NSW GOVERNMENT | Department of Primary Industries

NSW COMMERCIAL FISHERIES REFORM PROGRAM

Share linkage options

Ocean Trawl Fishery

NOTE: THIS DOCUMENT HAS BEEN PREPARED FOR DISCUSSION WITH THE OCEAN TRAWL 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 Trawl Fishery

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Foreword

The purpose of this paper is to describe potential share linkage options for the NSW Ocean Trawl Fishery for consideration by the Ocean Trawl Share Linkage Working Group (the 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. In multi-species share classes where species specific catch quotas do not encompass the bulk of the catch taken, the alternate linkage options below may need to be pursued for non-quota species.
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 mangement 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 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.

Contents

Major issues facing the NSW Ocean Trawl Fishery

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

All sectors

- Diminishing asset values – shares and boat licences.
- Diminished viability as a result of strong competition for market access between the fishery and other domestic and international fisheries.
- Competition for access to particular species including eastern school whiting between the prawn trawl and fish trawl sectors as well as the Commonwealth Southern and Eastern Scalefish and Shark Fishery.
- A range of public perception issues, including lack of public confidence that catches can be actively managed in such a way that they do not exceed sustainable levels.
- Surplus fishing capacity that can be activated at any time and that poses a risk to the viability of active participants in the fishery. There is significant surplus capacity in all sectors of the fishery that could be activated, particularly if profitability in the fishery increases.
- Ongoing reliance on complex input controls to [indirectly] manage catch and the impact that this has on fishers' ability to improve fishing efficiency.
- A range of issues with the current boat capacity/replacement rules resulting in ongoing government intervention (and cost), angst within the fishery and a major impediment to improved fishery-wide viability through, for example, the use of safe and efficient boats suitable for value adding via improved product handling and onboard processing etc:
    - Difficulty replacing boat – matching boat licences to boats
    - Difficulty upgrading boats – limited availability of larger boat licences
    - Inconsistent boat replacement rules across sectors – for no known sensible reason.

Prawn trawl sector

- Loss of access to trawl grounds as a result of short term closures to protect overfished species such as mulloway and the impact that this can have on the viability of the fishery.
- The regulatory induced dumping of product that sometimes occurs and the impact that this can have on the viability of the fishery, in particular species such as bluespotted flathead taken incidentally in waters south of Smoky Cape.
- Competition for access to king and school prawns within the fishery, sometimes resulting in representation to DPI.
- Competition for access to prawns between the fishery and other sectors including the Estuary Prawn Trawl and Estuary General fisheries.
- Ongoing reliance on complex and in some cases inconsistent and unenforceable input controls, including:
    - Inconsistent net length restrictions – boat specific net lengths applying to offshore prawn trawlers and for all other trawlers a maximum of 33 metres in the inshore sector and 60 m in the deepwater sector
    - Unenforceable engine power restrictions applying to offshore prawn trawlers only
    - Multiple controls applying to the capacity of some boats – hull units in the offshore prawn trawl sector and length restrictions that apply to all sectors.

Fish trawl sector

- The regulatory induced dumping of product that sometimes occurs and the impact that this can have on the viability of the fishery, in particular species subject to trip limits such as flathead and species requiring protection and subject to crude management approach such as trevally (size limits that result in dumping) and gemfish (a conservative but crude trip limit approach that can also result in dumping with no real benefit to the stock).
- Competition for access to key species within the fishery.
- Competition for access to key species between the fishery and other sectors including the Commonwealth Southern and Eastern Scalefish and Shark Fishery and the recreational sector.
- Reliance on or interaction with more overfished species than other commercial sectors in NSW – gemfish (recruitment overfished), silver trevally (growth overfished), redfish (growth overfished), jackass morwong (overfished) and various species of sharks and rays subject to a range of exploitation/conservation statuses.

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 where necessary. 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; and,
- Setting the initial ITCALs at levels commensurate with current catch or effort levels in the sector(s) concerned.

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 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 problem that arises, 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 adjusting the minimum shareholding (which determines shareholders' eligibility to an endorsement). The major features of 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 modify or remove some controls that inhibit fishers' profitability and government efficiency.
- Management charges are shared amongst shareholders equally, regardless of the number of shares held.
- Does not guarantee 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 higher levels of control over total catches or catches of particular species in the fishery or the security of investment/access associated with the catch and effort quota schemes outlined later in this paper. Total catches of major species would still need to be monitored to ensure that harvest levels do not exceed sustainable limits or levels that result in adverse resource sharing issues. If such a situation occurred, consideration would be given to increasing the minimum shareholding requirements (i.e. to reduce the number of endorsements in the fishery) – instead of the historical response which has been to apply additional and in some cases crude 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.

Table 1 Northern fish trawl (45 shareholders): Numbers of shareholders that contributed towards various percentages of total GVP taken from the northern fish trawl sector

60% GVP	70% GVP	75% GVP	80% GVP	90% GVP	95% GVP	97% GVP	99% GVP
7	9	10	11	14	18	20	24

Table 2 Inshore prawn trawl (194 shareholders): Numbers of shareholders that contributed towards various percentages of total GVP taken from the inshore prawn trawl sector

60% GVP	70% GVP	75% GVP	80% GVP	90% GVP	95% GVP	97% GVP	99% GVP
19	25	29	33	46	57	63	75

Table 3 Offshore prawn trawl (176 shareholders): Numbers of shareholders that contributed towards various percentages of total GVP taken from the offshore prawn trawl sector

60% GVP	70% GVP	75% GVP	80% GVP	90% GVP	95% GVP	97% GVP	99% GVP
25	32	36	42	57	69	76	87

Table 4 Deepwater prawn trawl (41 shareholders): Numbers of shareholders that contributed towards various percentages of total GVP taken from the deepwater prawn trawl sector

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

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

- Lower targets would provide greater opportunity to increase the fishing efficiency of those who remain. In other words a greater range of input controls could be relaxed or removed.
- Lower targets would also result in the remaining shareholders having a greater share of the fishery which would, theoretically, enhance the value of fishers property right (i.e. shares), although obviously these benefits would need to weighed up against the cost of acquiring additional shares.
- Whether shareholders in the fishery are typically diversified fishers or operate in this fishery only (data on this will be available to the working group). 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).
- The Deepwater prawn trawl targets in the table above are potentially too low. They are low because of extremely limited activity in this sector in recent years because of external issues – high fuel prices, market and processor issues and the high Australian dollar.

