



**An Echo of Wings:
A History of the
Tuckean Swamp**

Johanna Kijas
Kijas Histories

For the Tuckean Swamp Options Study
May 2019

Contents Page

	Introduction: 'Far Famed Tuckian Swamp'	5
1.	Unimaginable Richness: Imagining the Tuckean Swamp	15
2.	The Pre-regulated Swamp: to the 1860s (Era 1)	21
3.	Drainage: 1870s to 1915 (Era 2)	31
4.	Making Homes Before the Flood: 1915 to 1945 (Era 3)	45
5.	Flood: 1945 to 1971 (Era 4)	60
	Concluding Narrative: Re-imagining the Tuckean	74
	Appendix 1: Timeline	76
	Appendix 2: Survey Map of the Tuckean Swamp 1897	79

This project was made possible with the funding support of Elton Stone as well as contributions from Ballina and Lismore Councils, The Nature Conservancy, the Office of Environment and Heritage / National Parks and Wildlife Service and a private philanthropist. Many thanks to the Project Manager, Cassie Price, for her expertise and input into the history telling. Thank you to those who generously gave their time for oral history interviews, phone calls and provided documents, and to John, Jim and Athol for our invaluable fieldtrips. The volunteer staff of the Richmond River, Mid Richmond River and Alstonville Plateau Historical Societies were, as ever, very helpful. Thanks to friends for editorial assistance and special thanks to Amanda for her graphic design.

Introduction: 'The Far Famed Tuckian Swamp'

Situated on the Far North Coast of New South Wales, the Tuckean was one of the largest swamps along the coast north of Sydney, in a landscape once full of swamps. Misunderstood and derided throughout much of European history, swamps have now been recognised as among the most productive environments alongside rainforests and coral reefs. It was not until the 1960s that scientific understanding about the critical significance of swamps in the natural environment began to emerge, by which time generations of farming families had made their homes and established communities within such landscapes.

In 1915, 48 homestead farm blocks were advertised for sale, by ballot, within the 'Far Famed Tuckian Swamp'.¹ Having completed major drainage work over the previous three years, the New South Wales government was releasing the last Crown Land in the Tuckean Swamp deemed suitable for agriculture - advertisements claiming it to be: 'the richest alluvial land in the state'.² Because of the drainage work, the government promised this swampland would now soon be available for the cultivation of millet and potatoes, and dairy farming. Such was its renown as a substantial area of potential agricultural land, as yet largely untapped, that over 1,000 applications for the farm blocks were received by the government.³ The confidence, flawed promises and environmental ignorance embedded in the advertisements provides tracks into the complex history of a place that has always evaded simple description.

European drainage changed the Swamp's environment in a myriad of ways. It never was, however, a static landscape. Neither strictly land nor water, but both land and water, the lack of permanence and definition has been problematic within western perceptions of swamps. The idea of instability, where in places 'there is no bottom', resonates with a long history of seeing swamps as 'unfaithful ground' and 'useless'.⁴ They were feared as contaminated and contaminating places. Often seen as wastelands prior to drainage in European terms, this was in stark contrast to the concepts of bountiful resources and cultural richness that Indigenous people imbued in the same places.

Regardless of these oppositions, the Tuckean was renowned among those who knew it across generations and ethnicity for its abundance of waterbirds and diversity of fish and other aquatic life. Until the late 1960s, the seasonal return of ducks to the Swamp is remembered by the sound of many thousand-pairs of wings on high, and the cackle and whirring as they dropped out of the sky to land on the shallow expanses of water, fringed by vast beds of high reeds.

¹ This spelling was common at the time. The origin of the name remains unknown.

² *Daily Examiner*, Thursday 7 October 1915, 1; *Northern Star*, Saturday 9 October 1915, 8; *Tweed Daily*, Saturday 9 October 1915, 1.

³ See chapter 3.

⁴ Interview with Wazzer 27/4/17; Vittoria Di Palma, *Wasteland: A History*, New Haven: Yale University Press, 2014, 85.

In 1971 a barrage at Bagotville on the estuarine Tuckean Broadwater was completed, finally closing off salt water that the 1915 drainage system had ironically enabled onto land that had been planned for agriculture. Changes in wildlife populations, modifications in vegetation, water quality issues and changing soil structure had long been apparent. However, combined with new flood mitigation work of the late 1960s, this closure provides a clear marker of further dramatic environmental change in the Tuckean Swamp. Not least, the fish nursery within the blended waters of the Swamp around the head of the Tuckean Broadwater was now closed off to the Richmond River. The successful reduction of time that surface water remained after periods of high rainfall and flooding meant that the ducks no longer returned in immense numbers.

This brief, and inevitably incomplete, environmental history about the interrelationship of people and place in the Tuckean Swamp spans a period from the nineteenth century to 1971, exploring some of the interactions, fractures and interdependencies between humans and the environment.

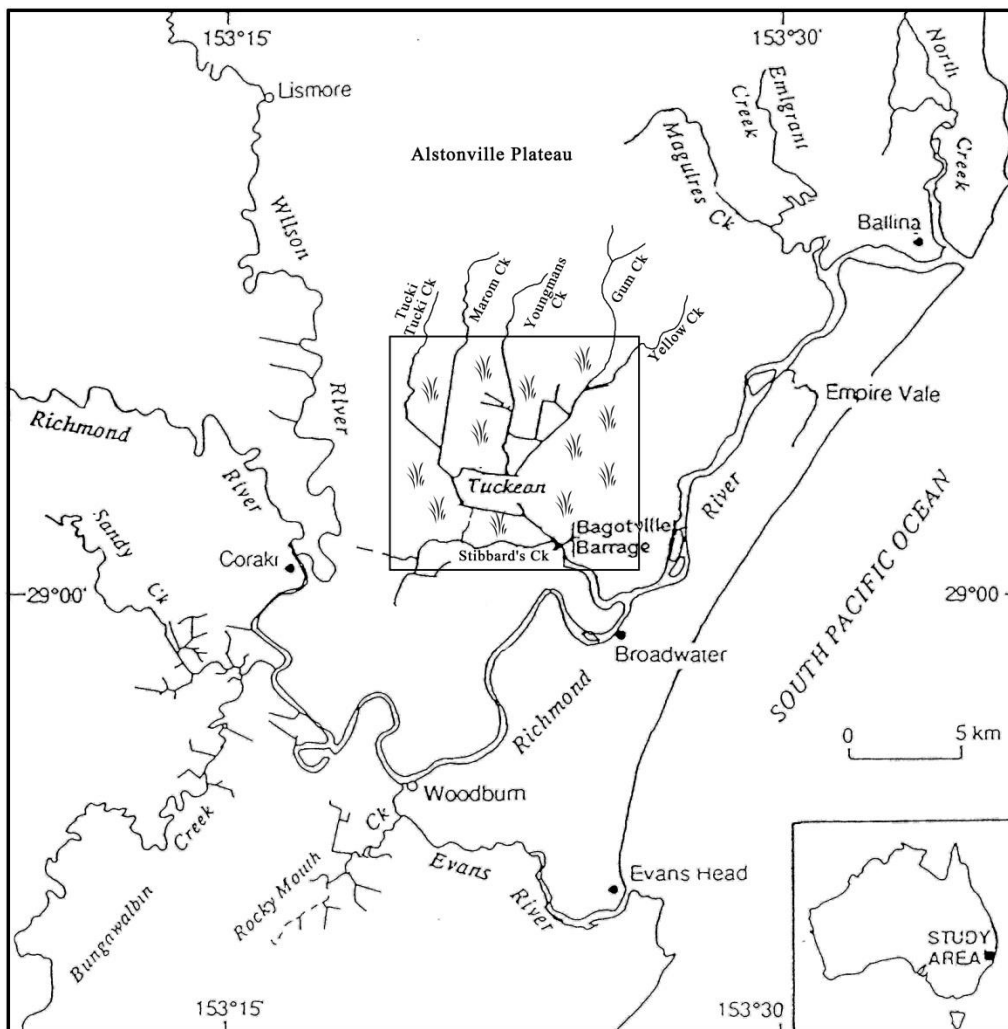
Locating the Tuckean Swamp

The Tuckean is located on the floodplains of the Lower Richmond River on the Far North Coast of New South Wales. It was one of the last swamps to be drained under a government public works program in the early twentieth century.

Reflecting the lack of defined edges of a swamp-scape, and the consequent challenges in demarcating swamp boundaries, the reported size of the Tuckean has varied depending on what areas of land are included and the stories people hold. Among diverse local commentators the whole expanse was often said to be around 30 square miles, while others cited a different figure of 16,600 acres. The Tuckean Swamp Drainage Trust, formed in 1915 and relating to most of the wetland, was 15,580 acres.⁵ Recent studies refer to it as approximately 8,500 hectares when referring to its catchment and formerly comprising approximately 4,000 hectares of wetland.⁶ The commonality across these diverse figures is its size, often described in early newspaper accounts as 'vast'. It forms the lower part of the 21,500-hectare catchment draining the Alstonville Plateau to its north. Joined to the Richmond River through the Tuckean Broadwater, regulated at the Bagotville Barrage since 1971, the Swamp is about 25 kilometres upstream from Ballina and 15 to 20 kilometres south by road from Lismore.

⁵ NSW Government Gazette, 16 February 1951; Department of Public Works, *Report of the Richmond River Valley Flood Mitigation Committee*, October 1954. This excludes the area in the south-west corner that was moved into the Gundurimba Shire C Riding Drainage Union.

⁶ Patterson Britton and Partners, Tuckean Swamp Hydraulic Study, Technical Report #1, 1996; Cassie Price, 'Exploring the likely outcomes of returning a natural flow regime to Tuckean Swamp Richmond River', *Wetland Care Australia*, January 2015.



Locality map adapted from Jesmond Sammut and Richard Bush,
Management Issues in the Tuckean Swamp: Landowner Study
 April 1994, 2

The Tuckean was naturally fed from five creeks flowing out of the subtropical rainforest known as the Big Scrub. It dropped off the high-rainfall Alstonville Plateau into the wetland as surface runoff and ground water. Tucki Tucki Creek discharges from the west, Marom and Youngmans Creeks from the north, Gum and Yellow Creeks from the north east. In the south west, Stibbards Creek joins the Tuckean Broadwater. The waters of these creeks were later channeled into man-made drains that attempted to control the flow of water over the land.

The full expanse of the Tuckean can be viewed from the high ridges that ring it from the north west, north and around to the south east. These ridges offer sweeping vistas that have been significant viewpoints for both the Traditional Owners, clans of the Bundjalung Nation, and Europeans. The Swamp was ringed by numerous Aboriginal camp and ceremonial sites on the

higher ground, enabling easy access to the abundant food and material sources that the wetland provided, interwoven with significant cultural areas.

Prior to European drainage, much of the lower parts of the Swamp were likely to have been a more open estuarine environment with less restricted tidal movement.⁷ In the latter part of the nineteenth century, as the Big Scrub was cut down on the Alstonville Plateau and increased flows of fresh water consequently washed down into the area, seasonal freshwater swamp came to predominate. The soil remained waterlogged, even in the drier months when no standing water might remain.

This swamp-scape comprised several types of fresh water rushes and water-ribbon, with floating and submerged vegetation when wet. Fresh meadow, which increased after drainage, comprised acres of water couch. Tall rushes grew in the deep, wet, peaty eastern part of the Swamp. The Tuckean landscape was also interspersed with a variety of forest vegetation and different habitats across its expanse. In the west there were elevated areas emerging out of the swamp, defined as islands, where a variety of forest types existed (eucalypt, rainforest and casuarina), as well as melaleuca and casuarina swamps in the lower parts. This mix of forest also skirted the southern sections and Big Scrub rainforest ringed the northern and eastern slopes. Mangroves, reeds, melaleuca and casuarina swamp bordered the Tuckean-Broadwater, which reached about two kilometres beyond today's barrage and pushed up further in a narrow waterway called Broadwater Creek.

Early European accounts often referred to the place as the Tuckean (Tucki or Broadwater) *swamps*, in the plural. The Indigenous custodians always understood and utilised the Swamp within different sections, including differentiating between food places, places for general movement and exclusions, and separate gendered areas. Those Europeans giving evidence to early twentieth century inquiries about the condition of the Swamp, and interviewees for this project, knew their own sections, often with less familiarity of other parts of the Swamp. Therefore, while this history usually refers to the Tuckean Swamp as a whole, care needs to be taken in understanding the area in its different spaces, as well as understanding that oral testimony may not always convey an accurate description across all sections, seasons, tides or climatic periods.

The Swamp today: reasons for reimagining the Tuckean Swamp

This environmental history is part of a larger project invested in reimagining the Tuckean Swamp. Key stakeholder groups aim to understand how best to balance the Swamp's

⁷ K Taffs, LJ Farago, H Heijnis and G.E. Jacobsen, 'A diatom-based Holocene record of human impact from a coastal environment: Tuckean Swamp, Eastern Australia,' *Journal of Paleolimnology* 39(1) 2008, 71-82. See chapter 1.

management into the future.⁸ The Tuckean is one of the most complex coastal wetland and drainage systems in New South Wales. We now know that modifications to the hydrology of the Tuckean Swamp over the past 130 years, largely through floodplain drainage works, has resulted in significant acid sulfate soil (ASS) issues and poor water quality across its lower catchment. In June 2018 the worst drain acidity readings of pH 2.08 were recorded; about the same as the juice of a lemon.⁹ Such readings are well below levels sustainable for aquatic habitats and to support healthy, functioning ecosystems. Due to the size of the floodplain, the nature and history of land use, and extensive drainage, it is not feasible to return the Swamp to a pre-European natural condition. However, such extremely poor water quality that occurs at times has grave implications for the environment and for the viability of farming and aquaculture in the region. Project stakeholders believe that more can be done to improve current conditions.

Project brief and methodology

The brief for this history, which differentiates it from previous reports, was its emphasis on exploring the interrelationships between people and place of the Tuckean Swamp to better understand a natural and historical landscape that no longer exists but might be re-imagined anew. This is a short historical report that only tackles an overview of the period since Europeans arrived.¹⁰ The project brief specified the historical research to conclude in 1971 with the building of the Bagotville Barrage. Scientific work by the University of New South Wales' (UNSW) Water Research Laboratory (WRL) takes up the story after the barrage was built.

This report draws on scholarship firstly from environmental history that acknowledges humans as inextricably interlinked with the natural world, and secondly from work on experiences of place that highlight the ways groups and individuals experience and explain the same landscapes in differing and contested ways. The dreams, philosophies and ideologies that people bring have shaped places, just as surely as the material place itself has the power to shape those dreams.

⁸ Swamp stakeholders include National Parks and Wildlife Service, Office of Environment and Heritage, Local Land Services, Jali LALC, Department of Primary Industries – Fisheries, Rous County Council, Ballina Shire Council, Lismore City Council, Richmond Valley Council, The Nature Conservancy and OzFish Unlimited.

⁹ The pH scale is used to grade acidity and is a measure of the hydrogen ion (H⁺) concentration. The pH scale is logarithmic, ranging from 0 (strongly acidic) to 14 (strongly alkaline). Due to the logarithmic scale, a soil with a pH of 4 is 10 times more acidic than a soil with a pH of 5, and 1,000 times more acidic than a soil with a pH of 7. Oxidised ASS soils typically have a pH of below 4.5. pH values at Tuckean Swamp is regularly below 4 and can get below 3 at times. Healthy aquatic ecosystems should have pH above 5. UNSW Water Research Laboratory, 'Memorandum to the Tuckean Swamp Options Study', 15/10/18. Following the completion of the Study, a full report of the hydrodynamics and options will be completed by UNSW WRL.

¹⁰ For a deep history of the region see Roger Kitching, Richard Braithwaite and Janet Cavanaugh, eds. *Remnants of Gondwana: A Natural and Social History of the Gondwana Rainforests of Australia*, Baulkham Hills: Surrey Beatty & Sons, 2010.

The interdisciplinary approach of environmental and place-based histories works to overturn the more traditional historical approach as space-less, where the places within which human activity occurred were often treated merely as a static stage. Place-based histories understand the interrelationship of the cultural and social world of humans, and the natural world, as ever present, one impacting the other. They also challenge the idea of mapping as timeless, as if mapped landscapes have remained unchanging. These are important concepts in all history telling, but are particularly important when exploring the history of an ever-changing, seasonal and unpredictable landscape such as a swamp.

Archival and secondary documents and oral testimony have been explored to gain an understanding of what the Tuckean Swamp was like, and why and how it changed, with the aim of uncovering rich description of the Swamp environment. Documentary evidence included secondary sources such as the array of previous scientific reports and articles on the Tuckean Swamp and the Richmond River Catchment; theses, reports and articles on drainage schemes and swamp-catchment restoration programs; anthropological writings on the Bundjalung people; local contextual histories of relevance to the area; fishing histories and histories tracing western conceptions of nature related to swamps. Except for Esme Smith's landuse history of the Tuckean Swamp, discussed below, and unlike river systems such as the Murray-Darling, swamps/wetlands have received little historical attention until recently.¹¹

Primary (first hand) documentary sources included archives from the local historical societies: the Richmond River Historical Society (Lismore), Mid Richmond River Historical Society (Coraki) and the Alstonville Plateau Historical Society. Surveyor reports, Crown (portion) plans and parish maps were viewed to elicit descriptions of the landscape prior to the beginning of draining of the Swamp and changes over time. An extensive search of newspaper accounts using the National Library of Australia's data base Trove (using diverse spellings such as Tuckian, Tucki and Broadwater swamp/s) was conducted. A number of road and water trips were kindly conducted by participants, plus kayak journeys up the drains.

Just as there remains a dearth of secondary writing about the history of swamps, this extends to original sources of the period such as early publications, newspaper accounts and literature. Forests such as the Big Scrub, and permanent water bodies such the Great Lakes on New South Wales' Central Coast, were often written about with nostalgia, referring for example to the magnificence and beauty of the forests even as they were being destroyed.¹² There is little similar exuberant description of swamps, other than to look forward to their demise.

¹¹ See Paul Sinclair, *The Murray: A River and its People*, Melbourne University Press: Carlton, 2001; Western Australian Museum, 'Reimagining Perth's Lost Wetlands', <http://museum.wa.gov.au/explore/wetlands> accessed 12/11/17.

¹² Arthur Cousins, *The Northern Rivers of New South Wales*, Australia: Shakespeare Head Press Ltd, 1933.

Cultural theorist Rod Giblett argues that swamps ‘do not cater to established classical concepts of vistas, horizon and landscape’. They only fitted the notions of the picturesque when viewed at a distance from raised vantage points or from the ‘canalised, tamed and straightened river’ such as in the work of the English landscape painter John Constable.¹³ Reflections of these insights are to be found in the historical descriptions of the Tuckean.

Six formal interviews and four invaluable field trips with interviewees were conducted. Wide-ranging discussions were held off record. Discussions were held with past land holders, Indigenous knowledge holders, previous duck shooters, commercial fishers who accessed the Tuckean-Broadwater prior to the barrage, and a contractor who dug the new drains of the late 1960s. Poor health, some reluctance to participate in the Study, and the passing of older knowledge holders hampered more personal insights.

Oral testimony was also accessed through the government inquiries held into the Tuckean Swamp in 1900 and 1920 (see chapter 3 and 4). In the same way as oral history interviewing, they, like all historical evidence, cannot be read at face value but are part of a diversity of sources that are compared, analysed and interpreted within their historical and environmental context. While oral history can be a poor source of accurate dates or scientific data, they can provide evocative insight into the meanings individuals and communities embed in places, often in contested and competing ways. They often elicit understandings that have been excluded, ignored or misunderstood through the available written documentation, thus providing new understandings.

This report builds on the landuse history of the Tuckean Swamp written by Esme Smith with research by Jane Baldwin.¹⁴ It was commissioned as part of a previous Land and Management Plan of the Tuckean that was prepared between 1993 and 1996.¹⁵ Smith and Baldwin’s landuse history provides an in-depth study of the 1912-1915 drainage scheme, predominantly based on evidence given to the government inquiries preceding and following its implementation. It is therefore recommended that this environmental history is read alongside Smith and Baldwin’s landuse history.

What’s in a name: swamp or wetland

American politicians’ confident promises to ‘drain the swamp’, with reference to exterminating something seen to be harmful or wasteful, links directly into the long western history of swamps that has focused on them as foul smelling, mosquito ridden, dismal and decaying places that needed to be eradicated to make way for civil progress through agriculture or other

¹³ Rodney Giblett, *Postmodern Wetlands: Culture, History, Ecology*, Edinburgh: Edinburgh University Press, 1996, 11-12.

¹⁴ Esme Smith and Jane Baldwin, *A Landuse History of the Tuckean Swamp*, Tuckean Swamp Study: Technical Report #6. Lismore, 1997.

¹⁵ Jane Baldwin, *Land and Water Management Plan for Tuckean Swamp*, July 1996, 2.

development.¹⁶ In more recent years the term ‘wetland’, to replace ‘swamp’, has been used to try and avoid such pervasive negative characterisations.¹⁷ In a history of a landscape such as the Tuckean, however, the term swamp, with all its cultural and social meanings and legacies, is pivotal to understanding the current situation and its future. The term is therefore retained throughout this report.

Creatures of the Swamp

Each generation to 1971 has described an ever-changing environment, portraying competing and coexisting values, and both abundance and decline in the wildlife. The renown of the Tuckean Swamp was widespread, but it was a physical landscape familiar only to a few. In 1933 an account in the *Northern Star* set out to describe, for ‘the majority’ of local readers, ‘a part of the district unknown to them except by name’. Viewed by launch from the drains the scenery was described:

On both sides are countless varieties of trees comprising tall ti tree, oaks and scrub timbers. In summer months lilies, ferns and flowers form a beautiful sight, great masses of creepers in flower overhanging the stream from trees along the banks. Lovers of bird life will find much to interest them, as swans in hundreds, wild ducks in thousands, cootes, red bills, pelicans, shags (black and variegated), and bush birds in thousands. From February till May thousands of flying foxes congregate. There are also plenty of fish in the creeks, including bream, flathead and mullet [sic].¹⁸

The article noted that snakes used to be ‘very prevalent’ but were now rarely seen. It declared that ‘this land was useless until the Tuckean drainage scheme was completed, but now includes valuable country, the swamps being good “summer paddocks”’.¹⁹ 1933 was part of a dry period when the swamp country provided a utilitarian value as pasture and ‘nature’ could be appreciated when viewed from a drain.

One group who knew the lie of the land well in distinct parts of the Swamp were duck shooters across the generations. Through to the late 1960s the sound made by the wings of countless numbers of ducks flying overhead remains fixed in people’s memories. Two men speaking independently of the 1940s, 50s and 1960s commented that you wouldn’t starve if you lived near the Tuckean – living off ducks and mullet (see chapter 5). But at the same time, and as early as 1887, a concern about the slaughter of ducks was expressed.²⁰ Perceptions of

¹⁶ Di Palma, *Wasteland*.

