

Licensing farm-scale validation

This fact sheet explains how we have involved eligible landholders in a process to review floodplain harvesting modelling and data, based on the recommendations of an independent review.

In 2019, the NSW Department of Industry (now the Department of Planning, Industry and Environment), together with the Murray–Darling Basin Authority, commissioned an [independent review of the NSW Floodplain Harvesting Policy implementation](#).

Alluvium Australia Pty Ltd was contracted to undertake the review, the purpose of which was to ensure that:

- modelling and data used to inform the floodplain harvesting model is technically robust and based on the best available information
- the implementation of the NSW Floodplain Harvesting Policy is consistent with relevant legislation and other related policies.

The [NSW Floodplain Harvesting Action Plan](#) is the NSW Government's response to the independent peer review. The plan addresses all recommendations arising from the review and sets out processes, actions and timeframes for implementation.

The Licensing Farm-scale Validation Process was developed as a result of the independent review and is in accordance with the [NSW Floodplain Harvesting Policy](#).

The validation process

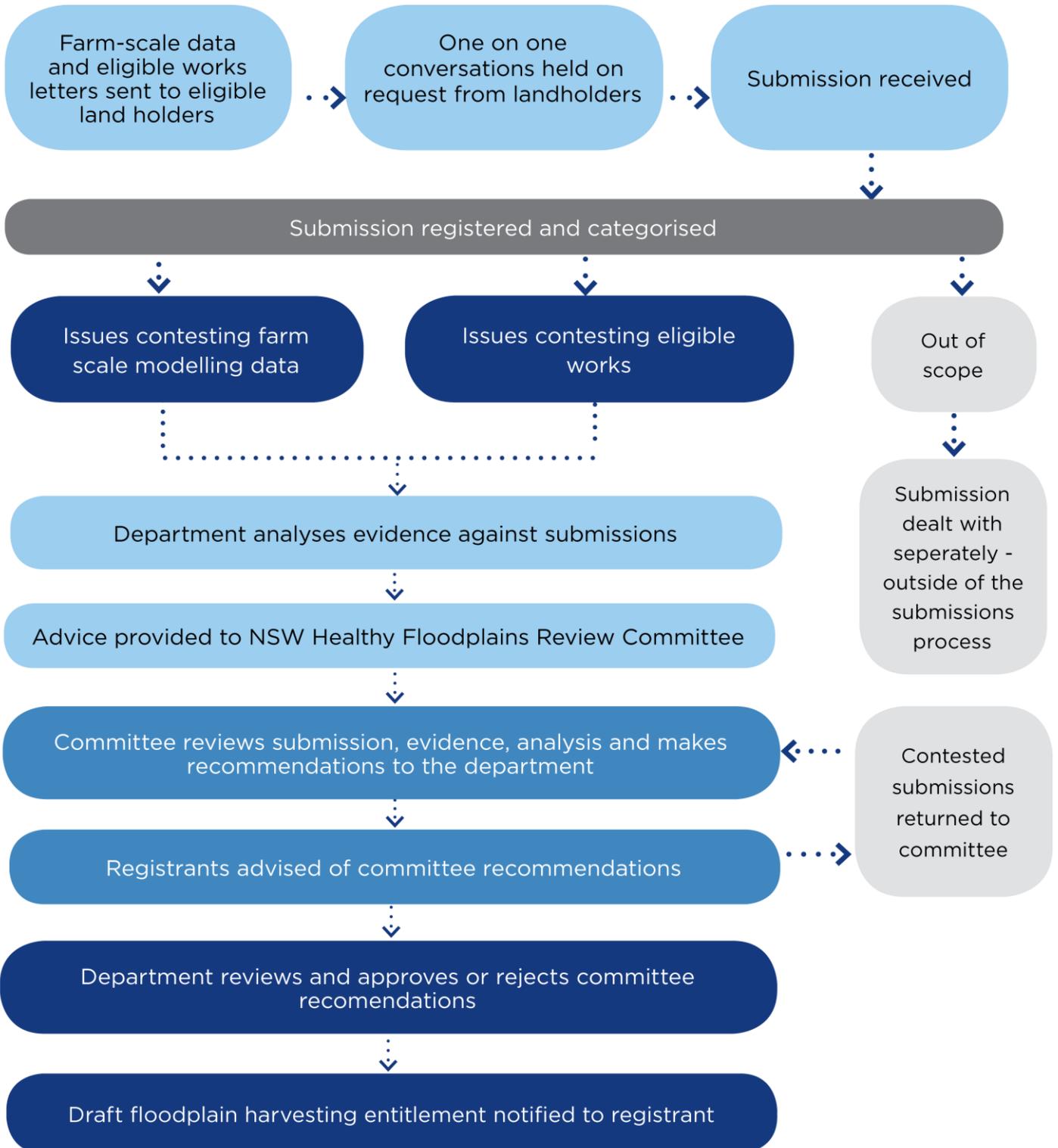
A key recommendation of the independent review was that on-farm information used in floodplain harvesting modelling should be communicated back to individual landholders with the opportunity to contest the data being used to represent their individual farm.