Calculating the minimum shareholding requirements

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

Table 5 Northern Fish Trawl: Minimum shareholdings required to achieve various target numbers of endorsements

Note: Total number of shares = 2,169

Target	7	9	10	11	14	18	20	24
Minimum shareholding	310	241	217	197	155	121	108	90

Table 6 Inshore prawn trawl: Minimum shareholdings required to achieve various target numbers of endorsements

Note: Total number of shares = 11,035

Target	19	25	29	33	46	57	63	75
Minimum shareholding	581	441	381	334	240	194	175	147

Table 7 Offshore prawn trawl: Minimum shareholdings required to achieve various target numbers of endorsements

Note: Total number of shares = 9,798

Target	25	32	36	42	57	69	76	87
Minimum shareholding	392	306	272	233	172	142	129	113

Table 8 Deepwater prawn trawl: Minimum shareholdings required to achieve various target numbers of endorsements

Note: Total number of shares = 656

Target	2	2	3	3	3	4	4	4
Minimum shareholding	328	328	219	219	219	164	164	164

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 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, one of the few strategies that can be adopted is to extend the timeframe available for shareholders to satisfy the minimum shareholding requirements.
- Regardless of whether a short term or long term approach is adopted, to streamline administration DPI would seek to align all minimum shareholding periods across fisheries. This would prevent having to issue new fishing business cards etc each time an endorsement is added or removed from a fishing business card.

DPI's preferred position is to pursue a once-off increase in the short term unless significant adjustment and investment in shares would be required (depends on the target selected). 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.

Additional issues to note

Issues identified by the Working Group at its first meeting that are not covered in the share linkage options comparison table – Table 16 Appendix 1 – or elsewhere include:

1. Shareholders forced to invest from time to time.
2. Minimum shareholdings apply to all operators – no scope to upscale/downscale.

Option 2: Effort quota (boat length day regime)

Fundamentally different approaches are possible

There is a range of fundamentally different approaches that could be pursued for managing days at sea, including:

1. Allocating days proportional to shareholdings and allowing shareholders to acquire and use any size boat
2. Allocating days proportional to shareholdings and maintaining separate rules that govern the transfer, upgrading and use of boats (with or without modifications)
3. Allocating a new class of shares that takes into account current shareholdings and a factor that represents the capacity of boats owned/used by shareholders.

For the purpose of this paper the third approach above has been modelled.

Discussion required: The Working Group is encouraged to discuss the pros and cons of the fundamental approaches above and confirm (or otherwise) that the third approach – which forms the modelling below – is the preferred approach.

Issues to consider include:

- The capacity of a trawler can have a significant affect on catch, so it would be logical to incorporate it into any new property right to be used to manage effort in the fishery.
- The boat capacity restrictions set out on licences are treated by some fishers as a second layer of rights – which is having an adverse affect on the market values of shares (which can be mortgaged and are compensatable if a fishery is terminated).
- The initial cost of setting up a scheme as per 3 above may be a small price to pay for the long term simplicity that it could deliver.
- There would be two additional classes of share to administer if the current 'access shares' are retained – more on this below.

A single day regime for the prawn trawl sector or multiple day regimes

Since the first meeting some fishers have advised against three separate sector-specific day regimes for practical reasons and cost.

Discussion required: The Working Group is encouraged to discuss the pros and cons of a single package of days that may be used in any sector of the fishery versus three separate sector-specific day regimes and confirm (or otherwise) that the former is the Working Group's preferred approach – as modelled below.

Alternate catch/effort proxies (relating to boat capacity)

For the purpose of this paper 'boat length' has been used as the proxy for catch – or the catching capacity of a boat. It has been chosen because information on the length of boats historically used in the fishery and currently owned is readily available.

Discussion required: The Working Group is encouraged to discuss and resolve the preferred proxy for catch, noting:

- There are other proxies that could be used including: hull capacity; engine capacity; the length of net used by shareholders; any combination of these; other relevant factors – noting that not all boats in the NSW Ocean Trawl Fishery are unitised etc.
- The proxy used to allocate the new class of 'effort unit shares' (as outlined below) needs to be same as the proxy used to calculate the ITCALs, which are based on historical effort.
- If a factor other than boat length is used, there will be increased administration costs implementing the new regime – which would need to be weighed up against the long term benefits.
- It is preferable – for reasons including future cost, complexity and ease of replacing boats – to use a consistent proxy across all relevant sectors.
- No single factor or practical combination thereof will ever be a perfect proxy for catch. There are a wide range of variables that can influence the catching capacity of a boat and resulting catches.

The approach presented in this paper

The approach presented in this paper involves indirectly managing catch using a combination of boat length and the number of days that each shareholder may fish – similar to the QLD day regime. It also involves:

1. In the case of prawn trawling, a single package of days that may be used in any sector of the prawn trawl fishery; and,
2. Two new class of share, 'fish trawling effort unit shares' for the northern fish trawl sector and 'prawn trawling effort units shares' for the prawn trawl sector.

Major features

The major features of the boat length day regime presented in this paper include:

- Opportunity for shareholders to choose any size boat that they use.
- Opportunity to remove a range of controls that inhibit fishers' profitability and government efficiency (noting the scope for this would be more than for Option 1 but less than Option 3).
- Provides for autonomous (as opposed to forced) adjustment.
- Opportunity for shareholders to upscale or downscale their access (and associated management charges).
- 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 the fishery and between the fishery and other sectors.
- 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.
- Potential increase in demand for shares, theoretically resulting in increased asset (i.e. share) values and opportunity to "*retire with dignity*".

