   |    | 2,499  |    |    |    |    |    | 0             | 0               | 0     |
| 1970 1        | 33  |   |    | 3,463  |    |    |    |    |    | 0             | 0               | 0     |
| 1971 1        |     |   |    | 657    |    |    |    |    |    | 0             | 0               | 0     |
| 1972 1        |     |   |    | 85     |    |    |    |    |    | 0             | 0               | 0     |
| 1973 1        |     |   |    | 5,031  |    |    |    |    |    | 0             | 0               | 0     |
| 1974 1        |     |   |    | 39     |    |    |    |    |    | 0             | 0               | 0     |
| 1975 1        |     |   |    | 3,630  |    |    |    |    |    | 0             | 0               | 0     |
| 1976 1        |     |   |    | 3,378  |    |    |    |    |    | 0             | 0               | 0     |
| 1977 1        |     |   |    | 5,574  |    |    |    |    |    | 0             | 0               | 0     |
| 1978 1        |     |   |    | 217    |    |    |    |    |    | 0             | 0               | 0     |
| 1979 1        |     |   |    | 364    |    |    |    |    |    | 0             | 0               | 0     |
| 1980 1        |     |   |    | 181    |    |    |    |    |    | 0             | 0               | 0     |
| 1981 1        |     |   |    | 98     |    |    |    |    |    | 0             | 0               | 0     |
| 1982 1        |     |   |    | 5,593  |    |    |    |    |    | 0             | 0               | 0     |
| 1983 1        |     |   |    | 20     |    |    |    |    |    | 0             | 0               | 0     |
| 1984 1        |     |   |    | 5,431  |    |    |    |    |    | 0             | 0               | 0     |
| 1985 1        |     |   |    | 97     |    |    |    |    |    | 0             | 0               | 0     |
| 1986 1        |     |   |    | 52     |    |    |    |    |    | 0             | 0               | 0     |
| 1987 1        |     |   |    | 2,460  |    |    |    |    |    | 0             | 0               | 0     |
| 1988 1        |     |   |    | 12     |    |    |    |    |    | 0             | 0               | 0     |
| 1989 1        |     |   |    | 61     |    |    |    |    |    | 0             | 0               | 0     |
| 1990 1        |     |   |    | 152    |    |    |    |    |    | 0             | 0               | 0     |
| 1991 1        |     |   |    | 2,418  |    |    |    |    |    | 0             | 0               | 0     |
| 1992 1        |     |   |    | 4,467  |    |    |    |    |    | 0             | 0               | 0     |
| 1993 1        |     |   |    | 225    |    |    |    |    |    | 0             | 0               | 0     |
| 1994 1        |     |   |    | 163    |    |    |    |    |    | 0             | 0               | 0     |
| 1995 1        |     |   |    | 73     |    |    |    |    |    | 0             | 0               | 0     |
| 1996 1        |     |   |    | 163    |    |    |    |    |    | 0             | 0               | 0     |
| 1997 1        |     |   |    | 5,679  |    |    |    |    |    | 0             | 0               | 0     |
| 1998 1        |     |   |    | 5,323  |    |    |    |    |    | 0             | 0               | 0     |
| 1999 1        |     |   |    | 18,075 |    |    |    |    |    | 0             | 0               | 0     |
| 2000 1        |     |   |    | 7,338  |    |    |    |    |    | 0             | 0               | 0     |
| 2001 1        |     |   |    | 13     |    |    |    |    |    | 0             | 0               | 0     |
| 2002 1        |     |   |    | 83     |    |    |    |    |    | 0             | 0               | 0     |
| 2003 1        |     |   |    | 7,560  |    |    |    |    |    | 0             | 0               | 0     |
| 2004 1        |     |   |    | 7,707  |    |    |    |    |    | 0             | 0               | 0     |
| 2005 1        |     |   |    | 8      |    |    |    |    |    | 0             | 0               | 0     |
| 2006 1        |     |   |    | 87     |    |    |    |    |    | 0             | 0               | 0     |
| 2007 1        |     |   |    | 97     |    |    |    |    |    | 0             | 0               | 0     |
| 2008 1        |     |   |    | 6,789  |    |    |    |    |    | 0             | 0               | 0     |
| 2009 1        |     |   |    | 45     |    |    |    |    |    | 0             | 0               | 0     |
| 2010 1        |     |   |    | 7,089  |    |    |    |    |    | 0             | 0               | 0     |
| 2011 1        |     |   |    | 24     |    |    |    |    |    | 0             | 0               | 0     |
| 2012 1        |     |   |    | 35     |    |    |    |    |    | 0             | 0               | 0     |
| 2013 1        |     |   |    | 6      |    |    |    |    |    | 0             | 0               | 0     |
| 2014 1        |     |   |    | 5,728  |    |    |    |    |    | 0             | 0               | 0     |
| 2015 1        |     |   |    | 186    |    |    |    |    |    | 0             | 0               | 0     |
| 2016 1        |     |   |    | 16     |    |    |    |    |    | 0             | 0               | 0     |
| 2017 1        |     |   |    | 25     |    |    |    |    |    | 0             | 0               | 0     |
| 2018 1        |     |   |    | 11     |    |    |    |    |    | 0             | 0               | 0     |
| 2019 1        |     |   |    | 6,589  |    |    |    |    |    | 0             | 0               | 0     |
| 2020 1        |     |   |    | 3,331  |    |    |    |    |    | 0             | 0               | 0     |
| 2021 1        |     |   |    | 8      |    |    |    |    |    | 0             | 0               | 0     |
| 2022 1        |     |   |    | 1,722  |    |    |    |    |    | 0             | 0               | 0     |
| 2023 1        |     |   |    | 234    |    |    |    |    |    | 0             | 0               | 0     |
| 2024 1        |     |   |    | 23     |    |    |    |    |    | 0             | 0               | 0     |
| 2025 1        |     |   |    | 899    |    |    |    |    |    | 0             | 0               | 0     |

| b) 48 Engins | DV | T | CM | HL | LL | JM | DS | PT | OT | TOTAL<br>FIXE | TOTAL<br>MOBILE | TOTAL  |
|--------------|----|---|----|----|----|----|----|----|----|---------------|-----------------|--------|
| Années       |    |   |    |    |    |    |    |    |    |               |                 |        |
| 1954 1       |    |   |    |    |    |    |    |    |    | 15,813        | 16,413          | 32,226 |
| 1955 1       |    |   |    |    |    |    |    |    |    | 30,559        | 15,675          | 46,234 |
| 1956 1       |    |   |    |    |    |    |    |    |    | 20,689        | 10,373          | 31,062 |
| 1957 1       |    |   |    |    |    |    |    |    |    | 22,061        | 25,811          | 47,872 |
| 1958 1       |    |   |    |    |    |    |    |    |    | 48,701        | 22,955          | 71,656 |
| 1959 1       |    |   |    |    |    |    |    |    |    | 12,343        | 28,567          | 40,910 |
| 1960 1       |    |   |    |    |    |    |    |    |    | 49,323        | 17,243          | 66,566 |
| 1961 1       |    |   |    |    |    |    |    |    |    | 31,523        | 15,753          | 47,276 |
| 1962 1       |    |   |    |    |    |    |    |    |    | 26,407        | 21,590          | 48,002 |
| 1963 1       |    |   |    |    |    |    |    |    |    | 15,510        | 26,675          | 42,185 |
| 1964 1       |    |   |    |    |    |    |    |    |    | 39,843        | 18,912          | 58,755 |
| 1965 1       |    |   |    |    |    |    |    |    |    | 26,776        | 16,918          | 43,694 |
| 1966 1       |    |   |    |    |    |    |    |    |    | 28,384        | 15,733          | 44,117 |
| 1967 1       |    |   |    |    |    |    |    |    |    | 207           | 21,015          | 21,222 |
| 1968 1       |    |   |    |    |    |    |    |    |    | 1,138         | 26,130          | 27,268 |
| 1969 1       |    |   |    |    |    |    |    |    |    | 4,405         | 2,646           | 7,051  |
| 1970 1       |    |   |    |    |    |    |    |    |    | 5,489         | 1,962           | 7,451  |
| 1971 1       |    |   |    |    |    |    |    |    |    | 3,786         | 3,718           | 7,504  |
| 1972 1       |    |   |    |    |    |    |    |    |    | 2,855         | 1,107           | 3,962  |
| 1973 1       |    |   |    |    |    |    |    |    |    | 1,606         | 2,855           | 4,461  |
| 1974 1       |    |   |    |    |    |    |    |    |    | 2,007         | 3,154           | 5,161  |
| 1975 1       |    |   |    |    |    |    |    |    |    | 1,789         | 5,102           | 6,891  |
| 1976 1       |    |   |    |    |    |    |    |    |    | 2,032         | 6,462           | 8,494  |
| 1977 1       |    |   |    |    |    |    |    |    |    | 1,572         | 7,671           | 9,243  |
| 1978 1       |    |   |    |    |    |    |    |    |    | 2,414         | 7,866           | 10,280 |
| 1979 1       |    |   |    |    |    |    |    |    |    | 4,103         | 13,235          | 17,338 |
| 1980 1       |    |   |    |    |    |    |    |    |    | 3,071         | 11,679          | 14,750 |
| 1981 1       |    |   |    |    |    |    |    |    |    | 8,354         | 11,607          | 19,961 |
| 1982 1       |    |   |    |    |    |    |    |    |    | 5,408         | 5,796           | 11,204 |
| 1983 1       |    |   |    |    |    |    |    |    |    | 7,473         | 9,465           | 16,938 |
| 1984 1       |    |   |    |    |    |    |    |    |    | 3,415         | 11,849          | 15,264 |
| 1985 1       |    |   |    |    |    |    |    |    |    | 3,315         | 4,674           | 8,000  |
| 1986 1       |    |   |    |    |    |    |    |    |    | 2,938         | 5,540           | 8,478  |
| 1987 1       |    |   |    |    |    |    |    |    |    | 1,290         | 4,949           | 6,239  |
| 1988 1       |    |   |    |    |    |    |    |    |    | 1,323         | 5,110           | 6,433  |
| 1989 1       |    |   |    |    |    |    |    |    |    | 736           | 4,078           | 4,814  |
| 1990 1       |    |   |    |    |    |    |    |    |    | 358           | 1,845           | 2,203  |

Tableau 3: (suite).

| c) 4S  | Engins | DV | T     | CM    | HL    | LL  | IM.    | DS | PT  | OT    | TOTAL<br>FIXE | TOTAL<br>MOBILE | TOTAL  |
|--------|--------|----|-------|-------|-------|-----|--------|----|-----|-------|---------------|-----------------|--------|
| Années |        |    |       |       |       |     |        |    |     |       |               |                 |        |
| 1954 1 |        |    |       |       |       |     | 2,892  |    |     | 36    | 2,892         | 36              | 2,928  |
| 1955 1 |        |    |       |       |       |     | 4,423  |    |     | 812   | 4,423         | 812             | 5,235  |
| 1956 1 |        |    |       |       |       |     | 2,197  |    |     | 451   | 2,197         | 451             | 2,648  |
| 1957 1 |        |    |       |       |       |     | 5,217  |    |     | 596   | 5,217         | 596             | 5,813  |
| 1958 1 |        |    |       |       | 107   |     | 7,114  |    |     | 591   | 7,221         | 591             | 7,812  |
| 1959 1 |        |    |       |       | 434   |     | 9,368  |    |     | 555   | 9,802         | 555             | 10,357 |
| 1960 1 |        |    |       |       | 5,159 |     | 2,037  |    |     | 9,307 | 7,196         | 9,307           | 16,503 |
| 1961 1 |        |    | 1,133 |       | 2,229 |     | 3,030  | 5  |     | 7,248 | 7,192         | 7,233           | 14,445 |
| 1962 1 |        |    | 2,777 | 80    | 3,974 |     | 2,057  | 24 |     | 4,259 | 8,888         | 4,283           | 13,171 |
| 1963 1 |        |    | 3,197 |       | 3,570 |     | 432    | 15 |     | 4,962 | 7,199         | 4,977           | 12,176 |
| 1964   |        |    |       |       |       |     | 486    |    |     | 3,490 | 6,652         | 3,490           | 10,142 |
| 1965   |        |    | 3,950 | 24    |       |     | 320    | 1  |     | 4,060 | 4,294         | 4,061           | 8,355  |
| 1966   |        |    | 1,656 | 973   |       |     | 441    |    |     | 3,385 | 3,868         | 3,385           | 7,253  |
| 1967   |        |    | 2,470 | 1,618 | 710   |     | 305    |    |     | 3,840 | 5,103         | 3,840           | 8,943  |
| 1968   |        |    | 3,070 | 1,127 | 623   |     | 333    |    |     | 2,568 | 5,153         | 2,568           | 7,721  |
| 1969   |        |    | 2,312 | 1,960 | 607   |     | 262    |    |     | 4,450 | 5,141         | 4,450           | 9,591  |
| 1970   |        | 21 | 1,769 | 846   | 771   | 251 |        |    |     | 5,436 | 3,678         | 5,436           | 9,114  |
| 1971   |        |    | 2,410 | 963   | 503   |     | 565    |    | 1   | 5,162 | 4,441         | 5,163           | 9,604  |
| 1972   |        |    | 2,040 | 1,418 | 511   | 511 |        |    |     | 5,817 | 4,480         | 5,817           | 10,297 |
| 1973   |        |    | 885   | 1,774 | 470   |     | 402    |    |     | 5,632 | 5,779         | 5,632           | 11,411 |
| 1974   |        |    | 200   | 2,326 | 402   |     | 976    |    |     | 7,009 | 5,968         | 7,009           | 12,977 |
| 1975   |        |    | 579   | 2,072 | 2,337 | 136 | 2,064  |    |     | 5,882 | 6,549         | 5,882           | 12,431 |
| 1976   |        |    | 992   | 2,900 | 353   |     | 46     |    |     | 6,810 | 5,676         | 6,810           | 12,486 |
| 1977   |        |    | 861   | 4,089 | 303   | 36  |        | 2  |     | 7,323 | 5,289         | 7,323           | 12,614 |
| 1978   |        |    | 2,178 | 3,626 | 194   |     | 28     |    |     | 8,736 | 6,026         | 8,736           | 14,764 |
| 1979   |        |    | 1,043 | 6,578 | 467   |     | 148    |    |     | 7,857 | 8,236         | 7,857           | 16,093 |
| 1980   |        |    |       | 1,376 |       |     | 11,658 |    |     | 9,267 | 14,830        | 9,267           | 24,097 |
| 1981   |        |    | 3     | 364   |       |     | 2,678  |    | 51  | 5,953 | 15,599        | 6,004           | 21,603 |
| 1982   |        |    | 13    | 27    | 2     |     | 3,688  |    | 340 | 8,267 | 15,357        | 8,610           | 23,967 |
| 1983   |        |    |       | 622   |       |     | 3,890  |    |     | 8,295 | 15,759        | 8,469           | 24,228 |
| 1984   |        | 8  | 675   | 8,923 | 961   |     | 4,301  |    |     | 7,847 | 14,868        | 9,341           | 24,409 |
| 1985   |        |    | 1,211 | 6,182 | 891   |     | 4,307  |    |     | 6,794 | 12,591        | 6,805           | 19,396 |
| 1986   |        |    | 52    | 4,269 | 383   |     | 2,672  |    |     | 9,251 | 7,376         | 9,412           | 16,788 |
| 1987   |        |    | 10    | 3,065 | 219   |     | 2,189  |    |     | 8,900 | 5,483         | 8,946           | 14,429 |
| 1988   |        |    |       | 3,782 | 42    |     | 1,232  |    |     | 4,169 | 5,056         | 4,165           | 9,221  |
| 1989 2 |        |    |       | 3,209 | 377   |     | 1,301  |    | 3   | 5,064 | 4,890         | 5,073           | 9,963  |
| 1990 2 |        |    | 1     | 1,686 | 159   |     | 666    |    | 12  | 4,870 | 2,512         | 4,882           | 7,394  |

d) 3Pn  
4RS

Engins  
Années

DV

T

CM

HL

LL

IM.

DS

PT

OT

TOTAL  
FIXE

TOTAL  
MOBILE

TOTAL

1 Données incomplètes. Certaines statistiques pour la division 3P seulement.

2 Statistiques préliminaires.

Tableau 4a: Morue 3Pn, 4RS: Statistiques préliminaires des débarquements (t) pour la morue de la subdivision 3Pn de l'OPANO en 1990.

| Canada-Terre-Neuve |        |        |       |       |      |      |       |      |       |       |       |       |        |
|--------------------|--------|--------|-------|-------|------|------|-------|------|-------|-------|-------|-------|--------|
| Type d'engin       | Jan.   | Fév.   | Mar.  | Avr.  | Mai  | Juin | Juil. | Août | Sept. | Oct.  | Nov.  | Déc.  | Total  |
| Trappes            |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Filets maillants   |        |        |       | 0.6   | 3.2  | 5.5  | 45.5  | 22.4 | 57.1  | 57.4  | 37.0  | 5.1   | 233.8  |
| Lignes à main      |        |        |       |       |      | 0.1  | 10.7  | 6.2  | 2.2   | 2.4   | 1.6   |       | 23.2   |
| Palangres          | 22.4   | 7.5    | 4.5   | 6.0   | 32.7 | 35.9 | 20.8  | 40.2 | 93.7  | 219.0 | 298.9 | 112.2 | 893.8  |
| Seines danoises    |        |        |       |       | 14.6 | 3.8  |       |      |       |       | 0.7   |       | 19.1   |
| Chaluts            | 1570.9 | 1968.2 | 529.7 | 99.8  | 35.4 | 10.9 | 15.3  | 19.9 |       | 2.3   | 0.1   | 0.3   | 4252.8 |
| Autres             |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Total              | 1593.3 | 1975.7 | 534.2 | 106.4 | 85.9 | 56.2 | 92.3  | 88.7 | 153.0 | 281.1 | 338.3 | 117.6 | 5422.7 |
| Canada-Maritimes   |        |        |       |       |      |      |       |      |       |       |       |       |        |
| Type d'engin       | Jan.   | Fév.   | Mar.  | Avr.  | Mai  | Juin | Juil. | Août | Sept. | Oct.  | Nov.  | Déc.  | Total  |
| Filets maillants   |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Lignes à main      |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Palangres          |        |        |       |       | 1.6  |      |       |      |       |       |       |       | 1.6    |
| Seines danoises    |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Chaluts            |        | 252.3  | 19.2  | 3.0   |      |      |       |      |       |       | 50.9  |       | 325.4  |
| Total              | 0.0    | 252.3  | 19.2  | 3.0   | 1.6  | 0.0  | 0.0   | 0.0  | 0.0   | 0.0   | 50.9  | 0.0   | 327.0  |
| Canada-Québec      |        |        |       |       |      |      |       |      |       |       |       |       |        |
| Type d'engin       | Jan.   | Fév.   | Mar.  | Avr.  | Mai  | Juin | Juil. | Août | Sept. | Oct.  | Nov.  | Déc.  | Total  |
| Trappes            |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Filets maillants   |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Lignes à main      |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Palangres          |        |        |       |       |      | 3.2  |       |      |       |       |       |       | 3.2    |
| Chaluts            |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Autres             |        |        |       |       |      |      |       |      |       |       |       |       | 0.0    |
| Total              | 0.0    | 0.0    | 0.0   | 0.0   | 0.0  | 3.2  | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0   | 3.2    |
| France             |        |        |       |       |      |      |       |      |       |       |       |       |        |
| Type d'engin       | Jan.   | Fév.   | Mar.  | Avr.  | Mai  | Juin | Juil. | Août | Sept. | Oct.  | Nov.  | Déc.  | Total  |
| Chaluts (SPM)      | 674.8  | 67.3   |       | 7.9   |      |      |       |      |       |       |       |       | 750.0  |
| TOTAL              | 2268.1 | 2295.3 | 553.4 | 117.3 | 87.5 | 59.4 | 92.3  | 88.7 | 153.0 | 281.1 | 389.2 | 117.6 | 6502.9 |

Tableau 4b: Morue 3Pn, 4RS: Statistiques préliminaires des débarquements (t) pour la morue de la division 4R de l'OPANO en 1990.

| Canada-Terre-Neuve |        |       |       |       |        |        |        |        |       |       |       |      |         |
|--------------------|--------|-------|-------|-------|--------|--------|--------|--------|-------|-------|-------|------|---------|
| Type d'engin       | Jan.   | Fév.  | Mar.  | Avr.  | Mai    | Juin   | Juil.  | Août   | Sept. | Oct.  | Nov.  | Déc. | Total   |
| Trappes            |        |       |       |       | 2.8    | 54.5   | 247.5  | 50.8   | 1.6   | 0.8   |       |      | 358.0   |
| Filets maillants   |        | 0.1   |       |       | 126.9  | 253.3  | 627.5  | 401.6  | 158.5 | 64.0  | 167.1 | 42.6 | 1841.6  |
| Lignes à main      | 4.8    | 4.1   |       |       | 0.7    | 33.0   | 340.0  | 222.3  | 100.5 | 59.6  | 41.8  |      | 806.8   |
| Palangres          | 0.3    | 0.9   | 0.3   | 0.3   | 15.8   | 120.0  | 436.6  | 361.5  | 342.1 | 166.5 | 127.1 | 14.4 | 1585.8  |
| Seines danoises    |        |       |       | 5.4   | 603.1  | 77.9   | 29.9   | 18.8   | 20.0  | 9.4   | 10.3  | 0.2  | 775.0   |
| Chaluts            | 3087.5 | 546.2 | 667.9 | 202.6 | 3422.3 | 5415.2 | 1502.1 | 972.3  | 355.0 | 110.8 | 338.0 | 13.2 | 16633.1 |
| Autres             |        |       |       |       |        |        |        |        |       |       |       |      | 0.0     |
| Total              | 3092.6 | 551.3 | 668.2 | 208.3 | 4171.6 | 5953.9 | 3183.6 | 2027.3 | 977.7 | 411.1 | 684.3 | 70.4 | 22000.3 |

| Canada-Maritimes |       |      |      |      |       |       |       |      |       |      |      |       |        |
|------------------|-------|------|------|------|-------|-------|-------|------|-------|------|------|-------|--------|
| Type d'engin     | Jan.  | Fév. | Mar. | Avr. | Mai   | Juin  | Juil. | Août | Sept. | Oct. | Nov. | Déc.  | Total  |
| Filets maillants |       |      |      |      |       |       |       |      |       |      |      |       | 0.0    |
| Lignes à main    |       |      |      |      |       |       |       |      |       |      |      |       | 0.0    |
| Palangres        |       |      |      |      | 3.7   | 44.5  |       |      |       |      |      |       | 48.2   |
| Seines danoises  |       |      |      |      | 4.3   |       |       |      |       |      |      |       | 4.3    |
| Chaluts          | 186.4 |      |      | 0.1  | 309.8 | 408.1 | 0.1   |      | 16.8  | 30.1 | 10.7 | 290.5 | 1252.6 |
| Total            | 186.4 | 0.0  | 0.0  | 0.1  | 317.8 | 452.6 | 0.1   | 0.0  | 16.8  | 30.1 | 10.7 | 290.5 | 1305.1 |

| Canada-Québec    |      |      |      |      |       |       |       |      |       |      |       |      |       |
|------------------|------|------|------|------|-------|-------|-------|------|-------|------|-------|------|-------|
| Type d'engin     | Jan. | Fév. | Mar. | Avr. | Mai   | Juin  | Juil. | Août | Sept. | Oct. | Nov.  | Déc. | Total |
| Trappes          |      |      |      |      |       |       |       |      |       |      |       |      | 0.0   |
| Filets maillants |      |      |      |      |       | 3.2   |       |      |       |      |       |      | 3.2   |
| Lignes à main    |      |      |      |      |       |       |       |      |       |      |       |      | 0.0   |
| Palangres        |      |      |      |      | 49.1  | 62.0  | 63.5  | 68.1 | 19.1  | 68.1 | 22.7  |      | 352.6 |
| Chaluts          |      |      |      |      | 62.5  | 88.5  |       |      |       | 0.5  | 120.5 |      | 272.0 |
| Autres           |      |      |      |      |       |       |       |      |       |      |       |      | 0.0   |
| Total            | 0.0  | 0.0  | 0.0  | 0.0  | 111.6 | 153.7 | 63.5  | 68.1 | 19.1  | 68.6 | 143.2 | 0.0  | 627.8 |

| France        |      |      |      |      |        |       |       |      |       |      |      |      |        |
|---------------|------|------|------|------|--------|-------|-------|------|-------|------|------|------|--------|
| Type d'engin  | Jan. | Fév. | Mar. | Avr. | Mai    | Juin  | Juil. | Août | Sept. | Oct. | Nov. | Déc. | Total  |
| Chaluts (SPM) |      |      |      | 11.0 | 1432.8 | 283.9 |       |      |       |      |      |      | 1727.7 |

|       |        |       |       |       |        |        |        |        |        |       |       |       |         |
|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|-------|---------|
| TOTAL | 3279.0 | 551.3 | 668.2 | 219.4 | 6033.8 | 6844.1 | 3247.2 | 2095.4 | 1013.6 | 509.8 | 838.2 | 360.9 | 25660.9 |
|-------|--------|-------|-------|-------|--------|--------|--------|--------|--------|-------|-------|-------|---------|

Tableau 4c: Morue 3Pn, 4RS: Statistiques préliminaires des débarquements (t) pour la morue de la division 4S de l'OPANO en 1990.

## Canada-Terre-Neuve

| Type d'engin     | Jan.  | Fév. | Mar. | Avr. | Mai   | Juin | Juil. | Août | Sept. | Oct. | Nov.  | Déc. | Total |
|------------------|-------|------|------|------|-------|------|-------|------|-------|------|-------|------|-------|
| Trappes          |       |      |      |      |       |      |       |      |       |      |       |      | 0.0   |
| Filets Maillants |       |      |      |      |       |      | 1.1   |      |       |      |       |      | 1.1   |
| Lignes à main    |       |      |      |      |       |      |       |      |       |      |       |      | 0.0   |
| Palangres        |       |      |      |      |       |      |       |      |       |      |       |      | 0.0   |
| Seines danoises  |       |      |      |      | 6.2   |      | 0.5   |      |       |      | 5.5   |      | 12.2  |
| Chaluts          | 124.0 | 2.5  |      | 19.0 | 283.4 | 84.0 | 65.7  | 71.0 | 29.5  | 16.9 | 234.8 | 0.6  | 931.4 |
| Autres           |       |      |      |      |       |      |       |      |       |      |       |      | 0.0   |
| Total            | 124.0 | 2.5  | 0.0  | 19.0 | 289.6 | 84.0 | 67.3  | 71.0 | 29.5  | 16.9 | 240.3 | 0.6  | 944.7 |

## Canada-Maritimes

| Type d'engin     | Jan. | Fév. | Mar. | Avr. | Mai | Juin | Juil. | Août | Sept. | Oct. | Nov. | Déc. | Total |
|------------------|------|------|------|------|-----|------|-------|------|-------|------|------|------|-------|
| Filets maillants |      |      |      |      |     |      |       |      |       |      |      |      | 0.0   |
| Lignes à main    |      |      |      |      |     |      |       |      |       |      |      |      | 0.0   |
| Palangres        |      |      |      |      | 0.5 | 0.7  |       |      |       |      |      |      | 1.2   |
| Seines danoises  |      |      |      |      |     |      |       |      |       |      |      |      | 0.0   |
| Chaluts          | 50.8 |      |      |      | 2.4 |      |       |      |       | 0.3  | 0.4  | 2.2  | 56.1  |
| Total            | 50.8 | 0.0  | 0.0  | 0.0  | 2.9 | 0.7  | 0.0   | 0.0  | 0.0   | 0.3  | 0.4  | 2.2  | 57.3  |

## Canada-Québec

| Type d'engin     | Jan. | Fév. | Mar. | Avr. | Mai   | Juin   | Juil.  | Août  | Sept. | Oct.  | Nov.  | Déc. | Total  |
|------------------|------|------|------|------|-------|--------|--------|-------|-------|-------|-------|------|--------|
| Trappes          |      |      |      |      |       |        |        | 1.0   |       |       |       |      | 1.0    |
| Filets maillants |      |      |      |      | 47.2  | 142.5  | 718.6  | 342.1 | 285.2 | 149.2 | 0.4   |      | 1685.2 |
| Lignes à main    |      |      |      |      | 2.8   | 16.1   | 21.0   | 42.3  | 42.2  | 22.9  | 11.5  |      | 158.8  |
| Palangres        |      |      |      | 6.8  | 23.4  | 79.3   | 105.9  | 40.4  | 178.6 | 151.3 | 78.7  |      | 664.4  |
| Chaluts          |      |      |      | 20.8 | 818.5 | 1197.4 | 361.2  | 315.1 | 288.0 | 372.5 | 509.2 |      | 3882.7 |
| Autres (casiers) |      |      |      |      |       |        |        |       |       | 0.2   |       |      | 0.2    |
| Total            | 0.0  | 0.0  | 0.0  | 27.6 | 891.9 | 1435.3 | 1206.7 | 740.9 | 794.0 | 696.1 | 599.8 | 0.0  | 6392.3 |

## France

| Type d'engin  | Jan.  | Fév. | Mar. | Avr. | Mai    | Juin   | Juil.  | Août  | Sept. | Oct.  | Nov.  | Déc. | Total  |
|---------------|-------|------|------|------|--------|--------|--------|-------|-------|-------|-------|------|--------|
| Chaluts (SPM) |       |      |      |      |        |        |        |       |       |       |       |      | 0.0    |
| TOTAL         | 174.8 | 2.5  | 0.0  | 46.6 | 1184.4 | 1520.0 | 1274.0 | 811.9 | 823.5 | 713.3 | 840.5 | 2.8  | 7394.3 |

Tableau 4d: Morue 3Pn, 4RS: Statistiques préliminaires des débarquements (t) pour la morue des divisions 3Pn, 4RS de l'OPANO en 1990.

