# Investigation report:

Release of the Murray Darling Basin Authority’s report ‘Monitoring first flush flows in the Namoi, Macquarie and Warrego Rivers - Remote sensing for compliance and ecohydrology’

Interim Inspector-General of Murray–Darling Basin Water Resources



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## Executive Summary

On 21 October 2019, the Minister for Water Resources, Drought, Rural Finance, Natural Disasters and Emergency Management, the Hon. David Littleproud MP, requested the Interim Inspector-General of Murray–Darling Basin Water Resources to conduct an investigation into the release of the Murray–Darling Basin Authority (MDBA) report titled, ‘Monitoring first flush flows in the Namoi, Macquarie and Warrego Rivers – Remote sensing for compliance and ecohydrology’ (MDBA 2019a).

This investigation focuses on:

* the events that led to the premature release of the report
* the MDBA response to the premature release of an incorrect version of the report
* the adequacy of MDBA procedures for managing the release of compliance and enforcement related information.

From a technical perspective, the purpose of the report was to bring together a geospatial analysis of flows in particular regions during a period of embargo.

What was not as clear within the agency was how this information would be applied for compliance purposes and communicated to regulators, in particular the NSW Natural Resources Access Regulator (NRAR). This uncertainty was reflected within the organisation with some describing the report as a 'technical’ report and others describing it as a ‘technical report with compliance information’.

Either way, stronger governance is required around:

* the process for the commissioning of a report of this kind
* the purpose of the report and associated governance procedures
* the handling; storage; approval and pathways for the exchange and dissemination of information.

The investigation also identified there are procedural and technical issues within the MDBA Communications team:

* The publication of the report and related media release had to be uploaded separately as the MDBA’s technology does not allow both to be loaded simultaneously. This situation increases the risk of an error in the publication process.
* The report’s unintentional publication was identified by external stakeholders almost 24 hours after the original publication, not by the MDBA.

The response by the MDBA to the premature release of the report was also examined. When the MDBA was notified the report was still on their website, the initial response from MDBA was to leave the report on the website as it had been downloaded a number of times and subsequently disseminated. MDBA advised that this was a conscious choice, driven by a strong culture of transparency and this was the reason for the decision to leave the initial report on the site.

Stakeholders, including the minister’s office and the NSW Department of Planning, Industry and Environment (DPIE) advised the MDBA to remove the geospatial information relating to storages that appeared to increase surface water in some locations during a temporary embargo that had been put in place. MDBA agreed to do so and deferred the initial planned release of the report. There was additional advice provided to the MDBA to remove the report completely from its website once the errors were discovered. MDBA did not action this advice until hours after this advice had been provided.

There was information exchanged between MDBA and NRAR in accordance with the Memorandum of Understanding between the two agencies. However, the information related to compliance was not formally referred to NRAR as an 'allegation' under the Memorandum of Understanding, but rather shared informally as technical information. This resulted in NRAR not giving attention to the information or to treat it as an allegation of non-compliance.

During the course of this investigation both MDBA and NRAR have been very cooperative. The MDBA have agreed to the recommendations in this report to remedy the situation and ensure it is not repeated.

## Introduction and scope of investigation

On 21 October 2019, the Minister for Water Resources, Drought, Rural Finance, Natural Disasters and Emergency Management, the Hon. David Littleproud MP, sent a letter to Mr Mick Keelty AO, Interim Inspector-General of Murray–Darling Basin Water Resources, requesting an investigation into the release of the Murray–Darling Basin Authority (MDBA) report ‘Monitoring first flush flows in the Namoi, Macquarie and Warrego Rivers – Remote sensing for compliance and ecohydrology’ (MDBA 2019a). In particular, the request was to examine:

* the events that led to the premature release of the report
* the MDBA response to the premature release of an incorrect version of the report
* the adequacy of MDBA procedures for managing the release of compliance and enforcement related information.