¹⁷ Paul Adam, ‘Wetlands: policy ahead of knowledge?’ in John Handmer et al eds. *Ecology, Uncertainty and Policy, Managing Ecosystems for Sustainability*, Prentice Hall, 2001, 209-235.

¹⁸ ‘Unique Scenery at Broadwater: Boating on the Tuckean,’ *Northern Star* 14 September 1933, 6.

¹⁹ *Ibid*, 2.

²⁰ *Richmond River Herald and Northern Districts Advertiser*, 28 January 1887, 2.

abundance and decline need to be read through temporal, cultural and social lenses as well as changing environmental conditions.

For the generation who grew up in the 1930s and 40s on the Aboriginal Reserve at Cabbage Tree Island, the Swamp continued to be accessed along the waterways and through the land of friendly farmers. Turtles, mud crabs, prawns, mullet, waterfowl, flying foxes and animals from the higher ground such as koalas, possums and bandicoots were among those harvested. Six seasons of the year, with the accompanying changes in plants and animal activity, provided the signals for what was available.²¹ The Tuckean was part of the integrated indigenous economic, social and cultural landscape of the Lower Richmond River Indigenous clan groups, connecting north to Lismore, around the escarpment to the lower river and estuary at Ballina, west to Woodburn and Coraki and out to Evans Head. Each group had their own family places, while sharing in the resources of the Tuckean.²²

Among the many creatures that inhabited the famous swamp was the Tuckean Bunyip, known from the Clarence to the Tweed where its mention in newspapers needed no further explanation beyond its name (see chapter 3). It could occasionally be heard booming of a night, keeping children terrified in their beds. Most water places in Aboriginal cosmology are home to a spirit creature whose cranky disposition requires caution and respect. When disturbed by human misconduct they can wreak havoc. Swamp monsters, from medieval times (at least) in western culture also dwelled in such landscapes.²³ Colonial Australia readily collapsed the two traditions into a menacing, misshapen creature called the bunyip who lurked in water holes and swamps, ready to devour those careless enough to stray into such places. The Tuckean Bunyip was said by European settlers not to be heard again after 1915 with the completion of the drains. Perhaps a question for the future is whether the Bunyip as fierce protector, rather than threatening representation of abhorrence and waste, can help re-imagine the Tuckean Swamp across its range of values to the diversity of its stakeholders.

Organisation of the report

The next chapter of this report summarises aspects of what we know about the habitat, fish and wildlife of Tuckean Swamp before European drainage. The following chapters are then organised around four eras that span the documentary history of the Tuckean Swamp to 1971, interlinking aspects of cultural, social, economic and government policy history with environmental markers such as climate, landscape and wildlife.

The subject matter of this history necessarily revolves around the shifting hydrological regime brought about by private and public drainage works of the Tuckean Swamp from the late

²¹ JALI Local Aboriginal Land Council, *Ngunya Jargoan Cultural Calendar*, <http://jalilands.com.au/assets/nj-cultural-calendar-2017-a3-version.pdf> accessed 12/2/19.

²² See chapter 2.

²³ Di Palma, *Wasteland*.

nineteenth century. The haphazard but progressive drying of the land through European drainage enabled the establishment of farming communities, greater access of cattle for longer periods, produced new fire regimes, shifting vegetation patterns and changes in the ground and surface water and soil structures. Intimately interlinked in this environmental history is settler and government responses to the weather patterns of flood and drought that occurred over the eighty years of drainage history relevant to this project, from the late 1880s to the late 1960s and the completion of the Bagotville Barrage in 1971.

Era 1 (chapter 2), to the end of the 1860s, provides descriptions of the Swamp prior to European intervention through drainage. At this time the Tuckean was not fenced, and Aboriginal survivors continued to access the Tuckean to gain food, protection and maintain cultural sites. However, their management regime as the dominant means of human intervention in the Swamp was coming to an end.

Era 2 (chapter 3), 1870 to 1915, covers the period from the first European ‘alienation’ of Crown Land around the Tuckean and the building of drains. Drainage work was started in the north and central sections of the Swamp during the 1880s by landholders Henderson and McPherson. One of the last of the early Public Works drainage schemes to be implemented along the New South Wales coast, government drainage work of the Tuckean began in 1912 and was completed in May 1915. While the early years of the twentieth century were drought bound, the years of heavy flooding at the end of the nineteenth century had propelled urgent community debates, flowing on to government, about the need for drainage and flood mitigation across the Tuckean.

Era 3 (chapter 4) takes up the early post-drainage period, 1915 to 1945. This was a time of consolidation of small family farms and communities across the Swamp landscape and adjacent slopes, where families carved out a living predominantly from dairying. The completion of the government drainage work in 1915 made available the last Crown Land areas in some of the lowest parts of the Swamp for small ‘homestead’ farms. These were predominantly dry years, where most of the new landholders had no experience of flooding in the region.

Era 4 to 1971 (chapter 5) focuses around the devastation wrought by flooding that started again in June 1945 and links to the era of large-scale post war engineering projects that, in the Tuckean, led to flood mitigation work and building of the barrage. As the Swamp filled again with surface water after the dry years, the rich bird life returned, and the mullet are remembered filling the drains.

A timeline is included at the end of the report to provide both broad context and local detail to build a framework within which to place the historical narrative.



1. Unimaginable Richness: Imagining the Tuckean Swamp

Referring to the global stage, historical geographer Michael Williams argues that prior to the early 1960s 'wetlands were largely neglected and unappreciated, and were probably the most poorly understood of landscapes and ecosystems.'¹ Since then there has been an explosion in knowledge that now recognises swamps as among the world's most productive environments.

Swamps exist at the junction between dry-land ecosystems and wet aquatic ones, while different from both. There is a great diversity of wetland types across the world, where the central commonality is that they are saturated with water, either permanently or seasonally, therefore impacting their soil types and vegetation. They provide vast amounts of food that attract a myriad of creatures in a food chain that moves from the organic matter from rotting vegetation that feeds aquatic insects, shell fish and small fish, which in turn become food for larger predatory fish, reptiles, amphibians, birds and mammals.

Most commercial and recreationally-caught fish species from the sea and freshwater use the calm, shallow swamps as their breeding ground and nursery for juveniles. The shallow water and abundant food supply support an enormous diversity of waterbirds. Swamps are referred to as natural sponges that slow the speed of floods and store excess water. The dense thickets of reeds filter pollutants before the water reaches the rivers, which is why swamps are often called the kidneys of a watershed. They act as natural flood regulators and recharge the ground water.

The geological features of the modern-day Tuckean Swamp emerged in the mid to late Holocene (about 6,500 years before present day) when sea levels stabilised. During this period tidal and flood waters inundated what became the Tuckean, depositing a thick layer of alluvium over the marine sands and estuarine clays that had been laid across it over the preceding 120,000 years. Peat deposits formed in the low-lying areas in the central and northern sections of the Swamp, while indurated sand formed in the slightly elevated areas in the west such as Tuckean Island.²

The research of wetland scientist Kathryn Taffs and colleagues assists in imagining some differences in Tuckean Swamp prior to European landuse changes. Testing of a sediment core from the Swamp analysed shifts in diatom assemblages to determine environmental fluctuations. Diatoms are single-celled algae that are regarded as very sensitive indicators of changes in water quality. It was found that there were marked changes in the diatom species over the Holocene, the current epoch starting about 11,500 years ago, through to 1971. During most of the Holocene up to the beginning of European landuse impact from the late 1880s, the diatom species found in the sediment indicated a much higher level of salinity than after the

¹ Michael Williams in M. Williams ed., *Wetlands: A Threatened Landscape*, Oxford: Basil Blackwell, 1990, 4.

² Patterson Britton and Partners, Tuckean Swamp Hydraulic Study: Tuckean Swamp Study: Technical Report #1, 1996, 10.

1880s. It is likely, therefore, that more of the Swamp prior to European drainage would have been an estuarine environment with unrestricted tidal movement. This correlates with Indigenous knowledge that Marom Creek, which flows into the Swamp in the north west, was an increase site for estuary stingray (see Era 1). After this time, the change in diatom species indicates that the Swamp increasingly became a predominantly freshwater environment. In the period from 1880 to the next change in species around 1906, this probably occurred because of clearing, especially in the Big Scrub, which delivered increased fresh water into the wetland.³

Environmental historian Jodi Frawley notes that settlers encountering the estuaries and coastal swamps of northern New South Wales into the late nineteenth century found them to be 'unimaginably dense with life'.⁴ Jim Cannane, who grew up on the south-western edge of the Tuckean from the 1930s, remembered the old men's stories of the immense floating islands of vegetation. He described that side of the Swamp as often looking like a sea (see Era 4).

Some insight can be gained into such a watery environment through the descriptions of newspaper correspondent 'Ramrod' who, in 1876, was on a quest to understand the medicinal properties of the eucalyptus. Regarding swamps with dread as places oozing with potential disease, he felt that if settlers could survive in such environments, it must be to do with the antiseptic 'power of the Eucalyptii'. He chose the Clarence and Richmond rivers for his studies 'as they have possibly more swamps, creeks, and marshes than all the other rivers of the east coast of Australia put together'.⁵

While clearly not a place that appealed to Ramrod, we might imagine the sounds and marvels of parts of the Tuckean through his account of a similar vast swamp on the Clarence:

...dreary, gloomy solitude, where silence is only broken by the voices of wild fowl and the dismal roar and rush of winds through the fields of dead and hollow reeds... The average depth of water is six feet in an ordinary season, but the mass of rotten vegetation is beyond all human comprehension. Through scores of years the rushes and duck weed have grown, and fallen, and rotted in successive layers, until the accumulation has become a solid mass of foul, rotten, decaying vegetable matter, eight and ten feet deep, and in the clear channels there is about two feet of decomposed matter along the bottom. The mass of stuff is so solid that you can walk about on it anywhere, although it would be rather awkward if you fell through; and swans, geese, ducks, etc., build their nests and hatch among the piles of rushes. Strange to say, the open water is as clear as crystal, and quite as palatable as the

³ K Taffs, LJ Farago, H Heijnis and G.E. Jacobsen, 'A diatom-based Holocene record of human impact from a coastal environment: Tuckean Swamp, Eastern Australia,' *Journal of Paleolimnology* 39(1) 2008, 71-82.

⁴ Jodi Frawley, 'Adapting to Change in Australian Estuaries: Oysters in the Technofix Cycles of Colonial Capitalism', Ulrike Kirchberger and Brett Bennett eds., *Environments of Empire: Networks and Agents of Ecological Change*, Chapel Hill: North Carolina Press, forthcoming 2020.

⁵ *Queenslander*, 21 October 1876, 14.

translucent wave of classical Enoggera, and far down in the depths you can see enormous eels, and mullet, and perch, in shoals, and of an immense size, three times greater than ever they become in the rivers.⁶

Ramrod's certainty that their miasmas or bad smells bore disease through the air was tinged with humour: 'After sunset these vast swamps are shrouded in a dense white sulphurous-looking mist, smelling of that faint, oppressive, sickly odor peculiar to a graveyard or an old cellar in which ten thousand rats have committed suicide about a month before'.⁷ To his surprise he found healthy communities across both regions.

The first survey map of the area was drawn up during the wet period of the late 1890s by surveyor Thomas McDonnough. Except for land and floating islands in the western section, and the mangrove, melaleuca and casuarina swamp-forests at the head of the Broadwater, the rest was described as open swamp and high reeds (see Era 2). The Tuckean, like other semi-permanent swamps, would then dry out at times leaving great masses of drying aquatic vegetation to decompose, ready to be broken down by worms, insects and bacteria and worked back into the soil. During these periods, verdant tracts of rich green water couch are remembered stretching into the distance.

That was a landscape Ramrod highly approved of back in 1876. He described swamps that:

...dry up in long dry seasons, and the couch grass, which grows upon them, is something to look at. They are as level as a table, except for a central channel, and I have seen them covered from end to end with couch grass eighteen inches high, one dense mass of luxuriant vegetation, in which hundreds of cattle and horses feed luxuriantly and grow fat in a few weeks.⁸

The Tuckean was widely renowned across generations of farmers for its use as a drought reserve for cattle.

Big rains would then bring the next flow to turn dried land back into water:

When the water returns to the wetland it comes to life and a sudden burst of nutrients becomes available for plants and fish. Plants start to sprout, insects, waterbirds, frogs, fish and mammals breed, hatch and arrive in their thousands. The result is a highly diverse and productive habitat.⁹

An older generation of locals remember a landscape some claimed was like the Kakadu of the south. Bert Elliot wrote to the *Northern Star*:

⁶ Ibid.

⁷ Ibid.

⁸ Ibid.

⁹ 'Wetland habitats', NSW Department of Primary Industries, <https://www.dpi.nsw.gov.au/fishing/habitat/aquatic-habitats/wetland> accessed 12/2/19.

I used to go shooting wild ducks at places like Tuckean Swamp, which was like a miniature Kakadu, some thousands of acres and only 20km from Lismore. The bird life was fabulous with black swans, spoonbills, ibis, cormorants, water hens, red bills and, on the high ground, hawks, the odd wedgetail eagle and many other species of birds. One tree alone had spoonbills and ibis nesting. There were also cormorants nesting by the hundreds, black swans on their floating reed nests, and small fish and shrimp by the millions. Quite often the sky was black with thousands of teal ducks and black ducks.¹⁰

The Tuckean was also renowned as a rich breeding ground for fish. Using interviews with professional fishermen, whose memories reached back to the 1930s and 40s, and available scientific knowledge, naturalist Bob McDonald outlined five estuarine habitats for fish in the Swamp prior to the closure of the Tuckean into the Broadwater in 1971.¹¹ The mangroves and salt marshes of the Swamp provided a juvenile fish nursery, thick with larvae of molluscs, worms and algae among other food for the larval and juvenile fish. Yellow Finned Bream, Sea Mullet and Tarwhine were the most common juvenile fish seen there by professional fishers. In the same habitat Blackfish (Luderick) joined the above list once adults, considered most productive during monthly high tides and periods of increased stream flow and flooding. The paperbark/melaleuca and sheoak/casuarina swamps of the Tuckean provided habitat for adult and juvenile sea mullet during floods. Mud flats, debris, sandy and muddy bottoms in the channels sheltered fish at low tide and the intermittent, shifting seagrass beds above today's barrage were highly productive for Yellow Finned Bream. During flood mullet, blackfish and bream moved deep into the Swamp, including farmland pasture, to get food and avoid the strong flood currents.

Evan Williams, who grew up on the south-eastern edge of the Swamp, described his childhood memory of the little islands that had formed when the Public Works Department first dug their drains between 1912 and 1915:

Always remember looking into the clear water sometimes and seeing the fish in myriads around those run-offs. They were feeding because of the water running out of the big flat plain of seaweed... they call it seagrass now. When the tide was a bit low and there was only a few inches of water under your dinghy... the big eels would swim underneath you sometimes and you would feel your dinghy shake.¹²

¹⁰ Letter to the editor, *Northern Star* 29 July 2015.

¹¹ Bob McDonald, Estimating the Value of the Tuckean Swamp to Fish Production of the Richmond River, unpublished paper, 1995, 3-5. McDonald used oral histories with Mike Reardon, Gordon Leslie Smith, Len Gallagher, John Gallagher, Daryl Holmes and Chris Heaton.

¹² In Esme Smith and Jane Baldwin, A Landuse History of the Tuckean Swamp, Tuckean Swamp Study: Technical Report #6, Lismore, 1997, 80-81.

As the Swamp flooded and dried over time, with shifting levels of surface water, a rotating inventory of birds joined more permanent dwellers. The return of water beckoned thousands upon thousands of ducks and other waterfowl to the Tuckean. Between 1967 and 1969 Graham Goodrick carried out a survey of wetlands of coastal New South Wales to provide the basis for a waterfowl conservation program for the state's National Parks and Wildlife Service.¹³ His classification of ecological types then informed baseline wetland research to current times. The 'seasonal fresh swamps' and 'fresh meadows' of the Tuckean were identified as the highest value waterfowl habitat. The following paraphrases Goodrick's descriptions of the types of swamp-scape of the Tuckean that were prevalent from the late nineteenth century to the time of his report.

Seasonal fresh swamps usually hold water during summer and autumn between one and three feet deep. In drier months the soil remains waterlogged but without standing water and in exceptionally wet years they can retain surface water year-round. During the wet season a wide range of aquatic plant species would be evident. The dominant emergent vegetation – those plants rooted in the water with their stems extending above – was often one species such as spike rush in the case of the earlier Tuckean. There would be varied sub-dominant floating and submerged vegetation such as water primrose, water milfoil, nardoo, frogbit, pondweed, marshwort, water fern and duck weed. In deeper water swamp lily and water lily were common.

In fresh meadows the soil can be covered up to a foot or more with fresh water, but for most of the year there would be no standing water. The characteristic ground cover is water couch, smart weeds and rushes. They were extensively used by black swans, black ducks and grey teal when flooded. Other regular inhabitants included (as named in 1969) white-necked and white-faced herons, white egrets, plumed and little egrets, straw-necked and white ibis, royal and yellow-billed spoonbills, spur-winged plovers, Japanese snipe and white-headed stilts.¹⁴ Of less value to waterbirds are the paperbark/melaleuca and mangrove swamps. Sheoak/casuarina swamps are not used by waterbirds.¹⁵

At the time of writing the report in 1969 Goodrick noted that: 'One of the most extensive swamps on the coast, Tuckean, has been seriously damaged by drainage and substantial rehabilitation is necessary.'¹⁶ Despite this comparative assessment over time and to other swamps, considerable areas of the Tuckean still had enough water at times to support relatively high numbers of waterbirds in the 1960s. Wazzer, who was interviewed for this report, was a contractor at the time working on the Tuckean drains and building the earthworks for the barrage. When asked what the Swamp looked like he said:

¹³ G.N. Goodrick, *A Survey of Wetlands of Coastal New South Wales*, CSIRO Division of Wildlife Research, Technical Memorandum No5, September 1970, 11.

¹⁴ *Ibid*, 10.

¹⁵ *Ibid*, 16.

¹⁶ *Ibid*, 28.

Ah, it was full of water - ducks and swans and everything on it. There was a lot of bird life then. I'd take ducks home all the time – mainly black ducks. Get a pair of good big black ducks, no problems. There were swans, jabirus, native companions. They were all out there – probably every kind of swamp bird you could think of. Plenty of feed for them then. Today they haven't got that.¹⁷

While most of the Tuckean was semi-permanent wetland, in its natural state some parts were deep enough to hold water all year round. Reeds in these permanent swampy areas punctuated the early descriptions of the Tuckean. It was amongst this tall, dense foliage that the Australasian Bittern made its home; the male's booming call identified by some of the early colonists as the real bunyip.¹⁸ It built its nest in secluded places deep in the reeds, hiding during the day and feeding on frogs, fish, crustacean, spiders and insects at night. A secretive bird that has been little understood, it is now suggested that a healthy reed bed within a functioning wetland is what attracts this endangered bird.¹⁹ The presence of the Tuckean Bunyip was recorded in oral history and newspaper accounts by its booming call, falling silent as the Swamp dried.

By 1969 Goodrick estimated that 58 per cent of high value wetland habitat had disappeared through drainage work on the Far North Coast. This was a time when environmental concerns were a marginal voice, and scientific evidence was only just emerging to recognise the value of swamp environments. Farming families around the Tuckean were struggling economically to maintain a sustainable living. Their focus returned to calls that had been heard from the 1920s for a barrage to stop salt water encroaching onto grazing and potential agricultural land and enable better drainage to assist flood mitigation. The following chapters explore the relationships between the people and place of the Tuckean, and the intermeshed cultural, social, economic and environmental influences that underlay its dynamic history.



¹⁷ Interview with Wazzer, 27/4/18.

¹⁸ Roy Keats, *Reminiscences of the Richmond River – NSW, 'Marianna' a dream home*, Mid Richmond River Historical Society, undated. The Australasian Bittern is also known as the 'Bunyip Bird'.

¹⁹ Darren Quin and Bruce Paton, 'Restoring Chaos', *Australian Birdlife*, 7 (4) December 2018, 42-46.

2. *The Pre-regulated Swamp: to the 1860s (Era 1)*

The arrival of Europeans into the clan country of the Bundjalung Nation on the Richmond River came late compared to many other parts of New South Wales. Swamp country was also amongst the least coveted land for agriculture, and the expanse of the Tuckean Swamp held back closer settlement in its vicinity until the last third of the nineteenth century. In this first era of the Tuckean history, therefore, the exploration follows some of what we can understand of the Traditional Owners who peopled the Swamp into the era of first contact, the arrival of the first Europeans, and what the Swamp might have been like prior to European intervention through settlement and drainage.

Settler alienation of the Crown Land of the Swamp did not start until the 1870s. However, the toll of massacres, disease and dispossession of Bundjalung people of the Lower and Mid Richmond River was entrenched by the late 1860s.¹ In a government inquiry held into the Tuckean Swamp in 1900, timber-getter Thomas McFadden, who gave evidence that he had been in the district since 1863, thought that 'from 1869 to 1886 it [the Swamp] had never been fired. It was one mass of weeds and rotten vegetation.'² From this one might infer that Bundjalung people had not been carrying out their regular slow burning practices of drying organic swamp material and leaf litter in the timbered areas that kept the Tuckean cared for and safe from destructive hot bushfires. They continued to access the swamp-scape after this time to gain food, protection and maintain cultural places. However, their sole custodianship and management of the Swamp was at an end.

Flood and drought: a constant

The weather patterns of El Niño and La Niña have influenced human interaction within and around the Swamp environment since humans arrived. Bundjalung are known, in archeological terms, to have been present from at least 6000 years before present (BP).³ Overall trends during the Holocene in this region indicate dynamic climate changes with increasingly drier conditions resulting from regional sea-level changes.⁴ Flood and drought form one of the key catalysts in the modern history of the Tuckean Swamp once Europeans arrived. The very wet years brought demands for flood mitigation and drainage, while the long dry years brought a loss of flood memory among the colonists. Settlers often treated both flood and drought as

¹ Heather Goodall, *Invasion to Embassy, Land in Aboriginal Politics in New South Wales, 1770-1972*, Sydney: Allen & Unwin, 1996.

² Thomas McFadden, Department of Public Works, *Tuckian Flood Escape Scheme: Parliamentary Standing Committee on Public Works - Minutes of Evidence*, Sydney: Government Printers, March 1900, 41.

³ Ron Heron, A Brief for an Aboriginal Study of Tuckean Swamp, Tuckean Swamp Study: Technical Report # 5, 1996.

