

NSW COMMERCIAL FISHERIES REFORM PROGRAM

Share linkage options

Ocean Haul Garfish



NOTE: THIS DOCUMENT HAS BEEN PREPARED FOR DISCUSSION WITH THE OCEAN HAUL GARFISH WORKING GROUP ONLY. IT IS NOT THE FINAL ANALYSIS AND DOESN'T REPRESENT THE INFORMATION THAT WILL BE SENT TO ALL SHAREHOLDERS FOR COMMENT

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Share Linkage Options – Ocean Haul Garfish

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Foreword

The purpose of this paper is to describe potential share linkage options for the NSW Ocean Haul Garfish Hauling Net Fishery for consideration by the Garfish Hauling Net share linkage working group at its second meeting in November 2013.

The share linkage options presented in this paper were short-listed by the Working Group at its first meeting having regard to the following hierarchy of linkage options proposed by the independent review team in the *Independent Review of NSW Commercial Fisheries Policy, Management and Administration* (the Review):

1. Where catch quota is a feasible proposition for a species, it should be pursued as the preferred option for linking shares to resource access.
2. If species specific catch quotas are not a feasible proposition, shares in that sector should be linked to fishing effort in the form of transferable time/gear based quota.
3. In the event that the two approaches above are demonstrated to not be feasible for a share class (i.e. the financial and other costs heavily outweigh the benefits), shares should be linked to resource access at the endorsement level whereby eligibility for an endorsement is determined by holding a minimum number of the corresponding shares.

The share linkage options presented in this paper are not the only feasible share linkage options for this fishery. A hybrid or combination of the linkage options presented in this paper may also be feasible.

Another important part of the reform program is the streamlining of current management arrangements to improve industry viability through, for example, increased business flexibility, improved operational efficiency and minimised management costs. The streamlining of current management arrangements will be influenced by the strength of the linkages pursued. Towards the end of this paper is detailed discussion on the management arrangements that may be able to be streamlined, for further consideration by the Working Group.

Depending on their feasibility, the share linkage options and ancillary reforms will be referred to shareholders for consideration and comment, and a public consultation phase will be needed given the interests of the other fishing sectors and some parts of the community in changes to the rules and regulations applying to the State's commercial fisheries. They will then be referred to the Structural Adjustment Review Committee (SARC) along with all submissions received for consideration and final recommendations to the Minister for Primary Industries.

The background and justification for the commercial fisheries reform program and the linking of shares to resource access is explained in detail in the *Independent Review of NSW Commercial Fisheries Policy, Management and Administration* (the Review), the Government's response to the Review, an Information Paper summarising the major findings of the Review and Commercial Fisheries Newsletters – all of which are available on the Commercial Fisheries Reform Homepage on the NSW DPI website. The overarching objectives of the reform program are to:

- Provide shareholders improved flexibility to tailor their access (and management costs)
- Improve the overall viability of the NSW commercial fishing industry
- Improve the value of shareholders' property rights (i.e. shares)
- Improve investment confidence and support from financial institutions
- Improve management and the public's perception of the NSW commercial fishing industry.

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Major issues facing the NSW Ocean Haul Garfish Net Fishery

Some of the major issues facing the NSW Ocean Haul Garfish Fishery that can be addressed through the reform program (and the linking of shares to resource access) include:

Resource Recovery Program

The Eastern Sea Garfish has been classified as overfished for over a decade. While some measures to address the causes of overfishing have been implemented through the Resource Recovery Program, this species remains classified as overfished. The industry reform program must consider the sustainability issues present and if feasible recommend share linkage options that can directly respond to these issues. It is recognised that the recovery of the species will require the reduction of commercial fishing mortality below the current levels for a number of years. The share linkage option recommended should have the ability to deliver the required reduction in fishing mortality required in an efficient and fair manner.

Recent commercial catches of Eastern Sea Garfish are in the range of 30-100 tonnes per annum. Although possibly not excessive for a healthy population these harvests appear to have been sufficient to suppress recovery of an already depleted population of Eastern Sea Garfish.

Considering the stock has not recovered despite the recovery program actions to date, it would highly likely that future commercial harvest would need to be capped well below current levels to increase the chances of recovery of the species.

The commercial fisheries reform program provides an opportunity for fishery restructure with the assistance of government funding that was not available previously.

A number of structural reform options were in development within the Resource Recovery Program process at the time of the announcement of the commercial fisheries reform including:

- Competitive catch limits based on regionalised total catch caps and individual trip limits.
- Individual transferable quotas.
- A permit system similar to the one that was used to manage large shark catches in the ocean trap and line fishery. (Effectively a limited access quota scheme while share restructuring and recovery takes place.)

Dependant on the final type of linkage recommended one of these options or strategies could be part of an overall implementation strategy designed to reduce the impact of the introduction of the final share linkage option and to promote recovery of the species.

General Issues

- Surplus fishing capacity that can be activated at any time and that poses a risk to the viability of active participants in the fishery.
- Limited opportunity to improve operational efficiency through, for example, reviewing crewing arrangements or removal of closures.
- A lack of fishing capacity in some regions that is hampering the efficient operation of garfish hauling in some regions, particularly the availability of crew.
- Maintaining fishing businesses diversity to address risk of overspecialisation.
- The cost of existing closures in terms of lost fishing opportunity and subsequent income.
- Share distribution issues within some regions and inter regional equity considering minimum shareholdings.

Ocean Haul General Shares (Crewing)

- Crewing rules restricts ability to raise operational crew in some regions.
- Cost of maintaining crewing entitlements under current management arrangements can be prohibitive
- An options paper regarding crewing reform options will be provided separately.