A boat length day regime is, however, an indirect way of managing catch and as such does not offer the higher levels of control over total catches or catches of a particular species in the fishery or the security of investment/access associated with a catch quota scheme as outlined later in this paper. Total catches of major species 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 boat length days available to the fleet) to reduce 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 controls that apply equally to all and sometimes have a greater effect on active fishers only.

Determining the ITCALs

Determining the ITCALs – or total number of boat length days – available to the prawn trawl and northern fish trawl sectors would be achieved by averaging the total annual 'effort units' (days x boat length) expended by the fishery over the three year period 2009/10 to 2011/12.

Table 9 Example showing how the ITCAL (total effort units) could be determined

	2009/10	2010/2011	2011/2012	ITCAL (3 yr ave.)
Boat 1	100 days x 17.5 m	120 days x 17.5 m	90 days x 17.5 m	
Boat 2	50 days x 15.2 m	60 days x 15.2 m	40 days x 15.2 m	
Boat 3	50 days x 10 m	55 days x 10 m	40 days x 10 m	
Total ('effort units')	**3,010**	**3,562**	**2,583**	**3,052**

Based on this approach and available data for the fleet the ITCALs for the prawn trawl and northern fish trawl sectors of the fishery would be as set out below.

Table 10 Calculation of potential ITCALs (total effort units) for the prawn trawl and northern fish trawl sectors

Sector	Potential ITCAL (total effort units)
Northern fish trawl	20,582
Ocean prawn trawl	126,192

Discussion required: DPI will present for discussion the methodology and data used to calculate the ITCALs above. These discussions may result in changes to the above ITCALs and the 'effort unit shares'/quota that would be available to shareholders as presented below.

Allocating a new class of 'effort unit shares'

A new class of 'effort unit shares' will be required if access (i.e. boat capacity and days) is to be fully transferable separate to the 'access shares' that currently exist.

The new effort unit shares would be allocated to shareholders based on the number of shares held in the sector(s) concerned and the 'maximum length' set out on the boat licence owned/used by the shareholder. For example:

Northern fish trawl: Assume Mr Fish holds 70 northern fish trawl shares and owns a licence that provides for a 20 m trawler (i.e. the "maximum length" set out on the front of his boat licence). Mr Fish would be allocated 1,400 fish trawl effort unit shares.

70 shares x 20 m = 1,400 fish trawl effort unit shares

Ocean prawn trawl: Assume Mr Prawn holds 80 inshore, 80 offshore and 15 deepwater prawn trawl shares and owns a licence that provides for an 18 m trawler (i.e. the "maximum length" set out on the front of his boat licence). Mr Prawn would be allocated 3,150 prawn trawl effort unit shares.

(80 + 80 + 15) shares x 18 m = 3,150 prawn trawl effort unit shares

Discussion required: During the modelling a range of complications became apparent that will need to be resolved if this linkage option is to be pursued. They include:

1. Some shareholders own multiple trawl businesses and multiple boat licences suitable for a trawler.

In such cases it may be necessary for DPI to provide the owner an opportunity to advise which boats/licences are used in connection with (or should be linked to) which business so that DPI could calculate the effort unit shares that should be allocated to each. For the purpose of the modelling DPI has randomly linked each licence to one of the businesses owned.

2. Some shareholders own multiple trawl businesses but only one boat licence suitable for a trawler. It may be that these shareholders are contemplating consolidating their shares into a single business. Alternatively, it may be that they intend to retain multiple fishing businesses for use on a single boat.

In such cases it may be necessary to recognise the single boat/licence as being used or linked to all of the businesses owned by the shareholder that have trawl shares. For the purpose of the modelling below DPI has adopted this approach.

3. Some shareholders do not have a boat licence [suitable for a trawler] registered in their name. It may be that:

(a) The shareholder owns a suitable boat licence that is registered in a different name;

(b) The shareholder does not own a suitable boat licence, but instead uses someone else's boat and boat licence on an as needs basis;

(c) The shareholder does not own a suitable boat licence and does not use anyone else's boat.

With respect to (a) it may be necessary to recognise the boat/licence that is registered to the other entity.

With respect to (b) it may be necessary to recognise the boat/licence used by the shareholder – although not owned by the shareholder.

With respect to (c) it may be that DPI is unable to take into account any boat licences for the purpose of allocating effort unit shares to the shareholder. In such cases the shares held by the shareholder would be all that could be taken into account.

Where these issues were evident during the modelling, DPI has not linked any boat licences to the shareholders' business. A consequence of this approach is that these shareholders have been allocated effort unit shares based on their current shareholding only.

- This was an issue for 6 of the 45 fishing businesses with **fish trawl** shares. 3 of the 6 businesses did not participate in the fishery in the three year period 2009/10 to 2011/12 and the other 3 had limited trawl activity in these years.
- It was also an issue for 25 of the 213 fishing businesses with **prawn trawl** shares. 17 of the 25 businesses did not participate in the fishery in the three year period 2009/10 to 2011/12 and the other 8 had limited trawl activity in these years.

The Working Group is encouraged to discuss these issues and provide advice on their preferred approaches.

Discussion required: The examples above and the modelling below involves using the "maximum length' appearing on the front of boat licences, rather than the length of the boat attached to the licence. This has been done because:

- Some boat licences do not have boats attached (as such there is no boat length to use); and,
- The "maximum lengths" are seen by some to be a form of property right and it is likely that they would seek to have it recognised rather than the sometimes shorter length of the boat attached to the licence.

The Working Group is encouraged to discuss and resolve the preferred approach – "maximum [allowable] length" or the actual length of the boat attached to the licence (if any) – for the purpose of allocating 'effort units'.

