



Water Trading Tool Kit



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1. Introduction

This booklet has been produced by Murray Dairy to help dairy farmers in the southern Murray–Darling Basin understand the issues and processes involved in water trading and to give them access to information that may be useful if they are thinking about participating in water trading.

There are different processes involved for each type of trade transaction. Also, each state has different processes and application forms.

If you are not sure what to do, the first step in planning a water trade is to contact your water supplier to check the arrangements that apply to the type of trade you are considering. Alternatively, water corporations and state water management departments provide information on trade processes and requirements on their websites.

If you are intending to use a water broker to conduct your trade, they should be able to advise you on the processes you will need to follow.

This publication is intended to provide general information that will be of use to irrigators, but each individual's circumstances are unique and irrigators may need to seek specific advice in relation to the feasibility and appropriateness of a particular water trade to ensure that it will meet their farm needs and financial circumstances.



2. Background to water trading

Water trading (intrastate trade) has been around within the Murray–Darling Basin (MDB) states since the 1980s. Water trades between states (interstate trade) were not possible until 1998.

The introduction of the Cap on water usage in the MDB in 1995 and the extended drought in the southern MDB since 1997 have contributed to significant growth in water trade over the past 10 years. Water trade has become recognised as a vital tool for irrigators to help them manage both their short-term and long-term access to water as part of the overall management of their farm businesses.

In an environment of finite water resources and where the sustainable limits of the resource have been reached (or even exceeded) in many systems, processes are needed that enable

water to move from existing uses to new uses. Governments across Australia have recognised this issue and, through the National Water Initiative, they have committed to the development of water trading to allow markets to be used as the primary method for re-allocation of water between users.

The Basin Cap

For NSW and Victoria, the Cap is defined as the seasonally adjusted amount of water that would have been diverted under the 1993/94 levels of development.





3. Water entitlements and water systems

As a first step towards learning about water trading, it is important to have a broad understanding of where the available water in the southern MDB comes from, what sort of water products are available in the market, and the processes used to determine the volumes of available water in each season.

Where does the water come from?

Most of the water available in the southern MDB comes from rainfall (and snowfall) on catchment areas on the Great Dividing Range along the southern and south-eastern margins of the Basin. For example, the Murrumbidgee and Goulburn, Broken and Loddon river catchments generate 35% of the Basin's total runoff, yet they cover only 12% of its area. The Upper Murray catchment (above Lake Hume) accounts for 17.3% of total runoff, but covers only 1.4% of the Basin.¹

There are two other major sources of water that are available to irrigators within the Basin: the Snowy Mountains Scheme and the Menindee Lakes storages on the Darling River.

Water sharing in the Murray–Darling Basin

The sharing of water in the southern MDB between SA, NSW and Victoria is managed according to the Murray–Darling Basin Agreement. This is a complex agreement that details provisions for sharing water resources the states, managing trade and river water quality, etc.

The 'River Murray system' (see Figure 1), which is managed by the Murray Darling Basin Authority (MDBA) in accordance with the Agreement, is made up of:

- the main course of the River Murray and all its effluents and anabranches;
- tributaries entering the River Murray upstream of Albury;
- the Darling River downstream of the Menindee Lake storage;
- MDBA works – Dartmouth Dam, Hume Dam, Yarrawonga

SUMMARY

Where does the water come from?

- The major sources of water for irrigators within the southern MDB are the Murrumbidgee, Goulburn, Broken and Loddon river catchments, the Upper Murray catchment, the Snowy Mountains Scheme and the Menindee Lakes storages on the Darling River.
- The sharing of water between South Australia, NSW and Victoria in the southern MDB is managed according to the Murray–Darling Basin Agreement.
- The 'River Murray system' is managed by the Murray Darling Basin Authority (MDBA).

Weir, Lake Victoria storage, weirs and locks along the River Murray and lower Murrumbidgee, and the barrages near the mouth of the River Murray; and

- the Menindee Lakes storage, which the NSW Government has leased to the MDBA in perpetuity.

In simple terms, all the inflows to the River Murray upstream of Albury (including the Kiewa) are shared between the three states in accordance with the Agreement.

Victoria and NSW each receive 50% of these shared inflows, and each has access to 50% of the storage volume in the MDBA reservoirs to store these inflows.

In addition, the Agreement provides for a highly reliable annual entitlement of 1,850 GL to be available to SA. NSW and Victoria are jointly responsible for providing this entitlement to SA.



Footnote 1: MDBA website: http://www.mdba.gov.au/water/about_basin.

Under periods of low inflow, when reserves in storages are at lower levels and the arrangements described above can't be followed, the water sharing arrangements under the Agreement move into what is termed a period of 'special accounting'. During special accounting, the shared inflows are equally divided three ways to determine the water available to NSW, SA and Victoria.

Under extreme conditions, as experienced in 2006/07 which saw the lowest ever recorded inflows into the system, the states and Commonwealth agreed to suspend the Agreement's water sharing provisions to ensure that essential needs for water could be met.

All tributary flows downstream of Albury are resources available to the respective states that 'own' the tributary stream. The harvesting of tributary flows and their use is governed by water sharing plans in each of the states.

For example, flows in the Goulburn River can be harvested for use by Victorian irrigators, subject to the provisions of Victorian Bulk Entitlements and the MDB Cap. Flows from the Goulburn River into the Murray are also measured and credited to Victoria through the sophisticated water accounting processes that track water available to the states.

The Menindee Lakes also provide water storage for the River Murray system. An agreement was reached whereby the MDBA's predecessor bodies funded works to increase the storage capacity of the lakes, and in return these storages have been leased to the MDBA in perpetuity. Water in the Menindee Lakes is under the control of the MDBA as part of the shared resources of the system until the volume in store drops to 480 GL. The water below this level is then only available for meeting NSW requirements. Once the Menindee Lakes are under NSW control, the volume in store must rise above 640 GL before control of the storages reverts to the MDBA.

While the inflows to the Menindee Lakes can be more variable than the upper Murray inflows, they provide an important supplement to available resources in the system. Importantly, water from Menindee Lakes enters the River Murray downstream of the Barmah Choke.

In years of high water availability, releases from Menindee Lakes help meet demands in the lower Murray and avoid the need to ration deliveries because of the limited transfer capacity available through the Barmah Choke.

Snowy Mountains Scheme

The Snowy Mountains Scheme consists of a network of 16 major reservoirs, seven hydro-electric power stations and 145 km of interconnecting tunnels that link the storages and power stations together.

This scheme diverts water from the Snowy, Murray, Tumut, and Murrumbidgee Rivers into the storages. This water is then released to either the River Murray or to the Murrumbidgee River (via the Tumut River), generating electricity along the way. In addition to power generation, the scheme was also developed to improve water supply for irrigation in the Murray and Murrumbidgee systems.

Historically, an annual average of approximately 1,120 GL of water has been harvested from the Snowy River catchment and redirected into the Murray and Murrumbidgee catchments, in roughly equal shares (i.e. around 560 GL/year to each catchment).

Based on long-term averages, a volume of around 1,190 GL/year is released from the Snowy system into the Murrumbidgee River. This water is available for use by NSW, as the Murrumbidgee is a NSW tributary. Historically, an average volume of approximately 1,196 GL/year is released from the Snowy system into the River Murray above Lake Hume. This release is above Albury and forms part of the Murray inflows that are shared between the states in accordance with the MDB Agreement. However, due to continued drought, releases have been well below long-term averages in recent years.















As a result of agreements reached between the NSW, Victorian and Commonwealth Governments in December 2000, up to 280 GL/year of this harvested water is now being returned to the Snowy River to improve its environmental health. Water is being returned to the Snowy through a range of measures, with a significant volume coming from water savings projects in Victorian and NSW water supply systems.

