

Latent Effort

The term “latent effort” has a range of meanings to fishermen and fishery managers. Generally, it refers to the available but unused opportunity for fishing vessels to participate in a fishery. If such “latent” effort is included in calculating the allocation of opportunity, such as days-at-sea (DAS), but it is not used, then the fishery will underperform its targets and not achieve optimum yield, since DAS allocated to active vessels will be reduced by the amount that is allocated to vessels that do not use them. On the other hand, if the allocation of DAS to all limited access permit holders (including those that haven’t been using their DAS in the past) is calculated based only on the current pattern of DAS usage by active vessels, as it is in the monkfish fishery, and vessels that have not been active begin to use their DAS, then there is an increased risk that the fishery will overshoot its catch targets, resulting in future reductions in DAS or other restrictions to account for the overage. If the catch targets are close enough to the catch limits (ACLs) that the overage results in catch exceeding the ACL, accountability measures are mandated.

This paper will characterize the latent effort in the monkfish fishery, and provide the Councils the information with which they can determine whether, and how big a problem latent effort is in the monkfish fishery. The table below describes the pattern of active and inactive vessels and DAS usage rates. Row 1 is the number of permits issued each year, and Row 2 is the number of permit rights; Row 1 is higher because if a vessel is replaced or upgraded it is issued a new permit number. Row 2 is the actual number of potential limited access participants. Rows 3 and 4 show the number of permits (shown in Row 1) charged/not charged a DAS in each of the last 4 years. The numbers are fairly consistent during that period.

The first category of latent effort is the group of vessels that have a limited access permit but have no landings of any species during the year. Row 5 shows that the number of such vessels with monkfish limited access permits has increased steadily from 110 in 2007 to 151 in 2010. These data are derived by a query of the permits, dealer, moratorium qualification review system, and DAS allocation management system databases; it looks at the rights/permits that were given a monkfish DAS allocation for a fishing year and pulls the permits that had no landings associated with them. This group includes permits with a confirmation of permit history (no vessel), as well as vessels that have permits but are not fishing in this region. The number of monkfish DAS allocated to the permits in Row 5 is shown in Row 15, and shows a steady increase from 3,651 DAS in 2007 to 4,667 in 2010.

Another category “latent effort” is the group of limited access scallop vessels that also have a limited access monkfish permit, but do not use any monkfish DAS because they choose not to expend a scallop DAS to target monkfish. Row 6 is the number of LA monkfish vessels that also have a scallop LA permit. Nearly all of those vessels do not use any monkfish DAS (Row 7), and the 3 that have used monkfish DAS (in 2009 and 2010) are combination boats, likely using a groundfish DAS when on a monkfish DAS (or vice versa). Given the consistency throughout the period in the number of scallop vessels that do not use their monkfish DAS, the DAS allocated to them have a low probability of being activated in the near term. Row 14 shows the number of DAS allocated each year (including any carryover DAS) to limited access monkfish/scallop vessels. The number of DAS allocated to vessels that also held a

monkfish permit declined from 7,223 DAS in 2007 to 6,208 DAS in 2008, and has remained relatively constant since then.

The next step in the analysis is to look at DAS allocated and used by vessels that used at least one monkfish DAS, Row 8. The number of allocated DAS has decline since 2007, due in part to the reduction in target TAC and associated specifications implemented under Framework 4 as well as the increased number of vessels in Row 5 discussed above (no landings of any species). Both the DAS allocated and the overall DAS used declined about 30% over the period, although DAS charged in the NMA declined by nearly 40% while DAS charged in the SMA declined by 20%, Rows 11 and 12, respectively.

One potential source of “latent effort” is the DAS allocated to vessels that fish exclusively in the SMA. Under the specifications process, all limited access vessels are allocated the same number of DAS, but up to now only a portion of those DAS are available for use in the SMA. A vessels that wants to use its entire monkfish DAS allocation, would need to use the Total DAS – SMA DAS in the NMA; in effect, all of the DAS allocation above the amount available for use in the SMA can be considered NMA DAS. Row 13 shows that the number of vessels fishing exclusively in the SMA during the 2007-2010 ranged from 151 to 119. Row 16 shows the “latent effort” associated with the NMA DAS allocated to those vessels which has declined slightly in the last two years in proportion to the fewer number of vessels fishing exclusively in the SMA.