⁴ R. McGrath and W. Boyd, 'Holocene Vegetation History of Bundjalung National Park and Bungawalbin Creek, North-eastern New South Wales', *Australian Geographer*, 29(2) 1998, 205-221.

aberrant events rather than as part of the cyclical pattern that characterises Australia's weather and shaped the landscape that Europeans came recently to live within.

When Captain Henry Rous was rowed up the Richmond River in 1828, renowned as the first European to 'discover' it, he reported that 'the country to the northward appears to have suffered as much from drought as the southern districts'. He had directed the boat to be turned around five miles after rowing up the Broadwater, 'ending in a low marshy jungle' that was later called the Tuckean Swamp.⁵

It was then over ten years before the first cedar-getters ventured north from the Clarence to establish themselves on the Lower and Mid Richmond. By that stage the earliest flood in European accounting had occurred on the Clarence in 1839, following 'the terrible drought of 1836, 1837 and 1838'.⁶ Reflecting back, in 1893, on this relationship between drought and flood, correspondent A. Meston noted that Grafton had been 'built on a foundation of alluvial wash from prehistoric flooding' and that 'the old aboriginals spoke of a flood when Wilsons Hill in South Grafton was the only dry land between the ridges and the river'.⁷ Baffled, he wrote that new settlers had left the Clarence after big floods and moved to the Richmond, only to reestablish themselves in the same types of locations. Stability and predictability of climatic conditions, sought after by the early colonists, was no more apparent in the semi tropics than to the south. For Bundjalung people, adaption to both long term climate change and seasonal variation was integral to their relationship with Country that included the Tuckean Swamp.

Water sites: cultural, social and economic places

Bodies of water are understood by Aboriginal people as more than physical domains. 'They are construed spiritually, socially and jurally, according to the same fundamental principles as affiliations to terrestrial places in the land.'⁸ The distinctions between land and water are not absolute but instead viewed as entwined cultural phenomena whose characteristics are predetermined by the sacred past. Indigenous anthropologist Marcia Langton explains:

Relationships with water places are steeped in social and religious traditions, from which spring power, knowledge, wellbeing, good fortune (e.g. food harvesting and fecundity), and even extraordinary misfortune, often the consequence of the punitive wrath of an ancestral being disturbed by human malfeasance.⁹

⁵ Quoted in the *Northern Star*, 25 August 1928, 15.

⁶ A Meston, *Maitland Mercury and Hunter River General Advertiser*, 25 February 1893.

⁷ *Ibid.*

⁸ Marcia Langton, 'Earth, wind, fire and water: The social and spiritual construction of water in Aboriginal societies, in David Bruno et al eds., *The Social Archeology of Australian Indigenous Societies*, Canberra: Aboriginal Studies Press, 144.

⁹ *Ibid.*, 145.

The Tuckean is part of a cultural landscape that takes in Evans Head, north past Lismore and south-east around Ballina, and was created through the actions of 'The Three Brothers'. The Three Brothers story is told in different ways depending on which group is telling it, and on the Far North Coast it explains how Bundjalung Country was populated across its expanse.

For those clan groups directly associated with the Tuckean Swamp, Widjabul and Nyangbul family groups, the story originates from the landing of the three brothers, their wives and their grandmother at Evans Head. Widjabul historian and linguist Roy C. Gordon summarised the story. When they landed the grandmother, Gammi, went to find food. For some reason the brothers and their wives left without waiting for their grandmother, canoeing northwards. When she returned to find everyone gone she stood on Goanna Headland (Dirawong), striking the ground with her stick and creating the first waves on the North Coast. The brothers and wives came into shore near Broadwater, at Boundary Creek, returning to search for Gammi. After eventually finding her they all set off again, landing at Bulloona (Ballina), establishing the first permanent camp. The brothers then travelled north to Lennox Head from where each went in a different direction to populate Bundjalung Country. It was the second brother Mamoon who returned to the Richmond River.¹⁰

Aboriginal people moved in clan and family groups between the coast around Evans Head and Ballina, and into the hinterland of the Big Scrub, according to seasonal variation and following the signs in the landscape.¹¹ They did not do this randomly, negotiating travel routes and permissions with other clan groups. James Oliver recalled his perception of the circumstances when he arrived in the Coraki area in 1866, after growing up on the upper Richmond at Tunstall between Lismore and Casino. 'The country was divided by them into districts, and an understanding prevailed which precluded the blacks of one division poaching upon the preserves of another'.¹² Within this system some places were shared - the Tuckean being a shared resource place. Nyangbul historian, Marcus Ferguson, notes: 'The Evans Head mob used it, the Lismore mob and the Ballina mob used it.'¹³

As a large water place within this landscape, teeming with life, the Tuckean was a significant place to each of the clan groups of the region.¹⁴ For example Widjabul are described as people of the mountains and the swamps.¹⁵ Widjabul Elder Auntie June Gordon nee Roberts relays the Creator's message about water from her grandfather Uncle Lyle Roberts Snr:

¹⁰ Roy C Gordon, 'Guriabui: A very long, long time ago', Wilsons River Story Sites, Wilson River precinct, Lismore.

¹¹ JALI Local Aboriginal Land Council, *Ngunya Jargoan Cultural Calendar*, <http://jalilands.com.au/assets/nj-cultural-calendar-2017-a3-version.pdf> accessed 2/12/18.

¹² Oliver Jones Memoirs, Handwritten notes and typescript copy, in 'O. Jones Pioneers' File' Richmond River Historical Society, 1936.

¹³ Interview with Marcus Ferguson, 17/3/18.

¹⁴ Roy C Gordon pers comm 21/2/18.

¹⁵ Ron Heron, A Brief for an Aboriginal Study of Tuckean Swamp.

Take notice of the animals and trees, they will let you know when a change is needed. *Garima gala jogun* – look after this country – and it will nourish and keep you well. *Garima* – look after the trees and they will show you when to hunt and gather food and medicine. I will create waterways and rivers for you also, but always be wise in your use of *Nyabay* – water – because when the land is dry everything living needs this precious resource to live.¹⁶

Ridgelines were important travelling routes, from which people went down into water places to access food, medicine and maintain cultural places. They camped above the swamps, away from the insects and terror of snakes. The Moonem ridge and plateau country ringing the Tuckean from south east to the north west had many camp sites, middens and places of significance. Marcus Ferguson provides this as evidence of the ‘high cultural sensitivity’ of the whole Tuckean Swamp area: ‘It’s a dead set indicator of what went on in that place’.¹⁷

Publicly known sites included a bora ground above the flood waters at Old Bagotville Road; Dalwood Falls running off Gum Creek; campsites at Victoria Park and Graham Road; around to the well-documented Tucki Bora Ring site on the Tuckurimba ridge that was also a permanent campsite for Widjabul. Of many mythological sites within the Swamp, Marcus noted a djurbihl/increase site for stingray in Marom Creek and a women’s birthing site within the vicinity of Cedar Island, and canoe trees that can still be found in the Swamp.¹⁸

Uncle Lewis Cook of Cabbage Tree Island, now 87, knew the Swamp well as a young man, fishing with his uncles. However, he didn’t access all parts. Not only did they keep their distance from sections related to women. Other parts were inhabited by Hairy Men and a dhurangan, an old witch, with spiritual powers that meant only certain people should enter.¹⁹

Local groups were not the only ones to make use of the rich resources of the Tuckean. Tuckurimba ridgeline was the main route for those from country to the south who were travelling through to southern Queensland where thousands gathered regularly for the Bunya Nut Festival. In turn, Queensland groups came south to the Lismore region. Many hundreds of people are remembered by colonial observers into the late nineteenth century gathering at sites like Robsons Knob, just to the north of the Tucki Bora Ground.²⁰

Such large numbers of people required food and other resources, always available in the surrounding swamps of which Tuckean was the most expansive. Uncle Lewis Cook retold stories

¹⁶ June Gordon, ‘In the Womb of the Goanna: Widjabul Country’, Wilsons River Story Sites, Wilson River precinct, Lismore.

¹⁷ Interview with Marcus Ferguson, 17/3/18.

¹⁸ Ibid. A dirangan (malevolent female ancestor) lives in Dalwood Falls, where the pool should be respected and not swum in. For many, this explains the numbers of deaths at the falls. Wazzer, who dug the drains in the late 1960s, also remembered the canoe trees.

¹⁹ Interview with Lewis Cook, 8/3/19.

²⁰ J.G. Steele, *Aboriginal Pathways in Southwestern Queensland and the Richmond River*, St Lucia: University of Queensland Press, 1984.

of the Old People who knew the signs for when different food sources would become plentiful allowing, for example, the movement of large numbers of people back and forth to the Bunya forests. The swamps and waterways of his region offered ‘a smorgasbord’.²¹

Archeologist Paul Irish notes:

Traditional Aboriginal life is often imagined as a repeating cycle of movement, food gathering and ceremony around defined ‘territories’ in the landscape. Whatever kernel of reality this captures, it obscures the environmental and technological changes experienced by Aboriginal people over vast periods of time, and it ignores their complex, widespread and ever-shifting connection that pushed them far beyond their tribal lands.²²

Like those before and after him, when Rous noted the presence of Nyangbul people on his visit to the lower Richmond, he would have believed that the Aboriginal way of life had not changed over time. Overturning the long-held view of Aboriginal stasis, prolonged scientific debate has surrounded arguments about ‘intensification’, involving human manipulation of the environment, growth in population, increased trade between groups, more elaborate and complex social and political structures and dynamic cultural change.²³

While we know little about Bundjalung manipulation over time of the Tuckean Swamp, archeologist Harry Lourandos’ work in the 1980s led to a new understanding of Aboriginal exploitation and management of water resources.²⁴ His work uncovered elaborate swamp management through drainage by Aboriginal people of western Victoria. This was at a similar time to Bundjalung presence, alerting us to the likelihood of deliberate manipulation of the Tuckean Swamp environment to help protect people against variations in resource availability as well as assisting availability in times of high population demand.

Water control systems found in Victoria, and Langton’s work on water places in Cape York Peninsula, are examples of a wide range of pre-contact Aboriginal land and resource management practices. The extent and consequences of long-term environmental change through deliberate Aboriginal burning practices remains debated in science. There is no question for Marcus Ferguson, part of the Firesticks Cultural Burning Project: ‘Fire was Aboriginal people’s number one tool for managing the land. Healthy country is when you can walk through it.’ He argues they would have carried out regular damp, cool burning of the rushes and the mass of drying organic matter and forest leaf litter. Marcus noted newspaper

²¹ Interview with Lewis Cook, 8/3/19.

²² Paul Irish, *Hidden in Plain View: The Aboriginal People of Coastal Sydney*, Sydney: NewSouth Publishing, 2017, 13.

²³ For example, see Lesley Head, ‘The Holocene Prehistory of a Coastal Wetland System: Discovery Bay, Southeastern Australia’, *Human Ecology* 15(4) 1987.

²⁴ Harry Lourandos, ‘Change or stability?: Hydraulics, hunter-gatherers and population in temperate Australia’, *World Archaeology* 11(3), 245-264.

headings of the 1920s and 30s that 'Tuckean Swamp is burning'. He commented: 'Before - Aboriginal people would never have allowed that to get out of control.'²⁵

In his hours of interviews with Marcus, Uncle Lewis Cook noted that Marom Creek, in the north west of the Swamp, was once a djurbihl or increase site for stingray, where ceremonies were held to assist the growth and reliability of the species.²⁶ Requiring estuarine waters, stingrays would have needed a different environment to the seasonal freshwater one described by later Europeans.

Wasteland and refuge

Clement Hodgkinson was the surveyor tasked by the New South Wales colonial government in 1841 to map and describe the semitropical country north of Port Macquarie to Morton Bay, prior to any formal opening of the lands to colonists. He found all the rivers from the Macleay northwards, including the Richmond, to be of similar character:

These borders of alluvial brushland on the banks of the river, are generally half a mile, or a mile wide, and are then backed by extensive swamps of many thousand acres in extent, whose verdant sea, of high waving reeds and sedge, stretches away to the base of the distant forest ranges.²⁷

He did think the north coast swamps were less dangerous than the 'fetid morasses' of southern America (USA). However, as someone who was tasked with finding potential agricultural land, he could only see the swamps as a long-term and unhealthy impediment to settlement of that part of the colony. He described thousands of acres of 'stagnant swamps ... and the decomposition constantly going on in the dense mass of vegetation on the alluvial lands, must also evolve a great quantity of noxious gas.'²⁸

Despite Hodgkinson's descriptions of the swamps, like other explorers and surveyors across the continent at the time, he did not record them on his maps. Only the rivers and the mountain ranges were marked, as the shallow and often seasonal swamps were hard to conceptualise in a mapping process that spoke of permanence.²⁹ Without an understanding of their ecological value, and as an impediment to European movement and settlement, they were regarded as useless in their natural state – wasteland.

²⁵ Marcus Ferguson pers comm, 6/7/18. Interview with Uncle Lewis Cook 8/3/19.

²⁶ See chapter 1.

²⁷ Clement Hodgkinson, *Australia from Port Macquarie to Morton Bay: with Descriptions of the Natives, their Manners and Customs; the Geology, Natural Productions, Fertility, and Resources of that Region; first explored and Surveyed by Order of the Colonial Government*, London: T&W Boone, 1845, 9.

²⁸ Ibid, 110.

²⁹ Dean Jeans, 'Use of historical evidence for vegetation mapping in New South Wales', *Australian Geographer* 14 1978, 93-97. In 1864, however, new regulations required surveyors to mark on their maps the boundaries of swamps along with forests, plains and land liable to inundation. This came three years after the legislative changes of the Robertson Land Acts of 1861 that heralded in land selection for the small farmer.

The first Europeans to stay in the area were the cedar getters, arriving on the lower Richmond in 1842. The squatter William Wilson, his wife Elizabeth and family, took up Lismore Station in 1844. Wilson introduced the first cattle onto the Tuckean in the west and southern sections. By the mid-1850s he was said to be running between 4,500 and 5,000 cattle between Lismore and his runs at Tucki Tucki, 'Dingarrubba' to the Broadwater.³⁰ Settlement around Coraki was established on the Mid Richmond River by 1849. Small scale selectors had taken up nearly all the river bank land and planted maize by 1866, often clearing the riparian vegetation right to the edges of the Richmond. The first small sugar mill was operating in 1865 and the boom in cane farming along the Lower and Mid Richmond had started by the end of the 1860s.³¹ Despite these early settlers, Europeans were slow to move into the region. In 1860 there were still only 1,283 non-Aboriginal people counted in the whole of the Richmond Valley.³²

Crown or public land for private ownership was not alienated from the Tuckean Swamp until the 1870s after Crown (portion) plans were surveyed.³³ However, by then the relationship of Bundjalung people with the Swamp had already changed. While still unfenced and therefore freely accessible for resources and to maintain cultural sites, the Tuckean also took on the role of protection and refuge. Infectious diseases brought with the new settlers was a disaster for clan groups. However, the 1840s to the 1860s was also the period that became known as the Black Wars across Bundjalung Country, bringing an intense time of carnage, pursuits and escapes.³⁴

Individual killings of white people brought reprisals of mass killings of Aboriginal men, women and children across the Lower and Mid Richmond. While many massacre stories only remain within oral traditions, others were recorded later by colonists once the immediate perpetrators had died.³⁵ Around 1843, at least 100 Aboriginal people were killed at Evans Head after five white men were killed by Bundjalung men at a cedar depot at Pelican Creek near Codrington. Those who escaped the Evans Head Massacre fled north looking for protection. Uncle Lawrence Wilson of the Bundjalung clan told of his ancestors fleeing to Dungurubba, only to find killings there continuing.³⁶ They then fled into the Big Scrub, most likely through the Tuckean,

³⁰ Esme Smith and Jane Baldwin, *A Landuse History of the Tuckean Swamp*, Tuckean Swamp Study: Technical Report #6, Lismore, 1997.

³¹ Daley, *Men and a River*.

³² *Northern Star* in Louise Daley, *Men and a River: Richmond River District 1828-1895*, Lismore: Richmond River Historical Society, second edition 2011, 117.

³³ Smith and Baldwin, *Tuckean Swamp Land Use History*.

³⁴ Jennifer Hoff, *Bundjalung Jugun: Bundjalung Country*, Lismore: Richmond River Historical Society, 2006. Places like the Tuckean and the estuary landscape around Ballina also became the refuge for other Indigenous groups pushed out of their own Country.

³⁵ For example, re Evans Head massacre see J.T. Olive, 'A Richmond River Horror: Slaughter of Blacks at Evans Head', *Richmond River Herald and Northern Districts Advertiser*, 13 April 1920, 2. For the 1850s Ballina massacre see James Ainsworth, *Reminiscences 1847 – 1922*, Ballina: Apex, 1987.

³⁶ Heather Goodall, *Evans Head and Area*, in *Respect of the Application for a Determination of Native Title Number NG 6034 of 1998: Lawrence Wilson v Minister for Lands and Conservation*. Prepared for the Federal Court of Australia, 2003.

emerging to seek refuge with William Wilson's family at Lismore Station. Heather Goodall has documented the process of 'dual occupation' that preceded the killing times between clan groups and friendly squatters such as the Wilsons.³⁷

About the same time a series of killings of Aboriginal people occurred along the Lower Richmond and around Ballina. Then in 1853 or 54 a second series of massacres occurred at Ballina, perpetrated by police from the Tweed. Stories from the Cook family relay a count of seven massacres on the Lower Richmond.³⁸ One of these relates to the story of Jack Bubba Cook, one of the founders of the Aboriginal settlement of Cabbage Tree Island. He was discovered in the Tuckean Swamp as a baby by a white man, Henry Cook, and raised and adopted by the family. Stories of where Jack came from, and how he came to be in the Swamp, differ. However, the likelihood that the mother who left him was fleeing a massacre is agreed by both sides of his family.³⁹

Henry Cook came from Rileys Hill and was looking for his cattle on the Swamp near Broadwater when he came across the baby. His biological son Samuel and Jack grew up together as brothers. Jack secured a selection on Cabbage Tree Island and in the 1880s, as the pressure on Widjabul people camped at Tucki Tucki increased, he encouraged them to join him. There they could maintain ties to Country, including the Tuckean, while creating a viable community life together. Senior Elder Uncle Lewis Cook is Jack's grandson. Samuel Cook went on to select some of the earliest land available in the Swamp at its northern end where Tucki Tucki Creek enters (at the bottom of Cooks Road). He provided evidence to the government's Tuckean Swamp Inquiry on flood mitigation in 1900, discussed below and in Era 2/chapter 3.

A place of many reeds: a rich environment

Within Indigenous oral traditions, the vastness of the Tuckean enabled it to become a route of escape, retreat and temporary protection for the traditional owners. They could hide among the high reeds where knowledge about the tracks, through a potentially treacherous landscape, was essential. A common characteristic of the Swamp, described through nineteenth century documents, was the dominance of reeds. The origin of the word Tuckean/Tuckian has not been discovered for this project. However, Tucki is recorded from early European documents and current Indigenous understandings to mean reed or similar, and when a word in Bundjalung is repeated it means 'many', for example, Tucki Tucki.⁴⁰

³⁷ Goodall, *Invasion to Embassy*.

³⁸ Betty Archer and Lewis Cook in Lois Cook and Catherine Marciniak, *Babe in the Reeds: A story of massacres and resilience*, 24 October, 2014, <http://www.abc.net.au/local/stories/2014/10/23/4113096.htm> accessed 12/2/19.

³⁹ Ibid.

⁴⁰ 'Aboriginal Names of Places Etc. with their Meanings', *Science of Man and Journal of the Royal Anthropological Society of Australasia*, October 22, 1900, 152.

Samuel Cook told the 1900 Inquiry of his memories of the Swamp prior to drainage: 'it was covered with rushes to a height of 6 to 8 feet.'⁴¹ Coraki police complained about the reeds in the Tuckean in relationship to illegal duck shooting in the late nineteenth century: 'This Tucki swamp was for years a nuisance of a place. Owing to its huge dimensions, its situation, and the high reeds surrounding it, it had been extremely difficult for police to get at offenders.'⁴²

Cook provided further information about the swamp-scape, telling the Inquiry there was 'very little timber' on the Swamp, and when asked about the extent of 'ti-trees' that might impede the faster removal of flood waters he said there were 'not sufficient to make any difference'.⁴³ Huge floating islands of aquatic vegetation were to be found in the south-western section of the Swamp. In the east another landholder, William Armbruster, told the Inquiry that before the early drains it was always too wet and boggy to ride a horse across, with only a few patches of dry land on rises and small ridges.⁴⁴

As the most valued timber, Red Cedar was removed from Cedar Island (also known as the Big Island) before Crown Plans were made, but is remembered as part of the Weis family stories.⁴⁵ Apparent from the first Crown Plans and the 1900 Inquiry, Hoop Pine forest is shown along the east side of the Tuckean, with Big Scrub rainforest fringing the Swamp from the south-eastern ridges around to the north west. In the south, eucalypt forest and tea tree (*Melaleuca*) swamp was mixed with rainforest. A wet, peaty mass formed levees along Broadwater Creek that extended north and east from the head of the Tuckean Broadwater, with some mangroves that would increase once drainage brought down more silt (see Era 2). In this era *Melaleuca* swamp was mainly confined to the margins of the Swamp and fringing Tuckean Island, plus a section of about 500 hectares in the south-eastern corner.⁴⁶

Little historical documentation of the Tuckean's fauna has been found for this era and what exists is generalised description. For example, when 'possum' is used, it may include three species. However, when all the documentation available was surveyed for a report in 1996, a calculation of 281 vertebrate species were found associated with the Tuckean: 14 amphibians, 30 reptiles, 33 mammals and approximately 204 bird species.⁴⁷

Bundjalung people on the Richmond were universally described as tall, well-built and healthy in early colonial memory.⁴⁸ The benefits of their rich environment - fruitful in all seasons of the

⁴¹ Samuel Cook, *Minutes of Evidence*, 1900, 23.

⁴² *Northern Star*, 9 December 1899, 4.

⁴³ Cook, *Minutes of Evidence*, 1900, 15.

⁴⁴ William Armbruster, *Ibid*, 36.

⁴⁵ Carol Evans compiler, *Weis History: Germany and Australia 1696-2008*, 2008.

⁴⁶ Michael Stevenson, *Remote Sensing and Historical Investigation of Environmental Change and Melaleuca Encroachment in Tuckean Swamp, North-Eastern NSW*, unpublished student paper, School of Environmental Science and Management, Southern Cross University, 2003.

⁴⁷ D. Charley and D. Sharp, *A Survey of the Terrestrial Flora and Fauna of Tuckean Swamp: Technical Appendix to the Draft Land and Water Management Plan for the Tuckean Swamp*, 1995.