Interim Total Commercial Access Levels (ITCALs)

In this paper there are many references to Interim Total Commercial Access Levels (ITCALs). Understanding ITCALs is important because they are a key element of the catch and effort quota management options set out in this paper. As the term suggests, an “ITCAL” is a temporary limit set for the purpose of and during a period of significant industry adjustment.

Once set, an ITCAL operates in the same way as a Total Allowable Catch (TAC), Total Allowable Commercial Catch (TACC) or a Total Allowable Effort (TAE), but it serves a different purpose and is set in a different way.

A TAC is the total amount of catch that can be taken in a specified period, usually a year. TACs are sometimes setup to apply across all or a range of stakeholder groups however they can also be setup to apply to a given sector only – for example, the TACC applying to the NSW Rock Lobster Fishery applies only to the commercial sector. A TAE is similar but relates to the total amount of effort that may be used in the specified period.

TACs are usually based on a stock assessment that takes into account a wide range of information from a variety of sources including logbooks and scientific surveys etc. TAEs, which act as a proxy for limiting total catch, are based on similar information.

Because of the time and resources required to establish biologically based TACs and TAEs that are scientifically robust, an alternate approach is being pursued for setting the initial total catch and effort levels.

This alternate approach involves:

- Recognising the new total catch and effort levels as ITCALs given that they will not be biologically based as per the vast majority of TACs and TAEs;
- Setting the initial ITCALs at levels with consideration to the current catch or effort levels in the sector(s) concerned; and
- Recognising that current sustainability issues (ie: overfished status) will require recognition in the ITCAL setting process.

This approach was referred to in the Independent Review report:

“Catch and effort limits are likely to be set, at least initially, at levels commensurate with current levels. While these limits may need to be scaled back over time in some share classes to increase the productivity of the resource or deal with overfishing issues, the issues associated with doing so will be considerably easier once a meaningful linkage has been established.”
(Independent Review of NSW Commercial Fisheries Policy, Management and Administration Report; pg 72).

In implementing this approach when setting ITCAL's, the significant and ongoing overfishing issues with regard to Eastern Sea Garfish must be taken into account and the potential ITCAL's will need to be scaled down in response.

In recognition of the role of the ITCALs during the structural adjustment phase and to provide industry with some level of certainty, it is proposed to set the ITCALs for a three year period and only modify them within this period if there is a demonstrable sustainability reasons to do so, (ie:

change in the species status) or if the shareholders themselves request and DPI agrees for it to be modified. After that point, the ITCALs will progressively be turned into TAC/TAEs determined in accordance with the processes and requirements set out in the *Fisheries Management Act 1994 (Part 2, Division 4)*.

Option 1: Limiting endorsement numbers (minimum shareholdings)

Under this scenario catches are indirectly managed by actively managing the number of endorsement holders in each sector of the fishery. This is achieved by increase (or decreasing) from time to time the minimum shareholdings requirements that are used to determine shareholders' eligibility to an endorsement. The major features of moving to a minimum shareholding system include:

- Forced (as opposed to autonomous) adjustment.
- A very direct and effective mechanism to adjust the number of endorsements in the fishery.
- Depending on the adjustment targets adopted, opportunity to remove some controls that inhibit fishers' profitability and government efficiency.
- Management charges are shared amongst shareholders equally, regardless of the number of shares held.
- Poor security of investment in a fisher's share within the fishery – endorsement holders continue to compete for their share

A minimum shareholding regime is an extremely indirect way of managing catch and as such does not offer the guaranteed security of investment or access that comes with a catch and effort quota schemes outlined later in this paper. Total catches would still need to be monitored and if catches were to increase significantly consideration would need to be given to increasing the minimum shareholding requirements. (ie: to reduce the number of active endorsements in the fishery) – instead of the historical response which has been to apply additional input controls to the entire fleet to reduce the fleet's efficiency.

Determining the adjustment targets

Determining a target number of endorsements is the first step. This can be done intuitively, but is best achieved by considering fishers' catch or GVP. For the purpose of this paper total GVP over the three year period 2009/10 to 2011/12, calculated using the average monthly prices for fish sales through the Sydney Fish Market, has been used. The following tables show the numbers of businesses that it took to reach the various percentages of total GVP (60% through to 99%) across these three years. Note:

- Ocean Hauling Garfish region 1 has a single shareholder only who is subsequently responsible for all production in this fishery / region.
- There are no shareholders in Ocean Haul Garfish Hauling Net Region 2.
- There was no reported catch in Ocean Haul Garfish Hauling Net Region 5 during the period used to calculate these GVP values.
- There are small numbers of shareholders in some of these classes and there may be difficulties with liquidity in these sharemarkets (e.g. no one wants to sell leading to an inefficient stand-off).

Table 1 Ocean Haul Garfish Hauling Net region 3 (4 shareholders): Numbers of shareholders that contribute towards various percentages of total GVP

60% GVP	70% GVP	75% GVP	80% GVP	90% GVP	95% GVP	97% GVP	99% GVP
1	1	1	1	1	2	2	3

Table 2 Ocean Haul Garfish Hauling Net region 4 (18 shareholders): Numbers of shareholders that contribute towards various percentages of total GVP

60% GVP	70% GVP	75% GVP	80% GVP	90% GVP	95% GVP	97% GVP	99% GVP
2	3	3	4	6	7	8	11

Table 3 Ocean Haul Garfish Hauling Net region 6 (13 shareholders): Numbers of shareholders that contribute towards various percentages of total GVP

60% GVP	70% GVP	75% GVP	80% GVP	90% GVP	95% GVP	97% GVP	99% GVP
2	3	3	3	4	5	5	5

Table 4 Ocean Haul Garfish Hauling Net region 7 (11 shareholders): Numbers of shareholders that contribute towards various percentages of total GVP

