

## FACT SHEET

# SFE State Water Hunter Index

The SFE State Water Hunter Index includes two State Water storages in the Hunter Valley - Glenbawn Storage near Scone, and Glennies Creek Storage near Singleton. The following table sets out the capacities of these two storages.

Storage	Capacity (ML)	Active Capacity (ML)	Inactive Capacity (ML)	Percentage of Total Index
Glenbawn	749,840	735,130	14,710	72%
Glennies Ck	283,370	282,300	1,070	28%
<b>Total</b>	<b>1,033,210</b>	<b>1,017,430</b>	<b>15,780</b>	<b>100%</b>

The 'Capacity' is the volume of the storage at full supply level. The 'Active Capacity' is the volume of storage between the full supply level and the lowest outlet works. The 'Inactive Capacity' is the volume of storage below the lowest outlet works that is normally not available.

### The Methodology to Calculate the SFE State Water Hunter Index

The SFE State Water Hunter Index is calculated each day as the sum of the active storage in each storage divided by the total active capacity.

$$\text{SFE State Water Hunter Index} = \frac{\text{Sum of the active storage volumes} \times 100\%}{1,017,430\text{ML}}$$

The 'active storage volume' is the volume on the day less the inactive capacity. When any storage drops below the inactive capacity, that active storage is said to be zero. This may occur in droughts when the active storage is emptied and the remaining inactive storage continues to evaporate. When any storage exceeds the full supply level, the active storage is set to 100%. This occurs during floods when the storage 'surcharges' and flows begin over the spillway.

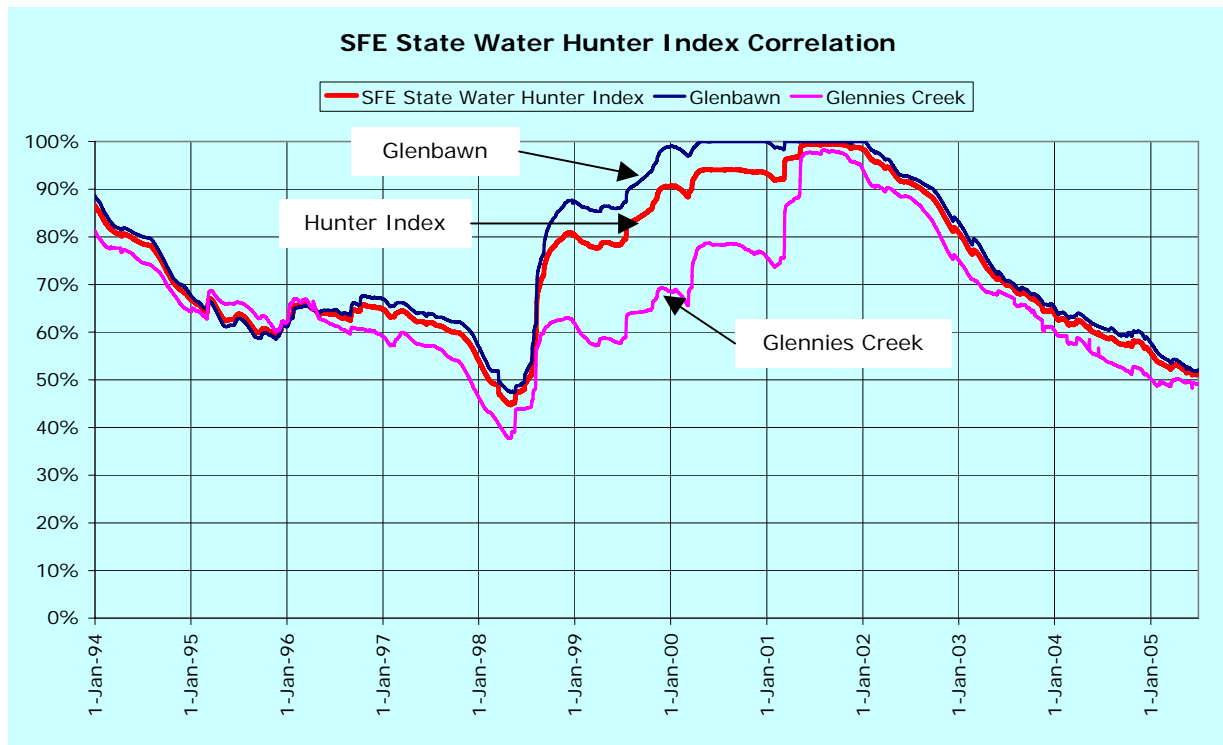
The Index does not have a direct correlation with the amount of water made available to irrigators. However, allocations are likely to be high when the Index is high and low when the Index is low.

