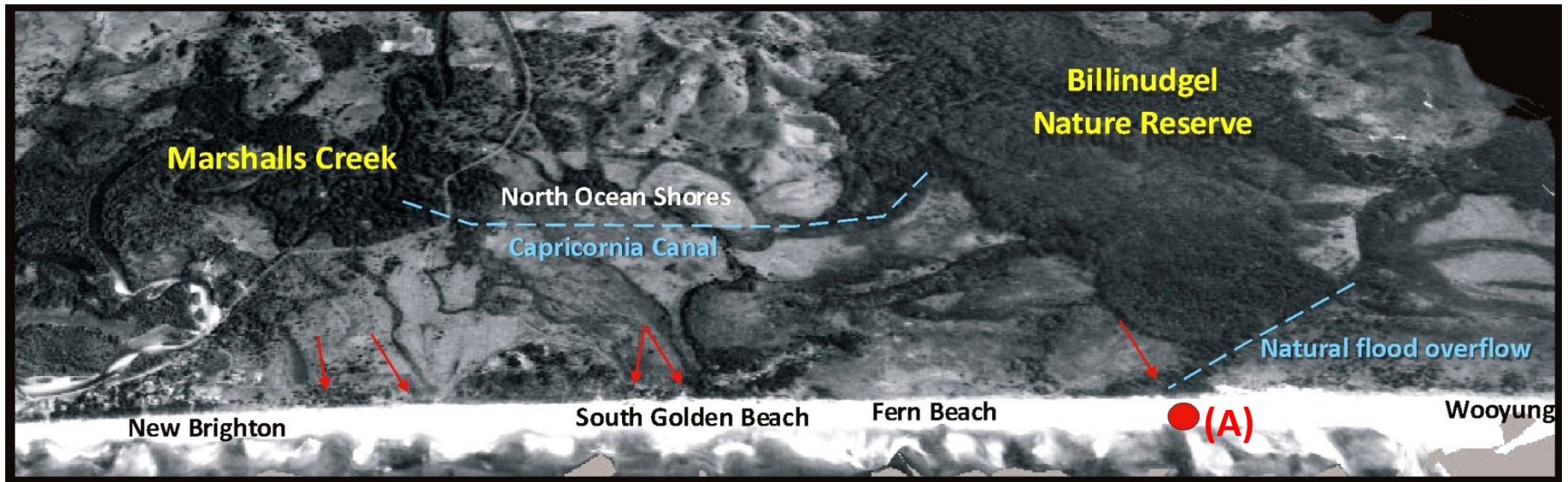


## CASE STUDY Facts ... North Byron Shire Flood Mitigation Project for Cr David Warth

### *Community-based Consultation*

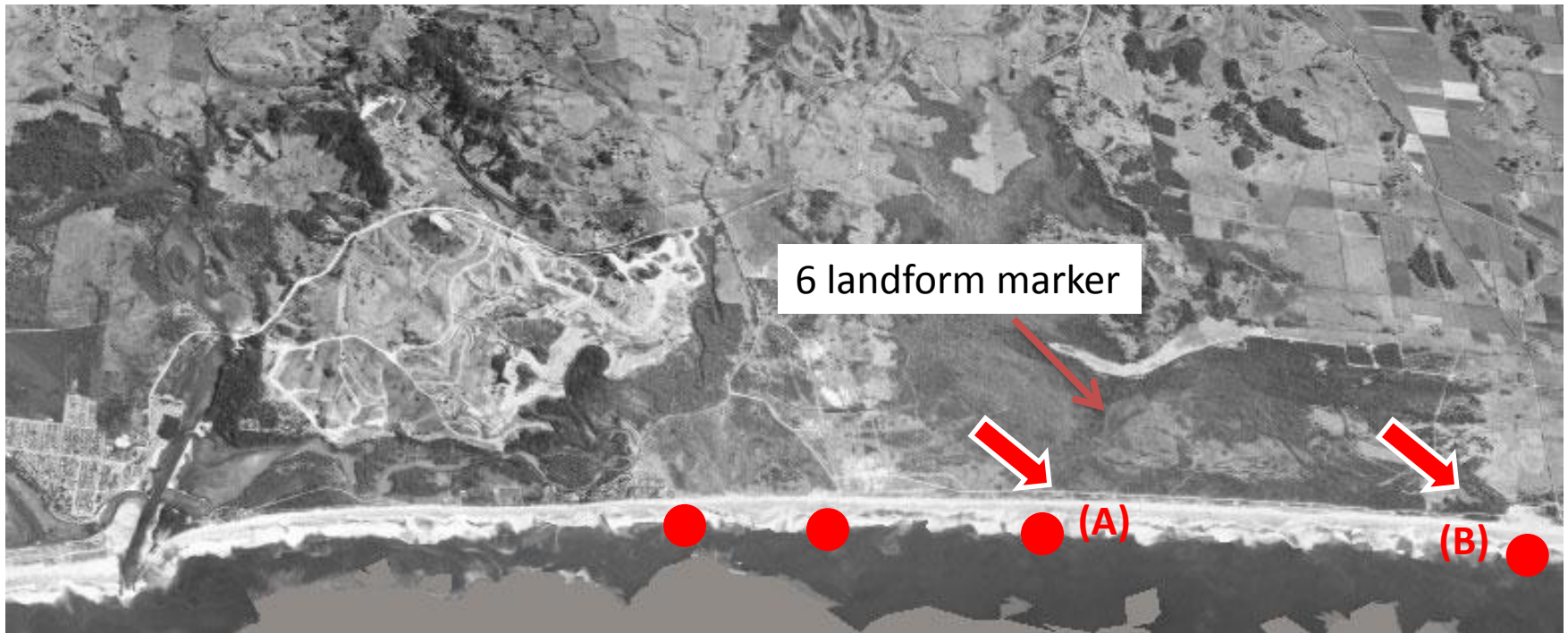
● Profile the natural flood outlet at North Ocean Shores.



## TASKS:

1. Investigate further the flood history documents and historical timeline facts of the establishment of the Ocean Shores Estate.
- 2. Identify the natural flood overflow location at **North Ocean Shores**.
3. Identify the legal obligations of Council to provide a 'duty of care' for those residents living at North Ocean Shores, South Golden Beach and Fern Beach.
4. Identify possible flood mitigation strategies to lower the flood levels on the Marshall's Creek Floodplain at the North Ocean Shores Outlet.