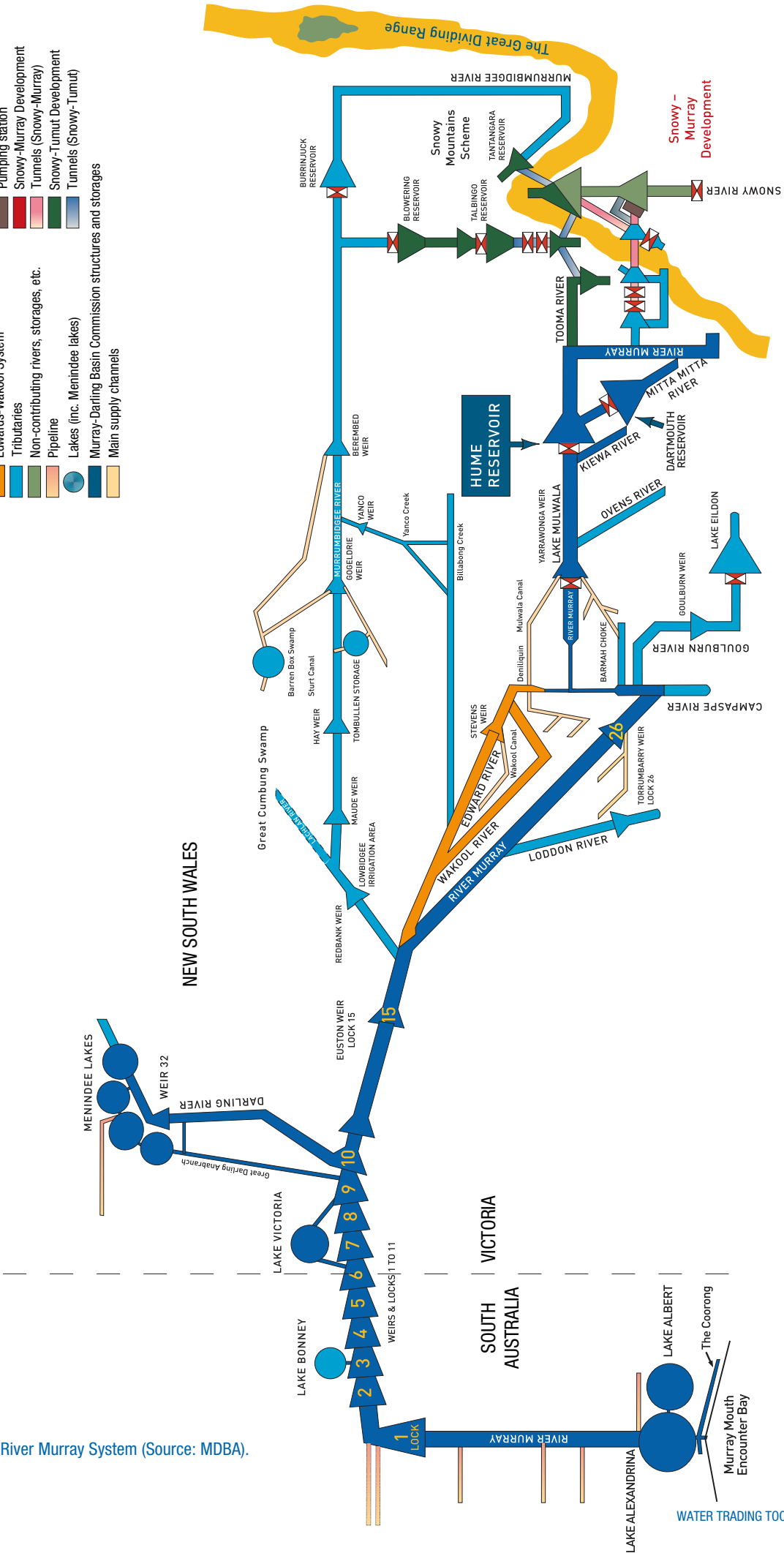
Regulated and unregulated systems

A regulated system is a system of streams, creeks and rivers that is controlled or 'regulated' by water storages which allow the water to be released when it is required.

An unregulated catchment is one that does not contain a storage that is managed by a water authority to provide releases to meet the needs of downstream customers. Management of water quantity within unregulated catchments is undertaken through a licensing regime for the taking and use of water.

Legend

-  Main stem of Murray-Darling system
-  Edwards-Wakool System
-  Tributaries
-  Non-contributing rivers, storages, etc.
-  Pipeline
-  Lakes (inc. Menindee lakes)
-  Murray-Darling Basin Commission structures and storages
-  Main supply channels
-  Hydro Power Station
-  Pumping station
-  Snowy-Murray Development
-  Tunnels (Snowy-Murray)
-  Snowy-Tumut Development
-  Tunnels (Snowy-Tumut)



Water entitlements

As part of national water reform agreements, states have progressively implemented changes to their water management regimes to separate water from land and to expand water trade.

Water entitlements held by irrigators and diverters on regulated water systems in northern Victoria were unbundled on 1 July 2007. Unbundling separated water from land and separated an existing water entitlement package into:

- a **water share**: a legally recognised, secure share of available water;
- a **delivery share**: a right to have water delivered to your land (for irrigators diverting directly from rivers this is called an extraction share); and
- a **water use licence**: a right to use water for irrigation on your land. There may also be an associated works licence issued where construction of pumps or bores are required on rivers or for groundwater.

The unbundling of water entitlements required a change to the way tariffs are charged so that they are consistent with the new entitlements. Therefore, tariffs were also 'unbundled' into:

- a charge on each water share to recover the costs of water harvesting and storage (i.e. the costs associated with the dams and weirs);
- charges related to delivery including:
 - a fixed infrastructure charge for maintaining and renewing the channel system, including a service point fee; and
 - a variable charge based on the amount of water actually delivered in a season.

A water share is 'a legally recognised, secure share of the water available to be taken from a defined water system'.

In NSW, changes implemented in 2004 separated water from land for water entitlements taken from regulated rivers. This created:

- A **water access licence (WAL)**: a legal right to a share of the available water. A WAL includes a 'share component' showing how many units of the total water shares in a system are attached to each water access licence.
- **Works and use approvals**: permissions to control the construction of works (e.g. installation of pumps and bores) and to control use water for a particular purpose, such as irrigation.

In NSW, private irrigation corporations like Murray Irrigation Limited hold significant water access licences that enable them to supply water to their shareholder customers. Water trade between shareholders within a private irrigation corporation

SUMMARY

Water entitlements

- A **water entitlement is a right, issued by state governments, to a share of the water available in the system each year, and is specified as a maximum volume of seasonal allocation that may be made against that share.**
- **In regulated systems, there are a number of water products with varying reliability. These differences are based on historical variations between the states and the type of irrigation that has occurred.**
- **With tradeable water entitlement, farmers can now have a varied number of water products that best suit their business profile.**

does not affect the corporation's overall WAL. As part of ongoing water reforms, NSW irrigation corporations have introduced **delivery entitlements** which specify the delivery rights and obligation of their customers in a broadly similar way to Victorian delivery shares. NSW irrigation corporations are also implementing changes that will allow individual shareholders to transform their 'share' of the corporation's water access licence into an individual water access licence.

A **water entitlement** is a right, issued by state governments, to a share of the water available in the system each year, and is specified as a maximum volume of seasonal allocation that may be made against that share.

Water entitlements are also known as water shares, water rights, diversion licences, water licences and water access licences depending on where and how these entitlements were issued by various states. As water reform has occurred in each state there have also been changes to the names of some of the water entitlements available.

Despite the names being different, there are similarities in the types of water entitlements available across the various states.

Water entitlements are generally classed according to their reliability, which is defined by how often the maximum seasonal allocations for the entitlement are expected to be available. Reliability is usually estimated using computer models that simulate how the current day systems of reservoirs, supply channels and water sharing rules would perform if a repeat of historic river inflows occurred.

In regulated systems – so called because they are downstream of major storages that can be used to regulate the release of water to meet users’ needs – there are generally two key water entitlement products, one of high reliability and another with lower reliability.

Both high-reliability and low-reliability water entitlements are separate assets that can be traded permanently or temporarily.

Table 1 includes the approximate maximum volume of these various entitlements available from different systems. This illustrates that while the general framework of entitlement types is somewhat similar, there are important differences in the

relative mix of each type of water entitlement that each state originally issued:

- In **NSW**, most of the water available is directed to medium reliability entitlements, with relatively small volumes of high reliability entitlements.
- In **Victoria**, most of the available water is allocated to high reliability entitlements, with the balance available for low reliability entitlements.
- In **South Australia**, all irrigation water is available through high reliability licences.

More details on the various entitlement frameworks and the particular reliability of different products can be found on state water management agency websites.

Table 1: Key types of regulated water entitlements in each state.

State	Entitlement Name	Reliability Class	Reliability (% of years in every 100 when entitlement volume is fully available)*	Approximate Maximum Vol. available from each river system** (GL)
Murray System				
NSW	High security water access licence	High	97%	183
NSW	General security water access licence	Medium	72%	1,668
Victoria	High reliability water share	High	99%	1,182
Victoria	Low reliability water share	Low	39%	301
SA	Water licence	High	100% (approx)	599
Murrumbidgee System				
NSW	High security water access licence	High	95%	377
NSW	General security water access licence	Medium	64%	1,888
Broken System				
Victoria	High reliability water share	High	90%	26
Victoria	Low reliability water share	Low	85%	5
Campaspe System				
Victoria	High reliability water share	High	98%	37
Victoria	Low reliability water share	Low	75%	19
Goulburn System				
Victoria	High reliability water share	High	97%	993
Victoria	Low reliability water share	Low	27%	437
Loddon System				
Victoria	High reliability water share	High	95%	22
Victoria	Low reliability water share	Low	27%	8

Notes:

* Reliability based on computer modelling assuming a repeat of historic inflows. No allowance is made for the possible impacts of future climate change on water availability. Modelling may not include recent extreme drought inflows. Information about reliability is available in the following publications: NSW Department of Water and Energy, 2009 – Water Availability in New South Wales Murray–Darling Basin Regulated Rivers; and Vic Department of Sustainability and Environment, 2008 – Northern Region Sustainable Water Strategy Discussion Paper.