## Canada-Terre-Neuve

| Type d'engin     | Jan.   | Fév.   | Mar.   | Avr.  | Mai    | Juin   | Juil.  | Août   | Sept.  | Oct.  | Nov.   | Déc.  | Total   |
|------------------|--------|--------|--------|-------|--------|--------|--------|--------|--------|-------|--------|-------|---------|
| trappes          | 0.0    | 0.0    | 0.0    | 0.0   | 2.8    | 54.5   | 247.5  | 50.8   | 1.6    | 0.8   | 0.0    | 0.0   | 358.0   |
| Filets maillants | 0.0    | 0.1    | 0.0    | 0.6   | 130.1  | 258.8  | 674.1  | 424.0  | 215.6  | 121.4 | 204.1  | 47.7  | 2076.5  |
| Lignes à main    | 4.8    | 4.1    | 0.0    | 0.0   | 0.7    | 33.1   | 350.7  | 228.5  | 102.7  | 62.0  | 43.4   | 0.0   | 830.0   |
| Palangres        | 22.7   | 8.4    | 4.8    | 6.3   | 48.5   | 155.9  | 457.4  | 401.7  | 435.8  | 385.5 | 426.0  | 126.6 | 2479.6  |
| Seines danoises  | 0.0    | 0.0    | 0.0    | 5.4   | 623.9  | 81.7   | 30.4   | 18.8   | 20.0   | 9.4   | 16.5   | 0.2   | 806.3   |
| Chaluts          | 4782.4 | 2516.9 | 1197.6 | 321.4 | 3741.1 | 5510.1 | 1583.1 | 1063.2 | 384.5  | 130.0 | 572.9  | 14.1  | 21817.3 |
| Autres           | 0.0    | 0.0    | 0.0    | 0.0   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0   | 0.0    | 0.0   | 0.0     |
| Total            | 4809.9 | 2529.5 | 1202.4 | 333.7 | 4547.1 | 6094.1 | 3343.2 | 2187.0 | 1160.2 | 709.1 | 1262.9 | 188.6 | 28367.7 |

## Canada-Maritimes

| Type d'engin     | Jan.  | Fév.  | Mar. | Avr. | Mai   | Juin  | Juil. | Août | Sept. | Oct. | Nov. | Déc.  | Total  |
|------------------|-------|-------|------|------|-------|-------|-------|------|-------|------|------|-------|--------|
| filets maillants | 0.0   | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0   | 0.0    |
| Lignes à main    | 0.0   | 0.0   | 0.0  | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0   | 0.0    |
| Palangres        | 0.0   | 0.0   | 0.0  | 0.0  | 5.8   | 45.2  | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0   | 51.0   |
| Seines danoises  | 0.0   | 0.0   | 0.0  | 0.0  | 4.3   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0   | 4.3    |
| Chaluts          | 237.2 | 252.3 | 19.2 | 3.1  | 312.2 | 408.1 | 0.1   | 0.0  | 16.8  | 30.4 | 62.0 | 292.7 | 1634.1 |
| Total            | 237.2 | 252.3 | 19.2 | 3.1  | 322.3 | 453.3 | 0.1   | 0.0  | 16.8  | 30.4 | 62.0 | 292.7 | 1689.4 |

## Canada-Québec

| Type d'engin     | Jan. | Fév. | Mar. | Avr. | Mai    | Juin   | Juil.  | Août  | Sept. | Oct.  | Nov.  | Déc. | Total  |
|------------------|------|------|------|------|--------|--------|--------|-------|-------|-------|-------|------|--------|
| Trappes          | 0.0  | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 1.0   | 0.0   | 0.0   | 0.0   | 0.0  | 1.0    |
| Filets maillants | 0.0  | 0.0  | 0.0  | 0.0  | 47.2   | 145.7  | 718.6  | 342.1 | 285.2 | 149.2 | 0.4   | 0.0  | 1688.4 |
| Lignes à main    | 0.0  | 0.0  | 0.0  | 0.0  | 2.8    | 16.1   | 21.0   | 42.3  | 42.2  | 22.9  | 11.5  | 0.0  | 158.8  |
| Palangres        | 0.0  | 0.0  | 0.0  | 6.8  | 72.5   | 144.5  | 169.4  | 108.5 | 197.7 | 219.4 | 101.4 | 0.0  | 1020.2 |
| Chaluts          | 0.0  | 0.0  | 0.0  | 20.8 | 881.0  | 1285.9 | 361.2  | 315.1 | 288.0 | 373.0 | 629.7 | 0.0  | 4154.7 |
| Autres           | 0.0  | 0.0  | 0.0  | 0.0  | 0.0    | 0.0    | 0.0    | 0.0   | 0.0   | 0.2   | 0.0   | 0.0  | 0.2    |
| Total            | 0.0  | 0.0  | 0.0  | 27.6 | 1003.5 | 1592.2 | 1270.2 | 809.0 | 813.1 | 764.7 | 743.0 | 0.0  | 7023.3 |

## France

| Type d'engin  | Jan.  | Fév. | Mar. | Avr. | Mai    | Juin  | Juil. | Août | Sept. | Oct. | Nov. | Déc. | Total  |
|---------------|-------|------|------|------|--------|-------|-------|------|-------|------|------|------|--------|
| Chaluts (SPM) | 674.8 | 67.3 | 0.0  | 18.9 | 1432.8 | 283.9 | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 2477.7 |

|       |        |        |        |       |        |        |        |        |        |        |        |       |         |
|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|---------|
| TOTAL | 5721.9 | 2849.1 | 1221.6 | 383.3 | 7305.7 | 8423.5 | 4613.5 | 2996.0 | 1990.1 | 1504.2 | 2067.9 | 481.3 | 39558.1 |
|-------|--------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|---------|

Tableau 5: Morue 3Pn, 4RS. Schéma d'allocation et débarquements.

| ANNEE | FLOTTE                                  | ALLOCATION<br>FINALE | CAPTURE<br>RAPPORTEE | % DE<br>L'ALLOCATION | ANNEE  | FLOTTE                                  | ALLOCATION<br>FINALE | CAPTURE<br>RAPPORTEE | % DE<br>L'ALLOCATION |
|-------|-----------------------------------------|----------------------|----------------------|----------------------|--------|-----------------------------------------|----------------------|----------------------|----------------------|
| 1980  | Mobile >100' NGBV                       | 8800                 | 8589                 | 98                   | 1986   | Mobile >100' NGBV                       | 4160                 | 3524                 | 85                   |
|       | GBV                                     | 1000                 | 1058                 | 106                  |        | GBV                                     | 1240                 | 1112                 | 90                   |
|       | Mobile 65-100'                          | 3000                 | 1817                 | 61                   |        | Mobile 65-100' NGBV                     | 400                  | 449                  | 112                  |
|       | Mobile <65'                             | 22200                | 27207                | 123                  |        | poissons de fond                        | 1700                 | 1456                 | 86                   |
|       | Fixe <65'                               | 28000                | 49349                | 176                  |        | crevette                                | 1400                 | 1530                 | 109                  |
|       | FRANCE                                  | 12000                | 9133                 | 76                   |        | Mobile <65'                             | 27850                | 26616                | 96                   |
| 1981  | Mobile >100' NGBV                       | 4000                 | 3157                 | 79                   |        | basé 4S,4T poissons de fond             |                      |                      |                      |
|       | GBV                                     | 1000                 | 846                  | 85                   |        | 1/1 à 30/4                              | 1000                 | 1077                 | 108                  |
|       | Mobile 65-100'                          | 3000                 | 2550                 | 85                   |        | 1/5 à 31/12                             | 4850                 | 5059                 | 104                  |
|       | Mobile <65' 1/1 à 12/7                  | 22500                | 28948                | 129                  |        | crevette                                | 1500                 | 1539                 | 103                  |
|       | 18/8 à 31/12                            | 3000                 | 3690                 | 123                  |        | chevauchement                           | 500                  | 505                  | 101                  |
|       | Fixe <65'                               | 28000                | 44720                | 160                  |        | Fixe <65' 1/1 à 30/9                    | 32000                | 23205                | 73                   |
|       | FRANCE                                  | 13500                | 14089                | 104                  |        | 1/10 à 31/12                            | 2000                 | 1437                 | 72                   |
| 1982  | Mobile >100' NGBV                       | 5000                 | 4233                 | 85                   | FRANCE |                                         | 13500                | 12577                | 93                   |
|       | GBV                                     | 1000                 | 1106                 | 111                  | 1987   | Mobile >100' NGBV                       | 3800                 | 3831 *               | 101                  |
|       | Mobile 65-100' NGBV                     | 500                  | 333                  | 67                   |        | GBV                                     | 1550                 | 857 *                | 55                   |
|       | GBV                                     | 2000                 | 2521                 | 126                  |        | Mobile 65-100' NGBV                     | 400                  | 210 *                | 53                   |
|       | Mobile <65' basé 4S,4T                  | 6500                 | 4084                 | 63                   |        | poissons de fond                        | 1400                 | 1518 *               | 108                  |
|       | basé 4R 1/1 à 30/4                      | 7884                 | 7880                 | 100                  |        | crevette                                | 1400                 | 1285 *               | 92                   |
|       | 1/5 à 31/12                             | 19216                | 21101                | 110                  |        | Mobile <65'                             | 26300                | 24161 *              | 92                   |
|       | Fixe <65' 1/1 à 30/9                    | 35000                | 46866                | 134                  |        | basé 4S,4T poissons de fond             |                      |                      |                      |
|       | 1/10 à 31/12                            | 2000                 | 2264                 | 113                  |        | 1/1 à 30/4                              | 950                  | 1236 *               | 130                  |
|       | FRANCE                                  | 13500                | 12160                | 90                   |        | 1/5 à 4/8                               | 2300                 | 3474 *               | 151                  |
| 1983  | Mobile >100' NGBV                       | 5000                 | 4173                 | 83                   |        | 5/8 à 31/12                             | 1200                 | 2095 *               | 175                  |
|       | GBV                                     | 600                  | 171                  | 29                   |        | crevette                                | 1500                 | 1095 *               | 73                   |
|       | Mobile 65-100' NGBV                     | 500                  | 199                  | 40                   |        | chevauchement                           | 500                  | 517 *                | 103                  |
|       | poissons de fond                        | 1000                 | 467                  | 47                   |        | Fixe <65' 1/1 à 30/9                    | 34700                | 21550 *              | 62                   |
|       | crevette                                | 1500                 | 1827                 | 122                  |        | 1/10 à 31/12                            | 2000                 | 2879 *               | 144                  |
|       | Mobile <65' basé 4S,4T poissons de fond | 4500                 | 3681                 | 82                   | FRANCE |                                         | 2300                 | 1585 **              | 69                   |
|       | crevette                                | 2000                 | 1629                 | 81                   | 1988   | Mobile >100' NGBV                       | 3605                 | 2660                 | 74                   |
|       | basé 4R,3Pn poissons de fond            |                      |                      |                      |        | GBV                                     | 1480                 | 607                  | 41                   |
|       | 1/1 à 30/4                              | 1677                 | 1677                 | 100                  |        | Mobile 65-100' NGBV                     | 421                  | 211                  | 50                   |
|       | 1/5 à 31/12                             | 4023                 | 4727                 | 117                  |        | poissons de fond                        | 1311                 | 909                  | 69                   |
|       | basé 4R,3Pn crevette                    |                      |                      |                      |        | crevette                                | 1332                 | 492                  | 37                   |
|       | 1/1 à 30/4                              | 3705                 | 3705                 | 100                  |        | Mobile <65'                             | 24885                | 17488                | 70                   |
|       | 1/5 à 31/12                             | 7018                 | 7018                 | 100                  |        | basé 4S,4T poissons de fond             |                      |                      |                      |
|       | basé 4R poissons de fond                | 8500                 | 9007                 | 106                  |        | 1/1 à 21/4                              | 744                  | 744                  | 100                  |
|       | basé 3P, 4VMX                           | 3800                 | 3815                 | 100                  |        | 22/4 à 31/7                             | 2351                 | 2431                 | 103                  |
|       | Fixe <65' 1/1 à 30/9                    | 38500                | 47666                | 124                  |        | 2/9 à 31/12                             | 1120                 | 1106                 | 99                   |
|       | 1/10 à 31/12                            | 2000                 | 1666                 | 83                   |        | crevette                                | 1460                 | 867                  | 59                   |
|       | FRANCE                                  | 13500                | 12107                | 90                   |        | chevauchement                           | 430                  | 274                  | 64                   |
| 1984  | Mobile >100' NGBV                       | 5000                 | 3171                 | 63                   |        | Fixe <65' 1/1 à 30/9                    | 32880                | 13950                | 42                   |
|       | GBV                                     | 600                  | 171                  | 29                   |        | 1/10 à 31/12                            | 1880                 | 1910                 | 102                  |
|       | Mobile 65-100' NGBV                     | 500                  | 170                  | 34                   | 1989   | Mobile >100'                            | 5499                 | 2096                 | 38                   |
|       | poissons de fond                        | 800                  | 886                  | 111                  |        | Mobile 65-100' NGBV                     | 521                  | 434                  | 83                   |
|       | crevette                                | 2250                 | 1886                 | 84                   |        | poissons de fond                        | 750                  | 675                  | 90                   |
|       | Mobile <65' basé 4S,4T poissons de fond |                      |                      |                      |        | poissons de fond/crevette               | 1330                 | 233                  | 18                   |
|       | fond                                    | 4800                 | 5588                 | 116                  |        | poissons de fond/crevette               |                      |                      |                      |
|       | crevette                                | 1200                 | 1112                 | 93                   |        | 1615                                    | 653                  | 40                   |                      |
|       | chevauchement                           | 500                  | 535                  | 107                  |        | Mobile 50-65' poissons de fond          | 2970                 | 2701                 | 91                   |
|       | basé 4R                                 | 29500                | 26060                | 88                   |        | Mobile <65' 1/01 à 31/03                | 36                   | 36                   | 100                  |
|       | Fixe <65' 1/1 à 30/9                    | 38107                | 37073                | 97                   |        | 11/04 à 31/12                           | 703                  | 720                  | 102                  |
|       | 1/10 à 31/12                            | 3243                 | 2858                 | 88                   |        | Mobile <65' allocation entreprise       | 25655                | 21927                | 86                   |
|       | FRANCE                                  | 13500                | 13224                | 98                   |        | zone de chevauchement                   | 425                  | 410                  | 97                   |
| 1985  | Mobile >100' NGBV                       | 4944                 | 3270                 | 66                   |        | 1/01 à 30/09                            | 32491                | 10856                | 33                   |
|       | GBV                                     | 1056                 | 386                  | 37                   |        | 1/10 à 31/12                            | 1890                 | 1432                 | 76                   |
|       | Mobile 65-100' NGBV                     | 500                  | 179                  | 36                   | FRANCE |                                         | 2640                 | 2594                 | 98                   |
|       | poissons de fond                        | 1700                 | 1561                 | 92                   | 1990   | MOBILE >100'                            | 3667                 | 3016                 | 82                   |
|       | crevette                                | 1500                 | 1306                 | 87                   |        | MOBILE 65-100' poissons de fond         | 1363                 | 1111                 | 82                   |
|       | Mobile <65' basé 4S,4T poissons de fond |                      |                      |                      |        | poissons de fond/crevette               | 1000                 | 704                  | 70                   |
|       | fond                                    | 5500                 | 5195                 | 94                   |        | MOBILE 45-65' poissons de fond/crevette | 1210                 | 856                  | 71                   |
|       | crevette                                | 1800                 | 1071                 | 60                   |        | poissons de fond                        | 2230                 | 2149                 | 96                   |
|       | chevauchement                           | 500                  | 473                  | 95                   |        | flotte ouest T.-M.                      |                      |                      |                      |
|       | basé 4R                                 | 30500                | 28910                | 95                   |        | 1/01 à 30/04                            | 7690                 | 7697                 | 100                  |
|       | Fixe <65' 1/1 à 30/9                    | 36500                | 34551                | 95                   |        | 1/05 à 31/12                            | 11550                | 11062                | 96                   |
|       | 1/10 à 31/12                            | 2000                 | 1149                 | 57                   |        | MOBILE <65' zone de chevauchement       |                      |                      |                      |
|       | FRANCE                                  | 13500                | 8122                 | 60                   |        | 3Ps,4Vm.                                | 320                  | 309                  | 97                   |
|       |                                         |                      |                      |                      |        | MOBILE <65'                             | 390                  | 454                  | 116                  |
|       |                                         |                      |                      |                      |        | FIXE <65' 1/01 à 30/09                  | 24520                | 5297                 | 22                   |
|       |                                         |                      |                      |                      |        | 1/10 à 31/12                            | 1420                 | 1654                 | 117                  |
|       |                                         |                      |                      |                      |        | FRANCE                                  | 2640                 | 2478                 | 94                   |

NOTE: NGBV = Navires non basé ds le golfe GBV = Navire basé ds le golfe

Tableau 6: Morue 3Pn, 4RS: Echantillonnage commercial pour 1990.

| Engin | * Trimestre | Province | Division | Mesures de<br>longueurs | Otolithes |
|-------|-------------|----------|----------|-------------------------|-----------|
| OTB   | 1           | CAN(T)   | 4R       | 11717                   | 560       |
|       |             | FRM      | 3Pn      | 7349                    | 847       |
|       | 2           | CAN(T)   | 3Pn      | 259                     | 42        |
|       |             |          | 4R       | 7802                    | 688       |
|       |             | CAN(Q)   | 4R       | 658                     | 65        |
|       |             |          | 4S       | 3549                    | 571       |
|       |             | FRM      | 3Pn      | 258                     | 20        |
|       |             |          | 4R       | 16462                   | 1615      |
|       | 3           | CAN(T)   | 4R       | 5126                    | 353       |
|       |             | CAN(Q)   | 4S       | 2593                    | 281       |
|       | 4           | CAN(Q)   | 4S       | 1261                    | 159       |
| SN    | 2           | CAN(T)   | 4R       | 1267                    | 167       |
|       | 3           | CAN(T)   | 4R       | 528                     | 89        |
|       | 4           | CAN(T)   | 4R       | 548                     | 62        |
| ST    | 2           | CAN(T)   | 4R       | 1008                    | 113       |
|       |             | CAN(M)   | 4R       | 267                     | 22        |
|       |             | CAN(Q)   | 4S       | 250                     | 30        |
|       | 3           | CAN(M)   | 4S       | 264                     | 30        |
| LL    | 2           | CAN(T)   | 3Pn      | 359                     | 151       |
|       |             | CAN(Q)   | 4R       | 250                     | 55        |
|       |             |          | 4S       | 500                     | 95        |
|       | 3           | CAN(T)   | 3Pn      | 802                     | 126       |
|       |             |          | 4R       | 1974                    | 434       |
|       |             | CAN(Q)   | 4R       | 501                     | 84        |
|       |             |          | 4S       | 1014                    | 189       |
|       | 4           | CAN(T)   | 3Pn      | 510                     | 33        |
|       |             |          | 4R       | 132                     | 34        |
|       |             | CAN(Q)   | 4R       | 250                     | 47        |
|       |             |          | 4S       | 513                     | 71        |
| GN    | 2           | CAN(T)   | 4R       | 2280                    | 317       |
|       |             | CAN(Q)   | 4S       | 452                     | 62        |
|       | 3           | CAN(T)   | 4R       | 4244                    | 478       |
|       |             | CAN(Q)   | 4S       | 1262                    | 127       |
|       | 4           | CAN(T)   | 4R       | 267                     | 37        |
| TOTAL |             |          |          | 76476                   | 8054      |

\* OTB = chalut, SN= seine danoise ST = chalut à crevette,  
LL= palangre FIX = trappe, LMP = ligne à main

Tableau 7 : Morue 3Pn,4RS. Capture à l'âge ('000)

| I    | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  | 1990  |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 I  | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 2 I  | 0     | 12    | 3     | 0     | 0     | 0     | 1     | 2     | 12    | 116   | 0     | 7     | 11    | 0     | 2     | 0     | 0     |
| 3 I  | 741   | 35    | 217   | 14    | 61    | 70    | 605   | 316   | 229   | 840   | 47    | 175   | 215   | 15    | 117   | 359   | 373   |
| 4 I  | 4069  | 4313  | 5210  | 2672  | 2678  | 3404  | 3390  | 6689  | 3231  | 4901  | 2947  | 2518  | 2415  | 1194  | 1274  | 1765  | 3227  |
| 5 I  | 9607  | 7707  | 12535 | 10124 | 10794 | 13995 | 17515 | 8999  | 18782 | 15255 | 7733  | 15909 | 8534  | 8426  | 6037  | 4849  | 8189  |
| 6 I  | 13498 | 5091  | 6323  | 12756 | 17616 | 12871 | 20196 | 20054 | 12747 | 18451 | 13493 | 13820 | 15635 | 12310 | 11452 | 7974  | 6308  |
| 7 I  | 5303  | 7185  | 4244  | 7943  | 9292  | 12592 | 11624 | 13971 | 13768 | 10206 | 20246 | 10688 | 11847 | 11864 | 6078  | 8489  | 5767  |
| 8 I  | 6658  | 2930  | 5750  | 2628  | 2163  | 4822  | 7064  | 4730  | 9673  | 6002  | 7394  | 9818  | 6024  | 7210  | 5145  | 4086  | 4216  |
| 9 I  | 2794  | 2757  | 1991  | 3274  | 1064  | 1429  | 1531  | 2154  | 3372  | 3061  | 5688  | 3179  | 6189  | 3650  | 1515  | 2730  | 1760  |
| 10 I | 1509  | 1719  | 2561  | 1098  | 1261  | 721   | 483   | 939   | 2109  | 1161  | 2095  | 2317  | 2284  | 1843  | 656   | 1104  | 964   |
| 11 I | 413   | 740   | 993   | 894   | 538   | 543   | 289   | 294   | 618   | 817   | 821   | 828   | 1748  | 1470  | 826   | 485   | 286   |
| 12 I | 173   | 316   | 395   | 394   | 441   | 300   | 324   | 172   | 145   | 211   | 406   | 200   | 461   | 575   | 277   | 388   | 115   |
| 13 I | 82    | 135   | 147   | 291   | 235   | 141   | 77    | 163   | 74    | 214   | 145   | 81    | 185   | 261   | 142   | 148   | 63    |
| 14 I | 31    | 89    | 69    | 84    | 128   | 88    | 78    | 74    | 42    | 32    | 40    | 14    | 40    | 102   | 64    | 68    | 26    |
| 15 I | 23    | 28    | 45    | 20    | 27    | 29    | 30    | 71    | 24    | 20    | 20    | 15    | 14    | 48    | 13    | 25    | 14    |
| 16 I | 32    | 16    | 6     | 22    | 11    | 21    | 18    | 44    | 13    | 17    | 36    | 6     | 5     | 30    | 4     | 17    | 3     |
| 17 I | 3     | 5     | 0     | 16    | 5     | 5     | 9     | 25    | 14    | 25    | 8     | 3     | 2     | 6     | 3     | 6     | 4     |
| 18 I | 6     | 5     | 3     | 7     | 6     | 0     | 2     | 9     | 7     | 2     | 4     | 4     | 6     | 2     | 1     | 3     | 2     |
| 19 I | 0     | 0     | 0     | 2     | 0     | 2     | 3     | 0     | 1     | 1     | 3     | 0     | 0     | 1     | 0     | 2     | 2     |
| 20 I | 0     | 5     | 0     | 2     | 0     | 2     | 1     | 0     | 1     | 1     | 1     | 0     | 3     | 2     | 1     | 1     | 0     |
| 21 I | 0     | 0     | 0     | 5     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 4     | 0     | 0     | 0     |
| 22 I | 0     | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 23 I | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 1     | 0     | 0     | 0     | 0     |
| 24 I | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     |
| 1+I  | 44941 | 33088 | 40491 | 42246 | 46320 | 51035 | 63241 | 58709 | 63863 | 61332 | 61129 | 59582 | 55619 | 49013 | 33607 | 32501 | 31319 |
| 2+I  | 44941 | 33088 | 40491 | 42246 | 46320 | 51035 | 63241 | 58709 | 63863 | 61332 | 61129 | 59582 | 55619 | 49013 | 33607 | 32501 | 31319 |
| 3+I  | 44941 | 33075 | 40488 | 42246 | 46320 | 51035 | 63240 | 58706 | 63851 | 61216 | 61129 | 59575 | 55608 | 49013 | 33605 | 32501 | 31319 |
| 4+I  | 44200 | 33041 | 40271 | 42232 | 46260 | 50965 | 62635 | 58391 | 63622 | 60376 | 61082 | 59400 | 55392 | 48999 | 33488 | 32142 | 30946 |
| 5+I  | 40131 | 28728 | 35062 | 39560 | 43581 | 47561 | 59245 | 51702 | 60391 | 55475 | 58136 | 56882 | 52977 | 47805 | 32214 | 30377 | 27718 |

Tableau 8 : Morue 3Pn,4RS. Poids moyens à l'âge (kg)

| I    | 1974  | 1975 | 1976 | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  | 1990  |
|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 I  | .00   | .00  | .00  | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   |
| 2 I  | .00   | .06  | .20  | .00   | .00   | .00   | .27   | .32   | .12   | .13   | .00   | .38   | .36   | .00   | .46   | .00   | .16   |
| 3 I  | .46   | .40  | .44  | .46   | .57   | .35   | .51   | .57   | .45   | .38   | .42   | .63   | .64   | .45   | .51   | .40   | .59   |
| 4 I  | .64   | .72  | .76  | .65   | .75   | .65   | .62   | .79   | .85   | .93   | .79   | .79   | .73   | .60   | .73   | .69   | .75   |
| 5 I  | .99   | 1.00 | 1.13 | 1.02  | .96   | .93   | .93   | .98   | 1.11  | 1.30  | 1.03  | .98   | .98   | .77   | .88   | .94   | .93   |
| 6 I  | 1.31  | 1.52 | 1.68 | 1.48  | 1.44  | 1.42  | 1.43  | 1.32  | 1.44  | 1.60  | 1.45  | 1.22  | 1.19  | 1.01  | 1.20  | 1.13  | 1.17  |
| 7 I  | 1.67  | 1.89 | 2.15 | 2.02  | 1.98  | 1.87  | 1.91  | 1.85  | 1.76  | 1.90  | 1.77  | 1.62  | 1.47  | 1.31  | 1.49  | 1.44  | 1.38  |
| 8 I  | 1.98  | 2.34 | 2.60 | 2.52  | 2.63  | 2.58  | 2.41  | 2.49  | 2.12  | 2.18  | 2.03  | 1.93  | 1.92  | 1.58  | 1.81  | 1.69  | 1.63  |
| 9 I  | 2.51  | 2.61 | 2.90 | 2.77  | 3.22  | 3.40  | 3.41  | 3.34  | 2.66  | 2.45  | 2.30  | 2.15  | 2.22  | 2.09  | 2.27  | 2.03  | 1.85  |
| 10 I | 2.89  | 3.08 | 3.11 | 3.17  | 3.32  | 3.84  | 4.15  | 4.55  | 3.13  | 3.47  | 2.70  | 2.32  | 2.46  | 2.65  | 2.74  | 2.33  | 2.14  |
| 11 I | 4.46  | 4.16 | 3.91 | 3.35  | 3.22  | 3.96  | 4.41  | 6.04  | 3.88  | 4.52  | 3.48  | 2.60  | 2.62  | 2.73  | 2.92  | 2.84  | 2.60  |
| 12 I | 5.59  | 4.50 | 4.83 | 4.23  | 3.86  | 5.23  | 3.87  | 7.43  | 5.70  | 4.37  | 3.75  | 3.71  | 3.07  | 3.05  | 3.05  | 3.13  | 3.88  |
| 13 I | 5.57  | 4.30 | 6.90 | 4.13  | 5.12  | 5.38  | 5.42  | 5.93  | 6.02  | 6.66  | 4.70  | 4.60  | 3.19  | 3.28  | 3.90  | 3.96  | 4.09  |
| 14 I | 6.61  | 6.56 | 5.26 | 4.48  | 5.90  | 5.37  | 4.17  | 7.96  | 6.41  | 5.94  | 7.88  | 7.47  | 5.22  | 4.22  | 2.98  | 4.38  | 4.56  |
| 15 I | 8.64  | 6.53 | 7.40 | 8.08  | 7.34  | 6.25  | 7.93  | 5.34  | 6.04  | 6.68  | 8.26  | 8.44  | 6.20  | 5.48  | 5.11  | 5.72  | 5.31  |
| 16 I | 7.81  | 5.02 | 9.86 | 9.57  | 6.48  | 7.28  | 5.19  | 8.94  | 7.32  | 6.19  | 7.02  | 9.36  | 8.40  | 6.50  | 11.25 | 6.75  | 8.66  |
| 17 I | 5.97  | 3.43 | .00  | 13.14 | 6.67  | 7.36  | 6.04  | 12.42 | 7.46  | 5.64  | 7.50  | 9.12  | 8.31  | 11.06 | 16.60 | 10.03 | 13.86 |
| 18 I | 12.22 | 9.51 | 8.71 | 7.51  | 5.69  | .00   | 15.21 | 9.48  | 11.00 | 6.00  | 14.57 | 10.22 | 5.39  | 15.11 | 12.23 | 9.46  | 16.25 |
| 19 I | .00   | .00  | .00  | 5.97  | .00   | 3.87  | 8.96  | 7.96  | 15.31 | 15.39 | 14.29 | 16.46 | 10.35 | 15.52 | .00   | 9.61  | 12.36 |
| 20 I | .00   | 9.51 | .00  | 4.94  | .00   | 11.63 | 17.67 | 8.07  | 13.87 | 14.17 | 12.21 | 9.51  | 7.87  | 15.60 | 10.80 | 14.51 | 8.72  |
| 21 I | .00   | .00  | .00  | 10.35 | .00   | 16.46 | .00   | .00   | .00   | .00   | 20.29 | 26.16 | 12.18 | 11.56 | .00   | 20.26 | 24.71 |
| 22 I | .00   | .00  | .00  | .00   | 15.31 | .00   | .00   | .00   | .00   | .00   | .00   | 9.51  | .00   | .00   | .00   | 14.56 | .00   |
| 23 I | .00   | .00  | .00  | .00   | .00   | 16.46 | .00   | .00   | .00   | .00   | 24.76 | .00   | 23.08 | .00   | .00   | 13.59 | .00   |
| 24 I | .00   | .00  | .00  | .00   | .00   | .00   | 18.94 | .00   | .00   | 18.94 | .00   | .00   | .00   | 21.64 | .00   | 12.18 | .00   |