The Index and any possible futures contracts do not represent the physical delivery of water or the use of water.

## SFE State Water Hunter Index Correlation

The following chart shows the historic behaviour of the individual storages against the index over the period 1 January 1993 to 30 June 2005.

**Note: charts are best viewed in colour**

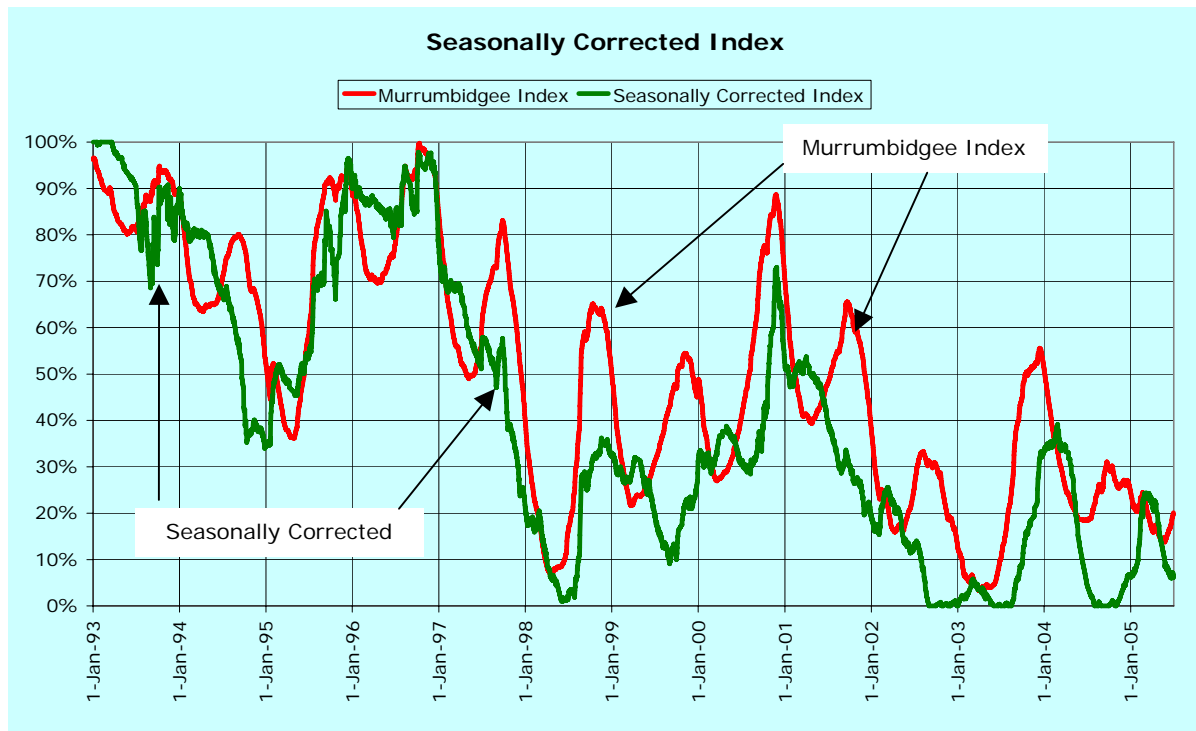


The chart shows:

- There were poor climatic seasons in 1995-1998 and 2003-2005.
- There were good climatic seasons in 1999-2002.
- Glenbawn and Glennies Creek operate in parallel to supply the Hunter River. Releases from each storage are managed to maintain a balance between Glenbawn and Glennies Creek, however inflows to each can vary from their catchments.
- There is good correlation between the behaviour of the storages. Both storages generally rise and fall at the same time due to wet and dry conditions.
- In periods where the storages are at different levels, such as January 2000, the index gives a better indication of overall conditions in the valley than does either storage.
- The index provides a better description of the overall seasonal conditions and water availability than either Glenbawn or Glennies Creek by themselves.
- Glenbawn has a stronger influence on the Hunter Index than Glennies Creek because Glenbawn is a larger storage.