** These volumes are derived from a range of sources of varying publication dates and are approximate only.

Water allocations

As noted above, water entitlements provide the holder with a right to a share of the water resources available in the system each year, depending on seasonal conditions and inflows. The entitlement holder can use or trade this volume of water in the current irrigation year. The water entitlement is usually termed water allocation, seasonal allocation or, more commonly in recent times, simply allocation.

States have different rules established in their water sharing plans or bulk entitlements that govern how the seasonal allocation processes occur. Broadly speaking, allocations are made against high reliability entitlements first. If additional water is available (subject to rules in the relevant water sharing plan or bulk entitlement), water is then allocated against medium and low reliability entitlements in turn.

For the NSW and Victorian Murray systems, the MDBA first makes an assessment of the water available to each state under the MDB Agreement, taking into account shared inflows, tributary inflows, usage to date and obligations to supply flows to SA etc. The water available to each state then forms the basis for determination of seasonal allocations for the Murray systems in each state. Both States have broadly aligned the timing of their seasonal allocations so that the market in each state is informed of changes in water availability at the same time.

In Victoria this process is called the seasonal determination (or seasonal allocation). In Victoria, seasonal allocations are reviewed and the results released at 10:00 am on the first and fifteenth of each month during the season (or the next business day if those dates are on a weekend or public holiday). The last allocation announcement occurs in April. Goulburn-Murray Water is the organisation responsible for making seasonal allocations for northern Victoria. Details can be found at www.g-mwater.com.au/.

SUMMARY

Water allocations

- **Seasonal allocations determine the amount of water available in a particular year to holders of water entitlements.**
- **In northern Victoria, seasonal allocations are made by Goulburn-Murray Water.**
- **In NSW, seasonal allocations are made by the Department of Water and Energy.**

In NSW this process is called an available water determination (or seasonal allocation). NSW seasonal allocations (or Available Water Determinations) are made by the Department of Water and Energy, and details can be found at www.dwe.nsw.gov.au/water/avail_awd.shtml.

As allocations are made, the amount of water available to entitlement holders is credited to an allocation account so that individuals can track the allocation they have available. In Victoria these are called Allocation Bank Accounts and in NSW they are called Water Allocation Accounts. As water is used (or traded) these accounts are debited accordingly.

When allocations are reviewed and the results released, in addition to any change to the seasonal allocation, there will often be an indication of the probability of further increases in allocation if wet, dry or average conditions occur in catchments. This provides valuable information on the possible future availability of water and can be useful, especially when considering the option of an allocation trade. Table 2 provides information on maximum seasonal allocations for some NSW and Victorian water systems since 1996/97. It is important to remember that from 1997/98 onwards, rainfall across much of the MDB has been significantly below long-term average levels.

Table 2. Seasonal Allocations since 1996/97 (as a % of water entitlement volume).														
Season	NSW Murray High Security	NSW Murray General Security	NSW M'bidgee High Security	NSW M'bidgee General Security	Vic Murray High Reliability	Vic Murray Low Reliability	Goulburn High Reliability	Goulburn Low Reliability	Campaspe High Reliability	Campaspe Low Reliability	Broken High Reliability	Broken Low Reliability	Loddon High Reliability	Loddon Low Reliability
1996/1997	100	100	100	100	100	100	100	100	100	120	100	70	100	90
1997/1998	100	84	100	90	100	30	100	20	100	90	100	70	100	10
1998/1999	100	93	100	85	100	100	100	0	100	0	100	70	100	0
1999/2000	100	35	100	78	100	90	100	0	100	0	100	70	100	0
2000/2001	100	95	100	90	100	100	100	0	100	120	100	70	100	0
2001/2002	100	105	100	72	100	100	100	0	100	80	100	70	100	0
2002/2003	100	10	100	38	100	29	57	0	100	0	100	0	57	0
2003/2004	100	55	95	41	100	0	100	0	100	0	100	70	67	0
2004/2005	97	49	95	40	100	0	100	0	39	0	100	70	100	0
2005/2006	97	63	95	54	100	44	100	0	31	0	100	70	100	0
2006/2007	69	0	90	10	95	0	29	0	0	0	77	0	0	0
2007/2008	50	0	90	13	43	0	57	0	18	0	71	0	5	0
2008/2009	95	9	95	31	35	0	33	0	0	0	0	0	0	0

Notes:

- Victorian water entitlements were unbundled and separated from land in July 2007. Allocations prior to 2007/08 listed under High reliability and Low reliability refer to Water Right/Regulated Diversion Licences and Sales respectively.
- Victorian Low reliability allocation data for the Goulburn and Murray prior to 2007/08 refer to sales allocations for water right holders in irrigation districts. Regulated diversion licences sales allocation trailed irrigation district allocations by 30%.
- Reflects the approximate final 'equivalent' final water allocations after 52% of water in allocation accounts was suspended in 06/07 and reinstated in 07/08
- The allocations shown are effective end of season allocations available after a reduction of 5% due to severe drought in 2006/07. This allocation was repaid in 2007/08 and is in addition to the allocation shown above for that year.



4. Water trading

Types of trade

There are three main forms of water trade. These are:

- transfer of ownership of a water entitlement, (previously called permanent trade). Water entitlements include water shares and water access licences;
- trade of allocation, (previously called temporary trade); and
- limited term transfer of a water entitlement (a relatively new option that is effectively a lease or rental of the water entitlement for a defined period).

No matter what type of trade is being undertaken, this is a market-based transaction and the buyer and seller need to agree on the price and other terms and conditions for the trade. In addition, they must seek approval from the relevant water authority (or authorities in many cases) to ensure that the trade is feasible and complies with the established water trading rules. Once the trade is approved, the change in ownership of the water products traded must be recorded in the appropriate registers so that the water authorities supplying the buyer and seller understand the new volumes of water entitlements and allocation available to all parties after the trade.

Transfer of a water entitlement

Transfer of ownership of a water entitlement gives the new owner the right to all future allocations available from that water entitlement. These transactions were previously called permanent trades, but with the separation of water from land and the increase in water market activity, the description of transfer of a water entitlement is preferred as it gives a clearer indication of the type of transaction involved.

Transfers of water entitlements are generally high value transactions, as the buyer is acquiring the ongoing right to seasonal allocations made against the water entitlement in all future years. These trades generally involve more complex information, checking and assessment than allocation trades and therefore usually take longer to process and approve.

Transfers of water entitlements provide the buyer with a valuable right, but a buyer is also accepting the risks associated with future seasonal conditions and water availability. These factors will determine how much water is actually allocated against the water entitlement in future, and while water authorities can offer guidance on the reliability of the water entitlement and likely allocations given a repeat of historical climate conditions, there is no guarantee of future allocation levels. This can be likened to buying a share in a publicly listed company where there is information available on past dividends paid per share, but future dividends are not guaranteed and depend on the performance of the company.

Part of the separation of water from land (unbundling) was also the clarification and clearer separation of water entitlements and allocations as described earlier. Now, the owner of a water entitlement receives allocations against the entitlement as they are made. This allocation is credited into an Allocation Bank Account (ABA) or the Water Allocation Account owned by the water entitlement holder. When a water entitlement is transferred to a new owner, all the allocations made prior



SUMMARY

Transfer of a water entitlement

- **Previously called 'permanent transfer', water entitlement transfer is the process used to buy or sell water shares.**
- **Water entitlement transfers change who owns the water entitlement, and therefore who receives the seasonal allocation from the water entitlement. Once the water entitlement ownership is transferred, the new owner receives all future seasonal allocation increases. The previous owner retains any seasonal allocation made before the water share was transferred.**
- **Water entitlement transfers may often also include changing the place where its allocations are used. This will be done by a tagging process.**
- **Trade/transfer between regulated and unregulated systems are subject to special rules which should be checked before attempting this type of trade.**

to the change of ownership remain the property of the seller. Once the ownership transfers to the buyer (this only occurs when the change of ownership is recorded in the appropriate water register), all future allocations are then credited to the ABA or Water Allocation Account of the buyer. No allocation moves automatically with a transfer of a water entitlement. If sellers and buyers of a water entitlement wish to also transfer ownership of allocation, then this is generally a separate transaction and a separate trade of allocation application may need to be lodged. (Note that slightly different arrangements and trading options apply in Victoria and NSW. Traders will need to check with the appropriate authority to confirm details.)

Transfer of a water entitlement only changes the ownership of the entitlement. It does not alter water use licences or works and use approvals. Separate amendments or adjustments to these permits may be required before new works can be installed or additional volumes of water applied to a property.

Trade of allocation

Allocations made against water entitlements are volumes of water available for use in the current irrigation season. Irrigators are also free to decide whether to use this water themselves, or trade part or all of their available allocation to another irrigator. This is called a trade of allocation.

These types of trades were previously called 'temporary trades' because they involved the sale of a volume of water only available for use in the current year, i.e. they were not 'permanent trades' of water entitlements. With the growing sophistication of the market and the introduction of carry over provisions, the description of temporary trade has been replaced by trade of allocation, which is a better description of the transaction and water products involved.