Tableau 9 : Morue 3Pn,4RS. Capture à l'âge (%)

| I    | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  | 1990  |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 I  | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 2 I  | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .2    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 3 I  | 1.6   | .1    | .5    | .0    | .1    | .1    | 1.0   | .5    | .4    | 1.4   | .1    | .3    | .4    | .0    | .3    | 1.1   | 1.2   |
| 4 I  | 9.1   | 13.0  | 12.9  | 6.3   | 5.8   | 6.7   | 5.4   | 11.4  | 5.1   | 8.0   | 4.8   | 4.2   | 4.3   | 2.4   | 3.8   | 5.4   | 10.3  |
| 5 I  | 21.4  | 23.3  | 31.0  | 24.0  | 23.3  | 27.4  | 27.7  | 15.3  | 29.4  | 24.9  | 12.7  | 26.7  | 15.3  | 17.2  | 18.0  | 14.9  | 26.1  |
| 6 I  | 30.0  | 15.4  | 15.6  | 30.2  | 38.0  | 25.2  | 31.9  | 34.2  | 20.0  | 30.1  | 22.1  | 23.2  | 28.1  | 25.1  | 34.1  | 24.5  | 20.1  |
| 7 I  | 11.8  | 21.7  | 10.5  | 18.8  | 20.1  | 24.7  | 18.4  | 23.8  | 21.6  | 16.6  | 33.1  | 17.9  | 21.3  | 24.2  | 18.1  | 26.1  | 18.4  |
| 8 I  | 14.8  | 8.9   | 14.2  | 6.2   | 4.7   | 9.4   | 11.2  | 8.1   | 13.6  | 9.8   | 12.1  | 16.5  | 10.8  | 14.7  | 15.3  | 12.6  | 13.5  |
| 9 I  | 6.2   | 8.3   | 4.9   | 7.7   | 2.3   | 2.8   | 2.4   | 3.7   | 5.3   | 5.0   | 9.3   | 5.3   | 11.1  | 7.4   | 4.5   | 8.4   | 5.6   |
| 10 I | 3.4   | 5.2   | 6.3   | 2.6   | 2.7   | 1.4   | .8    | 1.6   | 3.3   | 1.9   | 3.4   | 3.9   | 4.1   | 3.8   | 2.0   | 3.4   | 3.1   |
| 11 I | .9    | 2.2   | 2.5   | 2.1   | 1.2   | 1.1   | .5    | .5    | 1.0   | 1.3   | 1.3   | 1.4   | 3.1   | 3.0   | 2.5   | 1.5   | .9    |
| 12 I | .4    | 1.0   | 1.0   | .9    | 1.0   | .6    | .5    | .3    | .2    | .3    | .7    | .3    | .8    | 1.2   | .8    | 1.2   | .4    |
| 13 I | .2    | .4    | .4    | .7    | .5    | .3    | .1    | .3    | .1    | .3    | .2    | .1    | .3    | .5    | .4    | .5    | .2    |
| 14 I | .1    | .3    | .2    | .2    | .3    | .2    | .1    | .1    | .1    | .1    | .1    | .0    | .1    | .2    | .2    | .2    | .1    |
| 15 I | .1    | .1    | .1    | .0    | .1    | .1    | .0    | .1    | .0    | .0    | .0    | .0    | .0    | .1    | .0    | .1    | .0    |
| 16 I | .1    | .0    | .0    | .1    | .0    | .0    | .0    | .1    | .0    | .0    | .1    | .0    | .0    | .1    | .0    | .1    | .0    |
| 17 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 18 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 19 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 20 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 21 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 22 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 23 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 24 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 1+I  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2+I  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 3+I  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.8  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 4+I  | 98.4  | 99.9  | 99.5  | 100.0 | 99.9  | 99.9  | 99.0  | 99.5  | 99.6  | 98.4  | 99.9  | 99.7  | 99.6  | 100.0 | 99.6  | 98.9  | 98.8  |
| 5+I  | 89.3  | 86.8  | 86.6  | 93.6  | 94.1  | 93.2  | 93.7  | 88.1  | 94.6  | 90.5  | 95.1  | 95.5  | 95.3  | 97.5  | 95.9  | 93.5  | 88.5  |
| 6+I  | 67.9  | 63.5  | 55.6  | 69.7  | 70.8  | 65.8  | 66.0  | 72.7  | 65.2  | 65.6  | 82.5  | 68.8  | 79.9  | 80.3  | 77.9  | 78.5  | 62.4  |
| 7+I  | 37.9  | 48.1  | 40.0  | 39.5  | 32.8  | 40.5  | 34.1  | 38.6  | 45.2  | 35.5  | 60.4  | 45.6  | 51.8  | 55.2  | 43.8  | 54.0  | 42.2  |
| 8+I  | 26.1  | 26.4  | 29.5  | 20.7  | 12.7  | 15.9  | 15.7  | 14.8  | 23.6  | 18.9  | 27.3  | 27.6  | 30.5  | 31.0  | 25.7  | 27.9  | 23.8  |

Tableau 10 : Morue 3Pn,4RS. Longueur moyenne à l'âge (cm)

| I    | 1974   | 1975   | 1976   | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   | 1983   | 1984   | 1985   | 1986   | 1987   | 1988   | 1989   | 1990   |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 I  | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    |
| 2 I  | .00    | 19.00  | 28.00  | .00    | .00    | .00    | 31.00  | 32.71  | 23.50  | 23.70  | .00    | 34.16  | 34.00  | .00    | 37.00  | .00    | 27.03  |
| 3 I  | 36.78  | 35.17  | 36.11  | 37.00  | 39.24  | 33.25  | 38.17  | 39.26  | 36.49  | 33.44  | 35.88  | 40.65  | 41.36  | 36.65  | 37.97  | 34.17  | 40.09  |
| 4 I  | 41.06  | 42.76  | 43.64  | 41.35  | 43.30  | 41.14  | 40.67  | 44.01  | 44.94  | 46.37  | 44.05  | 44.06  | 42.93  | 40.18  | 42.83  | 42.11  | 43.53  |
| 5 I  | 47.59  | 47.91  | 49.82  | 48.08  | 47.21  | 46.62  | 46.49  | 47.47  | 49.50  | 52.06  | 48.23  | 47.40  | 47.33  | 43.83  | 45.69  | 46.70  | 46.69  |
| 6 I  | 52.40  | 54.96  | 56.85  | 54.45  | 53.91  | 53.67  | 53.79  | 52.49  | 53.95  | 55.96  | 54.20  | 51.03  | 50.58  | 47.80  | 50.65  | 49.68  | 50.16  |
| 7 I  | 56.69  | 59.15  | 61.83  | 60.53  | 60.03  | 58.85  | 59.20  | 58.30  | 57.79  | 59.08  | 57.91  | 56.04  | 54.10  | 52.21  | 54.35  | 53.74  | 52.93  |
| 8 I  | 59.95  | 63.23  | 65.85  | 65.14  | 66.13  | 65.27  | 63.91  | 63.96  | 61.32  | 61.48  | 60.42  | 59.36  | 59.02  | 55.24  | 58.01  | 56.61  | 55.74  |
| 9 I  | 64.72  | 65.57  | 68.24  | 67.22  | 70.50  | 71.65  | 71.62  | 69.95  | 65.82  | 63.81  | 62.75  | 61.28  | 61.94  | 60.53  | 62.09  | 60.12  | 57.66  |
| 10 I | 67.16  | 68.98  | 69.83  | 70.09  | 70.97  | 74.13  | 76.39  | 77.75  | 69.06  | 70.99  | 65.90  | 62.88  | 64.00  | 65.25  | 66.01  | 62.50  | 60.17  |
| 11 I | 78.00  | 76.55  | 75.00  | 71.23  | 69.68  | 75.19  | 77.99  | 86.78  | 74.47  | 77.97  | 71.57  | 64.79  | 65.17  | 65.82  | 67.42  | 65.98  | 63.37  |
| 12 I | 84.78  | 78.01  | 80.20  | 76.82  | 74.89  | 81.82  | 74.40  | 93.17  | 85.27  | 76.01  | 73.09  | 72.74  | 68.41  | 68.30  | 68.23  | 68.39  | 71.92  |
| 13 I | 83.13  | 76.17  | 90.65  | 76.70  | 81.29  | 83.78  | 84.17  | 86.79  | 87.26  | 88.68  | 77.64  | 77.76  | 69.37  | 69.55  | 73.75  | 73.73  | 73.57  |
| 14 I | 90.48  | 88.39  | 83.10  | 78.93  | 84.75  | 83.35  | 76.08  | 95.84  | 88.81  | 85.19  | 94.50  | 93.15  | 82.43  | 75.56  | 67.86  | 76.50  | 75.82  |
| 15 I | 98.00  | 89.10  | 93.35  | 96.18  | 92.37  | 86.86  | 94.70  | 83.11  | 88.01  | 90.03  | 95.51  | 96.34  | 86.08  | 81.07  | 81.99  | 83.44  | 77.19  |
| 16 I | 94.67  | 82.43  | 103.46 | 102.79 | 89.86  | 92.57  | 82.25  | 98.05  | 93.09  | 87.81  | 88.36  | 100.47 | 57.45  | 85.55  | 108.46 | 88.00  | 93.99  |
| 17 I | 88.00  | 73.00  | .00    | 112.12 | 91.28  | 92.99  | 87.72  | 111.44 | 94.18  | 85.86  | 93.35  | 100.24 | 96.92  | 104.35 | 122.14 | 101.26 | 108.61 |
| 18 I | 111.69 | 103.00 | 100.00 | 91.86  | 86.26  | .00    | 120.72 | 102.90 | 105.31 | 84.14  | 118.58 | 101.73 | 83.52  | 120.42 | 109.31 | 100.08 | 118.47 |
| 19 I | .00    | .00    | .00    | 88.00  | .00    | 76.00  | 99.60  | 97.00  | 121.00 | 120.23 | 116.14 | 124.00 | 106.00 | 119.52 | .00    | 98.38  | 106.91 |
| 20 I | .00    | 103.00 | .00    | 82.00  | .00    | 110.18 | 127.00 | 96.70  | 115.33 | 117.77 | 111.61 | 103.00 | 94.05  | 121.52 | 106.96 | 118.36 | 90.37  |
| 21 I | .00    | .00    | .00    | 106.00 | .00    | 124.00 | .00    | .00    | .00    | .00    | 133.00 | 145.00 | 112.00 | 109.57 | .00    | 133.00 | 139.00 |
| 22 I | .00    | .00    | .00    | .00    | 121.00 | .00    | .00    | .00    | .00    | .00    | .00    | 103.00 | .00    | .00    | .00    | 118.92 | .00    |
| 23 I | .00    | .00    | .00    | .00    | .00    | 124.00 | .00    | .00    | .00    | .00    | 142.27 | .00    | 139.00 | .00    | .00    | 113.34 | .00    |
| 24 I | .00    | .00    | .00    | .00    | .00    | .00    | 130.00 | .00    | .00    | 130.00 | .00    | .00    | .00    | 136.00 | .00    | 112.00 | .00    |

Tableau 11 : Morue 3Pn,4RS. Coefficient de variation des captures à l'âge

| I    | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 I  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  |
| 2 I  | .00  | .01  | 1.11 | .00  | .00  | .00  | .01  | .51  | .00  | .30  | .00  | .45  | 1.18 | .00  | 1.00 | .00  | .86  |
| 3 I  | .19  | .59  | .20  | .90  | .68  | .23  | .36  | .21  | .14  | .09  | .26  | .23  | .26  | .39  | .14  | .14  | .13  |
| 4 I  | .08  | .07  | .07  | .07  | .11  | .07  | .14  | .05  | .08  | .06  | .05  | .08  | .06  | .09  | .08  | .06  | .04  |
| 5 I  | .06  | .06  | .04  | .04  | .06  | .03  | .04  | .05  | .03  | .03  | .04  | .03  | .05  | .04  | .05  | .05  | .03  |
| 6 I  | .05  | .08  | .07  | .03  | .04  | .04  | .04  | .03  | .04  | .03  | .04  | .03  | .04  | .04  | .03  | .04  | .03  |
| 7 I  | .09  | .06  | .09  | .04  | .06  | .03  | .04  | .04  | .04  | .04  | .03  | .03  | .05  | .04  | .05  | .04  | .03  |
| 8 I  | .07  | .10  | .07  | .08  | .10  | .06  | .05  | .06  | .05  | .06  | .05  | .03  | .07  | .05  | .05  | .05  | .03  |
| 9 I  | .10  | .10  | .13  | .06  | .13  | .09  | .09  | .08  | .07  | .09  | .05  | .06  | .05  | .05  | .08  | .05  | .05  |
| 10 I | .14  | .11  | .10  | .10  | .13  | .13  | .12  | .12  | .09  | .14  | .07  | .06  | .09  | .06  | .09  | .09  | .07  |
| 11 I | .14  | .14  | .15  | .11  | .25  | .13  | .15  | .18  | .15  | .14  | .09  | .10  | .11  | .07  | .09  | .13  | .10  |
| 12 I | .18  | .20  | .19  | .13  | .21  | .13  | .18  | .19  | .22  | .32  | .13  | .12  | .11  | .08  | .13  | .11  | .11  |
| 13 I | .37  | .37  | .21  | .15  | .17  | .19  | .18  | .22  | .31  | .45  | .25  | .16  | .19  | .17  | .14  | .13  | .14  |
| 14 I | .36  | .28  | .39  | .24  | .23  | .23  | .30  | .31  | .29  | .51  | .21  | .20  | .18  | .15  | .27  | .15  | .18  |
| 15 I | .43  | .36  | .32  | .41  | .29  | .30  | .22  | .33  | .39  | .46  | .23  | .21  | .39  | .22  | .30  | .18  | .31  |
| 16 I | .37  | .37  | .75  | .47  | .44  | .43  | .49  | .37  | .42  | .35  | .34  | .26  | .37  | .29  | .49  | .21  | .41  |
| 17 I | 1.03 | 1.01 | .00  | .30  | .61  | .54  | .44  | .39  | .46  | .94  | .26  | .31  | .54  | .36  | .42  | .27  | .33  |
| 18 I | .52  | 1.01 | 1.02 | .56  | .72  | .00  | .01  | 1.06 | .44  | .96  | .27  | .36  | .42  | .49  | .50  | .47  | .25  |
| 19 I | .00  | .00  | .00  | 1.04 | .00  | 1.00 | .73  | 1.02 | .01  | .89  | .63  | 1.40 | 1.59 | .54  | .00  | .65  | .59  |
| 20 I | .00  | 1.01 | .00  | 1.04 | .00  | .92  | .00  | .67  | .27  | .69  | .76  | 1.05 | .63  | .36  | .29  | .59  | .84  |
| 21 I | .00  | .00  | .00  | 1.10 | .00  | 1.33 | .00  | .00  | .00  | .00  | 1.20 | .01  | 1.48 | .43  | .00  | 1.39 | 1.88 |
| 22 I | .00  | .00  | .00  | .00  | .01  | .00  | .00  | .00  | .00  | .00  | .00  | 1.08 | .00  | .00  | .00  | .21  | .00  |
| 23 I | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .63  | .00  | .01  | .00  | .00  | .66  | .00  |
| 24 I | .00  | .00  | .00  | .00  | .00  | .00  | .01  | .00  | .00  | .01  | .00  | .00  | .00  | 1.33 | .00  | 1.19 | .00  |

Tableau 12 : Morue 3Pn,4RS. Capture à l'âge ('000) (engins mobiles)

|     | 1     | 1974  | 1975  | 1976  | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  | 1990 |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| 1   | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| 2   | 1     | 0     | 12    | 3     | 0     | 0     | 0     | 0     | 0     | 12    | 116   | 0     | 4     | 11    | 0     | 0     | 0     | 0    |
| 3   | 1     | 53    | 35    | 217   | 13    | 12    | 39    | 38    | 32    | 219   | 729   | 6     | 93    | 162   | 2     | 16    | 341   | 166  |
| 4   | 1     | 1240  | 4294  | 5202  | 2309  | 1421  | 1712  | 794   | 3922  | 1665  | 2103  | 1411  | 1795  | 1869  | 915   | 542   | 1464  | 2578 |
| 5   | 1     | 4618  | 7653  | 12290 | 7949  | 7101  | 8191  | 7487  | 6749  | 12565 | 9103  | 4268  | 10619 | 7105  | 7078  | 4917  | 4092  | 7138 |
| 6   | 1     | 9531  | 4466  | 5392  | 9364  | 13019 | 8661  | 10784 | 15204 | 7350  | 11078 | 9055  | 8478  | 12633 | 10340 | 9095  | 6855  | 5446 |
| 7   | 1     | 4087  | 5853  | 2689  | 5243  | 5732  | 8240  | 6245  | 8063  | 8406  | 5936  | 13715 | 6475  | 9648  | 9369  | 4344  | 6637  | 4892 |
| 8   | 1     | 5492  | 1629  | 3411  | 1608  | 968   | 2411  | 3620  | 2785  | 4631  | 3521  | 4542  | 6303  | 4084  | 4976  | 3257  | 3009  | 3401 |
| 9   | 1     | 2078  | 1692  | 798   | 2085  | 415   | 616   | 578   | 824   | 1405  | 1681  | 3316  | 1846  | 4084  | 2094  | 801   | 1612  | 1393 |
| 10  | 1     | 1183  | 956   | 1092  | 814   | 651   | 209   | 221   | 275   | 535   | 360   | 962   | 1300  | 1363  | 939   | 306   | 610   | 679  |
| 11  | 1     | 201   | 195   | 420   | 628   | 353   | 253   | 119   | 34    | 82    | 218   | 316   | 361   | 1017  | 831   | 329   | 284   | 213  |
| 12  | 1     | 132   | 131   | 171   | 253   | 219   | 109   | 163   | 31    | 59    | 33    | 199   | 71    | 189   | 213   | 76    | 201   | 66   |
| 13  | 1     | 64    | 69    | 49    | 199   | 78    | 45    | 41    | 12    | 11    | 20    | 61    | 17    | 101   | 153   | 55    | 69    | 32   |
| 14  | 1     | 16    | 22    | 15    | 57    | 74    | 33    | 55    | 5     | 8     | 4     | 14    | 2     | 7     | 31    | 26    | 23    | 15   |
| 15  | 1     | 17    | 18    | 9     | 1     | 15    | 7     | 14    | 17    | 11    | 3     | 9     | 1     | 6     | 10    | 1     | 8     | 5    |
| 16  | 1     | 32    | 16    | 2     | 17    | 6     | 4     | 5     | 4     | 0     | 8     | 16    | 1     | 2     | 16    | 1     | 5     | 1    |
| 17  | 1     | 0     | 5     | 0     | 11    | 3     | 3     | 5     | 2     | 4     | 0     | 0     | 1     | 0     | 1     | 1     | 2     | 1    |
| 18  | 1     | 0     | 0     | 0     | 7     | 6     | 0     | 0     | 0     | 2     | 0     | 1     | 1     | 1     | 0     | 0     | 1     | 0    |
| 19  | 1     | 0     | 0     | 0     | 2     | 0     | 2     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 1    |
| 20  | 1     | 0     | 0     | 0     | 2     | 0     | 0     | 1     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0    |
| 21  | 1     | 0     | 0     | 0     | 5     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2     | 0     | 0     | 0    |
| 22  | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| 23  | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
| 24  | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    |
|     |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |      |
| 1+1 | 28735 | 27046 | 31760 | 30567 | 30075 | 30535 | 30170 | 37958 | 36967 | 34914 | 37890 | 37368 | 42282 | 36970 | 23769 | 25215 | 26019 |      |
| 2+1 | 28735 | 27046 | 31760 | 30567 | 30075 | 30535 | 30170 | 37958 | 36967 | 34914 | 37890 | 37368 | 42282 | 36970 | 23769 | 25215 | 26019 |      |
| 3+1 | 28735 | 27034 | 31757 | 30567 | 30075 | 30535 | 30170 | 37958 | 36956 | 34799 | 37890 | 37364 | 42270 | 36970 | 23769 | 25215 | 26019 |      |
| 4+1 | 28681 | 26999 | 31540 | 30554 | 30063 | 30495 | 30132 | 37926 | 36736 | 34069 | 37884 | 37271 | 42108 | 36968 | 23752 | 24874 | 25852 |      |
| 5+1 | 27441 | 22705 | 26338 | 28245 | 28642 | 28783 | 29338 | 34004 | 35071 | 31966 | 36473 | 35476 | 40240 | 36053 | 23210 | 23410 | 23274 |      |

Tableau 13 : Morue 3Pn,4RS. Poids moyens à l'âge (kg) (engins mobiles)

[illegible]

**Tableau 14** : Morue 3Pn,4RS. Longueur moyenne à l'âge (cm) (engins mobiles)

|    | 1 | 1974  | 1975  | 1976   | 1977   | 1978  | 1979   | 1980   | 1981   | 1982   | 1983   | 1984   | 1985   | 1986  | 1987   | 1988   | 1989   | 1990   |
|----|---|-------|-------|--------|--------|-------|--------|--------|--------|--------|--------|--------|--------|-------|--------|--------|--------|--------|
| 1  | 1 | .00   | .00   | .00    | .00    | .00   | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00   | .00    | .00    | .00    | .00    |
| 2  | 1 | .00   | 19.00 | 28.00  | .00    | .00   | .00    | .00    | .00    | 23.50  | 23.70  | .00    | 32.98  | 34.00 | .00    | .00    | .00    | 27.03  |
| 3  | 1 | 33.83 | 35.17 | 36.11  | 37.00  | 30.64 | 31.09  | 35.67  | 34.22  | 36.51  | 32.72  | 38.16  | 39.32  | 41.50 | 34.00  | 40.00  | 33.99  | 41.43  |
| 4  | 1 | 41.59 | 42.75 | 43.65  | 41.32  | 42.31 | 39.92  | 41.20  | 43.77  | 43.08  | 48.20  | 45.39  | 43.70  | 42.68 | 40.30  | 42.23  | 42.06  | 43.22  |
| 5  | 1 | 47.91 | 47.90 | 49.67  | 48.32  | 46.30 | 46.38  | 46.91  | 46.86  | 49.19  | 53.22  | 49.21  | 47.57  | 47.16 | 43.73  | 45.09  | 46.34  | 46.18  |
| 6  | 1 | 52.23 | 53.88 | 55.84  | 54.00  | 52.71 | 52.52  | 53.01  | 51.69  | 52.70  | 55.75  | 54.45  | 51.16  | 49.93 | 47.60  | 49.66  | 49.03  | 49.40  |
| 7  | 1 | 56.39 | 57.70 | 59.75  | 59.06  | 58.26 | 57.21  | 58.37  | 55.91  | 57.27  | 58.08  | 57.49  | 55.58  | 52.98 | 51.50  | 52.84  | 52.68  | 52.12  |
| 8  | 1 | 59.13 | 59.72 | 63.71  | 63.08  | 64.41 | 61.80  | 61.98  | 60.10  | 60.65  | 59.71  | 59.81  | 58.63  | 57.00 | 53.55  | 56.38  | 55.45  | 54.85  |
| 9  | 1 | 63.52 | 62.48 | 65.11  | 65.60  | 67.31 | 67.28  | 69.89  | 63.16  | 64.69  | 60.83  | 61.89  | 60.59  | 60.32 | 58.09  | 59.71  | 59.01  | 56.34  |
| 10 | 1 | 64.84 | 64.52 | 67.91  | 69.35  | 67.86 | 69.96  | 73.28  | 68.40  | 71.07  | 66.41  | 64.29  | 61.57  | 61.89 | 62.35  | 64.13  | 61.56  | 58.68  |
| 11 | 1 | 78.47 | 73.24 | 70.44  | 69.95  | 66.05 | 68.92  | 73.22  | 77.44  | 78.93  | 68.33  | 70.44  | 62.92  | 62.12 | 62.84  | 64.58  | 64.16  | 61.15  |
| 12 | 1 | 83.75 | 68.99 | 75.83  | 75.57  | 71.64 | 71.63  | 72.65  | 78.91  | 82.54  | 81.42  | 71.32  | 70.62  | 67.94 | 65.77  | 65.73  | 65.55  | 68.16  |
| 13 | 1 | 80.01 | 70.72 | 84.87  | 76.99  | 76.30 | 76.88  | 80.14  | 87.50  | 84.15  | 93.11  | 72.08  | 77.34  | 65.29 | 65.17  | 69.17  | 74.09  | 69.56  |
| 14 | 1 | 88.79 | 79.13 | 78.43  | 78.51  | 74.89 | 74.82  | 72.80  | 86.10  | 76.09  | 89.35  | 101.30 | 100.83 | 87.85 | 74.68  | 64.53  | 77.14  | 73.03  |
| 15 | 1 | 97.85 | 84.55 | 74.66  | 100.00 | 93.32 | 82.05  | 88.12  | 74.84  | 88.13  | 94.40  | 101.86 | 91.09  | 81.28 | 74.49  | 70.00  | 84.39  | 71.18  |
| 16 | 1 | 94.67 | 82.43 | 114.62 | 101.38 | 89.35 | 74.48  | 83.63  | 82.49  | .00    | 86.71  | 79.72  | 124.00 | 83.96 | 72.00  | 94.00  | 82.98  | 96.60  |
| 17 | 1 | .00   | 73.00 | .00    | 120.95 | 89.54 | 89.28  | 90.88  | 82.83  | 88.00  | 130.00 | .00    | 90.13  | .00   | 97.00  | 139.00 | 108.28 | 128.15 |
| 18 | 1 | .00   | .00   | .00    | 90.77  | 94.84 | .00    | .00    | .00    | 88.69  | .00    | 116.96 | 75.44  | 82.00 | .00    | .00    | 115.00 | .00    |
| 19 | 1 | .00   | .00   | .00    | 88.00  | .00   | 76.00  | 106.00 | .00    | .00    | 115.00 | .00    | .00    | .00   | .00    | .00    | 82.00  | 103.45 |
| 20 | 1 | .00   | .00   | .00    | 82.00  | .00   | 118.00 | 127.00 | 112.00 | 124.00 | .00    | .00    | .00    | .00   | .00    | .00    | 116.32 | .00    |
| 21 | 1 | .00   | .00   | .00    | 106.00 | .00   | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00   | 103.00 | .00    | .00    | .00    |
| 22 | 1 | .00   | .00   | .00    | .00    | .00   | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00   | .00    | .00    | 118.00 | .00    |
| 23 | 1 | .00   | .00   | .00    | .00    | .00   | 124.00 | .00    | .00    | .00    | .00    | .00    | .00    | .00   | .00    | .00    | .00    | .00    |
| 24 | 1 | .00   | .00   | .00    | .00    | .00   | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00   | .00    | .00    | .00    | .00    |

Tableau 15 : Morue 3Pn,4RS. Coefficient de variation des captures à l'âge (engins mobiles)

[illegible]

Tableau 16 : Morue 3Pn,4RS. Capture à l'âge ('000) (engins fixes)

| I    | 1974  | 1975 | 1976 | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988 | 1989 | 1990 |
|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1 I  | 0     | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0    |
| 2 I  | 0     | 0    | 0    | 0     | 0     | 0     | 1     | 2     | 0     | 0     | 0     | 3     | 0     | 0     | 2    | 0    | 0    |
| 3 I  | 688   | 0    | 0    | 1     | 48    | 31    | 566   | 283   | 10    | 111   | 40    | 83    | 53    | 13    | 101  | 18   | 207  |
| 4 I  | 2829  | 19   | 8    | 364   | 1223  | 1692  | 2596  | 2767  | 1566  | 2797  | 1536  | 723   | 546   | 278   | 732  | 301  | 649  |
| 5 I  | 4990  | 53   | 245  | 2175  | 3555  | 5804  | 10028 | 2250  | 6217  | 6152  | 3465  | 5289  | 1429  | 1348  | 1120 | 758  | 1051 |
| 6 I  | 3968  | 626  | 931  | 3392  | 4372  | 4211  | 9412  | 4851  | 5398  | 7373  | 4438  | 5342  | 3002  | 1970  | 2357 | 1118 | 861  |
| 7 I  | 1216  | 1332 | 1555 | 2700  | 3442  | 4352  | 5379  | 5909  | 5362  | 4270  | 6531  | 4213  | 2199  | 2495  | 1734 | 1852 | 885  |
| 8 I  | 1175  | 1300 | 2339 | 1021  | 1167  | 2411  | 3443  | 1944  | 4042  | 2481  | 2852  | 3515  | 1940  | 2234  | 1888 | 1077 | 815  |
| 9 I  | 716   | 1064 | 1193 | 1189  | 635   | 813   | 953   | 1330  | 1967  | 1381  | 2373  | 1333  | 2105  | 1556  | 714  | 1118 | 367  |
| 10 I | 326   | 763  | 1469 | 284   | 594   | 513   | 262   | 664   | 1574  | 801   | 1134  | 1017  | 921   | 903   | 350  | 494  | 286  |
| 11 I | 212   | 545  | 573  | 265   | 178   | 290   | 170   | 261   | 536   | 598   | 505   | 466   | 731   | 639   | 496  | 201  | 73   |
| 12 I | 41    | 185  | 224  | 141   | 216   | 191   | 161   | 142   | 86    | 178   | 206   | 130   | 271   | 362   | 202  | 188  | 49   |
| 13 I | 17    | 65   | 98   | 92    | 154   | 96    | 36    | 151   | 64    | 194   | 84    | 64    | 84    | 108   | 86   | 79   | 30   |
| 14 I | 15    | 67   | 54   | 27    | 52    | 54    | 23    | 69    | 33    | 28    | 26    | 12    | 33    | 71    | 37   | 45   | 11   |
| 15 I | 6     | 10   | 35   | 19    | 11    | 22    | 17    | 54    | 13    | 17    | 12    | 13    | 8     | 38    | 12   | 17   | 9    |
| 16 I | 0     | 0    | 4    | 5     | 5     | 16    | 13    | 40    | 13    | 9     | 20    | 5     | 3     | 15    | 3    | 12   | 2    |
| 17 I | 3     | 0    | 0    | 5     | 1     | 3     | 4     | 23    | 10    | 25    | 8     | 2     | 2     | 6     | 1    | 4    | 2    |
| 18 I | 6     | 5    | 3    | 1     | 1     | 0     | 2     | 9     | 5     | 2     | 3     | 3     | 5     | 2     | 1    | 2    | 2    |
| 19 I | 0     | 0    | 0    | 0     | 0     | 0     | 3     | 0     | 1     | 0     | 3     | 0     | 0     | 1     | 0    | 1    | 1    |
| 20 I | 0     | 5    | 3    | 0     | 0     | 1     | 0     | 0     | 0     | 1     | 1     | 0     | 3     | 2     | 1    | 0    | 0    |
| 21 I | 0     | 0    | 0    | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 2     | 0    | 0    | 0    |
| 22 I | 0     | 0    | 0    | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0    |
| 23 I | 0     | 0    | 0    | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 1     | 0     | 1     | 0     | 0    | 0    | 0    |
| 24 I | 0     | 0    | 0    | 0     | 0     | 0     | 1     | 0     | 0     | 0     | 0     | 0     | 0     | 0     | 0    | 0    | 0    |
| 1+I  | 16207 | 5042 | 8734 | 11680 | 15655 | 20501 | 33071 | 20751 | 26895 | 26418 | 23239 | 22214 | 13337 | 12043 | 9839 | 7287 | 5300 |
| 2+I  | 16207 | 5042 | 8734 | 11680 | 15655 | 20501 | 33071 | 20751 | 26895 | 26418 | 23239 | 22214 | 13337 | 12043 | 9839 | 7287 | 5300 |
| 3+I  | 16207 | 5042 | 8734 | 11680 | 15655 | 20501 | 33070 | 20748 | 26895 | 26418 | 23239 | 22211 | 13337 | 12043 | 9837 | 7287 | 5300 |
| 4+I  | 15519 | 6042 | 8734 | 11679 | 15607 | 20470 | 32503 | 20465 | 26886 | 26307 | 23198 | 22129 | 13284 | 12031 | 9736 | 7263 | 5093 |
| 5+I  | 12690 | 6023 | 8726 | 11315 | 14384 | 18778 | 29907 | 17698 | 25320 | 23509 | 21663 | 21406 | 12738 | 11752 | 9004 | 6967 | 4444 |