60% GVP	70% GVP	75% GVP	80% GVP	90% GVP	95% GVP	97% GVP	99% GVP
2	2	2	3	3	3	3	4

Discussion required: The Working Group's advice is required on appropriate adjustment targets (i.e. numbers of endorsements) for each region of the Ocean haul garfish net fishery. Issues for consideration include:

- Lower targets (e.g. 4 endorsements in region 4 instead of 11) should provide greater opportunity to increase the fishing efficiency/fishing time available to those who remain. In other words a greater range of input controls may be relaxed or removed. The remaining shareholders would also have a greater share of the fishery and more valuable property right, although obviously these benefits would need to be weighed up against the costs of acquiring additional shares.
- Whether shareholders in the fishery are typically diversified fishers or operate in this fishery only. If the latter consideration should be given to a more conservative target (the lower percentages to the left), however, if the former consideration should be given to a less conservative target (the higher percentages to the right).
- How adjustment targets are to be set in region 5 of the fishery. There was no reported catch during the GVP calculation period as used for the basis for calculating adjustment targets in the other regions. Various endorsement adjustment targets and their relative shareholdings have been provided in the following tables for information.
- There are only 10 shares in region 1. Should consideration be given to lowering the minimum shareholding in region 1 to 10 shares to allow transferability of this endorsement?

Calculating the minimum shareholding requirements

The adjustment targets are then used to calculate the minimum shareholdings that would apply. This is achieved by dividing the total number of shares in the fishery by the target number of endorsements.

Table 5 Ocean Haul Garfish Hauling Net region 1 - Minimum shareholdings required to achieve various target numbers of endorsements.

Note: Total number of shares = 10

1
10

Table 6 Ocean Haul Garfish Hauling Net region 3 - Minimum shareholdings required to achieve various target numbers of endorsements

Note: Total number of shares = 220

1	2	3
220	110	73

Table 7 Ocean Haul Garfish Hauling Net region 4 - Minimum shareholdings required to achieve various target numbers of endorsements

Note: Total number of shares = 1060

2	3	4	6	7	8	11
530	353	265	176	151	132	96

Table 8 Ocean Haul Garfish Hauling Net region 5 - Minimum shareholdings required to achieve various target numbers of endorsements. Figures provided for information and comparison.

Note: Total number of shares = 170

1	2	3	4	5
170	85	56	42	34

Table 9 Ocean Haul Garfish Hauling Net region 6 - Minimum shareholdings required to achieve various target numbers of endorsements

Note: Total number of shares = 590

2	3	4	5
295	196	147	118

Table 10 Ocean Haul Garfish Hauling Net region 7 - Minimum shareholdings required to achieve various target numbers of endorsements

Note: Total number of shares = 750

2	3	4
375	250	188

If shares are surrendered for cancellation prior to implementing the minimum shareholding scheme, for example during the exit grant process, the minimum shareholdings required to deliver the adjustment targets will be less than those set out in the tables above.

Period during which minimum shareholdings must be satisfied

Discussion required: The Working Group's advice is required on an appropriate timeframe for shareholders to satisfy the minimum shareholding requirements in order to remain endorsed to participate in the fishery. Options range from enforcing the current minimum, a once off increase in the short term, through to progressively increasing the minimum shareholdings over a longer time period. Issues for consideration include:

- Government assistance, in the form of exit grant payments, will only be available in the short term (i.e. throughout 2014) – supporting the concept of a once-off increase in the short term.
- For sectors requiring significant adjustment and significant investment in shares, one of the few strategies that can be adopted is to extend the timeframe available for shareholders to satisfy the minimum shareholding requirements.

DPI's preferred position is to pursue a once-off increase in the short term (e.g. all fishers must satisfy the relevant new minimum shareholding requirements by mid 2015 to remain endorsed) unless significant adjustment and significant investment in shares is required. In this latter case DPI would support progressively increasing the minimum shareholding requirements over two periods, or three periods in extreme cases.

Attributing management charges to shareholders

If managing endorsement numbers under a minimum shareholding scheme, the cost of management is attributed to shareholders equally. In other words, all shareholders pay the same regardless of how many shares are held or how much the fisher works or catches.

FishOnline and IVR compliant

FishOnline has been designed to deal with minimum shareholding programs along the lines of that proposed here. Consequently, it is envisaged that FishOnline would not need to be enhanced. The Integrated Voice Response (IVR) system is not relevant to this option.

Option 2: Effort Quota (day regime)

Under this scenario catch is indirectly managed via a 'consumable' quota of days allocated to businesses proportional to the number of shares held.

The major features of moving to a day regime include:

- Opportunity to remove some controls that inhibit fishers' profitability and government efficiency. (much greater scope than option 1 but less scope than option 3)
- Improved control over total catches from the fishery, which can be beneficial from a range of perspectives including capacity to deliver sustainability and resources sharing objectives within in the fishery and between the fishery and other sectors.
- Total catch from the fishery would need to be closely monitored as the catch per day can vary significantly between businesses.
- Improved community confidence that the fishery is operating at sustainable levels and that total effort can be managed if a sustainability issue were to arise. This may lead to greater community and government support for proposed changes/streamlining to benefit fishers.
- Provides for autonomous (as opposed to forced) adjustment.
- Opportunity for shareholders to upscale or downscale their access (and associated management charges which would be proportional to the number of shares held).

A day regime offers a lower level of control over total catches in the fishery or the security of investment/access associated with the catch quota schemes outlined later in this paper. Total catches would still need to be monitored to ensure harvest levels do not exceed sustainable limits or levels that result in adverse resource sharing issues. If such a situation occurred, consideration would need to be given to reducing the ITCAL (i.e. the total number of days available) to reduce the total fishing effort – noting that any reductions would apply on a pro-rata basis across all shareholders rather than using the historical approach of introducing an additional control that applies equally and constrains the efficiency/flexibility of active fishers.

