



Department of  
Primary Industries

NSW COMMERCIAL FISHERIES REFORM PROGRAM

# Draft Share Linkage Options

Estuary General Hand Gathering Fishery

**NOTE:** THIS DOCUMENT HAS BEEN PREPARED FOR DISCUSSION WITH THE ESTUARY GENERAL HAND GATHERING 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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Draft Share Linkage Options – Estuary General Hand Gathering Fishery

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**More information**

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## Foreword

The purpose of this paper is to describe potential share linkage options for the hand gathering component of the NSW Estuary General Fishery (EGF) for consideration by the Estuary General Hand Gathering Share Linkage Working Group (WG) at its second meeting in February 2014.

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 may not necessarily be the only feasible share linkage options for this fishery. A hybrid or combination of the linkage options 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 reduced management costs. The streamlining of current management arrangements will be influenced by the strength of the linkages pursued (i.e. the strongest form of linkage provides the best opportunity to amend or remove current restrictions). Toward the end of this paper is discussion on some of the management arrangements that may be able to be amended or removed, 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 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 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). This, in addition to the Government's response to the Review, an Information Paper summarising the major findings of the Review and Commercial Fisheries Newsletters 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);
- Assist to improve investment confidence and support from financial institutions; and
- Improve management and the public's perception of the NSW commercial fishing industry.

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## Major issues facing the NSW Estuary General Hand Gathering Fishery

Some of the major issues facing the hand gathering component of the NSW Estuary General Fishery can be addressed through the reform program (and the linking of shares to resource access) while others cannot. Irrespective, all of the issues must be considered when contemplating the possible share linkage options. Some important issues are listed below.

- Surplus fishing capacity that can be activated at any time which poses a risk to the viability of active participants in the fishery and overall sustainability of the fish stocks. Hand gathering fishing capacity is highly variable between the fishery regions.
- Competition for access to fish within the fishery and between the fishery and other sectors (e.g. recreational fishery).
- Significant public perception issues, including lack of public confidence that catches of some species can be actively managed in such a way that they do not exceed sustainable levels.
- Continual and ongoing campaigns initiated by various interest groups to prohibit the commercial harvest of some species (e.g. pipis).
- The need to implement and maintain various restrictions (e.g. possession limits, fishing closures) that inhibit fishing efficiencies.
- Competition for market access within the fishery.
- Limited opportunity to improve operational efficiency.
- NSW Food Authority requirements relating to the commercial harvest of bivalve shellfish.

## 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 expended 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 in a particular share class, 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*.

If shares are surrendered for cancellation prior to implementing the linkages, for example during the exit grant process, the amount of the ITCAL allocated per share available to those shareholders that remain in the industry will be greater than the estimates in this paper.

## Current structure of the NSW Estuary General Hand Gathering Fishery

Table 1: Number of fishing businesses that hold hand gathering shares and corresponding shareholding, eligibility for an endorsement and current restrictions by region

Region	Shareholding	Fishing Businesses	Endorsed	Restricted
1	1	1	Yes	Yes – worm only
	1	1	Yes	Yes – worm & nipper only
	100	1	No	n/a
	125	2	Yes	Yes – worm only
	125	9	Yes	No
	200	1	Yes	
2	1	2	No	n/a
	125	1	Yes	No
3	1	2	No	n/a
	1	5	Yes	
	2	1	Yes	Yes – worm only
	125	14	Yes	
	126	2	Yes	No
	150	1	Yes	
4	1	1	No	n/a
	1	1	Yes	No
	100	1	Yes	
	125	1	Yes	Yes – worms & nipper only
	125	26	Yes	No
	126	2	Yes	
5	100	1	Yes	No
6	1	2	Yes	Yes – worm only
	50	1	No	n/a
	125	5	Yes	
	250	1	Yes	No
	375	1	Yes	
7	1	1	Yes	Yes – worm & nipper only
	125	4	Yes	No



## Option 1: Limiting endorsement numbers (minimum shareholdings)

Under a mandatory minimum share holding regime a shareholder must have enough shares to satisfy the minimum shareholding requirement to be able to operate in the fishery. If a shareholder does not hold enough shares to satisfy the minimum shareholding requirement, that shareholder does not get an endorsement (i.e. irrespective of how many shares a shareholder has, if they do not hold at least the minimum number of shares the shareholder cannot participate in the fishery).

The major features (some of which are dependent upon the adjustment targets adopted) of a mandatory minimum shareholding regime include:

- Forced (as opposed to autonomous) adjustment;
- A very direct and effective mechanism for managing the number of endorsements in a share class.
- Limited control over total catch and effort in the fishery;
- Limited opportunity to remove or amend current controls that inhibit fishers' efficiency and profitability;
- Increased likelihood that additional restrictions will be needed if there are concerning trends in catch and effort information;
- Management charges are shared amongst shareholders equally, irrespective of the number of shares held;
- The security of investment is not as strong as a catch or effort linkage regime – endorsement holders continue to compete for their share of the available resource.