Tableau 17 : Morue 3Pn,4RS. Poids moyens à l'âge (kg) (engins fixes)

| I    | 1974  | 1975 | 1976 | 1977  | 1978  | 1979  | 1980  | 1981  | 1982  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  | 1990  |
|------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 I  | .00   | .00  | .00  | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   | .00   |
| 2 I  | .00   | .00  | .00  | .00   | .00   | .00   | .27   | .32   | .00   | .00   | .00   | .43   | .00   | .00   | .46   | .00   | .00   |
| 3 I  | .47   | .00  | .00  | .46   | .65   | .43   | .51   | .59   | .43   | .51   | .41   | .68   | .62   | .46   | .49   | .49   | .54   |
| 4 I  | .63   | .91  | .58  | .66   | .81   | .70   | .61   | .81   | .95   | .84   | .72   | .83   | .77   | .59   | .75   | .70   | .82   |
| 5 I  | .97   | 1.10 | 1.71 | .98   | 1.08  | .96   | .91   | 1.09  | 1.15  | 1.18  | .95   | .96   | 1.04  | .81   | 1.05  | 1.07  | 1.17  |
| 6 I  | 1.34  | 2.22 | 2.22 | 1.60  | 1.73  | 1.62  | 1.51  | 1.53  | 1.58  | 1.64  | 1.42  | 1.22  | 1.42  | 1.09  | 1.49  | 1.44  | 1.54  |
| 7 I  | 1.77  | 2.53 | 2.52 | 2.31  | 2.28  | 2.16  | 2.02  | 2.19  | 1.84  | 2.04  | 1.87  | 1.69  | 1.91  | 1.54  | 1.81  | 1.76  | 1.76  |
| 8 I  | 2.39  | 2.81 | 2.95 | 2.90  | 2.81  | 3.00  | 2.65  | 3.21  | 2.21  | 2.48  | 2.14  | 2.07  | 2.35  | 1.92  | 2.08  | 1.99  | 1.99  |
| 9 I  | 2.91  | 3.21 | 3.16 | 3.14  | 3.49  | 3.88  | 3.59  | 3.94  | 2.76  | 2.89  | 2.46  | 2.28  | 2.59  | 2.46  | 2.57  | 2.19  | 2.36  |
| 10 I | 4.04  | 3.87 | 3.32 | 3.44  | 3.83  | 4.09  | 4.58  | 5.18  | 3.03  | 3.80  | 2.89  | 2.53  | 2.85  | 3.05  | 2.98  | 2.44  | 2.51  |
| 11 I | 4.49  | 4.36 | 4.43 | 3.84  | 4.20  | 4.79  | 4.97  | 6.26  | 3.79  | 5.04  | 3.58  | 2.79  | 3.15  | 3.23  | 3.18  | 3.12  | 3.51  |
| 12 I | 6.22  | 5.55 | 5.46 | 4.59  | 4.33  | 6.28  | 4.25  | 8.02  | 6.09  | 4.20  | 4.02  | 3.90  | 3.10  | 3.26  | 3.22  | 3.40  | 4.71  |
| 13 I | 7.64  | 5.21 | 7.39 | 4.07  | 5.68  | 5.94  | 6.26  | 5.92  | 6.12  | 6.54  | 5.40  | 4.67  | 3.92  | 4.26  | 4.40  | 3.86  | 4.88  |
| 14 I | 6.96  | 7.22 | 5.51 | 4.64  | 8.81  | 6.29  | 5.29  | 8.11  | 7.02  | 5.85  | 7.03  | 7.19  | 4.98  | 4.30  | 3.34  | 4.31  | 4.90  |
| 15 I | 8.78  | 7.96 | 8.34 | 8.05  | 6.81  | 6.65  | 9.35  | 5.76  | 6.01  | 6.54  | 7.35  | 8.61  | 6.72  | 5.94  | 5.32  | 5.72  | 5.58  |
| 16 I | .00   | .00  | 7.96 | 11.03 | 7.03  | 8.12  | 5.11  | 9.37  | 7.32  | 6.40  | 8.49  | 9.49  | 9.95  | 9.58  | 12.26 | 7.25  | 7.45  |
| 17 I | 5.97  | .00  | .00  | 6.46  | 7.63  | 8.40  | 5.29  | 12.98 | 8.09  | 5.51  | 7.50  | 11.09 | 9.31  | 11.42 | 11.21 | 9.07  | 10.35 |
| 18 I | 12.22 | 9.51 | 8.71 | 9.16  | 7.96  | .00   | 15.21 | 9.42  | 13.11 | 6.00  | 14.95 | 12.94 | 5.50  | 15.11 | 12.23 | 8.07  | 16.25 |
| 19 I | .00   | .00  | .00  | .00   | .00   | .00   | 8.90  | 7.96  | 15.31 | 24.59 | 14.29 | 16.46 | 10.35 | 15.52 | .00   | 17.25 | 14.20 |
| 20 I | .00   | 9.51 | 9.71 | .00   | .00   | 11.24 | .00   | 7.33  | 6.59  | 14.17 | 12.21 | 9.51  | 7.87  | 15.60 | 10.80 | 16.44 | 8.72  |
| 21 I | .00   | .00  | .00  | .00   | .00   | 16.46 | .00   | .00   | .00   | .00   | 20.29 | 26.16 | 12.18 | 13.94 | .00   | 20.26 | 24.71 |
| 22 I | .00   | .00  | .00  | .00   | 15.31 | .00   | .00   | .00   | .00   | .00   | .00   | 9.51  | .00   | .00   | .00   | 16.46 | .00   |
| 23 I | .00   | .00  | .00  | .00   | .00   | .00   | .00   | .00   | .00   | .00   | 24.76 | .00   | 23.08 | .00   | .00   | 13.59 | .00   |
| 24 I | .00   | .00  | .00  | .00   | .00   | .00   | 18.94 | .00   | .00   | 18.94 | .00   | .00   | .00   | 21.64 | .00   | 12.18 | .00   |

Tableau 18 : Morue 3Pn,4RS. Longueur moyenne à l'âge (cm) (engins fixes)

| I    | 1974   | 1975   | 1976   | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   | 1983   | 1984   | 1985   | 1986   | 1987   | 1988   | 1989   | 1990   |
|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 I  | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    |
| 2 I  | .00    | .00    | .00    | .00    | .00    | .00    | 31.00  | 32.71  | .00    | .00    | .00    | 36.16  | .00    | .00    | 37.00  | .00    | .00    |
| 3 I  | 37.01  | .00    | .00    | 37.00  | 41.39  | 36.00  | 38.34  | 39.84  | 36.08  | 38.15  | 35.53  | 42.13  | 40.92  | 37.00  | 37.64  | 37.62  | 39.02  |
| 4 I  | 40.83  | 46.39  | 40.00  | 41.56  | 44.45  | 42.37  | 40.51  | 44.35  | 46.93  | 44.98  | 42.82  | 44.95  | 43.77  | 39.81  | 43.27  | 42.34  | 44.73  |
| 5 I  | 47.29  | 49.41  | 57.41  | 47.20  | 49.01  | 46.94  | 46.18  | 49.29  | 50.13  | 50.35  | 47.04  | 47.07  | 48.18  | 44.36  | 48.29  | 48.61  | 50.14  |
| 6 I  | 52.80  | 62.65  | 62.68  | 55.69  | 57.47  | 56.03  | 54.69  | 55.00  | 55.65  | 56.29  | 53.69  | 50.80  | 53.32  | 48.87  | 54.44  | 53.72  | 54.97  |
| 7 I  | 57.70  | 65.55  | 65.43  | 63.40  | 62.98  | 61.94  | 60.18  | 61.56  | 58.61  | 60.47  | 58.79  | 56.75  | 58.98  | 54.87  | 58.12  | 57.55  | 57.40  |
| 8 I  | 63.79  | 67.62  | 68.98  | 68.39  | 67.55  | 68.74  | 65.93  | 69.48  | 62.08  | 64.00  | 61.39  | 60.68  | 63.27  | 59.01  | 60.83  | 59.84  | 59.46  |
| 9 I  | 68.20  | 70.48  | 70.34  | 70.08  | 72.58  | 74.96  | 72.66  | 74.16  | 66.62  | 67.44  | 63.94  | 62.24  | 65.07  | 63.82  | 64.75  | 61.72  | 62.70  |
| 10 I | 75.55  | 74.57  | 71.25  | 72.22  | 74.37  | 75.83  | 79.02  | 81.61  | 68.38  | 73.05  | 67.26  | 64.56  | 67.12  | 68.27  | 67.65  | 63.66  | 63.72  |
| 11 I | 77.55  | 77.74  | 78.34  | 74.26  | 76.89  | 80.67  | 81.32  | 67.99  | 73.80  | 81.49  | 72.27  | 66.24  | 69.42  | 69.70  | 69.30  | 68.57  | 69.85  |
| 12 I | 88.10  | 84.37  | 83.54  | 79.05  | 78.19  | 87.68  | 76.18  | 96.27  | 87.14  | 75.00  | 74.80  | 73.90  | 68.74  | 69.79  | 69.17  | 70.36  | 76.94  |
| 13 I | 94.71  | 81.95  | 93.53  | 76.07  | 83.82  | 86.97  | 88.68  | 86.73  | 87.78  | 88.22  | 81.67  | 77.83  | 74.30  | 75.76  | 76.67  | 73.42  | 77.87  |
| 14 I | 92.33  | 91.40  | 84.42  | 79.84  | 98.70  | 88.54  | 83.95  | 96.56  | 92.04  | 84.55  | 90.75  | 92.17  | 81.25  | 75.94  | 70.20  | 76.18  | 79.54  |
| 15 I | 98.42  | 97.00  | 98.17  | 95.99  | 91.02  | 88.47  | 100.11 | 85.78  | 87.90  | 89.16  | 91.63  | 96.89  | 90.12  | 82.86  | 83.22  | 83.02  | 81.18  |
| 16 I | .00    | .00    | .00    | 107.42 | 91.81  | 97.28  | 81.67  | 99.74  | 93.09  | 88.73  | 95.20  | 97.59  | 104.02 | 99.94  | 112.11 | 90.27  | 91.70  |
| 17 I | 88.00  | .00    | .00    | 90.34  | 95.60  | 96.61  | 84.37  | 113.75 | 96.76  | 85.40  | 93.35  | 107.84 | 96.92  | 105.21 | 108.12 | 97.94  | 98.76  |
| 18 I | 111.69 | 103.00 | 100.00 | 101.71 | 97.00  | .00    | 120.72 | 102.90 | 113.91 | 84.14  | 119.45 | 112.99 | 83.83  | 120.42 | 109.31 | 94.49  | 118.47 |
| 19 I | .00    | .00    | .00    | .00    | .00    | .00    | 99.34  | 97.00  | 121.00 | 142.00 | 116.14 | 124.00 | 106.00 | 119.52 | .00    | 124.63 | 113.51 |
| 20 I | .00    | 103.00 | .00    | .00    | .00    | 109.00 | .00    | 93.95  | 91.00  | 117.77 | 111.61 | 103.00 | 94.05  | 121.52 | 106.96 | 123.40 | 90.37  |
| 21 I | .00    | .00    | .00    | .00    | .00    | 124.00 | .00    | .00    | .00    | .00    | 133.00 | 145.00 | 112.00 | 117.21 | .00    | 133.00 | 139.00 |
| 22 I | .00    | .00    | .00    | .00    | 121.00 | .00    | .00    | .00    | .00    | .00    | .00    | 103.00 | .00    | .00    | .00    | 124.00 | .00    |
| 23 I | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | .00    | 142.27 | .00    | 139.00 | .00    | .00    | 113.34 | .00    |
| 24 I | .00    | .00    | .00    | .00    | .00    | .00    | 130.00 | .00    | .00    | 130.00 | .00    | .00    | .00    | 136.00 | .00    | 112.00 | .00    |

Tableau 19 : Morue 3Pn,4RS. Coefficient de variation des captures à l'âge (engins fixes)

| I    | 1974 | 1975 | 1976 | 1977 | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1 I  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  |
| 2 I  | .00  | .00  | .00  | .00  | .00  | .00  | .01  | .51  | .00  | .00  | .00  | .73  | .00  | .00  | 1.00 | .00  | .00  |
| 3 I  | .20  | .00  | .00  | 1.02 | .83  | .32  | .39  | .23  | .48  | .35  | .29  | .43  | .38  | .44  | .12  | .31  | .16  |
| 4 I  | .10  | .19  | .57  | .23  | .16  | .12  | .17  | .08  | .12  | .08  | .05  | .14  | .10  | .11  | .05  | .07  | .09  |
| 5 I  | .08  | .21  | .27  | .07  | .08  | .05  | .07  | .12  | .07  | .05  | .04  | .04  | .06  | .06  | .06  | .05  | .07  |
| 6 I  | .09  | .20  | .20  | .05  | .07  | .06  | .07  | .07  | .07  | .04  | .04  | .04  | .04  | .05  | .04  | .05  | .07  |
| 7 I  | .16  | .14  | .16  | .06  | .07  | .06  | .08  | .06  | .07  | .06  | .03  | .04  | .05  | .04  | .05  | .04  | .06  |
| 8 I  | .11  | .14  | .12  | .10  | .11  | .08  | .07  | .08  | .08  | .09  | .04  | .04  | .05  | .04  | .05  | .05  | .06  |
| 9 I  | .12  | .15  | .18  | .09  | .15  | .13  | .13  | .10  | .11  | .10  | .05  | .07  | .05  | .05  | .08  | .05  | .09  |
| 10 I | .16  | .17  | .16  | .16  | .17  | .17  | .19  | .15  | .12  | .17  | .06  | .07  | .07  | .06  | .11  | .08  | .10  |
| 11 I | .20  | .18  | .22  | .19  | .19  | .18  | .20  | .20  | .17  | .15  | .08  | .10  | .07  | .07  | .09  | .11  | .16  |
| 12 I | .33  | .25  | .29  | .20  | .29  | .17  | .31  | .23  | .33  | .37  | .13  | .16  | .13  | .09  | .14  | .11  | .15  |
| 13 I | .45  | .55  | .24  | .32  | .20  | .25  | .25  | .24  | .35  | .50  | .18  | .19  | .17  | .15  | .17  | .15  | .21  |
| 14 I | .49  | .34  | .46  | .50  | .15  | .32  | .34  | .34  | .34  | .59  | .22  | .22  | .21  | .18  | .34  | .19  | .23  |
| 15 I | .67  | .69  | .33  | .42  | .34  | .37  | .31  | .41  | .59  | .55  | .26  | .22  | .40  | .24  | .31  | .22  | .33  |
| 16 I | .00  | .00  | 1.02 | .98  | .51  | .49  | .67  | .41  | .42  | .50  | .25  | .29  | .40  | .26  | .52  | .23  | .47  |
| 17 I | 1.03 | .00  | .00  | .94  | .73  | .78  | .73  | .42  | .53  | .95  | .26  | .50  | .54  | .38  | .76  | .31  | .35  |
| 18 I | .52  | 1.01 | 1.02 | .89  | 1.02 | .00  | .01  | 1.06 | .49  | .96  | .12  | .33  | .45  | .49  | .50  | .50  | .25  |
| 19 I | .00  | .00  | .00  | .00  | .00  | .00  | .76  | 1.02 | .01  | .01  | .63  | 1.40 | 1.59 | .54  | .00  | .42  | .78  |
| 20 I | .00  | 1.01 | .00  | .00  | .00  | 1.06 | .00  | .72  | 1.03 | .69  | .76  | 1.05 | .63  | .36  | .29  | .79  | .84  |
| 21 I | .00  | .00  | .00  | .00  | .00  | 1.33 | .00  | .00  | .00  | .00  | 1.20 | .01  | 1.42 | .92  | .00  | 1.35 | 1.88 |
| 22 I | .00  | .00  | .00  | .00  | .01  | .00  | .00  | .00  | .00  | .00  | 1.08 | .00  | .00  | .00  | .00  | 1.35 | .00  |
| 23 I | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .00  | .62  | .00  | .01  | .00  | .00  | .66  | .00  |
| 24 I | .00  | .00  | .00  | .00  | .00  | .00  | .01  | .00  | .00  | .01  | .00  | .00  | .00  | 1.33 | .00  | 1.19 | .00  |

Tableau 20: Morue 3Pn, 4RS. Analyse de variance et coefficients de la régression du taux de capture pour les années 1974-1990.

R multiple ..... 0.836  
R multiple carré ..... 0.699

## ANALYSE DE VARIANCE

| Source de variation | DL  | Sommes des carrées | Carrées moyens | F     |
|---------------------|-----|--------------------|----------------|-------|
| Origine             | 1   | 130.56             | 130.56         |       |
| Régression          | 38  | 567.86             | 14.94          | 51.44 |
| Classe              | 9   | 106.89             | 11.87          | 40.88 |
| Mois                | 11  | 31.72              | 2.88           | 9.92  |
| Div.                | 2   | 1.91               | 0.95           | 3.28  |
| Année               | 16  | 72.43              | 4.52           | 15.58 |
| Résiduelles         | 839 | 243.75             | 0.29           |       |
| Total               | 877 | 811.61             |                |       |

## COEFFICIENTS DE REGRESSION

| Catégorie | Code | Variable | Coefficient | Erreur Std. | No.Obs. |
|-----------|------|----------|-------------|-------------|---------|
| Classe    | 4    | Origine  |             |             |         |
| Mois      | 10   |          |             |             |         |
| Div.      | 1    |          |             |             |         |
| Année     | 1990 |          |             |             |         |
| Classe    | 2    | 1        | 0.358       | 0.100       | 86      |
|           | 3    | 2        | 0.698       | 0.103       | 88      |
|           | 5    | 3        | 0.332       | 0.090       | 80      |
|           | 6    | 4        | -0.045      | 0.101       | 100     |
|           | 7    | 5        | 0.406       | 0.102       | 78      |
|           | 8    | 6        | -0.861      | 0.113       | 89      |
|           | 9    | 7        | -0.539      | 0.102       | 147     |
|           | 10   | 8        | 1.000       | 0.126       | 32      |
|           | 11   | 9        | 0.455       | 0.100       | 112     |
| Mois      | 1    | 10       | 0.837       | 0.112       | 95      |
|           | 2    | 11       | 0.805       | 0.109       | 141     |
|           | 3    | 12       | 0.610       | 0.115       | 88      |
|           | 4    | 13       | 0.573       | 0.106       | 115     |
|           | 5    | 14       | 0.409       | 0.100       | 129     |
|           | 6    | 15       | 0.245       | 0.108       | 62      |
|           | 7    | 16       | 0.249       | 0.113       | 49      |
|           | 8    | 17       | 0.073       | 0.113       | 49      |
|           | 9    | 18       | -0.019      | 0.115       | 45      |
|           | 11   | 19       | 0.231       | 0.119       | 42      |
|           | 12   | 20       | 0.508       | 0.157       | 20      |
| Div.      | 2    | 21       | 0.106       | 0.057       | 441     |
|           | 3    | 22       | -0.020      | 0.080       | 297     |

Type 1: Code Province TC

|    |             |   |
|----|-------------|---|
| 2  | Maritime    | 4 |
| 3  | "           | 5 |
| 4  | Terre Neuve | 2 |
| 5  | "           | 3 |
| 6  | "           | 4 |
| 7  | "           | 5 |
| 8  | Québec      | 2 |
| 9  | "           | 3 |
| 10 | "           | 4 |
| 11 | France      | 5 |

Type 2: Mois

Type 3: Zones

| Code | Zone |
|------|------|
| 1    | 3Pn  |
| 2    | 4R   |
| 3    | 4S   |

Type 4: Années

Tableau 21 : Morue 3Pn, 4RS. Valeurs du taux de capture moyen (t/h).

### Taux de capture prédicts

Standards utilisés. Codes des variables: 4 10 1

| Années | Captures |       | Taux de capture |       |        |
|--------|----------|-------|-----------------|-------|--------|
|        | Poids    | Prop. | Moyenne         | E.S.  | Effort |
| 74     | 66436    | 0.145 | 0.771           | 0.096 | 86124  |
| 75     | 60233    | 0.054 | 0.542           | 0.074 | 111079 |
| 76     | 76981    | 0.142 | 0.632           | 0.070 | 121829 |
| 77     | 73566    | 0.273 | 0.589           | 0.066 | 124812 |
| 78     | 78506    | 0.220 | 0.644           | 0.074 | 121967 |
| 79     | 82777    | 0.210 | 0.676           | 0.079 | 122404 |
| 80     | 97579    | 0.200 | 0.735           | 0.080 | 132779 |
| 81     | 97911    | 0.168 | 1.342           | 0.159 | 72933  |
| 82     | 104939   | 0.185 | 1.459           | 0.166 | 71913  |
| 83     | 106080   | 0.167 | 1.220           | 0.151 | 86945  |
| 84     | 103643   | 0.139 | 1.162           | 0.147 | 89214  |
| 85     | 88289    | 0.155 | 1.291           | 0.154 | 68409  |
| 86     | 79887    | 0.396 | 1.186           | 0.135 | 69803  |
| 87     | 65594    | 0.212 | 1.138           | 0.126 | 58487  |
| 88     | 47624    | 0.175 | 1.214           | 0.141 | 39511  |
| 89     | 46668    | 0.313 | 1.162           | 0.135 | 40177  |
| 90     | 39558    | 0.457 | 0.969           | 0.113 | 40844  |

Tableau 22 : Morue 3Ph, 4RS. Taux de capture à l'âge (x100).

[illegible]

Tableau 23: Morue 3Pn, 4RS. Historique des allocations optimales et proportionnelles pour établir le nombre de traits à faire par strate lors des missions d'hiver.

| Allocation optimale/proportionnelle |       |        |        |       |        |        |        |        | Allocation optimale/proportionnelle |         |         |
|-------------------------------------|-------|--------|--------|-------|--------|--------|--------|--------|-------------------------------------|---------|---------|
| Année                               |       |        |        |       |        |        |        |        |                                     |         |         |
|                                     | 83    | 84     | 85     | 86    | 87     | 88     | 89     | 90     | moyenne                             | minimum | maximum |
| Région                              |       |        |        |       |        |        |        |        | Région                              |         |         |
| 302                                 | 1.875 | 0.115  | 0.049  | 2.475 | 5.501  | 2.401  | 0.381  | 0.034  | 302                                 | 1.604   | 0.034   |
| 303                                 | 1.875 | 0.115  | 0.130  | 0.098 | 0.625  | 18.311 | 1.397  | 0.220  | 303                                 | 2.846   | 0.098   |
| 304                                 | 1.875 | 0.036  | 0.130  | 0.098 | 0.625  | 2.401  | 0.381  | 2.194  | 304                                 | 0.968   | 0.036   |
| 305                                 | 0.054 | 0.036  | 0.049  | 0.027 | 0.274  | 2.401  | 0.820  | 2.194  | 305                                 | 0.732   | 0.027   |
| 801                                 | 0.627 | 0.115  | 0.459  | 0.098 | 0.063  | 0.076  | .      | .      | 801                                 | 0.240   | 0.063   |
| 802                                 | 0.054 | 0.036  | 0.049  | 0.027 | 0.625  | 2.401  | 11.154 | 13.200 | 802                                 | 3.443   | 0.027   |
| 803                                 | 0.054 | 0.036  | 0.049  | 0.027 | 0.274  | 0.479  | 0.381  | 0.220  | 803                                 | 0.190   | 0.027   |
| 804                                 | 0.054 | 0.036  | 0.049  | .     | 0.625  | .      | .      | .      | 804                                 | 0.191   | 0.036   |
| 805                                 | 0.054 | .      | .      | .     | .      | .      | .      | .      | 805                                 | 0.054   | 0.054   |
| 806                                 | 0.054 | .      | .      | .     | .      | .      | .      | .      | 806                                 | 0.054   | 0.054   |
| 807                                 | 1.875 | 0.036  | 0.130  | 0.098 | 0.274  | 0.479  | 0.030  | 0.220  | 807                                 | 0.393   | 0.030   |
| 808                                 | 1.875 | 0.861  | 0.130  | 8.790 | 0.625  | 0.206  | 0.820  | 0.460  | 808                                 | 1.721   | 0.130   |
| 809                                 | 0.627 | 0.115  | 0.459  | 2.475 | 2.410  | 0.206  | 0.820  | 0.018  | 809                                 | 0.891   | 0.018   |
| 810                                 | 0.627 | 0.115  | 0.049  | 0.351 | 18.860 | 0.748  | 2.317  | 13.200 | 810                                 | 4.533   | 0.049   |
| 811                                 | 1.875 | 11.178 | 0.459  | 2.475 | 5.501  | 2.401  | 0.820  | 2.194  | 811                                 | 3.363   | 0.459   |
| 812                                 | 0.627 | 0.861  | 2.256  | 0.098 | 0.274  | 0.206  | 0.381  | 0.460  | 812                                 | 0.645   | 0.098   |
| 813                                 | 1.875 | 0.207  | 1.187  | 0.351 | 0.625  | 0.479  | 0.381  | 0.034  | 813                                 | 0.642   | 0.034   |
| 814                                 | 5.257 | 0.861  | 1.187  | 0.098 | 0.063  | 0.206  | .      | .      | 814                                 | 1.279   | 0.063   |
| 815                                 | 1.970 | 3.603  | 1.187  | 0.027 | 0.625  | 0.206  | 0.381  | 0.460  | 815                                 | 1.057   | 0.027   |
| 816                                 | 0.627 | 0.036  | 0.459  | .     | .      | 0.748  | 0.381  | .      | 816                                 | 0.450   | 0.036   |
| 817                                 | 0.054 | .      | .      | .     | .      | .      | .      | .      | 817                                 | 0.054   | 0.054   |
| 818                                 | 0.627 | .      | .      | .     | .      | .      | .      | .      | 818                                 | 0.627   | 0.627   |
| 819                                 | 5.460 | 0.861  | 13.326 | 0.027 | 0.625  | 0.076  | 0.381  | 0.460  | 819                                 | 2.652   | 0.027   |
| 820                                 | 0.627 | 0.115  | 0.459  | 2.475 | 0.625  | 0.479  | 1.397  | 0.220  | 820                                 | 0.800   | 0.115   |
| 821                                 | 1.875 | 3.603  | 1.187  | 8.790 | 2.410  | 0.076  | 11.154 | 0.220  | 821                                 | 3.664   | 0.076   |
| 822                                 | 1.875 | 3.603  | 2.256  | 0.610 | 0.063  | 0.076  | 0.381  | 0.034  | 822                                 | 1.112   | 0.034   |
| 823                                 | 0.627 | 3.603  | 2.256  | 0.351 | .      | .      | 0.381  | 0.034  | 823                                 | 1.209   | 0.034   |
| 824                                 | 1.970 | 0.036  | 1.187  | 0.351 | .      | 0.206  | .      | .      | 824                                 | 0.750   | 0.036   |
| 825                                 | 1.970 | .      | .      | .     | .      | .      | .      | .      | 825                                 | 1.970   | 1.970   |
| 826                                 | 0.054 | .      | .      | .     | .      | .      | .      | .      | 826                                 | 0.054   | 0.054   |
| 827                                 | 1.875 | 0.036  | 0.049  | 0.027 | .      | 0.076  | .      | .      | 827                                 | 0.413   | 0.027   |
| 828                                 | 0.054 | .      | .      | .     | .      | .      | .      | .      | 828                                 | 0.054   | 0.054   |
| 829                                 | 0.627 | 0.036  | .      | .     | 0.063  | 0.076  | 0.030  | .      | 829                                 | 0.166   | 0.030   |
| 830                                 | 1.970 | 0.036  | 0.459  | 0.027 | 0.063  | 0.076  | 0.381  | 0.034  | 830                                 | 0.381   | 0.027   |
| 832                                 | 0.054 | .      | .      | .     | .      | .      | .      | .      | 832                                 | 0.054   | 0.054   |
| 833                                 | 0.627 | 0.861  | 0.459  | .     | .      | 0.076  | .      | .      | 833                                 | 0.506   | 0.076   |
| 835                                 | .     | .      | .      | .     | .      | 0.206  | 0.030  | 0.034  | 835                                 | 0.090   | 0.030   |
| 836                                 | .     | .      | .      | .     | .      | 0.076  | .      | .      | 836                                 | 0.076   | 0.076   |

Tableau 24: Nouveau schéma d'allocation des stations pour la mission d'hiver.

| STRATE | REGION | Km <sup>2</sup> | Allocation proportionnelle | Allocation suggérée <sup>1</sup> | Traits effectués Gadus, 1991 |
|--------|--------|-----------------|----------------------------|----------------------------------|------------------------------|
| 801    | 1      | 1214            | 3                          | 3                                | 2                            |
| 814    | 1      | 1029            | 3                          | 3                                | 3                            |
| 822    | 1      | 3244            | 9                          | 3                                | 3                            |
| 823    | 1      | 556             | 1                          | 3                                |                              |
| 827    | 1      | 3231            | 9                          | 3                                |                              |
| 829    | 1      | 2692            | 8                          | 3                                |                              |
| 830    | 1      | 1917            | 5                          | 3                                |                              |
| 833    | 1      | 559             | 1                          | 3                                |                              |
| 803    | 2      | 6917            | 19                         | 3                                | 3                            |
| 804    | 2      | 2490            | 7                          | 3                                |                              |
| 807    | 2      | 2370            | 7                          | 3                                |                              |
| 808    | 2      | 2428            | 6                          | 3                                |                              |
| 812    | 2      | 4648            | 13                         | 3                                | 3                            |
| 813    | 2      | 3958            | 11                         | 3                                | 2                            |
| 815    | 2      | 4407            | 12                         | 3                                |                              |
| 816    | 2      | 5032            | 13                         | 3                                |                              |
| 819    | 2      | 1441            | 4                          | 3                                |                              |
| 824    | 2      | 836             | 2                          | 3                                |                              |
| 809    | 3      | 1547            | 5                          | 3                                | 4                            |
| 820    | 3      | 1358            | 3                          | 3                                | 3                            |
| 302    | 4      | 964             | 3                          | 4                                | 3                            |
| 305    | 4      | 2446            | 7                          | 11                               | 14                           |
| 303    | 5      | 1701            | 4                          | 16                               | 15                           |
| 304    | 5      | 484             | 2                          | 5                                | 4                            |
| 811    | 5      | 1505            | 4                          | 14                               | 8                            |
| 821    | 5      | 1272            | 3                          | 12                               | 7                            |
| 802    | 6      | 1369            | 4                          | 31                               | 23                           |
| 810    | 6      | 764             | 2                          | 17                               | 7                            |
| TOTAL: |        |                 | 170                        | 170                              | 104                          |

<sup>1</sup> Contraintes: minimum 3 traits par strate, total de 170 traits.