Determining the ITCALs

Determining the ITCALs – the total number of days available to each sector – would be determined by averaging the total number of days fished in each sector over the three financial years 2009/10 to 2011/12.

Table 11 Calculation of potential ITCALs (total days)

Sector	Potential ITCAL
Ocean Haul – Garfish Hauling Net	224

This ITCAL will be reviewed annually to determine whether it is meeting the objectives of the recovery program objectives.

Discussion required: DPI will present for discussion the data used to calculate the sector specific ITCALs above. These discussions may result in changes to the above ITCALs and the day quota that would be available to shareholders as presented below.

Determining the quota of ‘days’ available to shareholders

The Eastern Sea Garfish ITCAL available to the ocean haul general purpose hauling net fishery would then need to be allocated amongst shareholders. It has been determined that the original share allocation in this fishery was undertaken in proportion to validated catch history at the time. It has also been determined that equity exists between all regions as consistent criteria was applied across all regions. I.e: a share in one region has the same value as a share in any other region. Therefore the distribution of days quota with regard to this fishery is relatively simple as distributing the ITCAL to shareholders based on their shareholdings across all regions.

The ITCAL available to each sector then needs to be allocated amongst the shareholders in the fishery proportional to the number of shares held.

Table 12 Calculation of quota per share (days)

Sector	Potential ITCAL	Total Shares	Quota per share (days)
Ocean Haul Garfish Hauling Net	224	2800	0.08

If shares are surrendered for cancellation prior to implementing the quota system, for example during the exit grant process, the amount of quota per share available to those that remain will be greater than the estimates above.

Fishing period

An allocation of quota is available to be fished during what is known under the *Fisheries Management Act 1994* as a ‘fishing period’. Fishing periods are generally defined as ‘one year’, however, they can also be longer or shorter.

Discussion required: The Working Group's advice is required on a suitable 'fishing period'. Realistic options include a one or two year fishing period. Longer fishing periods can result in reduced total management costs and are a feasible proposition for stocks at low risk of overfishing. Stocks at greater risk of overfishing are best managed using shorter (one year) fishing periods. DPI's suggests that a one year fishing period would be suitable.

Defining a 'day'

A day could be defined as either a calendar day or a 24 hour period from the time the endorsed fisher makes a pre-fishing report via the IVR system (if the IVR system is the preferred technology).

Discussion required: Workgroup input is sought regarding how a 'day' should be defined. A calendar day is more administratively efficient and should result in lower compliance and administration costs. A 24 hour period could benefit fishers by giving them the maximum opportunity to fish over a full 24 hour period, however it would be more costly to implement and administer.

Monitoring quota usage

A day quota system requires effort to be monitored from day to day – if the system is to have integrity. The cheapest way to do this is through the current paper-based log book system, however, there's a range of reasons why this would be inadequate including:

- Log books are used to capture a range of information (e.g. catch, effort and disposal information) some of which is not readily available for the purpose of submitting log books in a timely manner;
- Many fishers are tardy in submitting log books in a timely manner in any event;
- Even for log books submitted in a timely manner, data entry by DPI can take time and result in delays in up-to-date information.
- The online log book system in FishOnline is not designed to deal with acquitting quota usage.

One of the most cost effective ways to closely monitor a 'consumable' day quota would be to utilise the Integrated Voice Response (IVR) System recently developed by DPI. This system would require fishers to make a pre-fishing and a post land report using a mobile phone or computer. It also provides for real-time monitoring of quota usage and real-time quota balances in FishOnline – which will be accessible by shareholders (and any 'agents' they appoint to access FishOnline on their behalf). Reporting other information could be done separately either online or by using a streamlined version of the current commercial log book.

Discussion required: The Working Group's view is sought on the IVR system as a cost effective way to monitor quota usage or alternatives that would deliver the integrity required. DPI's preferred position is that the IVR system be utilised, at least until such time as alternate technology (e.g. a smart phone apps) are developed and functional.

Acquiring additional quota

Acquiring additional day quota could be achieved by a fisher in three ways:

- By transferring relevant shares, including shares in other regions, which would result in the shareholder having an ongoing right to a greater portion of the ITCAL/TAC for future fishing periods; or
- By transferring quota from other relevant shareholders including shareholders in other regions, which may be fished during the balance of the relevant fishing period only.

Share and quota transfers will be able to be done at minimal or no cost using FishOnline or for a fee if done via a paper-based application.

If all (or the last) share of the relevant class is transferred from a business, any quota remaining – quota that has not been used or not already transferred to another shareholder – would be transferred along with the last share to the new shareholder. This arrangement currently applies in the Abalone, Lobster and SUTS fisheries and has been hardwired into FishOnline.

Discussion required: DPI notes a range of views from various Working Groups at the first meetings regarding transferring quota during a fishing period. Some of the issues raised include:

Reasons for:

- Helps those wanting to fish at a desired level but cannot afford to buy shares
- Helps those who run out of quota and want to top up their allocation without buying shares
- Helps those who want to transfer their quota to another fisher and use the proceeds for other purposes such as adjusting their business/purchasing more shares
- Helps to ensure the entire ITCAL/TAC is used (i.e. such that there is little or no quota left over at the end of a fishing period).
- In the case of a catch quota – as per option 3 below – transferring quota is one strategy that can be used to reduce discarding.

Reasons against:

- Slows the rate of adjustment
- May stimulate ‘quota barons’ – people who purchase significant numbers of shares with the intent of leasing quota to other fishers.