### Determining the adjustment targets

Determining a target maximum number of endorsements for each share class is the first step in modelling a minimum shareholding regime. Table 2 below shows the number of endorsement holders that contributed towards various percentages (90 – 99%) of the estimated Gross Value of Product (GVP) in each share class over the three year period 2009/10 to 2011/12 – and has been provided to help the working group advise appropriate adjustment targets. The GVP was calculated using the average monthly prices of fish sold through the Sydney Fish Market.

### 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 maximum number of endorsements. Table 2 shows the resulting minimum shareholdings – based on various adjustment targets.

**Table 2: Numbers of fishing businesses with hand gathering shares that account for the various percentages of estimated GVP by region (and corresponding adjustment targets and minimum shareholdings)**

Region	Total number of shareholders and shares in each region	Maximum number of endorsements and corresponding minimum shareholding	Percentage of estimated GVP			
			90	95	97	99
1	Shareholders (15)	Endorsements	4	4	5	6
	Shares (1,677)	Minimum shareholding	419	419	335	280
2*	Shareholders (3)	Endorsements	1	2	3	3
	Shares (127)	Minimum shareholding	127	63	42	42
3 <sup>^</sup>	Shareholders (26)	Endorsements	15	18	19	22
	Shares (2,161)	Minimum shareholding	144	120	114	98
4	Shareholders (32)	Endorsements	11	13	14	16
	Shares (3,729)	Minimum shareholding	339	287	266	233
5	Shareholders (1)	Endorsements	1	1	1	1
	Shares (100)	Minimum shareholding	100	100	100	100
6	Shareholders (12)	Endorsements	7	7	8	9
	Shares (1,427)	Minimum shareholding	204	204	178	159
7	Shareholders (5)	Endorsements	4	5	5	5
	Shares (501)	Minimum shareholding	125	100	100	100

\* Although 3 fishing businesses (including two fishing businesses that hold 1 share each) accounted for 97 – 99% of the estimated GVP for region 2, there is currently only 1 available endorsement.

<sup>^</sup> The minimum shareholding requirements in region 3 are lower relative to some other regions due to the number of fishing businesses that hold 1 share and are restricted to beachworms or beachworms and nippers only.

### Determining the timeframe by which the minimum shareholding requirements must be satisfied in order to remain endorsed

Under a minimum shareholding regime it is important to determine the timeframe by which shareholders must satisfy the minimum shareholding requirements in order to be eligible for an endorsement to participate in the fishery. Options range from requiring shareholders to satisfy the minimum shareholding requirements in a once-off increase in the short-term or 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 – 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 could be adopted is to extend the timeframe to satisfy the minimum shareholding requirements.

Regardless of whether a short term or long term approach is adopted, to streamline administration DPI seeks to align the minimum shareholding periods across fisheries. Specifically, the minimum shareholding requirements would need to be satisfied by a set date that coincides with dates applying in other fisheries. This will reduce the administration associated with issuing new fishing business cards etc each time an endorsement is added or removed from a fishing business card.

DPI's preferred position on this issue is to pursue a once-off increase in the short term (e.g. all fishers must satisfy the relevant minimum shareholding requirements by early to mid 2015 to remain endorsed). However, it may be appropriate to progressively increase the minimum shareholding requirements over two periods if that is what shareholders would prefer (e.g. an increase by early 2015 and the balance by early 2016).

### 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 a minimum shareholding regime. As a consequence, it is likely that FishOnline would not need to be enhanced. The Integrated Voice Response (IVR) may be utilised to bolster the integrity of any ancillary management arrangements (e.g. daily and possession limits) that may be needed.

### Discussion and advice required

The Working Group's advice is required on the following:

- Should a minimum shareholding regime be considered as an option (to be put to shareholders for comment) for the hand gathering component of the EGF?
- What would be an appropriate adjustment target (i.e. maximum number of endorsements) for each share class?
- If a mandatory minimum shareholding regime is to be put to shareholders for comment, are there any existing controls that could be relaxed or removed to improve fishing efficiency – potentially upon fishers meeting the minimum shareholding requirements?
- An appropriate timeframe for shareholders to satisfy the minimum shareholding requirements in order to remain endorsed to participate in the fishery.

## Option 2: Catch quota

Under a catch quota regime species taken in the hand gathering component of the EGF are managed by a catch quota. Two separate catch quota regimes were identified by the WG for further consideration, one based on weight (kgs) and the other based on body count (numbers).