The allocation that an individual has available for use or trade is the total of the water allocated against water entitlements owned by the individual, together with any allocation purchased from another irrigator, minus the volume of allocation used on the property or previously traded away. Carry over has been available in NSW for some years and was introduced in Northern Victoria in 2007/08, which means that the allocation available to an individual may also include allocation carried over from a previous season. Trades of allocation are conducted in megalitres and involve actual volumes of water that can then be used or sold by the buyer.

Trade of allocation only changes the ownership of the allocation. It does not alter water use licences or works and use approvals. Separate amendments or adjustments to these permits may be required before new works can be installed or additional volumes of water applied to a property.

SUMMARY

Trade of allocation

- **Previously called 'temporary transfer'.**
- **Allocation trade is the process used to buy or sell seasonal allocation, that is water allocated to a water entitlement when a seasonal allocation is declared or increased. Allocation trade can be used to buy or sell volumes (in megalitres) of water that is already available under the seasonal allocation.**
- **An allocation assignment does not change the ownership of the water entitlement; but sellers must have sufficient water in their current allocation for use in the current season and to cover the volume being traded.**

Limited term transfers

A limited term transfer (LTT) is a new option available in Victoria since unbundling. This is in effect a lease of a water share to another person. The holder of the limited term transfer receives all the allocations made against the water share during the period of the LTT.

The water shares covered by the LTT are also taken into account when determining how much allocation an individual can carry over at the end of the irrigation season. As the name suggests, the shares are in effect 'transferred' to the holder of the LTT and he/she receives virtually all the benefits that ownership of the water would provide. At the end of the agreed term, the water shares revert to the original owner.

An LTT must be approved by the relevant water authorities to ensure that it complies with trading rules, and it must also be registered in the Water Register so that allocations can be automatically credited to the ABA of the holder of the LTT during its term. When the LTT reaches the end date originally advised to the Water Register, the term transfer arrangements are cancelled and the water share reverts fully to the original owner, who once again receives all allocations against the water share.

NSW offers a similar option for holders of water access licences. The transaction is called a term transfer and the holder of the WAL can transfer it to another person for a set period. The minimum period for a term transfer is six months.

SUMMARY

Limited term transfers

- A limited term transfer (LTT) is the process the owner of a water entitlement uses to lease the water entitlement to another person, for an agreed period of time.
- A limited term transfer does not change who owns the water entitlement, but during the period of the limited term transfer, the seasonal allocations from the water entitlement go to the person 'leasing' the water entitlement.

Carry over

While not a type of trade transaction, carry over of allocation is an important tool that can be used in conjunction with water trading to manage water availability for irrigators.

Carry over has been available in NSW for some years and was introduced in Northern Victoria in 2007/08. A water entitlement holder can choose to carry over some of the allocation available to them for use or trade in the next season.

Before the introduction of carry over, if available allocation were not used or traded then the unused allocation would be cancelled at the end of the year.

Currently, irrigators in Northern Victoria and Southern NSW (general security only) can carry over 50% of their water entitlements, but the total of water carried over from the previous season, plus any new allocation is limited to 100% of their entitlement volume in any season.

Carry over has helped to 'smooth' some of the seasonal fluctuations in trade prices that were previously experienced, particularly near the end of the irrigation season. Carry over is seen as an important option for managing reliability of water supply for individuals and supporting trade. It has become very important in recent severe drought years as it provides an option for irrigators to secure their early season water needs before seasonal allocations have reached high enough levels.

Each state makes rules on how much allocation can be carried over, and details can be found on irrigation corporation or state water agency websites. If you are planning to carry over allocation, it is important to understand these rules. In Northern Victoria you may need to ensure that water is in the correct allocation accounts, and that the volumes are within the limits allowed for carry over, otherwise allocation that was planned to be carried over may be cancelled. Recently, in NSW, water-sharing plans have been suspended in response to severe drought and carry over rules have been amended.

SUMMARY

Carry over

- Carry over is water not used in an irrigation season that is then carried over into the next season.
- Carry over acts as a risk management tool in times of limited water availability.
- Irrigators can carry over 50% of their entitlements, but carry over plus new allocation is limited to 100% of entitlement volume in any irrigation season.

Trading rules

Principles for developing trading rules

Trading rules have been developed in order to ensure the orderly operation of water markets.

The issues that trading rules are designed to manage generally fall into the following categories:

- ensuring that water product being sold can be physically delivered to the proposed buyer;
- ensuring that trades do not reduce the underlying reliability of water entitlements; and
- managing the potential environmental impacts of trade.

There are also a range of rules that govern the processes for undertaking trades. These rules often cover issues such as:

- Who can participate in the market as buyers and sellers.
- Establishing the identity of sellers (and buyers). This ensures that those offering water shares or allocations for sale are the legal owners of the products and entitled to sell them. Examples of these types of rules are the '100 point check' for sellers of Victorian water shares, and rules on who must sign forms for trade of allocation.
- Closing dates for processing of trades in each financial year.
- Fees that must be paid to various water authorities to cover the cost of processing trade applications.

Trading zones

Trading zones identify geographic areas where trade of water entitlement and/or allocation can generally occur with little or no limitation. The most important criteria for determining a trading zone is that the major water products in the zone are sourced from a common supply system/reservoirs.

Trading zones are a simple way of describing a geographic area where a water trade within the zone is likely to comply with most of the key trading rules. This allows buyers and sellers to agree on proposed trades and lodge applications for trades with a high degree of confidence that the trade is likely to be approved. This should not be taken to mean that any trade will automatically be approved, as trading zones are made as large as possible to create the largest possible markets. Trade zones may span several irrigation areas or irrigation supply authorities. If there are annual limits on net trade of water entitlements out of a particular area within a trading zone, then an application to sell to a buyer within the same zone but outside the seller's irrigation area or supply authority may not be approved if these trading limits have been reached.

An example of a trading zone in Victoria is Zone 1A, the Greater Goulburn zone. All the water entitlements in this zone are sourced from the major storages on the Goulburn River. (i.e. Lake Eildon, Goulburn Weir and Waranga Basin) and water entitlements and allocations can be readily delivered to new owners in this zone. A map of the trading zones for Victoria can be found on the Water Register website at www.waterregister.vic.gov.au.

SUMMARY

Trading zones

- **Trading zones identify geographic areas where trade of water entitlement and/or allocation can generally occur with little or no limitation.**
- **The southern Murray–Darling Basin is an interconnected system of major rivers, and there are a number of different trading zones within this system. Trade is possible between some of these connected zones and trading rules describe the way in which water shares and allocations can be traded from one zone to another.**
- **Trading rules for Victorian water entitlements and allocations can be found at the Victorian Water Register website.**
- **Information on trading rules for NSW entitlements is provided at the NSW Department of Water and Energy Water Register website.**

		From Trading Zone																		
To Trading Zone	Zone	1A	1B	1L	2A	2B	3	4A	4C	5A	6	6B	7	10A	10B	11	12	13	14	
	1A	a	a				b	a	a	a	b	b	b	b	b	b	b	b	b	b
	1B	a	a				b	a	a	a	b	b	b	b	b	b	b	b	b	b
	1L	a	a	a			b	a	a	a	b	b	b	b	b	b	b	b	b	
	2A				a	b														
	2B				a	a														
	3	a	a				a	a	a	a	b	b	b	b	b	b	b	b	b	b
	4A	b	b				b	a	a	b	b	b	b	b	b	b	b	b	b	b
	4C	b	b				b	a	a	b	b	b	b	b	b	b	b	b	b	b
	5A	b	b				b	b	b	a	b	b	b	b	b	b	b	b	b	b
	6	a	a				a	a	a	a	a	a	a	a	a	a	a	a	a	a
	6B	a	a				b	a	a	a	b	a	b	b	b	b	b	b	b	b
	7	a	a				a	a	a	a	b	a	a	b	b	a	a	a	a	a
	10A	a	a				a	a	a	a	a	a	a	a	a	a	a	a	a	a
	10B	a	a				a	a	a	a	a	a	a	a	a	a	a	a	a	a
	11	a	a				a	a	a	a	b	a	a	b	b	a	a	a	a	a
	12	a	a				a	a	a	a	b	a	a	b	b	a	a	a	a	a
	13	b	b				b	b	b	b	b	b	b	b	b	b	b	b	a	b
	14	b	b				b	b	b	b	b	b	b	b	b	b	b	b	b	a

Figure 2: Trading Rules Summary (from Victorian Trading Rules).

The southern Murray–Darling Basin is an interconnected system of major rivers, and there are a number of different trading zones within this system. Trade is possible between some of these connected zones and trading rules describe the way in which water shares and allocations can be traded from one zone to another. Figure 3 shows a map of the trading zones for the southern MDB.

Trading rules for Victorian water entitlements and allocations can be found at the Victorian Water Register website.

Information on trading rules for NSW entitlements is provided at the NSW Department of Water and Energy Water Register website and in the water sharing plans for each system which are also available via the same website.