DPI’s preliminary view is that the ability to transfer quota is an important component of any (catch or effort) quota management regime, and that the amount of quota that may be transferred to a shareholder during a fishing period should not be restricted unless there is a compelling reason to do so. Also important to note is that:

- FishOnline has been designed to allow quota transfers and this function cannot be turned on for one quota regime (or fishery) and at the same time be turned off for another – in other words because FishOnline has been set up to provide for quota transfers in the Rock Lobster, Abalone and Sea Urchin fisheries, any other fisheries that proceed to quota management and use FishOnline will need to provide for the transfer of quota unless significant cost to modify FishOnline is incurred; and,
- Modifying FishOnline to introduce limits on the amount of quota that may be transferred to a shareholder during a fishing period will impact the performance (i.e. speed) of FishOnline, come at a cost that will need to be borne by government or industry and may frustrate shareholders trying to acquire additional quota.

Attributing management charges to shareholders

Under a day quota system the cost of management is attributed to shareholders proportional to the number of shares held. In other words, a shareholder with a large package of shares (and greater access) will pay a larger share of the management costs than a shareholder with a smaller package of shares. Paying per share (or day quota) can be beneficial to fishers who are diversified and need only a small number of shares (or days) to compliment their other fishing activities – particularly when compared to a minimum shareholding system where all shareholders are charged the same regardless of how many shares they hold and how many days they fish or how much catch they may take.

FishOnline and IVR compliant

FishOnline and the IVR system have been designed to deal with quota management regimes along the lines of that presented here. Consequently, it is envisaged that neither system would need to be enhanced.

NSW DPI is developing new technology (i.e. a smart phone app) which will provide additional reporting flexibility which should be easier for fishers to use than the IVR system.

Option 3: Eastern Sea Garfish Quota

Under this scenario, Eastern Sea Garfish taken in the NSW Ocean Haul Garfish Hauling Fishery are managed by catch quota, with catches of Eastern Sea Garfish taken in all other sectors also capped in some way – the concept being that total catches in other Garfish harvesting sectors are also managed, whether via catch or effort controls, so that they do not exceed the relevant caps.

The major features of a catch quota system include:

- Optimum opportunity to remove a wide range of controls that inhibit fishers' profitability and government efficiency.
- Provides for autonomous (as opposed to forced) adjustment.
- Opportunity for shareholders to upscale or downscale their access (and associated management charges which would be proportional to the number of shares held).
- Defines security of investment with a fishers' share within the fishery.
- Tighter control over total harvest from the fishery which will be highly beneficial from a range of perspectives including capacity to deliver sustainability and resource sharing objectives within the fishery and between the fishery and other stakeholder groups.
- Community confidence that the fishery is operating at sustainable levels. Confidence that catches cannot increase may lead to greater community and government support for proposed changes/streamlining to benefit fishers, including their fishing efficiency.

Determining the ITCAL

Determining the ITCAL for this option requires a number of steps.

Step 1: The first step involves determining an industry wide ITCAL for Eastern Sea Garfish. This is achieved by averaging the total annual NSW Eastern Sea Garfish catch over the past 15 year period 1997/98 to 2011/12. The average yearly reported harvest of Eastern Sea Garfish over this period is: 61 tonne.

Consideration must be given to the ongoing sustainability issues with this species. One way to take this into consideration is to calculate a reduced ITCAL using the 10th percentile of the values used to calculate the yearly average above. Based on this approach the ITCAL is calculated at 32.24 tonnes. This level of harvest is consistent with 3 out of 5 of the most recent harvest years. This ITCAL could be subject to review dependant on the ongoing needs of the recovery program.

Step 2: The industry wide ITCAL for Eastern Sea Garfish then needs to be apportioned to all relevant sectors. This would be achieved by determining the proportion of the total NSW catch taken in each sector over the 3 year period 2008/09 to 2011/12. Based on this approach the ITCAL for the Ocean Haul and Estuary General Sectors would be as set out in the following table.

Table 13 Calculation of Eastern Sea Garfish ITCALs for relevant sectors

Sector	% of historic catch	Potential ITCAL (kg)
Ocean Hauling (Garfish)	93	29,983
Estuary General (Cat 1 and 2 Haulers)	7	2,257

Discussion required: DPI will present for discussion the data used to calculate the industry wide and sector specific ITCALs above. These discussions may result in changes to the above ITCALs and the eastern Sea Garfish quota that would be available to shareholders as presented below.

Determining the Eastern Sea Garfish quota available to shareholders

The Eastern Sea Garfish ITCAL available to the ocean haul general purpose hauling net fishery would then need to be allocated amongst shareholders. It has been determined that the original share allocation in this fishery was undertaken in proportion to validated catch history at the time. It has also been determined that equity exists between all regions as consistent criteria was applied across all regions. I.e: a share in one region has the same value as a share in any other region. Therefore the distribution of quota with regard to this fishery is relatively simple as distributing the ITCAL to shareholders based on their shareholdings across all regions.

Table 14 Calculation of Eastern Sea Garfish quota per ocean haul garfish haul shareholder.

Sector	ITCAL	Total shares	Quota per share
Ocean Haul Garfish Hauling Net All regions.	29,983kg	2800	10.71 kg per share

If shares are surrendered for cancellation prior to implementing the quota system, for example during the exit grant process, the amount of quota per share available to those that remain will be greater than the estimate above.

Discussion required: The Working Groups views area sought as to whether the cost of implementing consumable quota for this species under this scenario is realistic considering the current shareholding structure in the fishery. The working group is asked to consider if a research fishery arrangement is a feasible mechanism for transition to a share linkage quota regime. This could provide time for share restructuring to occur and also recovery of the species.