Body count estimates have been included in parentheses in the relevant tables for beachworms and nippers only, based on a beachworm weighing 15g and a nipper weighing 2g. References to kgs in this paper should also be taken to be a reference to the body counts in parentheses.

Generally, the major features of a catch quota regime include:

- It provides for autonomous (as opposed to forced) adjustment;
- Good opportunity to remove controls that inhibit fishers' profitability and efficiency;
- Tighter control over total catches from the fishery, which is beneficial from a range of perspectives including capacity to deliver sustainability and resource sharing objectives within and between the fishery and other sectors, respectively;
- Sound Government, industry and community confidence that the fishery is operating at sustainable levels;
- Management charges are attributed to shareholders proportional to the number of shares held; and
- Stronger security of investment relative to all other regimes.

## Determining the ITCALs and catch quota available to shareholders

Determining the ITCALs (i.e. the total pipi, beachworm, nipper, cockle and mussel quota available to the fishery) and the catch quota that would be allocated to each shareholder requires a number of steps.

**Step 1:** Given that pipis, beachworms, nippers, cockles and mussels are taken commercially by hand gathering endorsement holders in the EGF only, the first step involves determining a fishery-wide ITCAL for each species. This has been done having regard to the following recommendation from the SARC given at its January 2014 meeting:

*“...the SARC recommends that, unless there are sustainability concerns or concerning trends in the data, ITCALs should be set at the maximum catch level over the last 10 – 15 years (noting that a 15 year period could be unsuitable in Estuary General because the area available to the fishery declined substantially in 2002 with the introduction of 30 Recreational Fishing Havens).”*

For cockles and nippers, the ITCALs have been set at the maximum catch level over a 10 year (i.e. 2002/03 to 2011/12) period.

Due to recent trends in pipi and beachworm catch and effort the ITCALs for these species have been set at the maximum catch level over a 5 year (i.e. 2007/08 to 2011/12) period.

Given negligible reported landings of both mussels and cuttlefish over the past 5 years it is proposed to not set an ITCAL on these species.

Table 3: Potential EGF ITCALs for pipis, beachworms, nippers and cockles.

Species	ITCAL kg (no.)
Pipi	73,138
Beachworm	21,583 (1,438,867)
Cockle	28,739
Nipper	8,718 (4,359,000)

**Step 2:** The EGF ITCAL then needs to be allocated amongst relevant hand gathering shareholders proportional to the number of shares held. There is a number of ways that this could be done as outlined below.

### 1. State-wide allocation to all shareholders (taking into account restricted hand gatherers)

Under this model all share holders receive an allocation of each ITCAL proportional to the number of shares held, but only if they are permitted to take that species. Specifically, shareholders that are restricted by endorsement condition to taking beachworms or beachworms and nippers only, do not receive an allocation of pipis or cockles.

The main issue with this model is that there is little chance of the quota allocated to shareholders bearing any resemblance to or relationship with recent catches. The main reasons for this include:

- It assumes that each species is taken in equal amounts in each region; and,
- It assumes that all shareholders in a region take all species.

Table 5: State-wide allocation of pipi, beachworm, cockle and nipper ITCAL to eligible shareholders only.

Species	ITCAL (kg)	Shares	Kg (no.)/share	Kg (no.)/125 shares
Pipi	73,138	9,337	7.8	979
Beachworm	21,583	9,722	2.2 (148)	278 (18,500)
Cockle	28,739	9,337	3.1	385
Nipper	8,718	9,463	0.9 (460)	115 (57,580)

## 2. State-wide or regional based allocations taking into account restricted hand gatherers

With this model shareholders of each region are allocated a proportion of the ITCAL of certain species dependent upon (i) eligibility criteria set for each region, and (ii) any current endorsement conditions restricting the species that may be taken. Shareholders receive an allocation proportional to the number of shares they hold.

Allocations have been done on a regional and state-wide basis.

The main advantage of this model is that it attempts to minimise the impact on active shareholders by taking into account regional distributions in catch and the conditions applying to some hand gatherers.

For consideration by the WG, the proposed eligibility criteria for the allocation of catch quota for each species are set out below.

- i. Shareholders restricted to taking beachworms only or beachworms and nippers only are not eligible for an allocation of quota for pipis or cockles.
- ii. State-wide and regional allocations of catch quota are determined using percentages of total catch of each species from 2009/10 to 2012/13, subject to the following:
  - a. Only regions that have reported landing a total of 1,000 kg of pipis between 2009/10 and 2012/13 are eligible for a portion of the state-wide ITCAL for pipis.
  - b. Only regions that have reported landing a total of 1,000 kg of cockles between 2009/10 and 2012/13 are eligible for a portion of the state-wide ITCAL for cockles.
  - c. Only share classes that have reported landing a total of 500 kg of beachworms between 2009/10 and 2012/13 are eligible for a portion of the state-wide ITCAL for beachworms.
  - d. Only share classes that have reported landing a total of 500 kg of nippers between 2009/10 and 2012/13 are eligible for a portion of the state-wide ITCAL for nippers.

