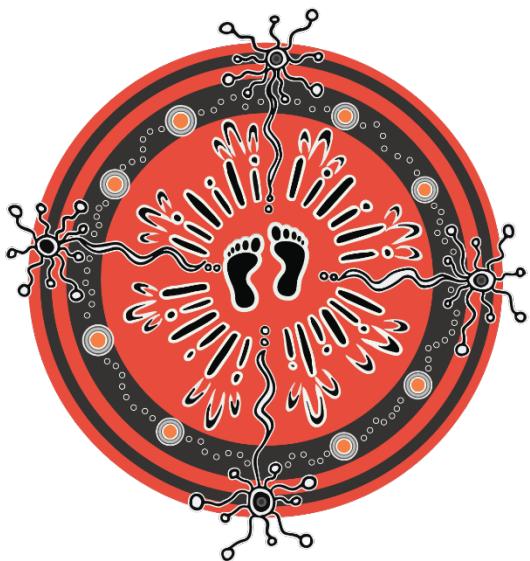


# Guideline for the implementation of the NSW Floodplain Harvesting Policy

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January 2025

# Acknowledgement of Country



Department of Climate Change, Energy, the Environment and Water acknowledges the traditional custodians of the land and pays respect to Elders past, present and future.

We recognise Australian Aboriginal and Torres Strait Islander peoples' unique cultural and spiritual relationships to place and their rich contribution to society.

Artist and designer Nikita Ridgeway from Aboriginal design agency – Boss Lady Creative Designs, created the People and Community symbol.

Guideline for the implementation of the NSW Floodplain Harvesting Policy

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# Introduction

Floodplain harvesting is the capture and use of water flowing across a floodplain. Historically, the take of water associated with floodplain harvesting has been unlicensed and unmonitored in NSW. Under the *Water Management Act 2000* (WM Act), the take of water, including that taken by floodplain harvesting, must be accounted for under a water access licence, basic landholder right, or licence exemption.

In 2013, the NSW Government introduced the NSW Floodplain Harvesting Policy to announce the process the department would follow to bring floodplain harvesting activities into the water sharing and licensing framework of the WM Act. The NSW Floodplain Harvesting Policy has been implemented in four of the five northern inland valleys of NSW. The floodplain harvesting licensing process commenced on 15 August 2022 in the NSW Border Rivers and Gwydir Valleys, 17 February 2023 in the Barwon–Darling Valley, and 1 March 2023 in the Macquarie Valley. It is anticipated that the licensing process will be completed for the Namoi Valley in 2025.

Floodplain harvesting is defined in the [NSW Floodplain Harvesting Policy \(PDF, 410.45 KB\)](#) as the collection, extraction, or impoundment of water flowing across floodplains. Floodplain harvesting includes rainfall and overbank flow, but excludes the taking of:

- water under a water access licence that is not a floodplain harvesting access licence
- water under a basic landholder right, including water taken under a harvestable right
- water under an applicable water access licence exemption under the WM Act
- used irrigation water.

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## About this guideline

This guideline details the implementation process for the NSW Floodplain Harvesting Policy. This guideline has been updated to reflect the changes made to the determination process from the amendments to the Water Management (General Regulation) 2018 on 8 December 2023. Further updates may be made to this guideline to reflect the progress of implementation.

The below provides an overview of the sections in this guideline that explain the processes of licensing and managing floodplain harvesting activities in NSW, which can also be read in isolation.

**Section 1** outlines how we identified properties as eligible for floodplain harvesting access licences and the assessment process for granting water supply work approvals.

**Section 2** explains the process for determining the entitlement associated with floodplain harvesting (unregulated river) access licences and floodplain harvesting (regulated river) access licences.

**Section 3** explains the role of the Healthy Floodplains Review Committee in determining eligibility or entitlement in the northern Murray-Darling Basin and the independent review process.

**Section 4** outlines the types of rules that will apply to floodplain harvesting access licences, the process for including these rules in the relevant water sharing plans, and how floodplain harvesting is included in water resource plans.

**Section 5** outlines the environmental benefits that implementing the NSW Floodplain Harvesting Policy will have.

**Section 6** explains how the take of water associated with floodplain harvesting will be adaptively managed including monitoring and evaluation, responses to any future growth in floodplain harvesting, impacts on other water users, and protection for downstream water users.

**Section 7** clarifies the interaction between:

- flood works and water supply works
- overland flow and floodplain harvesting.

**Section 8** provides examples of the templates used in the licensing process for regulated river, unregulated river, and groundwater only properties.

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# 1 Determination of eligibility for floodplain harvesting access licences and granting of approvals

To be determined as eligible, landholders must first submit a registration of interest to be assessed by the department. The department assesses the eligibility of works capable of floodplain harvesting against the criteria specified in the NSW Floodplain Harvesting Policy.

Eligible works are granted water supply work approvals subject to assessment (see section 1.4). An independent third-party review of all works that are deemed as ineligible in circumstances where the registrant makes an appeal, can be found in section 0.

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## 1.1 Registration of interest

As part of the implementation of the NSW Floodplain Harvesting Policy in five northern inland valleys (Gwydir, Namoi, Macquarie, Border Rivers and Barwon–Darling), landholders who undertake floodplain harvesting activities were invited to submit a registration of interest (ROI). These invitations were sent in 2012, and Table 1 lists the closing dates for the ROI.

The ROI was the first step for landholders in obtaining authorisation under the *Water Management Act 2000* to continue floodplain harvesting activities. ROIs required landholders to submit sufficient information to determine eligibility. Further information was requested at the time of assessment where required.

Information collected through the ROI process included:

- property details such as applicant name, property name, lot/DP, and floodplain harvesting activity site number (ROI number)
- supply (interception and conveyance works) details including type, construction date and water access licence, and water supply work approval details
- storage details linked to water supply works such as area, volume, construction date and water access licence, and water supply work approval details
- floodplain harvesting property map with reference to relevant water access licence numbers
- a description of past floodplain harvesting activities
- a declaration.

To ensure all properties capable of floodplain harvesting were captured during this process, the department used local knowledge, discussions with relevant water user groups, and satellite imagery to cross-check against the ROI's received.

Table 1: ROI periods in northern inland valleys.