Irrigators who are shareholder customers of NSW private irrigation corporations like MIL will need to apply to their supply corporation for approval to any trade transactions. The irrigation corporation can also advise on any special rules that may apply

to these trades. If the trade of entitlement or allocation involves trade from a seller within the private corporation to a buyer outside the corporation’s supply region, then the corporation will also need to lodge an application with NSW Department of Water and Energy (for entitlement trades) or State Water (for allocation trades) to amend the corporation’s overall WAL or Water Allocation Account.

Figure 2 is an extract taken from the trading rules on the Victorian Water Register website and it shows the trading opportunities possible for Victorian entitlements and allocations. Water entitlements can trade between ‘from’ and ‘to’ zone combinations denoted by an ‘a’ indicating the trade is always possible. Allocations can trade between ‘from’ and ‘to’ zone combinations denoted by an ‘a’ (always possible), or between combinations denoted by ‘b’ (backtrade), subject to any limits on backtrades that may apply. The full trading rules also contain details of other rules that apply to trades.

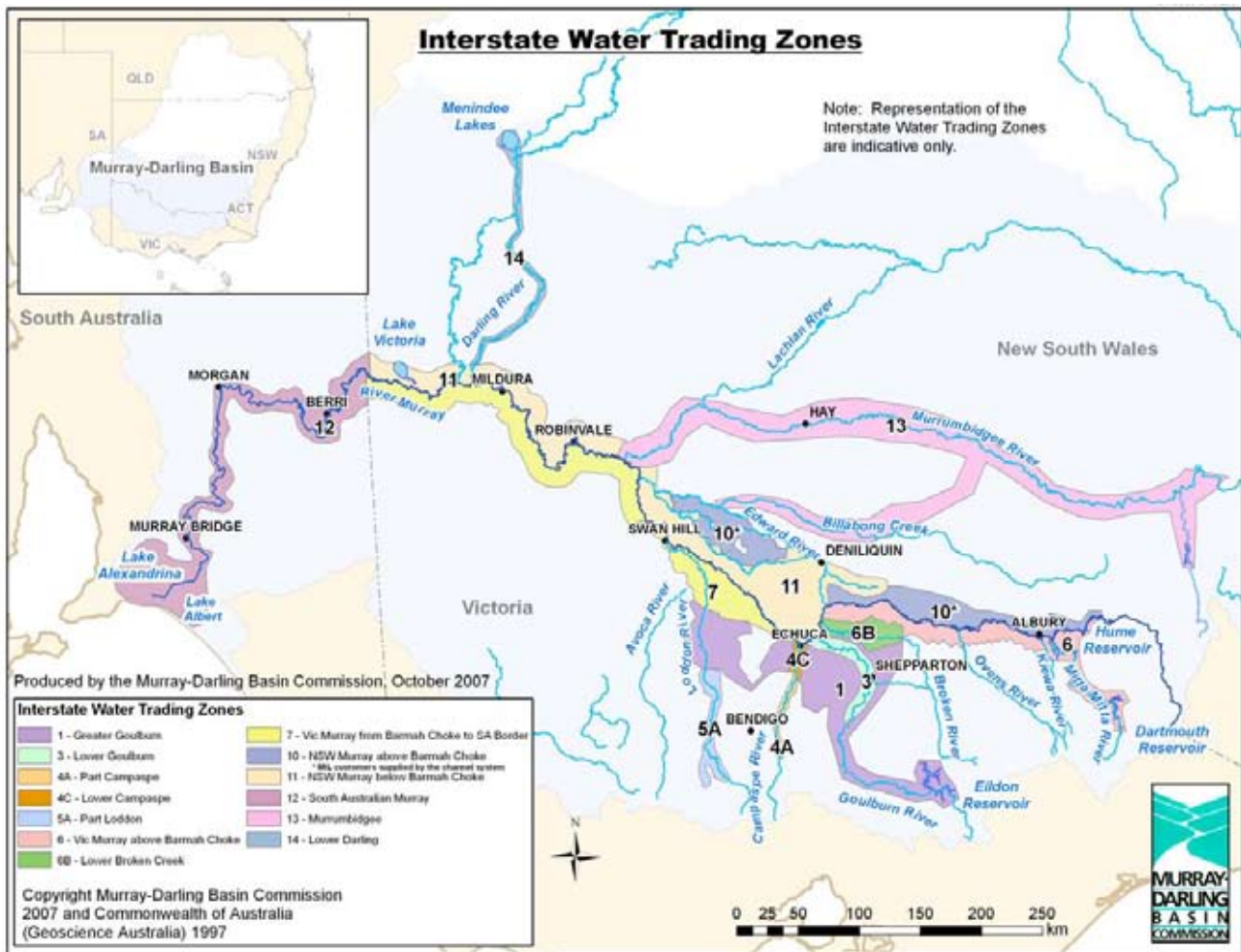


Figure 3: Interstate Water Trading Zones.

Some important trading rules to know

Barmah Choke Limits

The Barmah Choke is a natural restriction in the River Murray, formed by movement of the earth's crust along a fault line. The River Murray downstream of Lake Hume can handle flow rates of around 25,000 ML/day within the river channel. The Barmah Choke can only cope with approximately 8,000 ML/day (at Barmah) before water spills out of the river channel and starts to flood through the Barmah/Millewa Forest. In many years, demand for water downstream of the Choke requires the river to operate at this maximum capacity for extended periods throughout the irrigation season. If water entitlements issued above the Choke (e.g. in Zone 6) were traded downstream to below the Choke (e.g. to Zone 7), then this would increase the demand for water to flow through the Choke and would exacerbate potential supply restrictions for irrigators in the lower Murray system. Therefore water entitlements cannot be traded from above the Choke (Zone 6) to below the Choke (Zone 7).

SUMMARY

Important trading rules

- Water entitlements cannot be traded from above the Barmah Choke (Zones 6 or 10) to below the Choke (Zones 7 or 11).
- Transfer of a water share may be refused if the net volume of water shares traded out of an irrigation area or district in any financial year reaches 4% of the total volume of water shares in that irrigation area or district.
- The Victorian trading rules for regulated systems allow for backtrade of allocations from downstream systems to upstream systems in some circumstances, e.g. from the Murray system to the Goulburn system.

For the same reasons, allocation can not usually be traded from upstream to downstream of the Choke. If there has been prior allocation trade from below the Choke to above it, then an equivalent volume of allocation can be traded downstream through the Choke, so that the overall situation in regard to channel capacity constraints is no worse than it would have been before the trades took place. In recent low allocation years, the MDBA has been able to determine that there was no significant risk on capacity restrictions on the Murray because of the low volumes of water available, and has announced temporary lifting of the limits on allocation trade through the Choke in part or all of particular years.

4% limit on trades out of irrigation areas

The Victorian trading rules include a provision that a transfer of a water share may be refused if the net volume of water shares traded out of an irrigation area in any financial year reaches 4% of the total volume of water shares in that irrigation area. There are separate 4% limits for high and low reliability water shares.

NSW irrigation companies also apply similar 4% limits on the volume of water entitlements that can transfer out of their district in any year.

There are no similar limits on the volume of water shares sold by river diverters in Victoria or NSW.

In July 2008, the Council of Australian Governments agreed to explore options for increasing the 4% trade limits to facilitate more open trade. In June 2009, the Victorian and Commonwealth Governments reached agreement on a range of measures in order to facilitate the Commonwealth Government's \$3.1 billion buyback of water entitlements for the environment. The key aspects of this agreement include:

- the Commonwealth Government can purchase up to 300 GL of water entitlements over the five years from 2008/09, over and above any purchases possible under the current 4% annual trade limits;

- there will be greater co-ordination of Commonwealth purchases with the Northern Victorian Irrigation Modernisation Project; and
- Victoria will begin to phase out the 4% limit on net trades of water shares out of irrigation districts from July 2011, with a view to removing the cap entirely by 2014.

Information on the volume of water shares traded out of each Victorian irrigation area is available from the Victorian Water Register website. NSW irrigation company websites will also usually provide information on whether the 4% limit has been reached for their districts.

10% non water user limits (Victoria only)

When the Victorian Government proposed the separation of water and land in a Green Paper in 2003, irrigation communities raised a number of concerns about the risks of speculation in water markets. The government responded to these concerns by introducing a 10% limit on the volume of water shares in any system that could be owned by non-irrigators.

For the purposes of this rule, a system is defined at the river basin level, and the test for ownership by an irrigator is via the linkage of the water share to a water use licence. This means that up to 10% of the water shares in the Goulburn system (Zones 1A, 1B and 3) or the Murray system (Zones 6, 6B and 7) or the Broken system (Zones 2A and 2B), etc, can be held without being associated with a Water Use Licence. This category is also called non-water user (NWU) limits.

Following a review of the non-water user limits, the Victorian government announced in May 2009 that it will amend the legislation to remove the 10% limit on water that can be held without being associated with land. These changes are planned to be in place by the end of October 2009.

Information on the volume of water shares in the non-water user limits can be found on the Victorian Water Register website.