The minister requested to be provided with a report on the outcomes of the investigation and any actions necessary to address the findings.

### Investigation

A number of staff were interviewed from both the Murray Darling Basin Authority (MDBA) and the NSW Natural Resources Access Regulator (NRAR) during the course of this investigation. For the purpose of this report names have been de-identified, however written records of conversations are held by the Office of the Interim Inspector-General.

Whilst this investigation report highlights key dates and events, a condensed timeline is provided in Appendix A.

### Background of the report

In early 2018, the MDBA developed a GIS and Spatial Services capability within the Data Services Section of Corporate Strategy and Services Division.

This team was designed to build the internal capacity to access, analyse and apply Basin-wide European Space Agency ‘Sentinel-2’ satellite imagery for use in compliance, ecological mapping and general landscape monitoring. The MDBA advised the remote sensing involves the use of satellite imagery to study the entire Murray–Darling Basin (the Basin) to visually examine the landscape, the vegetation, to track environmental flows, inform river management, and to assist in understanding how the landscape has changed over time. This imagery can also be used in support of compliance activities.

The satellite imagery used by the MDBA is available to the public from the European Space Agency and managed by Geoscience Australia within the national computing infrastructure at the Australian National University.

The report is a presentation of the results of monitoring ‘first flush’ flows in the Namoi, Macquarie and Warrego catchments that occurred in March to April 2019. The flows in the Macquarie and Namoi were subject to a section 324 (*Water Management Act 2000* (NSW)) temporary water restriction (an embargo) implemented by the New South Wales Government. The embargo was in place to protect the inflows to these catchment areas from general extraction due to the drought.

It is important to note that not all pumping from these water sources was prohibited by the embargo; water users were allowed to pump for stock and domestic purposes, and some high security users such as town water utilities were allowed to source water for residential supply. There are also alternative sources of water available in some of these areas, including groundwater that the embargo did not apply to. These factors need to be adequately considered when monitoring compliance to ensure a fair, transparent and enforceable water compliance system is maintained.

## The events that led to the premature release of the report

In response to the temporary embargo, from 2 to 17 April 2019, MDBA and NRAR worked collaboratively in the analysis of remote sensing imagery to monitor the first flush event. NRAR was also viewing satellite imagery in the Basin, and the information was exchanged under the [Memorandum of Understanding](https://www.industry.nsw.gov.au/__data/assets/pdf_file/0008/157049/NRAR-MDBA-signed-memorandum-of-understanding.pdf) (NRAR 2018) and the [Collaboration Protocol](https://www.mdba.gov.au/sites/default/files/pubs/collaboration-protocol-nsw-nrar.pdf) (MDBA 2019b) between MDBA and NRAR.

By having these agreements in place, both NRAR and the MDBA have demonstrated an understanding of the need to engage collaboratively with appropriate levels of governance.

During the embargo period there was two-way discussion between the agencies on the observations of the flow. This information was being used to sense check what both MDBA and NRAR were observing to assist with the compliance activity on the ground. Essentially, both agencies refer to this methodology as the ‘eye in the sky’ assisting with ‘boots on the ground’.

From 2 to 12 April 2019, NRAR had deployed twelve compliance officers to proactively monitor compliance with the embargo and to respond to any allegations of non-compliance during this period.

Following the embargo, NRAR Water Regulation team worked with the NRAR Regulatory Innovation team to analyse the satellite imagery, together with any information and associated intelligence to ascertain what, if any, follow up action was required. There was a planned operation for late October 2019.

It appears that after 1 July 2019, there was little communication between the MDBA GIS and Spatial Services Team and the NRAR Regulatory Innovation Team.

On 19 August 2019, the MDBA Communications received an electronic formal request for the start of the release process of the report, along with the publication checklist. The checklist for new publications on the MDBA website was approved by MDBA Compliance at the Senior Executive level as per MDBA protocols.