The discussion above presents three categories of “latent effort”, DAS allocated to monkfish vessels that also have a LA scallop permit, to vessels with no landings of any species, and NMA DAS issued to vessels that fished exclusively in the SMA. The sum of these DAS is shown in Row 17. These DAS can be considered as having a low probability of being used. Row 18 is the total number of DAS allocated, and Row 20 is the percentage of the total allocated DAS that have a low probability of being charged. Both the number and percentage of the total DAS in this category has remained constant at about 11,700 DAS during the period 2007-2010.

Row 19 is the total number of DAS that were charged each year. The percentage of the total allocated DAS that were charged is shown in Row 19. Despite the declining number of allocated DAS, the percentage of the total DAS there were charged each year in 2007-2010 has remained constant at about 18%. For vessels that used at least one DAS, the percentage of allocated DAS that were charged also remained fairly constant at about 55%, Row 21.

The bottom line is that about half of the allocated DAS have a low probability of being used. Of the remaining half, slightly more than half (i.e., about 30% of the total) are unused each year, but since those vessels are active in the fishery, have a greater likelihood of being used in the future. As noted above, however, the usage rate by these active vessels does not indicate a trend toward greater or less usage over the past four years.

| | FISHING YEAR | 2007 | 2008 | 2009 | 2010 |
|-----------|---|-------------|-------------|-------------|-------------|
| 1 | Number of distinct LA permits by year | 781 | 769 | 763 | 741 |
| 2 | Number of permit rights (vessels and/or CPH) allocated DAS by year | 732 | 742 | 742 | 743 |
| 3 | Number of LA vessels charged a DAS by year | 289 | 276 | 253 | 243 |
| 4 | Number of LA vessels not charged a DAS by year | 492 | 493 | 510 | 502 |
| 5 | Number of permits rights (vessels and/or CPH) allocated DAS with no landings of any species | 110 | 126 | 138 | 151 |
| 6 | Number of LA vessels that also have a LA scallop permit | 189 | 185 | 183 | 183 |
| 7 | Number of LA vessels that also have a LA scallop permit and did not use a monkfish DAS | 189 | 184 | 180 | 180 |
| 8 | DAS allocated to vessels that used at least one monkfish DAS | 11,013 | 9,078 | 8,128 | 7,683 |
| 9 | Monkfish DAS charged to LA permits | 5,765 | 5,345 | 4,350 | 4,264 |
| 10 | Unused DAS by vessels using at least one monkfish DAS (Row 8 - 9) | 5,247 | 3,732 | 3,778 | 3,419 |
| 11 | Monkfish DAS charged in the NMA | 1,821 | 1,315 | 1,097 | 1,123 |
| 12 | Monkfish DAS charged in the SMA | 3,945 | 4,026 | 3,253 | 3,141 |
| 13 | Number of vessels that fished exclusively in the SMA by year | 135 | 151 | 119 | 121 |
| 14 | Monkfish DAS allocated to vessels that also held a LA scallop permit (Row 6) | 7,223 | 6,208 | 6,215 | 6,151 |
| 15 | Monkfish DAS allocated to LA vessels with no landings of any species (Row 5) | 3,651 | 4,306 | 4,573 | 4,667 |
| 16 | NMA DAS allocated to vessels that fished only in the SMA (NMA - SMA DAS allocation * Row 13) | 986 | 1,102 | 869 | 883 |
| 17 | Total allocated monkfish DAS to vessels that also held a LA scallop permit, to vessels with no landings of any species, and NMA days issued to vessels that fished exclusively in the SMA (Rows 14+15+16) | 11,859 | 11,616 | 11,657 | 11,701 |
| 18 | Total monkfish DAS allocated | 30,585 | 25,354 | 25,083 | 24,020 |
| 19 | Percent of monkfish DAS allocated that were charged (Rows 9/18) | 19% | 21% | 17% | 18% |
| 20 | Percent of monkfish DAS allocated with very low probability of being charged (Row 17/18) | 39% | 46% | 46% | 49% |
| 21 | Percent of monkfish DAS allocated that were charged to LA monkfish vessels that used at least one DAS (Row 9/8) | 52% | 59% | 54% | 56% |