Table 6: Regional and state-wide allocation of pipi ITCAL for eligible share classes using catch data from 2009/10-2012/13.

Region	% of total catch	ITCAL (kg)	Shares	Kg/share	Kg/125 shares
1	7	5,090	1,425	3.6	446
2	3.7	2,714	127	21.4	2,672
3	57	41,717	2,155	19.4	2,420
4	21.3	15,575	3,604	4.3	540
5			<b>Ineligible</b>		
6	11	8,042	1,425	5.6	705
7			<b>Ineligible</b>		
<b>State-wide</b>	<b>100</b>	<b>73,138</b>	<b>8,605</b>	<b>8.4</b>	<b>1,046</b>

Table 7: Regional and state-wide allocation of beachworm ITCAL for eligible share classes using catch data from 2009/10-2012/13.

Region	% of total catch	ITCAL (kg)	Shares	Kg (no.)/share	Kg (no.)/125 shares
1	13.4	2,914	1,677	1.7 (116)	217 (6,600)
2			<b>Ineligible</b>		
3	52.9	11,517	2,161	5.3 (355)	666 (21,000)
4	26.1	5,683	3,729	1.5 (102)	191 (4,285)
5			<b>Ineligible</b>		
6	4.3	926	1,427	0.6 (43)	81 (1,902)
7	2.5	543	501	1.1 (72)	135 (4,301)
<b>State-wide</b>	<b>100</b>	<b>21,583</b>	<b>9,495</b>	<b>2.3 (152)</b>	<b>284 (8,032)</b>

Table 8: Regional and state-wide allocation of cockle ITCAL for eligible share classes using catch data from 2009/10-2012/13.

Region	% of total catch	ITCAL (kg)	Shares	Kg/share	Kg/125 shares
1			<b>Ineligible</b>		
2			<b>Ineligible</b>		
3			<b>Ineligible</b>		
4	20.8	5,967	3,604	1.7	207
5			<b>Ineligible</b>		
6	43.5	12,506	1,425	8.8	1,097
7	35.7	10,266	501	20.5	2,561
<b>State-wide</b>	<b>100</b>	<b>28,739</b>	<b>5,530</b>	<b>5.2</b>	<b>650</b>

Table 9: Regional and state-wide allocation of nipper ITCAL for eligible share classes using catch data from 2009/10-2012/13.

Region	% of total catch	ITCAL (kg)	Shares	Kg (no.)/share	Kg (no.)/125 shares
1			Ineligible		
2			Ineligible		
3			Ineligible		
4	10.5	911	3,729	0.2 (122)	31 (15,275)
5	40.1	3,497	100	35 (17,487)	3,500 (1,748,738)*
6	49.4	4,309	1,425	3 (1,512)	378 (188,997)
7			Ineligible		
<b>State-wide</b>	<b>100</b>	<b>5,254</b>	<b>5,254</b>	<b>1.7 (830)</b>	<b>207 (103,707)</b>

\* For region 5 it is the kg and numbers per 100 shares.

### 3. Allocating quota to shareholders (within regions) by tender

A fundamental alternative to allocating quota. With this model shareholders of each share class are provided a once off opportunity to nominate their current shares towards an allocation of each species - based on the same eligibility criteria outlined above. Shareholders receive an allocation of each eligible species proportional to the number of shares they have nominated for each.

The main advantage of this model is that it attempts to address the fact that some fishers target certain species whereas other target other species. A disadvantage of this model is that although shareholders will be certain of what species they will receive an allocation for, they will be uncertain as to what the specific allocation will be.

#### Minimum Shareholding requirements

Minimum shareholding requirements (i.e. the minimum number of shares that a shareholder must hold to be eligible for an endorsement) can be used in conjunction with a catch quota regime to assist with adjustment in each share class. Given that the total number of shares of each share class (i.e. in each region) is variable, different minimum shareholding requirements can apply in each region. Furthermore, there are a very limited number of shares in some regions (i.e. regions 2 and 5) and there could be scope to reduce the minimum shareholding requirements that apply currently.

#### Fishing period

An allocation of catch 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.

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 suggests that a one year fishing period commencing on 1 July each year would be suitable for the hand gathering component of the EGF initially.

#### Acquiring additional quota

Acquiring additional catch quota (i.e. kgs) could be achieved by a fisher in two ways:

- By transferring relevant shares, 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 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 (i.e. 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.