On the same date the MDBA Communications team started the normal process of assessing the web accessibility of the report. Also as part of the normal publication process the documents were sent to the media team to commence preparation for the release of the report.

On this same date MDBA media prepared a draft joint media release in preparation of engagement with NRAR.

It is understand that the MDBA began exploring privacy risk associated with use of GIS technologies in June 2019.

In advance of the report’s publication the MDBA added a [statement on its privacy page addressing the collection, use and disclosure of personal information in a GIS context](https://www.mdba.gov.au/privacy/privacy-collection-notice-geospatial-satellite-images).

On 6 September 2019, MDBA Compliance sent an email to NRAR and the Office of the Interim Inspector-General of Murray-Darling Basin Water Resources proposing a joint media release and outlined a communication strategy. The report was attached to the email, however NRAR advised that a request to review the document was not made at the time.

On 12 September 2019, NRAR responded to MDBA providing in principle support of the joint media release, and advised they would formally get back to MDBA.

On 17 September 2019, MDBA sent the draft media release to the minister’s office for information. A new release date of 16 October 2019 was identified.

On 18 September 2019, NRAR media contacted MDBA media where concerns were verbally raised by NRAR in relation to the timing of the media release with the report, as NRAR was still conducting enquiries in relation to the embargo. MDBA responded with an email advising a new release date of 16 October 2019 had been identified. NRAR’s planning was for their compliance operation to commence the week of 28 October 2019.

From 17 September to 14 October 2019, negotiations continued between MDBA and NRAR around the timing of the joint media release.

On 11 October 2019, MDBA Communications emailed NRAR Media outlining the intent to publish the report on 16 October 2019. NRAR then briefed the Department of Planning, Industry and Environment (DPIE) who expressed concern to NRAR about the timeframes.

On 16 October 2019 the MDBA Communications team and NRAR media were continuing negotiations around timings and 17 October 2019 was identified. That same day, NRAR responded with amendments to the media release and input from the DPIE.

At 8:20am, 17 October 2019 there was an email from the minister’s office to the MDBA Communications team requesting the release be delayed to allow for the potential involvement of the Interim Inspector-General in the release. MDBA confirmed with the minister’s office that the release would be delayed until 11am that morning.

At 9am, 17 October 2019, the MDBA GIS & Spatial Services team, Corporate Division, sent a copy of the report as a courtesy to a range of stakeholders, including DPIE.

About 9am, 17 October 2019 MDBA Communications published the report in readiness for the morning release. The publishing process involves MDBA loading the report through the ICT portal in preparation for the media release, which has a hyperlink to the report. MDBA advised this is normal procedure as it generally takes anywhere up to an hour for a document to be uploaded on to the web page (the website cache process takes time). The technical capability does not exist for the report and media release to be uploaded simultaneously.

At this point in the process, there was no risk assessment of the report undertaken as this was not part of normal procedures.

At 12:12pm, 17 October 2019 DPIE emailed relevant NRAR and MDBA stakeholders advising a range of concerns around the content of the report, including appropriately setting the scene for the embargo, the difficulties and barriers to successful compliance and removing the geolocation coordinates.

Following this correspondence MDBA executive agreed to take the report off the website which was communicated to the MDBA Communications team, and the team proceeded to remove it. At that time all involved thought the report had been taken down, however it was later determined the report continued to be publically available.

MDBA advised they had historically identified that the website coordinator required the ability to remove a publication in an emergency and/or exceptional circumstances. This role previously sat within the website technical team, who are not always readily available in the case of an emergency.

The removal of this report was the first time this particular staff member had removed material from the website and was not aware of the full process, hence the correct procedure was not followed and the report was not removed. None of these details were realised until the following day, 18 October 2019.

At 1:16pm, 17 October 2019 MDBA sent an internal email to relevant internal stakeholders stating that publication of the report would be delayed to 22 or 23 October 2019, to effectively enable both agencies 'to nut out any issues they wish to address in the report'.