⁴⁸ Heather Goodall, *Evans Head and Area Native Title Claim*.

subtropical climate and with an abundance of resources accessed from ocean, swamp, river and land - showed in their physique. Bundjalung moved between these environments as the climatic periods and seasons provided the signs, and they hosted large groups of visitors from other areas. In a landscape where dense rainforest covered great areas, the floodplains and swamps were key resource places. Referring to the era before European intervention, Marcus Ferguson commented: 'When the Tuckean Swamp was active it was the shopping centre for the Traditional Owners – you could get whatever you wanted.'⁴⁹



⁴⁹ Interview with Marcus Ferguson, 17/3/18.

3. Drainage: 1870s to 1915 (Era 2)

Europeans had started to arrive in the Richmond River region from the 1840s. However, it is only in this era that colonial settlement increased. During the 1870s and 80s, land was taken up on slopes above the Tuckean and some higher ground within the Swamp such as Cedar and Tuckean Islands. It is within this period from the late 1880s to 1915 that drainage of the Swamp was carried out, first by private landholders and then by the New South Wales government's Public Works Department (PWD).

From the 1890s the process of closer settlement took increasing hold across the region, brought on by the introduction of dairying, more success of small cropping and improved shipping to Sydney markets. Families from the south came in search of shrinking available agricultural land in the colony and pressure on government mounted from the late nineteenth century to make the expansive Tuckean Swamp more available to farmers through flood mitigation or draining.

The late nineteenth century were years of high rainfall and flooding. This was accompanied by intense political lobbying from the town and river settlements for diversion schemes on the Richmond River for flood relief. The first of three Public Works inquiries about the Tuckean Swamp was held in 1900 to assess the viability of such demands, where the cautionary recommendation was for a flood diversion canal through the Tuckean. This was overturned in 1911 in favour of a drainage scheme. It took until 1912 to begin digging, among the last of the major Public Works drainage schemes along the swampy coastline north of Sydney to the Tweed. In September 1915, following the completion of the works, the New South Wales government opened the last 5,000 acres of Crown Land in the Swamp for small-scale farming with the promise of dry, arable land. This era closes with the completion of the drainage works, with Era 3 exploring the period following its completion.



'Tuckean Swamp Drainage Area', Tucki Tucki file
Courtesy Richmond River Historical Society

The weather

In the last two decades of the nineteenth century, the region struggled with large scale and frequent flooding, interspersed with dry times. It was during the heavy rainfall years of the 1890s that increasingly urgent calls were made for the government to act on flood mitigation across the region.

By the time the people of the Mid Richmond and Tuckean Swamp were promised action following the 1900 Inquiry, they didn't know that the next twenty years would bring dry years and drought. As the Public Works drains were dug between 1912 and 1915, the memory of flooding receded as drought continued and the Swamp dried. Some of the new farmers who took up land in the Swamp after 1915 arrived with little or no understanding of the type of land they were purchasing.

Moving in: the slow creep of closer settlement on the Richmond

The transition between a frontier society and farming communities, envisaged in the emphatic migration literature enticing British Isle settlers to Australian shores, came slowly to the Richmond River Valley. In the 1870s timber was the main industry on the Lower and Mid Richmond River as cedar and hoop pine were cut out of the narrow fringe of forest between the river and the swamps.¹

As the river banks were cleared for farming, the timber getters moved up river. The Robertson Land Acts of 1861 overturned the prior land tenure of the squatters' big runs, such as William Wilson's hold on the land from Lismore to the Broadwater. Free selection meant reducing the size of the land parcels available for selection, introducing the concept of the yeoman farmer. Closer settlement brought farming families to the region, women and children, as well as small businesses to support the growing communities. 4000 new settlers had arrived in the Richmond Valley over the six years between 1874 and 1880, although this still only brought the entire non-Aboriginal population from Casino to Ballina to 8,504.² Parcels of land were now available for 'conditional purchase', before surveying, of between 40 and 350 acres.

To keep the land, the farmer had to clear the timber and build a dwelling. In later years in swamp country, this included the requirement to dig drains. The first land to be taken up was close to the river system, which was the main access route in this landscape of thick forest and swamps. The ferocity of floods increased as the riparian land was cleared. The first selectors arrived around the southern edges of the Tuckean Swamp on the river flood plains in the 1870s. Most of the available land had been alienated by the end of the 1880s, taking up a mix of higher timbered land and swamp. For example, Edward Collard's selection on the south-western side of the Swamp was described in the Crown Plan as 'a mixture of good level plains with open

¹ Louise Daley, *Men and a River: Richmond River District 1828-1895*. Richmond River Historical Society: Lismore. Second edition 2011.

² *Ibid*, 128.

forest of oak, mahogany, box and peppermint; and an area of dense brush and open reedy swamp.’³ Approximately 5,000 acres in the Swamp remained in the hands of the Crown, too wet to be made available for purchase. Maize, sugar cane, vegetables and some tobacco were the first crops tried in the area. The first survey of the Tuckean Swamp was not begun until 1897 by government surveyor Thomas McDonnough.⁴

This was a period of increasing restriction on the free movement of Aboriginal people across their Country. The size of the Tuckean Swamp meant it became a place of indigenous retreat and protection from the onslaught of closer settlement. As discussed in the previous chapter, one place where Bundjalung and other clan groups moved during the 1880s was Cabbage Tree Island, between Broadwater and Wardell. Part of the island was selected by Jack Cook (known as Bubba), a Bundjalung man and adopted son of the Cook family (see Era 1). As European settlement increased around Wyrallah, Jack encouraged Widjabul, other Bundjalung clans and dispossessed Indigenous groups from further afield, to start farming cane on his selection on the Island. The settlement enabled the continuous relationship with the Swamp over the coming decades. Gladys Faulkner, born Weis, told family members that ‘lots’ of Aboriginal people walked through their Marom Creek farm in the early 1900s on their way to Cabbage Tree Island. They were looking for the ‘Teddy Bears’, as the Weis family called koalas, to eat.⁵

Gladys’ widowed grandfather, Karl Weiss, had taken up a selection on Cedar Island, arriving from Germany in 1886. He is thought to have selected the island from drawings and maps while still in Germany. He had cows, chickens, fruit trees, vegetables and grew grape vines on his 40 acres from which he made wine. In 1891 he was joined by his three eldest children, George 18, Friedrich 17 and Anna Maria 15. On arrival in the region, they had to make their way alone across-country to Lismore to meet their father after they were mistakenly taken to the Tweed.⁶ To the east, in around 1888, another recent landholder in the northern section of the Swamp began drainage work. George Henderson started work below Marom Creek, working down into the central swamp where the runoff from the Alstonville Plateau could be directed out into the Tuckean Broadwater before reaching the lower Richmond River.

Mr. Henderson’s drains

‘Hendersons Drain’ is marked on current maps in the north of the Swamp joining the drain that enters the Tuckean Broadwater. George Henderson had a series of drains cut on his property in the late 1880s with the aim of drying out the swamp to allow grazing land for his cattle.⁷ At

³ Esme Smith and Jane Baldwin, *A Landuse History of the Tuckean Swamp*, Tuckean Swamp Study: Technical Report #6. Lismore, 1997, 16.

⁴ Thomas McDonnough, *Survey Plan of Tuckean Swamp*, Harbours and Rivers Branch of Department of Public Works, 1897.

⁵ Family interview with Gladys Faulkner nee Weis, courtesy Lorraine Judge.

⁶ Carol Evans compiler, *Weis History: Germany and Australia 1696 - 2008*, self-published, 2008.

⁷ See the evidence of Samuel Cook and Albert Armbruster, Department of Public Works, *Tuckian Flood Escape Scheme: Parliamentary Standing Committee on Public Works - Minutes of Evidence*, Sydney: Government Printers, March 1900.

about the same time, above the head of the Tuckean Broadwater, a southern neighbour called McPherson also dug one east-west running drain towards Stoney Island. Evidence to the 1900 Inquiry noted that between them, they accounted for eight miles of drains.⁸

Human-led change to the Tuckean environment preceded European drainage through generations of fire management by Bundjalung clans, the early presence of William Wilson's cattle into southern parts of the Swamp, and increased sedimentation and fresh water runoff from clearing in the region. Henderson's drainage works, however, began a new history of changes to the hydrology of the Swamp (see Appendix 2 for c1897 survey map of the Tuckean Swamp).

Henderson settled his family on 100 acres above the Tuckean, where he was renowned for his success in growing an extensive orchard, a great diversity of fruit and vegetables and a European-style garden, watered through his innovative irrigation system.⁹ Below that he took up 1,200 acres of predominantly low swamp, much of which surveyor Thomas McDonnough described as appearing to be in 'a kind of basin'.¹⁰ Henderson began to drain the land from about 1887/8.¹¹ By the time of the 1900 Inquiry he had already left the region, leasing the property to Albert Armbruster in 1897. He sold the land to Edward Justelius in 1910.¹²

There was general agreement that some measure of drying of the landscape had occurred around Henderson's drains. However, there were contested views on the extent and success of this endeavor to 'improving' the land. Two opposing perceptions were apparent in evidence given before the 1900 Inquiry. The Tuckean farmers and graziers each declared that the drains had improved the swamp landscape, where reeds had been replaced by dry ground and grasses. Samuel Cook, who selected land in the north-western part of the Swamp, expressed a common view when saying: 'They were a success. During a number of years before the land was drained, I often tried to cross it on foot and could not do so, and since then I have ridden across the drained part on horseback.'¹³ John Bagot, who grew up on the eastern bank of the Tuckean Broadwater, said that before the drains 'it was impossible to get into it at all' ... because of the 'boggy state of the swamp, and the water to some extent.' It was a 'waste'. However, after the drainage work it was possible to access in 'reasonably dry weather'.¹⁴

On the other hand, New South Wales's Engineer-in-Chief Cecil Darley and Tuckean surveyor Thomas McDonnough had different views. Darley had previously caused much fury among residents and the local media when he opposed both the idea of a flood channel across the Tuckean, as well as any drainage, declaring that the regional engineer's report:

⁸ Albert Armbruster, *Minutes of Evidence*, 1900, 35.

⁹ Roy Keats, *Reminiscences of the Richmond River – NSW, 'Marianna' a dream home*, Mid Richmond River Historical Society, undated, 3-4.

¹⁰ Thomas McDonnough, *Minutes of Evidence*, 1900, 62.

¹¹ In his evidence to the 1900 Inquiry, Samuel Cook noted that Henderson had started digging the drains 'twelve or thirteen years ago', *Minutes of Evidence*, 22.

¹² *Richmond River Herald*, 20 December 1910.

¹³ Samuel Cook, *Minutes of Evidence*, 1900, 23.

¹⁴ John Bagot, *Minutes of Evidence*, 1900, 55.

... clearly sets the latter question at rest by showing that drainage works have been already attempted on a fairly large scale, and ended in disappointing failure, as the surface of the land was actually lowered by the operation, and is now in a worse stage than before anything was done.¹⁵

While less fervent in his opposition, McDonnough was also skeptical of the 'success' of the drains. Asked at the Inquiry whether Mr. Henderson's drains 'were effective in draining the land' he responded: 'Only to a certain extent. I do not think they were a complete success, or anything like a success.' He did not think the drains had caused 'an injury [to the Swamp], but I think they caused it to subside a couple of feet.' McDonnough had surveyed the land through the wet years of the late 1890s and suggested while the drains were a partial success, they were no use in getting rid of flood water and cattle could only access the land 'now and again'.¹⁶

'The Tuckian Grievance': Flood mitigation and/or drainage

Following a series of floods that had washed away homes, crops, cattle and killed the grasses that could support surviving livestock, the newly formed Tuckurimba Progress Association had supported the decision to lobby the Minister of Works in 1891 for 'a system of canals [across the Tuckean] for flood water escape, drainage, irrigation and navigation.'

This system to extend from the head of The Broadwater firstly, inwards toward Meerschaum Vale, secondly Marom, thirdly Tucki Tucki Creek and that branches to these canals be cleared to the principle creeks for collecting the water that at present floods the vast swampy flats.¹⁷

As flooding continued through the 1890s, and little was heard from the government, outrage increased across the community. In response to the Chief Engineer's reluctance to move on any scheme in relation to the Tuckean, newspapers headlined 'The Tuckian Traducer', 'The Tuckian Trouble' and 'The Tuckian Grievance'. It was declared that: 'The Tuckian Flood Escape Drain is a question that is all important to farmers and dairymen throughout the whole Richmond River district.'¹⁸

A constant agitator for action, Coraki's *Richmond River Herald and Northern Districts Advertiser*, noted in March 1893 that:

We have only to look at the vast extent of land lying between the North Arm of the Richmond River and Broadwater, and known as Tuckian, to see what a vast amount of good land could be reclaimed by the cutting of a canal in that locality. Tens of thousands of acres of the very richest description of land

¹⁵ *Richmond River Herald*, October 1898, 5.

¹⁶ McDonnough, *Minutes of Evidence*, 1990, 62-63. Cook agreed that it looked like the land had subsided, beaten down by the hoofs of the cattle.

¹⁷ Minute Books of the Tuckurimba Progress Association, Richmond River Historical Society Archives, 32.

¹⁸ *Richmond River Herald*, 20 January 1899, 4.

would by such means be added to our agricultural area. This low land is now comparatively useless, except in a few months of the year when it is available only as grazing land.¹⁹

Continuing agitation led to the New South Wales government's establishment of a Parliamentary Standing Committee on Public Works Inquiry into the Tuckian Flood Escape Scheme. For five days starting 7 March 1900, the three-member sectional committee took a range of evidence at Lismore and down river to Coraki, Woodburn and Ballina. They were to investigate whether a flood escape channel should be cut from the North Arm of the Richmond River below Tuckurimba to the edge of the Swamp, leaving the water to spread across the area and move away through the Tuckean Broadwater.²⁰

The significance of the Inquiry's 'Minutes of Evidence' for this history are the recollections of Tuckean farmers, graziers and the surveyor of the swamp environment over decades prior to 1900.²¹ The Committee brought down its recommendations in August 1900, settling on a politically soft outcome between the concerns against the scheme from engineers and the hopes of the Richmond River constituents. The Committee noted that in their opinion the proposal was 'not expedient' to be carried out:

... but if the owners of the land benefited will undertake to enter into a satisfactory guarantee for the payment of 3 percent upon the cost of construction, together with the cost of all claims for any damage to the land, or from the silting of the river that the cutting of the channel may cause, the Committee are disposed to recommend the carrying out of this work, and not otherwise.²²

At the time on the Richmond, media coverage indicated there remained general agreement across the river communities to push ahead with the flood diversion scheme through the Tuckean. However, as the drought years of the early 1900s descended on the district, the ongoing lack of government action on the scheme became less urgent to the community. Then in 1907 the Chief Engineer of the PWD, L.A. Wade, reported on two proposals in the Tuckean – one for the construction of a flood escape channel and the other for swamp drainage. He made it clear that in his opinion they were 'distinct and antagonistic [so that] only one of these proposals can be carried out.'²³

It was a relief to the editor of the *Richmond River Herald* when the state's engineering surveyor, Kratten Hutchinson, arrived in the Lower Richmond to begin planning for drainage works in the surrounding swamps. Tapping into the potent protestant ethic of gainful work he noted that

¹⁹ Ibid, 17 March 1893, 2.

²⁰ *Minutes of Evidence*, 1900.

²¹ Smith and Baldwin, *Tuckean Swamp Land Use History*, goes into details of the evidence provided to the Inquiry.

²² Ibid, 37.

²³ Ibid, 39.

'...the great bulk of the area is allowed to rest in idleness, except for those all too brief periods when the water disappears, and they can be utilised for grazing.'²⁴

In her landuse history Esme Smith details the 14 miles, location and depths of the proposed drains in the Tuckean, exploring the lead-up to this decision to settle on the drainage scheme over the flood diversion canal.²⁵ The scheme was gazetted on the 9th November 1910, noting that the proposed works consisted of 'excavating channels, fencing, culverts, timber drops and snagging of the Broadwater Creek.'²⁶ Community acceptance for this shift towards drainage over flood mitigation was strongly influenced by a notice in the Government Gazette that placed liability for damage through flooding at the feet of the region's ratepayers:

The Department of Public Works desire to point out that the construction of the Flood Prevention scheme would divert such volumes of water from the river channel, which would spread over the Tuckian Swamp in their course to the Broadwater, that settlement of this area for either dairying or agricultural purposes would be unsafe and practically impossible. It will, therefore, be necessary in the event of this scheme being carried out, to resume the whole of the alienated lands comprised in the swamp area and their cost would form a permanent charge against the scheme.²⁷

Landholders and councils across the Richmond River communities who had supported the flood diversion scheme now rapidly changed their position in the face of ratepayer costs and possible litigation for damaged properties. A second PWD inquiry was held in May 1911 to hear objections to the flood diversion scheme, with the outcome favouring the drainage scheme.²⁸

The first canal was cut in 1912 and the project was completed in May 1915, at which stage the Tuckean Swamp Drainage Trust took over management of the scheme. It was part of a successive push from the PWD in the first two decades of the twentieth century across coastal New South Wales to assist private landholders in draining their land, and, as in the case of the Tuckean, provide a vehicle for further land release from the Crown. The new government program of drainage along the NSW coast had begun in 1904, after the enactment of the *Water and Drainage Act 1902*. The PWD enthusiastically claimed that:

On the Tweed, Richmond, Macleay, and other rivers, there are thousands of acres of swamp lands of the richest character which only need proper drainage to make them very valuable... The drainage of these lands appears to be one of the surest and most profitable investments of which money can be

²⁴ *Richmond River Herald*, 24 September 1909, 4.

²⁵ Smith and Baldwin, *Tuckean Swamp Land Use History*, 40. At the 1920 Inquiry into the function of the scheme, the PWD witness gave evidence that the canals and works had been carried out to the plan, except for a deviation near Cedar Island, known to locals as 'the Big Island'.

²⁶ *Richmond River Herald*, 26 May 1911.

²⁷ In Smith and Baldwin, *Tuckean Swamp Land Use History*, 40.

²⁸ *Ibid*, chapter 4.

employed. It will undoubtedly be the means of inducing closer settlement of the coastal districts of the State.²⁹

The Tuckean was almost the last major PWD drainage scheme to be completed in this initial era of swamp drainage across New South Wales.³⁰

Environmental change on the Tuckean

Changes to the swamp environment came more gradually to the Tuckean than to other landscapes of the Richmond Valley, nevertheless becoming apparent over the era. Elsewhere in the Richmond River Valley, this was a period of rapid environmental change. While clearing of the Big Scrub was still slow through the 1870s, it had begun in earnest by the 1880s. However, it took until the 1890s and the enthusiastic uptake of dairying to witness its rapid destruction by 1910. Approximately 75,000 hectares of forest had spread across the Alstonville Plateau, including that which perched on the edge of the northern and eastern sections of the Swamp from Tucki Tucki and Marom Creeks around to Meerschaum Vale. Roy Keats, who knew the Henderson home well as a boy, remembered that it was located 'on a rich volcanic red soil rise, overlooking the expansive Tuckean swamps which teemed with wild duck and water fowl of nearly every know species.' He described the Big Scrub forest on the property:

At the back and the two sides, the hill rose by ridges, and flat portions slightly higher. These were covered with thick rainforest of teak, yellow stringy, rosewood, cedar, black bean and numerous fig varieties. Their trunks bore elkhorns, tree-ferns, rock lilies and orchids galore. Large leafed stinging trees, the dread of both man and beast, grew around the edges of the scrub as if guarding the natural habitat of native dogs, opossums, koalas, tree goannas and other ilk of the marsupial and reptile fauna.³¹

Unlike the selective logging of the cedar getters who came before, dairy farming and 'free selection' required the almost wholesale removal of the Big Scrub timber by clear felling and then burning. By 1910 only about one percent was left standing across the Plateau.³² The dense network of creeks across the landscape began to fill with sediment as erosion took hold, moving soil down the catchment creeks into the Tuckean. Clearing to the edge of the Richmond River was also noticeably causing riparian land losses and siltation. The introduction of an ornamental aquatic plant from the Amazon, water hyacinth, had become such a choking

²⁹ Public Works Department (1904) Annual Report, 70 in Mitchell Tulau, 'Lands of the richest character: agricultural drainage of backswamp wetlands on the North Coast of New South Wales, Australia: development, conservation and policy change: an environmental history', PhD thesis, Southern Cross University, 2011.

³⁰ Table of drainage works completed by the PWD compiled by Mitchell Tulau, Ibid, Appendix 4.2.

³¹ Keats, Reminiscences of the Richmond River.

³² D.N. Jeans, *An Historical Geography of New South Wales to 1901*, Sydney: Reed Education, 1972.

menace to the backswamps and the Richmond River by 1914 that even ocean-going steamers in the river were held up on their journey to and from Lismore.³³

In the Tuckean, Thomas McDonnough's survey map of 1897 noted areas of ringbarked and felled timber on Tuckean and Cedar Islands and on the northern slopes east of Youngmans Creek. Between Marom Creek and Cedar Island, the survey map noted open swamp and high reeds. Within the Swamp, changes to the environment were taking hold through Henderson's and McPherson's drainage work in the northern and central areas. Evidence given at the 1900 Inquiry noted that the once spongy peat had lost moisture and been trampled by cattle to a solid mass.³⁴

In their study of the photosynthesising algae, diatoms (discussed in Era 1), Kathryn Taffs and colleagues found that changes to the diatoms after about 1880 up to 1906 may indicate declining salinity in the Tuckean, caused by a stronger freshwater influence on the previously estuarine aquatic ecosystem. They suggest this correlates with the changing land use practices of the period where clearing would have caused an increase in freshwater runoff into and over the Swamp.³⁵

Increasing sedimentation through the upper areas of the Swamp through catchment runoff and drainage work, building at the head of the Tuckean Broadwater, may also have assisted growth of the thick reeds shown in McDonnough's map and described by him at the 1900 Inquiry. These slowed the tidal movement up into the Swamp, the saline waters in turn blocked by the freshwater coming out of the Swamp in all but the very dry times. McDonnough was asked at the 1900 Inquiry to describe the head of the Broadwater:

It is all mangroves right round, and it gradually changes into reeds when you get back a couple of hundred feet, and the reeds get so thick that the water does not flow much further in ordinary weather. The salt-water does not get much back on to it on account of the growth of weeds. ... but I could tell from the level that it would go a mile away if the reeds were burnt to give it a chance – they choke it.³⁶

The abundance of 'weed' (indigenous aquatic vegetation) was also noted. Following the completion of taking evidence, McDonnough took two members of the Standing Committee up the Broadwater by government launch and then rowed into the Tuckean. They reported that: 'At the head of the Broadwater a creek is entered which continues for some distance through

³³ *Richmond River Herald*, 22 May 1914.