Backtrades

The Victorian trading rules for regulated systems allow for backtrade of allocations from downstream systems to upstream systems in some circumstances. The most significant backtrade opportunity is from the Murray system to the Goulburn system, but other backtrade opportunities can arise. The Murray to Goulburn backtrade is explained below as an example, but similar principles apply for other backtrade opportunities.

Backtrade is possible as a result of downstream trade from the Goulburn system to the Murray. Over a number of years, Goulburn water entitlements have been permanently traded into the Murray system under exchange rate trading arrangements. When seasonal allocations are made for the Goulburn system, water is allocated against these Goulburn system entitlements that have been traded into the Murray. The water is tracked via the Goulburn Valley Account. This account represents water held in the Goulburn system storages for release to the Murray.

Other actions that can increase the available balance in the Goulburn Valley Account include allocation trade from the Goulburn to the Murray and water generated through water savings projects undertaken in the Goulburn system as part of the Snowy or Living Murray programs.

If the Murray system operator calls for water to be released from the Goulburn to the Murray to help meet demands, the account is reduced accordingly. When there is a positive balance in the Goulburn Valley Account, allocation can be traded 'back' from the Murray to the Goulburn. The account is reduced to reflect these backtrades and the water that would have been released to the Murray is instead redirected into the Goulburn system to cover the backtraded volumes. The Goulburn Valley Account (and other similar inter-valley accounts) uses continuous accounting, so that any balance in the account at the end of the water year carries over to become the opening balance for the next water year.

Details on the volumes of various allocation backtrade opportunities are available on the Victorian Water Register website.

Similar backtrade opportunities can arise in NSW, for example from the Murray to the Murrumbidgee system. State Water can provide advice on the rules for backtrade and any limits that may apply.

Maximum holding limits

In Victoria, allocations can currently only be purchased by holders of a water use licence (or by the environmental manager or urban water corporation). Additionally, irrigators can only hold a maximum of twice the annual use limit specified in the water use licence for the property (i.e. 200% of the maximum water volume that can be applied to the property). This is called the holding limit.

Similarly, the volume of water shares that can be associated with a property cannot be more than twice the annual use limit for the property.

Tagged water trading

Water entitlements have a number of attributes, or characteristics. One of the important attributes of an entitlement is its source trading zone. This defines the reservoirs or supply system that the entitlement originates from and where the allocations are stored until released for use. The source of a water entitlement does not change if it is traded to a new owner or new location.

If the entitlement is traded into a different trading zone or system, it will be 'tagged' so that the available allocations from the entitlement can be delivered for use at the new location. Tagging can be required for inter-system trades within the same state and is usually done automatically as part of the trade approval. If an interstate entitlement trade is involved, you may need to apply to your local water supply corporation to establish the tagging arrangements to enable the interstate allocations to be delivered to the new location.



5. Conducting a trade

There are different processes involved for each type of trade transaction. Also, each state has different processes and application forms. If you are not sure what to do, the first step in planning a water trade is to contact your water supplier to check the arrangements that apply to the type of trade you are considering. Alternatively, water corporations and state water management departments provide information on trade processes and requirements on their websites.

NSW private irrigation corporation customers may also need to check with their supply corporation to determine what approvals and applications are necessary for any trade they may be considering.

If you are intending to use a water broker to conduct your trade, they should be able to advise you on the processes you will need to follow.

SUMMARY

Conducting a trade

- **There are different processes involved for each type of water trade transaction.**
- **If you are not sure what to do, the first step in planning a water trade is to contact your water supplier to check the arrangements that apply to the type of trade you are considering.**
- **In order to ensure your trade is approved as quickly as possible, you should ensure that all required information is provided and lodged with the approval authority.**

Transfer of a water entitlement

In Victoria, all applications for transfer of water entitlements must first be assessed and approved by the appropriate water corporations. Once the transfer has been approved and the buyer and seller have settled the sale transaction, the change of ownership must be advised to the Water Registrar so the change of ownership can be recorded in the Victorian Water Register.

In NSW, water entitlement trades that involve a change in the location where the water will be extracted require approval from the Department of Water and Energy (some transfers of ownership may not require DWE approval – check with DWE or your water broker to confirm). Once the transfer has been approved by DWE and the buyer and seller have settled the sale transaction, the Department of Lands must be advised of the change of ownership so it can be recorded in the NSW water access licence Register.

If you are a customer of one of the NSW private irrigation corporations, you will also need approval from your water supplier for a water trade. Contact your water corporation to confirm their requirements.

If the trade is an interstate entitlement transfer, you may also need to submit an application to have the allocations from the interstate entitlement tagged for delivery to your property.



Allocation trade

In Victoria, applications for allocation trades are made to the seller's water corporation. In NSW, State Water processes allocation trade applications.

If you are a customer of a NSW private irrigation corporation, an application for an allocation trade must be lodged with your supply corporation on their form. If the trade involves a transfer of allocation to a buyer outside the corporation's supply area, then the corporation will make the necessary additional application to State Water for the transfer from the corporation's overall water allocation account to the buyer.

It is important to ensure that all the details for the trade are accurate and the financial arrangements are clear and agreed by all parties, because once the trade is approved, the allocation will be moved to the buyer's water allocation account.

Interstate allocation trades

Interstate allocation trades are similar to trades within a state, but they must be processed and recorded by both states involved in the trade. In summary, the key steps for interstate allocation trade are:

- Allocation trade forms must be completed for both the buyer's and the seller's state.
- Submission of applications:
 - seller's fee, seller's original form, copy of buyer's form must be submitted to the seller's authority
 - buyer's fee, buyer's original form, copy of seller's form must be submitted to the buyer's authority.
- Approval times can be longer than for a within state allocation trade as there are two authorities and two separate systems involved.

Important issues for trade applications

In order to ensure your trade is approved as quickly as possible, you should ensure that all required information is provided and lodged with the approval authority. Some issues you should check include:

- Have you used the correct form for the particular transaction you wish to undertake and is it accompanied by the current application fee?
- Have you checked the trading rules to ensure that the trade is feasible?
- Have all the owners or their authorised representatives signed the forms?
- Are the buyers accurately identified and have they signed the forms (if required)?
- Is all the required information accurately completed? Incomplete forms cannot be approved and may be refused or returned to the applicant.
- Do you need approval from parties with a registered interest (e.g. mortgage holders) in a water entitlement before the ownership of the entitlement can be transferred?
- Are there any outstanding charges owed to the seller's water corporation that may prevent the trade being approved?
- If you are applying for a trade of water entitlement do you understand what will happen to allocations already made against the entitlement and are there any additional allocation trade applications required to implement the buyer's and seller's intentions?

Using a water broker

There are a range of options for arranging a water trade. The key options are private trades or trades arranged through a water broker.

Private trades

Private trades are arranged directly between the buyer and seller and the necessary applications are lodged with the water authorities following the processes described above.

Water brokers

Water brokers have emerged to help meet the needs of buyers and sellers. Private trades can tend to be limited to local areas or direct farming associates. Brokers can provide a useful service of matching buyers and sellers from across a larger geographic area. They can also provide services in relation to the preparation and lodgement of applications for trades and liaison with various water authorities.

There are two main forms of water broking services. There are a range of brokers who list parcels of water that irrigators wish to buy or sell and then match these buyers or sellers, much in the way that a real estate agent will match up buyers and sellers of properties. A number of water brokers also offer their services online over the internet which can be a convenient option. These broker websites can also be a valuable source of trade information.

The other main form of water broking service is the water exchange model, where buyer and seller bids are placed into a weekly pool and a 'pool price' is struck that establishes the market price that applies to all trades that occur on that exchange day. Watermove is probably the best known example of this type of pooled exchange trading.

SUMMARY

Using a water broker

- **Water brokers can provide a useful service of matching buyers and sellers across a larger geographic area. They can also provide services in relation to preparing and lodging applications for trades and liaison with various water authorities.**
- **There are no special laws or regulations applying to Water Brokers, but they are subject to the general fair trading laws that apply to businesses in all states.**
- **The Australian Competition and Consumer Commission (ACCC) has recently developed three useful brochures to help irrigators and water brokers understand their rights and obligations – these can be found on the ACCC website www.accc.gov.au.**

Working with brokers

Allocation trades and transfers of water shares can be high value transactions with significant benefits for farm businesses. As with any important business transaction, there are risks and traders need to understand what they are committing to as either a buyer or seller of allocation or water share. You should ensure you understand what will happen if your trade is approved, and also what happens in the event that your trade is not approved by the relevant water authorities.

There are no special laws or regulations applying to water brokers, but they are subject to the general fair trading laws that apply to businesses in all states. The Australian Competition and Consumer Commission (ACCC) has recently developed three useful brochures to help irrigators and water brokers understand their rights and obligations. These can be found on the ACCC website at www.accc.gov.au/content/index.phtml/itemId/849216. This site also provides useful information and tips on how to select a water broker, and what action you can take if you experience problems in your dealings with a broker or with an exchange.

Finding a water broker

There are a range of water brokers operating across northern Victoria, southern NSW and SA that can help irrigators with water trading.

