



# Summary of Carnarvon Floodplain Management Working Group report

## Floodplain management for the Carnarvon horticultural industry

### Background

Periodic flooding of the lower Gascoyne River floodplain at Carnarvon is a natural event. The flooding results from cyclonic and thunderstorm activity, with the risk period generally from November to May, associated with the wet season in the north of WA. The Carnarvon horticultural area has suffered considerable damage following flooding of the Gascoyne River in 1960, 1961, 1974, 1980, 1995, 2000, 2009, 2010/11 and 2021.

The WA Government has undertaken restoration programs to replace soil lost for most of these flooding events. Apart from the soil loss and risks of permanent damage to the natural resource, the costs and delivery of the restoration programs have failed to improve soil conservation and land management practices, and therefore the business resilience, of many in the current industry. A more enduring model is required for a sustainable Carnarvon horticultural industry.

To assist the horticulture industry to recover and reduce future impacts, the WA Government convened the Carnarvon Floodplain Management Working Group to review factors that contributed to the impacts of the flood.



Flooding of the Gascoyne River 2021 (Photo: CGA)

### Report

A report has been prepared by the Working Group focused on improving management of the floodplain and, most importantly, its soils on which the Carnarvon horticultural industry relies on for profitable and sustainable production.

Five critical success factors have been identified to resolve the current issues and be better prepared for future events. These are:

1. Governance
2. Flood planning and mapping
3. Waterways management
4. Soil conservation and land management, and
5. Waste management

The full report can be accessed at [agric.wa.gov.au/carnarvon-floodplain-report](http://agric.wa.gov.au/carnarvon-floodplain-report)

## Summary of recommendations

### 1. Establish a governance structure to promote a coordinated and long-term strategic approach to floodplain management

- 1.1 The current Working Group continue to provide the coordination and long-term strategic leadership for the management of the floodplain, including the implementation of the endorsed recommendations. The Working Group should be maintained and actively engaged in the long term for the benefit of the horticultural industry.
- 1.2 The Working Group be represented on the Local Emergency Management Committees to ensure effective communication, collaboration, and preparedness for pending floods.
- 1.3 The Commissioner of Soil and Land Conservation, Department of Primary Industries and Regional Development (DPIRD), Department of Water and Environmental Regulation (DWER), Shire of Carnarvon and Department of Fire and Emergency Services (DFES) clearly define and communicate expectations and regulatory powers to landholders, with support from Carnarvon Growers Association (CGA).
- 1.4 The Working Group develop a conflict resolution pathway to assist mediation of on-farm issues between stakeholders

and communicate the pathway to all stakeholders.

### 2. Undertake flood planning and mapping to increase understanding

- 2.1 DWER and Shire of Carnarvon develop a high-resolution digital elevation model through comprehensive surveys of the river and floodplain. The digital elevation model will assist the understanding of sand build-up in the channel and floodways; identify and capture recent changes (such as private levees and infilling of low areas) comparison of Government-constructed levees with as-constructed drawings.
- 2.2 DWER and Shire of Carnarvon develop a new floodplain model to better understand flood behaviour; assess the impact of local structures added since the last model was developed (20 years ago); inform potential engineering solutions such as increasing breakouts upstream or additional levee structures downstream: and guide land use planning. The study should include benefit cost assessments.
- 2.3 DWER working with the Bureau of Meteorology and DFES prepare and deliver consistent communication on how the flood level measurement are reported, including how this relates to previous events.
- 2.4 Shire of Carnarvon and DWER consider the installation of visual gauge boards along the

river for growers to observe local river levels to improve awareness and decision making.

### **3. Reduce impacts through waterways management**

- 3.1 DPIRD review the existing and new information with industry representatives to:
- Identify all flood prone areas susceptible to impact using new data sets.
  - develop up to date maps of floodway areas,
  - Identify where a road may constrain flow of a floodway, and
  - develop recommended soil management practices (cultivation practice and vegetation cover) for privately owned floodways.
- 3.2 Where there is joint ownership of a floodway, a management plan facilitated with all landowners by the DPIRD Development Officer.
- 3.3 DPIRD, Shire of Carnarvon and DWER develop a management plan for publicly owned floodways and riverbanks. This includes where floodway flow may be impeded by a road or other infrastructure.
- 3.4 DPIRD together with the Working Group develop a process for engaging and encouraging landowners who are reluctant to commit to preparing and implementing management plans for

improved floodplain management.

- 3.5 DPIRD work with the Shire of Carnarvon and DWER to identify floodways and riverbank work that could form community projects.
- 3.6 Shire of Carnarvon and DPIRD develop a budget for initial remediation of publicly owned floodways and their ongoing maintenance.
- 3.7 Shire of Carnarvon, with assistance from DWER and DPIRD, develop grant applications to fund the initial clean-up program and ongoing maintenance of floodways.
- 3.8 DPIRD and Shire of Carnarvon develop a grant application for a riverbank management plan.

### **4. Reduce loss through improved soil conservation and land management practices**

- 4.1 DPIRD employ a Development Officer based at Carnarvon for at least three and up to five years to lead education and engagement with growers in the Carnarvon horticultural area, and promote better land, soil, and crop management practices to mitigate the impact of flood events and reduce soil loss from horticultural properties.
- 4.2 In consultation with industry, DPIRD develop, publish, and promote a guide of contemporary farm management practices for the Carnarvon horticultural area. It should include practical

management options, landholder compliance requirements and obligations, and flood and cyclone preparation checklists.

DPIRD and CGA encourage all growers to participate in existing programs, such as Building Horticulture Business Capacity, Farm Business Resilience, and Freshcare Environmental Code of Practice.

- 4.4 DPIRD, with industry, develop the WA Government policy on future soil restoration for the Carnarvon horticultural area.

## 5. Improve waste management

- 5.1 CGA, DWER and Shire of Carnarvon develop a strategy to regularly encourage growers to appropriately dispose all waste and rubbish from their property.
- 5.2 Good practice waste management guidelines be developed by a grower group with DWER, CGA, Keep Australia Beautiful Council, and DPIRD.
- 5.3 The State Government co-invest with industry to engage and audit growers in relation to the management of on-farm waste/rubbish.
- 5.4 A waste management compliance plan be developed for implementation by DWER and the Shire of Carnarvon.

- 5.5 Department of Planning, Lands and Heritage be invited to address the Working Group to outline their plan on managing rubbish on Crown land.

- 5.6 DPIRD and CGA investigate options to manage excess agricultural produce, using incentives available under WasteSorted grants.

- 5.7 DPIRD and CGA will work with industry to investigate and support proposals to devise solutions for horticultural and chemical waste management.

## Next Steps

Stakeholders and community members are invited to review the full report available at

[agric.wa.gov.au/carnarvon-floodplain-report](http://agric.wa.gov.au/carnarvon-floodplain-report)

The Minister for Agriculture and Food has responded with support for implementation of the recommendations in the Working Group report.

[LINK](#)

## More information

Visit [agric.wa.gov.au/carnarvon-floodplain-report](http://agric.wa.gov.au/carnarvon-floodplain-report)

Or contact Val Shrubbs by email [valerie.shrubbs@dpird.wa.gov.au](mailto:valerie.shrubbs@dpird.wa.gov.au)