*Reasons for allowing leasing:*

- Helps fishers wanting to fish at a desired level but cannot buy shares (e.g. they may already hold all the hand gathering shares in a region);
- Helps fishers that need more 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; and
- 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).

*Reasons against allowing leasing:*

- May slow the rate of adjustment; and
- May stimulate 'quota barons' (i.e. 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 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.

It is important to note the following recommendation from SARC given at its January 2014 meeting in response to its concern that the ability to lease may impede adjustment by providing a disincentive to sell shares to those who need additional shares to maintain their level of production:

*"... the SARC recommends that, unless there are clear reasons to the contrary, in the short term, potentially for a period of 2 years, leasing of quota or effort units should not be permitted. In the long term the SARC recommends that leasing should be an integral component of the management of NSW fisheries."*



## Transferability of catch quota

If the hand gathering share classes are to be managed using a catch quota regime consideration has to be given to providing for the transferability of catch quota between regions or having the total amount of catch quota capped or 'locked into' each region. The current shares would be used to authorise access in a region (as is the case now) and the catch quota used to dictate how many kgs could be caught in a region.

If the total amount of catch quota is capped in each region shareholders have the certainty and security that they hold a set proportion of the catch quota that can be caught in the waters of the fishery in the region they hold shares. However, for regions where only a limited number of shares exist, and as a consequence a limited amount of catch quota would be allocated, there may be limited amount of scope for shareholders to acquire additional catch quota.

In contrast, if there was full transferability of catch quota between regions, shareholders could acquire catch quota from other regions to upscale their operation (or vice versa). In this case the amount of catch quota that could be used in the waters of a region is not capped. As a consequence, shareholders would not have the security of knowing how much catch quota could be caught in each region, however would have the flexibility to transfer catch quota into or out of a region, e.g. in response to variations in abundance of fish, environmental conditions etc.

## Monitoring quota usage

A catch quota regime requires the catch quota to be monitored on a daily basis if the regime is to have integrity. One way to do this is through the current paper-based log book system, however, there is a range of reasons why this is inappropriate including:

- Log books are used to capture a range of information (e.g. catch, effort and disposal information) some of which may not be readily available for the purpose of submitting log sheets daily;
- Resource intensive for fishers and DPI;
- Inability to monitor and enforce catch quota in real time; and
- The online log book system in FishOnline is not designed to deal with acquitting quota usage.

The most cost effective way to closely monitor a 'consumable' catch quota would be to utilise the IVR system recently developed by DPI or the new smart phone app being built. The IVR system would require fishers to make a pre-fishing, pre-landing and post-landing report 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 would be done separately either online or by using the log book.

FishOnline and the IVR system have been designed to deal with quota management regimes. As a consequence, neither system should need to be enhanced. However, complications may arise for fishers working fishing businesses with numerous 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 a number of potential solutions to this problem:

- 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 should be 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.

### Attributing management charges to shareholders

Under a catch quota regime the cost of management is attributed to shareholders proportional to the number of shares held. Specifically, a shareholder with a large holding of shares (and greater catch quota allocation) will pay a larger share of the management costs than a shareholder with a smaller holding of shares. Paying per share (or kgs) can be beneficial to fishers who are diversified and need only a certain number of shares (or kgs) 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.

### Discussion and advice required

The Working Group's advice is required on the following:

- Should a catch quota regime be considered as an option (to be put to shareholders for comment) for the hand gathering component of the EGF?
- Are the ITCALs and how they have been determined and allocated appropriate (i.e. should specific share classes not be allocated catch quota)?
- Whether the use of minimum shareholding requirements should be used in conjunction with a catch quota regime?
- The transferability of catch quota between share classes (i.e. regions).
- The use of the IVR or smart phone app systems to monitor catch quota usage.

### Option 3: Effort quota (day regime)

Two separate effort quota (days regimes) were identified by the WG for further consideration (i.e. with or without trip limits). Irrespective of the regime the WG suggested a trigger limit on the total catch available to the fishery be implemented. A trigger limit is a predetermined limit on the total catch of each species for the fishing period. When the trigger limit is reached, a management response is triggered. What the management response will be is highly dependent upon what the trigger limit is set at. For example, if the trigger limit for a species is set at the proposed ITCAL in table 3 the management response could be the implementation of a fishing closure prohibiting the commercial harvest of the species until the start of the following fishing period. If the trigger limit for a species is set lower than the proposed ITCAL in table 3 (e.g. 80% of the ITCAL) the management response could be, for example, the implementation of a trip limit (if one doesn't currently exist) or a reduction in the existing trip limit.

