

## Marshall's Creek Floodplain

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### **To whom it may concern**

For some time I have been interested in the debate concerning management of flooding within the Marshall's Creek floodplain and the Brunswick River catchment in general. I contribute the following as I believe there is a good deal of misinformation, and possibly misunderstanding, concerning the history of catchment management and the original hydrology of the Wooyung, Crabbes Creek, and Yelgun areas.

My family was originally located at Stokers Siding and moved to Tyagarah in 1958. I completed all my schooling at Mullumbimby, through to 1972, and although I have lived away from the district during my early adult life, I consider I have maintained connection to the area sufficient to recall much of our local history for the past 50 years or so.

My father was a keen recreational fisherman and each Sunday our family would leave the farm for a day of beach fishing up and down the coast. We would often travel to South Golden Beach and follow a winding sand track north, through the dunes, toward Wooyung. This was both before and during the time of sand mining and I can recall the steady progression of mining dredges along coastal areas, from north to south, during much of the 1960's. I remember that a short distance north of South Golden Beach there was a low point in the dunes, and this was a favoured place to park our vehicle and access the beach. Prior to mining the dunes were very much higher, with a series of interlocking ridges and swales which were thickly vegetated with littoral rainforest in sheltered areas. The bush track which cut through the back dunes became narrower to the north because at that time it was not a shortcut to the Tweed Coast, in contrast to the gravel road that was later constructed as mining activity moved south.

A little later during my youth, I guess about the late 1960's or 1970, I remember standing close to the original low point in the dunes and watching a bulldozer clear a path to the beach in order to allow accumulated floodwaters contained in the back swamp, to breach the dunes and flow across the beach into the ocean. This followed a period of canal construction and major alteration of natural watercourses by, I believe, the company developing Ocean Shores at that time. Watching the breaching of the dunes was especially interesting to me because the water was stained dark brown, from ti-trees and tannins, and quickly cut a channel through the beach sand and into the surf, before fanning out to create a huge brown plume well beyond the breakers.

I think my observations would support the views of Jim Mangleson and others who believe that natural low points were present in the dune system, (prior to their reshaping during mining activity), and their purpose was to provide ocean outfalls in times of sustained rainfall and accompanying flood.



Researching the history of the Wooyung area, Crabbes Creek, Billinudgel Creek, and the Upper Marshall's Creek floodplain is an interesting exercise as there is ample evidence to suggest that significant and major diversions of these sub-catchments has occurred during the past 60 years or so. For example:

- I have a copy of an original Mooball Parish Map, dated 26 February 1942, which clearly identifies a permanent ocean outflow of Billinudgel Creek to the south of the present day Wooyung Caravan Park. The tidal limits of the creek are clearly marked, as is the fact that a large water body (swamp) was contained within the coastal strip from Wooyung, south to the Yelgun and Billinudgel areas. In fact, the swamp is identified on the map as the Mooball and Crabbes Creek Swamp Drainage District. Drain reserves are marked on the map that shows an intention to re-route some natural watercourses to other sub-catchments. For instance, Burringbar Creek, which once terminated in the swampland, is now channelled into the Mooball Creek upper catchment at Wooyung.
- Studies of the 1942 Mooball Parish Map and other historical maps show that Crabbes Creek also terminated in swampland, which had an outflow to the Ocean south of Wooyung, via Billinudgel Creek. However, topographic maps of today show a complex interconnection of drainage channels across a landscape which was once a large freshwater swamp and inland lagoons, spilling over through ocean outfalls in times of flood. The condition and depth of the drainage channels today determines that Crabbes Creek, Billinudgel Creek, and Yelgun Creek, can all flow to the Marshall's Creek catchment, and this was clearly not the case in historic times prior to extensive land clearance and drainage of land to advantage agriculture. North of the Shire boundary is Burringbar Creek which is now channelled to Mooball Creek, and no longer terminates in swampland that once out flowed south of Wooyung.
- The significance and permanent status of the original Billinudgel Creek ocean outflow is supported by the following newspaper entry by Alexander Meston, in May 1880, when he wrote an article titled "The Beach Highway". An excerpt follows:

*.....Two miles further brings us to Mooball Creek, a second Currumbin, and here on our return we got down over our saddles, the bottom having shifted since passing down. Cross this creek about 200 yards up, where a small track goes in from the north side, and, if it is rather deep, better risk the water than the quicksand at the mouth.*

*Eight miles further is another creek called Billinudgo (sic) which can be easily crossed anywhere back from the beach. From here to the Brunswick is a distance of five miles.....*

Other historical records and anecdotal information identify the fact that the swamp and interconnecting lagoons along the coastal strip were deep, apparently allowing navigation in small boats by the areas first European settlers.



It is therefore not unreasonable to conclude that cumulative alterations to the natural drainage pattern and blocking of ocean outfalls, over the last 60 years, are having a significant effect on the Marshall's Creek floodplain. Particularly because overflow and additional floodwaters from Crabbes Creek, Billinudgel Creek, and Yelgun Creek, are now channelled into the Capricornia Canals, through the constrictive Kallaroo Court bund, and eventually into the ocean via the Brunswick River mouth. Contained water will find its own level, and unprecedented flood levels within North Ocean Shores, South Golden Beach, and New Brighton, are the inevitable result.

Historical evidence suggests that Billinudgel Creek originally flowed north through swampland; out flowing to the ocean near Wooyung, and not south into the Marshall's Creek catchment as is now the case. It should be remembered that the company who developed Ocean Shores, Wendell West Pty Ltd, at one time considered constructing an ocean access marina at North Ocean Shores, to the north of the Capricornia Canal Estate as it was then called. The canal construction and extensive associated earthworks, plus installation of the Optus telephone cable with access track across the Billinudgel Nature Reserve swampland, have all had a cumulative effect on the hydrologic regimes and pattern of overland water flow.

In summary, the basic premise is that floodwater which once flowed north, (and to the ocean via outfalls in the dune system), is now forced to channel south, through the bund, and into Marshall's Creek and eventually the Brunswick River. Because of the longer route and other constrictions such as the rock walls across Reading's Bay, outflow to the ocean is slower, resulting in increased flooding of lower areas. Catchment management, as with many environmental issues, is usually linked to past human practices in which the imposition of change to natural processes and biological systems was not clearly understood, especially in terms of engineering for "extreme" weather events.

Signed

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SCU Environmental Resource Management

AND OTHER LATER COMPANIES,