Définition des régions (allocations):

|   |        |
|---|--------|
| 1 | 0.0384 |
| 2 | 0.1794 |
| 3 | 0.0343 |
| 4 | 0.1005 |
| 5 | 0.3195 |
| 6 | 0.3280 |

Tableau 25: Morue 3Pn, 4RS: Nombre moyen de morues capturées par trait de chalut lors des croisières de recherche (hiver).

| Voyage<br>Année | Prof.<br>brasses | GADUS 4<br>1978 | GADUS 16<br>1979 | GADUS 31<br>1980 | GADUS 46<br>1981 | GADUS 73<br>1983 | GADUS 89<br>1984 | GADUS 104<br>1985 | GADUS 119<br>1986 | GADUS 134<br>1987 | GADUS 148<br>1988 | GADUS 162<br>1989 | GADUS 177<br>1990 | GADUS 194<br>1991 |
|-----------------|------------------|-----------------|------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| <hr/>           |                  |                 |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   |                   |                   |
| Div.3Pn         |                  |                 |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   |                   |                   |
| 302             | 50-100           | 200.33          | 25.67            | 57.67            | 144.27           | 82.00            | 71.40            | 4.23              | 569.00            | 256.33            | 96.67             | 16.33             | 1.00              | 7.00              |
| 303             | 100-150          | 28.67           | 1.33             | 24.33            | 31.25            | 94.00            | 25.88            | 12.50             | 30.89             | 51.25             | 810.25            | 142.00            | 10.43             | 19.00             |
| 304             | 150-200          | 2.00            | 5.67             | 18.00            | 10.67            | 108.00           | 11.00            | 5.67              | 14.67             | 20.33             | 134.00            | 15.33             | 126.50            | 78.75             |
| 305             | >200             | 1.80            | 0.67             | 2.00             | 19.60            | 2.00             | 2.00             | 2.33              | 2.54              | 8.50              | 99.50             | 35.33             | 119.25            | 1016.00           |
| Div.4R          |                  |                 |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   |                   |                   |
| 801             | 150-200          | 4.67            | 81.33            | 14.00            | 6.00             | 55.33            | 55.00            | 46.00             | 25.33             | 2.50              | 3.00              |                   |                   | 22.00             |
| 802             | >200             | 19.00           | 1.50             | 89.00            | 22.50            | 2.57             | 4.00             | 0.33              | 7.43              | 18.33             | 108.00            | 447.67            | 594.33            | 1835.70           |
| 809             | 150-200          | 61.00           | 64.27            | 98.33            | 151.50           | 27.17            | 52.60            | 57.87             | 430.57            | 62.67             | 16.00             | 42.81             | 59.00             | 57.00             |
| 810             | 150-200          | 30.33           | 5.67             | 262.25           | 139.58           | 38.40            | 22.00            | 3.00              | 57.71             | 585.25            | 40.00             | 77.33             | 612.83            | 25.29             |
| 811             | 100-150          | 199.92          | 71.20            | 954.50           | 631.50           | 126.00           | 1850.57          | 41.86             | 597.87            | 220.17            | 143.25            | 38.00             | 89.71             | 31.13             |
| 812             | 100-150          | 134.60          | 61.60            | 39.67            | 29.29            | 52.00            | 204.44           | 185.71            | 49.20             | 4.56              | 10.54             | 19.27             | 24.38             | 21.67             |
| 813             | 100-150          | 63.00           | 40.75            | 105.00           | 14.33            | 188.47           | 144.80           | 116.90            | 140.80            | 28.00             | 18.63             | 17.20             | 2.00              | 5.50              |
| 820             | 50-100           | 79.25           | 95.25            | 2632.75          | 1008.00          | 54.86            | 54.40            | 35.40             | 603.50            | 29.20             | 18.67             | 151.67            | 5.00              | 12.33             |
| 821             | 50-100           | 1359.25         | 81.25            | 341.50           | 340.50           | 77.57            | 451.00           | 71.60             | 1467.56           | 53.89             | 3.67              | 22.50             | 7.00              | 1.86              |
| 822             | 50-100           | 551.50          | 372.00           | 13.40            | 13.80            | 131.30           | 325.15           | 221.50            | 310.67            | 1.13              | 1.75              | 14.88             | 0.13              | 0.67              |
| 835             | 30-50            |                 |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   | 3.17              |                   |
| AB              | 50-100           | 556.00          | 24.20            | 7.60             | 0.00             | 126.00           | 281.43           | 214.50            | 65.40             |                   | 7.67              | 6.00              | 1.67              |                   |
| Div.4S          |                  |                 |                  |                  |                  |                  |                  |                   |                   |                   |                   |                   |                   |                   |
| 803             | >200             | 5.33            |                  | 49.86            | 25.25            | 2.18             | 6.53             | 3.87              | 7.00              | 11.00             | 25.44             | 16.36             | 25.15             | 71.67             |
| 804             | >200             | 22.33           |                  | 23.50            | 70.00            | 5.40             | 17.40            | 4.67              |                   | 23.80             |                   |                   |                   |                   |
| 807             | 150-200          | 32.00           | 5.00             | 12.33            | 12.00            | 67.49            | 12.67            | 12.17             | 26.40             | 5.63              | 26.00             | 0.00              | 19.33             |                   |
| 808             | 150-200          | 48.33           | 42.40            | 95.00            | 160.67           | 80.88            | 239.17           | 17.50             | 1131.00           | 17.38             | 8.83              | 36.67             | 29.75             |                   |
| 814             | 100-150          | 44.67           | 12.00            | 36.67            | 16.50            | 887.33           | 225.00           | 156.20            | 22.50             | 2.00              | 8.67              |                   |                   | 45.00             |
| 815             | 100-150          | 25.33           | 21.50            | 49.67            | 13.83            | 205.57           | 737.00           | 111.80            | 9.50              | 22.22             | 12.45             | 23.72             | 33.00             |                   |
| 816             | 100-150          | 33.60           | 69.00            | 33.00            | 3.86             | 66.80            | 21.75            | 66.75             |                   |                   | 28.00             | 22.86             |                   |                   |
| 819             | 100-150          | 28.50           | 79.00            | 12.00            | 5.50             | 276.67           | 195.50           | 545.43            | 10.40             | 15.17             | 5.67              | 16.20             | 37.00             |                   |
| 827             | 50-100           | 25.00           |                  | 1.00             | 14.40            | 125.50           | 8.20             | 4.60              | 0.67              |                   | 1.80              |                   |                   |                   |
| 833             | <50              | 3.33            |                  | 0.00             | 0.00             | 51.50            | 147.00           | 34.67             |                   |                   | 0.50              |                   |                   |                   |
| CD              | 50-100           | 23.00           | 282.50           | 4.50             | 5.17             | 109.33           | 5.25             | 139.50            | 0.75              | 3.11              | 3.75              | 5.91              | 2.00              |                   |

AB = Strate 823+824  
CD = Strate 829+830

Tableau 26 : Morue 3Pn, 4RS. Biomasse minimum exploitable (t) lors des croisières de recherche (hiver).

| Voyage  |        | GADUS 4 | GADUS 16 | GADUS 31 | GADUS 46 | GADUS 73 | GADUS 89 | GADUS 104 | GADUS 119 | GADUS 134 | GADUS 148 | GADUS 162 | GADUS 177 | GADUS 194 |
|---------|--------|---------|----------|----------|----------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Année   |        | 1978    | 1979     | 1980     | 1981     | 1983     | 1984     | 1985      | 1986      | 1987      | 1988      | 1989      | 1990      | 1991      |
| Prof.   |        |         |          |          |          |          |          |           |           |           |           |           |           |           |
| brasses | strate |         |          |          |          |          |          |           |           |           |           |           |           |           |
| <50     | 833    | 124     | 128*     | 0        | 0        | 918      | 2582     | 328       | 127*      | 39*       | 1         | 21*       | 10*       |           |
|         | Total  | 124     | 128      | 0        | 0        | 918      | 2582     | 328       | 127       | 39        | 1         | 21        | 10        |           |
| 50-100  | 302    | 8872    | 1073     | 3036     | 5063     | 3449     | 2656     | 169       | 21320     | 12747     | 4584      | 1873      | 4         | 84        |
|         | 820    | 5157    | 4021     | 103644   | 45384    | 3172     | 3668     | 2482      | 22851     | 1558      | 139       | 2407      | 51        | 66        |
|         | 821    | 59447   | 2943     | 5082     | 6329     | 4251     | 12866    | 3902      | 48541     | 1744      | 31        | 209       | 46        | 14        |
|         | 822    | 59823   | 37986    | 224      | 312      | 16541    | 35161    | 24737     | 35691     | 32        | 13        | 72        | 6         | 34        |
|         | 827    | 176     | 221*     | 9        | 35       | 11319    | 273      | 109       | 5         | 35*       | 21        | 1*        | 1*        |           |
|         | AB     | 8348    | 426      | 44       | 0        | 6738     | 15205    | 5813      | 722       | 285*      | 21        | 17        | 8         |           |
|         | CD     | 503     | 14399    | 88       | 116      | 19822    | 82       | 14510     | 5         | 87        | 78        | 68        | 89        |           |
|         | Total  | 142327  | 61069    | 112128   | 57238    | 65291    | 69911    | 51722     | 129135    | 16488     | 4887      | 4646      | 204       | 197       |
| 100-150 | 303    | 2457    | 96       | 2786     | 1536     | 6459     | 2220     | 912       | 3405      | 6357      | 57472     | 8057      | 777       | 441       |
|         | 811    | 8188    | 3686     | 20412    | 31536    | 6920     | 76743    | 2293      | 24842     | 6511      | 1792      | 274       | 482       | 301       |
|         | 812    | 16032   | 7435     | 882      | 1068     | 8266     | 35882    | 24411     | 8584      | 204       | 171       | 324       | 424       | 468       |
|         | 813    | 7452    | 541      | 1576     | 267      | 25176    | 21197    | 13574     | 8589      | 390       | 235       | 198       | 23        | 41        |
|         | 814    | 535     | 61       | 95       | 92       | 23966    | 10811    | 4797      | 51        | 7         | 12        | 100*      | 60*       | 190       |
|         | 815    | 1006    | 1275     | 1109     | 495      | 30451    | 77504    | 18890     | 230       | 862       | 320       | 313       | 553       |           |
|         | 816    | 1158    | 5899     | 1195     | 101      | 10499    | 798      | 6387      | 2219*     | 751*      | 682       | 521       | 379*      |           |
|         | 819    | 312     | 2655     | 79       | 24       | 11949    | 9639     | 22981     | 68        | 113       | 47        | 84        | 233       |           |
|         | Total  | 37140   | 21649    | 28134    | 35119    | 123685   | 234794   | 94244     | 47988     | 15196     | 60731     | 9871      | 2930      | 1440      |
| 150-200 | 304    | 126     | 108      | 645      | 355      | 1867     | 53       | 416       | 321       | 977       | 2366      | 487       | 2290      | 888       |
|         | 801    | 127     | 1299     | 126      | 66       | 2207     | 2737     | 2241      | 567       | 60        | 80        | 112*      | 68*       | 142       |
|         | 809    | 3509    | 4524     | 1924     | 4156     | 1786     | 2421     | 3081      | 24119     | 2217      | 141       | 385       | 409       | 496       |
|         | 810    | 1810    | 583      | 8888     | 3515     | 1361     | 1084     | 72        | 2103      | 7158      | 435       | 1673      | 3054      | 144       |
|         | 807    | 855     | 277      | 180      | 227      | 4390     | 320      | 960       | 534       | 241       | 337       | 0         | 186       |           |
|         | 808    | 5167    | 4557     | 8844     | 9779     | 8194     | 24154    | 1643      | 74632     | 732       | 133       | 1338      | 333       |           |
|         | Total  | 11594   | 11348    | 20608    | 18098    | 19806    | 30769    | 8413      | 102275    | 11385     | 3492      | 3994      | 6340      | 1669      |
| >200    | 305    | 271     | 170      | 508      | 5518     | 338      | 27       | 777       | 415       | 3151      | 16449     | 5628      | 11340     | 61160     |
|         | 802    | 1861    | 646      | 10523    | 2112     | 308      | 395      | 27        | 1232      | 1283      | 5786      | 23920     | 14620     | 57345     |
|         | 803    | 1592    | 5170*    | 18568    | 6871     | 1162     | 2443     | 1893      | 1837      | 2099      | 3736      | 2760      | 3110      | 4729      |
|         | 804    | 515     | 874*     | 1035     | 2034     | 508      | 817      | 282       | 862*      | 910       | 139       | 165*      | 94*       |           |
|         | Total  | 4239    | 6860     | 30634    | 16535    | 2316     | 3682     | 2979      | 4345      | 7443      | 26109     | 32473     | 29164     | 123233    |
|         | TOTAL  | 195424  | 101054   | 191504   | 126989   | 212016   | 341738   | 157687    | 283870    | 50551     | 95220     | 51005     | 38648     | 126541    |

AB = Strate 823+824

CD = Strate 829+830

\* Remplie à l'aide d'une régression multiple ( $R^2=0.39$ )

Tableau 27 : Morue 3Pn 4RS. Nombres à l'âge Gadus Atlantica ('000)

| I    | 1978   | 1979  | 1980   | 1981  | 1983   | 1984   | 1985   | 1986   | 1987  | 1988  | 1989  | 1990  | 1991   |
|------|--------|-------|--------|-------|--------|--------|--------|--------|-------|-------|-------|-------|--------|
| 1 I  | 116    | 58    | 0      | 715   | 0      | 64     | 0      | 0      | 0     | 170   | 35    | 7     | 0      |
| 2 I  | 2032   | 2983  | 2397   | 1594  | 837    | 1628   | 1923   | 197    | 224   | 2981  | 6172  | 451   | 768    |
| 3 I  | 7792   | 4544  | 20817  | 5101  | 9549   | 6114   | 10588  | 4077   | 3334  | 3728  | 7361  | 12926 | 4328   |
| 4 I  | 26392  | 15478 | 27013  | 19223 | 13142  | 60257  | 14434  | 25153  | 8378  | 4999  | 4436  | 10184 | 22021  |
| 5 I  | 34007  | 22817 | 47728  | 14729 | 16703  | 30097  | 26893  | 35443  | 11358 | 6092  | 2850  | 9116  | 34697  |
| 6 I  | 43494  | 15222 | 37258  | 29331 | 49030  | 45000  | 14096  | 65919  | 4552  | 6590  | 6006  | 5281  | 34385  |
| 7 I  | 12891  | 11259 | 18696  | 17200 | 23444  | 55182  | 15669  | 43201  | 4043  | 7196  | 8408  | 6691  | 13410  |
| 8 I  | 4467   | 4977  | 10649  | 8114  | 15284  | 20221  | 18217  | 23629  | 2202  | 12687 | 3324  | 5535  | 13049  |
| 9 I  | 1759   | 1005  | 4414   | 2293  | 6994   | 14043  | 7639   | 13143  | 1677  | 5561  | 3522  | 1828  | 10619  |
| 10 I | 2651   | 555   | 816    | 758   | 1674   | 4824   | 6445   | 4775   | 1688  | 2923  | 750   | 1714  | 1148   |
| 11 I | 913    | 1156  | 682    | 75    | 1236   | 1730   | 1382   | 3122   | 718   | 3588  | 609   | 158   | 1379   |
| 12 I | 1087   | 396   | 603    | 220   | 427    | 760    | 899    | 1162   | 512   | 1146  | 666   | 264   | 180    |
| 13 I | 405    | 301   | 505    | 93    | 240    | 397    | 474    | 566    | 165   | 477   | 322   | 33    | 114    |
| 14 I | 270    | 192   | 397    | 245   | 74     | 186    | 100    | 151    | 178   | 309   | 89    | 60    | 24     |
| 15 I | 12     | 109   | 112    | 60    | 107    | 55     | 56     | 86     | 89    | 150   | 149   | 27    | 5      |
| 16 I | 0      | 71    | 70     | 30    | 58     | 126    | 32     | 25     | 12    | 42    | 42    | 4     | 34     |
| 17 I | 0      | 15    | 7      | 11    | 56     | 37     | 5      | 27     | 40    | 0     | 26    | 0     | 0      |
| 18 I | 11     | 0     | 28     | 30    | 0      | 150    | 14     | 0      | 0     | 0     | 9     | 0     | 3      |
| 19 I | 0      | 7     | 14     | 0     | 5      | 31     | 8      | 6      | 0     | 0     | 0     | 17    | 0      |
| 20 I | 11     | 0     | 0      | 15    | 9      | 0      | 0      | 14     | 0     | 0     | 23    | 0     | 3      |
| 21 I | 4      | 14    | 0      | 0     | 0      | 0      | 8      | 0      | 8     | 0     | 0     | 0     | 0      |
| 22 I | 0      | 0     | 0      | 0     | 0      | 30     | 5      | 0      | 0     | 0     | 0     | 0     | 0      |
| 23 I | 0      | 0     | 0      | 0     | 0      | 0      | 6      | 0      | 0     | 0     | 0     | 0     | 0      |
| 1+I  | 138314 | 81158 | 172207 | 99834 | 138870 | 240929 | 118892 | 220696 | 39177 | 58638 | 44799 | 54296 | 136166 |
| 2+I  | 138198 | 81100 | 172207 | 99119 | 138870 | 240865 | 118892 | 220696 | 39177 | 58468 | 44764 | 54289 | 136166 |
| 3+I  | 136166 | 78117 | 169810 | 97525 | 138033 | 239238 | 116969 | 220498 | 38952 | 55488 | 38591 | 53827 | 125398 |
| 4+I  | 128374 | 73573 | 148993 | 92424 | 128484 | 233124 | 106381 | 216421 | 35618 | 51759 | 31230 | 40911 | 131070 |
| 5+I  | 101982 | 58095 | 121979 | 73202 | 115342 | 172867 | 91947  | 191268 | 27240 | 46760 | 26794 | 30728 | 109049 |

Tableau 28 : Morue 3Pn 4RS. Nombres à l'âge Gadus Atlantica (%)

| I    | 1978  | 1979  | 1980  | 1981  | 1983  | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  | 1990  | 1991  |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 I  | .1    | .1    | .0    | .7    | .0    | .0    | .0    | .0    | .0    | .3    | .1    | .0    | .0    |
| 2 I  | 1.5   | 3.7   | 1.4   | 1.6   | .6    | .7    | 1.6   | .1    | .6    | 5.1   | 13.8  | .8    | .6    |
| 3 I  | 5.6   | 5.6   | 12.1  | 5.1   | 6.9   | 2.5   | 8.9   | 1.8   | 8.5   | 6.4   | 16.4  | 23.8  | 3.2   |
| 4 I  | 19.1  | 19.1  | 15.7  | 19.3  | 9.5   | 25.0  | 12.1  | 11.4  | 21.4  | 8.5   | 9.9   | 18.8  | 16.2  |
| 5 I  | 24.6  | 28.1  | 27.7  | 14.8  | 12.0  | 12.5  | 22.6  | 16.1  | 29.0  | 10.4  | 6.4   | 16.8  | 25.5  |
| 6 I  | 31.4  | 18.8  | 21.6  | 29.4  | 35.3  | 18.7  | 11.9  | 29.9  | 11.6  | 11.2  | 13.4  | 9.7   | 25.3  |
| 7 I  | 9.3   | 13.9  | 10.9  | 17.2  | 16.9  | 22.9  | 13.2  | 19.6  | 10.3  | 12.3  | 18.8  | 12.3  | 9.8   |
| 8 I  | 3.2   | 6.1   | 6.2   | 8.1   | 11.0  | 8.4   | 15.3  | 10.7  | 5.6   | 21.6  | 7.4   | 10.2  | 9.6   |
| 9 I  | 1.3   | 1.2   | 2.6   | 2.3   | 5.0   | 5.8   | 6.4   | 6.0   | 4.3   | 9.5   | 7.9   | 3.4   | 7.8   |
| 10 I | 1.9   | .7    | .5    | .8    | 1.2   | 2.0   | 5.4   | 2.2   | 4.3   | 5.0   | 1.7   | 3.2   | .8    |
| 11 I | .7    | 1.4   | .4    | .1    | .9    | .7    | 1.2   | 1.4   | 1.8   | 6.1   | 1.4   | .3    | 1.0   |
| 12 I | .8    | .5    | .4    | .2    | .3    | .3    | .8    | .5    | 1.3   | 2.0   | 1.5   | .5    | .1    |
| 13 I | .3    | .4    | .3    | .1    | .2    | .2    | .4    | .3    | .4    | .8    | .7    | .1    | .1    |
| 14 I | .2    | .2    | .2    | .2    | .1    | .1    | .1    | .1    | .5    | .5    | .2    | .1    | .0    |
| 15 I | .0    | .1    | .1    | .1    | .1    | .0    | .0    | .0    | .2    | .3    | .3    | .0    | .0    |
| 16 I | .0    | .1    | .0    | .0    | .0    | .1    | .0    | .0    | .0    | .1    | .1    | .0    | .0    |
| 17 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .1    | .0    | .1    | .0    | .0    |
| 18 I | .0    | .0    | .0    | .0    | .0    | .1    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 19 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 20 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .1    | .0    | .0    |
| 21 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 22 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 23 I | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    | .0    |
| 1+I  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2+I  | 99.9  | 99.9  | 100.0 | 99.3  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 99.7  | 99.9  | 100.0 | 100.0 |
| 3+I  | 98.4  | 96.3  | 98.6  | 97.7  | 99.4  | 99.3  | 98.4  | 99.9  | 99.4  | 94.6  | 86.1  | 99.2  | 99.4  |
| 4+I  | 92.8  | 90.7  | 86.5  | 92.6  | 92.5  | 96.8  | 89.5  | 98.1  | 90.9  | 88.3  | 69.7  | 75.3  | 96.3  |
| 5+I  | 73.7  | 71.6  | 70.8  | 73.3  | 83.1  | 71.8  | 77.3  | 86.7  | 69.5  | 79.7  | 59.8  | 56.6  | 80.1  |

Tableau 29: Morue 3Pn, 4RS. Nombre moyen et poids moyen (Kg) de morues capturées par trait de chalut lors des croisières de recherche (été).

| VOYAGE  |         | NEEDLER 141 | NEEDLER 141 |
|---------|---------|-------------|-------------|
| No.     |         | 1990        | 1990        |
| ANNEE   | Prof.   | NOMBRES     | POIDS       |
| STRATE  | brasses | MOYEN       | MOYEN       |
| -----   |         | -----       |             |
| Div.3Pn |         |             |             |
| 302     | 50-100  |             |             |
| 303     | 100-150 |             |             |
| 304     | 150-200 |             |             |
| 305     | >200    |             |             |
| Div.4R  |         |             |             |
| 801     | 150-200 | 0.30        | 0.07        |
| 802     | >200    | 0.00        | 0.00        |
| 809     | 150-200 | 0.00        | 0.00        |
| 810     | 150-200 | 0.00        | 0.00        |
| 811     | 100-150 | 0.63        | 0.33        |
| 812     | 100-150 | 0.89        | 1.41        |
| 813     | 100-150 | 16.61       | 7.46        |
| 820     | 50-100  | 25.44       | 12.69       |
| 821     | 50-100  | 29.48       | 19.14       |
| 822     | 50-100  | 19.93       | 11.14       |
| 823     | 50-100  | 36.71       | 24.25       |
| 824     | 50-100  | 236.00      | 219.53      |
| Div.4S  |         |             |             |
| 803     | >200    | 0.13        | 0.23        |
| 804     | >200    | 0.00        | 0.00        |
| 805     | 150-200 | 0.00        | 0.00        |
| 806     | 150-200 | 0.00        | 0.00        |
| 807     | 150-200 | 0.00        | 0.00        |
| 808     | 150-200 | 0.00        | 0.00        |
| 814     | 100-150 | 1.67        | 2.72        |
| 815     | 100-150 | 0.11        | 0.09        |
| 816     | 100-150 | 3.10        | 2.80        |
| 817     | 100-150 | 25.04       | 18.84       |
| 818     | 100-150 | 0.34        | 0.60        |
| 819     | 100-150 | 1.67        | 1.92        |
| 825     | 50-100  |             |             |
| 827     | 50-100  |             |             |
| 828     | 50-100  | 12.37       | 9.29        |
| 829     | 50-100  | 34.19       | 25.13       |
| 830     | 50-100  | 26.70       | 6.08        |
| 831     | 50-100  | 33.93       | 21.74       |
| 832     | 50-100  | 32.00       | 16.54       |
| 833     | <50     | 21.10       | 19.10       |

Tableau 30 : Morue 3Pn 4RS. Nombres à l'âge Alfred Needler ('000) et (%)

|             | I | 1990  | 1990   |
|-------------|---|-------|--------|
| -----+----- |   |       |        |
| 1 I         |   | 496   | 1.16   |
| 2 I         |   | 2266  | 5.29   |
| 3 I         |   | 14634 | 34.17  |
| 4 I         |   | 11770 | 27.49  |
| 5 I         |   | 6125  | 14.30  |
| 6 I         |   | 2331  | 5.44   |
| 7 I         |   | 2289  | 5.34   |
| 8 I         |   | 2204  | 5.15   |
| 9 I         |   | 460   | 1.07   |
| 10 I        |   | 150   | .35    |
| 11 I        |   | 47    | .11    |
| 12 I        |   | 18    | .04    |
| 13 I        |   | 33    | .08    |
| -----+----- |   |       |        |
| 1+I         |   | 42823 | 100.00 |
| 2+I         |   | 42327 | 98.84  |
| 3+I         |   | 40061 | 93.55  |
| 4+I         |   | 25426 | 59.37  |
| 5+I         |   | 13656 | 31.89  |

Tableau 31 : Morue 3Pn,4RS. Nombres à l'âge Lady Hammond ('000) et (%)

| I           | 1984  | 1985  | 1986   | 1987   | 1988  | 1989  | I    | 1984  | 1985  | 1986  | 1987  | 1988  | 1989  |
|-------------|-------|-------|--------|--------|-------|-------|------|-------|-------|-------|-------|-------|-------|
| -----+----- |       |       |        |        |       |       |      |       |       |       |       |       |       |
| 1 I         | 154   | 289   | 71     | 242    | 8185  | 79    | 1 I  | .3    | .5    | .1    | .2    | 10.9  | .1    |
| 2 I         | 1096  | 774   | 1962   | 2120   | 1498  | 4210  | 2 I  | 2.1   | 1.4   | 1.5   | 1.8   | 2.0   | 5.4   |
| 3 I         | 2111  | 3377  | 9660   | 5518   | 3493  | 10015 | 3 I  | 4.1   | 6.0   | 7.3   | 4.8   | 4.7   | 12.9  |
| 4 I         | 5811  | 6264  | 26512  | 17168  | 5568  | 13753 | 4 I  | 11.2  | 11.2  | 19.9  | 14.8  | 7.4   | 17.7  |
| 5 I         | 9811  | 10545 | 35137  | 39556  | 14492 | 13772 | 5 I  | 19.0  | 18.8  | 26.4  | 34.1  | 19.3  | 17.8  |
| 6 I         | 11516 | 11796 | 26920  | 21035  | 14955 | 17866 | 6 I  | 22.3  | 21.0  | 20.3  | 18.1  | 19.9  | 23.0  |
| 7 I         | 9275  | 9549  | 15670  | 14592  | 13504 | 9807  | 7 I  | 17.9  | 17.0  | 11.8  | 12.6  | 18.0  | 12.6  |
| 8 I         | 5619  | 6210  | 8489   | 8096   | 7080  | 3873  | 8 I  | 10.9  | 11.1  | 6.4   | 7.0   | 9.4   | 5.0   |
| 9 I         | 3253  | 3794  | 4458   | 4484   | 3037  | 2201  | 9 I  | 6.3   | 6.8   | 3.4   | 3.9   | 4.1   | 2.8   |
| 10 I        | 1411  | 1755  | 2061   | 1974   | 1798  | 1261  | 10 I | 2.7   | 3.1   | 1.6   | 1.7   | 2.4   | 1.6   |
| 11 I        | 646   | 868   | 907    | 708    | 307   | 159   | 11 I | 1.2   | 1.5   | .7    | .6    | .4    | .2    |
| 12 I        | 369   | 474   | 538    | 315    | 578   | 310   | 12 I | .7    | .8    | .4    | .3    | .8    | .4    |
| 13 I        | 176   | 219   | 197    | 59     | 139   | 89    | 13 I | .3    | .4    | .1    | .1    | .2    | .1    |
| 14 I        | 143   | 122   | 148    | 52     | 166   | 91    | 14 I | .3    | .2    | .1    | .0    | .2    | .1    |
| 15 I        | 115   | 35    | 69     | 100    | 104   | 0     | 15 I | .2    | .1    | .1    | .1    | .1    | .0    |
| 16 I        | 46    | 34    | 41     | 0      | 36    | 30    | 16 I | .1    | .1    | .0    | .0    | .0    | .0    |
| 17 I        | 0     | 0     | 0      | 0      | 0     | 0     | 17 I | .0    | .0    | .0    | .0    | .0    | .0    |
| 18 I        | 91    | 18    | 0      | 0      | 0     | 19    | 18 I | .2    | .0    | .0    | .0    | .0    | .0    |
| 19 I        | 0     | 0     | 0      | 0      | 0     | 0     | 19 I | .0    | .0    | .0    | .0    | .0    | .0    |
| 20 I        | 83    | 0     | 41     | 0      | 14    | 0     | 20 I | .2    | .0    | .0    | .0    | .0    | .0    |
| 21 I        | 2     | 12    | 17     | 44     | 13    | 0     | 21 I | .0    | .0    | .0    | .0    | .0    | .0    |
| -----+----- |       |       |        |        |       |       |      |       |       |       |       |       |       |
| 1+I         | 51728 | 56136 | 132900 | 116062 | 74965 | 77535 | 1+I  | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 2+I         | 51574 | 55846 | 132828 | 115820 | 66780 | 77456 | 2+I  | 99.7  | 99.5  | 99.9  | 99.8  | 89.1  | 99.9  |
| 3+I         | 50478 | 55072 | 130866 | 113700 | 65282 | 73246 | 3+I  | 97.6  | 98.1  | 98.5  | 98.0  | 87.1  | 94.5  |
| 4+I         | 48368 | 51695 | 121206 | 108192 | 61789 | 63231 | 4+I  | 93.5  | 92.1  | 91.2  | 93.2  | 82.4  | 81.6  |
| 5+I         | 42557 | 45431 | 94693  | 91014  | 56221 | 49478 | 5+I  | 82.3  | 80.9  | 71.3  | 78.4  | 75.0  | 63.8  |

Tableau 32: Morue 3Pn, 4RS. Effectifs estimés par "Adapt".