Under a days regime, effort is managed via a consumable quota of days allocated to fishing businesses proportional to the number of shares held. The addition of a trip limit restricts fishers to a maximum catch of each species on each day. The major features of this type of day regime include:

- Provides for autonomous (as opposed to forced) adjustment.
- Improved opportunity (relative to a stand alone minimum shareholding regime) to remove or amend current restrictions that inhibit fishers' efficiency and profitability, noting that the implementation of trip limits inhibit efficiency.
- Improved control over total catches of species from the fishery, which is beneficial from a range of perspectives including capacity to deliver sustainability and resource sharing objectives within the fishery and between the fishery and other sectors.

- Improved Government, industry and community confidence that the fishery is operating at sustainable levels.
- Management charges are attributed to shareholders proportional to the number of shares held.
- The security of investment is not as strong as a catch quota regime. Endorsement holders continue to compete for their share of the resource knowing that once the trigger limit is reached a management response will be implemented, similar to a competitive total allowable catch or 'race to fish'.

### Trigger limits on total catches

A starting point for setting a trigger limit on total catch for each species for a fishing period are the proposed ITCALs in table 3.

### Determining the ITCALs and days available to shareholders

Determining the ITCAL (i.e. the total number of days available to each share class of the fishery) and the quota of days that would be allocated to each shareholder requires a number of steps. This has been done below in two ways, on a state-wide and regional basis.

**Step 1:** The first step involves determining the ITCAL for either all share classes or each share class (i.e. region). Numerous options are presented below for the WG's consideration.

#### State-wide ITCAL

The state-wide ITCAL is the total number of days allocated to all hand gathering share classes as a whole. This has been determined by calculating the maximum and average annual number of days fishers have reported fishing under the authority of a hand gathering endorsement over the 4 (2009/10 – 2012/13), 5 (2008/09 – 2012/13) and 10 year periods (2003/04 – 2012/13). Note that the 4 year time period was used as the new catch and effort reporting arrangements implemented in 2009 provided for a method to be linked to a share class (i.e. region) and a day.

Table 10: Some options for the state-wide ITCAL of days for the hand gathering share class

Time period	Calculation	ITCAL (days)
10 year	Maximum	11,252
	Average	7,497
5 year	Maximum	9,554
	Average	5,087
4 year	Maximum	4,555
	Average	3,970

## Regional ITCAL

The regional ITCAL is the total number of days allocated to each share class. This has been determined by calculating the maximum and average annual number of days fishers have reported fishing in each region under the authority of a hand gathering endorsement over the 4 year period 2009/10 – 2012/13. The 4 year time period was used as the new catch and effort reporting arrangements implemented in 2009 provided for a method to be linked to a share class, regional waters and a day. Days worked on ocean beaches prior to 2009/10 were reported in ocean zones rather than the EGF regions.

Table 11: Regional ITCAL of days for the hand gathering share class

Region	ITCAL (days)	
	Maximum annual days	Average annual days
1	784	600
2	94	41
3	1999	1686
4	911	743
5	207	175
6	673	507
7	340	219

**Step 2:** The ITCAL available to each share class then needs to be allocated amongst the shareholders in each region proportional to the number of shares held. This has been done below in two ways (i.e. state-wide and regional basis).

## State-wide allocation

This has been determined by dividing the maximum and average days ITCALs from table 10 by the total number of hand gathering shares.

Table 12: State-wide allocation of the ITCAL of days to hand gathering shareholders

Time period	Calculation	ITCAL (days)	Shares	Days per share	Days per 125 shares
10 year	Maximum	11,252	9,722	1.2	145
	Average	7,497		0.8	96
5 year	Maximum	9,554		1.0	123
	Average	5,087		0.5	65
4 year	Maximum	4,555		0.5	59
	Average	3,970		0.4	51

## Regional allocation

This has been determined by dividing the maximum and average days ITCALs from table 11 by the total number of hand gathering shares in each region.

Table 13: Regional allocation of the ITCAL of days to hand gathering shareholders

Region	Calculation	ITCAL (days)	Total No. shares	Days per share	Days per 125 shares
1	Maximum	784	1,677	0.5	58
	Average	600		0.4	45
2	Maximum	94	127	0.7	93
	Average	41		0.3	40
3	Maximum	1,999	2,161	0.9	116
	Average	1,686		0.8	98
4	Maximum	911	3,729	0.2	31
	Average	743		0.2	25
5	Maximum	207	100	2.1	259
	Average	175		1.8	219
6	Maximum	673	1,427	0.5	59
	Average	507		0.4	44
7	Maximum	340	501	0.7	85
	Average	219		0.4	55

## Daily (trip) limits

If daily limits are to be incorporated into a day regime, advice from the WG is sought as to what an appropriate limit should be for each species.

## Defining a 'day'

Two options for defining a 'day' include:

- 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); or
- A set 24 hour period (i.e. a date).