Determining the effort quota (boat length days) available to shareholders

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

Table 11 Calculation of effort quota per 'effort unit' share (boat length days)

Sector	Potential ITCAL	Total 'effort unit' shares*	Quota per effort unit share
Northern fish trawl	20,582 boat length days	32,176	0.7 boat length days
Ocean prawn trawl	126,192 boat length days	307,925	0.4 boat length days

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.

Example of the allocation process and how shareholders may use their quota

For the purpose of this example assume there are two shareholders in the fish trawl sector and two shareholders in the prawn trawl sector and the fishing period is a one year fishing period.

Shareholder A: Shareholder A has 87 **northern fish trawl** shares and a boat licence with a maximum allowable length of 23.86m. Shareholder A would be allocated 2,076 fish trawl effort unit shares (87 shares x 23.86m) which if used on the shareholder's current boat (which is 22.86m) would result in the shareholder being allocated 58 days. If shareholder A decided to upgrade his boat to 23.5m, the number of days that he would be entitled to work would be reduced to 57.

Shareholder B: Shareholder B has 55 **northern fish trawl** shares and a boat licence with a maximum allowable length of 18.3m. Shareholder B would be allocated 1,007 fish trawl effort unit shares which if used on the shareholder's current boat (which is 17.3m) would result in the shareholder being allocated 37 days. If shareholder B decided to downgrade his boat to 16m, the number of days that he would be entitled to work would increase to 40.

Shareholder C: Shareholder C has 155 inshore, 155 offshore and 22 deepwater **prawn trawl** shares and a boat licence with a maximum allowable length of 17.02 m. Shareholder C would be allocated 5,651 prawn trawl effort unit shares which if used on the shareholder's current boat (which is 16.02m) would result in the shareholder being allocated 147 days. If shareholder C decided to upgrade his boat to 19m, the number of days that he would be entitled to work would be reduced to 124.

Shareholder D: Shareholder D has 65 inshore and 65 offshore **prawn trawl** shares and a boat licence with a maximum allowable length of 17.36m. Shareholder D would be allocated 2,257 prawn trawl effort unit shares which if used on the shareholder's current boat (which is 17.36m) would result in the shareholder being allocated 54 days. If shareholder D decided to downgrade his boat to 16m, the number of days that he would be entitled to work would increase to 59.

A shareholder may upgrade or downgrade at any time and the resulting number of days that the business may operate in relevant sectors would be adjusted accordingly.

Defining the '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 for a boat length day regime in the NSW Ocean Trawl Fishery.

The Working group is also encouraged to discuss when any such fishing period should start, noting that DPI will need to consider the linkage options proposed for other fisheries and matters such as DPI's capacity to deal with the administration associated with reconciling quota usage at the end of a fishing period and gearing up for the commencement of a new fishing period. Options could include commencing the fishing period:

- Close to the start of the calender year (e.g. 1 February)
- At the start of the financial year
- Just prior to the most productive/profitable part of the season.

Defining a 'day'

It is proposed that a day be defined as a 24 hour period from the time the endorsed fisher goes fishing, or more specifically from the time the fisher makes a pre-fishing report via the IVR system (if the IVR system is the preferred technology).

Declaring the boat to be used (and boat length)

This scheme requires DPI to know the boat, or more specifically the length of the boat, in use or proposed to be used.

This means that shareholders will be required to inform DPI the boat that they propose to use and the business that they propose to use it against. A shareholder who uses the same boat and business all of the time need only do this once.

If boat licences are to be retained DPI will have a record of the length of the boat. However, if boat licences are removed from the fishery shareholders would be required to inform DPI the boat to be used and the length of the boat – unless the boat has previously been used in NSW and DPI already has a record of its length.

Monitoring quota usage

A day quota system requires days fished to be monitored. 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 report only using a mobile phone. 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 or there is capacity to implement a cost effective Vessel Monitoring System (VMS).

Acquiring additional quota

Acquiring additional boat length day quota could be achieved by a fisher in two ways:

- By transferring effort unit shares for the sector concerned, 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, which may be used 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.

The Working Group is encouraged to discuss these issues and provide advice on whether transferring 'boat length day' quota should be permitted in the fishery.

Retaining or removing the current 'access shares'

If a boat length day regime as presented in this paper is implemented – along with two new classes of effort unit share – a decision will need to be made on whether the sector specific 'access shares' that currently exist should be retained.

If the current access shares are retained they would be used to govern access to each sector of the fishery – via endorsements as is currently the case – and the effort unit shares would be used to determine how many days the business can operate in those sectors.

Discussion required: The Working Group is encouraged to discuss the fate of the current 'access shares' in the event that a boat length day scheme is pursued.

With respect to the northern fish trawl sector, the new northern fish trawl effort unit shares could be used to govern eligibility to an endorsement – by applying a minimum shareholding – as well as the shareholders quota (i.e. boat length days). In this case the current 'access shares' would become redundant.

With respect to prawn trawling – which involves three distinct sectors – there are two potential approaches:

- Retain the current 'access shares' and shareholders' privileged access to one or more sectors of the fishery;
- Remove the current 'access shares' and open up access such that anyone who holds 'prawn trawling effort unit shares' can access all three sectors of the fishery – subject to satisfying any new minimum shareholding that may apply to the effort unit shares.

Attributing management charges to shareholders

Under a boat length day scheme management charges would, theoretically, be 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.

This may, however, be subject to whether or not the current access shares are retained. If the current access shares are retained it could be that a standard management charge apply to access each sector and a variable mangement charge apply depending on the number of effort unit shares held.

Paying per effort unit share (or boat length day quota) 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.

FishOnline and IVR compliant

FishOnline would need to be enhanced to track the variable consumption of quota – based on the size of boat used. There are two potential approaches:

- FishOnline could be enhanced to calculate the number of days each shareholder is eligible for or the number of days remaining – which would be readily available on FishOnline.
- Fishers could be required to declare as part of the IVR pre-fishing report the length of the boat to be used. This would not require enhancement to FishOnline.

It should also be noted that complications may arise for fishers working fishing businesses with many share classes that are subject to 'consumable' catch or effort quotas.

