

NOTICES OF MOTION

Notice of Motion No. 9.1 Investigation of Environmental Outflow – Northern Arm of Fern Beach, Billinudgel Nature Reserve

That Council:

1. Notes:

- a. The evidence of a pre-1976 drainage channel to the ocean north of Fern Beach within Billinudgel Nature Reserve (Reserve).
 - b. That coastal channels can provide rare and ecologically significant habitat.
 - c. The channel may have been closed as part of creating a coastal track to Wooyung that no longer exists.
 - d. The Reserve may help to drain floodwaters from the north and north-west.
 - e. The impact of the channel's closure during major rainfall has not been studied.
 - f. That more investigation is required on the above matters.
- 2. Requests staff to prepare a report investigating opportunities for the creation of a managed environmental outflow at the historical outlet location (approx. GPS 153.5506, -28.4856), including:**
- a. Hydrological modelling of potential flood mitigation impacts;
 - b. Environmental impact assessment and biodiversity benefits;
 - c. Coastal processes assessment (including sand transport and shoreline stability);
 - d. Land tenure and regulatory approval requirements, including consultation with NSW National Parks and Wildlife Service and relevant State agencies;
 - e. Preliminary cost estimates and potential funding sources;
 - f. Staged implementation options, including temporary or seasonal trial openings.
- 3. Receives a staff report back within six months.**

Attachments:

1. E2026/22262 - The Restoration

Councillor's supporting information:**Submitted by Cr David Warth**

Historical aerial photography and mapping indicate that in the early 1970s a drainage channel was constructed to convey water from the North Ocean Shores canal development to the ocean via an outlet located at the northern arm of Fern Beach within Billinudgel Nature Reserve. Imagery from 1974 shows a wide, sandy, meandering entrance discharging to the ocean. In 1976 the mouth of the outlet was closed to facilitate construction of a coastal track to Wooyung. That track is no longer in existence, however the drainage outlet remains blocked.

The coastal corridor from Wooyung to Brunswick Heads forms part of a broader floodplain system associated with the Brunswick River catchment and adjoining northern catchments. This low-lying landscape, approximately 22,000 hectares in extent, includes major waterways such as Crabbes Creek, Yelgun Creek and Marshalls Creek. During major rainfall events, the low-lying coastal corridor between Ocean Shores, Billinudgel and Wooyung operates as a single floodplain basin. The Billinudgel Nature Reserve, gazetted in 1996 and covering approximately 789 hectares, functions as a natural drainage basin and is the primary receiving area for overland floodwater from the north and north-west.

Mapping and contour data show that the former drainage channel intersects and captures overland flood flows. Since closure of the outlet in 1976, floodwater backs up behind the obstruction, effectively acting as a barrier and forcing water to flow south toward Fern Beach and South Golden Beach. During the February 2022 flood event, sheet flow was observed entering these areas from the north. The water was described as clear, in contrast to typically discoloured canal water, supporting the view that it originated from overland flows redirected due to the blocked outlet.

Coastal creek entrances and intermittent lagoon outlets are rare and ecologically significant habitats. They provide feeding and nesting grounds for shorebirds and estuarine species. A local example can be observed at Clarkes Beach in Byron Bay, where a small freshwater outflow has established valuable shorebird habitat, including the Beach Stone-curlew, Red-capped Plover and Pied Oystercatcher. The closure of the Billinudgel drainage outlet likely resulted in the loss of a coastal interface habitat of this type. Restoration of a managed environmental outflow may therefore provide both biodiversity benefits and potential flood mitigation outcomes.

Recent integrated flood mitigation and environmental restoration projects undertaken by Byron Shire Council, including the Sandhills Wetlands project in Byron Bay, demonstrate Council's capacity to deliver projects that improve water quality, biodiversity and flood resilience outcomes simultaneously.

Archival correspondence from 1982 and 1985, including material involving the NSW Minister for Public Works & Ports, indicates that the drainage outlet and its management were matters of formal government consideration.

Staff Comments, Director Infrastructure Services:

Flood flows north of Brunswick Heads have experienced change through development and sand mining. Further, post development, coastal creek outlets have a long history of modeling and reporting in the Marshalls Creek and North Byron Floodplain Management Plans, plus a mixture of community support and concern. To date modeling has not allowed a Floodplain Management Plan to support changes to the current landform or create coastal creek outlets. This has been partly due to model runs showing minimal flood mitigation outcomes and also the low likelihood of such a proposal obtaining approval or suitable funding. A suitable cost benefit outcome needs to be achieved before flood mitigation options can obtain state funding, to date this has not been achievable.

Tallow and Belongil Creek outlets are very complicated outlets to manage, this management has significant ongoing cost to Council and carries risks that cannot be managed completely. Creating additional outlets for Council to manage needs to be considered very carefully.

Staff intention since the 2022 floods has been to use the North Byron Floodplain Risk Management Study and Plan Review to look at the coastal creeks outlets option with a different Lense, using different modeling approaches to find a solution that achieves a supportable flood mitigation outcome or confirm that coastal creek outlets are not a suitable flood mitigation option and close this option out.

Successful investigation of the coastal creek outlet option relies upon current day modeling tools and therefore is reliant upon an updated flood model as part of the North Byron Floodplain Risk Management Study and Plan Review. Council will not have the necessary funding or resources to complete the North Byron Floodplain Risk Management Study and Plan Review project until it is funded.

If Council wish to progress further investigations into the coastal creeks outlet option it is recommended that the Council prioritise funding of the North Byron Floodplain Risk Management Study and Plan Review.

Financial/Resource/Legal Implications:

Floodplain mitigation options must be developed and supported in a Floodplain Management Plan before they can progress to funding and approval. Any other route carries significant risk and liability to Council should the mitigation option fail. Floodplain Management Plans must be prepared in accordance with State Government Policy. The NSW Floodplain Development Manual 2023 is the current policy used by State Government for the preparation of such documents.

Review of the North Byron Floodplain Risk Management Study and Plan, and adoption of an updated plan that includes coastal creek outlets as a recommended flood mitigation option is the only way Council can appropriately and successfully create coastal creek outlets.

Is the proposal consistent with any Delivery Program tasks?

Community Strategic Plan and Operational Plan

CSP Objective	CSP Strategy	DP Action	Code	OP Activity	
3: Nurtured Environment	3.4: Support and empower the community to adapt to, and mitigate the impact on climate change	3.4.3: Floodplain Risk Management – Manage the risks of flooding to property, people and the environment	3.4.3.1	Floodplain Risk Management Advisory Committee coordination	Report strategic flooding matters through the Floodplain Risk Management Advisory Committee
3: Nurtured Environment	3.4: Support and empower the community to adapt to, and mitigate the impact on climate change	3.4.3: Floodplain Risk Management – Manage the risks of flooding to property, people and the environment	3.4.3.4	North Byron Floodplain Risk Management Study and Plan Review	Council to co-contribute \$150,000 in the 2025/26 budget to allow staff to seek grant funding with DWEECC in Q1 to complete study

Is the proposal consistent with Council's role?

Collaborator: We work together to develop solutions to challenges facing our community