At no stage did the MDBA make a formal referral of the locations across the Namoi and Macquarie that were seen to fill by at least 10% after the embargo was in place to NRAR for compliance consideration and/or investigation.

NRAR advised that in August 2019 there was a meeting with MDBA Compliance where the process for formally referring matters was discussed. It was agreed at this meeting that any referral should be sent via the NRAR enquiry email and/or phone number.

NRAR did not view receipt of the report in October 2019 as a formal referral for compliance action. Instead, NRAR viewed it as a technical document on the work conducted by the MDBA that would assist with NRAR's planned 'on the ground work' and as a comparison for NRAR's own in-house analysis.

## The Murray Darling Basin Authority’s response to the premature release of an incorrect version of the report

At 12:30pm, 18 October 2019 MDBA became aware the report was live on the website, and had been since 9am the previous day (17 October 2019). Website statistics indicated the report had been viewed 19 times and downloaded twice. MDBA had also received calls from stakeholders about the report. MDBA advised that given the report had already been viewed and disseminated, the MDBA made a decision to leave the report on the website, to ensure transparency.

Shortly after, the minister’s office was briefed of this decision and indicated a preference for the report to be withdrawn on privacy grounds. DPIE also made a request that the geospatial information, including latitudes and longitudes, be removed from the report.

MDBA reconsidered their position and at 6:30pm the same day removed the original report from their webpage. MDBA intended on replacing the report with an updated version removing location information, and providing an explanation as to the publication error.

At 8:30pm, the amended report was uploaded to include reference to the identification of the report. The publication error was noted on the landing page.

At 11:20pm MDBA made a decision to also update the media release section of the web page. MDBA also messaged via social media the publication error and highlighted the revised report.

MDBA chief executive Phillip Glyde has since publically apologised for the report stating that it was not intended to release the report with that level of detail and personal information.

On 21 October 2019, MDBA commenced an internal review, with the scope including procedures around the development, approval and publication of a report.

## The adequacy of Murray Darling Basin Authority procedures for managing release of compliance and enforcement related information

A range of MDBA staff were interviewed and it is evident there is confusion around the purpose of the report. The report is titled 'Monitoring 'first flush' flows in the Namoi, Macquarie and Warrego Rivers – Remote sensing for compliance and ecohydrology'. The title clearly states the purpose of the report.

MDBA Compliance staff advised the report was a technical report and as such was not locked down nor was access restricted—anyone in the MDBA could have accessed the report had they known about it through a search in the MDBA records management system.

The reason provided by MDBA Compliance for it being deemed a technical report rather than a compliance report is that there was no intention to imply illegal activity through the analysis. This position adopted by MDBA Compliance is at odds with elements of the report that state:

If the storage was filled during the period of flow embargo, then the imagery and supporting information will be provided to compliance officers as one line of evidence to consider for further investigation. (MDBA 2019a)

Both agencies agreed that the sharing of this information was partially to monitor the embargo to ensure entitlement holders were complying with the embargo. MDBA advised as they do not have investigative powers relating to water take, they were monitoring the flow, as their role is to ensure the state agencies are effectively conducting compliance activities. The MDBA further described the purpose of the report was to communicate to the community that the technical capability exists to monitor water flow, which in turn has a deterrent effect.

On 23 September, the GIS and Spatial Services team, MDBA sent an email to the Compliance team seeking clarification and suggesting to formalise processes around monitoring flows, including the communication of this activity and the dissemination of the information. The team stated they were concerned as to how to manage the data; who is involved internally and externally; and how to communicate with NRAR. Specifically, whether the material should be forwarded formally or informally.

MDBA Compliance advised the procedures currently being developed for the use, handling and dissemination of compliance material were not adopted as the report was viewed as a technical report. MDBA has now revised their procedures relating to compliance material to ensure the information is locked down and access limited to one team, which is the Audit and Investigation team. Only this team and their managers have access, which is based on the need to know principle.