Valley	ROI closing date
Gwydir	30 November 2012
Namoi	1 July 2013
Border Rivers	1 July 2013
Macquarie	30 April 2014
Barwon-Darling	30 April 2014

Landholders in other valleys will have the opportunity to submit an ROI if the NSW Floodplain Harvesting Policy is implemented beyond the five northern valleys in the future.

## 1.2 Assessment of eligibility

The NSW Floodplain Harvesting Policy specifies the eligibility criteria<sup>1</sup> for works that are capable of floodplain harvesting and may subsequently be eligible to receive a floodplain harvesting access licence. The criteria relate specifically to works capable of floodplain harvesting that, on or before 3 July 2008, were:

- constructed on a floodplain in accordance with an approval granted under Part 2 or Part 8 of the *Water Act 1912* or Part 3 of Chapter 3 of the *Water Management Act 2000*, or
- subject to a pending application for an approval to construct on a floodplain under Part 2 or Part 8 of the *Water Act 1912*, or Part 3 of Chapter 3 of the *Water Management Act 2000*, or
- constructed on a floodplain and it can be proven that the work did not require an approval under Part 2 or Part 8 of the *Water Act 1912*.

This means that under the NSW Floodplain Harvesting Policy existing works for which an application under the *Water Act 1912* or the *Water Management Act 2000* was required and not made on or before the 3 July 2008 cut-off date will not be authorised for floodplain harvesting through the department's licensing of floodplain harvesting activities. However, these works may be used for floodplain harvesting if they apply for and are granted an approval and this is able to be linked to a floodplain harvesting access licence.

The department used a combination of desktop assessments and field inspections to verify data in the ROIs. Detailed irrigator behaviour questionnaires were used as a line of evidence to inform the modelling for floodplain harvesting.

<sup>1</sup> The eligibility criteria are specified in section 23B of the *Water Management (General) Regulation 2018*

## Desktop assessment

Once the ROI process closed for a given valley, desktop assessments were completed to determine provisional eligibility prior to further investigation and a site inspection. The desktop assessment involved:

- reviewing information provided in the ROI
- investigating relevant licences and/or approvals
- examining relevant maps, aerial photographs, and satellite imagery.

## Field inspection

Following the desktop assessment, field inspections were conducted, and the following information and observations were documented in a site inspection report:

- applicable water sources
- external channels or banks that form part of a supply or interception system and are capable of diverting flood water
- dimensions and capacity of works capable of floodplain harvesting
- the location of meters
- storage details including types, location, and height of banks.

## Irrigator behaviour questionnaires and determination of on-farm storage capacity

Irrigator behaviour questionnaires are structured surveys used to collect comprehensive information relating to, but not limited to:

- water harvesting
- farm infrastructure and on-farm water management
- planting decisions and irrigation practice
- floodplain harvesting history, capability, and capacity.

In the five northern inland valleys, the data from the questionnaires confirmed that while information about recent farm infrastructure was readily available, information on historic floodplain harvesting development for many properties was either incomplete or inaccurate due to changes in property ownership or gaps in record keeping.

The department used the questionnaire data as one of the lines of evidence for modelling (see section 2.1). Other lines of evidence included remote sensing products such as LiDAR and Landsat, flood models, flood photography, on-ground mapping, and inspection data, as well as scientific literature.

## Assessment process

Using all the information gathered, the department assessed whether the work(s) on a property satisfied the criteria specified in the NSW Floodplain Harvesting Policy (see section 1.2). Only those

works assessed as eligible progressed to the next step in the licensing process, which involved the granting of a water supply work approval (if required and subject to assessment) and the determination of a floodplain harvesting access licence entitlement.

## 1.3 Eligibility/Ineligibility determination and notification to registrants

The department finalised a site inspection report, once eligibility had been assessed, including details about the determined eligibility or ineligibility of an ROI. Registrants were notified in writing of the determination outcome.

If an ROI was determined as ineligible, the reasons and evidence associated with the decision were included in the notification of determination. In the northern Murray-Darling Basin, registrants were also advised of their right to appeal to the Healthy Floodplains Review Committee.

The table below summarises the total number of ROIs received in the northern Murray-Darling Basin and the results of the determination. The total number of ROIs for the Namoi Valley were accurate at the time of publication of this guideline; however, may be subject to change as licensing of floodplain harvesting activities is not yet complete for this valley.

Table 2: ROI received in northern inland valleys.

Valley	Total ROI received	Eligible	Ineligible
Gwydir	161	135	26
Border Rivers	55	43	12
Macquarie	106	78	28
Barwon-Darling	43	33	10
Namoi <sup>2</sup>	275	221	54

## 1.4 Granting water supply work approvals

Under the *Water Management Act 2000*, it is an offence to take water under a water access licence unless it is through an approved water supply work nominated on the water access licence or an exemption applies.

The department develops a water infrastructure plan for each property determined to be eligible for floodplain harvesting via the ROI process, based on the information gathered during the field

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<sup>2</sup> Figures subject to change as replacement floodplain harvesting access licences and water supply works approvals have not yet been determined.

inspection process. This information is used to pre-fill an application for a water supply work. The water supply work approvals will cover all works that ‘take’ overland flow as floodplain harvesting, including pumps, pipes, regulators, and supply channels that are not within and/or do not intercept a river or creek.

Applications are assessed against multiple criteria including environmental considerations, Native Title, and lawful occupation of land. Applications which relate to an area of key fish habitat, are referred to the NSW Department of Primary Industries and Regional Development—Fisheries for assessment.

Water supply works approvals will cover all works that ‘take’ overland flow as floodplain harvesting, that is, pumps, pipes, regulators, and supply channels that are not within and/or do not intercept a river or creek.

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## 2 Determination of floodplain harvesting entitlement

Once it is established that a property has eligible floodplain harvesting works under the NSW Floodplain Harvesting Policy, the next step is to determine entitlements based on whether a property is associated with a regulated river water source or an unregulated river water source.

Properties associated with a regulated river water source were defined as properties which held a regulated river access licence on or before 3 July 2008, regardless of whether they also held an unregulated river access licence and/or bore licence.

Properties associated with an unregulated river water source were defined as properties that did not hold a regulated river access licence on or before 3 July 2008, and between 1 July 1993 and 30 June 1999, held an entitlement or bore licence under the *Water Act 1912*, which was then replaced by an unregulated river access licence or aquifer access licence under the *Water Management Act 2000*.