|    | 74     | 75     | 76     | 77     | 78     | 79     | 80     | 81     | 82     | 83     | 84     | 85     | 86     | 87     | 88     | 89     | 90     |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 4  | 57348  | 86902  | 113669 | 95787  | 131099 | 141799 | 102983 | 159863 | 100141 | 91008  | 108770 | 67055  | 77271  | 55780  | 39181  | 88853  | 177913 |
| 5  | 37838  | 43270  | 67247  | 88351  | 76005  | 104911 | 113015 | 81248  | 124832 | 79065  | 70077  | 86387  | 52621  | 61079  | 44589  | 30925  | 71150  |
| 6  | 48579  | 22286  | 28454  | 43716  | 63175  | 52461  | 73231  | 76681  | 58377  | 85209  | 50930  | 50377  | 56333  | 35361  | 42383  | 31044  | 20932  |
| 7  | 18747  | 27560  | 13640  | 17574  | 24250  | 35784  | 31305  | 41682  | 44635  | 36261  | 53068  | 29489  | 28740  | 31975  | 17813  | 24338  | 18202  |
| 8  | 21026  | 10550  | 16062  | 7328   | 7202   | 11446  | 17904  | 15112  | 21485  | 24087  | 20454  | 25129  | 14473  | 12811  | 15444  | 9084   | 12245  |
| 9  | 9265   | 11191  | 5987   | 7948   | 3621   | 3939   | 5008   | 8267   | 8093   | 9742   | 14290  | 10055  | 11690  | 6398   | 3964   | 7988   | 3740   |
| 10 | 4631   | 5057   | 6668   | 3100   | 3545   | 2002   | 1932   | 2715   | 4820   | 3575   | 5207   | 6552   | 5357   | 3971   | 1936   | 1875   | 4070   |
| 11 | 1716   | 2426   | 2585   | 3141   | 1545   | 1761   | 987    | 1145   | 1373   | 2038   | 1877   | 2367   | 3268   | 2319   | 1584   | 992    | 536    |
| 12 | 695    | 1032   | 1317   | 1218   | 1763   | 778    | 951    | 546    | 671    | 565    | 930    | 793    | 1189   | 1094   | 569    | 549    | 373    |
| 13 | 610    | 413    | 559    | 721    | 641    | 1045   | 365    | 485    | 291    | 418    | 271    | 394    | 468    | 556    | 375    | 215    | 98     |
| 14 | 309    | 425    | 216    | 324    | 327    | 312    | 728    | 230    | 250    | 171    | 149    | 91     | 250    | 216    | 219    | 179    | 42     |
| 15 | 158    | 225    | 268    | 114    | 189    | 152    | 176    | 525    | 121    | 167    | 111    | 85     | 62     | 168    | 85     | 122    | 85     |
| 4+ | 200922 | 211337 | 256671 | 269321 | 313361 | 356390 | 348585 | 388499 | 365090 | 332307 | 326132 | 278773 | 251721 | 211729 | 168141 | 196165 | 309386 |
| 5+ | 143575 | 124434 | 143002 | 173534 | 182262 | 214591 | 245602 | 228637 | 264949 | 241299 | 217362 | 211719 | 174450 | 155949 | 128961 | 107312 | 131473 |
| 6+ | 105736 | 81164  | 75754  | 85184  | 106257 | 109680 | 132587 | 147388 | 140117 | 162233 | 147285 | 125332 | 121829 | 94870  | 84372  | 76386  | 60324  |
| 7+ | 57157  | 58878  | 47300  | 41468  | 43082  | 57219  | 59356  | 70707  | 81739  | 77024  | 96356  | 74955  | 65496  | 59508  | 41988  | 45343  | 39392  |

Tableau 33: Morue 3Pn, 4RS. Biomasse début d'année.

|    | 1974   | 1975   | 1976   | 1977   | 1978   | 1979   | 1980   | 1981   | 1982   | 1983   | 1984   | 1985   | 1986   | 1987   | 1988   | 1989   | 1990   |
|----|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 4  | 29323  | 49563  | 74497  | 51078  | 88558  | 76680  | 50782  | 105941 | 68427  | 80757  | 76987  | 47357  | 54572  | 27546  | 25058  | 53189  | 57935* |
| 5  | 30193  | 34687  | 60586  | 77901  | 60140  | 87999  | 87462  | 63341  | 116564 | 82950  | 68576  | 75914  | 46146  | 45818  | 32346  | 25536  | 57226  |
| 6  | 53089  | 27273  | 36899  | 56511  | 76564  | 61457  | 84785  | 84922  | 69373  | 113620 | 69933  | 56462  | 60926  | 35044  | 40870  | 30972  | 21934  |
| 7  | 26553  | 43454  | 24621  | 32303  | 41420  | 58589  | 51640  | 67897  | 68248  | 59943  | 89484  | 45133  | 38520  | 40053  | 21792  | 31997  | 22779  |
| 8  | 36367  | 20863  | 35619  | 17057  | 16577  | 25875  | 37994  | 32979  | 42588  | 47226  | 40164  | 46424  | 25472  | 19515  | 23826  | 14394  | 18767  |
| 9  | 20974  | 25443  | 15579  | 21328  | 10308  | 11777  | 14878  | 23472  | 20841  | 22239  | 31983  | 21005  | 24156  | 12806  | 7498   | 15326  | 6606   |
| 10 | 11147  | 14057  | 19004  | 9395   | 10757  | 7035   | 7260   | 10697  | 15597  | 10865  | 13414  | 15136  | 12305  | 9623   | 4631   | 4309   | 8499   |
| 11 | 7615   | 8405   | 8973   | 10156  | 4932   | 6387   | 4060   | 5733   | 5767   | 7667   | 6525   | 6273   | 8062   | 6008   | 4406   | 2767   | 1321   |
| 12 | 4429   | 4618   | 5997   | 4954   | 6349   | 3188   | 3726   | 3127   | 3936   | 2326   | 3825   | 2850   | 3358   | 3093   | 1642   | 1661   | 1238   |
| 13 | 3129   | 2022   | 3111   | 3218   | 2982   | 4769   | 1943   | 2326   | 1948   | 2576   | 1230   | 1637   | 1610   | 1767   | 1294   | 747    | 352    |
| 14 | 2050   | 2570   | 1027   | 1802   | 1614   | 1639   | 3455   | 1507   | 1541   | 1024   | 1076   | 538    | 1225   | 792    | 687    | 740    | 180    |
| 15 | 1194   | 1475   | 1865   | 744    | 1084   | 924    | 1153   | 2483   | 837    | 1092   | 781    | 694    | 420    | 900    | 394    | 504    | 408    |
| 4+ | 226063 | 234429 | 287679 | 286448 | 321287 | 346319 | 349139 | 404425 | 415667 | 432286 | 403979 | 319422 | 276771 | 202965 | 164443 | 182142 | 197245 |
| 5+ | 196740 | 184866 | 213182 | 235370 | 232730 | 269639 | 298357 | 298484 | 347240 | 351529 | 326992 | 272065 | 222199 | 175419 | 139384 | 128953 | 139310 |
| 6+ | 166547 | 150179 | 152596 | 157469 | 172589 | 181640 | 210895 | 235143 | 230676 | 268579 | 258416 | 196152 | 176053 | 129601 | 107038 | 103417 | 82084  |
| 7+ | 113458 | 122906 | 115696 | 100958 | 96025  | 120183 | 126110 | 150221 | 161304 | 154958 | 188493 | 139689 | 115127 | 94557  | 66169  | 72444  | 60150  |

\* ajustée à la moyenne géométrique 1974-1989.

Tableau 34: Morue 3Pn, 4RS. Mortalité par pêche.

|    | 74    | 75    | 76    | 77    | 78    | 79    | 80    | 81    | 82    | 83    | 84    | 85    | 86    | 87    | 88    | 89    | 90    |
|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4  | 0.082 | 0.056 | 0.052 | 0.031 | 0.023 | 0.027 | 0.037 | 0.047 | 0.036 | 0.061 | 0.030 | 0.042 | 0.035 | 0.024 | 0.037 | 0.022 | 0.020 |
| 5  | 0.329 | 0.219 | 0.231 | 0.135 | 0.171 | 0.160 | 0.188 | 0.131 | 0.182 | 0.240 | 0.130 | 0.228 | 0.198 | 0.165 | 0.162 | 0.190 | 0.135 |
| 6  | 0.367 | 0.291 | 0.282 | 0.389 | 0.368 | 0.316 | 0.364 | 0.341 | 0.276 | 0.274 | 0.346 | 0.361 | 0.366 | 0.486 | 0.355 | 0.334 | 0.401 |
| 7  | 0.375 | 0.340 | 0.421 | 0.692 | 0.551 | 0.492 | 0.528 | 0.463 | 0.417 | 0.373 | 0.548 | 0.512 | 0.608 | 0.528 | 0.473 | 0.487 | 0.426 |
| 8  | 0.431 | 0.367 | 0.504 | 0.505 | 0.403 | 0.627 | 0.573 | 0.424 | 0.591 | 0.322 | 0.510 | 0.565 | 0.616 | 0.973 | 0.459 | 0.687 | 0.473 |
| 9  | 0.405 | 0.318 | 0.458 | 0.607 | 0.392 | 0.512 | 0.412 | 0.340 | 0.617 | 0.427 | 0.580 | 0.430 | 0.880 | 0.996 | 0.549 | 0.474 | 0.720 |
| 10 | 0.447 | 0.471 | 0.553 | 0.497 | 0.500 | 0.508 | 0.323 | 0.482 | 0.661 | 0.444 | 0.588 | 0.496 | 0.637 | 0.719 | 0.469 | 1.052 | 0.301 |
| 11 | 0.309 | 0.411 | 0.553 | 0.378 | 0.486 | 0.416 | 0.391 | 0.334 | 0.689 | 0.585 | 0.661 | 0.488 | 0.894 | 1.205 | 0.859 | 0.778 | 0.868 |
| 12 | 0.322 | 0.413 | 0.403 | 0.442 | 0.323 | 0.556 | 0.473 | 0.429 | 0.273 | 0.533 | 0.658 | 0.327 | 0.560 | 0.870 | 0.774 | 1.519 | 0.414 |
| 13 | 0.160 | 0.447 | 0.344 | 0.590 | 0.519 | 0.161 | 0.264 | 0.464 | 0.331 | 0.834 | 0.894 | 0.256 | 0.573 | 0.731 | 0.539 | 1.424 | 1.172 |
| 14 | 0.118 | 0.262 | 0.438 | 0.338 | 0.565 | 0.371 | 0.127 | 0.442 | 0.204 | 0.230 | 0.356 | 0.186 | 0.195 | 0.734 | 0.387 | 0.549 | 1.094 |
| 15 | 0.170 | 0.146 | 0.202 | 0.219 | 0.170 | 0.235 | 0.208 | 0.161 | 0.243 | 0.144 | 0.218 | 0.209 | 0.287 | 0.374 | 0.191 | 0.253 | 0.194 |

Tableau 35: Morue 3Pn, 4RS. Résiduelles (log).

|    | 77    | 78    | 79    | 80    | 82    | 83    | 84    | 85    | 86    | 87    | 88    | 89    | 90    |
|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 4  | 0.61  | -0.11 | 0.55  | -0.29 | -0.14 | 0.57  | 0.25  | 1.02  | -0.27 | -0.58 | -0.97 | -0.64 | 0.00  |
| 5  | 0.58  | -0.29 | 0.28  | -0.01 | 0.40  | 0.83  | -0.32 | 1.11  | -1.10 | -0.91 | -0.69 | -0.43 | 0.56  |
| 6  | 0.04  | -0.49 | 0.15  | -0.22 | 0.23  | 0.71  | 0.04  | 1.08  | -1.40 | -0.24 | -0.39 | -0.33 | 0.82  |
| 7  | 0.00  | -0.35 | -0.04 | -0.14 | 0.02  | 0.47  | 0.16  | 0.97  | -1.28 | 0.28  | -0.53 | -0.32 | 0.77  |
| 8  | -0.26 | -0.90 | 0.34  | -0.82 | 0.13  | 0.44  | 0.19  | 0.58  | -0.88 | 0.80  | -0.36 | -0.25 | 0.99  |
| 9  | 0.26  | -0.73 | -0.31 | -0.73 | -0.21 | 0.47  | 0.53  | 0.44  | -0.30 | 0.96  | -0.37 | -0.31 | 0.29  |
| 10 | 0.08  | 0.18  | 0.23  | -2.12 | 0.10  | 0.52  | 0.07  | 0.56  | -0.57 | 1.42  | 0.12  | -0.62 | 0.02  |
| 11 | -0.24 | -0.43 | -0.21 | -0.67 | -0.04 | 0.04  | 0.37  | 0.22  | -0.52 | 0.94  | 0.43  | -0.10 | 0.22  |
| 12 | -0.07 | -0.86 | 0.71  | -1.26 | -0.16 | 0.77  | 0.57  | 0.58  | -0.83 | 0.63  | 0.79  | -0.70 | -0.18 |
| 13 | 0.00  | -0.29 | -0.41 | 0.26  | -0.64 | 0.41  | 0.29  | -0.31 | -0.00 | 0.53  | -0.51 | 0.54  | 0.14  |
| 14 | -2.29 | 0.17  | -0.05 | -1.67 | 0.05  | -0.21 | 0.09  | 0.83  | -0.14 | 1.07  | 0.71  | -0.66 | -0.28 |

Tableau 36: Morue 3Pn, 4RS. Statistiques approximatives en assumant la linéarité près de la solution.

|                                    |                        |               |
|------------------------------------|------------------------|---------------|
| DECALAGE ORTHOGONAL.....           |                        | 0.000361      |
| MOYENNE DU CARRE DES RESIDUELLES.. |                        | 0.425964      |
| PARAMETRE                          | ERREUR STD             | STATISTIQUE T |
| 1.78269E5                          | 1.18979E5              | 1.49833E0     |
| 7.14291E4                          | 3.19902E4              | 2.23285E0     |
| 2.11063E4                          | 7.23613E3              | 2.91680E0     |
| 1.83612E4                          | 6.05154E3              | 3.03414E0     |
| 1.23619E4                          | 3.74572E3              | 3.30027E0     |
| 3.79132E3                          | 1.05390E3              | 3.59743E0     |
| 4.09761E3                          | 1.44388E3              | 2.83792E0     |
| 5.45049E2                          | 1.40344E2              | 3.88367E0     |
| 3.75897E2                          | 1.34386E2              | 2.79715E0     |
| 1.00484E2                          | 1.99410E1              | 5.03906E0     |
| 4.31708E1                          | 9.21971E0              | 4.68245E0     |
| 2.43062E <sup>-1</sup>             | 4.74781E <sup>-2</sup> | 5.11944E0     |
| 3.86357E <sup>-1</sup>             | 7.31608E <sup>-2</sup> | 5.28093E0     |
| 5.12370E <sup>-1</sup>             | 9.65878E <sup>-2</sup> | 5.30471E0     |
| 6.20063E <sup>-1</sup>             | 1.16436E <sup>-1</sup> | 5.32534E0     |
| 6.29925E <sup>-1</sup>             | 1.17983E <sup>-1</sup> | 5.33910E0     |
| 5.76295E <sup>-1</sup>             | 1.09123E <sup>-1</sup> | 5.28066E0     |
| 5.46724E <sup>-1</sup>             | 1.02339E <sup>-1</sup> | 5.34227E0     |
| 7.85559E <sup>-1</sup>             | 1.49442E <sup>-1</sup> | 5.25663E0     |
| 6.77088E <sup>-1</sup>             | 1.26920E <sup>-1</sup> | 5.33475E0     |
| 8.25688E <sup>-1</sup>             | 1.56921E <sup>-1</sup> | 5.26182E0     |
| 6.06113E <sup>-1</sup>             | 1.21028E <sup>-1</sup> | 5.00803E0     |

Tableau 37: Morue 3Pn, 4RS. Matrice des corrélations entre paramètres.

|    | 1    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   | 11   | 12   | 13   | 14   | 15   | 16   | 17   | 18   | 19   | 20   | 21   | 22   |
|----|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 1  | 1.00 | 0.06 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.29 | 0.02 | 0.01 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2  | 0.06 | 1.00 | 0.06 | 0.04 | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.20 | 0.22 | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| 3  | 0.04 | 0.06 | 1.00 | 0.06 | 0.04 | 0.02 | 0.02 | 0.00 | 0.00 | 0.00 | 0.00 | 0.14 | 0.16 | 0.22 | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 0.00 | 0.00 | 0.01 |
| 4  | 0.03 | 0.04 | 0.06 | 1.00 | 0.05 | 0.02 | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 | 0.11 | 0.12 | 0.15 | 0.22 | 0.02 | 0.01 | 0.01 | 0.00 | 0.00 | 0.01 | 0.01 |
| 5  | 0.02 | 0.03 | 0.04 | 0.05 | 1.00 | 0.00 | 0.01 | 0.02 | 0.02 | 0.02 | 0.04 | 0.06 | 0.07 | 0.09 | 0.14 | 0.20 | 0.00 | 0.01 | 0.02 | 0.04 | 0.06 | 0.10 |
| 6  | 0.01 | 0.01 | 0.02 | 0.02 | 0.00 | 1.00 | 0.02 | 0.02 | 0.03 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.07 | 0.12 | 0.24 | 0.02 | 0.02 | 0.03 | 0.05 | 0.08 |
| 7  | 0.01 | 0.01 | 0.02 | 0.03 | 0.01 | 0.02 | 1.00 | 0.04 | 0.04 | 0.03 | 0.05 | 0.03 | 0.03 | 0.04 | 0.07 | 0.10 | 0.16 | 0.22 | 0.04 | 0.05 | 0.08 | 0.14 |
| 8  | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.02 | 0.04 | 1.00 | 0.06 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.05 | 0.12 | 0.27 | 0.03 | 0.02 | 0.03 |
| 9  | 0.00 | 0.00 | 0.00 | 0.01 | 0.02 | 0.03 | 0.04 | 0.06 | 1.00 | 0.03 | 0.02 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.06 | 0.09 | 0.17 | 0.24 | 0.03 | 0.03 |
| 10 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.02 | 0.03 | 0.01 | 0.03 | 1.00 | 0.03 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.03 | 0.11 | 0.28 |
| 11 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.03 | 0.05 | 0.01 | 0.02 | 0.03 | 1.00 | 0.00 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.02 | 0.03 | 0.11 | 0.28 |
| 12 | 0.29 | 0.20 | 0.14 | 0.11 | 0.06 | 0.03 | 0.03 | 0.01 | 0.01 | 0.00 | 0.00 | 1.00 | 0.08 | 0.05 | 0.03 | 0.02 | 0.01 | 0.01 | 0.00 | 0.01 | 0.01 | 0.01 |
| 13 | 0.02 | 0.22 | 0.16 | 0.12 | 0.07 | 0.03 | 0.03 | 0.01 | 0.01 | 0.00 | 0.01 | 0.08 | 1.00 | 0.06 | 0.04 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| 14 | 0.01 | 0.02 | 0.22 | 0.15 | 0.09 | 0.04 | 0.04 | 0.01 | 0.01 | 0.00 | 0.01 | 0.05 | 0.06 | 1.00 | 0.05 | 0.03 | 0.02 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 |
| 15 | 0.01 | 0.01 | 0.02 | 0.22 | 0.14 | 0.07 | 0.07 | 0.02 | 0.02 | 0.01 | 0.01 | 0.03 | 0.04 | 0.05 | 1.00 | 0.04 | 0.03 | 0.02 | 0.01 | 0.01 | 0.02 | 0.03 |
| 16 | 0.01 | 0.01 | 0.01 | 0.02 | 0.20 | 0.12 | 0.10 | 0.03 | 0.03 | 0.01 | 0.02 | 0.02 | 0.02 | 0.03 | 0.04 | 1.00 | 0.05 | 0.03 | 0.02 | 0.02 | 0.03 | 0.05 |
| 17 | 0.00 | 0.00 | 0.01 | 0.01 | 0.00 | 0.24 | 0.16 | 0.05 | 0.06 | 0.02 | 0.02 | 0.01 | 0.01 | 0.02 | 0.03 | 0.05 | 1.00 | 0.04 | 0.03 | 0.03 | 0.03 | 0.04 |
| 18 | 0.00 | 0.00 | 0.00 | 0.01 | 0.01 | 0.02 | 0.22 | 0.12 | 0.09 | 0.02 | 0.02 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 1.00 | 0.05 | 0.03 | 0.02 | 0.04 |
| 19 | 0.00 | 0.00 | 0.00 | 0.00 | 0.02 | 0.02 | 0.04 | 0.27 | 0.17 | 0.03 | 0.02 | 0.00 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.05 | 1.00 | 0.05 | 0.02 | 0.02 |
| 20 | 0.00 | 0.00 | 0.00 | 0.00 | 0.04 | 0.03 | 0.05 | 0.03 | 0.24 | 0.10 | 0.03 | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.05 | 1.00 | 0.04 | 0.03 |
| 21 | 0.00 | 0.00 | 0.00 | 0.01 | 0.06 | 0.05 | 0.08 | 0.02 | 0.03 | 0.27 | 0.11 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.03 | 0.03 | 0.02 | 0.04 | 1.00 | 0.05 |
| 22 | 0.00 | 0.01 | 0.01 | 0.01 | 0.10 | 0.08 | 0.14 | 0.03 | 0.03 | 0.02 | 0.28 | 0.01 | 0.01 | 0.02 | 0.03 | 0.05 | 0.04 | 0.04 | 0.02 | 0.03 | 0.05 | 1.00 |

Tableau 38: Morue 3Pn, 4RS. Projection des effectifs, biomasses et captures en assumant une capture de 35,000 t (1e TPA).

| EFFECTIFS |        |        |        | BIOMASSE |        |        |        |
|-----------|--------|--------|--------|----------|--------|--------|--------|
|           | 1990   | 1991   | 1992   |          | 1990   | 1991   | 1992   |
| <hr/>     |        |        |        |          |        |        |        |
| 4         | 90000  | 90000  | 90000  | 4        | 57618  | 57618  | 57618  |
| 5         | 71385  | 70772  | 72059  | 5        | 58008  | 57510  | 58555  |
| 6         | 20927  | 51065  | 51823  | 6        | 21643  | 52811  | 53595  |
| 7         | 18213  | 11474  | 32582  | 7        | 23592  | 14862  | 42205  |
| 8         | 12247  | 9739   | 6847   | 8        | 19197  | 15265  | 10731  |
| 9         | 3739   | 6248   | 5496   | 9        | 7000   | 11698  | 10289  |
| 10        | 4073   | 1490   | 3526   | 10       | 9042   | 3308   | 7828   |
| 11        | 536    | 2468   | 841    | 11       | 1389   | 6392   | 2178   |
| 12        | 373    | 184    | 1456   | 12       | 1140   | 564    | 4453   |
| 13        | 98     | 202    | 114    | 13       | 360    | 738    | 416    |
| 14        | 42     | 25     | 130    | 14       | 169    | 99     | 518    |
| 15        | 85     | 12     | 17     | 15       | 391    | 54     | 78     |
| <hr/>     |        |        |        |          |        |        |        |
| 4+        | 221719 | 243678 | 264890 | 4+       | 199548 | 220918 | 248465 |
| 5+        | 131719 | 153678 | 174890 |          |        |        |        |
| 6+        | 60334  | 82906  | 102831 |          |        |        |        |
| 7+        | 39407  | 31841  | 51009  |          |        |        |        |

## BIOMASSE DE LA CAPTURE

|       | 1990  | 1991  | 1992  |
|-------|-------|-------|-------|
| <hr/> |       |       |       |
| 4     | 2328  | 1300  | 702   |
| 5     | 7497  | 6215  | 3485  |
| 6     | 7369  | 11981 | 6897  |
| 7     | 8282  | 4071  | 6649  |
| 8     | 7213  | 4721  | 1931  |
| 9     | 3606  | 3628  | 1856  |
| 10    | 2320  | 1016  | 1398  |
| 11    | 798   | 1751  | 344   |
| 12    | 387   | 139   | 626   |
| 13    | 250   | 155   | 49    |
| 14    | 103   | 16    | 46    |
| 15    | 73    | 8     | 6     |
| <hr/> |       |       |       |
| 4+    | 40225 | 35000 | 23991 |
| 5+    | 37897 | 33700 | 23289 |
| 6+    | 30401 | 27486 | 19803 |
| 7+    | 23031 | 15504 | 12906 |

## MORTALITE PAR PECHE

|       | 1990  | 1991 | 1992 |
|-------|-------|------|------|
| <hr/> |       |      |      |
| 4     | .040  | .022 | .012 |
| 5     | .135  | .112 | .060 |
| 6     | .401  | .249 | .134 |
| 7     | .426  | .316 | .170 |
| 8     | .473  | .372 | .200 |
| 9     | .720  | .372 | .200 |
| 10    | .301  | .372 | .200 |
| 11    | .868  | .327 | .176 |
| 12    | .414  | .283 | .152 |
| 13    | 1.172 | .238 | .128 |
| 14    | 1.094 | .194 | .104 |
| 15    | .194  | .149 | .080 |
| <hr/> |       |      |      |
| 4+    | .180  | .133 | .081 |

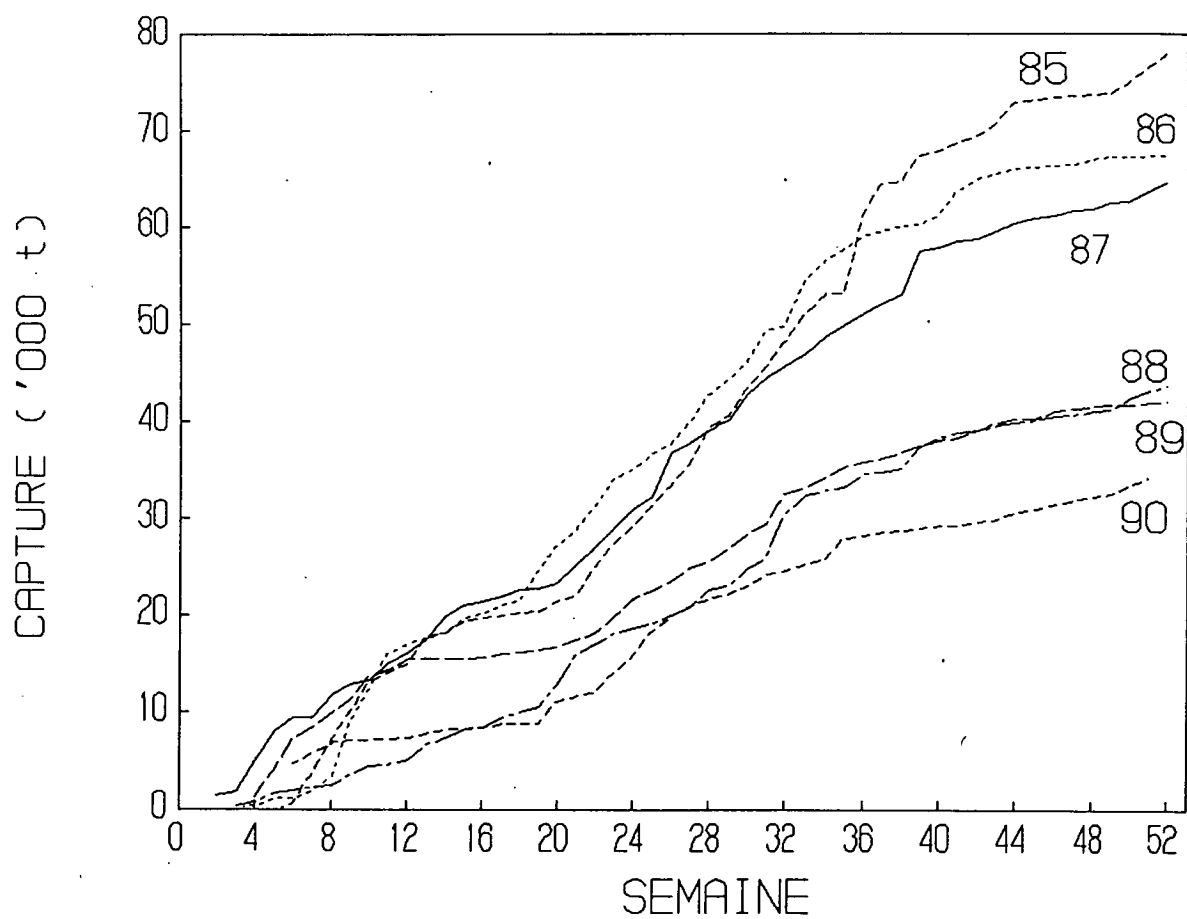
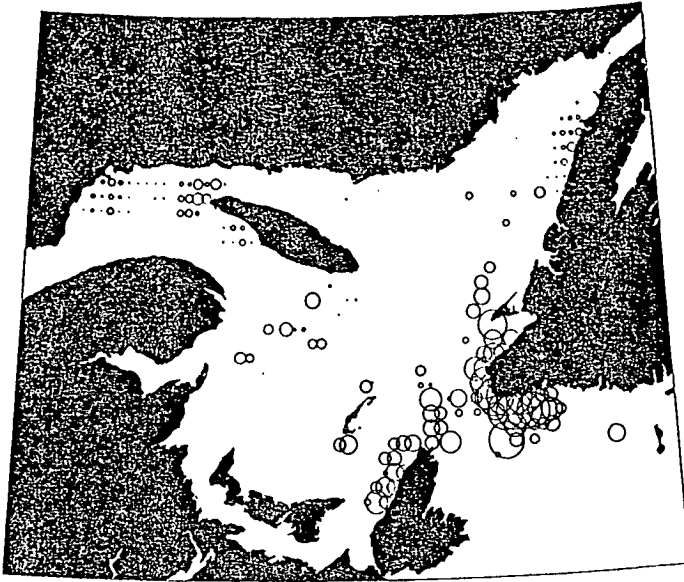
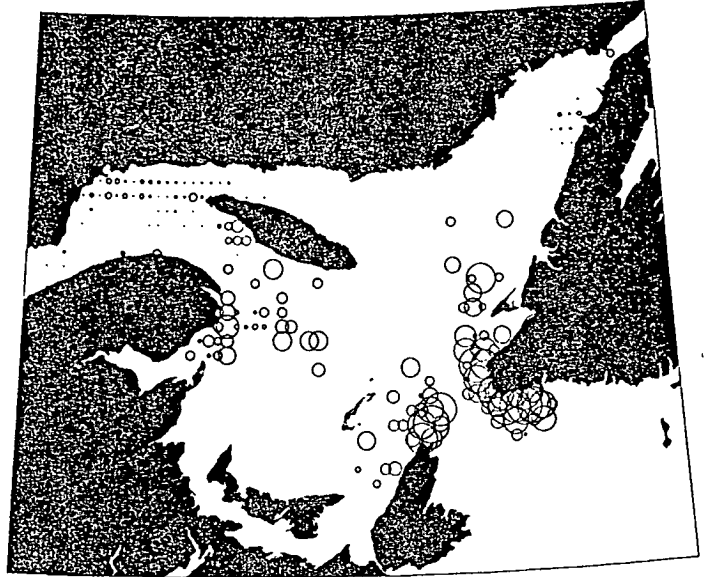


Figure 1: Morue 3Pn, 4RS. Evolution hebdomadaire des captures cumulatives depuis 1985.