This set in motion the farm-scale validation process where the departments records of eligible works and floodplain harvesting capability were presented to eligible registrants across the five northern valleys. Registrants then had the opportunity to make submissions to the NSW Healthy Floodplains Review Committee if they disputed the information used by the department that had been compiled from multiple lines of evidence (Figure 1).

The process would have dual advantages. Firstly, it would improve the quality of the information used in floodplain harvesting modelling and the entitlement determination process. Secondly, it would provide transparency and procedural fairness benefits for eligible landholders. Together, this would result in the equitable sharing of the available floodplain harvesting resource, based on the floodplain harvesting capability of each eligible farm.

Figure 1. Farm-scale validation process

Farm-scale validation process



The NSW Healthy Floodplains Review Committee

The committee was established to provide procedural fairness to eligible landholders through implementation of the NSW Floodplain Harvesting Policy. The committee's role is to consider submissions on preliminary determinations concerning:

- Eligibility of works
- Calculation of the proposed share component of a floodplain harvesting access licence.

The current committee comprises four members including an independent chairperson¹:

- Independent Chair – Conrad Bolton
- Member representing the irrigation industry – Mark Winter
- Member representing the agricultural industry – Xavier Martin
- Member representing environmental groups – Beverley Smiles

The committee is assisted by an independent advisor, Timothy Duddy. Mr Duddy was a member of the committee from its inception until December 2020 and consequently he is able to provide guidance to the committee concerning its deliberations on farm scale validation submissions.

Membership of the committee is by invitation from the Deputy Secretary, NSW Department of Planning, Industry and Environment – Water. The committee operates under established [terms of reference](#).

From June 2015 to June 2021, the committee held a total of 49 meetings. During the period May 2020 to June 2021, 41 meetings were held to review and make recommendations on submissions received through the farm-scale validation process.

Eligible works

Eligible floodplain harvesting works are defined by the NSW Floodplain Harvesting Policy as works capable of floodplain harvesting that, on or before 3 July 2008, were:

- constructed on a floodplain in accordance with an approval granted pursuant to Part 2 or Part 8 of the *Water Act 1912* or the *Water Management Act 2000*; or
- subject to a pending application for an approval to construct the work on a floodplain under Part 2 or Part 8 of the *Water Act 1912* or the *Water Management Act 2000*; or
- constructed on a floodplain and for which it can be established to the satisfaction of the Minister for Water that the department did not require an approval under Part 2 or Part 8 of the *Water Act 1912* or the *Water Management Act 2000*.

¹ This was the membership of the committee as at 30 June 2021, when the term of appointment of all members expired. At the time of preparation of this fact sheet the department was in the process of reforming the committee.