Once floodplain harvesting entitlements are determined, WaterNSW is responsible for issuing the access licences to individual properties and setting up the associated water allocation accounts for each access licence.

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### 2.1 Determination of floodplain harvesting entitlements associated with regulated rivers and the Barwon–Darling unregulated river

#### **Extraction limits and the use of models**

Long-term average annual extraction limits, as specified in water sharing plans, are designed to manage the total take of water by all properties within the water sharing plan area. This area includes those properties that capture and use water flowing across a floodplain.

Extraction limits for regulated rivers (and the Barwon–Darling Unregulated River) are calculated using computer models that simulate river basin behaviour based on more than 100 years of climatic data, the amount of irrigation development in the water sharing plan area at specified points in time, and the applicable water sharing plan rules. These models use the best available data, and the department continues to update them as more information becomes available.

Managing compliance with extraction limits protects downstream water users and the environment, by ensuring that any flows in excess of that permitted to be taken under access licences or basic landholder rights remain in-stream. Similarly, the use of rules in a water sharing plan allows identified effects to be adaptively managed.

## Steps for determining floodplain harvesting entitlement

The department determines floodplain harvesting entitlements associated with regulated rivers and the Barwon-Darling unregulated river using three key steps:

1. update river system models to represent floodplain harvesting activities for individual properties
2. assess extraction limits to ensure compliance with them
3. determine individual floodplain harvesting entitlements, ensuring that the total take of water will be within the relevant extraction limit and that any effects are distributed as equitably as possible among eligible floodplain harvesting properties.

### Update river system models to improve representation of floodplain harvesting

River system models are designed to assess the potential effects of different water management strategies or policies for water sharing. A customised platform is needed to correctly represent specialised water sharing plan rules. All current river system models produced by the department have been developed in the Integrated Quantity and Quality Model or eWater Source platforms.

The department will improve these models to represent individual properties with their associated infrastructure and access to overland flow. Each model will represent the components of floodplain harvesting using multiple lines of evidence and best available industry data.

The modelling reports are available online for each valley:

- [Barwon-Darling](#)
- [Border Rivers](#)
- [Gwydir](#)
- [Macquarie](#)
- [Namoi](#).

### Assess extraction limits and growth in use

The department will use updated models to re-assess extraction limits established in water sharing plans and the long-term annual average take of water based on current infrastructure and management practices.

Water sharing plans define how extraction limits are calculated. For most regulated rivers, it is specified as the lesser of:

- the take of water that would occur with the infrastructure and management arrangements that existed in 1999–2000, combined with the water sharing plan rules, or
- the take of water that would have occurred under the Murray–Darling Basin ‘Cap’ conditions<sup>3</sup>.

Water sharing plans require long-term assessment, based on a fixed level of development and management rules. This type of assessment is referred to as ‘scenario modelling’. Scenarios provide

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<sup>3</sup> Cap conditions are limits on the take of water, specified in Schedule E of the Murray–Darling Basin Agreement. See Schedule 1 of the Water Act 2007 (Commonwealth)

an estimate of the overall take of water for the river system at a particular level of development, licence use, and management rules.

We can assess the long-term average annual take of water and the variability of annual take by modelling the assumptions about the level of development and management rules over a long climatic sequence. Scenarios will not necessarily match the historical take of water and river flows because the level of development and management rules will have varied over time.

Based on this information, we will use the following process to assess if there is a growth in use:

- scenarios are updated for Cap and water sharing plan conditions<sup>4</sup>. The long-term average take of water under both scenarios is assessed and the extraction limit is defined by the lesser of the two.
- a ‘current conditions’ scenario is created that assumes the current levels of development and management rules were in place over a long climatic period, such as 1889–2018. This is used to assess whether the current long-term average annual take of water exceeds the extraction limit.

A growth in use is identified if the model demonstrates that the current long-term average annual take of water exceeds the extraction limit.

### **Individual floodplain harvesting entitlement is determined to ensure the take of water does not exceed extraction limit**

The department uses an ‘eligible floodplain harvesting unconstrained’ scenario<sup>5</sup> to assess the floodplain harvesting that would have occurred with only floodplain harvesting works deemed eligible under the NSW Floodplain Harvesting Policy. We use this as the starting point for determining floodplain harvesting entitlements for each individual.

- If the total take of water does not exceed the extraction limit, each individual’s floodplain harvesting entitlement will be equal to their long-term average annual floodplain harvesting take under the ‘unconstrained’ scenario.
- If the total take of water does exceed the extraction limit, individual floodplain harvesting entitlements will be determined to limit water take to within the long-term average annual extraction limit. The reduction in individual floodplain harvesting entitlement will be equitably applied across eligible landholders<sup>6</sup>.

The department updates the ‘current conditions scenario’<sup>7</sup> to include the floodplain harvesting entitlements and account management rules. The long-term average total take of water is assessed to ensure it does not exceed the extraction limit.<sup>8</sup>

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<sup>4</sup> For the Barwon–Darling Unregulated River Water Source, only the Cap scenario will be used.

<sup>5</sup> This is termed the eligible water supply works scenario model under section 23I of the Water Management (General) Regulation 2018

<sup>6</sup> This described in section 23J of the Water Management (General) Regulation 2018

<sup>7</sup> This is termed the current conditions model under section 23H of the Water Management (General) Regulation 2018

<sup>8</sup> This is termed the plan limit compliance scenario model under section 23J of the Water Management (General) Regulation 2018

## **Individual floodplain harvesting entitlement is adjusted if unregulated river access licence was also held on 3 July 2008**

To account for water taken under unregulated river access licences when determining floodplain harvesting associated with regulated rivers, some or all of the entitlement associated with the unregulated river access licence held on 3 July 2008 is subtracted from the floodplain harvesting entitlement determined using the 3 models specified in Division 3 of the Water M under clause 23C(2) of the Water Management (General) Regulation 2018.