Most will advertise in local media and farming publications. Water brokers can also be found listed in the Yellow Pages. Lower Murray Water also publishes a list of water brokers on their website at www.lmw.vic.gov.au.

How do I set a price to buy or sell water?

Determining what is a 'fair market price' for water trades is a complex and difficult challenge, and there is no simple answer.

As with buying or selling any product or commodity where the value varies over time, information on prices paid and volumes trading in the market are an important aid in helping to determine an appropriate price.

State water management departments are increasingly providing a large amount of information on water trading, including volume and price information for both water entitlement and allocation trades. Water broker websites can also be useful sources of information. Appendix 2 provides details of a range of websites that can provide data to help understand and monitor water markets.

Transfers of water entitlements are a long-term investment in a water access entitlement, and the value of these entitlements is largely based on long-term financial planning considerations for the business. This could include questions such as:

- What is the reliability of the water entitlement and how much water allocation can I expect to receive from on average?
- What additional production will the water entitlement support, and what is the value of this production to the profitability of the business?
- What payback period is appropriate for purchasing this type of business asset?
- How much are other buyers currently paying for these entitlements?
- What other options are available for growing my business and how does purchase of water shares compare with these alternatives?

As a general rule prices for water entitlements tend to be less volatile than for allocation trades, but generally they are a significant investment and need careful consideration. As with other major investments, you may also wish to seek professional advice on the financial implications of a water entitlement purchase.

Significant volumes of allocation are traded each year in the major markets within the southern MDB, and there is a wealth of data available (refer Appendix 2 for websites).

SUMMARY

Setting a price for water

- **Determining what is a 'fair market price' for water trades is a complex and difficult challenge, and there is no simple answer.**
- **State water management departments and water broker websites can also be useful sources of information on volume and price information for both water entitlement and allocation trades.**
- **As with other major financial decisions, you may also wish to seek professional advice on the pricing and financial implications of a water sale or purchase.**

Water allocation prices can vary markedly from season to season and within a particular season. It is incorrect to assume that because allocation traded at a particular price last year, it will trade at the same price this year. Allocation trade prices reflect the range of issues that affect farm decision-making. Traders consider a number of matters when determining how much they should offer to buy or sell allocations, including:

- seasonal allocation compared with previous seasons;
- water use in current season compared with previous seasons;
- gross margins or likely returns that you or other potential traders could receive from using the water;
- cost of alternatives. (e.g. dairy farmers buying feed supplements);
- prices paid for water in the trader's region and/or trading zone;
- prices paid for water in other regions and trading zones;
- price trends for previous seasons, particularly in regard to price changes at the opening of the irrigation season and towards the end of the season; and
- volumes available for sale or purchase in the region and/or trading zone.

Again, professional advice from another party may be of assistance in establishing buy or sell prices for allocation trades.

Historic information on water trading

Allocation trade is the most established type of trade in the Basin, and there is quite a deal of information available. For example, Figure 4 shows the volumes of allocation trade in Northern Victoria since trade was introduced in 1991. This graph highlights the steady trend in growth of annual allocation trade volumes since 1994/95. Figure 5 provides allocation trade data for the NSW Murray system.

Information on prices paid for water trades is now starting to be collected for all trades, and state government water management department websites and water entitlement register websites now provide ready sources of data on trade prices.

Similar information on trade in water entitlements is not as readily available and it can be more difficult to interpret due to reforms which have changed the nature of the 'product' for sale and progressively freed up entitlement trade. The separation of water from land, which has occurred at different times in each state, is an example of these types of reforms.

Goulburn-Murray Water customers have been active in water entitlement trading for some years and G-MW has monitored and reported information on trading activity (see Figures 5 and 6). Murray Irrigation Limited also tracks and publishes data on transfers of water entitlements between MIL customers (see Figures 6 and 7).

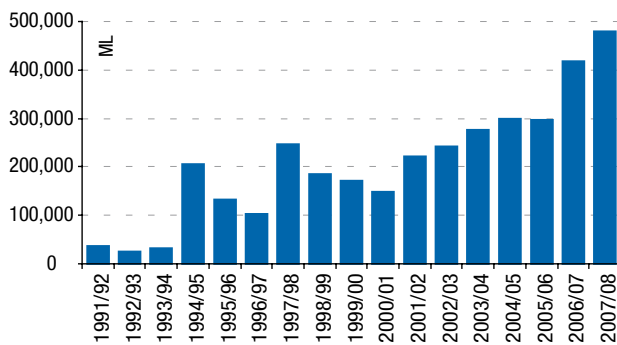


Figure 4: Annual volumes of allocation trade in Northern Victoria (temporary trade).

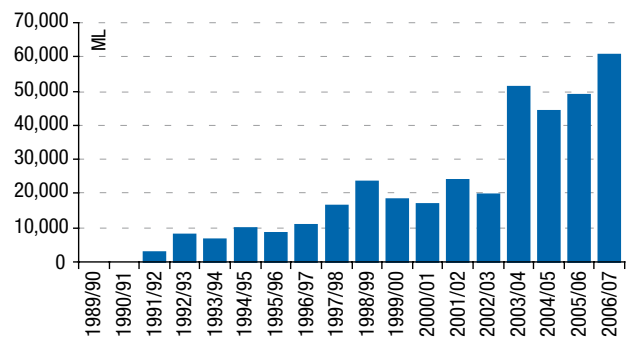


Figure 6: Annual transfers of water entitlements for Goulburn-Murray Water (permanent trade).

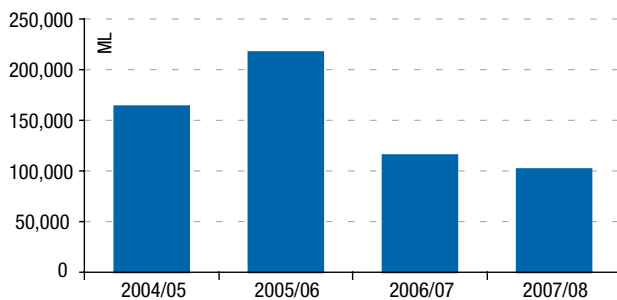


Figure 5: Annual volumes of allocation trade in NSW Regulated Murray (temporary trade).

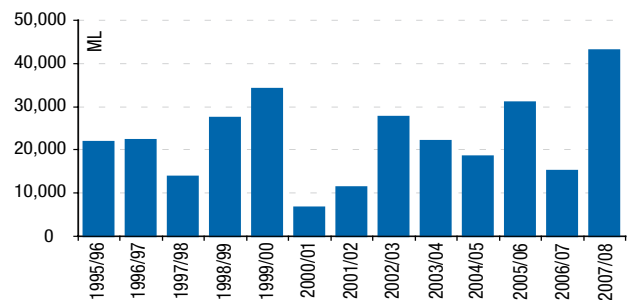


Figure 7: Internal permanent transfers for Murray irrigation.

Table 3 shows the net movement of water entitlement trade for individual irrigation areas within G-MW over the same period. It should be noted that the data provided relates to volumes of high reliability Water Rights/Diversion Licences. Up until the end of 2006/07, prior to the unbundling of water entitlements in northern Victoria, the low reliability Sales product was 'attached' to water rights and the right to access sales moved with the permanent trade of a water right or diversion licence.

Further information on volumes and prices for water trades can also be found on water broker and water exchange websites. Appendix 2 provides addresses of some websites that may be of assistance.

Table 3: Net Water Entitlement Trade for G-MW.

Irrigation Area	Cumulative Net Entitlement Trade 1991/92 to 2006/07 (Permanent Trade)	Change
Shepparton	-17,154	-9.3%
Central Goulburn	-35,316	-9.0%
Rochester	-9,045	-4.8%
Campaspe	-1,311	-6.2%
Pyramid-Boort	-40,521	-16.5%
Murray Valley	-1,675	-0.6%
Torrumbarry	-50,284	-12.4%
Goulburn System Diversions	-4,178	-3.8%
Murray System Diversions	-9,403	-8.2%



6. Summary

Water trade has become a vital tool to assist irrigators in managing their farm businesses. As water availability responds to drought and climate change, trade will become increasingly important in enabling the available water to be redistributed through water markets.

Governments at the state and federal level are also aware of the importance of water trade and are committed to expanding and improving trade opportunities.

Further development of trade will continue to offer more choice and flexibility to irrigators in how they can use trade as part of their farm management. As the number of trade options increase, the choices facing farmers will become more complex.

Water trades are often high value transactions. To make the most of these opportunities, irrigators need to make sure they understand the trading systems and rules. The terms and conditions of any trading transaction also need to be clear to all the parties involved. As with any important farm decision, careful investigation and planning, supported by professional advice if necessary, can help ensure that water trading adds the maximum value to your farm business.