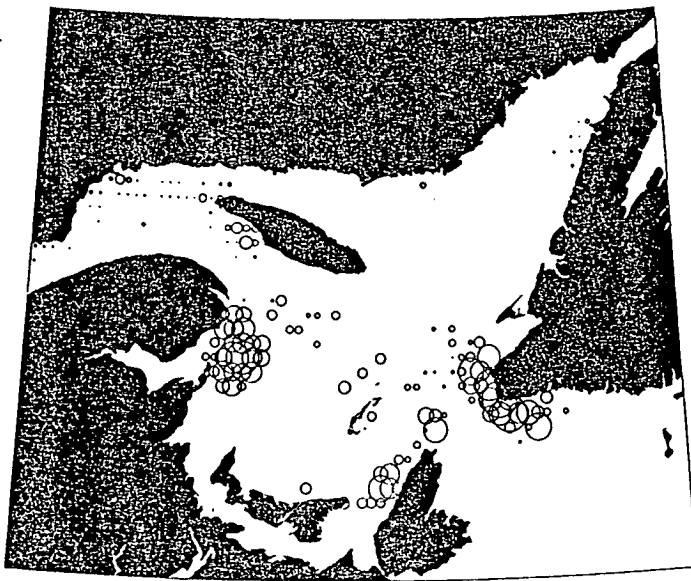
Catch (t) Cod 1986 Jan - Apr



Catch (t) Cod 1987 Jan - Apr



Catch (t) Cod 1988 Jan - Apr



Catch (t) Cod 1989 Jan - Apr

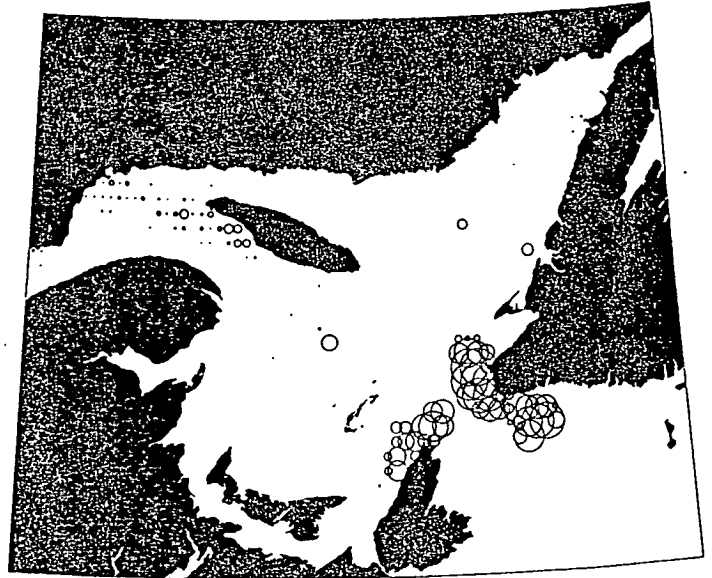
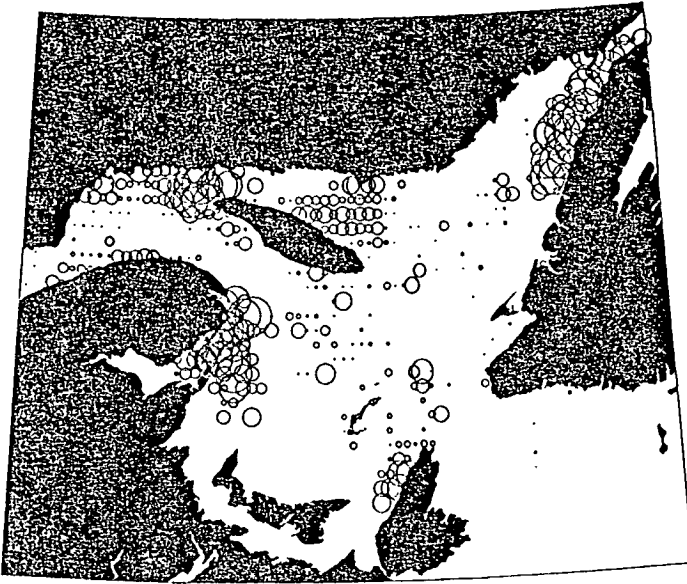
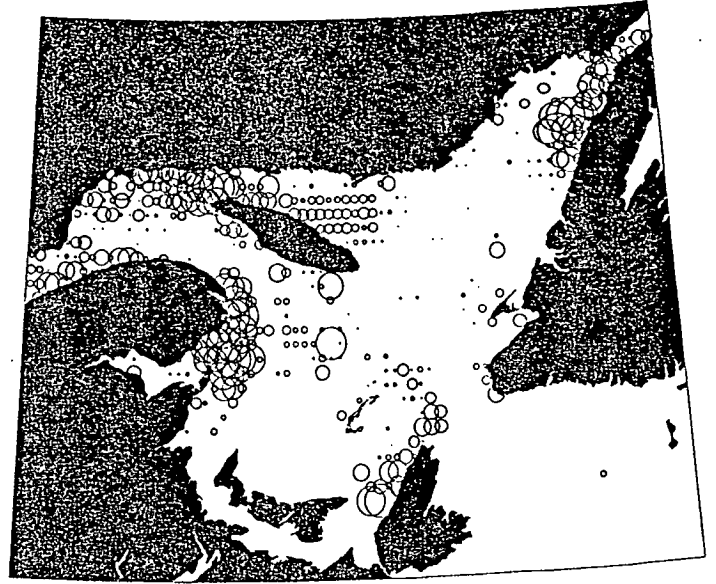


Figure 2: Morue 3Pn, 4RS. Distribution géographique des captures de morue pour les pêches commerciales.

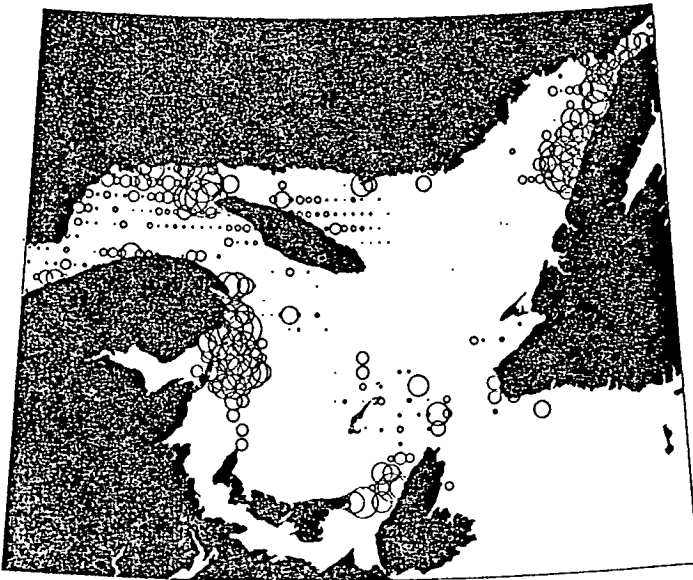
Catch (t) Cod 1986 May - Aug



Catch (t) Cod 1987 May - Aug



Catch (t) Cod 1988 May - Aug



Catch (t) Cod 1989 May - Aug

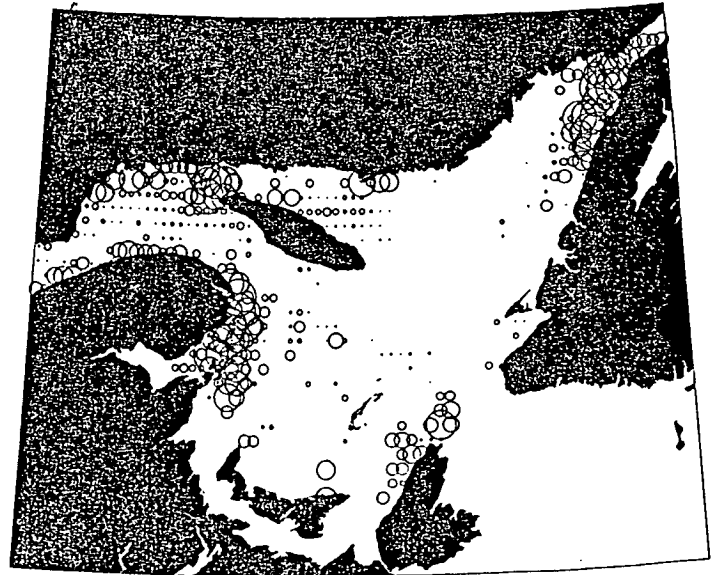
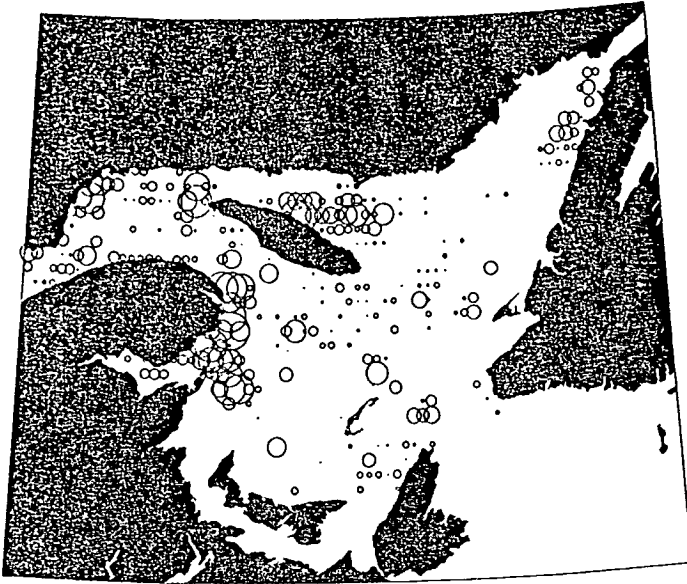
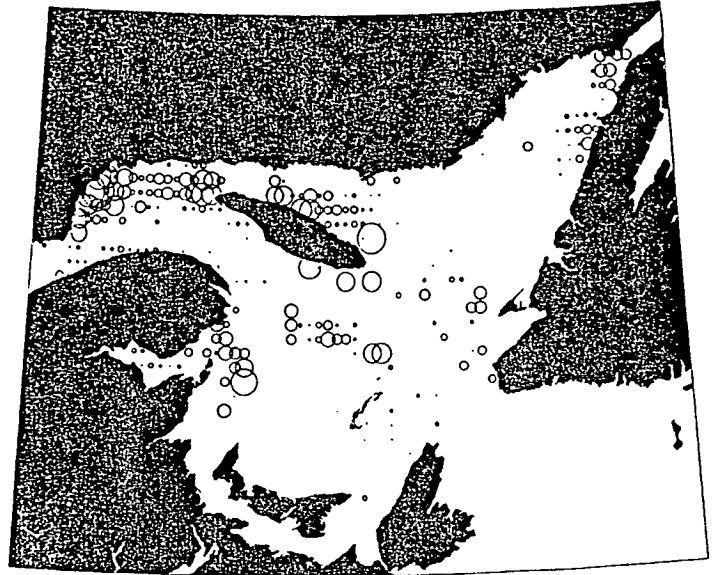


Figure 2: (Suite).

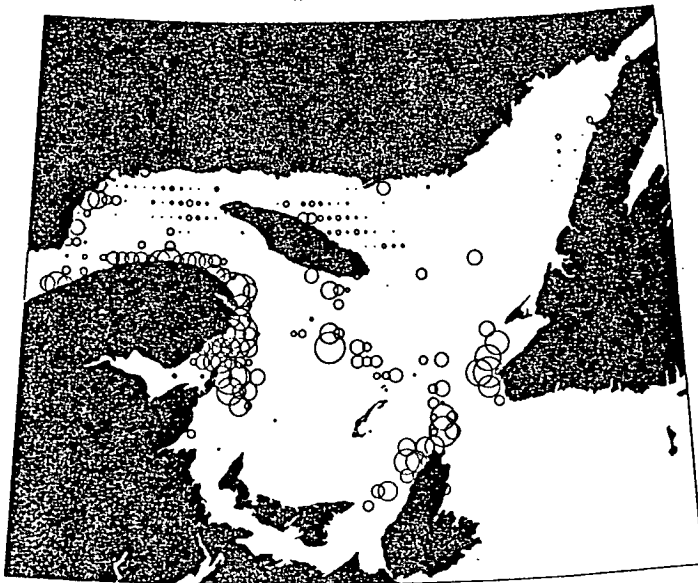
Catch (t) Cod 1986 Sept - Dec



Catch (t) Cod 1987 Sept - Dec



Catch (t) Cod 1988 Sept - Dec



Catch (t) Cod 1989 Sept - Dec



Figure 2: (Suite).

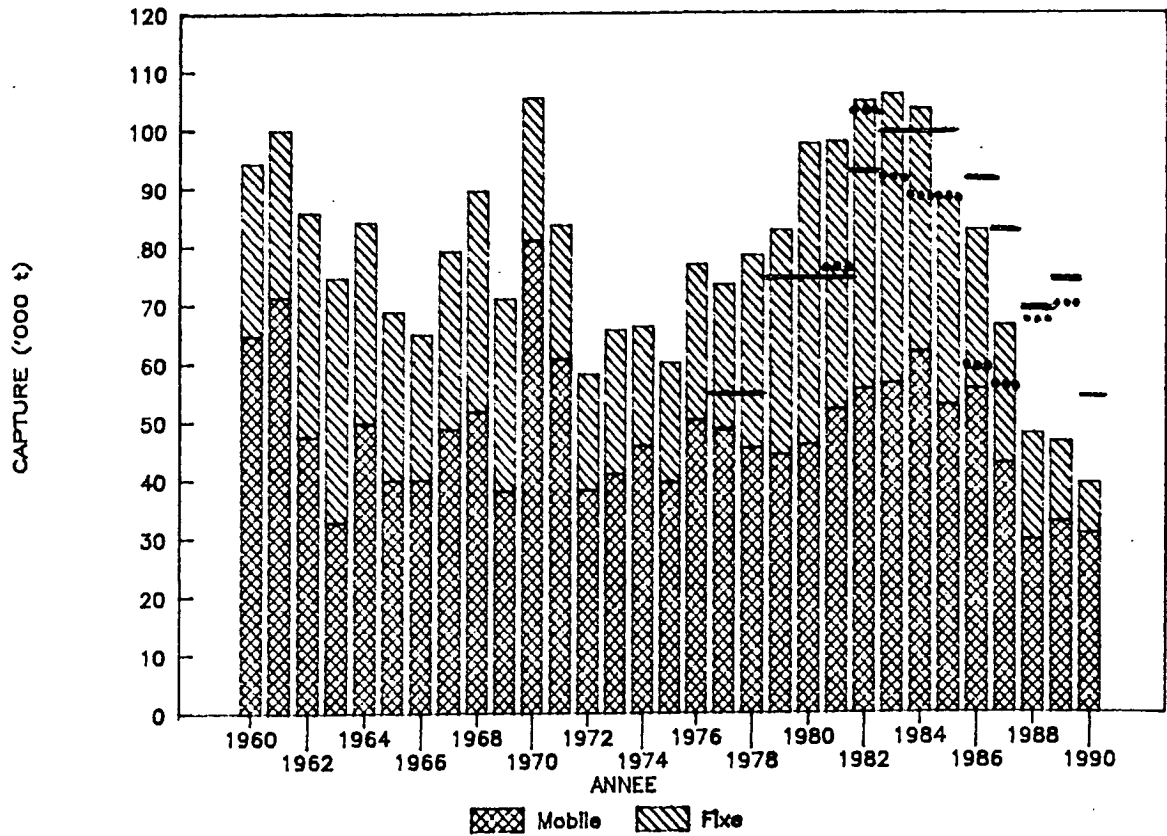


Figure 3: Morue 3Pn, 4RS. Captures historiques par flotte, TPA(—) et avis à FO.1(...).

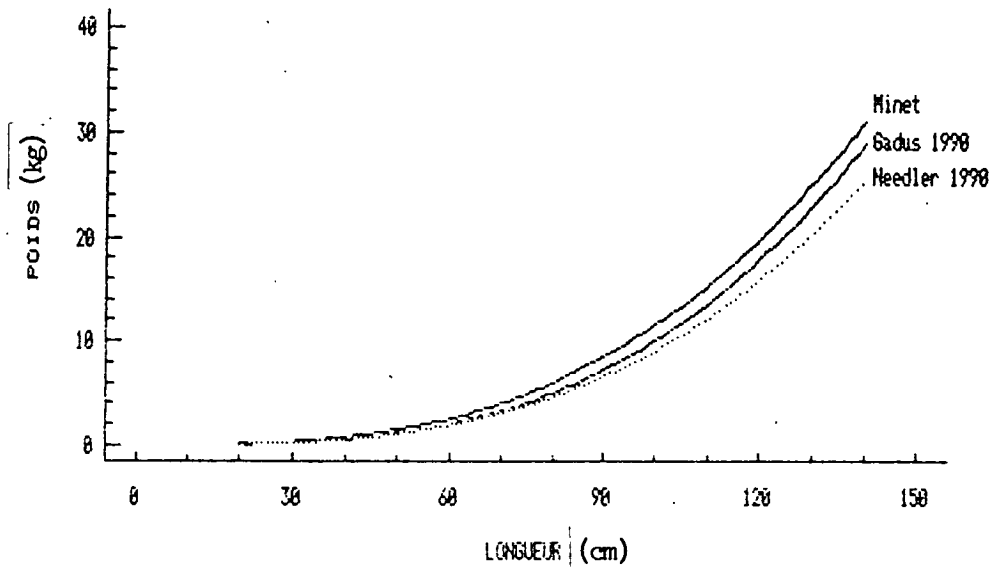


Figure 4: Morue 3Pn, 4RS. Relation longueur poids pour la morue.

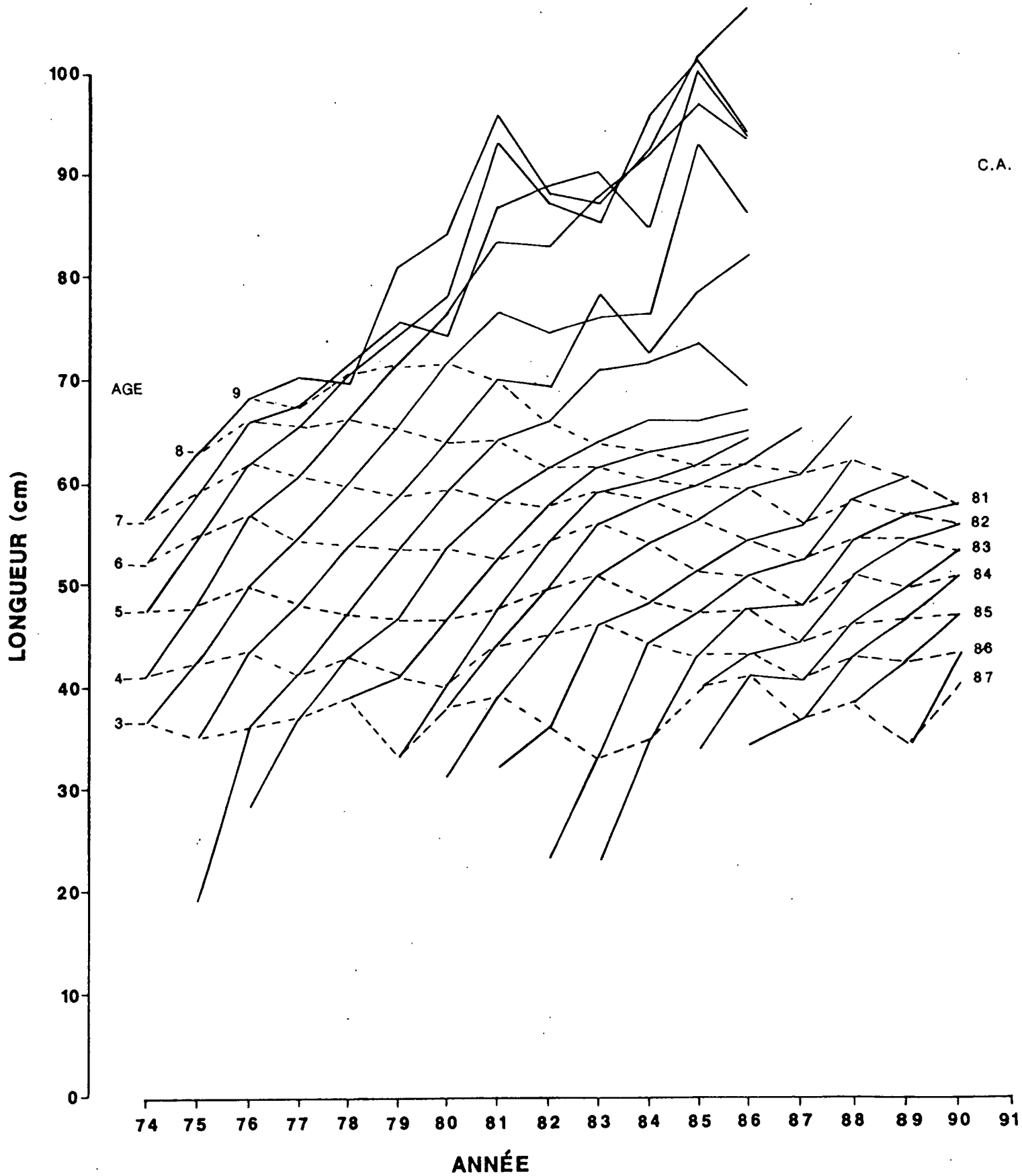


Figure 5: Morue 3Pn, 4RS. Changements dans la longueur moyenne à l'âge pour les pêches commerciales.

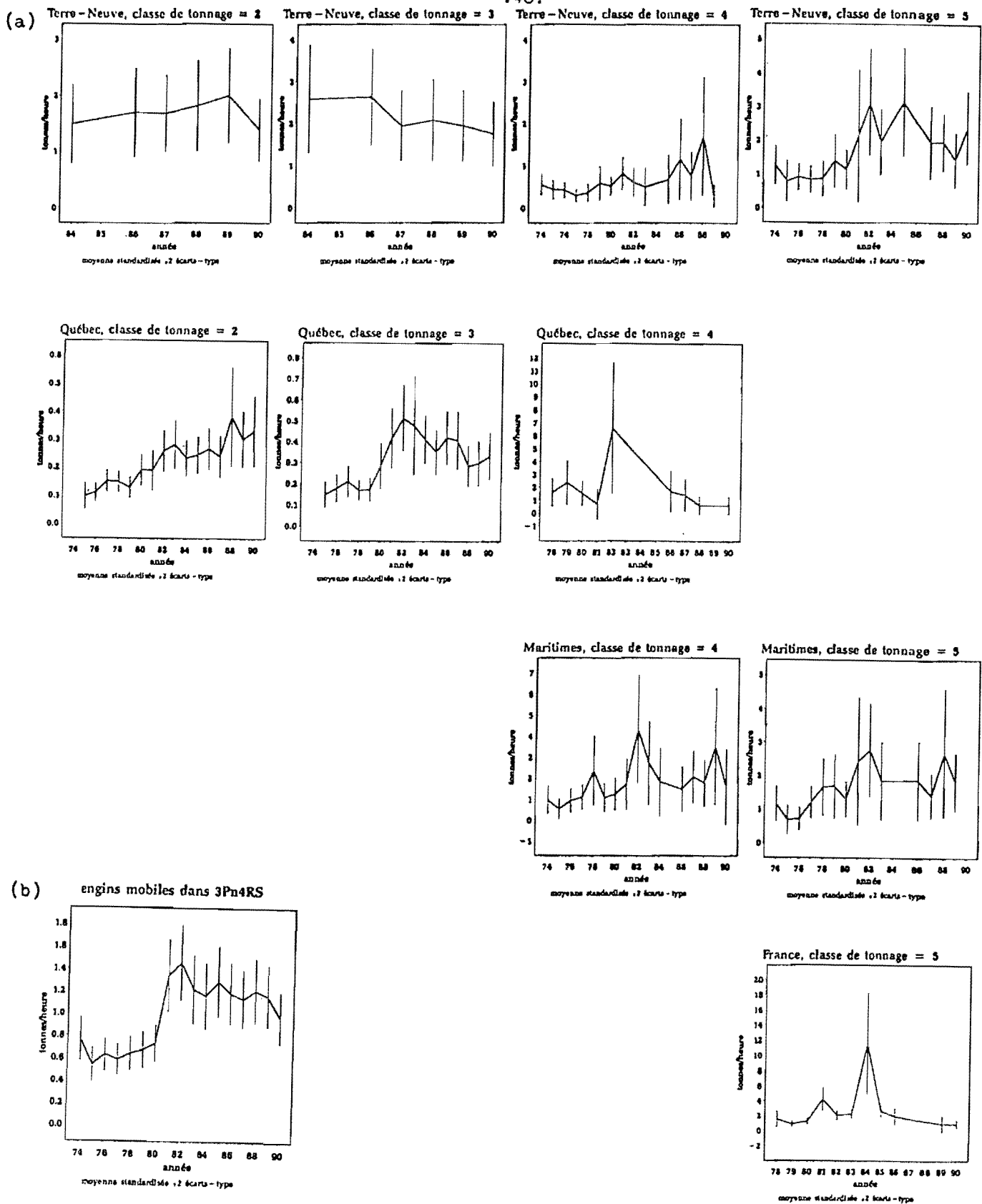


Figure 6: Morue 3Pn, 4RS. Taux de capture par flotte (a) et Total (b).

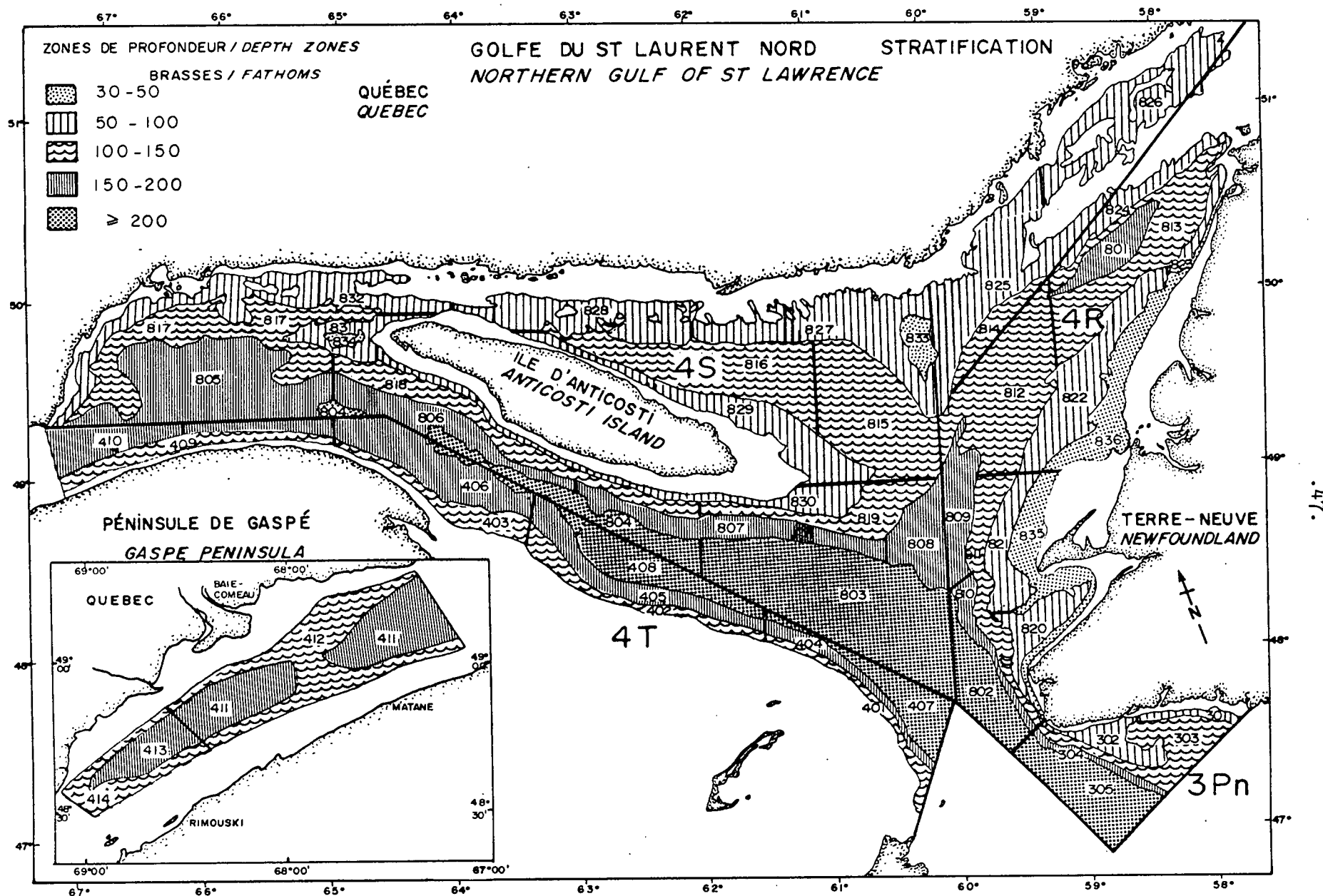


Figure 7: Morue 3Pn, 4RS. Schéma de stratification utilisé pour les croisières de recherche sur les poissons de fond.

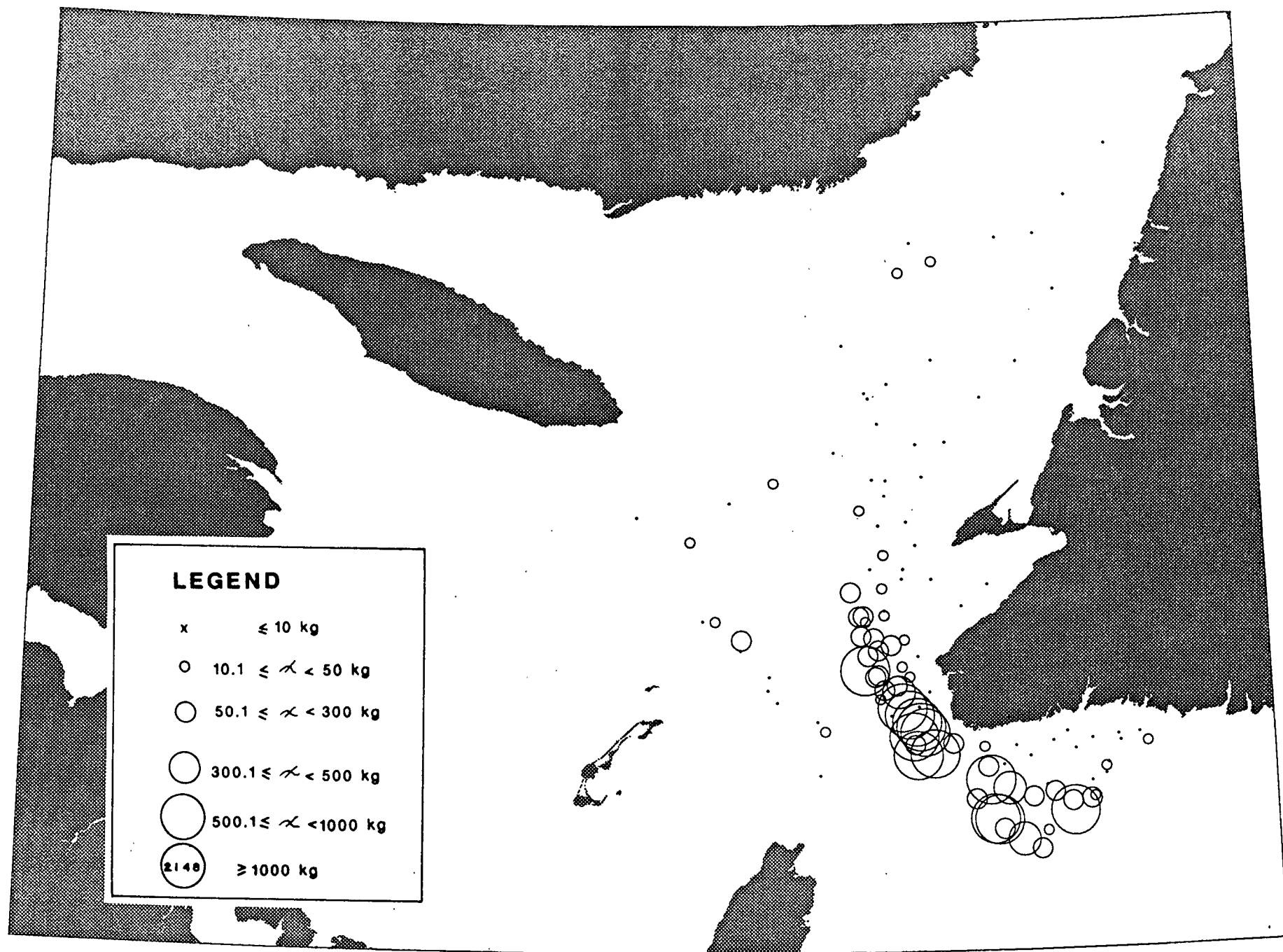


Figure 8: Morue 3Pn, 4RS. Distribution des prises et taux de capture (Kg/trait de 30 min.) de la croisière de recherche sur le *Gadus Atlantica*.