Multiple lines of evidence

The department used multiple lines of evidence to establish the floodplain harvesting eligibility status of each farm and to establish models that reflected their floodplain harvesting capability. These lines of evidence included:

- Landholder registrations of interest
- Survey information from landholders
- Site inspections carried out by licensing staff
- Licensing records including historic information provided by landholders
- Satellite imagery, LiDAR and aerial photography
- Climatic records
- Topographic and parish maps
- Floodplain models
- Observed rainfall, streamflow and headworks storage records
- Published literature
- Data and information supplied by duly qualified practitioners

Table 1. Eligible Registrations of Interest per valley

| Valley | Number of eligible Registrations of Interest |
|----------------|--|
| Border Rivers | 42 |
| Gwydir | 143 |
| Namoi | 217 |
| Macquarie | 81 |
| Barwon-Darling | 33 |
| Total | 516 |

Eligible works and modelled capability letters

Beginning in April 2020, we wrote to eligible floodplain harvesting landholders to communicate the parameters used to model floodplain harvesting occurring through eligible works and their ability to access floodplain water. Two letters, sent by email, contained the following information:

1. For properties associated with a regulated river²:
 - Key information that was used to model floodplain harvesting for their property. Statistics and data were also provided on 3-year, 5-year and long-term average diversions.
 - A table describing the eligible floodplain harvesting works on their property and a map showing the location of the works.
2. For properties associated with an unregulated river³ or those that only had access to groundwater before 3 July 2008:
 - Key information that was used to calculate draft floodplain harvesting entitlements for their property.
 - Confirmation of eligible floodplain harvesting works on their property. No list of eligible works or maps were attached to this letter.

One-on-one consultation

We held one-on-one consultation sessions with those eligible floodplain harvesting landholders who requested a consultation session. The purpose of these sessions was to explain the information provided in the letters and the type of evidence landholders should provide if they intended to make a submission to the committee.

Submissions

Landholders were given 28 days to lodge a formal submission to the department about on-farm eligible works and modelling statistics. Landholders in the NSW Border Rivers and Gwydir valleys were given additional time (42 days) because of COVID-19 pandemic restrictions and the difficulty in accessing consultants during that period.

We categorised submissions based on the issues raised, for example:

1. Contesting eligible works such as storage capacity, pump size or location of works, or works not included in the water infrastructure plan (WIP)⁴
2. Contesting modelling data such as the rate of take, weather station data used or 3-year, 5-year and long-term average annual diversions
3. Out-of-scope matters such as policy changes

² For the purposes of this fact sheet, regulated rivers are those that receive the benefit of flows sourced from publicly owned storages constructed upstream of the Border Rivers, Gwydir, Namoi and Macquarie designated floodplains. The rivers referred to are principally the regulated sections of the MacIntyre, Gwydir, Namoi and Macquarie, but also include effluent streams such as the Mehi River in the Gwydir Valley and Pian Creek in the Namoi Valley. The relevant water sharing plans prescribe the regulated rivers and streams for each water source.

³ Unregulated streams do not receive flows that emanate from a publicly owned storage. These streams are defined in the relevant water sharing plans.

⁴ A Water Infrastructure Plan (WIP) was developed for each eligible registration of interest (ROI). The WIP consists of a map showing the location of each floodplain harvesting work and a table describing those works.

4. Contesting draft entitlement results for unregulated and groundwater only properties.

We analysed submissions received about eligible works and draft unregulated entitlements. We collated the submissions for the committee based on the evidence provided by the landholder and the department’s analysis of this evidence.