1971 Coastline showing ● flood overflow outlets identifying North Ocean Shores (A) Wooyung (B).  
*Note: The dirt road connects South Golden Beach to Wooyung blocking the outlets.*

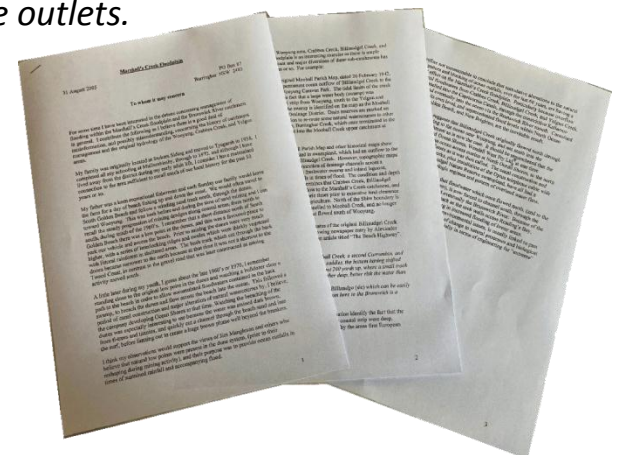
## Background: The Marshalls Creek Floodplain

Ian Fox - An account of the area in the 1960's

Southern Cross University

Environmental Resource Management

[https://brunswickvalley.com.au/flood-history/flood\\_story51.pdf](https://brunswickvalley.com.au/flood-history/flood_story51.pdf)

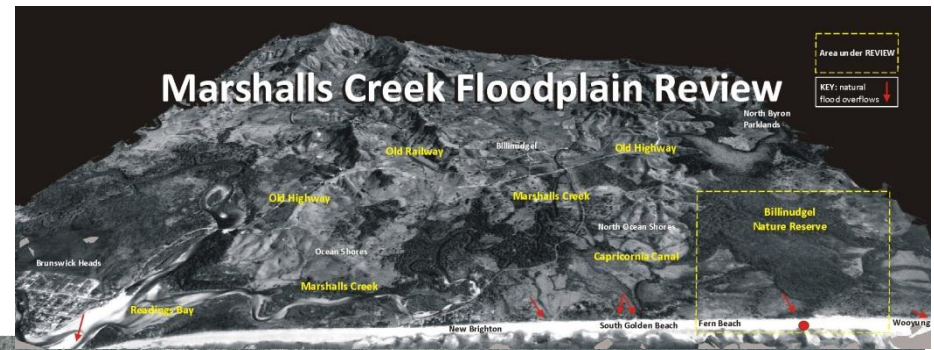




## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



### Observation 1:

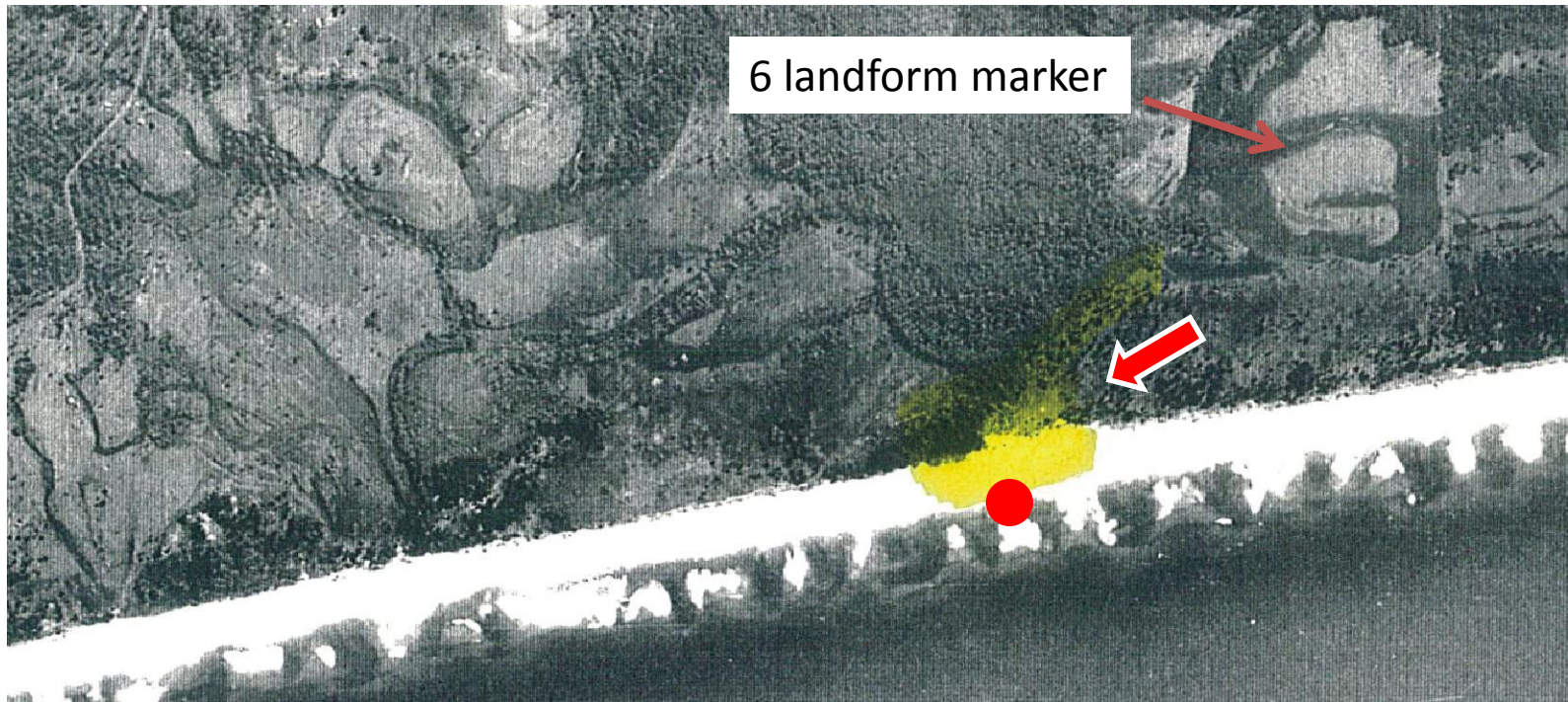
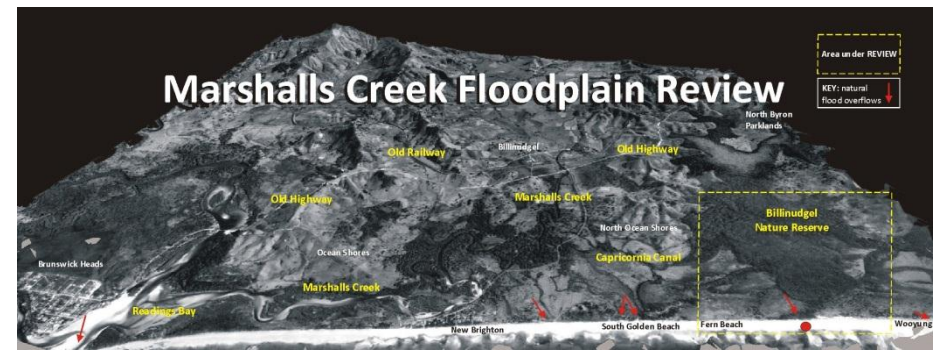
- The flood overflow outlet at North Ocean Shores entered the ocean at (A). There was also an outlet at Wooyung that flowed into the ocean (B). (See Parish of Mooball Map 1887)



## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



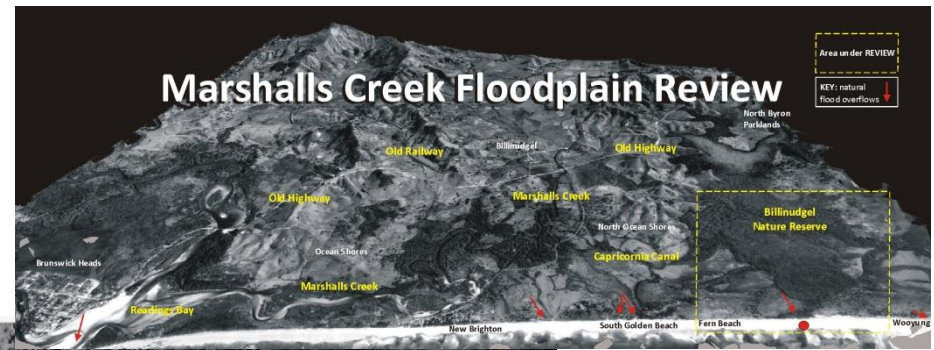
## Observation 2:

1947 yellow area showing location of the outlet just north of Fern Beach. *Note: 45 degree angle of the natural channel to the overflow outlet feeding from the 6 landform marker.*

## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



### Observation 3:

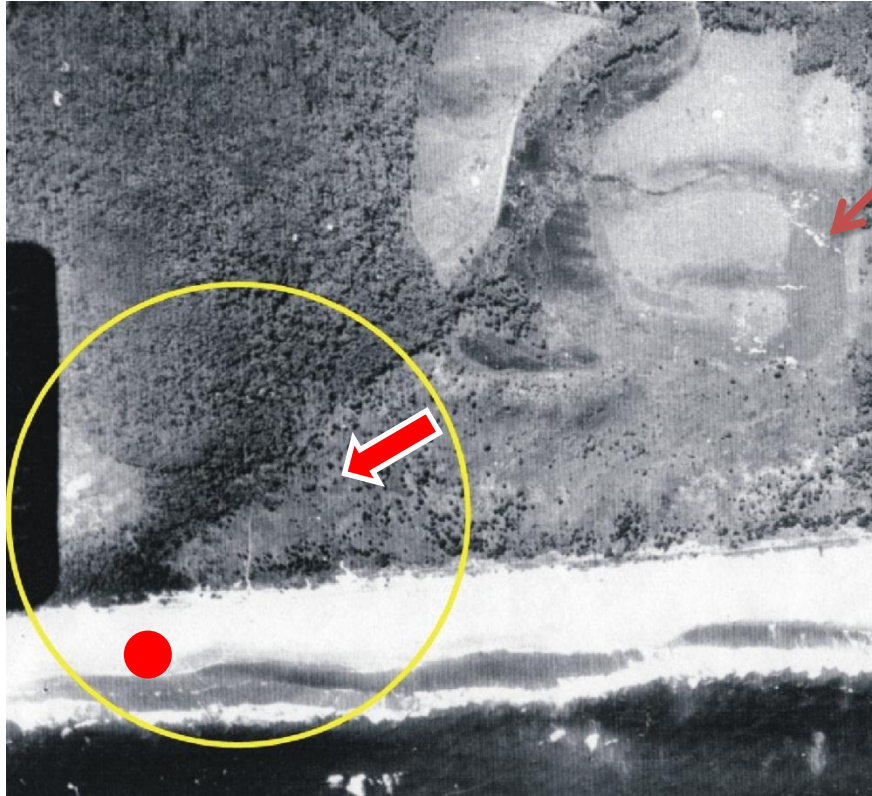
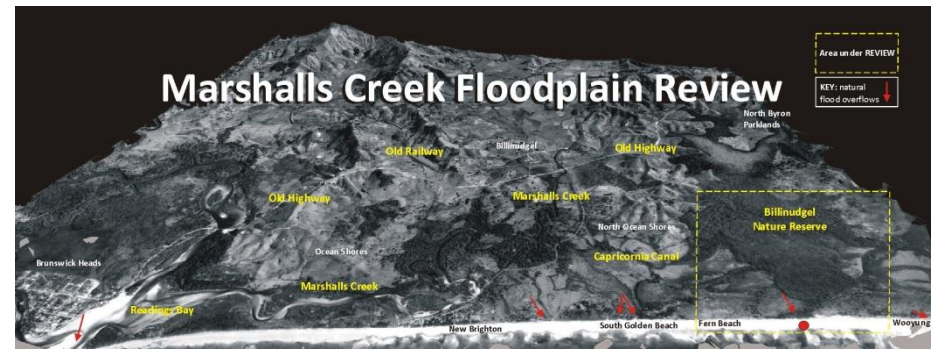
Additional proof identification of North Ocean Shores flood outlet 1944. *Note: 45 degree angle of the natural channel to the overflow outlet feeding from the 6 landform marker.*



## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



6 landform marker

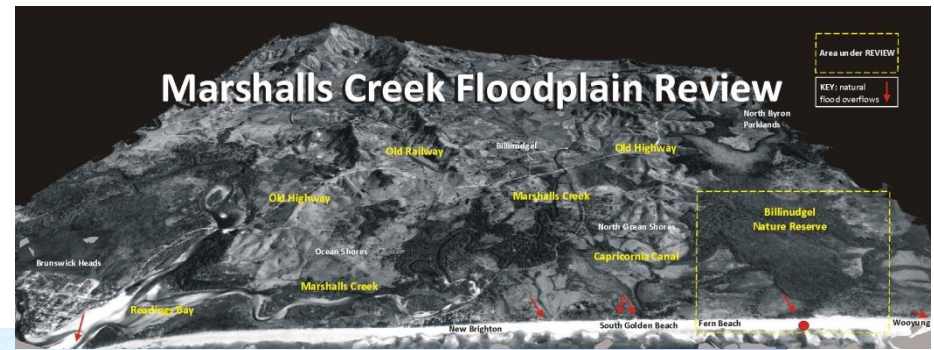
### Observation 4:

Closer inspection of the North Ocean Shores flood outlet 1944. *Note: 45 degree angle of the natural channel to the overflow outlet feeding from the 6 landform marker.*

## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



## Observation 5:

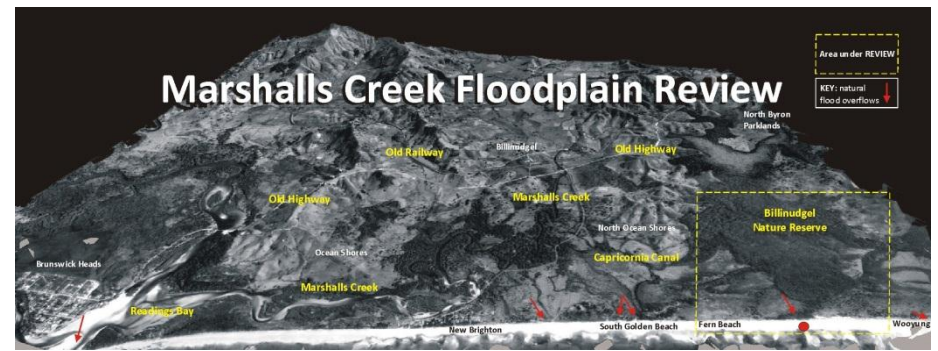
Circa 1974 Development of Stage 2 North Ocean Shores showing outlet open and flowing.



## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



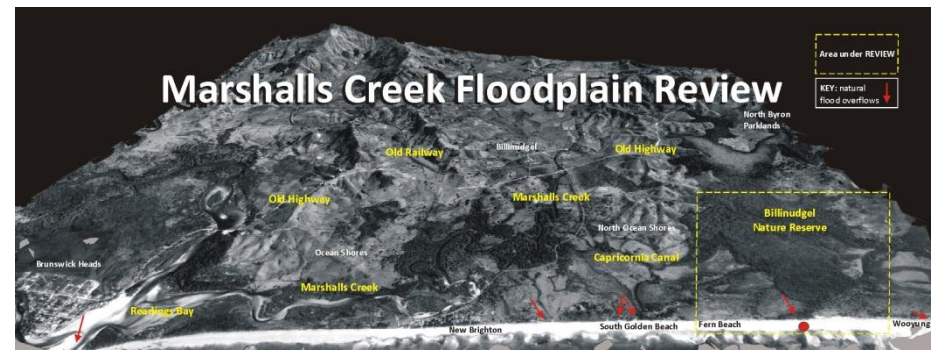
## Observation 6:

1974 Development of Stage 2 North Ocean Shores showing outlet open and flowing.

## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



## Observation 7:

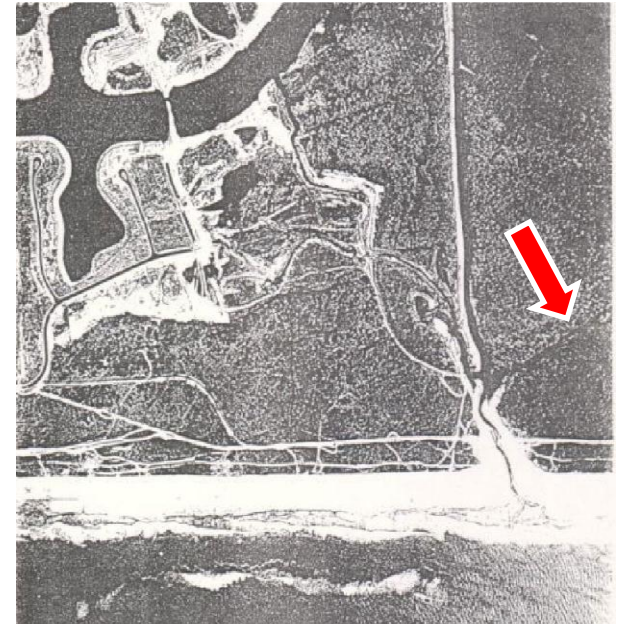
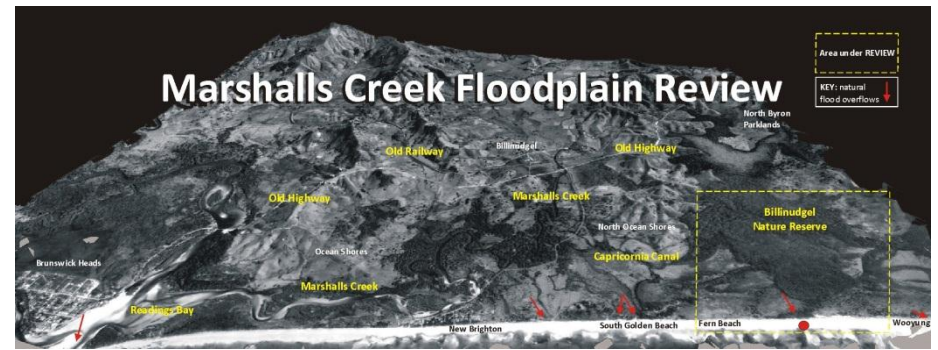
1976 North Ocean Shores **outlet closed** and **dune stabilisation** undertaken at the outlet mouth. (see slide 14 - Deputy Premier's letter to Council 1982)



## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



## Observation 8:

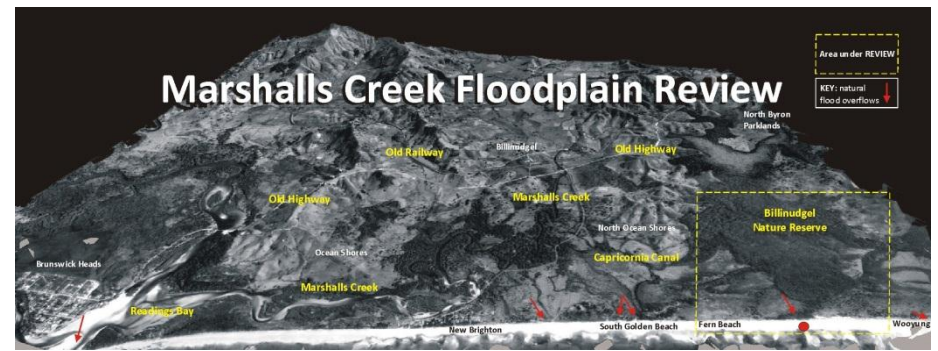
1980 North Ocean Shores Outlet closed. Note: red arrow identifying 45 degree channel.



## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



## Observation 9:

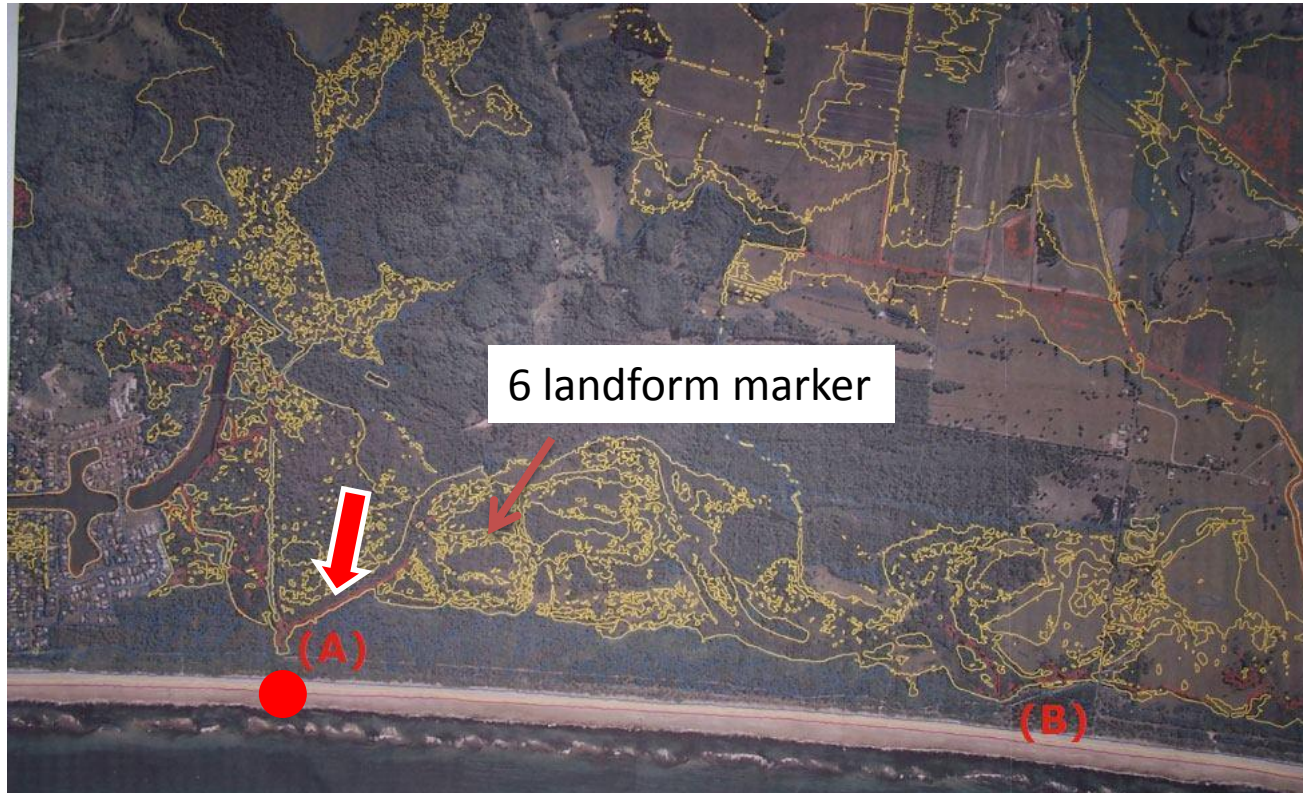
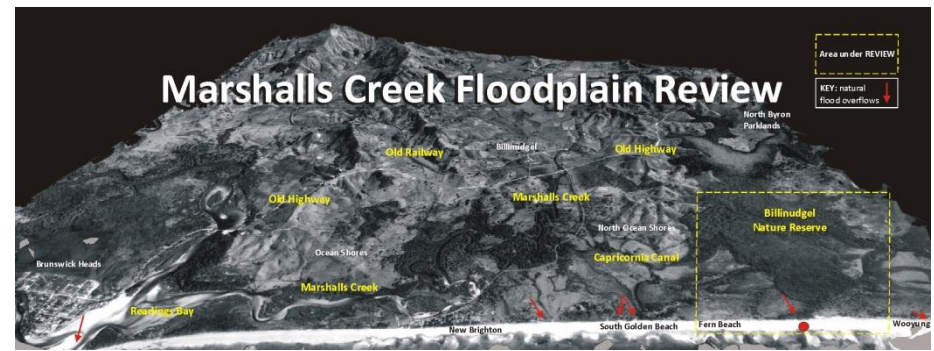
1987 Outlet still closed.



## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



(The coloured markings on the map outline the old creek banks that allowed the water to flow out into the ocean)

**Yellow Markings**

- below 2m AHD

**Red Markings**

- below 1m AHD

**Blue Markings**

- above 3m AHD

### Observation 10:

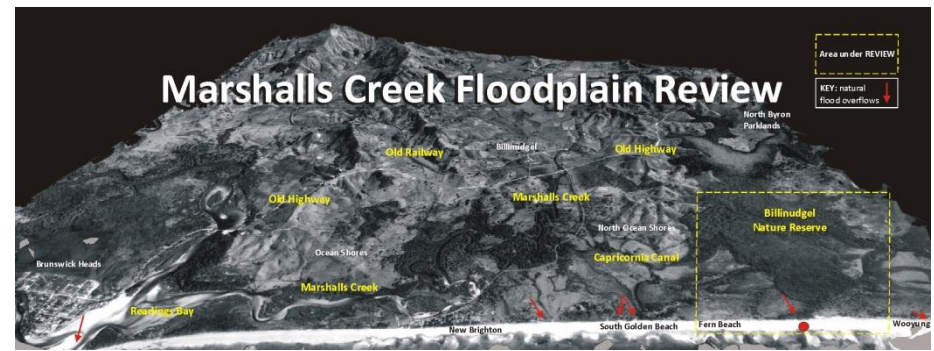
2007 Topographic map of land showing AHD levels around the outlet (A) at North Ocean Shores. *Note: red arrow identifying 45 degree angle of the natural channel feeding from the 6 landform marker.*



## TASK:

Identify the natural flood overflow location at North Ocean Shores.

Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



### Observation 11:

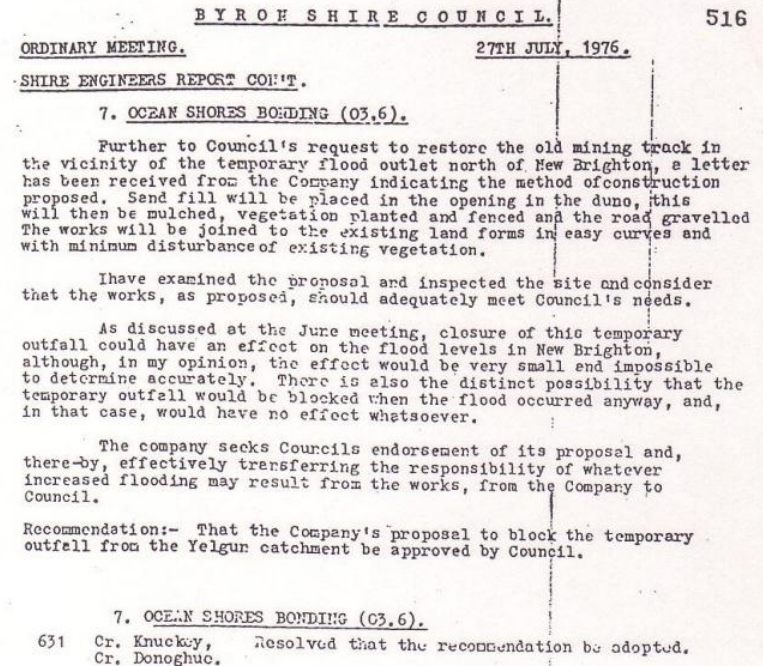
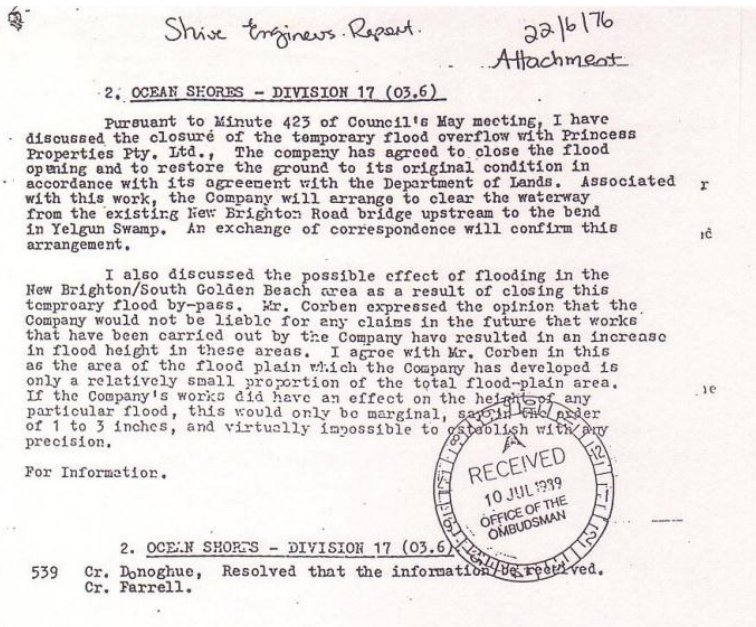
Photos showing the location of the outlet blocked by dunes and road.

**Note red arrow:** 45 degree natural channel still present in 2015.



## TASK:

Identify the **legal obligations of Council** to provide a 'duty of care' for those residents living on the Marshalls Creek Floodplain.



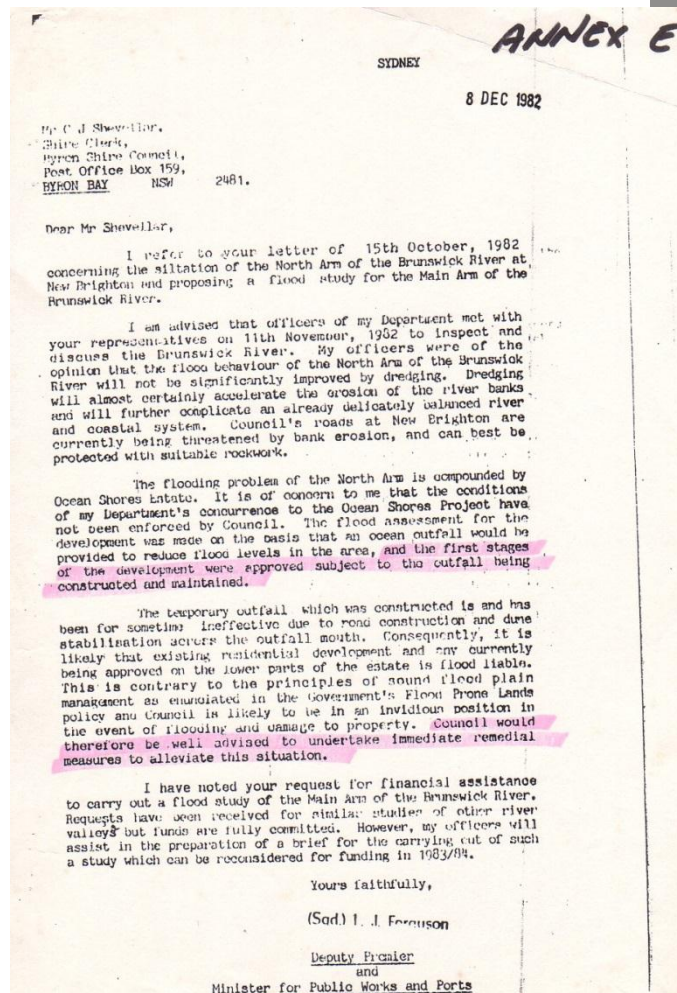
**COUNCIL RECORDS PROVIDED BY OMBUDSMAN SHOWING COUNCIL RESOLUTION TO ACCEPT LIABILITY FOR FLOODING CAUSED BY COMPANY COMPLYING WITH REQUEST TO CLOSE OUTLET**

## Document 1:

1976 BSC Engineer's Report and Minutes of Council Meeting.

## TASK:

Identify the **legal obligations of Council** to provide a 'duty of care' for those residents living on the Marshalls Creek Floodplain.