## Minimum Shareholding requirements

Minimum shareholding requirements (i.e. the minimum number of shares that a shareholder must hold to be eligible for an endorsement) can be used in conjunction with a days regime to assist with adjustment in each share class. Given that the total number of shares of each share class (i.e. in each region) is variable, different minimum shareholding requirements can apply in each region. Furthermore, there are a very limited number of shares in some regions (i.e. regions 2 and 5) and there could be scope to reduce the minimum shareholding requirements that apply currently.

## Fishing period

Similar to a catch quota regime, realistic options for a fishing period include a one or two years. DPI suggests that a one year fishing period commencing on 1 July each year would be suitable for the hand gathering component of the EGF initially.

## Transferability of catch quota

Similar to a catch quota regime, if the hand gathering share classes are to be managed using a days regime consideration has to be given to providing for the transferability of effort quota (i.e. days) between regions or having the total amount of effort quota capped or 'locked into' each region. The current shares would be used to authorise access in a region (as is the case now) and the effort quota used to dictate how many days could be caught in a region. The same pros and cons apply to transferring effort quota as apply to transferring catch quota.

## Monitoring quota usage

Similar to a catch quota regime, an effort quota regime requires the effort quota (days) to be monitored on a daily basis if the regime is to have integrity. The IVR system would require fishers to make a pre-fishing report so that a day is deducted from their quota of days. Pre-landing and post-landing reports may be required to assist to ensure the integrity of any daily limits and/or the total catch limits. Reporting other information would be done separately either online or by using the log book.

## Acquiring additional quota

Acquiring additional quota (i.e. days) could be achieved by a fisher in two ways:

- By transferring relevant shares, which would result in the shareholder having an ongoing right to a greater portion of the ITCAL/TAE for future fishing periods; or
- By transferring quota from other relevant shareholders 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.

## Attributing management charges to shareholders

Under a days regime the cost of management is attributed to shareholders proportional to the number of shares held. Specifically, a shareholder with a large holding of shares (and greater number of days) will pay a larger share of the management costs than a shareholder with a smaller holding 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.

## Discussion and advice required

The Working Group's advice is required on the following:

- Should a days regime be considered as an option (to be put to shareholders for comment) for the future management of the hand gathering component of the EGF?
- What should the trigger limits be set at and what are the appropriate management responses once these limits are triggered?
- What method should be used to determine the ITCAL of days?
- Should state-wide or regional allocations be used?
- What are appropriate trip limits for each species?
- How should a 'day' be defined?
- What are the appropriate minimum shareholding requirements to be used in conjunction with a days regime.
- A suitable 'fishing period' and when the fishing period should commence.

- The transferability of effort quota between the regions.
- The use of the IVR or smart phone app systems to monitor effort quota usage and daily and/or total catch limits.

#### Option 4: Daily limits with trigger limit on total catch

Under a daily limit regime the catch of all hand gathering species is managed by having restrictions on the total catch of each species that may be taken by a fisher on a day (i.e. a daily limit) and there is a trigger limit set on the total catch of each species for the fishing period. Similar to option 3 above, once the trigger limit is reached a management response is triggered (see option 3 for details).

Fishers that have enough shares to satisfy the minimum shareholding requirement to be able to operate in the fishery are entitled to take a set maximum quantity of species they are authorised to harvest on each day. The acquisition of additional shares entitles the fisher to take a higher set maximum quantity of species they are authorised to harvest on each day.

The major features of a daily limit regime include:

- Provides for autonomous (as opposed to forced) adjustment.
- Improved opportunity to remove or amend current restrictions that inhibit fishers' efficiency and profitability.
- Improved control over total catches of species from the fishery, which is beneficial from a range of perspectives including capacity to deliver sustainability and resource sharing objectives within the fishery and between the fishery and other sectors.
- Improved Government, industry and community confidence that the fishery is operating at sustainable levels.
- Management charges are attributed to shareholders proportional to the number of shares held.
- The security of investment is not as strong as a catch quota regime. Endorsement holders continue to compete for their share of the resource knowing that once the trigger limit is reached a management response will be implemented, similar to a competitive total allowable catch or 'race to fish'.

#### Determination of the daily limits and trigger limits on total catches

Determining the (i) daily limits (including how many shares equate to how much of an increase in the daily limit), (ii) trigger limits for each species, and (iii) the respective management responses once the limits are reached requires considerable WG advice.

#### Discussion and advice required

The Working Group's advice is required on the following:

- Should a daily limit regime be considered as an option (to be put to shareholders for comment) for the future management of the hand gathering component of the EGF?
- What should the trigger limits be set at and what are the appropriate management responses once these limits are triggered?
- What are appropriate daily limits (including the increases associated with the acquisition of additional shares)?
- What are the appropriate minimum shareholding requirements to be used in conjunction with a daily limit regime?
- A suitable 'fishing period' and when the fishing period should commence.