Fishing period

An allocation of quota is available to be fished during what is known under the *Fisheries Management Act 1994* as a 'fishing period'. Fishing periods are generally defined as 'one year', however, they can also be longer or shorter.

Discussion required: The Working Group's advice is required on a suitable 'fishing period'. Realistic options include a one or two year fishing period. Longer fishing periods can result in reduced total management costs and are a feasible proposition for stocks at low risk of overfishing. Stocks at greater risk of overfishing are best managed using shorter (one year) fishing periods. DPI's suggests that a one year fishing period would be suitable.

Monitoring quota usage

A catch quota system requires effort to be monitored from day to day – if the system is to have integrity. The current paper-based log book system could be relatively cost effective, however, there's a range of reasons why this would be inadequate including:

- Log books are used to capture a range of information (e.g. catch, effort and disposal information) some of which is not readily available for the purpose of submitting log books in a timely manner;
- Many fishers are tardy in submitting log books in a timely manner in any event;
- Even for log books submitted in a timely manner, data entry by DPI can take time and result in delays in up-to-date information.
- The online log book system in FishOnline is not designed to deal with acquitting quota usage.

One of the most cost effective ways to closely monitor a catch quota would be to utilise the Integrated Voice Response (IVR) System recently developed by DPI. This system would require fishers to make a pre-fishing, pre-landing and post landing report using a mobile phone or computer. It also provides for real-time monitoring of quota usage and real-time quota balances in FishOnline – which will be accessible by shareholders (and any 'agents' they appoint to access FishOnline on their behalf). Reporting other information could be done separately either online or by using a streamlined version of the current commercial log book.

Acquiring additional quota

Acquiring additional catch quota could be achieved by a fisher in two ways:

- By transferring relevant shares, including shares in other regions, which would result in the shareholder having an ongoing right to a greater portion of the ITCAL/TAC for future fishing periods; or
- By transferring quota from other relevant shareholders including shareholders in other regions, which may be fished during the balance of the relevant fishing period only.

Share and quota transfers will be able to be done at minimal or no cost using FishOnline or for a fee if done via a paper-based application.

If all (or the last) share of the relevant class is transferred from a business, any quota remaining – quota that has not been used or not already transferred to another shareholder – would be transferred along with the last share to the new shareholder. This arrangement currently applies in the Abalone, Lobster and SUTS fisheries and has been hardwired into FishOnline.

Discussion required: DPI notes a range of views from various Working Groups at the first meetings regarding transferring quota during a fishing period. Some of the issues raised include:

Reasons for:

- Helps those wanting to fish at a desired level but cannot afford to buy shares
- Helps those who run out of quota and want to top up their allocation without buying shares

- Helps those who want to transfer their quota to another fisher and use the proceeds for other purposes such as adjusting their business/purchasing more shares
- Helps to ensure the entire ITCAL/TAC is used (i.e. such that there is little or no quota left over at the end of a fishing period).
- In the case of a catch quota transferring quota is one strategy that can be used to reduce discarding.

Reasons against:

- Slows the rate of adjustment
- May stimulate 'quota barons' – people who purchase significant numbers of shares with the intent of leasing quota to other fishers.

DPI's preliminary view is that the ability to transfer quota is an important component of any (catch or effort) quota management regime, and that the amount of quota that may be transferred to a shareholder during a fishing period should not be restricted unless there is a compelling reason to do so. Also important to note is that:

- FishOnline has been designed to allow quota transfers and this function cannot be turned on for one quota regime (or fishery) and at the same time be turned off for another – in other words because FishOnline has been set up to provide for quota transfers in the Rock Lobster, Abalone and Sea Urchin fisheries, any other fisheries that proceed to quota management and use FishOnline will need to provide for the transfer of quota unless significant cost to modify FishOnline is incurred; and,
- Modifying FishOnline to introduce limits on the amount of quota that may be transferred to a shareholder during a fishing period will impact the performance (i.e. speed) of FishOnline, come at a cost that will need to be borne by government or industry and may frustrate shareholders trying to acquire additional quota.

Attributing management charges to shareholders

Under a catch quota system the cost of management is attributed to shareholders proportional to the number of shares held. In other words, a shareholder with a large package of shares (and greater access) will pay a larger share of the management costs than a shareholder with a smaller package of shares. Paying per share can be beneficial to fishers who are diversified and need only a small number of shares to compliment their other fishing activities – particularly when compared to a minimum shareholding system where all shareholders are charged the same regardless of how many shares they hold and how many days they fish or how much catch they may take.

FishOnline and IVR

FishOnline and the IVR system have been designed to deal with the quota regime as outlined here . Consequently, it is envisaged that neither system would need to be enhanced.

Additional issues to note

Issues to note that are not covered in the share linkage options comparison table – Table 16 Appendix 1 – include:

1. There would need to be total limits (pseudo ITCALs) on Eastern Sea Garfish catches in other sectors.
2. If Eastern Sea Garfish taken in other sectors are also to be managed by catch quotas, consideration will need to be given to providing for the 'full transferability' between the sectors concerned. This would need to be considered at two levels:
 - Transferring [a new class of] Eastern Sea Garfish shares between the sectors concerned

- Transferring Eastern Sea Garfish quota between the sectors concerned.

Comparison of share linkage options

The share linkage options investigated in this paper all have pros and cons and address to different degrees the various objectives of the reform program.

Changes to fishing rights can also be difficult for fishers. When linking property rights to resource access it is natural for those affected to focus on how much quota they will get and how the program may adversely affect their business – the negatives are easily speculated and advocated, and the longer term positives seem too far away to be tangible. There is no doubt that linking property rights to resource access will change the way shareholders manage their businesses and or operate. Some will choose to exit and others, generally those who are able to catch fish more efficiently and more business minded, are more likely to remain and prosper into the future.