## Findings

1. There is a lack of understanding around the purpose of the report; what constitutes compliance information; and associated handling and dissemination of compliance material across MDBA.
2. The report was widely viewed as a compliance report within MDBA, however MDBA Compliance executive described the report as a technical report.
3. Clarification is required around the approval process for publication of reports in the MDBA whether they be for compliance reporting or otherwise.
4. Whilst the GIS spatial information is publically available through various websites, the analysis and inferences that were drawn by MDBA in the report raises the sensitivity of the information contained.
5. Staff at MDBA have reported they feel they need to have ‘top cover’ to instil confidence in the purpose, development and sharing of information.
6. The risk assessment process for publications and associated release is not clearly documented, though there is evidence that some risks were considered.
7. MDBA were progressing the publishing of the report, whilst NRAR indicted they had not completed due diligence in ascertaining potential compliance issues.
8. Whilst the governance exists between the two agencies, there is a lack of formal referral processes of compliance material, and the closing of the loop relating to the referral.

## Recommendations

During the course of the investigation, MDBA has been proactively identifying solutions and improved processes, however the following recommendations should be addressed by 31 December 2019 or earlier:

1. Strengthen compliance material procedures, including:
	1. Establish compliance report process, ensuring the purpose of the report is clear.
	2. Raise awareness and educate staff to ensure the identification, handling and dissemination procedures are followed and are continuously reviewed and strengthened if necessary.
	3. Undertake risk assessments when commissioning, developing and publishing compliance and/or technical reports.
	4. Establish whether a matter is to be treated as a compliance matter at the outset in order to invoke the compliance process procedures rather than decide midway through an inquiry.
2. Strengthen current referral processes with relevant state compliance agencies, including between MDBA and NRAR to ensure the agreed referral process is written in the relevant governance documents including MOUs.
3. Improve processes for drafting website material to reduce the risk of unintentional releases, including:
	1. The publication checklist—an updated section in the checklist has been added to include a stakeholder risk assessment; the purpose of the report; whether the document relates to compliance; and if so, handling and dissemination information strictly applies.
	2. Appropriate training in relation to loading and removing web content.
	3. Establishing a detailed process document that helps guide people who are removing publications, including a follow up email to media team and relevant line area to note it has been unpublished, and then additional checks to ensure the publication has been removed.
4. Provide out of hours website technical support for uploading and removal of material to the MDBA website.
5. Establish and communicate approval processes for publications, ensuring reports for publication are cleared by line area managers or technical experts and approved for publication by the relevant general manager. Where the report overlaps line areas within MDBA, all relevant line managers should approve the report and associated release.