The amount to be subtracted is determined in accordance with the following method:

- if there were no works associated with the unregulated river access licence installed on 3 July 2008, no amount is subtracted, or
- if works associated with the unregulated river access licence were already installed on 3 July 2008, the landholder is given an opportunity, through the submission process outlined below, to provide records of the take associated with these works. The amount to be subtracted will be determined based on either:
  - Statutory declaration of usage - if a landholder indicates that they have not used the unregulated licence prior to 3 July 2008, they will be asked to provide a Statutory Declaration stating this. No adjustment will be made to the share components for those properties.
  - Total annual actual take ratios - where records are not supplied, the ratio between the licensed entitlement in Part 5 of each respective water sharing plan and the estimate of total annual actual take, submitted under Section 71 of the Water Act 2007 (Commonwealth), will be used to determine the adjustment required to reflect the usage under that licence (Table 3). The total annual actual take ratio will be multiplied by the unregulated river access licence share component with this figure used for the adjustment.
  - Logbooks - where logbook usage information of at least seven consecutive years has been prepared, the total annual actual take ratio will be compared against the usage information. If the usage information indicates usage is less than the total annual actual take ratio, then the usage data will be used for the adjustment.

Table 3: Total annual actual take ratios for each valley.

Valley	Licensed entitlement as in Part 5 of respective water sharing plan	Estimate of total annual actual take (ML/year) submitted under Section 71	Ratio (percentage) to be applied
Macquarie	131,085	8,191	6.25%
Border Rivers	29,889	13,468	45.06%
Gwydir	68,135	10,530	14.42%
Namoi	154,115	68,674	44.56%

Before finalising floodplain harvesting entitlements, letters are sent to owners of eligible properties outlining the information used to determine floodplain harvesting entitlements for their property which includes any adjustments.

Landholders then have a 28-day period to contest the adjustment of their share component. The 28-day period commences from the date of the letter advising of their draft floodplain harvesting entitlement.

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## 2.2 Determination of floodplain harvesting entitlement for properties associated with unregulated river water sources, excluding the Barwon–Darling

### **Properties with an unregulated river access licence during 1993–99 (without a regulated river access licence and with or without a bore licence)**

In unregulated river water sources (other than the Barwon–Darling<sup>9</sup>), most of the water available for floodplain harvesting is already accounted for within the existing access licence share components and the relevant long-term average annual extraction limits. This is because when licences in unregulated rivers were converted from the *Water Act 1912* to the *Water Management Act 2000*, this was done using actual irrigated areas and actual crops being grown. This conversion process, known as volumetric conversion, effectively considered all forms of water taken.

However, for some properties with floodplain harvesting works deemed eligible under the NSW Floodplain Harvesting Policy, floodplain harvesting entitlements may be issued where it can be clearly demonstrated that the volumetric conversion process did not sufficiently cater for floodplain harvesting.

#### **Historical volumetric conversion of unregulated river access licences**

At the time of volumetric conversion, unregulated river water licence holders provided information about their irrigated areas, the types of crops planted, and methods of water extraction. Licence holders had to provide up to six years of information on the area of crops grown (from 1993–94 to 1998–99).

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<sup>9</sup> In the Barwon–Darling, floodplain harvesting activities were not typically accounted for when unregulated river water licences issued under the *Water Act 1912* were volumetrically converted in 2000. As a result, the Barwon–Darling is treated like a regulated river for its long-term average annual extraction limit and floodplain harvesting entitlement determination process.

The method used for calculating the volumetric conversion<sup>10</sup> was:

- Where a survey was returned:
  - if the reported total area irrigated exceeded the area authorised by the licence, the crop areas reported for that year were adjusted back to the authorised area. Volumetric conversion was only applied to the authorised area.
  - the areas for each crop type reported in the survey were multiplied by the appropriate crop conversion rate for the climate zone to give a volume in megalitres (ML). The perennial rate was applied where crops were over-sown on the same area.
  - if the total reported area in a year was less than the authorised area, the remaining area was multiplied by the inactive rate for the climate zone to give a volume in ML.
  - the total volume for each crop and area, plus the volume for the inactive area (if any) were added to give an annual volume.
  - the volumes determined under (ii) or (iv) for each year were compared. The highest of these volumes was selected as the irrigation entitlement, in ML per year.
- Where a survey was not returned:
  - the authorised area was converted at an inactive rate. This rate varied, depending on the climate zone in which they were located, ranging from 1.0 to 6.0 ML per hectare.

### **Anomalies and amnesties in the volumetric conversion process**

In some cases, licence holders who believed that their entitlement determined through the volumetric conversion process was insufficient or an anomaly, could request a review through the Independent Anomalies Review Committee. Licence holders provided evidence to help the committee make an informed decision.

The department has identified properties with floodplain harvesting works deemed eligible under the NSW Floodplain Harvesting Policy that were dealt with through the anomalies process. These properties will be assessed to ensure any increase in entitlement, that resulted from the anomalies process, is considered when determining floodplain harvesting entitlement.

During the volumetric conversion process, water users were also given the opportunity to report if they were taking additional water, such as from overland flow or had unapproved works. Water use, dam sizes, and other water supply works were verified by the department, and unregulated river access licences and work approvals were issued in most cases.

The department also identified properties with floodplain harvesting works deemed eligible under the NSW Floodplain Harvesting Policy that were dealt with through an amnesty enquiry. We will assess these properties to ensure we consider any additional unregulated river access licence granted during the amnesty process, when determining floodplain harvesting entitlement.

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<sup>10</sup> Taken from: *Volumetric Conversion – the next stage*. A booklet for landholders with licences on unregulated rivers in NSW, DLWC, September 2000.

## Unconverted unregulated river water access licences

Unregulated river access licences (with an authorised area) that are yet to be volumetrically converted will not receive a separate floodplain harvesting entitlement. Instead, this volume will be catered for as part of the volumetric conversion process. WaterNSW is completing these volumetric conversions as a priority.

## Steps for determining floodplain harvesting entitlement

Properties with eligible floodplain harvesting works that have historically held an unregulated river licence (1993–99) and have been volumetrically converted may be granted floodplain harvesting entitlement if:

- the maximum crop area between 1993–99 was greater than the authorised area, and
- a volumetric conversion or anomalies process did not account for the additional crop area, and
- repeating the volumetric conversion process for the additional crop area over the 1993–99 period and subtracting the original volumetric conversion volume (licences for unregulated river water only) and metered bore usage or bore licensed entitlement for the highest crop year (whichever is highest) results in a volume that is greater than zero.

**Note:** Overland flow can also be taken under unregulated river access licences provided the relevant works have been nominated on a water supply work approval (see section 7.2).