The government has advised that the final decision on linkage will be based on merit (i.e. not a shareholder vote), so it is critical that consideration is given to not only the pros and cons of the various linkage options, but their effectiveness delivering on the full range of government and industry objectives of linking property rights to resource access. [Table 16 \(Appendix 1\)](#) compares the five linkage options set out in this paper against a range of short and long term objectives – from government and industry perspectives – that are important to consider.

Applying the share linkage options to two hypothetical businesses

Another way to help shareholders weigh up the various linkage options is to provide examples of the quota that would be allocated (or the number of shares required to maintain current catch or effort levels) under each linkage option.

Following is an example of how the various linkage options would affect two hypothetical ocean hauling eastern sea garfish shareholders in region 4, one who is very active in the fishery and another who is a diversified fisher and has limited activity in the fishery, focussing on the quota that would be allocated to each and the number of shares that each would need to continue their current levels of access.

Mr Workalot

Shareholding = 40

Number of days fishing = 26

Catch per annum = 6,220 kg

Mr Diverse

Shareholding = 40

Number of days fishing = 13

Catch per annum kg = 758

Assumptions: Assume a target of 7 endorsements (95% total GVP) for the purpose of the minimum shareholding regime.

Table 15 Effect of the various linkage options on two hypothetical region 4 shareholders.

Shareholder		Min. shareholding	Day quota	Catch quota
Mr Workalot	Quota allocation	n/a	3.2 days	428.4 kg
	Shares needed to maintain current access	111 shares	285 shares (23 more days)	541 shares (5,792 more kg)
Mr Diverse	Quota allocation	n/a	3.2 days	428.4 kg
	Shares needed to maintain current access	111 shares	123 shares (10 days)	31 shares (329.6 kg)

There are a number of things that can be gleaned from the example above, including:

Transitioning to the new arrangements:

- Transitioning to a new minimum shareholding has the same affect on both shareholders.
- Transitioning to the latter three linkage options has a very different affect on each shareholder. This is because Mr Workalot operates at higher levels and catches more – meaning he requires more shares – whereas Mr Diverse operates at a low level and catches less.
- The impact of low level of quota available due to the likely requirements of the recovery program requires consideration.
- The pros and cons of transitioning to a new regime needs to be considered alongside the pros and cons that arise once the new regime is bedded-in.

Once the new regimes is in place:

- Under the minimum shareholding program both shareholders would pay the same management charges despite the fact Mr Diverse spends little time and catches little in this fishery. Under the remaining two linkage options the management charges incurred by Mr Diverse would be less than the management charges incurred by Mr Workalot – which is likely to benefit fishers who operate in multiple fisheries.
- Under the minimum shareholding neither fisher's share of the resource (or access to it) can be guaranteed because any other shareholder can increase their level of access or catch at any time. Under the latter two linkage approaches additional shares would be needed before a fellow fisher can increase his or her access or catch.
- The increased security associated with the latter two linkage options (particularly a catch quota) coupled with increased demand for shares should, theoretically, result in the value of shareholders' assets (i.e. their shares) increasing – which has benefits when retiring and can be attractive to prospective new entrants considering investing in the fishery.

Costs associated with the share linkage options

A major consideration for shareholders will be the costs associated with the various linkage options, particularly given the proposed development and introduction of a new cost recovery framework. The cost of management is also an issue for government given current industry subsidies and the Act's [secondary] objective to promote a viability commercial fishing industry.

The costs associated with the various linkage options are, however, only one part of the overall picture in terms of shareholder profitability and the government's obligation to promote industry-wide viability. Some important points to note include:

- Individual shareholder profitability is influenced by a wide range of issues many of which are outside the direct control of the State government. Examples include: the cost of boats and equipment; the price received for product harvested; and the fishing ability and business skills of the shareholder concerned. The profitability of individual shareholders is not the responsibility of the Working Group or the government.
- Promoting industry-wide viability is a longer term objective that is also influenced by a range of things including, pertinent to the reform program underway: the cost, complexity and flexibility afforded by the management frameworks put in place and the removal/relaxation of controls that inhibit the operational and business inefficiency of fishers.

Overall, these issues need to be considered alongside the range of social and economic benefits that arise from linkage shares to resource access, including gaining a stronger 'social licence' to operate and increased asset (i.e. share) values etc.

The role of government is to establish a framework that promoted improved industry-wide viability – in the medium to longer term – not as touched on above to maintain or improve the profitability of individual shareholders while transitioning to a new management framework.

While it would be ideal to have firm costings for each option, NSW DPI is unable to provide definitive advice on the actual costs that would be payable. This will be influenced by a wide range of things including: the final design of the linkage options; if a quota scheme is pursued, the number of shares held; the number of shareholders remaining; the adoption of technology (e.g. the IVR and or VMS etc) to reduce enforcement costs; and the new cost recovery framework once implemented. Speculating on specific management costs payable by shareholders at this point in time would be misleading.

The best approach at this stage is to give an indication of the relative costs of the various linkage options having regard to the likely future research, management and compliance needs associated with each.

An indication of the relative costs of the various linkage options will be provided separately.

Refining current management arrangements

A significant part of the current reform program is to streamline current arrangements.

Refining management arrangements dependent on share linkage

Scope to streamline current management arrangements is in some cases dependent on the form and strength of the management framework or linkage proposed to be pursued.

Table 17 (Appendix 2) shows the streamlining proposals for which the form and strength of share linkage is important. It also shows whether or not the proposal is supported by the various linkage options that have been short-listed by the Share Linkage Working Group to date.

Controls that may be refined regardless of share linkage

Streamlining the following current management arrangements is not so dependent on the form and strength of the management framework or linkage proposed to be pursued.