Appendix 1: Glossary of terms for water trading in Victorian regulated water systems

10% Non-water user limit	The proportion of the total volume of water shares in each water supply system that can be held as unassociated water shares (see also unassociated water shares below). In May 2009 the Victorian Government announced it will remove the 10% non-water user limit.
4% Trade-out limit	A limit on the annual net trade of the volume of water shares out of an irrigation district. The 4% limit for each irrigation area is determined on 1 July at the start of each water year. The 4% limit will begin to phase out from July 2011, with a view to removing it by 2014.
Allocation bank account	Allocations made throughout the irrigation season are credited to the allocation bank account (ABA) of each water share holder. The balance of an ABA is the amount of water available to the owner of the associated water share for the current season.
Allocations	A percentage of the water share volume that is actually available to water share holders in a given water system during a given irrigation season. Allocations in each water system are set by the managing authority at intervals throughout the irrigation season after assessment of the available water resources.
Annual use limit	The maximum volume of water that in any 12-month period may be applied to the land specified in a water-use licence or water-use registration.
Declared water system	A water system that has been declared in accordance with section 6A of the Water Act 1989. Water rights and take-and-use licences in declared water systems have been converted into unbundled entitlements.
Delivery share	An entitlement to have water delivered to land in an irrigation district and a share of the available water flow in a delivery system.
Delivery system	The system for the delivery of water for irrigation. This means an irrigation district or, for private diverters, a river reach on a regulated river.
Extraction share	A share (in terms of unit volume per unit of time) of the total amount of water that can be drawn from a water system at a certain point.
High-reliability water share	A water share against which seasonal allocations made as a first priority. High-reliability water-shares are expected to reach 100% allocations in 95 years out of 100 (based on repeat historic inflows over the 100-year period to 1994/95).
Irrigation area	A geographic area with defined boundaries within which water is distributed for irrigation using infrastructure owned and operated by a water authority.
Limited term transfer	The transfer of a right to future allocations under a water share for a limited period (lease) to the owner or occupier of land specified in a water-use licence or registration.
Low-reliability water share	A water share with a relatively low reliability of supply. In northern Victoria, these shares will be of the available water once there is enough water to meet higher-reliability water shares in the current year, and, with minimum inflows, to meet higher-reliability water shares in the following year.
Regulated water system	A water system where the flow of the river is regulated through the operation of major storages or weirs to secure water supplies
Reliability	Water shares are classed according to their reliability, which is defined by the frequency with which full seasonal allocations are expected to be available. Most water shares are classified as either high-reliability or low-reliability water shares.
Trading zone	A defined area within which trade between users can always occur, or can always occur subject to a few set conditions. Trade between trading zones may in some cases also be possible subject to the conditions defined in the trading rules.
Trading zone source	The trading zone that determines where the water share and allocation can be traded and where the allocation can be used.

Trading zone use	The trading zone where the allocation is used. Can be different to Trading Zone Source under a tagging regime in regulated systems.
Unassociated water share	Water shares whose owner does not also own or occupy land covered by a water-use licence and nominated for the water allocation use. These water shares are held independently from land.
Unbundling	The conversion of a prior water right or take-and-use licence in a declared water system into three separate entitlements being: <ul style="list-style-type: none"> • a water share; • a delivery share or extraction share; and • a water-use licence.
Unregulated water-system	A river system where no major dams or weir structures have been built to assist in the supply or extraction of water.
Water allocation trade	The transfer of a volume of allocation available in the current year.
Water corporation	Charged with supplying water to townspeople, farmers and other water users across Victoria for urban, industrial and commercial use. They administer the diversion of water from waterways and the extraction of groundwater. The authority must provide the service of delivering water to the owner or occupier of each serviced property in its irrigation district at the volumes and for the periods determined by the Authority. The functions of a water authority in relation to their irrigation district include: <ul style="list-style-type: none"> • providing, managing and operating systems for the delivery of water; • identifying community needs related to irrigation, drainage, salinity mitigation; • planning for future needs of the community relating to these matters; and • developing and implementing programs for improved irrigation and drainage and salinity mitigation practices together with the function of investigating any matters related to these functions.
Water share	A legally recognised, secure share of the water available for use in a defined water system. A water share is specified as a maximum volume of seasonal allocation that may be made against that share. Water shares may be high-reliability or low-reliability
Water share transfer	The transfer of ownership of a water share (Note that the water allocations already granted do not transfer and the transfer is absolute.)

Source: The Victorian Water Register website; <http://www.waterregister.vic.gov.au/>

Note: A glossary of NSW terminology is also available at the NSW Water Management Registers, Licence & Trading Statistics website; <http://www.wma.dwe.nsw.gov.au/wma/>

Appendix 2: Useful websites for water trading

There is a wide range of information on the internet that can be of use if you are considering water trading. Many sites are being improved and the information available expanded, so it is often worth revisiting sites to check if new information of interest to you has been added.

Government water registers and water trading data

1. Victorian Water Register (www.waterregister.vic.gov.au) is the primary site for water trading information covering unbundled entitlements in Victoria. It is the official site for the Victorian Water Register and provides a range of information, including:
 - A copy of record for a water share. This is the water trade equivalent of a title search and provides information on the water share characteristics and its ownership (charges apply).
 - Water share statistics, including the volume of various types of water share on issue in each system
 - A wide range of water trading data including full trading rules and trading zone maps; information on volumes of trade compared to 4% and 10% trading limits; backtrade opportunities available (e.g. volumes of Murray to Goulburn allocation trade possible) and reports on historic trading data.
 - Trade data including volume and price information collected for all trades.
 - A range of downloadable application forms and details of the fees for various transactions.
 - A facility to track the status of your allocation trade. If you note down the identification number from the pre-numbered form, you can enter this into the website and check if your application has been completed (either approved or refused) or is still being processed.
2. NSW Department of Water and Energy: Water Management Registers, Licence & Trading Statistics (www.wma.dwe.nsw.gov.au). This site provides a range of information on NSW water

entitlements, trading and other applications and transactions under the *Water Management Act 2000*, including:

- Approvals
 - status of applications for approvals, including current advertisements; and
 - issued approvals, including conditions.
 - Water access licences information and transactions
 - licence conditions;
 - available water determinations;
 - water allocation assignments (formerly known as temporary trades), including trade volumes and price data; and
 - assignment of shares (formerly known as permanent trades), including trade volumes and price data.
 - Water access licence and use statistics
 - summaries by water source of number of licences, available water determinations and water usage; and
 - summaries by water source of water allocation assignments.
3. NSW water access licence Title Search (www.lpi-online.lpi.nsw.gov.au). The NSW Department of Lands records land title information and water access licence title information. Title searches and ownership records for water access licences are available at this site (charges apply).
 4. SA Department of Water, Land and Biodiversity Conservation – Water Trading in South Australia (<http://e-nrims.dwlbc.sa.gov.au/wtr/>)

This site lists every approved water trade in the current water year for each of the prescribed area in South Australia. Annual summaries of water trading activities are provided for every year from 2000/01.

5. National Water Commission (www.nwc.gov.au).

This site provides a large range of general information on progress with water reforms and water trading issues. It also includes a number of water trading publications including the Australian Water Markets Report 2008, which is a consolidated national summary of water markets, featuring trading summaries for each State and Territory, as well as information about their various operational practices, pricing and governance arrangements

Seasonal allocation information

1. Northern Victoria: Goulburn-Murray Water (www.g-mwater.com.au)
2. NSW: Department of Water and Energy (www.dwe.nsw.gov.au)
3. SA: Department of Water, Land and Biodiversity Conservation (www.dwlbc.sa.gov.au)

Water trading sites with price information

A range of water broker and water exchange sites provide data on water trading, volumes traded and prices (although generally only for trade conducted through that broker/exchange). Here are some sites that may be of interest.

1. Watermove (www.watermove.com.au)
2. Murray Irrigation Limited Water Exchange (www.murrayirrigation.com.au/watexch)
3. Murrumbidgee Water Exchange (www.murrumbidgeewater.com.au)
4. Transferable Water Exchange (www.planright.com.au)
5. Waterfind (www.waterfind.com.au)
6. Water Exchange (www.waterexchange.com.au)
7. Commonwealth Department of Environment, Water, Heritage and the Arts (www.environment.gov.au/water/policy-programs/entitlement-purchasing/market-prices.html)

Water authorities, irrigation supply companies and government water management agencies

These sites offer a range of information on water trade issues, water management policies, seasonal allocations, irrigation deliveries and water resource data including storage levels and river flows.

1. Goulburn-Murray Water (www.g-mwater.com.au)
2. Lower Murray Water (www.lmw.vic.gov.au)
3. Murray Irrigation Limited (www.murrayirrigation.com.au)
4. Murrumbidgee Irrigation (www.mirrigation.com.au)
5. Coleambally Irrigation (www.colyirr.com.au)
6. Murray–Darling Basin Authority (www.mdba.gov.au)
7. NSW State Water (www.statewater.com.au)
8. NSW Department of Water & Energy (www.dwe.nsw.gov.au)
9. NSW Water Information (www.waterinfo.nsw.gov.au)
10. SA DWLBC (www.dwlbc.sa.gov.au)
11. SA River Murray Operations (www.riverland.net.au)
12. Victorian DSE (www.dse.vic.gov.au)
13. ACCC (www.accc.gov.au)

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