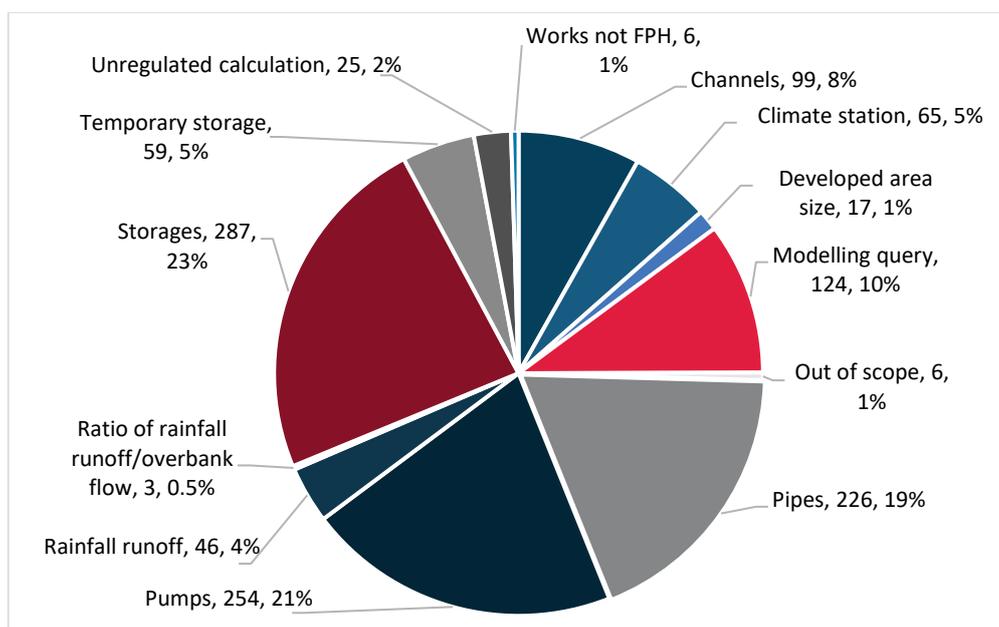
Submissions received about modelling were also analysed by the department. At the request of the committee, the department’s analysis of individual modelling submissions was also independently reviewed by Tony Weber of Alluvium Australia Pty Ltd. Mr Weber’s role was to ensure that the submission review process employed by the department was fair, used the best available information and was consistently applied.

The committee reviewed all submissions and analyses and made recommendations to the department on each issue raised. See Table 2 and Figure 2 for the total number and type of submissions received. The committee recommendations were reviewed and approved by the department.

Table 2. Number and categories of submissions received through the farm scale validation process

| Valley | Submissions Received | Contesting Eligible Works | Contesting Modelling | Contesting Draft unregulated entitlement |
|------------------|----------------------|---------------------------|----------------------|--|
| Border Rivers | 50 | 31 | 19 | 0 |
| Namoi | 156 | 93 | 40 | 24 |
| Gwydir | 101 | 62 | 37 | 1 |
| Macquarie | 78 | 48 | 30 | 0 |
| Barwon - Darling | 19 | 11 | 8 | 0 |
| Total | 404 | 245 | 134 | 25 |

Figure 2. Number and types of issues raised in submissions



Decisions of the Committee

The committee’s Terms of Reference (ToR) require its members to use their best endeavours to make decisions through consensus and cooperation. The committee has been very successful in reaching unanimity for most of the cases that have come before it, however, the ToR recognise that this may not always be possible and has provisions for those instances where consensus cannot be achieved.

Where consensus is not achievable the department prepares a report highlighting the position of each committee member. The report is presented to the Deputy Secretary DPIE-Water for consideration and determination. As at August 2021 the department has received 404 farm scale validation submissions of all types. Consensus was not achieved in only 25 of these cases. In regard to the submissions reviewed prior to the farm- scale validation process, there were no instances of non-consensus.

Evidence required to support submissions

The information supplied to landholders in 2020 about both eligible works and modelling parameters was based on the best information the department had available at that time using multiple lines of evidence. Through farm-scale validation, landholders had the opportunity to have their records amended if they could provide better evidence than that initially relied upon.

The quality of the evidence was paramount in this process. The revisions made as a result of farm-scale validation were based on there being better available evidence upon which to base decisions. Table 3, Table 4 and Table 5 describe the type of evidence required for eligible work, unregulated and modelling submissions respectively.