Maximum shareholdings: The current default maximum shareholding of 40% of the shareholding in the fishery is ineffective and proposed to be removed on the basis that there is negligible to nil risk of a monopoly in the relatively small scale fisheries in NSW. This will streamline administration and reduce the longer term management costs. A new maximum shareholding could be introduced in the future if an unacceptable consolidation of shares becomes evident.

Net Registrations: Under the current management controls all nets used in the ocean haul garfish hauling net fishery must be registered. Net rego freeze, still a form of input control, barrier to entry to fishery, more descriptive regulation to ensure fishery effort does not blow out (especially under days regime) not known what nets are registered etc. Current administrative and management control that creates barrier to efficient management regime.

<p>Discussion required: The working group in principle support is sought to remove the requirement to register nets in the Ocean Haul Garfish Fishery. To implement this further refinement of gear description would be required.</p>

Foreign ownership restrictions: It is proposed that the restrictions on foreign ownership of shares be removed on the basis that there is negligible to nil risk of a significant foreign ownership of the relatively small scale fisheries in NSW. Foreign ownership is also an issue

managed by the Commonwealth, not the States. This will streamline administration and reduce the longer term management costs.

Registering 'eligible fishers': The requirement to register 'eligible fishers' against fishing businesses is being removed as part of the development of FishOnline, which will automatically check that nominated fishers are already licensed. This will streamline the nomination process.

Boat licences: Under an output or catch quota regime boat licences would no longer be required to [indirectly] manage catch. The same principal applies under an effort control regime (days) if there is a regime establishes a strong relationship between effort and catch. Removing boat licences presents a range of administrative and business efficiencies, including reduced paperwork and ongoing licensing costs for fishers.

The main issue to consider is whether there will be an ongoing need to cap boat capacity in the fishery. Given that boats can already be upgraded to 6 metres in the fishery (by acquiring a suitable boat licence whether from the ocean haul fishery or from some other fishery), the main issue requiring consideration is the future use of boats greater than 6 metres in length in the fishery.

Discussion required: The Working Group's view is sought on the option of removing the requirement for boats used in the ocean haul garfish hauling net fishery to be licensed. In considering this, the future use of boats greater than 6 metres in length in the fishery will need to be discussed.

OG1 notations on boat licences: OG1s play no part in management of the ocean haul garfish hauling net fishery and (if boat licences are to be retained) may be removed from boat licences.

Appendix 1

Table 16 Comparison of share linkage options

Issue	Minimum shareholdings	Days Quota	Catch quota
Government interests			
Within powers of Act	Yes	Yes	Yes
Can be administered	Yes	Yes	Yes
Can be enforced	Yes	Yes	Yes
FishOnline compliant	Yes	Yes	Yes
IVR compliant	Not applicable.	Yes	Yes
Promotes voluntary compliance	No	Yes	Yes
Manages catch	Indirectly (weak)	Indirectly	Directly
Can be used to respond to sustainability or resource sharing issues	Indirectly (weak)	Indirectly	Directly
Shareholder interests			
Secure share of catch	Minimal security	Moderate security	Very secure
Investment confidence	Less confidence	Moderate confidence	Highest confidence
Scope to tailor access	No	Yes	Yes
Scope to tailor fees	No: flat fee	Yes: pay per share	Yes: pay per share
Fish more efficiently	Subject to adjustment target and relaxation of input/effort controls	Subject to days allocated and relaxation of input/effort controls	Yes
Value of rights	Lowest value	Moderate value	Highest value
Remove input controls	Some scope	Moderate scope	Maximum scope
Addresses public perception issues	Generally yes, subject to public peception issue	Generally yes, subject to public peception issue	Yes
Ongoing adjustment (for viability)	Yes: forced on an as needs basis	Yes: autonomous and can be stimulated on as needs basis	Yes: autonomous and can be stimulated on as needs basis
Estimated relative cost of scheme	?	?	?
Cost per shareholder	No choice: all shareholders pay the same.	Decided by shareholder: costs proportional to shares held	Decided by shareholder: costs proportional to shares held

Discussion required: Opportunity will be provided for the Working Group to review the comparison table above, which will be an important part of the paperwork to be put to shareholders for comment.

Appendix 2

Whilst some linkage options may provide for the removal of a control, this will in some cases be dependent on:

- How conservative the ITCAL is; and,
- Whether catches are monitored and strategies exist to offset any unsustainable increases in catch (e.g. reducing the ITCAL).












The following symbol has been used to denote where this is an issue: 

Table 17 Streamlining proposals and whether the linkage options short-listed to date support their removal or relaxation

Current control	Minimum shareholdings	Days Quota	Catch quota
Remove fishing businesses as an effort control	Only once adjustment target is met	Yes 	Yes
Allow shares to be transferred to any person	Only once adjustment target is met	Yes 	Yes
Remove minimum shareholding requirements	No	Yes, but suggested they be retained to stimulate adjustment should the number of endorsements in a sector need to be reduced to maintain/improve viability	
Remove 48 hour restriction applying to nominations ¹	Yes 	Yes	Yes
Remove boat capacity restrictions	Yes 	Yes	Yes
Remove or relax seasonal restrictions	Yes 	Yes 	Yes
Remove or relax weekend and public holiday closures	Yes 	Yes 	Yes
Consider the use of unlicensed crew	No	Yes 	Yes
Allow ocean haulers to boat haul in some estuaries.	No	Yes 	Yes

Discussion required: Opportunity will be provided for the Working Group to discuss the streamlining proposals above and where necessary firm up the details of any such proposals to be put to shareholders for comment.

¹ This change is occurring as part of the development of FishOnline.