## Appendix A: Timeline of events

Table A1 Timeline of events

| Date | Action/activity |
| --- | --- |
| 2 to 17 April 2019 | * MDBA and NRAR work collaboratively on monitoring the first flow event through the use of remote sensing imagery, and exchanging information as per their Memorandum of Understanding.
 |
| 2 to 12 April 2019 | * NRAR deploy 12 officers in the Namoi and Macquarie catchments to monitor on ground that the embargo was being upheld by users in the catchments.
 |
| 17 April 2019 | * First flow event finished.
 |
| After 1 July 2019 | * Limited communications regarding the analysis of the remote sensing/spatial data between MDBA and NRAR.
 |
| July 2019 | * NRAR Water Regulation worked with the NRAR Regulatory Innovation to analyse the satellite imagery, together with other information and intelligence, to ascertain if any follow up required.
 |
| 19 August 2019 | * MDBA Communications receive electronic request to start release process of the ‘Monitoring ‘first flush’ flows in the Namoi, Macquarie and Warrego Rivers – Remote sensing for compliance and ecohydrology' report, along with publication checklist.
* Checklist is approved by MDBA Executive.
* MDBA Communications commence publication process, including assessing web accessibility of report.
* MDBA seek internal legal advice relating to privacy issues with the reports release.
* A privacy statement is added to the report and webpage.
* MDBA Media prepare draft joint media release in preparation of engagement with NRAR.
 |
| 6 September 2019 | * MDBA Compliance email NRAR and the Office of the Interim Inspector-General of Murray–Darling Basin Water Resources to propose a joint media release and a communication strategy for the report's release.
 |
| 12 September 2019 | * NRAR respond to MDBA providing in principle support of the joint media release, and advise they would formally get back to MDBA.
 |
| 17 September 2019 | * MDBA Communications send draft media release to the minister’s office, and receive response requesting a delay to the release date to allow for the availability of the Interim Inspector-General to potentially welcome the report.
* MDBA Communications liaised with NRAR Media for updated draft release date of 16 October 2019.
 |
| 18 September 2019 | * NRAR Media contacted MDBA Media where concerns were verbally raised by NRAR in relation to the timing of the media release with the report.
* MDBA respond with email advising new release date of 16 October 2019 identified.
 |
| 17 September to 14 October 2019 | * Negotiations continue between MDBA Communications and NRAR Media around timing of joint media release, noting NRARs investigations were incomplete.
 |
| 11 October 2019 | * MDBA Communications email NRAR Media outlining intent to publish on 16 October 2019.
* NRAR brief NSW DPIE, who express concerns about the timing of the report.
 |
| 16 October 2019 | * Negotiations continue between MDBA Communications and NRAR Media around timings.
* New release date of 17 October 2019 identified.
* NRAR respond to MDBA with amendments to the media release and input from the DPIE.
 |
| 17 October 2019 | * 8:20am: Email from minister’s office to MDBA Communications team requesting a delay to the report release time to allow for potential involvement of Inspector-General.
* Report release time amended from 10am to 11am.
* 9:00am: GIS & Spatial Services, Corporate Division sent the report, as a courtesy, before release to a range of stakeholders: NSW DPIE, Commonwealth Environment Water Office, NRAR, Bureau of Meteorology, Geoscience Australia, Queensland Department of Natural Resources, Mining and Energy.
* Approximately 9:00am: MDBA Communications publish the report in ‘readiness’ for morning release.
* 12:12pm: DPIE email relevant NRAR and MDBA stakeholders advising a range of concerns around the content of the report.
* MDBA Media instructs for the report to be removed from MDBA webpage.
* 1:16pm: MDBA notify external stakeholders the report release date is delayed until 22 or 23 October 2019.
 |
| 18 October 2019 | * 12:30pm: MDBA made aware that the report was live on the website, and had been since 9am the previous day (17 October 2019). Website statistics show the report had been viewed 19 times and downloaded twice.
* 1:30pm: MDBA Compliance and Partnerships, Engagement and Policy agree to leave the report up to ensure transparency.
* Minister’s office is advised of the report and indicates preference to take it down.
* NRAR requests the location information (latitudes and longitudes) be removed from the report.
* 6:30pm: MDBA reconsiders and removes the original report to be replaced with an updated version removing location information, and providing explanation as to why.
* 8:30pm: Updated version of the report uploaded with the publication error noted on the landing page.
* 11:20pm MDBA update the media release section of their web page.
* MDBA messaged via social media the publication error and highlighted the revised report.
 |
| 21 October 2019 | * MDBA communications team conduct a review on current practices and make immediate changes to current practice and policies.
 |

## References

MDBA 2019a, [Monitoring flows in the Namoi, Macquarie and Warrego Rivers](https://www.mdba.gov.au/publications/mdba-reports/monitoring-flows-namoi-macquarie-warrego-rivers), Canberra.

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NRAR 2018, [Memorandum of understanding between the Murray-Darling Basin Authority (MDBA) and the NSW Natural Resources Access Regulator (NRAR) (pdf 387kb)](https://www.industry.nsw.gov.au/__data/assets/pdf_file/0008/157049/NRAR-MDBA-signed-memorandum-of-understanding.pdf), February.