Each time a fisher phones in on the IVR system, he or she would need to listen to the full range of quota regimes relevant to the fishing business concerned before choosing the quota regime to report against. Preliminary testing of the IVR system indicates that having more than 3 to 4 quota regimes linked to a fishing business may frustrate some users. There are, however, a number of potential solutions:

- Move the shares that are linked to a quota regime into a separate fishing business. This would alleviate the need for the fisher to listen to the full range of quota regimes relevant to the fishing business concerned each time he or she uses the IVR system.
- NSW DPI is developing new technology (i.e. a smart phone app) that is easier for fishers to use than the IVR system – much like using the internet where the user chooses the quota regime he or she is interested in without first having to listen to a list of quota regimes.

Discussion required: The Working Group's advice is sought on these or other potential solutions to the limitations associated with the IVR system.

Additional issues to note

Issues identified by the Working Group at its first meeting that are not covered in the share linkage options comparison table – Table 16 Appendix 1 – or elsewhere include:

1. High catch operators will probably need to acquire more shares.
2. Some fishers will be forced to change the way they work – so they don't waste their days – or to maximise their fishing time from their allocated days.
3. Fishers may feel the need to stay at sea despite adverse weather conditions (it was also noted that this already occurs).
4. Potentially high implementation and ongoing costs – including VMS and or IVR costs for enhanced compliance.

Option 3: Catch quota – using Eastern school whiting as an example

Under this scenario eastern school whiting taken in the NSW Ocean Trawl Fishery is managed by catch quota. 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).
- Guarantees security of investment in a fishers' share of the species concerned within the fishery.
- Tight control over total eastern school whiting catches from the fishery, which can be 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 spiral out of control may lead to greater community and government support for proposed changes/streamlining to benefit fishers, including their fishing efficiency.

These major features must, however, be considered alongside the full range of issues sometimes associated with catch quotas, such as implementation/ongoing costs. These issues are highlighted later in this part (under "Issues to consider") and in Appendix 1.

Determining the ITCALs

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

Step 1: The first step involves determining an industry wide ITCAL for eastern school whiting. This would be achieved by averaging the total annual NSW eastern school whiting

catch over the 15 year period 1997/98 to 2011/12. Based on this approach the industry wide ITCAL for eastern school whiting would be 930.8 tonne.

Step 2: The industry wide ITCAL for eastern school whiting then needs to be apportioned to relevant sectors – which includes the northern fish trawl, southern fish trawl and ocean prawn trawl sectors. This would be achieved by determining the percentage of the total NSW catch taken in each sector over the three year period 2009/10 to 2011/12. Based on this approach the ITCAL for the northern fish trawl, southern fish trawl and ocean prawn trawl sectors would be as set out in the following table.

Table 12 Calculation of eastern school whiting ITCALs for relevant sectors

Sector	Percentage of total historic school prawn catch taken	Potential ITCAL
Northern fish trawl	39.8 %	370.2 tonne
Southern fish trawl	13.8 %	128.3 tonne
Ocean prawn trawl (inshore/offshore)	46.4 %	432.2 tonne

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 school whiting quota that would be available to shareholders as presented below.

Options for allocating a new class of 'eastern school whiting shares'

A new class of 'eastern school whiting shares' would be required if long term access to eastern school whiting is to be fully transferable between the northern fish trawl and prawn trawl sectors – separate to the 'access shares' that currently exist.

The total number of eastern school whiting shares that would be issued would be equal to the eastern school whiting ITCAL [in kilograms] available to the relevant sectors. Therefore, the total number of shares available for issue would be 802,400 (i.e. 370,200 + 432,200).

There are a number of ways that the new 'eastern school whiting shares' could be allocated to shareholders, including:

1. Proportional to **shareholdings** – as modelled in the next part of this paper
2. By providing shareholders a once off opportunity to **nominate** one or more of their current shares towards an allocation of the new eastern school whiting shares – in which case the shares so nominated would be cancelled, resulting in an indirect form of compensation for other shareholders who lose access to eastern school whiting.
3. By providing shareholders a once off opportunity to **tender** for the new eastern school whiting shares with the proceeds:
   - Held by DPI to help offset the cost of managing the sector
   - Used to compensate other shareholders for loss of access to eastern school whiting.

Discussion required: The Working Group is encouraged to discuss these approaches.

Allocating 'eastern school whiting shares' based on shareholdings

One of the options available is to allocate the eastern school whiting ITCALs to shareholders based on the numbers of shares held, noting:

- This would not apply to the southern fish trawl sector because it is not a share managed fishery and is the subject of jurisdictional negotiations with the Commonwealth. If school

whiting is to be quota managed, catches in the southern fish trawl sector would be capped [based on the southern fish trawl ITCAL of 128.3 tonne above] until such time as these negotiations are finalised.

- In the northern fish trawl sector, the new eastern school whiting shares would be allocated to shareholders proportional to the number of northern fish trawl shares held.
- In the prawn trawl sector, the new eastern school whiting shares would be allocated to shareholders proportional to the number of inshore and offshore prawn trawl shares held given that eastern school whiting have historically been taken in both sectors.

The table below shows the number of new eastern school whiting shares that each shareholder in the northern fish trawl and ocean prawn trawl sectors (i.e. inshore and offshore prawn trawl) would be allocated. Each share would equate to 1 kg of quota.

Table 13 Allocation of 'eastern school whiting shares' (or quota in kilograms) per share

Sector	ITCAL	Total shares	Eastern school whiting shares (or kg of quota) per share
Northern fish trawl	370,200 kg	2,169	171 eastern school whiting shares (or kgs of quota) per northern fish trawl share
Ocean prawn trawl (inshore + offshore)	432,200 kg	20,833	21 eastern school whiting shares (or kgs of quota) per inshore/offshore prawn trawl share

If shares are surrendered for cancellation prior to implementing the quota system, for example during the exit grant process, the number of eastern school whiting shares (or kilograms of quota) available to those that remain would be greater than the estimates above.