- The use of the IVR or smart phone app systems to monitor a daily limit regime.

## Staged approach to the implementation of share linkage

The SARC mentioned the concern of some WGs that the significant disparity between shareholdings and catch/effort levels and the tight timeframe for implementation of share linkage will preclude the acceptance of strong share linkage options such as catch and effort quota in the short term, despite the proposed exit grant process which will facilitate adjustment. An anticipated consequence of this scenario is a tendency to default to weaker forms of linkage such as endorsement numbers (i.e. minimum shareholding requirements). As a consequence the SARC recommended that staged implementation of share linkage, with reliance in the short-term on increasing minimum shareholdings should continue to be investigated by the WG as an option in exceptional circumstances and where it can clearly be justified.

## Discussion and advice required

The Working Group's advice is required on the following:

- Should a staged approach to a strong share linkage option, with reliance in the short-term on increasing minimum shareholdings be considered as an option (to be put to shareholders for comment) for the future management of the hand gathering component of the EGF?

## 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 viable commercial fishing industry.

The costs associated with the various linkage options are 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.
- Promoting industry-wide viability is a longer term objective of the reform program that is also influenced by a range of things including: 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 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 system) to reduce enforcement costs; streamlining current controls; 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 a general indication of the relative costs of the various linkage options having regard to the likely future research, management and compliance needs associated with each.

## Reforming current management arrangements

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

### Reforming management arrangements dependent on share linkage

Scope to streamline current management arrangements is generally dependent on the form and strength of the management framework or linkage proposed to be pursued. Some of the restrictions that currently apply have been mentioned previously in this paper. There are likely to be others that need to be identified.

**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 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 a catch or effort quota regime boat licences would no longer be required to [indirectly] manage catch if the regime establishes a strong link to catch levels and is actively used to manage catch – by increasing or decreasing the ITCAL on an as needs basis. Removing boat licences presents a range of administrative and business efficiencies, including reduced paperwork and ongoing costs for fishers.

**Species restrictions:** Different gear types restrict the species that may be taken in them, some for good reason. However, some restrictions apply that result in the requirement to discard certain fish irrespective of whether they are alive or dead (e.g. sand whiting and bream from a flathead net). Consideration needs to be given to amending such restrictions.

**Restrictions on taking nippers, worms and pipis:** Restrictions exist on what can be used to take nippers, worms and pipis. Consideration needs to be given to allowing the use of appropriate devices (e.g. pipi rakes as are used in the South Australian fishery) to take these species.

**Fishing closures:** Numerous fishing closures exist in the EGF. A comprehensive list of these closures has been with DPI for review for some time. DPI needs to finalise the fishing closures review. As a consequence final advice on any fishing closures relevant to the hand gathering component of the EGF is required from the WG.

## Discussion and advice required

The Working Group's advice is required on identifying a full list of current restrictions (e.g. any further specific fishing closures, other than Recreational Fishing Havens and Marine Park zoning arrangements which are beyond the scope of this specific reform program) for review and

potential amendment. Important to note is that the ability to amend or revoke any specific restriction will likely depend on the final form of linkage adopted.

## Preliminary comparison of share linkage options

Table 14: Preliminary comparison of share linkage options

Issue	Minimum shareholdings	Catch quota	Days	Daily limits
<b>Government interests</b>				
Within powers of Act	Yes	Yes	Yes	Yes
Can be administered	Yes	Yes	Yes	Yes
Can be enforced	Yes	Yes	Yes	Yes
FishOnline compliant	Yes	Yes	Yes	Yes
IVR compliant	Yes	Yes	Yes	Yes
Manages catch	Indirect (weak)	Directly	Directly with total limit on catch	Directly with total limit on catch
Can be used to respond to sustainability or resource sharing issues	Indirectly (weak)	Directly	Directly with total limit on catch, indirectly without	Directly with total limit on catch
<b>Shareholder interests</b>				
Secure share of catch	Minimal security	Most security	Moderate security	Moderate security
Investment confidence	Less	High	Moderate	Moderate
Scope to tailor access	No	Yes	Yes	Yes
Scope to tailor fees	No	Yes: pay per share	Yes: pay per share	Yes: pay per share
Fish more efficiently	Subject to adjustment target and relaxation of input/effort controls	Yes	Possible	Possible
Value of rights	Lowest value	Highest value	Moderate value	Moderate value
Remove input controls	Minimum scope	Maximum scope	Moderate scope	Moderate scope
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	Yes: autonomous and can be stimulated on as needs basis
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	Decided by shareholder: costs proportional to shares held