Before finalising floodplain harvesting entitlements, owners of eligible properties associated with unregulated rivers are sent a letter outlining the information that has been used to calculate floodplain harvesting entitlements for their property. Landholders may make a submission within 28 days, with supporting evidence, if they disagree with the information used.

## Determination of floodplain harvesting entitlement for groundwater- only properties

There are some properties with eligible floodplain harvesting works that have historically only held bore licences during 1993–99. The calculation of floodplain harvesting entitlement for these properties is based on the maximum crop area grown in the period 1993–99. Where floodplain harvesting entitlement is determined, these properties will be issued with a floodplain harvesting (unregulated river) access licence.

The department uses remote sensing to determine the maximum crop area for the property in each year from 1993 to 1999, inclusive. The remote sensing data used in this process has been validated with an accuracy of over 95% for all average, dry, and wet rainfall years. Where remote sensing data is unavailable, information about maximum crop areas from the Irrigator Behaviour Questionnaire completed by registrants is used.

## Steps for determining floodplain harvesting entitlement

The maximum crop area, as determined via remote sensing, will relate to a specific year within the period 1993–99. The maximum crop area is multiplied by the cotton conversion rate that was used in the volumetric conversion process. The cotton conversion rate varies from 7.0 ML to 9 ML depending on the climatic zone in which the property is located.

Metered bore water usage or bore licensed entitlement (whichever is highest), in the year associated with the maximum crop area, is subtracted from the volumetric calculation. If the result is greater than zero, the property may be eligible for floodplain harvesting entitlement.

Before finalising floodplain harvesting entitlements, owners of eligible groundwater-only properties are sent a letter outlining the information that has been used to calculate floodplain harvesting entitlements for their property. Landholders may make a submission within 28 days, with supporting evidence, if they disagree with the information used.

### **The Water Management (General) Regulation 2018 Amendment**

The Water Management (General) Regulation 2018 was amended on 8 December 2023, changing the way that historical groundwater access is considered when calculating proposed floodplain harvesting (unregulated river) access licence entitlements. Previously, only groundwater usage was accounted for in the calculation. Now, the greater of historic groundwater usage or the entitlement held is accounted for. This precautionary approach ensures that floodplain harvesting licences reflect historic crop areas that could not be met by other existing licensed entitlements.

This approach significantly reduces the risk of over-allocating licence shares, protecting the rights of existing users, and ensuring downstream communities and the environment have their share of available water.

The changes also benefit landholders involved in the process of floodplain harvesting licensing by:

- improving clarity on the timing for adopting a model used to determine entitlement
- allowing an additional opportunity to comment on their draft entitlement if there are reductions made to their proposed entitlement.

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## 3 Independent review process

Following the release of the NSW Floodplain Harvesting Policy in 2013, an independent review process was created to support the processing of floodplain harvesting Registrations of Interest (ROIs) into work approvals and access licenses. After the release of the Policy, a Healthy Floodplains Review Committee (HFRC) was established in 2014 and operated until being disbanded in August 2023. From August 2023, an independent third party has been engaged to provide independent reviews of the submission and assessment process.

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### 3.1 Healthy Floodplains Review Committee

The department established the HFRC to:

- facilitate the orderly and equitable processing of ROIs in accordance with the NSW Floodplain Harvesting Policy
- review and assess submissions raised by floodplain harvesting registrants who believed:
  - their determination of ineligibility for floodplain harvesting entitlement was incorrect, or
  - the proposed floodplain harvesting entitlement was incorrect.
- provide appropriate advice and make recommendations to the department for the resolution of such issues.

After reviewing and assessing submissions made by a registrant, the committee prepared recommendations for consideration by the department. The department then advised the registrant of the outcome that, either:

- the original decision was upheld, and no further action was required, or
- the original decision had been overturned and further analysis was to be undertaken.

More information on the activities of the HFRC during its operation and the terms of reference are available online on the department's [website](#).

#### Membership

The Healthy Floodplains Review Committee was comprised of representatives from the North West Local Land Services, NSW Farmers Association, NSW Nature Conservation Council, and NSW Irrigators Council. The meetings were facilitated by the department.

The committee had access to technical experts from relevant state government agencies to provide information as required. The committee could also obtain independent advice from individuals or organisations that had specific and relevant local knowledge.

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## 3.2 Independent third-party review

Subject matter experts in the department examine the information provided in submissions and assess whether the data used to determine entitlements should be revised. All recommendations and their justification are documented. This assessment is then subject to an independent third-party review. The independent third-party review ensures that the department's assessment and recommendation properly considers all matters raised by the landholder, conforms with legislative and/or policy requirements, and is fair, consistent, and adequately documented.

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# 4 Rules for floodplain harvesting access licences

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## 4.1 Types of rules

For all regulated rivers and unregulated rivers in the northern inland valleys, the relevant long-term average annual extraction limit already includes the take of water associated with floodplain harvesting activities within the plan area.

In addition to this, rules will be applied to floodplain harvesting access licences once they are issued to manage:

- available water determinations
- trade
- access
- account management.

Rules for floodplain harvesting access licences were included in the relevant water sharing plans for the NSW Border Rivers, Gwydir, and Macquarie Valleys on 29 July 2022, Barwon-Darling on 17 February 2023, and in the Namoi on 15 November 2024.

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## 4.2 Unique rules for each valley

There are some rules for floodplain harvesting access licences that will vary between regulated rivers and unregulated rivers and, for regulated rivers, from valley to valley, based on public consultation and modelling outcomes. These are:

- available water determinations in the first year following issuing of access licences
- account management rules
- trade
- access arrangements.

Historically, an available water determination greater than 100% of the share component has been applied to some access licence categories in the first year following the start of a water sharing plan. This ensures the volume of water in a water allocation account reflects the:

- potential amount of carry over that would have been permitted under the relevant *Water Act 1912* licence, or
- use of long-term averages in the determination of the access licence entitlement and the associated need to take more in some years and less in others.

Account management rules vary across NSW and between different categories of access licences, but generally consist of a combination of limits on the amount that may be:

- taken annually or over a number of consecutive years or both, or
- held in an allocation account at any time, or
- carried over from one year to the next.