Table 3. Evidence requirements – submissions contesting eligible works

| Changes requested | Evidence required |
|---|--|
| Specification amendment pump size or type, pipe size. | Photographic evidence verifying the change such as a photo of a pump compliance plate or pipe size. Photos were required to be GPS enabled so that the location of works could be verified. |
| Change in capacity, for example pumping rate or pipe flow rate. | Certification from a suitably qualified person, such as an engineer, concerning the feasibility of the change claimed, for example the capability of a pump to perform at the rate claimed, or the capability of a pipe to pass flows at the rate claimed. |
| Change in storage capacity. | A storage curve prepared by a suitably qualified person, such as registered surveyor. |

| Changes requested | Evidence required |
|--|---|
| Addition of works not included in the WIP (water infrastructure plan). | <p>Photographic evidence of the existence of the works. Photos were required to be GPS enabled so that the location of the works could be verified.</p> <p>A statutory declaration attesting to the date of construction or installation of the works.</p> <p>Certifications from suitably qualified persons, if required, depending on the type of works.</p> <p>A storage curve, if required, depending on the type of works.</p> |

Table 4. Evidence requirements – submissions contesting draft unregulated floodplain harvesting entitlements

| Changes requested | Evidence requirements |
|--|---|
| Area irrigated exceeds the authorised area ⁵ of an existing unregulated river access licence. | <p>Remote sensing that demonstrates that additional irrigated crop was grown during the volumetric conversion years of 1993 to 1999.</p> <p>Statutory Declaration concerning the area of crop grown during the years 1993 to 1999</p> |

Table 5. Evidence requirements – submissions contesting modelling parameters

| Issue | Evidence requirements |
|---|---|
| Change of climate station | Verification that the climate station claimed by the registrant is the station located closest to their irrigation development. |
| Claiming access to runoff from neighbouring areas | <p>Confirmation that there are eligible works installed that are capable of diverting the runoff claimed.</p> <p>Verification of the size of the catchment area, runoff rates and frequency of runoff events claimed by the landholder.</p> |

⁵ The NSW Floodplain Harvesting Policy states that where existing floodplain harvesting works in unregulated river water sources meet the eligibility criteria for assessment and it can be demonstrated that the area irrigated using water taken by those works is in addition to the area assessed during the volumetric conversion process, a new access licence may be issued. The share component of the issued access licence will be determined using the volumetric conversion process that was used for unregulated river access licences in the same water source. Most volumetric conversions occurred during the early 2000s and were based on crop water requirements, together with the maximum area of irrigated crop grown during the years 1993 to 1999. The information used for the volumetric conversions was derived from survey information provided by licence holders. Because of the length of time that has elapsed, the department considered that using remote sensing to identify cropping area was a more reliable method for determining unregulated floodplain harvesting entitlements. For further information go to [volumetric-conversion-booklet](#).

| Issue | Evidence requirements |
|--|--|
| Inclusion of sacrifice fields ⁶ and other temporary storages | Confirmation of the storages that are to be included in the eligible storage capacity for each farm. Remote-sensing analysis to demonstrate that the claimed areas have historically been used as temporary storage associated with floodplain harvesting events. |
| Property should be excluded from the requirement for floodplain harvesting licensing as the farm rarely has access to overland flow. | Evidence to demonstrate that these farms have no capacity to access overland flow. |
| Increase in the frequency of access to overbank flow. | Confirmation of the claimed increase in frequency through an analysis of remote sensing data and water balance modelling. |
| Increase in area developed for cropping. | Confirmation of the increased area claimed through an analysis of remote sensing data. |
| Allowance for gravity filling of storages. | Verification that there are works installed works that are capable of facilitating the gravity filling of storages. |

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⁶ A sacrifice field is an irrigation field where water is temporarily stored during a floodplain harvesting event. The water captured is transferred into a permanent storage when it is possible to do so. On occasions the field will have a crop growing in it and hence the crop will be sacrificed when the field is used as a temporary storage.