Discussion required: The number of eastern school whiting shares (or kilograms of quota) above is likely to be concerning for shareholders who target this species, and potentially some who take it as incidental catch. It is for this reason the Working Group is encouraged to consider the alternate allocation options above.

Example of the allocation process and how shareholders may use their quota

For the purpose of this example, shareholder A has 87 **northern fish trawl** shares and the fishing period is a one year fishing period.

Shareholder A would be allocated 14,877 eastern school whiting shares, which would entitle him or her to take 14,877 kg of eastern school whiting during each fishing period. Alternatively, shareholder A could transfer those shares to another person – who would receive an ongoing right to a portion of the ITCAL for future fishing periods – or he could transfer one or more kilograms of quota to other eastern school whiting shareholders for use during the relevant fishing period.

Issuing new fishing businesses

For administrative purposes DPI would issue the holders of the new eastern school whiting shares an additional fishing business to house those shares – as per the management arrangements applying to the rock lobster and abalone fisheries. Any person who acquires one or more eastern school whiting shares would also be issued a new fishing business to house those shares.

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.

Stout whiting

Stout whiting, which is quota managed in QLD and taken off northern NSW, could be incorporated into the eastern school whiting scheme presented in this paper or managed under its own quota scheme.

Discussion required: The Working Group is encouraged to discuss the pros and cons of incorporating stout whiting into the eastern school whiting scheme presented in this paper, managing it under its own quota scheme or treating it like all other byproduct species taken in the prawn trawl sector of the fishery in which case it would not be subject to any special arrangements.

Other issues to consider

Many of the issues relevant to the earlier effort quota regime are also relevant to a catch quota regime, including:

- Defining the fishing period
- Monitoring quota usage – noting the differences outlined below
- Acquiring additional quota
- Attributing management charges to shareholders – noting the differences outlined below
- Retaining or removing the current 'access shares' – noting the issues outlined below

Monitoring quota usage

With respect to monitoring catch in a fishery subject to a catch quota, the IVR system has been designed to require endorsement holders to make a pre-fishing, pre-landing and post landing report using a mobile phone. This differs from the earlier effort [boat length day] scheme, which would require endorsement holders to make a pre-fishing report only.

Discussion required: The Working Group's view is sought on the IVR system as a tool for monitoring quota usage or on any 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. smart phone apps) are developed and functional.

Attributing management charges to shareholders

Under a catch quota scheme management charges would be attributed to shareholders proportional to the number of shares held. In other words, a shareholder with a large package of eastern school whiting shares (and greater access) will pay a larger share of the management costs than a shareholder with a smaller package of shares.

Retaining or removing the current 'access shares'

If eastern school whiting is quota managed along the lines of the approach presented in this paper, the current access shares would need to be maintained so that they can be used to govern access to the balance of the fishery – using minimum shareholdings and or some other catch or effort control scheme. Although one of the most important commercial species in NSW (by weight), the bulk of the eastern school whiting catch is taken by relatively few fishers.

Additional issues to note

Issues identified by the Working Group at its first meeting that are not covered in the share linkage options comparison table – Table 16 Appendix 1 – or elsewhere include:

1. High catch operators will probably need to acquire more shares.

2. Setting an ITCAL (or TAC in the longer term) may be difficult given that prawn abundance can fluctuate significantly from year-to-year which could result in catch not being maximised.
3. Highly responsive TACs (in the longer term) that closely follow stock abundance can be expensive – if such an approach is pursued.
4. Potentially high implementation and ongoing costs – including VMS and or IVR costs for enhanced compliance.
5. Risk of increased discarding (including as a result of high-grading).

Option 4: Linking fish trawl shares to the taking of fish in the prawn trawl sector

The proposal to link fish trawl shares to the taking of fish in the prawn trawl sector has been modelled separately by representatives of the fish trawl sector – with the assistance of the Professional Fishermen's Association. A copy of the proposal is available on the DPI website.

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 minimum shareholding and boat length days schemes would affect two hypothetical shareholders, one who is very active in the fish trawl sector and another who is a diversified fisher operating part time in the fish trawl sector and part time in the prawn trawl sector as per the details in the table below.

Table 14 Two hypothetical shareholders

	Mr Fish Trawl	Mr Diverse
Shareholdings	64 northern fish trawl shares	59 northern fish trawl shares 50 inshore prawn trawl shares 50 offshore prawn trawl shares 20 deepwater prawn trawl shares
Maximum [allowable] boat length	17.9 meters	16 meters
Current boat length	17.7 meters	16 meters
Recent number of days fishing (2011/12)	Fish trawling: 131 days	Fish trawling: 32 days Prawn trawling: 84 days

Assumptions:

Assume the following targets (95% total GVP) for the minimum shareholding schemes:

- Northern fish trawl: 18 endorsements (minimum shareholding = 121)
- Inshore prawn trawl: 57 endorsements (minimum shareholding = 194)
- Offshore prawn trawl: 69 endorsements (minimum shareholding = 142)
- Deepwater prawn trawl: 4 endorsements (minimum shareholding = 164)

Also assume that no shares are surrendered for cancellation in the lead up to implementation of the linkage approaches.

Table 15 Effect of the minimum shareholding and boat length day scheme on two hypothetical businesses

Shareholder		Min. shareholding	Boat length day shares / quota
Mr Fish trawl	**Quota allocation**	n/a	1,146 fish trawl effort unit shares (41 days for a 17.7m boat)
	Number of additional shares to maintain current access	57 northern fish shares	Requires 2,470 fish trawl effort unit shares – 66 more days for a 17.7m boat. (equivalent to 138 northern fish trawl shares)
Mr Diverse	**Quota allocation**	n/a	944 fish trawl effort unit shares (34 days for a 16m boat) 1,920 prawn trawl effort unit shares (50 days for a 16m boat)
	Number of additional shares to maintain current access	62 northern fish shares 144 inshore prawn shares 92 offshore prawn shares 144 deepwater prawn shares	Holds more fish trawl effort unit unit shares than he requires – can sell the equivalent of 2 days worth of effort unit shares for a 16 m boat – which equates to 64 fish trawl effort unit shares. (or the equivalent to 4 northern fish trawl shares) Requires 1,312 prawn trawl effort unit shares – 34 more days for a 16m boat (equivalent to 82 inshore/offshore or deepwater prawn trawl shares)

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

Transitioning to the new arrangements:

- With respect to the fish trawl sector and the minimum shareholding scheme, Mr Fish Trawl and Mr Diverse would both need to acquire a reasonable number of shares (57 and 62 northern fish trawl shares respectively) despite the fact that Mr Diverse works significantly fewer days in this sector.