## Document 2:

1982 L. J. Ferguson Deputy Premier  
Minister for Public Works and Ports  
letter to Council.

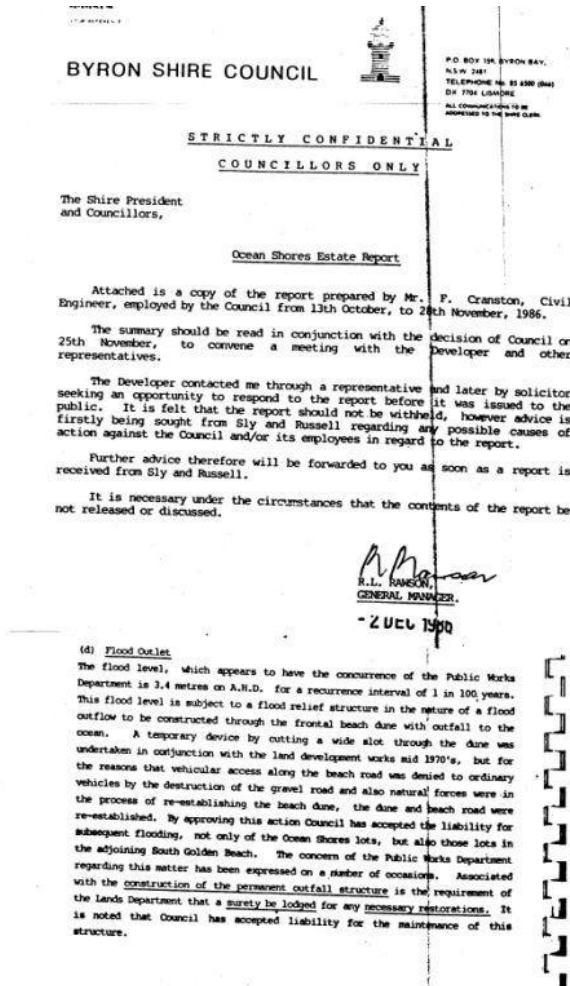
Regarding the temporary outfall  
being ineffective due to road  
construction and dune stabilisation  
across the outfall mouth ...

*'Council would therefore be well  
advised to undertake immediate  
remedial measures to alleviate this  
situation.'*



## TASK:

Identify the **legal obligations of Council** to provide a 'duty of care' for those residents living on the Marshalls Creek Floodplain.



### Document 3:

1982 Report to Councillors about the construction of a permanent flood outlet.

*'By approving this action Council has accepted the liability for subsequent flooding, not only of the Ocean Shores lots, but also those lots in adjoining South Golden Beach.'*

*'It is noted that Council has accepted liability for maintenance of this structure.'*

## TASK:

Identify the **legal obligations of Council** to provide a 'duty of care' for those residents living on the Marshalls Creek Floodplain.



CHCD/JT/03  
YOUR REFERENCE

Further Contact: Mr. G.A. McDonald

**BYRON SHIRE COUNCIL**

P.O. BOX 136, BYRON BAY, N.S.W. 2481  
TELEPHONE NO. 65 6500 (064)

ALL COMMUNICATIONS TO BE FORWARDED TO THE SHIRE CLERK

30 OCT 1985

The Managing Director,  
Ocean Shores Development Corporation,  
P.O. Box 19,  
BRUNSWICK HEADS, N.S.W. 2483

Attention: Mr. H. Cunningham

Dear Sir,

Re: Ocean Shores Bonding - Flood Overflow.

I refer to discussions between yourself and Council's Engineer on Monday the 28th October, 1985, where you requested justification for Council requiring your company to bond, at this stage, the construction of the flood overflow, from the estate into the ocean.

The position is, as explained by Mr. McDonald, that the development currently existing was originally approved by Council and the Public Works Department on the basis of a floodway design that incorporated a flood overflow as an integral component in controlling the flood levels. Subsequent development has proceeded at levels based on the assumption that the flood overflow would be installed.

It is estimated by the Public Works Department that the 1:100 year flood level at the northern divisions would be half a metre higher than that previously calculated, should the overflow not be installed as required. This has, of course, implications for the development in the northern divisions in particular, which were partially developed in the mid 70's (on the basis of the overflow being installed) and subsequently completed shortly after your organisation purchased the development company.

A quick perusal of Council's files has provided the following in support of Council's viewpoint in this matter (copies attached):-

1. Public Works Department letter of the 10th May, 1973 to Cardno & Davies setting out terms of approval to the hydraulic master plan, and development of the estate, which entails construction of a temporary flood by-pass and the bonding for the construction of a permanent one.
2. Council letter to developer of the 18th March, 1974, setting out conditions of approval for the Development Area Plan for the northern divisions, which includes a requirement that the "design of waterways be approved by the Public Works Department and Council".

....2

Ocean Shores Development Corporation - 2 - 30 OCT 1985

3. Public Works Department letter of the 6th August, 1975, to Cardno & Davies reconfirming the Department's original conditions of approval and detailing the matters (including the flood overflow) still outstanding at that point in time.
4. Minister for Public Works' letter to Council of the 8th December, 1982 expressing concern that his Department's original condition of concurrence for development on the estate - i.e. the flood overflow - had not been enforced by Council.
5. Public Works Department letter to Council of the 22nd December, 1982, reiterating that Department's requirement that a flood overflow be constructed and that, without it, the developed land is 'flood prone'.
6. Department of Environment and Planning letter to Council of the 9th May, 1984, advising that the Public Works Department's original requirements should be carried out "in fulfilment of the previous conditions of consent".
7. Minutes of Byron Shire Flood Plain Management Committee Meeting of the 7th August, 1985, (Item 2) where Mr. Farr, District Engineer of the Public Works Department, advised the meeting that "the flood overflow must proceed".

Whilst both Council and the Public Works Department are willing to consider any proposals that your company may have, as an alternative to the construction of the flood overflow (these proposals would have to include consideration of effect on existing development previously approved on the basis of the overflow proceeding), it is indisputable, from the attached correspondence, that the company is currently obligated to the bonding of the overflow. It is also pointed out that the overflow is presently included (at \$130,000) within the current bond of \$295,000.

Yours faithfully,

C.J. SHEVELLAR  
SHIRE CLERK.

PER: [Signature]

ENCL.