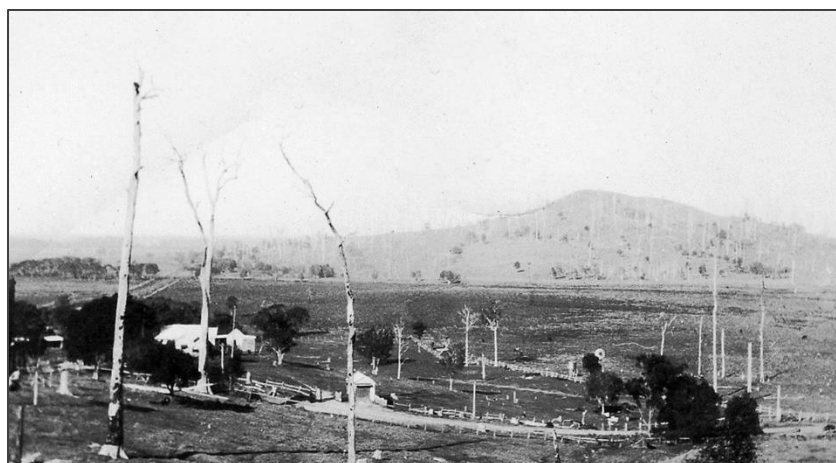
³⁴ *Minutes of Evidence*, 1900.

³⁵ Kathryn Taffs et al, 'A diatom-based Holocene record of human impact from a coastal environment: Tuckean Swamp, eastern Australia,' *Journal of Paleolimnology*, 39(1) 2008:71-82.

³⁶ McDonnough, *Minutes of Evidence*, 1900, 62.

the swamp. The creek has recently become almost blocked with weeds and extreme difficulty was experienced forcing a way through.³⁷

Those giving evidence at the 1900 Inquiry had all seen the Swamp during the wet years. The first decade of the twentieth century saw increasingly dry weather, although for a time the Tuckean retained water when other swamps had dried out. For example, in February 1910 when referring to the south-western section of the Swamp, the Dungurubba local news section of the *Richmond River Herald* noted that rain was needed 'as the swamps are still empty, with the exception of Tuckian, which is carrying a fair depth of water, deposited there by Tucki, Marom and other creeks.' A bit further down the news-sheet the correspondent noted that they had since had ten points of rain 'and the Tuckian is once more a miniature inland sea. The bunyip should be able to take up his abode there again. We haven't heard him for several years.'³⁸



Looking across to Cedar Island from Marom Creek early 1900s.
Courtesy Lorraine Judge and Weis Family collection.

By 1912, however, severe drought had settled across the region. Much of the Tuckean was renowned for its pasture in dry and drought times. Gladys Faulkner remembered the following few years as 'the Big Drought' when they had to move their cattle onto the Swamp and milk them on Grandfather Weis's land on Cedar Island, as there was no feed left around the farm on Marom Creek.³⁹ James Justelius, Edward's father, described the grasses present in about 1912 as 'paspalum, Hunter River Grass, clover and water couch'.⁴⁰

³⁷ *Northern Star*, 11 April 1900, 3.

³⁸ *Ibid*, 18 February 1910.

³⁹ Gladys Faulkner interview held by Lorraine Judge.

⁴⁰ James Edward Justelius, Department of Public Works, *Tuckean Swamp Drainage Trust District: Inquiry held at the Court House Lismore, commencing Tuesday 14 September 1920 concluding Friday 17 September 1920*, Sydney: Government Printers, 1920, 15.

Of birds and bunyips: animal life of the Swamp

There are few written records about wildlife in the Tuckean during this era. Bundjalung groups were still able to traverse the landscape, secure food and visit cultural sites in the Swamp prior to the construction of fencing in the next era. Closer settlement had brought clearing and other changes to the landscape. More cattle brought increased competition for food and water for native animals. Yet the number of settlers living across the Tuckean was still low and the diversity of species from the previous era may not have changed dramatically during these decades.

However, it is unlikely that the Swamp wildlife escaped the pattern of destruction that was apparent across the broader landscape. Government policy of the late nineteenth century encouraged the extermination of native animals that ate crops and killed stock. For example, across the Big Scrub, pademelons were targeted. As their forest habitat was cleared they thrived on the maize and pastures of exotic grasses that replaced it. 84,805 pademelon scalps were paid for by the Pastures and Stock Protection Board at Lismore between 1891 and 94.⁴¹ Dingoes were another animal targeted and, on the Swamp, dingoes were prolific. Gladys remembered her father setting poisons to kill them, killing seven dingoes one night.

Wallabies were once abundant in the 'early days' on Cedar Island, but rarely seen in later years.⁴² In 1893 John McKinnon of Coraki wrote in his diary that he caught 12 perch in the Tuckean and had risen at 4am to kill a native cat, but 'it got away'.⁴³

The enormous number and variety of snakes in this era was commented upon, especially after flood when they could be found on every possible surface above the water. In G. Munro's reminiscences of the Mid Richmond he remembered his first great flood in 1866. He and his companion had rowed out to see how others had fared, describing snakes in their 'thousands', where 'every floating log or ti-tree bush was full of them.'

We passed along the edge of what was then called the big swamp, but now known as Tuckean. As we went through a place called Black Snake Flat we found it merited its name, for snakes were there in the hundreds. This is not a snake yarn but the gospel truth, as many old hands can verify.⁴⁴

More is recorded about bird life, especially waterbirds. The comparatively late settlement of the Richmond River region meant that a correspondent for *The Queenslander* in 1875 could still claim that:

In the present populated state of the Richmond the game is practically illimitable and exhaustless... I have seen a flock of geese closely packed and

⁴¹ Brett Stubbs, 'From "Useless Brutes" to National Treasure,' *Environment and History* 7 (1), 2001, 31.

⁴² Gladys Faulkner interview.

⁴³ *Richmond River Herald*, 'Pioneering days. Notes from Diaries of the late Mr John McKinnon', 30 September 1931.

⁴⁴ *Kyogle Examiner*, 15 July 1927, 4.

covering two or three acres, and a quarter of a mile of ducks, in which a ball could hardly have been fired without hitting a bird.⁴⁵

Unlike other coastal areas it was still possible to see 'wild fowl by the thousands' that were little more startled by the presence of a man than 'tame ducks on a garden pond.'⁴⁶

The numbers of Magpie Geese were heavily reduced across the region by the early twentieth century, however other waterfowl retained high numbers.⁴⁷ Reflecting a memory across the generations about sounds made by countless numbers of ducks, a commentator in 1908 said of the region's swamps: 'It was nothing to see ducks rise from a pool here in such clouds as to throw a deep shadow covering ten acres, and with the sound like the rumbling of thunder, or the rushing of water over the precipice.'⁴⁸

Despite this abundance, from the late nineteenth century there were also some in the region who worried about the 'wholesale slaughter' of ducks and geese.⁴⁹ In 1881, and added to in 1893, the Birds Protection Act (NSW) instigated 'closed seasons' where scheduled birds were to be protected. This was required, it was argued, because '...many of our native birds which are not harmful or destructive to anything in the community... are in very great danger of being absolutely exterminated.'⁵⁰ In 1887 a robust condemnation of the 'wholesale abuse' of the Act by 'cockney sportsmen in and around Coraki' was claimed in the interests of sportsmen who did not flout the law. The author named all the birds from the district that were scheduled for protection:

Wild Duck of any species, Teal, Widgeon, Coot, Emu, Native Companion, Wild Turkey, Black Swan, Wild Goose of any species, Bronzewing or other indigenous Pigeon, Curlew, Brush Turkey, Laughing Jackass, Gulls, Dragon-bird, Lyre-bird, Rifle-bird, Regent-bird, Night Heron, Magpie and other Black Magpie etc and the eggs of such birds.⁵¹

In 1899 John Morrie was 'charged at Tuckurimba for having in his possession in the close season certain scheduled birds to wit fifteen ducks.'⁵² It was recorded that Constable Stephenson of Rous claimed that: 'The police were continually receiving complaints from residents in different locations of the manner in which parties shot in and out of season.'⁵³ Morrie was fined ten shillings for each bird and court costs, probably the only person to be charged for such an

⁴⁵ *Queenslander*, 24 July 1875.

⁴⁶ *Ibid*, 10 June 1876.

⁴⁷ Adam N Smith, 'Waterbirds and their habitat on the Clarence River floodplain: a history,' *Zoologist* 35 (3), 2011, 788-809.

⁴⁸ *Queenslander*, 5 December 1908.

⁴⁹ *Richmond River Herald*, 28 January 1887, 2.

⁵⁰ In Stubbs, 'From "Useless Brutes" to National Treasures', 33.

⁵¹ *Richmond River Herald*, 28 January 1887, 2.

⁵² *Northern Star*, 9 December 1899, 4.

⁵³ *Ibid*.

offense in the region until another man, Edward Leadbeater, was fined seven pounds in 1952.⁵⁴ Duck shooters across the generations entirely ignored the closed season and protected areas in the Tuckean and surrounding swamps, ready with numerous strategies to escape the occasional attempts to enforce the law. Portions of the Tuckean Swamp was gazetted as a reserve for birds from 1903, added to over the decades.

In 1913 a writer for the *Broadwater District News* claimed duck numbers had ‘considerably reduced’ in the face of commercial shooters for the Sydney Market.⁵⁵ This added to the long-running arguments aired in the local newspapers, and in part reflected class antagonism and the differences between urban Lismore and regional residents. In 1904 Charlie Slade, a professional duck shooter of 22 years from Coraki, hit back at recent accusations from Lismore. He said that any reduction of duck numbers had at least two causes: ‘1st. The swamps are being drained. 2nd. The ducks will fly away in a few hours, and then be destroyed as they were in Queensland last year, where men were paid a big wage to destroy them.’⁵⁶

The numbers of ducks fluctuated over the years depending on the season and amount of standing water. In 1908 a report from the NSW Naturalist’s Club reported only ‘a few waterfowl and swans were seen near the drained area of the Tuckean Swamp.’⁵⁷ At other times there were ‘acres of ducks’. In 1913 there was ‘regret’ that native birds were becoming scarcer, but in the case of the Tuckean this was considered a necessary part of closer settlement. ‘When the drains are completed, and the water carried away, Tuckian will no longer be a breeding-place or rendezvous for wild ducks.’⁵⁸

No regret was heard amongst settler families for the demise of the Tuckean Bunyip. Roy Keats was told by George Henderson that the bunyip’s intermittent booming call that radiated out of a night in the wet season was a bitten (a bird, the Australasian Bittern). This did not help him, or the other children, as they scrambled indoors to bed on the nights it rang out.⁵⁹

On the opposite side of the Tuckean another early family on its south-western edge were the Collards, selecting land in about 1882. Anna Collard wrote a poem about the bunyip of the ‘dismal swamp’ that spoke of many things. She began: ‘*Far off, in lonely “Tuckyann” swamp, the awful bunyip cries; his home is in the tall green reeds, where deep the water lies.*’ The Collards, like the Hendersons, bred horses: ‘*His body’s like a yearling colt’s, his claws are sharp and strong, his tail is like a rough pine log – some nine or ten feet long. His eyes are big, his neck is thick, with a long, long waving mane. And those who ever saw him once, never wish to look again.*’

⁵⁴ *Northern Star*, 15 August 1952. There may well have been others, however oral history from duck shooting families back to the 1930s only remember this one conviction.

⁵⁵ *District News*, 4 June 1913.

⁵⁶ Charlie Slade, letter to the editor *Northern Star*, 29 June 1904, 5.

⁵⁷ *Sydney Morning Herald*, 6 April 1908, 11.

⁵⁸ *Northern Star*, 4 June 1913, 6.

⁵⁹ Keats, *Reminiscences of the Richmond River*.

The bunyip's mane might also have referenced another mythical creature, the unicorn. The wild woodland creature of medieval Europe could only be tamed by a virgin. In Anna Collard's poem the bunyip would be banished only under '*ancient prophesy*', once '*ladies three shall go for him, and shall not be afraid, one must be a widow – one a matron, one a maid.*' Published in 1889, when women and families in larger numbers were only just starting to settle in the region, one might read into Anna's poem the hope and promise of closer settlement soon to come:

So when that day shall come to pass,
Without the help of men,
The bunyip cry no more will sound,
On lovely 'Tuckyann'.⁶⁰



The Bunyip 1890 - By J. Macfarlane
Print published in the *Illustrated Australian News*
Courtesy of the State Library of Victoria

The Tuckean Bunyip was remembered in newspapers well into the new century. However, Bill Mason who grew up in the northern part of the Swamp, remembered his father's story that the bunyip was not heard again after 1915 with the completion of the Public Works drains.⁶¹



⁶⁰ The poem was reproduced across state boundaries and well into the twentieth century, often with the last line - incorrectly stated as the 'lonely Tuckian/Tuckean'. In 1945 the *Wingham Chronicle and Manning River Observer* reproduced the poem from an earlier printing in a Melbourne magazine *Wild Life*, sent from a Brisbane correspondent. The author wished to correct the representation of Mrs Collard as 'an old woman who lived near the swamp' to a 'cultured English woman with a flair for verse and story writing': 22 June 1945, 1.

⁶¹ Bill Mason, notes and unpublished reminiscences, Alstonville Plateau Historical Society.

4. Making Homes Before the Flood: 1915 to 1945 (Era 3)

The completion of the Public Works Department's (PWD) drainage scheme through the Tuckean in 1915 triggered the release of the last areas of Crown Land in the Swamp for homestead farms. This era is characterised by the establishment of small properties across the landscape where families carved out a living predominantly from dairying. These were economically and socially tough times, with two world wars and the Great Depression of the 1930s. They were also times of community consolidation focused around the halls and primary schools that skirted the Swamp – Dungurubba in the south, Tuckurimba on the escarpment to the north west, Marom Creek in the north, Meerscham Vale to the east and Bagotville in the south.

The release of the remaining c. 5,000 acres of Crown Land by the government in 1915 for small-scale farming came with a caveat. Following the colonial land policies in place since the Robertson Land Acts of 1861, landholders were required to build on their land to keep it. And whereas landholders in treed areas were required to clear, those within swamp areas were required to build lateral drains to assist the process of creating more agricultural land. We know quite a lot about the rapid changes in the landscape of the Tuckean Swamp brought on by the drainage work, and the stress placed on landholders through deterioration to some blocks, through evidence to the PWD's Tuckean Swamp Drainage Trust District Inquiry of 1920. This is also the era when oral history reaches back with memories from fishers and farmers who provided oral testimony to Esme Smith for the landuse history.

Dry times after flood

At the time the government released the last Crown Land in Tuckean Swamp in 1915, there had not been a major flood in the region since February 1895. Two moderate floods were recorded in 1898 and 1899. Then, except for two small floods in 1917 and 1919, the next major flood did not occur until July 1921. There was one more flood in 1931 before the rains started again in earnest from June 1945. The intervening period was dry to severe drought. The Federation Drought took hold across the country from at least 1900, becoming severe in the Richmond River region in 1902. Dry years prevailed until severe drought again descended on the Richmond in 1915, just as the PWD's drainage work across the Tuckean was complete and the lowest areas of the Tuckean Swamp were opened to small-scale farmers.⁶²

While the 1921 flood only reached a low height across the Swamp, siltation caused by the flood waters killed the introduced pasture grasses causing difficulties to feed stock.⁶³ Ten years later

⁶² J.G. Armstrong, *Climatic Survey, Richmond, Tweed: Region 1, New South Wales*, Bureau of Meteorology, Department of the Interior, 1972.

⁶³ Esme Smith and Jane Baldwin, *A Landuse History of Tuckean Swamp, Tuckean Swamp Study: Technical Report #6*. Lismore, 1997.

the 1931 flood reached 20ml higher at Coraki, but still spread across the Swamp without alarming consequences as farmers were used to water sitting on the land. Flood memories from the late nineteenth century had receded and new farmers in the Swamp had no experience of the ferocity and heights the waters could reach. For example, it was thought by many that Tuckean Island was above the flood line, a deadly mistake discovered in the June 1945 flood discussed in Era 5.⁶⁴

The homestead farms and dairying

4,901 and three-quarter acres, making up 48 homestead farm leases, were 'thrown open' in the Tuckean Swamp in October 1915, attracting nearly 1,000 applications.⁶⁵ A ballot was held where the first 48 names drawn were allocated first options on the land. Conditions of purchase were 'the usual ones' of fencing boundaries, building a residence within five years and payment of rent. However, as the land was nearly all low swamp, it was claimed that there should be some leeway to build elsewhere on higher ground. Speculators were encouraged with the idea that now drained, the land would prove an excellent agricultural investment and they could sell after five years.

The land was described in the advertising as:

... generally low-lying and swampy, with some small areas of higher land; rich alluvial soil suitable for cultivation of millet, dairying when fully drained and grass, maize and potatoes, or for grazing and dairying when fully drained and grassed; generally lightly timbered, with tea tree, mahogany, and oak; there is a butter factory at Coraki; this land is known as the Tuckean Swamp; water supply not permanent but may be obtained by shallow sinking...⁶⁶

As can be seen from evidence to the 1920 Inquiry into the Tuckean Swamp Drainage Trust (discussed below), a number of speculators who took up their options said they knew nothing about the type of land they had purchased. For others, it was a chance to establish themselves on their own farms in a region they knew well. Two leases in the Parish of Broadwater were taken up by Frederic Antonioli and Dominico Filicietti. They had grown up at New Italy, 20 kilometres to the south. Their families had previously battled to subsist on the poor soils of the nineteenth century Italian community south of Woodburn. Boys and men had always had to work away from their farms to help support their families, and one of the industries had been the collection of grass seeds in the Tuckean prior to the PWD drainage scheme.⁶⁷ Younger

⁶⁴ Interview with Jim Cannane, 7/3/18.

⁶⁵ *Richmond River Herald*, 12 October 1915; *Northern Star*, 20 October 1915.

⁶⁶ *Casino and Kyogle Courier and North Coast Advertiser*, 15 September 1915. Newspapers from further afield tended to use the spelling Tuckian, with local newspapers more often referring to Tuckean.

⁶⁷ Ann Gabrielle Thompson, *Turmoil, Tragedy to Triumph: The Story of New Italy*, Lismore: New Italy Museum, 2nd edition 2013; Joseph B. Kelly, Department of Public Works, *Tuckean Swamp Drainage Trust District: Inquiry held at*

family members had started leaving the community in the early 1900s in search of more productive farmland.

Despite its marginality as agricultural land, and as witnessed by the number of applications, the release of this low swamp country was highly sought after because few similar opportunities to secure Crown Land for farming remained across the state.⁶⁸ For those families who persevered through ever-challenging circumstances in the Tuckean, it is a matter of pride that they shaped a landscape perceived as wasteland into a place that helped sustain families, communities and an industry.



A farm at Tucki Tucki looking across the Tuckean Swamp.
Courtesy Richmond River Historical Society

The first half of the twentieth century saw a period of intense farming and community building across the region's landscape. As had been hoped by the early policy makers and selectors, the Northern Rivers became famous for its small-scale dairy farms. However, no dairy was ever just about cows. Mixed cropping on the Mid Richmond, such as maize and millet for brooms, helped supplement incomes and other animals, such as pigs and poultry, meant that farming families were largely self-sufficient. Reflecting on the Tuckean Swamp landscape of his childhood in the 1930s and 40s, Ray Hunt, who has lived his whole life above the Swamp at Tuckurimba, remembered it as a place full of little dairy farms.⁶⁹

The Swamp's widely held fame was its capacity to agist large numbers of cattle from far and wide in dry times and drought. Gladys Faulkner nee Wiess remembered the year 1915 as the worst year of the drought. Describing the north-eastern side of the Swamp she remembered:

the Court House Lismore, commencing Tuesday 14 September 1920 concluding Friday 17 September 1920, Sydney: Government Printers, 1920.

⁶⁸ The last, steepest areas remaining under forest in the Big Scrub were also released around this time.

⁶⁹ Ray Hunt, pers comm 12/4/17.

'There were cattle came from everywhere! Looking over to Meerschaum Vale and Slatterys, it was just covered with cattle. Everywhere there was a blade of grass there were cattle. It lasted a devil of a long time.'⁷⁰ In 1916 as drought wore on, the *Richmond River Herald* reported that 'a mob of 500 cattle in first-class condition left Tuckean last week for Stratheden. When they were brought down to the swamp they were that poor they could scarcely walk. They left practically as forward stores.'⁷¹

At the start of the dry 1930s, when dairying was at its busiest across the region, the Pastures Protection Board claimed there to be 17,742 cattle 'depasturing on the area south of Tucki wharf and east of the Richmond River.'⁷² A story proudly repeated among older generations is that cattle off the south-western sections of the Swamp at the time gained some of the best prices at the cattle sales.

Large landowners like the Somervilles, whose swamp country on the western edge of the Tuckean was only one of their many properties, moved their dairy cattle around the whole region depending on the seasons. On the other hand, for those with small properties within the Swamp with few options to move their cattle in wet times, dairying was an often-heartbreaking venture. George Garbutt, whose family property was in the south-western section of the Swamp, told Esme Smith in 1997 that:

We lost cattle in those early days whether there was a flood or not because in the wet seasons it would be that wet and at times there would be no drenches like you have today. [Cattle died from] disease and fluke and worms and that sort of things... Dairying in that time was pretty rugged ... The pastures were inundated with water so often that it was poor quality feed they were living on. You get a combination of poor-quality feed and parasites. Well how the devil can you survive?⁷³

It was during this era, as more fencing was erected to enclose the increasing number of small farms in the Swamp and around the escarpment, that Aboriginal people's access from their homes on Cabbage Tree Island into their food and cultural sites was further closed off. Farmers became known as either friendly, allowing access, or hostile and to be avoided.

Fishing: food, recreation and a profession

The early drainage work brought many changes to the Tuckean Swamp and the Broadwater, including how fish and aquatic life moved into and around the Swamp. It was a rich nursery and feeding ground for juvenile and adult fish, providing an array of habitat among the mangroves, reeds, shifting sea grass meadows and wet paperbark forests. Perch, catfish, eels and lobsters

⁷⁰ Family interview with Gladys Faulkner nee Weiss, courtesy Lorraine Judge.

⁷¹ *Richmond River Herald*, 1 February 1916, 2.

⁷² *Northern Star*, 11 October 1932, 6.

⁷³ Smith and Baldwin, *Tuckean Swamp Land Use History*.

were among the fishlife in the fresh water upper reaches where the five plateau creeks met the drains, while school prawns, crabs and estuarine fish species thrived in the lower Swamp and the Broadwater. The diversity of available aquatic creatures supplemented and sustained the diets of Aboriginal people and farming families, as well as provided stock for professional fishermen.