Floodplain harvesting is highly variable in nature. The NSW Floodplain Harvesting Policy provides that account management rules will be developed on a valley-by-valley basis in conjunction with the proposed entitlements that recognise this variability. The two primary considerations that will be used to set these account management rules are:

1. ensuring compliance with the relevant long-term average annual extraction limit
2. distributing effects as equitably as possible among eligible floodplain harvesting properties.

The account management rules for floodplain harvesting (regulated river) access licences are defined as part of the process of determining entitlements (see section 2.2).

The rules for floodplain harvesting (unregulated river) access licences—except for those located within the Barwon–Darling Unregulated River—will reflect the existing rules for unregulated river access licences. This is despite variances between valleys for initial available water determinations and account management rules for floodplain harvesting (regulated river) access licences. This is because most of the entitlement associated with floodplain harvesting in unregulated rivers is already provided for within the existing share components of unregulated river access licences.

The restriction of temporary trade for floodplain harvesting licences will be identical for each valley (see section 4.3). However, the permanent trade rules may vary between valleys, depending on existing trade rules in the relevant water sharing plan, and any identified areas that require protection, such as:

- environmental assets dependent on floodwater
- any areas where entitlement may be concentrated.

Outcomes from public exhibition and the assessment of environmental benefits (see section 5) will influence whether trading zones are established to guide the movement of permanent trade or whether permanent trade is permitted without restriction within a water source.

Lastly, access rules may be required to allow us to place restrictions on floodplain harvesting when required for environmental purposes. The scope and nature of these rules is yet to be determined and will require consultation.

## 4.3 Identical rules for each valley

Table 4 outlines the rules that either already exist in water sharing plans in the five northern inland valleys, or will apply to all regulated and unregulated floodplain harvesting access licences once the licences are issued and the relevant water sharing plan is amended.

The NSW Floodplain Harvesting Policy treats the Barwon–Darling Unregulated River like a regulated river. This is because a model is used in determining entitlements and, unlike other unregulated rivers, most of the entitlement associated with floodplain harvesting is not included in the existing unregulated river access licences.

Table 4: Standard rules in water sharing plans for floodplain harvesting access licences.

Type of rule	Floodplain harvesting (regulated river)	Floodplain harvesting (unregulated river)	Comment
<b>Long-term average annual extraction limit and long-term average sustainable diversion limit.</b>	The long-term average annual extraction limit and long-term average sustainable diversion limit includes the take of water for floodplain harvesting based on the level of development that existed at a specified period such as the 1999–2000 water year.	The long-term average annual extraction limit and long-term average sustainable diversion limit includes the take of water by floodplain harvesting based on the annual extraction averaged over the period 1 July 1993 to 30 June 1999.	<p>The extraction and diversion limits, specified as a level of development at a specified time, associated with floodplain harvesting are already established in many water sharing plans and in the Basin Plan 2012 via sustainable diversion limits (SDL) for SDL resource units.</p> <p>Estimates of the volumes associated with floodplain harvesting, in ML/year, have historically been poor. However, models are being updated to improve these estimates (see section 6.4).</p>
<b>Compliance with the extraction or diversion limit.</b>	If an assessment is undertaken that demonstrates that the long-term average annual extraction limit or long-term average SDL has been exceeded and that exceedance is a result of water taken under floodplain harvesting (regulated river) access licences, the available water determination for	If an assessment is undertaken that demonstrates that the long-term average annual extraction limit or long-term average SDL has been exceeded, the available water determinations for floodplain harvesting (unregulated river) access licences and unregulated river access licences will be	<p>The use of models in a regulated river system allows for a more targeted response to an extraction or diversion limit being exceeded.</p> <p>Most of the entitlement associated with floodplain harvesting in unregulated rivers is already provided within existing</p>

Type of rule	Floodplain harvesting (regulated river)	Floodplain harvesting (unregulated river)	Comment
	those licences will be reduced to the extent necessary to bring the take of water to within the extraction or diversion limit.	reduced at the same rate and to the extent necessary to bring the take of water to within the extraction or diversion limit.	unregulated river access licences.
<b>Available water determinations following the first year.</b>	At least 1 ML per unit share (or 100% of the share component) each year following the first year, unless a lower amount is required in response to an exceedance of the extraction or diversion limit.	At least 1 ML per unit share (or 100% of the share component) each year following the first year, unless a lower amount is required in response to an exceedance of the extraction or diversion limit.	This approach is consistent with other access licence categories such as local water utility access licences and unregulated river access licences.
<b>Taking of water under a section 85A order.</b>	Section 85A of the <i>Water Management Act 2000</i> allows for the taking of contaminated rainfall runoff under a floodplain harvesting (regulated river) access licence even when there are insufficient allocations in the account. This can result in the allocation account going into a negative balance of up to a maximum of 100% of the share component.  The negative balance would be rectified with the next crediting following an available water determination.	Not applicable.	This rule only applies to floodplain harvesting (regulated river) access licences.  This rule is not required for floodplain harvesting (unregulated river) access licences as the entitlements associated with these licences are based on a maximum use rather than a long-term average.

Type of rule	Floodplain harvesting (regulated river)	Floodplain harvesting (unregulated river)	Comment
<b>Trade rules.</b>	<p>Buying and selling of share components (permanent trade) will be permitted within an extraction management unit, water source, management zone, or trading zone.</p> <p>The area within which trade can occur will be specific to each water source or water sharing plan.</p> <p>Buying and selling of allocations (temporary trade) will not be permitted.</p>	<p>Buying and selling of share components (permanent trade) will be permitted within an extraction management unit, water source, management zone, or trading zone.</p> <p>The area within which trade can occur will be specific to each water source or water sharing plan.</p> <p>Buying and selling of allocations (temporary trade) will not be permitted.</p>	<p>This approach is consistent with the trade rules outlined in the NSW Floodplain Harvesting Policy.</p> <p>Every trade application is assessed against the general principles outlined in the Access Licence Dealing Principles Order 2004, such as the potential effects on other water users and the environment.</p> <p>Selling share components associated with a floodplain harvesting access licence may result in needing to remove or modify the associated water supply work to ensure the water sold can no longer be taken by the seller.</p>
<b>Mandatory conditions.</b>	<p>Access licence condition to implement the taking of water under a section 85A order.</p> <p>Water supply work approval condition to allow for the removal or modification of a work to coincide with a permanent trade to</p>	<p>Access licence conditions reflect those for unregulated river access licences.</p> <p>Water supply work approval condition to allow for the removal or modification of a work to coincide with a permanent trade to ensure water is not being taken twice.</p>	None.