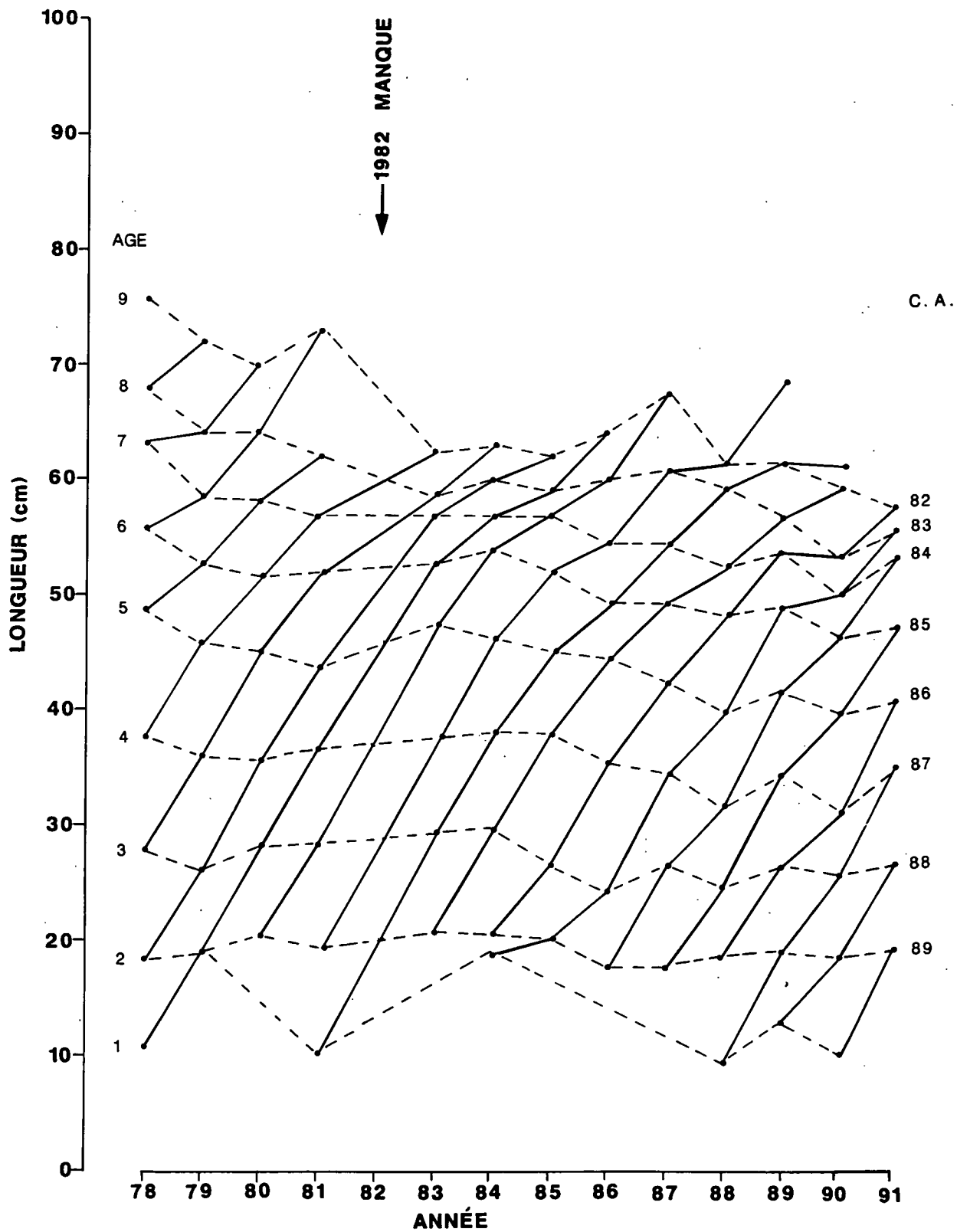


Figure 9: Morue 3Ph, 4RS. Changements dans la longueur moyenne à l'âge des croisières de recherche (hiver).

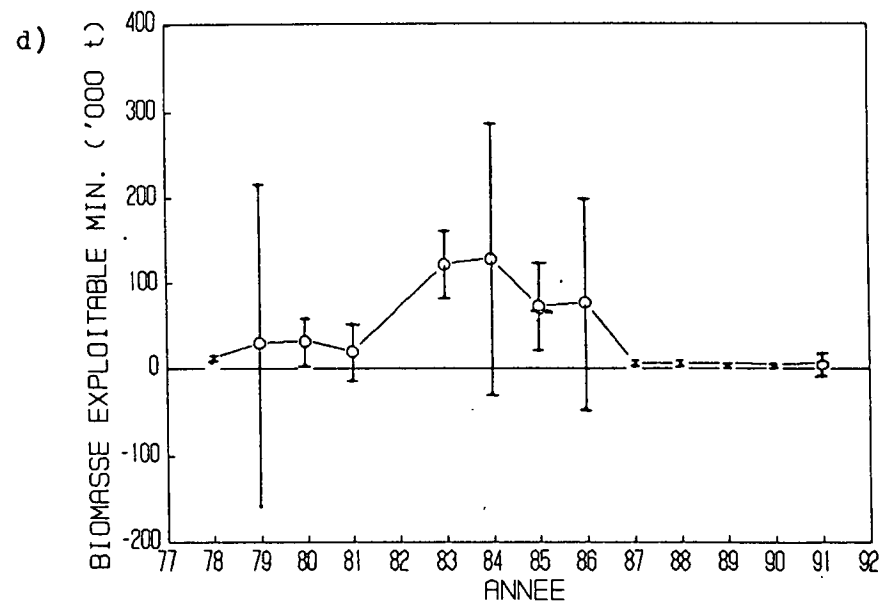
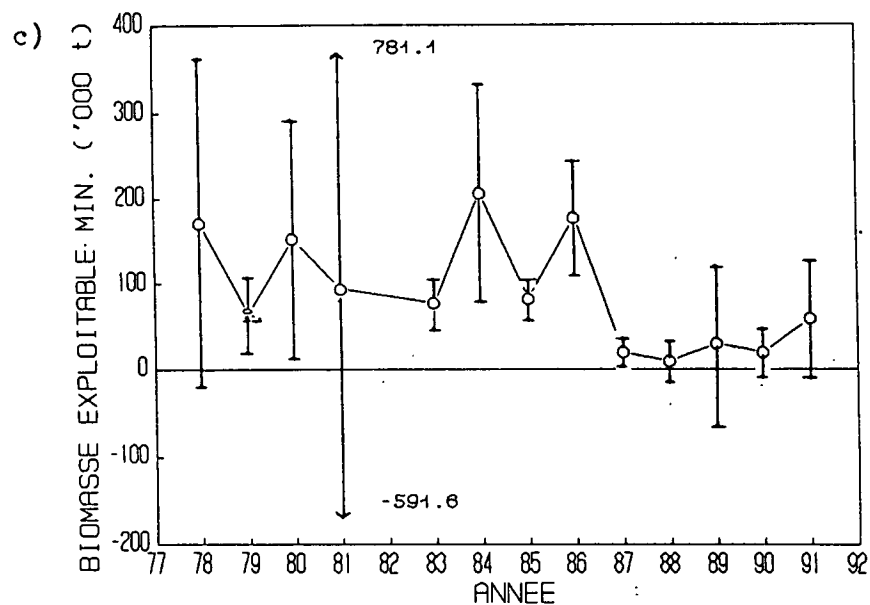
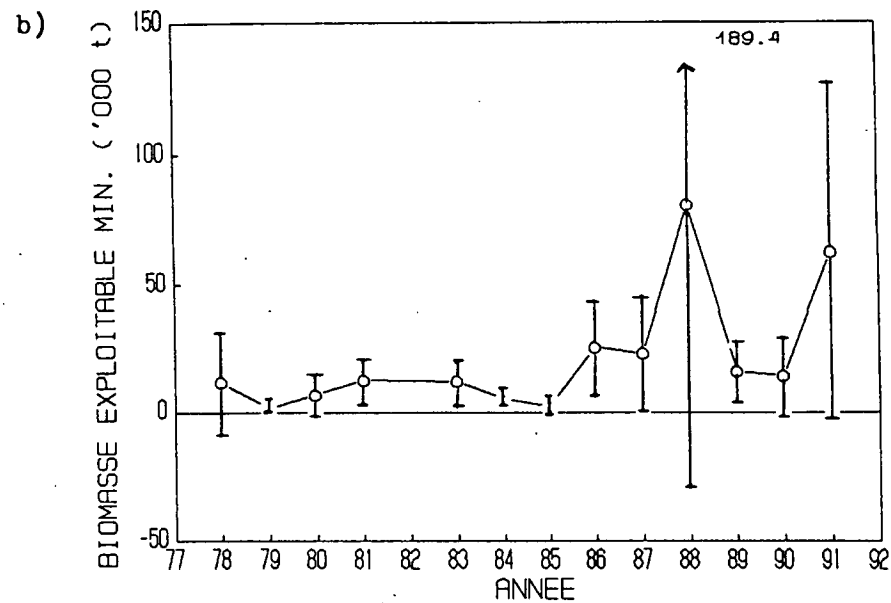
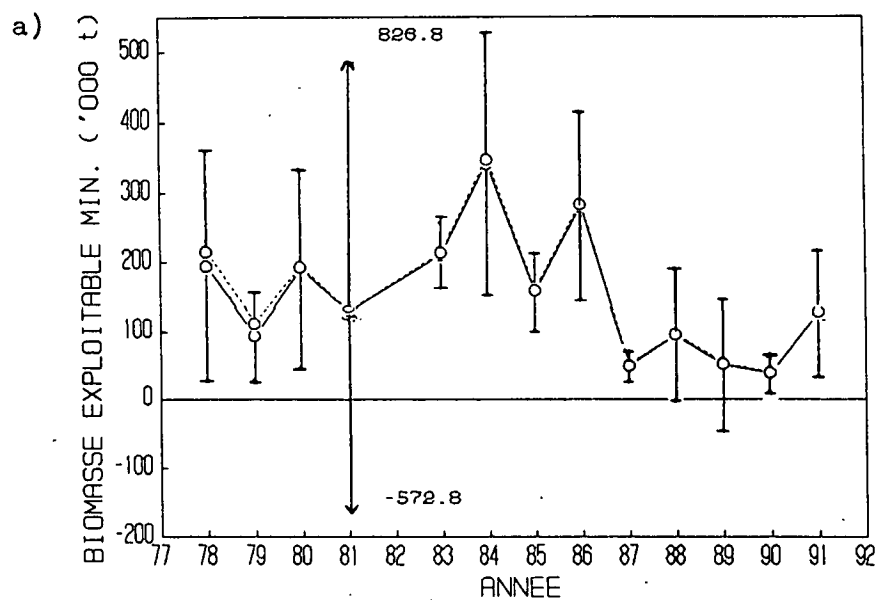


Figure 10: Morue 3Pn, 4RS. Biomasses minimums exploitables (et intervalles de confiance à 95%) pour le stock (a), subdivision 3Pn (b), division 4R (c) et 4S (d) estimées par échantillonnage stratifié aléatoire sur le Gadus Atlantica.

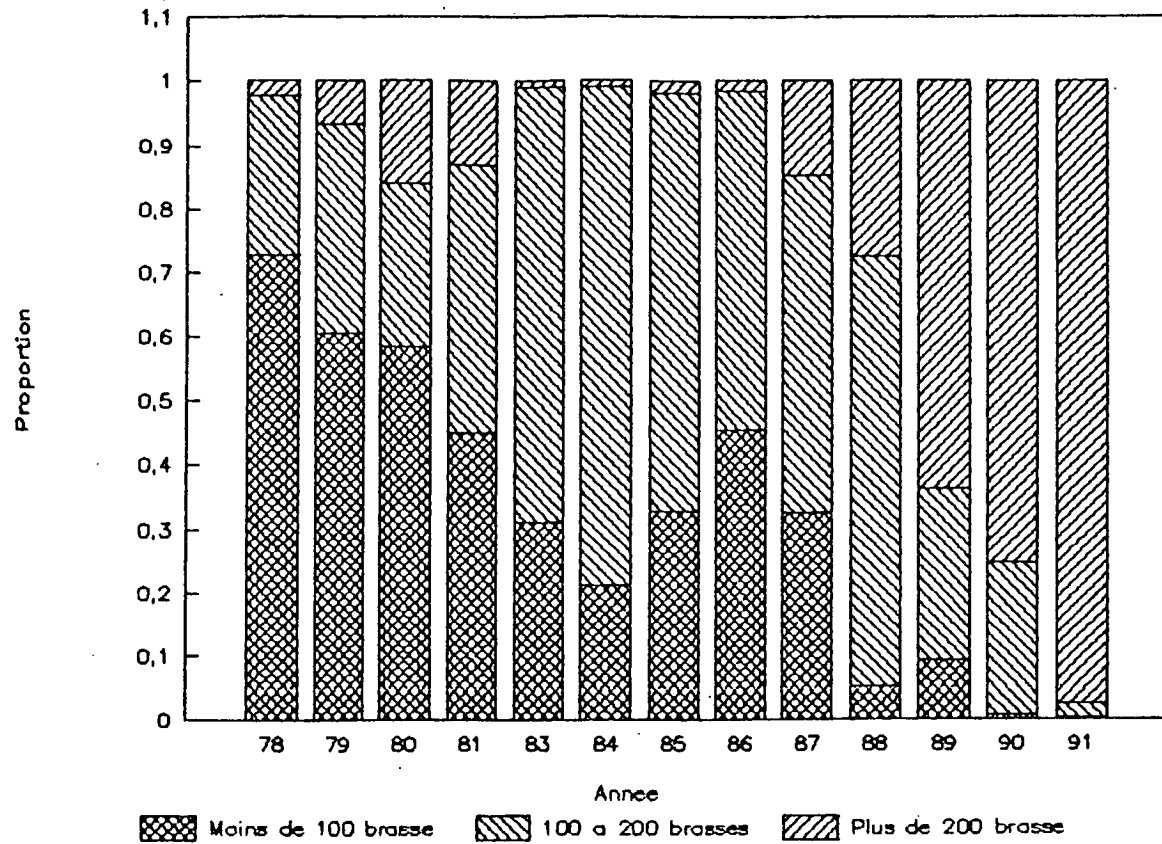


Figure 11: Morue 3Pn, 4RS. Proportion de la biomasse (missions d'hiver).

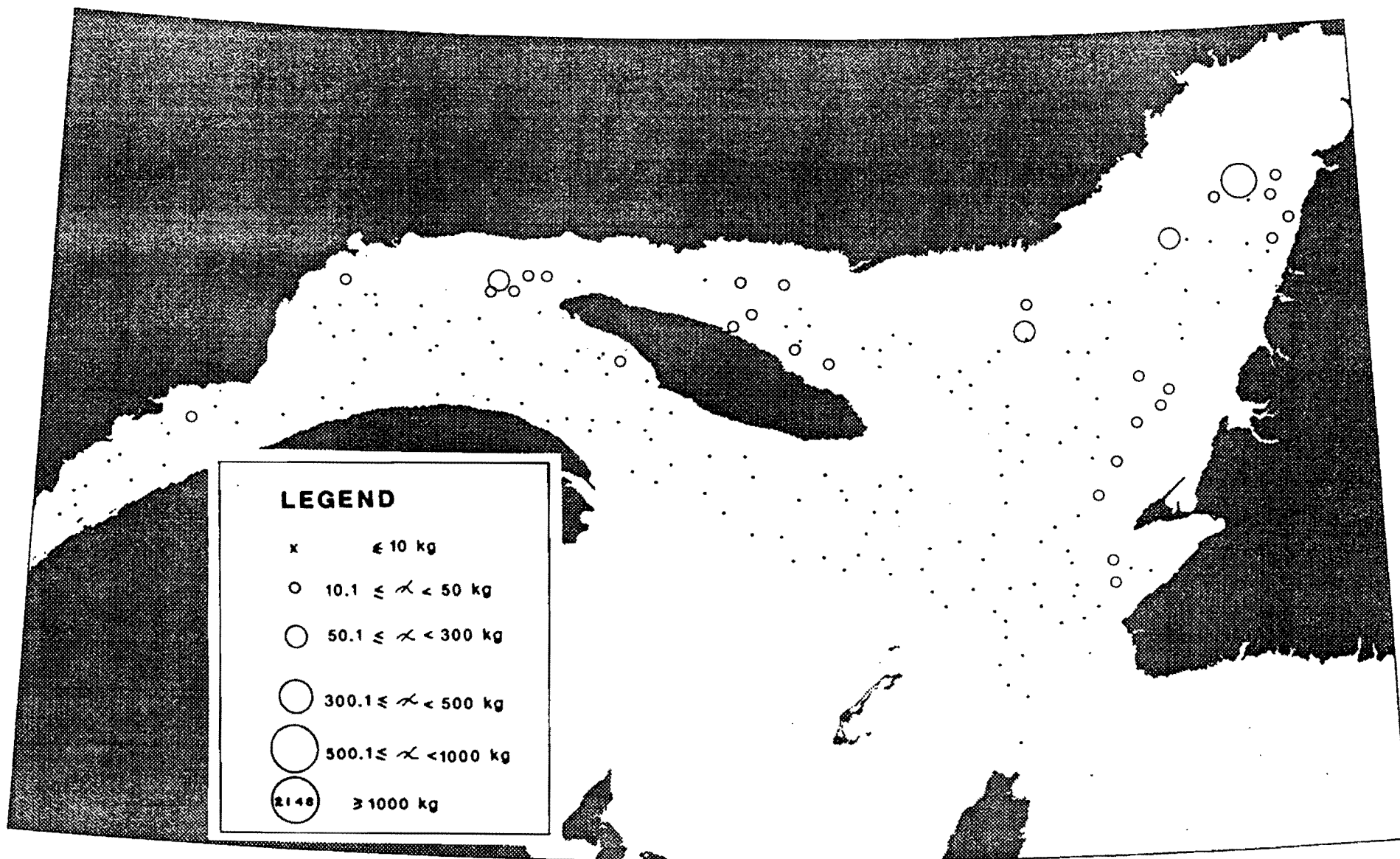


Figure 12: Morue 3Pn, 4RS. Distribution des prises et taux de capture (Kg/trait de 30 min.) de la croisière de recherche sur le Alfred Needler.

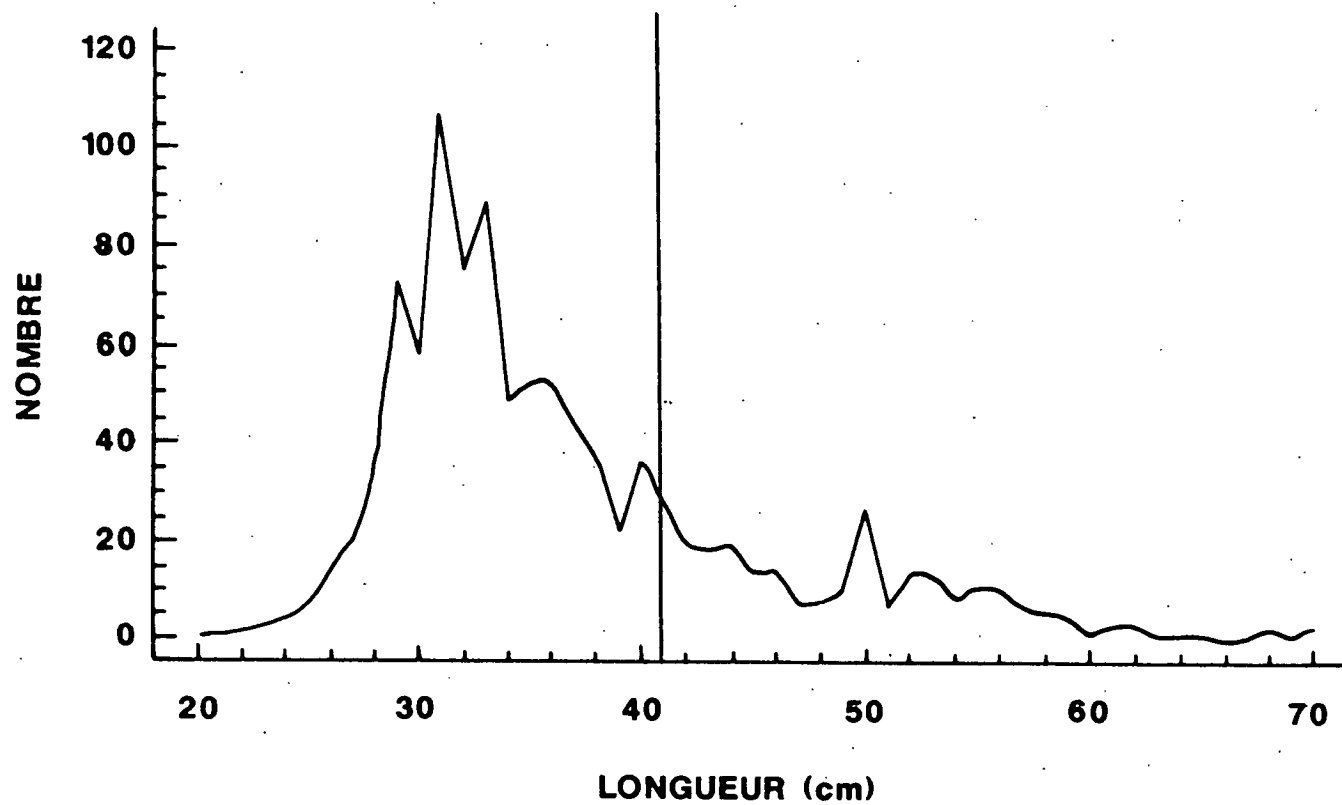


Figure 13: Morue 3Pn, 4RS. Fréquence de longueur des captures de morues lors de la pêche dirigée à la crevette.

|                                      |  |                                   |  |                                |
|--------------------------------------|--|-----------------------------------|--|--------------------------------|
| ALK13PnOTBFRM (847)                  |  | ALK10TB (1407)                    |  |                                |
| ALK14ROTBNFL (417)                   |  |                                   |  |                                |
| ALK14ROTMNFL (143)                   |  |                                   |  |                                |
|                                      |  |                                   |  | AGE10TB <sup>9748</sup>        |
| LFJAN3PnOTBFRM (5642) <sup>675</sup> |  |                                   |  |                                |
| LFEB3PnOTBFRM (1707) <sup>68</sup>   |  | LF10TBFRM(7349) <sup>742</sup>    |  |                                |
|                                      |  |                                   |  | LF10TB (19066) <sup>9748</sup> |
| LFEB4ROTBNFL (5943) <sup>543</sup>   |  |                                   |  |                                |
| LFJAN4ROTBNFL (4753) <sup>3085</sup> |  | LF10TBNFL (11717) <sup>8497</sup> |  |                                |
| LFJAN4ROTMNFL (1021) <sup>2</sup>    |  |                                   |  |                                |

|                                    |                                 |                               |
|------------------------------------|---------------------------------|-------------------------------|
| ALK23PnLLNFL (151)                 |                                 |                               |
| ALK24RGNNFL (317)                  |                                 |                               |
| ALK24RLLQUE (55)                   | _ALK2IN (680)                   |                               |
| ALK24SGNQUE (62)                   |                                 |                               |
| ALK24SLLQUE (95)                   |                                 |                               |
| LFMAI4RLLQUE (250) <sup>16</sup>   |                                 | _AGE2IN <sup>1223</sup>       |
| LFMAI4SGNQUE (250) <sup>47</sup>   |                                 |                               |
| LFJUN4SGNQUE (202) <sup>143</sup>  | _LF2INQUE (1202) <sup>436</sup> |                               |
| LFJUN4SLLQUE (500) <sup>79</sup>   |                                 | _LF2IN (3841) <sup>1223</sup> |
| LFJUN3PnLLNFL (359) <sup>36</sup>  |                                 |                               |
| LFJUN4RGNNFL (1242) <sup>253</sup> | _LF2INNFL (2639) <sup>691</sup> |                               |
| LFMAI4RGNNFL (1038) <sup>127</sup> |                                 |                               |

|                                       |                                    |                                 |
|---------------------------------------|------------------------------------|---------------------------------|
| ALK23PnOTBFRM (258) <sup>8</sup>      |                                    |                                 |
| LFVR4ROTBFRM (250) <sup>11</sup>      | LF2OTBFRM (16720) <sup>1736</sup>  | AGE2OTB <sup>14935</sup>        |
| LFMAI4ROTBFRM (11599) <sup>1433</sup> |                                    |                                 |
| LFJUN4ROTBFRM (4613) <sup>284</sup>   |                                    |                                 |
| LFVR3PnOTBNFL (259) <sup>100</sup>    |                                    |                                 |
| LFVR4ROTBNFL (766) <sup>203</sup>     |                                    |                                 |
| LFMAI4ROTBNFL (3529) <sup>3259</sup>  | LF2OTBNFL (10336) <sup>10284</sup> |                                 |
| LFMAI4RSNNFL (1267) <sup>603</sup>    |                                    | LF2OTB (31780) <sup>14935</sup> |
| LFMAI4RST2NFL (1008) <sup>163</sup>   |                                    |                                 |
| LFJUN4ROTBNFL (3507) <sup>5415</sup>  |                                    |                                 |
| LFMAI4ROTBQUE (251) <sup>63</sup>     |                                    |                                 |
| LFMAI4RSTMAR (267) <sup>184</sup>     | LF2OTBQUE (4724) <sup>2188</sup>   |                                 |
| LFMAI4SOTBQUE (1510) <sup>720</sup>   |                                    |                                 |
| LFMAI4SSTQUE (250) <sup>98</sup>      |                                    |                                 |
| LFJUN4ROTMQUE (407) <sup>59</sup>     |                                    |                                 |
| LFJUN4SOTBQUE (2039) <sup>1197</sup>  |                                    |                                 |

## 3 IN

|                         |  |                       |              |
|-------------------------|--|-----------------------|--------------|
| ALK33PnLLNFL (126)      |  |                       |              |
| ALK34RGNNFL (478)       |  |                       |              |
| ALK34RLNFL (434)        |  | _ALK3IN (1438)        |              |
| ALK34RLIQUE (84)        |  |                       |              |
| ALK34SGNQUE (127)       |  |                       |              |
| ALK34SLIQUE (189)       |  |                       |              |
| LFJUL4RGNNFL (257) 628  |  |                       | _AGE3IN 5518 |
| LFJUL4RLNFL (434) 437   |  |                       |              |
| LFAOU3PnLLNFL (566) 40  |  | _LF3INNFL (7020) 3590 |              |
| LFAOU4RGNNFL (2634) 402 |  |                       |              |
| LFAOU4RLNFL (319) 362   |  |                       |              |
| LFSEP3PnLLNFL (236) 94  |  |                       |              |
| LFSEP4RGNNFL (1353) 159 |  |                       |              |
| LFSEP4RLNFL (1221) 342  |  | _LF3IN (9797) 5518    |              |
| LFJUL4RLIQUE (251) 64   |  |                       |              |
| LFJUL4SGNQUE (1262) 719 |  |                       |              |
| LFJUL4SLIQUE (514) 106  |  | _LF3INQUE (2777) 1928 |              |
| LFAOU4RLIQUE (250) 68   |  |                       |              |
| LFAOU4SLIQUE (250) 40   |  |                       |              |
| LFSEP4SLIQUE (250) 179  |  |                       |              |

## 3 OTB

|                           |  |                        |                     |
|---------------------------|--|------------------------|---------------------|
| ALK34ROTBNFL (353)        |  |                        |                     |
| ALK34RSNNFL (89)          |  | _ALK3OTB (753)         |                     |
| ALK34SOTBQUE (281)        |  |                        |                     |
| ALK34SSTMAR (30)          |  |                        | _AGE3OTB 4081       |
| LFJUL4ROTBNFL (2497) 1502 |  |                        |                     |
| LFJUL4RSNNFL (528) 30     |  | _LF3OTBNFL (5654) 3100 |                     |
| LFAOU4ROTBNFL (1963) 972  |  |                        |                     |
| LFSEP4ROTBNFL (666) 355   |  |                        |                     |
| LFJUL4SOTBQUE (788) 361   |  |                        | _LF3OTB (8511) 4081 |
| LFAOU4SOTBQUE (1275) 315  |  | _LF3OTBQUE (2857) 964  |                     |
| LFSEP4SOTBQUE (530) 288   |  |                        |                     |
| LFSEP4SSTMAR (264) 300    |  |                        |                     |

## 4 IN

|                         |  |                      |                    |
|-------------------------|--|----------------------|--------------------|
| ALK43PnLLNFL (33)       |  |                      |                    |
| ALK44RGNNFL (37)        |  | _ALK4IN (222)        |                    |
| ALK44RLNFL (34)         |  |                      |                    |
| ALK44RLIQUE (47)        |  |                      |                    |
| ALK44SLIQUE (71)        |  |                      |                    |
| LFOCT3PnLLNFL (510) 219 |  |                      | _AGE4IN 1923       |
| LFOCT4RGNNFL (267) 64   |  | _LF4INNFL (909) 1418 |                    |
| LFOCT4RLNFL (132) 167   |  |                      |                    |
| LFJUL4RLIQUE (250) 68   |  |                      | _LF4IN (1672) 1923 |
| LFOCT4SLIQUE (513) 151  |  | _LF4INQUE (763) 505  |                    |

## 4 OTB

|                          |  |                     |               |
|--------------------------|--|---------------------|---------------|
| ALK44RSNNFL (62)         |  |                     |               |
| ALK4SOTBQUE (159)        |  | _ALK4OTB (221)      |               |
| LFOCT4RSNNFL (548) 9     |  |                     | _AGE4OTB 2131 |
| LFOCT4SOTBQUE (1261) 373 |  | _LF4OTB (1809) 2131 |               |

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|               |  |               |                |
|---------------|--|---------------|----------------|
| AGE2IN 1223   |  |               |                |
| AGE3IN 5518   |  | _AGEIN 8664   |                |
| AGE4IN 1923   |  |               | _AGE9TOT 39558 |
| AGE1OTB 9748  |  |               |                |
| AGE2OTB 14935 |  | _AGEOTB 30894 |                |
| AGE3OTB 4081  |  |               |                |
| AGE4OTB 2131  |  |               |                |