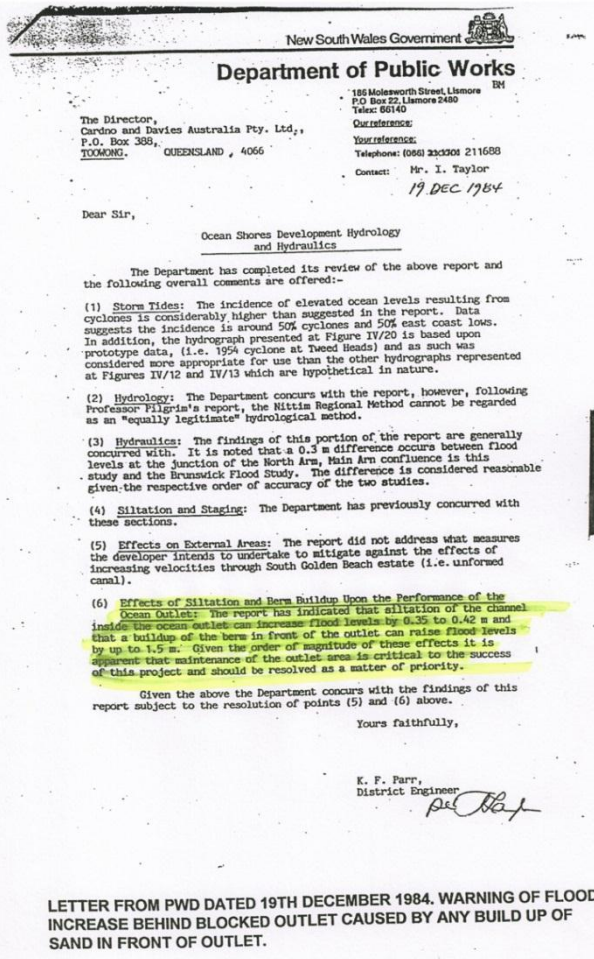
## Document 4:

1985 Letter to OS Developers from Shire Clerk.



## TASK:

Identify the **legal obligations of Council** to provide a 'duty of care' for those residents living on the Marshalls Creek Floodplain.



## Document 5:

1984 Public Works letter warning of increased flood levels behind blocked outlet caused by a build up of sand.

## TASK:

Identify **possible flood mitigation strategies** to lower the flood levels on the Marshalls Creek Floodplain and along the coastline from Wooyung to Brunswick Heads.



## Report 1:

**Proposal Brief presented to BSC:** To identify 3 locations along the coastline from Wooyung to the Brunswick River mouth to position flood pumps to remove excess flood water off the floodplain into the ocean in order to lower the flood levels on the floodplain at critical times during a major flood event.

**The location for the pumps were selected on the basis that they are:**

1. Low elevation (around 1.2m/ 1.3 AHD), hence will be an area that will be inundated early in a flood event.
2. Still have semi-intact remnant drainage channels that will carry floodwater from overflow from Marshalls Creek or Billinudgel Nature Reserve.
3. Are located on Crown Land.

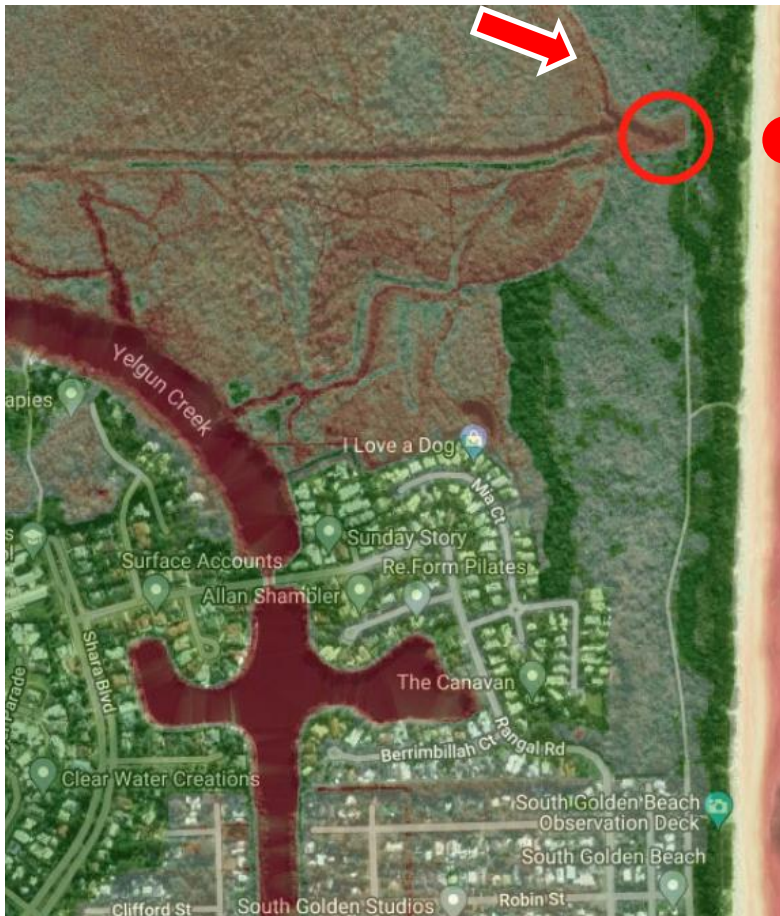
**The 3 locations identified are:**

1. North of sports field at New Brighton (153.5491, -28.5037)
2. South of levee at SGB (154.5499, -28.4984)
3. Billinudgel Nature Reserve north of Fern Beach (153.5506, -28.4856)



## TASK:

Identify **possible flood mitigation strategies** to lower the flood levels on the Marshalls Creek Floodplain and along the coastline from Wooyung to Brunswick Heads.



### Location 3:

Billinudgel Nature Reserve  
north of Fern Beach  
(153.5506, - 28.4856)

*Note: red arrow identifying  
45 degree angle natural channel  
feeding from the 6 landform marker.*



### ***Committee members;***

***Website :*** [https://brunswickvalley.com.au/flood-history/north\\_byron\\_shire.htm](https://brunswickvalley.com.au/flood-history/north_byron_shire.htm)

### ***Research Team***

*Cr David Warth*

*David Brealey*

*Mark Russell*

*Jan Mangleson OAM (OSCA President)*

*Denise Stammers (OSCA Treasurer)*

*Margaret Kelly*

*Jill Spring*

*Heather Rowland*

*Diane Boyd*

*Graeme Boyd*

*Michael James*

*Photos courtesy of Frank Mills OAM former Byron Shire Councillor and Jim Mangleson former OSCA Flood Committee Member. OSCA Inc. endorses this report as true and accurate.*