Type of rule	Floodplain harvesting (regulated river)	Floodplain harvesting (unregulated river)	Comment
	ensure water is not being taken twice.		
Amendment provisions.	Ability to amend, omit, or insert any rule in relation to floodplain harvesting access licences.	N/A.	None.

## 4.4 Process for amending water sharing plans

A water sharing plan may be amended under section 45 of the *Water Management Act 2000*, including in the circumstances that the respective plan specifies. Where an amendment is not specified in a water sharing plan and results in a reduction in water allocations for the holder of an access licence, compensation may be payable in some circumstances under section 87 or 87AA of the *Water Management Act 2000*. All amendments require approval by the NSW Minister for Water and concurrence from the NSW Minister for the Environment.

Before issuing floodplain harvesting access licences and amending associated water sharing plan amendments, the department will consult with the public on:

- modelling results that form the basis for floodplain harvesting access licence entitlements
- scope of the proposed water sharing plan amendments to be made for rules for floodplain harvesting access licences.

## 4.5 Water resource plans and floodplain harvesting

The Basin Plan 2012 requires water resource plans to be developed and accredited in the Murray–Darling Basin. Certain rules contained in NSW water sharing plans are included as part of each water resource plan. The proposed amendments to water sharing plans for floodplain harvesting will result in consequential amendments to the relevant water resource plan. Under the Basin Plan 2012, any change to a water resource plan requires reaccreditation.

Each water resource plan must identify all forms of take, including the take of water by floodplain harvesting, and manage the total take of water to ensure it does not exceed the sustainable diversion limit (SDL) specified in the Basin Plan 2012 for each SDL resource unit.

Where floodplain harvesting access licences have not yet been issued, water sharing plans still identify the take of water by floodplain harvesting by including it within the extraction and diversion limits. However, until floodplain harvesting access licences are issued, the compliance response will be applied to other licence categories such as supplementary water access licences (see section 6.2).

## 5 Assessment of environmental benefits

A significant benefit that will come from implementing the NSW Floodplain Harvesting Policy is that, for the first time, we will be able to accurately measure and account for the water that is harvested from floodplains. This can be included as part of the broader state-wide management of water resources. This will give us a better understanding of water use throughout NSW, while ensuring that all water users get their fair share, and the environment is kept healthy (see section 2).

As part of implementing the NSW Floodplain Harvesting Policy, the department will assess the environmental benefits gained. We will publish the results on a valley-by-valley basis as part of consultation proposed during the determination of draft floodplain harvesting entitlements.

The assessment will consider the effect the NSW Floodplain Harvesting Policy has on the volume taken by floodplain harvesting and the consequent effect on the health of the environment. They will inform active management of floodplain harvesting to protect licensed environmental water and inform, within the constraints of the NSW Floodplain Harvesting Policy, trade and account management rules for floodplain harvesting access licences.

The work will collate information from a variety of sources, including floodplain management plans and long-term water plans for each of the valleys. It will focus on identifying the location, type, and water needs of environmental assets, and use modelled hydrologic data to compare current (pre-policy) and predicted (post-policy) flows and determine the ecological consequences of NSW Floodplain Harvesting Policy implementation. The assessment will also include consideration of cumulative benefits and/or effects on downstream water users and the environment.

Furthermore, it will compare metrics such as the timing, extent, duration, volume, and location of flows, and analyse these to predict how changes in flows contribute to changes in the condition of environmental assets. This and other lines of evidence will provide a qualitative and quantitative assessment of the benefits implementing the NSW Floodplain Harvesting Policy may provide for environmental assets.

Licensing and monitoring of floodplain harvesting will play a critical role in improving the modelling of water use. The data gathered will allow for better assessment of the impact of different water sharing plan rules for floodplain harvesting on the environment, and downstream water users on a floodplain harvesting event basis. It will provide the fundamental building blocks required to improve the management of floodplain harvesting over time (see section 6).

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# 6 Adaptive management of floodplain harvesting

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## 6.1 Adaptive management

Adaptive management refers to the practice of changing a management regime in response to new information, either from the results of monitoring or some other improvement in understanding. Adaptive management is a requirement of the *Water Management Act 2000* and the *National Water Initiative 2004*.

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## 6.2 Water sharing plans

Adaptive management is incorporated into water sharing plans in two main ways. These are:

- rules to enable a response to growth in floodplain harvesting
- the inclusion of amendment provisions.

### Response to growth in floodplain harvesting

To manage the take of water, long-term average annual extraction limits, and long-term average sustainable diversion limits established in the Basin Plan 2012, are specified in a water sharing plan for a water source or group of water sources. Each year, the department must assess extraction against these limits. The take of water associated with floodplain harvesting is included in this assessment.

The application of and compliance with an extraction or diversion limit protects downstream water users and the environment, by ensuring that any flows in excess of those permitted to be taken under access licences or basic landholder rights remain in-stream. Similarly, the use of water sharing plan rules allows identified impacts, such as growth in water use, to be adaptively managed.

Generally, the rules in a water sharing plan allow for a reduced allocation to be made through the available water determinations process to specific categories of access licences as the first response to an exceedance of an extraction or diversion limit. This is referred to as a growth in use (GIU) response.

Until floodplain harvesting (regulated river) access licences are issued, a GIU response cannot specifically target growth in floodplain harvesting. Instead, the GIU response will firstly target supplementary water access licences and then regulated river (general security) access licences.

Similarly, until floodplain harvesting (unregulated river) access licences are issued, a GIU response will target unregulated river access licences in response to a growth in floodplain harvesting. However, the impact of this is comparatively less than in regulated rivers as most of the entitlement associated with floodplain harvesting has already been incorporated into existing unregulated river access licences.

Once floodplain harvesting (regulated river) access licences are issued, the proposed GIU response will target either supplementary water or floodplain harvesting (regulated river) access licences, in proportion to where the growth in extraction is occurring. The ‘current development’ scenario model will show where the growth is occurring. Growth in extraction will be managed by GIU responses for supplementary water and/or floodplain harvesting (regulated river) access licences.