Among the farming families, Esme Smith recorded stories of fish abundance. Bill McElligott, whose family lived on the south-eastern edge of the Swamp, remembered plenty of mullet, flat head, and jewfish/Mullaway up to 50 pounds, garfish caught on dark nights, with big saltwater eels in the blind, adjacent to the drain above today's barrage. Evan Williams remembered Harold Worboys' story of jumping eighty mullet one night on the western end of Broadwater Creek.⁷⁴

Others made their livelihoods from fishing. Gordon Leslie Smith lived half way up the Broadwater:

About 1930 or 31 we went there, and you could see the bream shining in the rushes. There was that much seagrass ... half way up the Broad. Well the bird life is prolific in there and the prawns, you could see them floating through this seagrass and the bream, you could go out and throw a line at what we call the mud deck just below where the Bagotville ferry used to be, there was a deep hole there about 35 to 40 foot of water, and we used to haul when I started fishing... get up to 300 to 400 pound of jewfish every time we went, three to four baskets of bream and blackfish and now that hole is not there. ... In rough weather I used to go up the Tuckean. I used to catch a lot of fish. I used to go up as far as Marom Creek – row up.⁷⁵

Gordon became a professional fisher at the age of 12. He fished mainly out of the Tuckean Broadwater until the 1960s. In the 1930s and early 40s he remembered four fishers concentrated in the Broad. Although he went the furthest into the Swamp, where he could get a thousand pound of fish as far up as Marom Creek, they could all fish in there. He noted: 'Up near the head of the Broad, on what we called the blind side, in the real big flat tides we could get five or six hundred kilos of mullet in about an hour and a half, and that's when we knew the fish were in the creeks.'⁷⁶

Further describing the area Gordon told Esme:

A lot of fishermen wouldn't go fishing when the big strong southerly came up. This is where I had it all over them all. I'd go up to a mile above the barrage ... it wasn't there then... there was a big swamp in there and it runs out in three

⁷⁴Ibid.

⁷⁵Interview with Gordon Leslie Smith by Craig Copeland, 1991.

⁷⁶ Ibid.

places into the main drain. When we had the big six foot or six foot six tides ... I used to go up in the day time into that swamp. I cut a track through it just so that I could push the boat around this swamp. I'd get in and rattle the paddles and the fish would all go through the reeds into the net. Mullet, only mullet in there... Up the main drain one night the best catch I ever got was over a thousand pounds. ... The fish would be scratching the boat as I was rowing. I got jewfish like that up there. People won't believe it.⁷⁷

Changing environment in the Swamp

Fish kills had been recorded on the Richmond River from the late nineteenth century. Such events can be natural occurrences. However, by the 1930s blame started to turn towards the water quality of the backswamps. Fish were killed after the summer flood of February 1931, where no direct blame was attached to a cause. But in March 1937 the Tuckean Swamp was directly implicated. A *Northern Star* report announced that:

Following the recent heavy rains in the Richmond River district the drainage from the Tuckean Swamp area has caused the death of thousands of fish, which have been washed along the banks of the river to Ballina. Mullet have suffered to a greater extent than other varieties, but many large flathead, bream, whiting and perch have also died.⁷⁸

A better understanding of the impact of climate, deoxygenated water and fish kills would start to take hold amongst fishermen in the next era. For farmers, the drainage works set in train a circulating set of environmental consequences that impacted an already dynamic ecosystem, in opposition to government promises and landholder hopes of greater predictability and stability in creating an agricultural landscape. Salt incursion, appearance of bare areas where nothing would grow, a shift in vegetation to more salt resistant plants, increased siltation and a new fire regime all became apparent soon after the PWD drainage work was completed.

In May 1920 a public meeting in Lismore with the New South Wales Colonial Secretary, James Dooley, was disrupted by a 'long-winded deputation' from a farmers' group demanding that a Royal Commission be established into the poor performance of the drains in the Tuckean Swamp.⁷⁹ While this idea was 'strenuously denounced' as a waste of money, a PWD inquiry was held later that year into the Tuckean Swamp Drainage Trust in Lismore from the 14th to 17th September.⁸⁰

⁷⁷ Gordon Leslie Smith in Smith and Baldwin, Tuckean Swamp Land Use History, 81.

⁷⁸ *Northern Star*, 26 March 1937, 8.

⁷⁹ *Richmond River Herald*, 21 May 1920, 2.

⁸⁰ Chapter six of Esme Smith's landuse history details the contested evidence to the Inquiry between ratepayers and government employees.

Five years after the completion of the drains, 23 landholders across the Tuckean were angered at having to pay rates into the Drainage Trust. They argued that they had no benefit either because the drains were too far away or because the drains had caused environmental degradation to their land. A number of ratepayers in the north, central and eastern parts of the Swamp claimed the scheme had degraded the land rather than improved it.⁸¹

Firstly, this was observed through the incursion of saltwater onto some of their properties for the first time (north-east section) and secondly, that despite the government's predictions, much of their land remained under water for extended periods which left it useless to them. This included an increased accumulation of water in the lower swamp during the wet season due, as they argued, to the inadequate width and depth of the drain into the Broadwater. Edward Justelius provided an example that related to much of the north-eastern side of the Swamp impacted by the drains: 'The effect is that in dry times the natural swamp growth is killed through insufficient water, and in wet times artificial [pasture] that may have been planted become inundated and drowned...' leaving much of the Swamp without vegetation.⁸²

Salt and soils

Of particular relevance to this report was the Inquiry's third issue for investigation: '(3) Whether the design and work necessary for an effective drainage scheme should have included a flood gate on the Broadwater, below the confluence of all drains to keep all salt water out of the drain.'⁸³ There was some contested evidence about the extent of tidal inundation before and after the PWD drainage work. However, it was clear that the drains allowed tidal saltwater further into the Swamp within the settlers' era, in times of high tide and dry weather. This was due to a combination of factors. Unlike the shallower Henderson drains, the depth of the PWD drains allowed salt water to flow over the top of the freshwater in dry times, with more frequent events of spillage over the banks onto the land. In the Tuckean Broadwater a rocky bar was removed, and dredging was undertaken in the Broadwater. The thick bed of reeds that surveyor Thomas McDonnough had noted in 1900 (Era 3), which helped stem the tidal flow in all but the high Spring tides, had been cleared to create a broader channel linking swamp outflow into the Broadwater.

Less obvious was the reason for the changes in vegetation and appearance of bare areas in eastern sections of the Swamp. Joseph Kelly set the tone for much of the ratepayers' arguments at the beginning of the hearings. Referring to the drought year of 1919 on his portion 60 in the central east, he described the landscape:

⁸¹ Department of Public Works, *Tuckean Swamp Drainage Trust District: Inquiry held at the Court House Lismore, commencing Tuesday 14 September 1920 concluding Friday 17 September 1920*, Sydney: Government Printers, 1920.

⁸² Ibid.

⁸³ Ibid, 8-9.

I could scrape the salt off the dry bare ground – all vestiges of grass was gone. Hitherto this swamp, although of not much value in the wet seasons, was my insurance against dry ones... Before any drainage was done, in such dry seasons, I have had the Italians over from New Italy gathering couch and clover seed there, and for a time I had paspalum growing well there. Now in wet seasons it is almost useless, and in dry seasons it is quite useless.⁸⁴

Thomas Lovett from Meerschaum Vale reported a similar story: ‘Where bull rushes are growing now there was good grass growing till the drains came up: it was a mass of water couch.’ Edward Justelius bought the Henderson property in about 1910/11. He returned from the First World War in September 1919 saying:

When I saw the property the nature of the herbage had completely changed; in place of the water couch and the Hunter River couch and the bracken that used to be growing there, there was salt water rush... I also saw a white salt deposit on the stems of some sort of grass... The effect of the salt water seemed to be at the foot of the hills where previously there had been quite good grazing; there is now nothing there...⁸⁵

The effects and mystery surrounding the change in vegetation, and appearance of bare areas where nothing was growing, needed explanation. One of the engineers of the scheme commented brusquely that in part the problems referred to overgrazing of the properties in previous years.⁸⁶ In searching for answers to this bewildering and rapid change, Kelly and other landholders suggested that the increased flow of saltwater up the drains from the Broadwater was percolating underground and surfacing on his and surrounding properties, denuding the areas of vegetation.

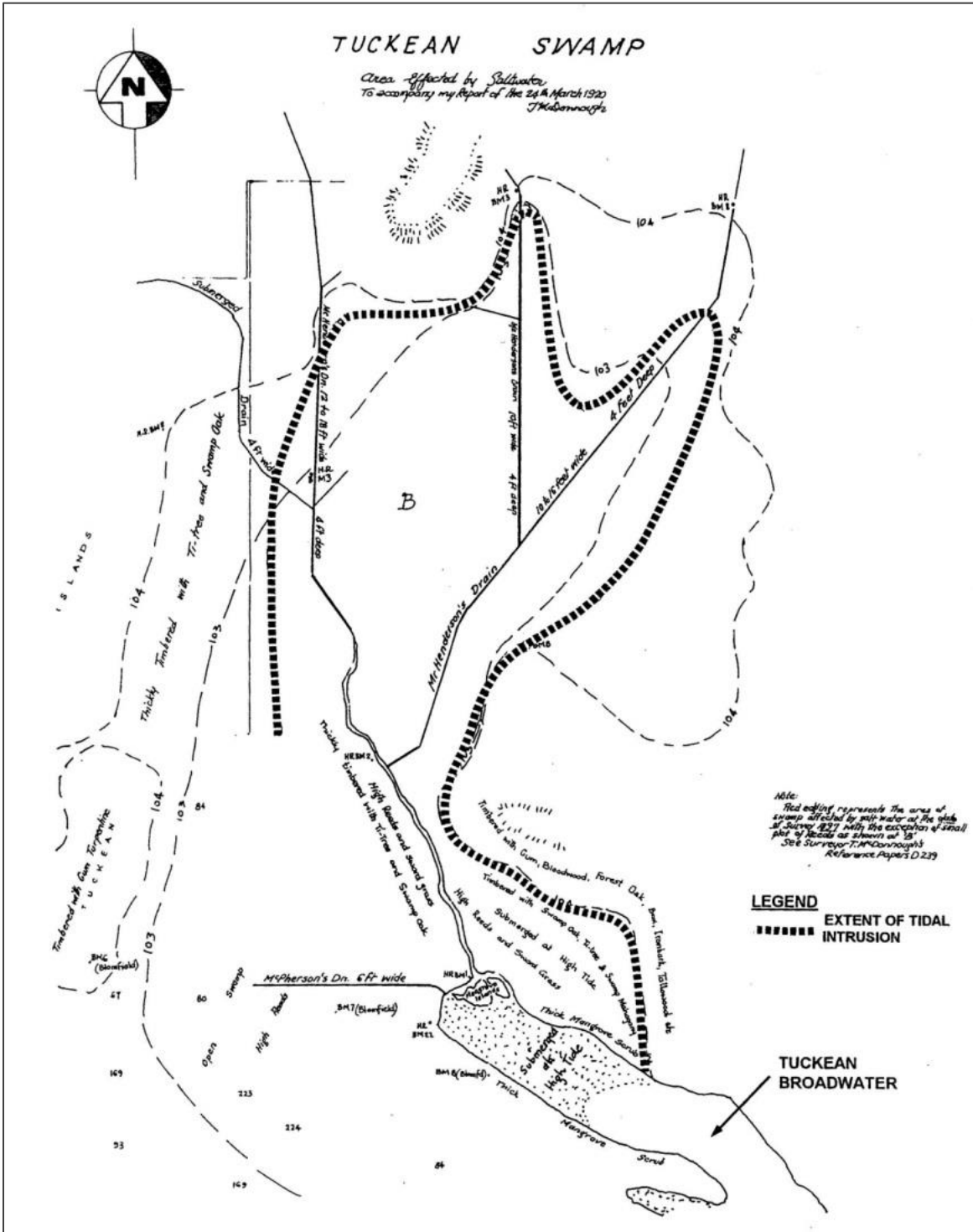
An alternative explanation came from the Government Valuer Edward Graves. He had known the Tuckean ‘in a general way since 1883’. Overall, he believed the drainage scheme had benefited many landholders, and that a lack of lateral drains and clogging of the drains through lack of maintenance had led to some poor function. Regarding Justelius’ descriptions of the changes in vegetation, he believed that ‘some other deleterious matter was coming from the land.’ Comparing this situation to the many other swamps he knew between the Tweed and Macleay rivers he noted: ‘Practically on all those swamps after draining this dry material which is called alum by people living on the swamps has invariably appeared... I think there has been a failure of the vegetation due to the alum out of the soil.’⁸⁷

⁸⁴ Joseph Kelly, *Tuckean Swamp Drainage Inquiry 1920*, 13.

⁸⁵ Edward Justelius, *Tuckean Swamp Drainage Inquiry 1920*, 35.

⁸⁶ Ibid.

⁸⁷ Edward Graves, Ibid, 58. On page 49 he noted that it ‘leaches out of the soil’.



Surveyor Thomas McDonnough's map prepared for the 1920 PWD Tuckean Swamp Inquiry with typed additions by Patterson Britton & Partners.
Tuckean Swamp Hydraulic Study, 1996, Figure 5

The ratepayers' descriptions and portions named in the 1920 Inquiry, which were across the lowest parts of the Swamp, directly correspond to more recent mapping of acid sulfate soil (ASS) scalding. This correlates with Graves' description. The science on ASS indicates that scalds can start to appear within a year of disturbance in vulnerable areas, and certainly within the four to five years described by Kelly and others.⁸⁸ The dry to drought years of the era, heavy grazing of the lower swamp, and lowering of the water table through drainage, combined to raise the specter of AAS early in the twentieth century.

The ratepayers' pleas for a flood gate to stem the flow of salt water inundation was rejected by the Commissioner, Mr. Brierly. The engineering evidence was that it would be exorbitantly costly with little guarantee of long-term success and could further increase the buildup of silt and growth of weeds on the swamp side, all of which would impede the drainage flow of fresh water out of the Swamp through the Broadwater.⁸⁹

Silt

The impact of increased silt coming down Broadwater Creek from clearing, and the early private drainage works near the head of the Tuckean Broadwater, had already been noted by Thomas McDonnough in 1900. More silt was carried into the Broadwater from the PWD drainage works. In 1916 the Gundurimbah Shire President led the lobbying of government to dredge the Broadwater, especially regarding the buildup of silt at the ferry landings.⁹⁰ The PWD subsequently carried out the dredging, making sure to note it was at the ratepayers' request. However, this allowed more tidal flow into the Swamp.

The PWD also snagged the Broadwater. There was some contention about whose idea this was. It was part of the gazetted program of works in 1911, but later the PWD claimed that the landholders had demanded that snagging be carried out to help hold back the tidal flow.⁹¹ Instead it was another barrier to the freshwater coming out of the Swamp at times of high rainfall and remained a trial for everyone until it was at last broken apart.

Rapid sedimentation of the Broadwater also assisted the growth of mangroves in its upper reaches.⁹² The fringing mangroves described by McDonnough in his survey map and evidence to the 1900 Inquiry expanded enormously over the early twentieth century, as can be seen in photos taken by Frank Cook in the early 1930s. Evan Williams, who held these photos in his collection, knew the Swamp intimately from the time of his childhood. In later life he sought

⁸⁸ Mark Rosicky, Leigh Sullivan and Peter Slavich, *Acid sulfate soil scalds: How they occur and best management practices for this revegetation*, Wollongbar: NSW Agriculture and ASSMAC, 2002.

⁸⁹ Evidence of Edward Graves, Kratten Hutchinson, Stephen Weedon and Harry Searl, *Tuckean Swamp Drainage Inquiry 1920*.

⁹⁰ *Northern Star*, 8 April 1916.

⁹¹ *Tuckean Swamp Drainage Inquiry 1920*.

⁹² L Farago, 'Using Diatoms and Pollen as Bioindicators of Past and Contemporary Environmental Conditions in Tuckean Swamp, Northern NSW', Honors Thesis, Southern Cross University, 2002.

the assistance of anyone interested in the environmental conditions of the Swamp.⁹³ Describing the acres of mangroves and swamp forest surrounding the Tuckean Broadwater he wrote:

Probably because of the density of trees, humidity and protection from the wind, stag horns and orchids grew on the swamp oaks. I do not recall other than stag horns growing on the mangroves... Schools of small fish were frequently seen... An interest of mine in those days was bees nests in the large old mangroves with hollows as I kept a number of hives. I robbed a couple of these in trees on the south side of the waterways. When bee trees in the mangroves were being robbed by Aboriginals from Cabbage Tree Island the smoke could be readily seen from the hill [at Bagotville].⁹⁴



The Tuckean Broadwater 1930s.

⁹³ Jane Baldwin pers comm 7/8/18. For example, Evan sought out John Gallagher, providing him with copies of photos and a letter describing some of his early memories and the location of the photographs. Evan died just prior to this project's inception.

⁹⁴ Evan Williams, correspondence to John Gallagher, 1990s.



The Tuckean Broadwater 1930s. The photo above and on p.55 by Frank Cook in the collection of Evan Williams. *Courtesy John Gallagher and June Williams.*



Evan Williams in the Tuckean Swamp early 1930s. *Courtesy Williams family collection and John Gallagher.*

Within this mix of mangroves and swamp oaks, Evan remembered a flying fox camp located in its centre:

I recall some older residents of the day expressing the view that it was the largest camp in northern NSW. When a youth, more than 60 years ago, I used to occasionally wade through these areas and vividly remember the acres of flying foxes in the branches above and their stench!⁹⁵

A thriving industry in what were known as black mangrove sticks (or red mangrove by fishermen) occurred between 1900 and 1950 in the Lower Richmond River and the Broadwater. The River Mangrove sticks were harvested at their base for the oyster industry in Georges River, Port Stephens and the Hawkesbury. Intensive cultivation was at its height in the 1930s, after suitable mangroves found in rivers to the south had all been cut out by the oystermen. Reporting on the industry in 1934 it was stated that ‘many hundreds of thousands of sticks have already been cut’ from the Richmond and one operator was shipping from 250,000 to 300,000 sticks a year.⁹⁶ Fisheries Conservation Manager, Patrick Dwyer, has conservatively estimated that three million sticks were harvested in the Richmond through the 1930s, with at least 20 kilometres of mangroves removed from the Lower Richmond including the Broadwater over that time.⁹⁷

Drying land

Despite the anger and disappointment of landholders that the Swamp still held water for extended periods, the land had been drying out for some time. At the 1920 Inquiry, Graves recounted buying cattle off Cedar and Tuckean Islands in July 1888: ‘Access was almost impossible in spite of nearly a year’s fine weather outside ... Unable sometimes for six months to get to the islands.’⁹⁸ However, the start of encroachment of paper bark forests had begun even before the completion of the Public Works drainage scheme in 1915.⁹⁹ Born in 1907, Gloria Faulkner nee Weis had started milking cows from prior to starting her schooling. She remembered the view looking across to Grandfather Weis’s property on Cedar Island from their farm at Marom Creek as a child: ‘It was all ti tree across the flat as thick as you could get them. We used to have to put bells on the cows to find them.’¹⁰⁰

⁹⁵ Ibid.

⁹⁶ *Northern Star*, 3 February 1934, 6; Also *Newcastle Morning Herald and Miner’s Advocate*, 16 January 1937, 8.

⁹⁷ Patrick Dwyer, ‘Historical harvesting of River Mangroves for use as ‘oyster sticks’ in NSW’, video presentation, 26 July 2017 <http://sydney.edu.au/environment-institute/publications/patrick-dwyer-historical-harvesting-of-river-mangrove-for-use-as-oyster-sticks-in-nsw/> accessed 12//2/19.

⁹⁸ Edward Graves, *Tuckean Swamp Drainage Inquiry 1920*.

⁹⁹ Michael Stevenson, Remote Sensing and Historical Investigation of Environmental Change and *Melaleuca* Encroachment in Tuckean Swamp, North-Eastern NWS, unpublished student paper, School of Environmental Science and Management, Southern Cross University, 2003, comparing portion plans from the 1870s and 1915.

¹⁰⁰ Gladys Falkner family interview.

Taking in the sweeping views from Tregeagle, above Tucki and Marom Creeks, a correspondent to the *Northern Star* described the scene in 1926 as taking in sea, river creek, swamp, flats, hills and mountains. Working around from the east was 'Tuckean Swamp, with its vast acreage and millions of ti-trees.'¹⁰¹ In his study of *Melaleuca* encroachment in the Tuckean, Michael Stevenson estimates that by 1942 the area of paperbark swamp in the main eastern stand had more than doubled over 70 years.¹⁰² In the central west, on what some knew as Woyboys Island (Tuckean Island), a busy paperbark timber industry was underway by the Woyboys family. A number of huts on the property housed the timber workers.¹⁰³ The 'knees' continued to be sought for boat building years after the industry had faded.

Fires

At about the time the PWD drains were dug, Peirce Hoare of Green Forest in the south west of the Swamp and Edward Graves both reported a bush fire so ferocious that, according to Graves, it 'burnt the bank of Broadwater Creek from portion 127 right up to the drain scoring the bank to a depth of a foot.'¹⁰⁴ Reports across the state noted that the swamps were burning again in 1931 and 1936.¹⁰⁵ Dried vegetation would have included the enormous numbers of nests of swans and other waterbirds lying on the parched ground; vegetation from the huge floating beds; water hyacinth that had become a choking problem for the backswamps; dense lantana that encroached across parts of the landscape and pasture grasses. It was more than the dried surface vegetation fueling the fires. The *Richmond River Herald* reported that the 'peaty substance' was on fire in 1931 while the *Casino and Kyogle Courier* reported it was 'burning two feet deep in places.'¹⁰⁶ This fire was quickly subdued, indicating that most of the peat below the surface was still wet, unlike the devastating peat fires of 1977/78 and 2002 where the fires could not be extinguished for months.

Reports of the 1931 fire was carried in newspaper across Queensland and New South Wales, celebrating the demise of thousands of flying foxes. 'One good result was the destruction of Tuckean's famous flying fox camp, situated in the ti-tree belt in the swamp. The pests were caught by the flames, heat and smoke to such good purpose that they fell in myriads.'¹⁰⁷

In December 1936 the *Northern Star* again reported large fires across the Swamp:

Fire has swept several thousands of acres of the 13,000 acres in Tuckean Swamp. The swamp is carrying more stock today than it has carried for many

¹⁰¹ 'Tregeagle Scenery: A Beauty Spot', *Northern Star*, 31 December 1926, 2.

¹⁰² Stevenson, *Melaleuca Encroachment in the Tuckean Swamp*.

