STOCK WATER
LIMITED RESOURCE AFTER FIRE

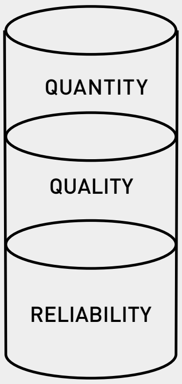
WATER STOCKTAKE: QUANTITY

Knowing where water is on your property, how much you have available and its quality is vital after a fire. Assessing your water resources involves:

- Personal knowledge of your property.
- Assesment of possible contaminants from runoff or storage containers.
- Continuous observation.
- Knowing the quantity of each water storage.
- Knowing the safe pumping rate from bores or wells.
- Being aware of any conditions (like cease-to-pump rules) in any water sharing plans for your area.
- Monitoring evaporation rates.
- Drawing on past experiences of water use during drought and long dry spells, e.g., which water storages are spring fed and which have had extremely poor quality water in the last 10-15 per cent.
- Knowing the duration of your eligibility for emergency supply.

The best way to manage and maintain stock water is to have reliable information about your property's water supplies. This means knowing where the water is, how much is available and whether it is 'fit for purpose'. A water stocktake will provide this vital information.

Farm water comes from a number of different sources. These may be natural sources such as rivers and channels, or they may be constructed in the form of dams, ground tanks, wells or bores. In emergencies you may import water from known or unknown sources carted or contained in known or unknown equipment. Whatever the sources, the suitability of water you have now and the water you need for the future depend on its quantity, quality and reliability.



Water on your property is an asset to be managed and maintained

STOCK WATER STORAGE

STEP 1: In a table like the one below, list all the water storages on your property that can be used for stock watering purposes.

STEP 2: Determine the width, length and depth of each water storage and fill in the calculation table accordingly.

STEP 3: Using the formula relevant to the water storage shape, calculate the surface area in square metres of each water storage and enter in the table.

STEP 4: Using the following formula, calculate the volume in cubic metres (m3) and enter the results in the table.
Volume (m3) = 0.4 x Surface Area x Depth
0.4 is a conversion factor that takes into account the slope of the sides of water storages.

STEP 5: Calculate the capacity of each water storage in megalitres (ML) by dividing the volume in cubic metres (m3) by 1000 and enter in the table.

STEP 6: Add up the storage capacity of all your water storages in the table to
give your Total Existing Water Storage Capacity.

(Extract from NSW Department of Natural Resources Updated March 2006 DIPNR 04_029)

Water storage name or number	Width (W)	Length (L)	Depth (D)	Surface area (WxL)	Volume (WxLx Dx0.4*)	Storage capacity
Ground tank 1	30m	30m	4m	900m^2	1,440m^3	1.4ml
Rams' dam	50m	75m	4m	3,750m^2	6,000m^3	6.0ml
Total stock water capacity						7.4ml

*0.4 is a conversion factor that accounts for the sloped sides of water storages.

YOUR MAJOR WATER STORAGES ARE CRITICAL AFTER FIRE. YOU CAN ALWAYS PIPE WATER.

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STOCK WATER
LIMITED RESOURCE AFTER FIRE

WATER STOCKTAKE: QUALITY

Good quality water is vital for your stock, household and business. Knowing your water quality allows you to plan for water treatments to avoid problems such as stock health, poor plant growth, blocked irrigation or stock watering pipes, staining and other undesirable effects.

POOR WATER QUALITY CAN EVEN RENDER WATER UNUSABLE

Problems with water quality may have a chemical basis (e.g., pH or concentrations of certain elements) or they may be due to physical causes (e.g., turbidity when the water is cloudy with suspended solids). Some problems may be more obvious, while other problems may require more extensive analysis and treatment. Water quality can be severely affected by ash and soil in runoff.

After testing, water quality problems can be identified and corrected.

Common water quality problems are:

- pH (best between 6.5-8.5).
- Iron.
- Hardness.
- Corrosion.
- Salinity.
- Sodicity.
- Other elements.
- Turbidity/cloudiness.
- Algae.
- Colour, taste and odour.
- Bacterial growth.

Ensure you know what pipes and storage container (e.g. IBCs) have previously been used for, to avoid poisoning stock.

WATER STOCKTAKE: RELIABILITY - MEETING THE WATER DEMAND

A reliable water supply is a precious resource in an emergency. As part of assessing your property's water sources you will need to consider the average versus peak demand and how well-equipped you are to meet an unexpected interruption to water supplies.

Thinking about your property's water supplies as 'managing your water budget' is a good way to use water efficiently after a fire. A water budget may help to avoid a forced destock due to insufficient water supplies.

Water requirements and maximum advisable levels of salinity and conductivity vary widely according to the type of stock and the type of grazing.

REMEMBER: your water budget is just as critical as your feed budget

STOCK TYPE	CONSUMPTION PER HEAD PER DAY (L)
Weaners, average all feeds	2–4
Adult dry sheep – grassland	2–6
Adult dry sheep – saltbush	4–12
Ewes with lambs, dry feed	4–10

NOTES:

Water consumption by sheep can increase by 80% in extreme, hot conditions.

- Sheep can drink 40% more in summer than winter, and 50-80% more if their water contains more than 2,000ppm total dissolved salts (TDS).
- Water at 4,000-10,000 ppm TDS may cause problems initially until animals adjust.
- Include native animals in your calculations where they are not excluded although sheep drink around 6.5 times more water each day than kangaroos.
- When planning water supply requirements, allow for evaporation losses, e.g., the NSW Southern Tablelands average 25% loss of dam water over the late spring, summer, autumn period.

EXAMPLE:

A water storage on your property holds 1.44ML. At assessment, the water storage is at 60% capacity. How long could this water storage service 1,000 dry sheep without rainfall top up?

Total water capacity	1,440,000L
At 60% capacity	864,000L
Less 15% (allow 15% of 100% capacity for fouling, bogging)	216,000L
Less 25% evaporation (25% of 60% capacity)	216,000L
Available stock water	432,000L

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