Geographic restrictions for permit Category H vessels (vessels limited to fishing off the Virginia/North Carolina coast.)

Permit Categories G and H were established in Amendment 2 (effective May 1, 2006) to qualify vessels that did not obtain a limited access permit in the original FMP due to a variety of circumstances. The trip limits and DAS allocation for G and H vessels are the same as permit category A and B, respectively, but G and H vessels are limited to fishing south of 38°40' N Lat (see Figure 1). There are seven category H vessels and no category G vessels.

The monkfish fishery in this area is prosecuted exclusively with gillnets, primarily out of Chincoteague, VA. In 2002, NMFS adopted a series of large mesh gillnet closures to protect sea turtles under the authority of the Endangered Species Act, and amended the closures in 2006, as shown in (Figure 1). Large-mesh gillnet vessels are also subject to the Harbor Porpoise Take Reduction Plan gear restrictions and a closure from February 15-March 15. Also shown is the state waters large-mesh gillnet closure to protect bottlenose dolphin.

The availability of monkfish in this area is highly seasonal and transient, as monkfish migrate out of deep water in the spring and proceed northward. Turtle closures notwithstanding, fishermen report a monkfish season lasting only 2-3 months, from April through June. This seasonality is reflected in the monthly landings data, with May accounting for over 60% of the total by category H vessels for 2005-2010 (Figure 2).

As a group, permit category H vessels use about half of their allocated monkfish DAS (Table 1). Within the group, however, there is a wide range of usage rates, with some vessels using up to 80% of their allocation in a given year. The average usage rate and distribution are approximately the same as found among active monkfish vessels in the broader southern management area fleet.