- Overall, transitioning to a scheme that involves minimum shareholding requirements in all relevant share classes has a greater impact on fishers who hold multiple share classes – like Mr Diverse above who would need to acquire a total of 442 shares across four different share classes.
- Transitioning to the boat length day scheme has a very different affect on each shareholder. Under the example above, Mr Fish Trawl would need to acquire additional northern fish trawl shares (or effort unit shares) because he operates at a relatively high level in this fishery (131 days each year and he only holds 57 shares) whereas Mr Diverse would be in a position to sell some of his shares because he typically only works 32 days per year (and holds 62 shares).
- The pros and cons of transitioning to a new regime need to be considered alongside the pros and cons that arise once the new regime has bedded-in.

Once the new regimes has bedded-in:

- Under the minimum shareholding scheme both shareholders would pay the same management charges for access to the northern fish trawl fishery, despite the fact Mr Fish works more days than Mr Diverse. Under the boat length day regime, each shareholder can adjust their shareholding to suite their needs and the management charges that they are liable for – which is one of the benefits of these finer-scale linkages.
- Under the minimum shareholding scheme 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 boat length day scheme additional shares would be needed before a competitor can increase his or her access (i.e. the size of his or her boat or the number of day that he or she fishes).
- The increased security associated with the boat length day scheme (or a catch quota schemes) 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 promotes improved industry-wide viability – in the medium to longer term – not 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 reform program is to streamline current mangement 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.

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 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.

Ground gear on fish trawl nets: Some fishers seek opportunity to use ‘rubber discs’ that are up to 6 inches in diameter – as used when operating in Commonwealth waters – instead of the maximum 100mm rubber discs currently permitted in NSW.

Drop gear and gauge of chain: At the first meeting of the Working Group it was suggested that current restrictions relating to drop gear and the gauge of chain that may be used should be reviewed, however, no details were provided. Further advice on these issues is required.

Square/diamond shaped mesh codends in the prawn trawl sector: Diamond-shaped mesh codends are currently permitted under permit. DPI proposes to amend the regulations to allow the use of diamond-shaped mesh codends OR square-shaped mesh codends and cancel the current permit. This will provide scope for fishers to use codends that best suite their needs and opportunity for extension work to promote voluntary uptake of square-mesh codend.

Sweeps on single nets used in the deepwater prawn trawl sector: Some fishers seek opportunity to use sweeps that are longer than 5m or the distance between the trawl gallows and the stern of a boat. This issue and the options available to offset any risk of increased incidental catch of deepwater finfish would need to be discussed in detail if this proposal is to proceed to the next stage of this process.

1,100 meter closure: This closure was introduced during environmental assessment of the fishery as a precautionary measure – given negligible if any commercial trawl activity in those waters and no information on the impacts that trawling may have in those waters. At the first meeting of the Working Group it was suggested that this closure be reviewed.

Any extension of the fishery into those waters would require an assessment of potential environmental impacts and consultation with the Commonwealth government.

Forster & Port Stephens Juvenile King Prawn closures: These closures apply to prawn trawling only (not fish trawling) and were introduced at the request of industry to optimise king prawn yield – not for sustainability reasons etc. Since then:

- The Port Stephens-Great Lakes Marine Park has been implemented, which excludes trawlers from much of the waters concerned; and,
- Industry advice indicates few if any juvenile king prawns lay-up in the waters concerned and that the closure was more likely introduced to prevent prawn trawlers competing with local fish trawlers for access to other species.

DPI supports removing or rationalising these closures to address the duplication of legislation spanning these waters.

Two lobsters per day for personal consumption (no commercial lobster tags issued): If the trawl fishery is serious about this proposal and wants to pursue it, consultation with the NSW commercial lobster shareholders (at least) will be required.

Discussion required: The Working Group is encouraged to resolve which of these should be pursued and those that should not, noting the need to consult other stakeholder groups on some of the proposals and the option to progress any longer term or more controversial reforms separate to the current reform program.

Appendix 1

Table 16 Comparison of share linkage options

Issue	Minimum shareholdings	Boat length days	Catch quotas
Government interests			
Within powers of Act	Yes	Yes	Yes
Can be administered	Yes	Yes	Yes
Can be enforced	Yes	Yes – with IVR or other technology	Yes
FishOnline compliant	Yes	Depends on approach to the variable consumption of quota – refer Option 2	Yes
IVR compliant	Not applicable	Yes	Yes
Promotes voluntary compliance	No	Yes	Yes
Manages catch	Indirectly (weak)	Indirectly (strong)	Directly
Can be used to respond to sustainabilty or resource sharing issues	Indirectly (weak)	Indirectly (strong)	Directly: very strong for quota species only
Shareholder interests			
Secure share of access within fishery	Minimal security	Moderate security	Most security
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	Yes	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, depending on the issue	Generally yes, depending on the issue	Generally yes
Ongoing adjustment (for viabilty)	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 (e.g. reducing the ITCAL) to offset any unsustainable increases in catch.