¹⁰³ Field trip with Jim Cannane, 26/4/18.

¹⁰⁴ Graves, *Tuckean Swamp Drainage Trust Inquiry 1920*, 50.

¹⁰⁵ 'Tuckean Swamp Fires', *The Sydney Morning Herald*, Wednesday 28 January 1931, 12; *Northern Star*, 'Pastures fire-swept: Tuckean Swamp', Friday 4 December 1936, 8.

¹⁰⁶ *Casino and Kyogle Courier and North Coast Advertiser*, Saturday 31 January 1931, 2.

¹⁰⁷ *Richmond River Herald*, 'Tuckean Swamp on Fire: Flying Foxes Perish in Thousands', 16 January 1931.

years, large numbers of cattle from other districts being on agistment as well as those from farms reaching into the swamp. The peat is burning, also standing timber, and any change of wind threatens danger in a new direction.¹⁰⁸

The Swamp environment was changing; not fast enough for many and too fast for a few. At the May 1920 meeting, after much of the audience had left following the Tuckean ratepayers' disruption, a lone voice called on the Colonial Secretary to turn the 'problematic swampy parts' of the Tuckean into a sanctuary for 'water hens etc'.¹⁰⁹ In February 1934 duck shooters noted changes in the Swamp and a reduction in the number of birds compared to other areas. 'Old shooters' noted that 'the Tuckean swamps are covered in grass and weed, and there is practically no water for the ducks to alight on.'¹¹⁰ Four days later the *Northern Star* again reported: 'Best results have been obtained in Coraki swamp, but at Tuckean birds are scarce, the new drainage scheme reducing the spread of water.'¹¹¹

A keen duck shooter in his youth, Official First World War artist to the British Admiralty, Arthur Burgess, had lived in Lismore as a young man and was often cited in the local newspapers writing from his home in London. In 1927 an article in the *Northern Star* noted:

Arthur Burgess was often seen with a gun in the scrubs around Lismore and on the Tucki swamp. Though from Tucki to London is a far cry he hears that the scrub has disappeared, and the swamp now drained, and he enquires regretfully whether it is true. The old beauty lives with him in heart and mind; the echo is not dead – it reverberates along the corridors of memory.¹¹²

¹⁰⁸ *Northern Star*, 4 December 1936, 8.

¹⁰⁹ *Richmond River Herald*, 21 May 1920, 2.

¹¹⁰ *Northern Star*, 20 February 1934, 3.

¹¹¹ *Ibid*, 24 February 1934, 2.

¹¹² *Northern Star*, 27 October 1927, 6.



5. *Flood: 1945 to 1971 (Era 4)*

Following the dry and drought years of the previous era, flooding dominates this one. In the first half it is the devastating torrents of water that fill homes, drown livestock and bring plagues of mosquitoes that often focus the stories about the Tuckean Swamp. In the second half of the period it is the engineering plans, feats and spending on flood mitigation that bring radical change to the Swamp.

The disparity in climatic conditions between the flooding of the late nineteenth century to the drought times of the 1912 to 1915 drainage works outlined in Era 2 is more dramatic than in this era. However, it is perhaps ironic though not atypical that the digging of new drains and the large-scale earth works that culminate at the Bagotville Barrage, which followed the urgent calls for flood mitigation throughout the 1950s, again occurred in the average to dry years of the late 1960s. This chapter starts with flood stories in the Tuckean. It then provides a broad historical context regarding the North Coast economy and general enthusiasm for flood mitigation that laid the ground work for a new era of environmental change in the Tuckean post 1971. The chapter concludes with individual memories of the Swamp environment.

The wet years: flood stories

After fifty years of average, dry to drought years, with only a few nuisance and minor floods, the rains started again in earnest in 1945. June 1945, June 1948, February 1954, February 1956 and July 1962 were the highest and most devastating of the renewed flood times. But there was a second, or more, smaller flood in many of those years. Between 1945 and 1962 there were 25 recorded floods. Mud, mosquitoes, stock deaths, fish kills, stench and dramatic rescues haunt the stories of a generation who grew up on the Tuckean during that time. With the Swamp full of water, it was also when waterbirds returned in vast numbers, stopping people to look up as ducks blackened the sky.

Jim Cannane grew up on the south-western edge of the Swamp from his birth in 1933. His father worked for the large landowners, the Somervilles, and the family eked out a sparse living from their leasehold dairy. The June flood of 1945 was the first Jim experienced. It left their home with inches of water and stinking mud in it a fortnight after the flood first rose, with black snakes still in residence and doors that wouldn't close for another six months. The mosquitos harassed the cattle so badly that they could not stand still all night, and they made the chore of milking a nightmare. Each flood would see the Cannanes living with their neighbours, the McCaugheys, a little further up Tuckurimba hill, often for a month before they could move back home. Outside the house, Jim remembered, it was 'a quagmire - gord it stank.'¹

¹ Interview with Jim Cannane 7/3/18.

Jim retells the stories of stock loses on Tuckean Island in 1945. His father was one of the men who battled out to the Whipps property to try and save a herd of heifers. But it was too late to entice them onto higher ground through the floodwaters. The cattle were later found dead, caught high in the forks of trees where they had been unable to escape the force of water that had wedged them in.

Harry Stibbard told Esme Smith that the flood ‘came out of the blue – the first major flood we had... There were 600 head of cattle that got drowned on Tuckean Island.’² The Antonioli property, secured in the homestead ballot of 1915, was on the ‘wrong side’ of the old Tuckean drain. So too were the Woyboys. There was no road through to Cedar Island in those days and neither farmer was able to get his herd out. Tuckean Island, also known to those of Jim’s generation as Woyboys Island, was thought by many at the time to be above the flood line.³

Summer floods could bring fish kills. Introduced pasture grass such as paspalum, Hunter River couch and infestations of introduced smart weed in the Tuckean and other swamps grew rapidly after winter rains, and unlike the indigenous water couch, rotted when inundated. This material, alongside other organic materials washed into the swamps, could cause the deoxygenation of the water with the consequence of fish deaths through suffocation. Fishermen Mike Readon and Len Gallagher told of a large fish kill from Coraki down to Ballina in the summer following the June flood. Gordon Leslie Smith recalled the event in the Tuckean Broadwater where he thought the fish became trapped between the black deoxygenated water that was discharged both from the Tuckean and further upstream. Crushed or rotted smartweed is also toxic to fish and Gordon felt that it may also have been a prime culprit.⁴

In 1948 disaster again struck in June. Harold Woyboy, who had been feared drowned, later described ‘a wall of water’ sweeping down from the Meerschaum Vale Range where ‘the low lying swamp became as rough as a sea.’⁵ The Queensland newspaper the *Truth* described the desperate search for the Clarke family in the Swamp as ‘the most gripping so far of the flood on the Richmond, which has caused havoc of unprecedented proportions.’ The report went on: ‘The search encountered many difficulties. The swamp was infested with snakes and the carcasses of 80 head of stock were seen floating below the surface.’ 12 families from the Tuckean had become marooned, some of the rescued being hospitalised with pneumonia.⁶

The biggest flood came in 1954 - the ‘daddy of them all’ according to Harry Stibbard. It inundated communities from southern Queensland and throughout northern New South Wales and beyond, drowning ten people from Kyogle. On the Richmond, the *Northern Star* reported

² Harry Stibbard in Esme Smith and Jane Baldwin, A Landuse History of Tuckean Swamp, Tuckean Swamp Study: Technical Report #6. Lismore, 1997, 75.

³ Interview with Jim Cannane 26/4/18.

⁴ Interviews with Bob McDonald in McDonald, A Report on the Impact of Habitat Variation and Fish Kills on Fish Catches in the Richmond River, unpublished report, 2001, 6. McDonald records them as a summer flood in 1945, but it would likely have been the March flood of 1946.

⁵ *Truth*, Brisbane, Sunday 20 June 1948, 2.

⁶ *Ibid.*

‘that Tuckean, in the Broadwater district, is the worst devastated area.’⁷ The *Sydney Morning Herald* documented the devastating circumstances for the Mid and Lower Richmond River communities, noting that it was the dairy farmers who were worst hit. Headlined ‘Bid to save 25,000 starving stock’, the account told of the desperate race to bring food to the stranded stock, still standing in water after many days. The affected area was described as 25 miles square, bounded by Coraki, Woodburn, Broadwater and Wardell – much of which encompassed the Tuckean Swamp.⁸

Moving out: population decline on the Far North Coast

The floods wreaked havoc on already vulnerable rural communities across the North Coast. By 1956 Jim’s family joined many others in leaving the Tuckean district, the floods helping to break the back of struggling dairy farmers. While the Cannanes remained in the area, others left for the city.

The period from the mid-1930s to the Second World War was one of increasing stagnation in the countryside. The Depression stunted the growth of country towns, accelerating the drift to the cities with the consequential ‘drain of vigor’, according to historian Geoffrey Bolton, from rural environments.⁹ However, it was during the long economic boom of the 1950s and 60s when the growth of the big cities accelerated in comparison to the countryside. In 1960, Sydney represented 56 per cent of the New South Wales population, with 75 per cent of the manufacturing jobs.¹⁰

Population decline across the North Coast was especially acute. Ulrich Ellis, a longtime activist for the Country Party and New State Movement, claimed an estimated 48,000 people between 1954 and 1964 had been ‘spirited away in one decade, dribble by dribble... Only a raving madman would suggest the evacuation of such a numerous community. ...The north is the victim of raving madness... Sydney got them.’¹¹

This was at a time of oversupply of dairy produce to a rapidly changing international market that was turning away from the traditional cream-based products of the Far North Coast. Added to this was a shrinking domestic market at the beginning of global economic restructuring, which would see government policy shift away from a history of protecting primary producers and small-scale farming. The rationalisation process of dairying moved through the region at great speed. 940 dairies were lost to the industry on the Far North Coast by 1959, with half

⁷ *Northern Star*, 3 March 1954, 4.

⁸ *Sydney Morning Herald*, 25 February 1954, 1.

⁹ Geoffrey Bolton, *Spoils and Spoilers: A history of Australians shaping their environment*, North Sydney: Allen&Unwin, 2nd edition 1992.

¹⁰ Johanna Kijas, ‘A place at the coast: Internal migration and the shift to the coastal-countryside’ in *Transformations: Region, Culture, Society*, 2, 2002.

¹¹ Ulrich Ellis, *The Battle for Decentralisation: Northern Districts Lose 48,000 Potential Citizens in Ten Years*, Armidale: New England New State Movement, 1965, 1-2.

again of the remainder leaving the industry over the next ten years.¹² Increased costs, loss of markets, declining soil fertility, weed problems and an aging farming community, where children had left the farms, all contributed to the rural decline. For those who remained, farmers increasingly shifted over to beef cattle and searched for ways to hang on to their land.

Sugar cane increased along the Lower and Mid Richmond, with mechanisation and new strains of cane enabling parts of the Tuckean to come under cultivation. Flood mitigation was considered an essential part of increasing the viability of farming across the North Coast, thereby also contributing to the prosperity of the nation.

Transforming the flood plains and backswamps: flood mitigation and drainage

The 1950s and 60s were the decades of great optimism for the benefits of large-scale publicly-funded water engineering projects on a state and national level.¹³ Across all the large rivers north of Sydney, the focus of flood mitigation infrastructure was on building levees, flood gates and drains.¹⁴ Especially on the North Coast, flood mitigation infrastructure projects were enthusiastically endorsed to support individual farmers and communities. Beyond the aims of reducing flood risk, a goal was to increase the intensity and profitability of landuse. This focused on providing conditions that could shift farming from sparse grazing to more profitable intensive cropping, especially sugar cane. It is the era when a renewed push to drain the backswamps comes to the fore.¹⁵

In the Lower Richmond River improved backswamp drainage was a particular focus.¹⁶ It was a slow process, however, from planning to action. In the Tuckean, farmers continued working on their own to accomplish more control over water on their land through the 1950s. After his father retired, Jim took over work on the Somervilles' Tuckurimba estate. They had three small drains built and flood-gated into the deep swamp around Stoney Island. These fed off the east-west running drain that took the water from Tucki Tucki and Marom Creeks, known to farmers and fishers as the 'Main Drain' (also called Stoney Island Drain and now the Nature Reserve Drain). 'One of my jobs was to control those little three-foot floodgates and save a bit of water for that swamp.' He was also able to control the salty water getting into the swamp in dry times

¹² Hazel Ferguson, Johanna Kijas and Adele Wessell, with the Northern Rivers Landed Histories Research Group. 'Towards Reflexive Localism: Exploring the Diverse Co-Creators of Alternative Food Regions' in *Journal of Historical Geography*, 55 (14 21), 2017.

¹³ Paul Sinclair, *The Murray: A River and its People*, Carlton: Melbourne University Press, 2001.

¹⁴ Department of Public Works, *Report of the Richmond River Valley Flood Mitigation Committee*, October 1954, Section 12.

¹⁵ Damian Lucas, 'Shifting currents: a history of rivers, control and change', University of Technology Sydney PhD thesis, 2004.

¹⁶ Department of Public Works, *Report of the Richmond River Valley Flood Mitigation Committee*, October 1954 and May 1958.

when the high tides reached up to Tucki Tucki Creek. Jim said the cattle would drink the briny water but didn't thrive.¹⁷

This was the swampy area where the older men had told Jim stories about the wild horses that used to roam and camp on Stoney Island. Attempts to muster them had failed as they knew their way around the huge floating islands that could sink those in pursuit. When Jim came to work on the property he saw the remains of these islands lying in huge heaps on the ground. Even then the rate of drainage off that part of the Swamp after flood or heavy rainfall was now too rapid for their survival.

Jim said the Somervilles had 600 acres in the low swamp country, where he remembers 1100 head of dairy cattle in the best years. He would move them onto higher ground in the winter when the water couch died back, and return them in the summer months. Then he would 'mow every inch' to get rid of the 'smart arse' (smart weed) and then it 'would look good. It was like a bed of oats – acres of green feed.'¹⁸

Another farmer bought his property in the north of the Tuckean just before the 1954 flood hit. He had 400 acres in the Swamp that he described as 'good handy country – good grazing', and the rest of the farm was on higher ground. He dug his own shallow drains, 'like everyone else', to take the water off so he could 'improve the land - make it more arable.' It was a relief when at last the government acted to widen and deepen the old drains and build new ones in the late 1960s: 'There was never any issue about the works – it was just plain common sense and there was no argument.'¹⁹

The major flood of 1945 had renewed urgency about the impact of flooding on farmland across the region. On the Richmond a Flood Mitigation Committee was established by the State Government in 1948, handing down their interim report in 1954, with final recommendations in 1958.²⁰ In the Tuckean, the recommendation was for the enlargement of the existing drains. This was to reduce the time that floodwaters remained on the ground from one to three weeks, down to four days from the flood peak, and accelerate the drainage from normal local rainfall.²¹ It was low on the priority list, however, at 13 out of 15 proposed works.

The need to separate flood risk management on the one hand, and drainage to support farming on the other, which had been forcefully argued by the government's Chief Engineer in Era 2, was now overturned and integrated. The committee reported that the cause of much damage and loss to farmers was the amount of time that water lay on the ground, rather than necessarily the depth that was reached in a flood. They concluded that 'the main requirements are the efficient drainage of local run-off, reduction in peak heights of backwaters from floods

¹⁷ Interview with Jim Cannane 7/3/18.

¹⁸ Ibid.

¹⁹ Interview name withheld, 21/1/18.

²⁰ *Richmond River Flood Mitigation Report October 1954.*

²¹ *Richmond River Valley Flood Mitigation Report May 1958, 35.*

and their quick removal during falling stages of the river.²² The report argued that the existing drains were 'far too small' to quickly remove floodwater and overland flow.

This restriction on drain capacity is due, partly to adherence to the original purpose of increasing the area of pasture land, by lowering the water level in permanent swamps; and partly to the limits placed on expenditure by the landholders concerned.²³

Across the North Coast the aim of the drainage unions and trusts had been to work co-operatively with landowners, supporting the clearing and maintenance of the public drains. However, the renewed flooding in this era highlighted their limitations in skills and resources.²⁴ On the Richmond, the drainage work of the farmers and the unions was assisted in November 1959 with the proclamation of the Richmond River County Council. This brought more resources, not only in government funding but also through the employment of engineers to design, construct and manage the proposed levees, drains and floodgates.

Planning and financing on the local level was supported on a state level with flood planning in the aftermath of the 1955 Hunter River flood. The NSW government introduced a state-wide program for the construction of structural mitigation works with the aim of reducing existing flood risk. At this time in the Tuckean, the long-called for Stibbards Canal was dug. The Tuckurimba Levee, started in the 1950s, was completed in 1963. This stopped smaller floods overtopping the banks into the Tuckean from the North Arm of the Richmond (Wilson River), but pushed more water onto the western side of the river. In ongoing discussion and research about a flood diversion canal through the Tuckean in 1967, the County Council further emphasised the need to examine a 'combined drainage and diversion scheme.'²⁵ 'The two sides of the question are inextricably mixed...'.²⁶

During the 1967/68 financial year the Richmond River County Council adopted a works program for levees, floodgates and drainage works that included the Tuckean, West Coraki, Tuckombil, Broadwater, Sandy Creek, Kilgin, North Woodburn, Wardell, Pimlico, Dungurubba and Empire Vale. Wazzer, digging the new drains in the Tuckean, interpreted what he was doing: 'Flood Mitigation was the instigators of the whole thing. They surveyed and then told us where to dig. If they could find a water hole – they'd drain it.'²⁷

²² *Richmond River Flood Mitigation Report October 1954*, Section 12:4.

²³ *Ibid* 12:9.

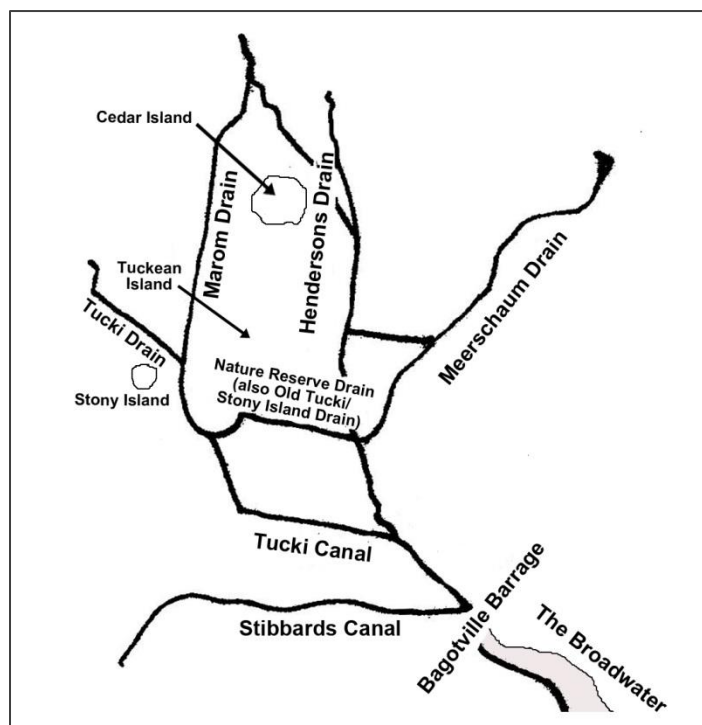
²⁴ Lucas, *Shifting currents; Mitchell Tulau, Lands of the richest character: agricultural drainage of backswamp wetlands on the North Coast of New South Wales, Australia: development, conservation and policy change: an environmental history*, Southern Cross University PhD thesis, 2011.

²⁵ Richmond River County Council, 'Proposed Diversion of Part of the Flood Flow of the North Arm of the Richmond River from Tuckurimba to the Broadwater', 23 June 1967, 4.

²⁶ *Ibid*, 2.

²⁷ Interview with Wazzer, 27/4/18.

As part of this new round of infrastructure spending, Tuckean farmers were told that the Bagotville Barrage would also be funded. County Engineer for the Richmond River County Council, K. Galbraith, noted that the barrage would 'prevent headwaters running into the swamp. A series of major drains also will be established to enable floodwaters to discharge from the swamp within a few days of peak height. At present the water lies there for months.'²⁸ At the official opening of the barrage the status of the Swamp was defined: 'The barrage is a fundamental part of a large drainage complex which benefits an area of about 16,000 acres of farmland.'²⁹



Tuckean Drains

Adapted from Patterson, Britton & Partners 1996

Since the completion of the first PWD drainage works in 1915, farmers had been demanding a barrage to prevent saltwater onto their land and stop floods working back up the Broadwater into the Tuckean. Today, many who experienced a time both before and after the barrage stand firm that it was the best thing to happen to the Swamp. Others no longer agree. For example, Athol Sneesby, who knew the Swamp from the mid-1960s when still on the family cane farm at Banks Estate, Broadwater, wanted the barrage at the time. He thought the drains were a good idea as the water drained off the land more quickly. However, as he came to understand that

²⁸ K Galbraith, *Northern Star*, 29 August 1968 in Smith and Baldwin, *Tuckean Swamp Land Use History*, 68.

²⁹ *Northern Star*, 12 May 1971 in *Ibid*, 69.

they ‘drained everything’, leaving little water for the swamp, he changed his mind.³⁰ It is the job of another history to explore the diversity of responses to the drainage works and barrage, and its environmental consequences, post 1971.

Ducks and mullet: you wouldn’t starve in the Tuckean

Throughout this era to 1971 farmers continued to work their land, building drains to dry out the Swamp in the hopes of providing their cattle with pasture for longer or converting land to cropping. During this period the melaleuca forests continued their expansion as the Swamp dried out. There also remained areas of undrained swamp across the Tuckean that still attracted large numbers of ducks and duck shooters, for example in the sand holes around the head of the Tuckean Broadwater, in the deeper swamp around Stoney Island and the ‘Duck Hole’ south east of Round Hill and north to Tucki Tucki Creek. Of other birds, one farmer remembered watching groups of seven or eight brolgas dancing as a boy; another remembered Magpie Geese in the early 1950s. Throughout the 1960s one could still row high up into the Swamp, for example to the base of Justelius Hill, or motor up in a flat bottom boat to sight-see or catch a commercial supply of mullet on the high tide.

Ducks

Changes in the Swamp environment and its wildlife were experienced and perceived differently across the generations. Two keen duck shooters provide some insight for this era. Jim Cannane spent most weekends in the south-western part of the Swamp shooting ducks throughout the 1940s until he left the area in 1956. In wet weather when the ducks were alight during the day you could stand and watch them fill the sky, darting back and forth. Nights were filled with their sounds - the whistle of their wings and their constant quacking and calling to each other. ‘But’, Jim said, ‘now you go down there and it’s like a desert – as silent as a morgue.’³¹

Jim remembered feeling that duck numbers were dwindling before he left in the mid-1950s. 14 years younger, Athol Sneesby still thought there were thousands of ducks in the Swamp when he started shooting there with his father in 1965. He estimated there could be 5,000 ducks in and around the Broadwater through the 1960s and it wasn’t until the 1970s that numbers could be seen to decline rapidly. Everyone knew the Swamp was a sanctuary, or at the very least that there were open and closed seasons, and everyone ignored it and shot all year round.³²

Jim described the numbers of ducks during the 1940s:

³⁰ Interview with Athol Sneesby, 22/5/18.