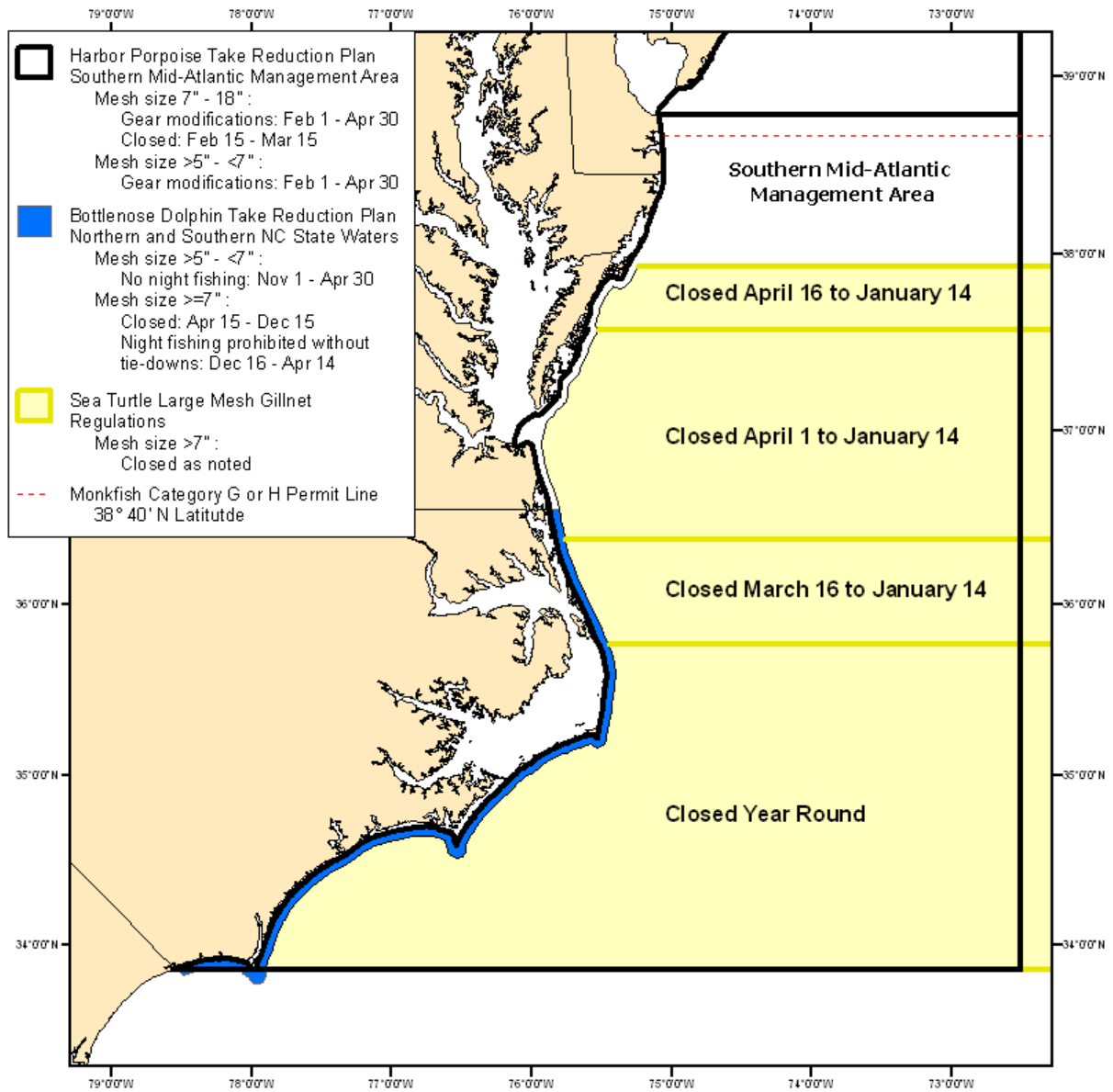
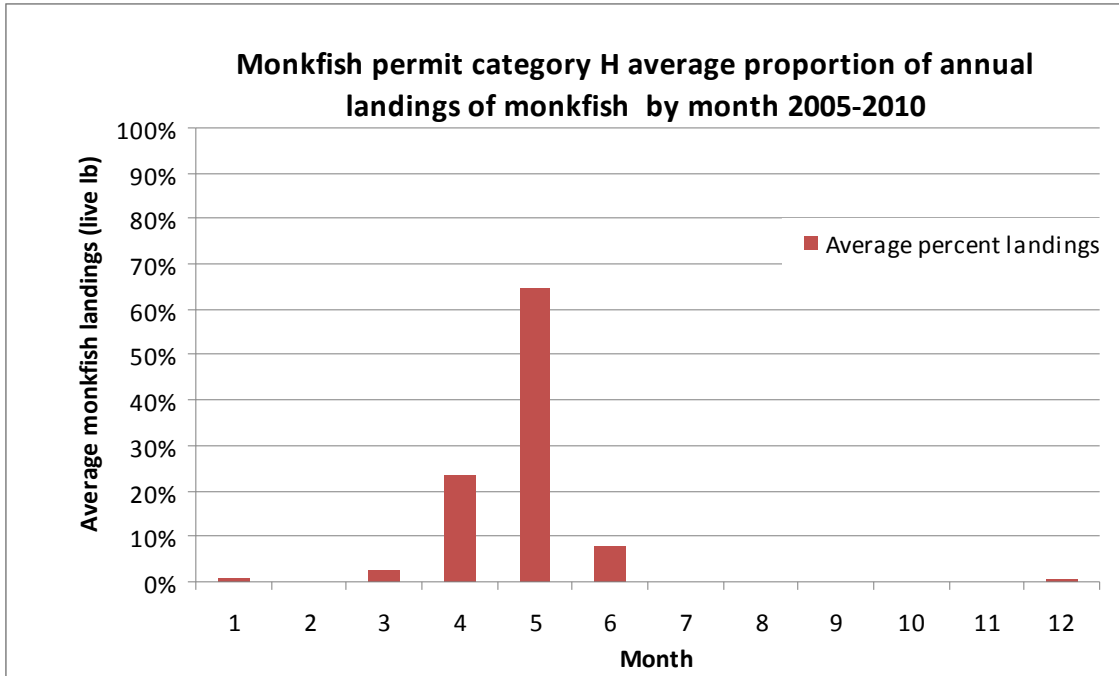
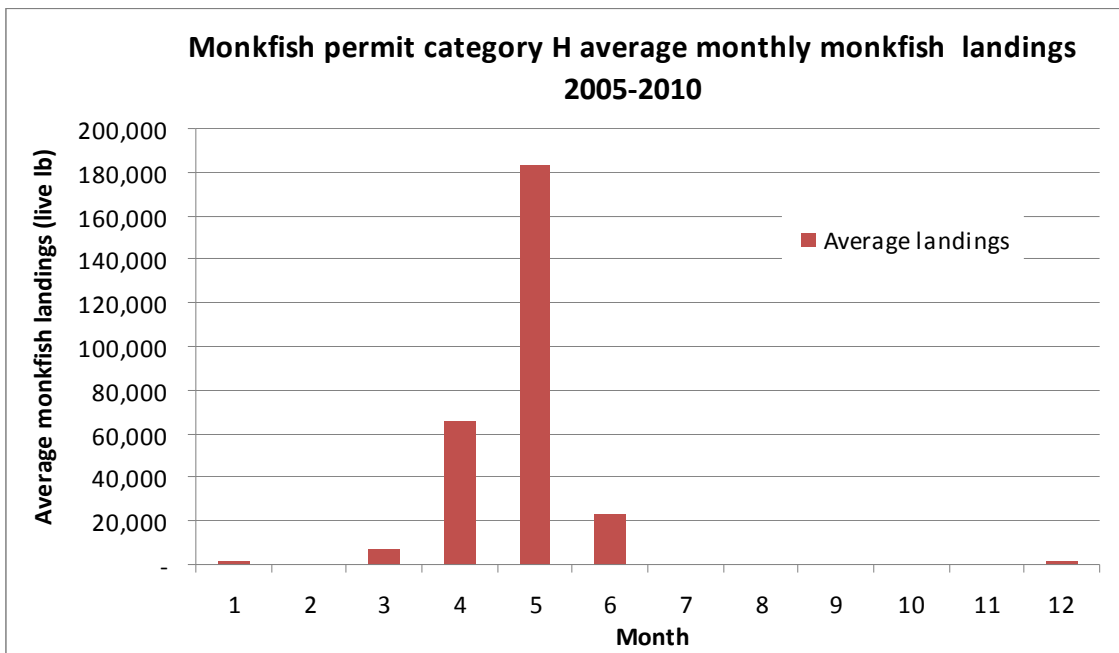


Figure 1 Chart of Monkfish Permit Category H fishery, showing Harbor Porpoise, bottlenose dolphin, and sea turtle closure areas/seasons.



(a)



(b)

Figure 2 Monkfish permit category H average proportion of annual landings (a), and average monthly landings (b) for 2005-2010.

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|----------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| H Permit DAS Allocation | 196.5 | 121.0 | 162.0 | 185.0 | 189.0 | 189.0 |
| H Permit DAS Usage | 103.9 | 86.9 | 103.1 | 101.9 | 91.8 | 85.7 |
| H Permit DAS Percent Used | 52.9% | 71.8% | 63.6% | 55.1% | 48.6% | 45.3% |

Table 1 Monkfish permit category H days-at-sea (DAS) allocation and usage, 2005-2010.