## An Example of Seasonal Correction

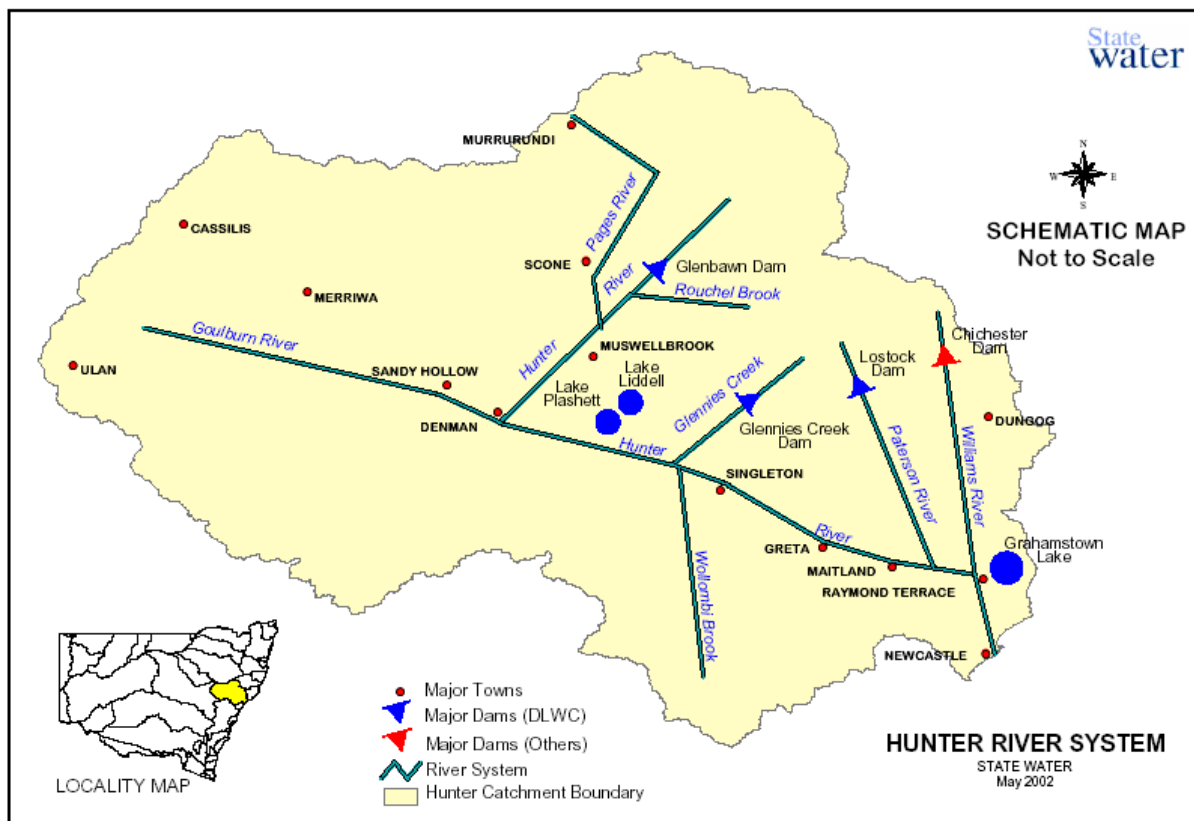
The following chart shows the Murrumbidgee Index and the Seasonally Corrected Index for the period 1 January 1993 to 30 June 2005.



- The red “Murrumbidgee Index” plots the combined storage of Burrinjuck and Blowering Storages, expressed as a percentage of the combined storage capacity.
- The green “Seasonally Corrected Index” ranks the storage index as a percentile exceedance for each day. The Seasonally Corrected Index tells whether the storage index is higher than normal (corrected indexes of above 50%) or lower than normal (corrected indexes of less than 50%).
- For example in late 1998 the storage index peaked at around 65%, while the Seasonally Corrected Index was about 35%. That is, in the latter months of the year a storage index of 65% is less than normal and quite low. This storage index ranks with only 35% of years expected to be lower than this.
- As a general rule when the storage index is high the seasonally corrected figures will also be high and when the index is low so are the seasonally corrected figures.
- The figures for 1993 and 1996 are amongst the highest expected, with Seasonally Corrected Indexes of more than 90%. While 1998 and 2002 to 2004 have had periods as low as will ever be expected to be experienced, with Seasonally Corrected Indexes of zero%.

- There are some significant differences between the two indexes. There are some periods where the storage index rises and the seasonally corrected figures fall, and visa versa.
- In the period plotted above the storage index rises to some extent each winter, however the Seasonally Corrected Index falls in some winters. This occurs in 1994, 1999, 2001 and 2002. Although the storages were rising in these winters they were rising much less than average, primarily because these were drier winters. Therefore the Seasonally Corrected Index falls, showing that there were declining conditions in those winters.
- The Seasonally Corrected Index has the potential to communicate more information about the state of the regions seasonal conditions, that is whether it is much wetter or drier than average.

**Schematic map relating to the Hunter Index**



*Produced by State Water for the benefit of its customers.*

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