³¹ Pers comm Jim Cannane, 21/11/18.

³² Interview with Athol and Catherine Sneesby, 22/5/18.

Look, the ducks were that plentiful when we were young fellas that we knocked off playing cricket out at Coraki one Saturday evening to watch them. The ducks were coming out of Tuckean and heading over to swamps on the other side of Coraki. Ah the sky was black with them, like you see the flying foxes. And what happened was they built up in the time during the war. Nobody could get any ammunition to shoot and they built up and built up and built up and built up. Oh gord, there were millions of them. No trouble to go out there and shoot 50 or 60 of a morning. No trouble. Loved it – it was sport. I just liked shooting. And there were that many out there we never thought we'd ever get to the end of them – but we have, I think.³³

At one stage Jim's mother heard that a large flock of white caps (Eurasian Coots) had settled on the Swamp and she sent Jim and his brother out to get some. They came home with half a sugar bag but found them too tough to eat. So, Mrs. Cannane minced them all up and made them into sandwiches for the Red Cross table at the Woyboys Clearing Out Sale. Jim remembered:

Anyhow she put them out on a tray at the sale and I'd gone over this day and I said to me mate: 'Wild duck sandwiches there – you want to get into them – they're going to disappear like rabbits.' [laughs] And boom they were all eaten. Well Mum wasn't going to waste them. Only time I ever seen the white caps out there – and we didn't shoot them out either.³⁴

Like most people who lived around the Swamp at the time, Jim described the noise of gunshots on a Saturday and Sunday morning sounding like a war:

It was like bloody Korea. Boom boom, boom boom, boom, boom, all over the bloody Tuckean – bloody ducks in the air going for their lives.

What happened to the ducks? They reckoned that what thinned them out more than anything was the rice boys out there poisoned the water when the rice was coming up – down in the Riverina – terrible waste. They poisoned the swans and everything, just to grow some rice. Shot a duck out at Dungurubba one day and it had rice in his gizzards. 'Course they lost a lot of water out there in the Swamp as well.³⁵

Athol was born in 1947 and grew up on the family cane farm on Banks Estate across the river from Broadwater. He and his father would row up into what he called Justelius Drain,

³³ Interview with Jim Cannane, 7/3/18.

³⁴ Ibid.

³⁵ Interview with Jim Cannane, 26/4/18.

describing stag horns and elk horns festooning the black swamp oaks: 'There'd be 20 or 30 on each tree – huge they were.' He also remembered the waterbirds: 'There was every type of bird in the Swamp ... Jabiru, Native Companion, plovers.' He remembered lots of turtles and the leeches 'were shocking'. The mosquitoes were so bad sometimes that they had to stop and wipe the rifle sight clear of them. As they usually went duck shooting in the afternoon, the mosquitos would land on the rifle because they were attracted to the heat.³⁶

Each generation had different names for places. Athol described some of the places they shot ducks. He called the low swamp in Green Forest off Hoares Lane - Wunches Swamp, recalling that '90 per cent of the time it would have water lying on it. As you passed by: 'You could shoot a pair of ducks out of the car window.' It was 'clean' with water couch on it. Looking across to Stoney Island 'there were miles of ducks.' Ten years after Jim had left the area, Athol's favourite place to shoot and build their hides/humpies was the same 'Duck Hole' on the Somerville property, which he also called 'Horseshoe Lagoon' near the 'Stockyards'. After rain 'it would be water as far as you could see.' But it would soon dry up again leaving water only in the lowest section.

Further up Tuckean Island Road near the old Woyboys farm, looking into the dense paper bark forest to the east, Athol described a hole in the trees where the whistling ducks would fold their wings to glide through for shelter. They formed camps numbering four to five hundred in Athol's estimation, settling on the limbs of the trees during the day. They flew out to feed on the plains and the edges of the swamp in the late afternoon, when Athol and his shooting partner would usually venture out.³⁷

Athol loved duck to eat: 'They were heaven.' His mother steamed them in oil and water and stuffed them with bread and herbs. She also cooked giblet soup, using all the insides of the duck: 'Magnificent.' Nothing was wasted. Black ducks were definitely the favoured duck: 'Also teal were nice, but they were small, and you needed two for a feed. There were also spoonbill ducks, whistler ducks and copperhead ducks, although the latter were rare.' Cathie Sneesby, Athol's wife, grew up around Coraki and while there were many swamps in the region it was the Tuckean, Cathy said, that was known as the ultimate place to go duck shooting. Cathy always disliked duck but she remembered that for most people, wild duck was the premier food to eat.³⁸

Cathy and Athol noted that through the 1960s and into the 1970s there were thousands of ducks being shot and sold out of Coraki to the Sydney market: 'It was illegal but that didn't stop the trade until later.' Cathy was a nurse at the Campbell Hospital in Coraki. One Saturday

³⁶ Interview with Athol and Catherine Sneesby, 22/5/18.

³⁷ Road trip with Athol Sneesby, 22/5/18.

³⁸ Interview with Athol and Catherine Sneesby, 22/5/18.

afternoon she recalled someone bragging that they had shot 200 ducks that morning. She couldn't get it out of her mind and after that, if Athol wanted duck for dinner, he had to prepare and cook it himself.

Fish

Athol also fished with his father. Near the head of Tucki Creek they caught fresh water catfish and fresh water crayfish, and 'heaps of perch' in Justelius Drain. They would also go out mullet hopping at night. They put a lantern at the front of the boat and the mullet – 400 to 500 centimetres long - would hop into the boat: 'They'd hit you hard too! When you crossed the old Tuckean drain in the day time you could see the mullet swimming and hopping and swirling in the water.' In the Broadwater they caught 'everything' – flathead, whiting, jewfish. They would row up Stibbards Creek from the Broad, catching fish as they went: 'It was all clean through there – no weeds or mud.' The creek had running water with the tide and was 'thick with ducks.'³⁹

Evan Williams sister-in-law June Williams also remembered the fish around that period. She and her fiancée would go for Sunday drives. She remembered the poddy mullet heading back out to sea through the drains, 'a jumping, swirling mass' so thick she felt like she could have walked on them: 'The drains were clear and open – except for all the fish!'⁴⁰

Wazzer spent a lot of time through the 1960s in the Swamp, cleaning out the old drains and then digging the new drains of the late 1960s. There were 'plenty of fish – get a feed anytime.' His stories are punctuated with his reflections of the period before and after his drainage and earth-works on the barrage: 'The duck holes were everywhere before. Hard to tell where any of the holes were after I'd been there.' He used a 'weed bucket' that was 12-foot long to clean the drains and he would use that to help him catch some dinner:

I'd see a patch of mullet coming up and they'd be working ahead of me. I'd go ahead and put a block across there. I'd have a big block of weed and they couldn't get past me and I'd just scoop 'em out. Simple as that – as many as I wanted. Hard to imagine now. I always had ducks, fish, whatever I wanted. I'd live off the land.⁴¹

When asked about any other fish species he found in the drains he said:

No other fish. Oh – plenty eels – you always got them of course. They'd be in the weed where it was pretty heavy. Always pulling them out. The Jabiru – the little eels – they'd be into them. They'd follow me everywhere. I was their

³⁹ Field trip with Athol Sneesby, 22/5/18.

⁴⁰ June Williams pers comm, 15/5/18.

⁴¹ Interview with Wazzer, 27/4/18.

feed bucket (laughs). They'd be a pair – mate for life. They probably followed me for years! I went away for a holiday and thought, oh they'll be gone. But I left the machine there, see, and when I come back and started it up – two or three days and there they are back again! So they must have known. I was using that big weed bucket and probably digging a metre deep. I'd pick up whatever was in there – weed and of course mud. And that would go on the bank and it would have little fish and whatever was in that matting – the natural weed – and that was their dinner.⁴²

In the 1960s and 70s farmers remembered a commercial fisher's ute stacked high with huge eels out of the drains. There was an international market for them.

Thinking back to his time in the 1940s and 50s Jim Cannane reflected:

In the six-foot tides it came up Tucki Drain. Oh we used to get big mullet down in there don't you worry about that! Big Mullet! County Council employed two blokes living on the bank of the old Tucki Drain in a hut and their job was to keep the drains clear. They used a brush hook to clear the weed and hyacinth etc. They came out on a cream truck of a Monday morning - go home Friday dinner time. Used to borrow their row boat of a night time – we'd get a corn bag of big sea mullet. Only mullet – an eel or two – but we didn't want them. Only time you'd see fish right out in the swamp was when the floods came. Dry ground today and three-foot tomorrow, and you'd come across a good-sized school of mullet.⁴³

For some farmers the presence of such large numbers of sea mullet and other ocean fish so far up the drains was further proof of the failure of the drains to provide the mechanism for arable farm land.

Gordon Leslie Smith was still fishing almost exclusively out of the Tuckean Broadwater in a wooden row boat until the 1960s, after which he started motoring up river to include Woodburn in his fishing. By then, John Gallagher said that there were six fishing families living out of the Broadwater. John was born into a commercial fishing family in Coraki in 1945 - a fourth generation Richmond River fisher with 45 years in the industry and former chair of the Ballina Fishermen's Co-op. He was 'thirteen and a half' when he started commercial fishing and, with his dad, he started fishing in the Broadwater and up into the Tuckean from that time.

The Broadwater was very different to fishing in a shallow creek like Dungurubba, where you might get a good lot of mixed-fish, but you would spend the next day taking out all the sticks from the net. The Broad was wide

⁴² Ibid.

⁴³ Field trip with Jim Cannane, 26/4/18.

and open - even the Main Drain up in the Swamp. That was clean with a lot of ribbon weed in it, which you don't see very much of today.⁴⁴

As noted above, when referring to the Main Drain the fishermen were referring to the east-west running drain that was widened and deepened in the late 1960s. Now called the Nature Reserve Drain, it was previously called Stoney Island Drain, while Jim and some older locals still refer to it as the Old Tucki or Tuckean Drain.

There were several important swamps within the Richmond River catchment, but for John it was the Tuckean that was the main 'artery of the river'. When asked what it looked like he said:

Well you can close your eyes and you can look at a great big vast amount of water with water couch growing through it, fish diving through the water couch - it was an amazing place. Not only for fishing and fishermen, but for farmers as well. It was land and water. Just like looking at a golf course - beautiful and green. There were trees and little islands.⁴⁵

When he first started fishing in the 1960s he remembered that most of the Richmond River commercial fishers would regularly 'cram into the Broadwater'.

On the eastern side of the Bagotville ferry approach there used to be a deep hole there that we called 'Deep Hole'. The fishermen would gang together and haul that hole once a month – every new moon, once a month. They'd finish up with boats 16, 18-foot-long, two-foot deep, two of them probably, almost sinking, with bream, jewfish, mullet, flathead, crabs. You wouldn't pull in there now 'cause it's full of bloody sticks and those lilies that grow in acid water. That sort of fishing all finished with the Barrage.⁴⁶

John noted that the Broadwater and up into the drains was great habitat for mud crabs: 'You could go up there on a full moon, and you shot your nets off, and if you waited for a three-hour set, [laughs] you'd be sorry because the bloody crabs would have chewed into the nets and chewed the fish. Ahh it was murder!'

In the 1990s, Evan Williams sought John out as he started looking for those who would listen to his concerns about the current state of the Swamp. John relayed one of Evan's stories:

He told me - three nights before the full moon and three nights after he said, 'you'd go down to the ferry approach – put a lantern there – leave it a while and you'd have a scoop' – and he said 'you could spend an hour there and

⁴⁴ Interview with John Gallagher, 5/12/17.

⁴⁵ Ibid.

⁴⁶ Ibid.

come home with a honey tin [25 litres] full of prawns. Then you'd spend a couple of hours cooking 'em – beautiful prawns!' Go there today and see how you go.

John reflected:

As far as the fisherman goes, and the recreational fishermen go, in the Swamp you had a good mud crab area, a good fish area and a good prawn, crustacean area. When that swamp was drained my father and my grandfather started to say to me: 'Right oh son, you are going to have to start fighting because this river's going to become a drain in years to come.' How bloody true their words are.⁴⁷

Historian of the Clarence River, Damian Lucas, argues that fishers have often felt that: 'The term "drain" is evocative of something that is technological, regulated and dead; very different from the life of a diverse natural river.'⁴⁸ Fishers and farmers have often clashed over the state of the environment because they have been perceived to benefit differently from the same environmental elements. Arguments and explanations abound on both sides.

As water was further drained and disappeared from the Swamp, the numbers of waterbirds declined dramatically. The environmental consequences of the flood mitigation work of the late 1960s, which included ground subsidence, drying of the peat, lowering of the water table, increased emergence of acid sulphate soils and siltation, came at a time when scientific understanding about wetlands was only just starting to emerge. The next 60 years would bring new knowledge and old arguments into contest over the future of the Tuckean Swamp.



⁴⁷ Ibid

⁴⁸ Lucas, *Shifting currents*, 67.

Concluding narrative: Re-imagining the Tuckean

Hidden behind a deceptively narrow strip of subtropical rainforest, beyond the banks of the lower Richmond River, lay a vast swathe of swamps. The Tuckean was the largest of them all. Captain Henry Rous, the first European to record the landscape in 1828, was rowed to the entrance of the Tuckean Broadwater. Looking into the Tuckean he described a 'low marshy jungle.' It was a dry August day, Rous noting that the surrounding landscape was in drought. Beyond his sight, the Tuckean opened up into an immense and diverse palette of vibrant green water couch, high reeds, shallow lagoons, and occasional timbered rises, backed in the north and east by the dense rainforest of the Big Scrub.

It was probably quiet in the daytime sun, where long-legged waterbirds might have been seen at the muddy edges of drying ponds, hunting an array of invertebrates. A riot of chirping frogs and insects would have taken over after dark, backed by the raucous chatter of flying foxes as they left their roosts in the paperbark and mangrove trees to seek food. It would take the next big rains to refill the Swamp, bringing with it the cacophony of twenty thousand ducks and more descending onto sheets of water, and the returning boom of the Australasian Bittern from its secretive cover. The eels would move back into the Swamp, the next breeding cycle for freshwater and ocean-going fish would be set in train, and the shallow waters would become the nursery for juvenile fish. This was the shared place of the lower river Bundjalung clans and their visitors, presided over by an ancestral being who created and protected this ever-changing environment.

European forays into the Richmond River Valley followed slowly in the wake of Rous's descriptions. Bundjalung clans maintained their seasonal and cultural practices unmolested in their *Jargun* (Country) into the early 1840s. Family groups used distinct parts of the rich Swamp resources, as well as caring for and respecting the network of cultural sites across its expanse. Every few years when the seasons dictated, scores of southern visitors travelled through the lower river areas of Bundjalung land to share in the great Bunya Nut harvests in southern Queensland, or hundreds would gather on Country for ceremonies. Such large numbers could be hosted because of the abundant food supplies within the Tuckean and neighbouring swamps. By the 1860s, however, massacres and disease had devastated the Traditional Owners and the Bundjalung clans' sole stewardship of the Tuckean was coming to an end.

The exuberant chaos and fluctuation of the Swamp was not suited to the dominant needs or desires of the incoming colonists. Their European roots bore centuries of stories where the blight of the dismal swamp was overcome through drainage. Across New South Wales there was little arable land left for selection by the late nineteenth century, and the push to drain the North Coast swamps for farming was put into action. Its immense size meant that the Tuckean was both coveted and challenging. While private drainage work had begun in the north of the Swamp by the late 1880s, the Tuckean would be one of the last Public Works Department

drainage schemes to be completed in 1915. The 'idleness' to which the swamp country had been left, complained the editor of the *Richmond River Herald* in 1909, was ending. The Tuckean Bunyip would soon fall silent.

Bundjalung people had been learning how to live with the seasonal changes and extremes of drought and flood for thousands of years before Rous entered the Richmond. However, the newcomers were intent on changing a landscape they had no experience or understanding of. The ancient weather patterns of El Niño and La Niña confounded a European desire for predictability and certainty in working the land. Dry and drought conditions characterised the first half of the twentieth century around the Tuckean, and when these conditions broke, it again brought urgency to the plight of farmers impacted by flood.

In the wake of renewed flooding from 1945, with the largest in living memory thundering through the region in February 1954, both the state and national governments began planning for flood mitigation infrastructure. There was a buoyant sense of optimism, with the support of money and expertise, in engineering solutions to control nature's wrath. This was the era where the focus on the North Coast returned to draining its remaining backswamps, both to alleviate flooding, and at last to fulfil the colonial promise to create more agricultural land. In the Tuckean, through the last years of the 1960s, the old drains were dug deeper and wider, new drains were constructed and the long-called for Bagotville Barrage was finally built to stop saltwater moving up into the Swamp.

Some of the environmental consequences of drainage were apparent from early in the twentieth century, such as surface subsidence, changing plant species and soil that would grow nothing. Paperbark forests expanded into areas that had previously been reedbeds, and the great floating islands of vegetation that had made accessing the Swamp treacherous for those without knowledge of its pathways, were drying up permanently. The dredging and widening of the Tuckean Broadwater allowed large saltwater fish far up the drains and Stibbards Creek. The country that Bundjalung had managed and Rous described was changed immeasurably.

Today, as diverse groups seek answers to managing the Swamp into the future, no one contemplates a return to a pre-drainage environment. We can, however, re-imagine an abundant and flourishing swamp back into parts of the Tuckean. Wetland science offers new understandings that were not available twenty years ago, let alone when the colonial project was intent on creating communities of small family farms within Bundjalung Country. A new historical narrative can hopefully emerge, returning the Bittern to hide deep within healthy reedbeds and the Tuckean Bunyip to mediate across cultural, economic and environmental challenges, helping to recreate a rich, functioning Swamp that serves its diverse stakeholders.



Appendix 1: Timeline

Before and after 1828: home of clans of the Bundjalung Nation

1828: Captain Henry Rous is rowed up the Richmond River to the Tuckean/Broadwater before returning to his frigate the *Rainbow*. He names the river after Charles, the fifth Duke of Richmond. Drought conditions reported for the region.

1841: Surveyor Clement Hodgkinson arrives on the Richmond River in his exploration of the New South Wales coast north of Port Macquarie

1842: Cedar getters arrive on the Richmond River

1840s: Evans Head Massacre

1844: William Wilson and his family establish their station 'Lismore'

1848: Wilson is gazetted runs over 36 square miles that include parts of the Tuckean Swamp: Tucki Tucki, Dungurubba and Blackall runs

1861: Crown Lands Alienation Act and Occupation Act (Robinson Land Acts)

1863/4: Wet period with extensive flooding

1870s and 1880s: Selection blocks taken up across higher parts of the Tuckean Swamp following Robinson Land Acts

1881 to 1886: Period of drought

c1886: Large fire in the Swamp

c1888: George Henderson digs drains in central northern portions of the Swamp

1887 to 1895: Period of heavy flooding

1880/90s: Clear felling of the Big Scrub escalates

1891: Tuckurimba Progress Association writes to Minister of Works requesting a system of canals into the Tuckean for flood water escape and drainage

1895: Last major flood until 1921

1897: Surveyor Thomas McDonnough arrives from Sydney to survey the Tuckean Swamp

1900: First Inquiry by a Parliamentary Standing Committee on Public Works into a flood escape scheme for the Richmond River and Tuckean Swamp

1900 to 1909: Period of drought

1901 to 1909: Closer Settlement Acts (New South Wales)

1901: Drainage Promotion Act (New South Wales)

1901: Birds Protection Act (New South Wales)

- 1902: Water and Drainage Act (New South Wales) first enacted
- 1911: Second Public Works Inquiry into flood mitigation or drainage of the Tuckean Swamp: drainage scheme is recommended over flood mitigation
- 1911: Reserve for bird protection gazetted for parts of the Tuckean Swamp
- 1912: Work begins on drainage canals in the Tuckean Swamp by Public Works Department
- 1912: Crown Lands (Amendment) Act, enabling homestead farm tenure
- 1915: Tuckean Swamp Drainage Trust takes over management of the scheme from Public Works on completion of drainage work
- 1915: Tuckean Swamp opened for homestead farm tenure under ballot
- 1915 to 1920: Severe drought years with 1915 recorded as the driest
- 1918: Birds and Animals Protection Act, repealing the Birds Protection Act 1901 and Native Animals Protection Act 1903
- 1920: Third Public Works Inquiry into drainage of the Tuckean Swamp with a focus on claims of salt inundation and calls for a floodgate in the Tuckean Broadwater
- 1921: Flood
- 1923: Special court sitting over three days in Lismore to hear appeals against rates payable to the Tuckean Swamp Drainage Trust
- 1926: 'Bay of Broadwater' gazetted as a bird sanctuary
- 1931: Widely reported fire in Tuckean that kills thousands of flying foxes
- 1931: Flood
- 1932: Due to dry conditions, Pastures Protection Board claims 17,742 cattle are located south below Tucki Wharf and east of the Richmond River
- 1932: Stibbards Drain first proposed to be dug in the south-western section of Tuckean Swamp (not completed until the 1950s)
- 1936: Fires again recorded raging across Tuckean Swamp
- 1937: Large fish kill blamed on drainage out of the Tuckean Swamp
- 1940: Gundurimba Shire, incorporating the western section of the Tuckean, is declared a sanctuary under the Birds and Animals Protection Act
- 1945 – 1959: period of major flooding occurs following a long dry period
- 1945: Devastating flooding in the Tuckean Swamp during June
- 1946: Large fish kill reported out of the swamps including the Tuckean from summer flooding

- 1948: Devastating flooding in the Tuckean Swamp
- 1948: Richmond District Fishermans Co-operative formed at Ballina
- 1953: Manager of the Richmond District Fishermans Co-op claims swamp drainage schemes are causing increased fish kills
- 1954: Largest twentieth century flood recorded on the Richmond. Tuckean Swamp is reported to be 'the worst devastated area'¹
- 1958: Richmond River Valley Flood Mitigation Committee report
- 1959: Richmond River County Council established to manage flood mitigation and associated natural resource management activities
- 1964: Completion of the Tuckurimba levee
- 1968: New public works drainage started in the Tuckean
- 1969: Work on the long-called for barrage at Bagotville is started by the PWD
- 1971: Bagotville barrage completed

¹ *Northern Star*, 3 March 1954, 4.