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	Boat length days	Catch quota (if applied to primary species)
Remove fishing businesses as an effort control	Only once adjustment target is met	Yes – effort would already be capped	Yes – catch would already be capped
Allow shares to be transferred to any person	Only once adjustment target is met	Yes – effort would already be capped	Yes – catch would already be capped
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 viabilty	
Remove 48 hour restriction applying to nominations[1]	Yes 	Yes – effort would already be capped	Yes – catch would already be capped
Remove boat licences and remove/rationalise the boat capacity/replacement restrictions set out on licences: **Note:** Also see the discussion below relating to removing/rationalising the the boat capacity/replacement restrictions.	Yes 	Yes  . **Note:** if boat length is incorporated into the boat length day scheme, any change in boat length upon replacement or modification would be offset by the numbers of days that may be fished	Yes – catch would already be capped
Remove, relax, rationalise the three different sets of headline length restrictions in the prawn trawl sector	Yes 		Yes
Remove or relax the restriction on taking	No. Minimum shareholdings and the boat length days scheme would not directly address		Yes – if flathead is quota managed – quota

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

flathead in prawn trawl nets south of Smoky Cape	the risk of increased catch or the resource sharing concerns raised by other sectors, including the NSW fish trawl sector As suggested in the OTFMS, a BRD that is effective at removing the bulk of any flathead that may be taken may fascilitate removal of this restriction		schemes can deliver a market based approach to resource sharing issues
Remove or relax the trip limit on gemfish to minimise discarding	No	No	Yes – if gemfish is quota managed and the ITCAL/TAC is set at a level that accounts for the 'recruitment overfished' status attributed to this species
Remove or reduce the size limit on silver trevally to minimise discarding	No	No	Yes – if silver trevally is quota managed and the ITCAL/TAC is set at a level that accounts for the 'growth overfished' status attributed to species
Remove or relax the 'trip limits' introduced to support the C/W quota scheme (e.g. flathead spp. etc).	No. Minimum shareholdings and the boat length days scheme would not directly address the risk of increased catch or the resource sharing concerns raised by other sectors Alternate longer term strategies may be feasible – such as the development and introduction of resource sharing agreements that involve capping total catches in the NSW trawl fishery **Note:** There has recently been industry discussion on alternate approaches to apply in the short-term.		Yes – if the species concerned are quota managed

Boat licences and rationalising current boat licence/capacity restrictions

Removing boat licences presents a range of administrative and business efficiencies including reduced paperwork and ongoing licensing costs for fishers, noting that boats also need to be registered or accredited by a range of other government authorities including Maritime NSW, the NSW Food Authority and in some cases so that fish taken from the boat may be exported.

In essence, boat licences serve limited purposes in terms of managing total effort and catch in the NSW Ocean Trawl Fishery given that:

- Total fishing effort could increase significantly in any event if the many inactive fishing businesses in the fishery were activated; and,
- Current licensing arrangements provide for fishers to upgrade boats in the fishery, by acquiring a [latent] boat licence that suits their needs.

The linkage options presented in this paper provide scope for the removal of boat licences in the fishery. Under a catch quota scheme catches would be capped directly. Under the other two schemes catches would continue to be monitored in any event and the minimum shareholding targets and the ITCALs could be used on an as needs basis to account for 'effort creep' or any significant increases in catch as a result of increased total boat capacity.

Many fishers consider that boat licences – or more specifically the, conditions, notations, restrictions and exemption codes that are attached to them – help manage competition between shareholders. In some cases these conditions, notations, restrictions and exemption codes also influence the market value of a boat licence.

DPI encourages the Working Group to seriously consider the removal of boat licences from the fishery and in any event, how to best rationalise the controls currently linked to boat licences. The conditions, notations, restrictions and exemption codes etc. that the Working Group needs to work through include:

- **OG1 notations** on boat licences play no part in management of the fishery and as such could be removed (along with boat licences)
- The **maximum engine power** restrictions that apply to offshore prawn trawlers (and set out on relevant boat licences) are complex and expensive to administer and cannot be adequately enforced by DPI. Industry advice also indicates that the current high price of fuel is acting as a deterrent against increased engine power.
- The **maximum hull unit** restrictions that apply to offshore prawn trawlers only (and set out on relevant boat licences) would not be needed if catch quotas are introduced or boat length is embedded into future property rights as per the boat length day scheme set out in this paper. The hull unit restrictions apply to some licences only and there is a reasonable correlation between hull units and boat length – a graph showing this will be provided at the meeting.
- The **maximum boat length** restrictions set out on boat licences would not be needed if catch quotas are introduced or boat length is embedded into future property rights as per the boat length day scheme set out in this paper. Maximum boat length restrictions are one of the few controls common to all NSW boats (other than the lobster and abalone fishery).
- Rationalising the **net length restrictions** that apply in the prawn trawl sector, including the maximum net length restrictions applying to offshore prawn trawlers. At present there are three sets of rules:
  - Unitised licences are subject to licence specific maximum net lengths – that apply regardless of which sector the boat is used in;
  - Non-unitised boats operating in the inshore sector are subject to a maximum 33m of headline; and
  - Non-unitised boats operating in the deepwater sector are subject to a maximum 60m of headline – as are fish trawlers.
- The requirement to use only **'unitised boat licences'** in the offshore prawn trawl sector. This arrangement replaced the old "OP1" notations on boat licences. Under current arrangements access to the offshore prawn trawl sector is governed first and foremost by shares and endorsements.
- The **OT exemption codes** that provide for the ongoing use of boats greater than 20 metres in length in the fishery. It is DPI's view that boat licences with an OT exemption code would need to be retained if the holders of those licences are to retain this privilege, noting that holders of such licences would continue to be subject to the transaction charges that apply to the issue and renewal of a licence.
- Although the **maximum 20m boat length** restriction is set out in regulation – as opposed to on licences – the working group should also discuss the pros and cons of maintaining this rule in light of the various linkage options on the table.

Discussion required: The Working Group is encouraged to discuss rationalising the vast array of conditions, notations, restrictions and exemption codes on boat licences and the requirement for boats used in the Ocean Trawl Fishery to be licensed. In considering this, the various linkage options that are on the table will need to be considered.