Conversely, once floodplain harvesting (unregulated river) access licences are issued, the proposed GIU response will apply equally to unregulated river access licences and floodplain harvesting (unregulated river) access licences.

## **Amendment provisions**

A water sharing plan contains a suite of amendment provisions that allow for rules to adapt to changing information and conditions. In addition, section 45 of the *Water Management Act 2000* (WM Act) further allows for water sharing plans to be amended, including if the minister considers it to be in the public interest.

A general amendment provision for floodplain harvesting is included in water sharing plans that allows rules to be amended, omitted, or inserted in relation to floodplain harvesting access licences. This amendment provision will allow the water sharing rules for floodplain harvesting to be adjusted by the Minister, without triggering the compensation provisions of the WM Act.

As part of remaking the relevant water sharing plans, the department will consider the effectiveness of rules for floodplain harvesting access licences in providing water to licence holders in a way that also protects downstream water users and the environment. This may result in a decision to remove or reduce the scope of amendment provisions included for floodplain harvesting.

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## **6.3 Monitoring, evaluation, and reporting**

### **Individual monitoring and reporting**

As part of the implementation of the NSW Floodplain Harvesting Policy, each property that takes water associated with floodplain harvesting will be required to monitor and report that take of water. This requirement relates specifically to section 60C of the WM Act, which makes it an offence to take water when there is insufficient water allocation in the account for the access licence. See the [NSW Floodplain Harvesting Measurement Policy](#) for more information.

### **Valley-scale monitoring, evaluation, and reporting**

Monitoring, evaluation, and reporting are essential to informing adaptive management of floodplain harvesting so that we can improve environmental, social, cultural, and economic outcomes over time. Floodplain harvesting will be incorporated into the existing monitoring, evaluation, and reporting frameworks for water sharing and water resource plans.

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## 6.4 Modelling updates

The department will continuously improve all components of the models to ensure they represent best available information. The department has invested in remote sensing technology and expansion of the river gauging network to improve our understanding of flood flow breakouts and return flows from the floodplain to the river. Further, implementation of the floodplain harvesting measurement framework will provide data on the volume of water taken through floodplain harvesting activities. The additional information provided from the above sources can be used to recalibrate and help improve on the current models over time.

Updates are important because:

- using models in regulated river systems and the Barwon–Darling unregulated river allows us to analyse the potential effect of any proposed changes to water sharing plan rules before implementing them
- models are used to assess compliance with extraction and diversion limits, and must be deemed acceptable by the Minister and the Murray–Darling Basin Authority (for more information on model updates, visit the Murray–Darling Basin Authority [website](#)).

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## 7 Topics for clarification

As part of previous public consultation, stakeholders have requested more detailed information on specific aspects of floodplain harvesting. This section clarifies these topics.

Answers to frequently asked questions are also available on the department's [website](#).

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### 7.1 Water supply works and flood works

#### Definition of a flood work

The Water Management Act 2000 (WM Act) defines a flood work, in relation to a floodplain, to be:

- a work, such as a causeway or embankment, within a floodplain that is likely to have an effect on the:
  - flow of water to or from a river or lake, or
  - distribution or flow of floodwater in times of flood.

This includes all associated pipes, metering equipment and other equipment.

A flood work may be used to direct floodwater and/or protect property from the effects of flooding. A flood work approval does not authorise the approval holder to take (that is, capture or harvest) water. The take of water requires a water access licence and a water supply work approval. The determination of whether a flood work approval should be issued is made in accordance with the relevant floodplain management plans, where applicable.

#### Definition of a water supply work

The WM Act defines a water supply work to be a work that is constructed/installed:

- for the purpose of:
  - taking water from a water source, or
  - capturing or storing water, or
  - conveying water to the point at which it is to be used, or
- that has or could have the effect of:
  - diverting water to or from a water source, or
  - impounding water in a water source.

This includes the reticulated system of such works, comprising all associated pipes, sluices, valves, metering equipment, and other equipment. The primary purpose of a water supply work is to supply water associated with a water access licence or basic landholder right.

A water supply work approval is required to construct and use a work to take water associated with a water access licence. In most instances, a water use approval will also be required. In some instances, both approvals are combined into a single approval.

## Interaction between a flood work and water supply work

Based on the definitions provided in the *Water Management Act 2000*, there are some instances where a work, such as a channel used to divert floodwater, may be both a flood work and a water supply work. In these situations, the work may require both approvals. It is the responsibility of the landholder to ensure they hold all relevant approvals to avoid compliance action.

## 7.2 Overland flow and floodplain harvesting

### Definition of floodplain harvesting

Floodplain harvesting is defined in the [NSW Floodplain Harvesting Policy \(PDF, 410.45 KB\)](#) as the collection, extraction, or impoundment of water flowing across floodplains. Floodplain harvesting includes rainfall and overbank flow, but excludes the taking of:

- water under a water access licence that is not a floodplain harvesting access licence
- water under a basic landholder right, including water taken under a harvestable right
- water under an applicable water access licence exemption under the WM Act
- used irrigation water.

### Taking of overland flow

The taking of water flowing across floodplains, including rainfall runoff and overbank flow that is not captured within the definition of floodplain harvesting, is currently accounted for under unregulated river access licences. An unregulated river water source is defined in water sharing plans as including all water occurring naturally on the surface of the ground and in rivers, lakes, and wetlands within the boundaries of the water source.

### Measuring the take of overland flow

Landholders taking overland flow under an unregulated river access licence are subject to the non-urban metering rules. This means different measurement rules apply to overland flow taken under floodplain harvesting licences and unregulated river licences. Under the non-urban metering rules, only closed conduit (meeting AS4747 standards) or open channel metering equipment can be used to measure overland flow, which is not always practical. In contrast, under a floodplain harvesting licence, overland flow must be measured through either point-of-intake metering (using the same standard as non-urban metering closed conduit) equipment or storage measurement equipment.

The [review of the non-urban metering rules](#) identified that there are some unregulated access licence holders who take overland flows under an unregulated river access licence. This type of water extraction cannot be effectively measured using non-urban metering measurement. The review recommended storage measurement equipment be used in these cases.

Landholders with a floodplain harvesting access licence are subject to the floodplain harvesting measurement rules and can use either point-of-intake or storage metering equipment as their primary metering equipment. Further information on the floodplain harvesting measurement rules is available on the department's [website](#).