

Geological Society of Jamaica
March 11, 2006

Flooding at Moneague

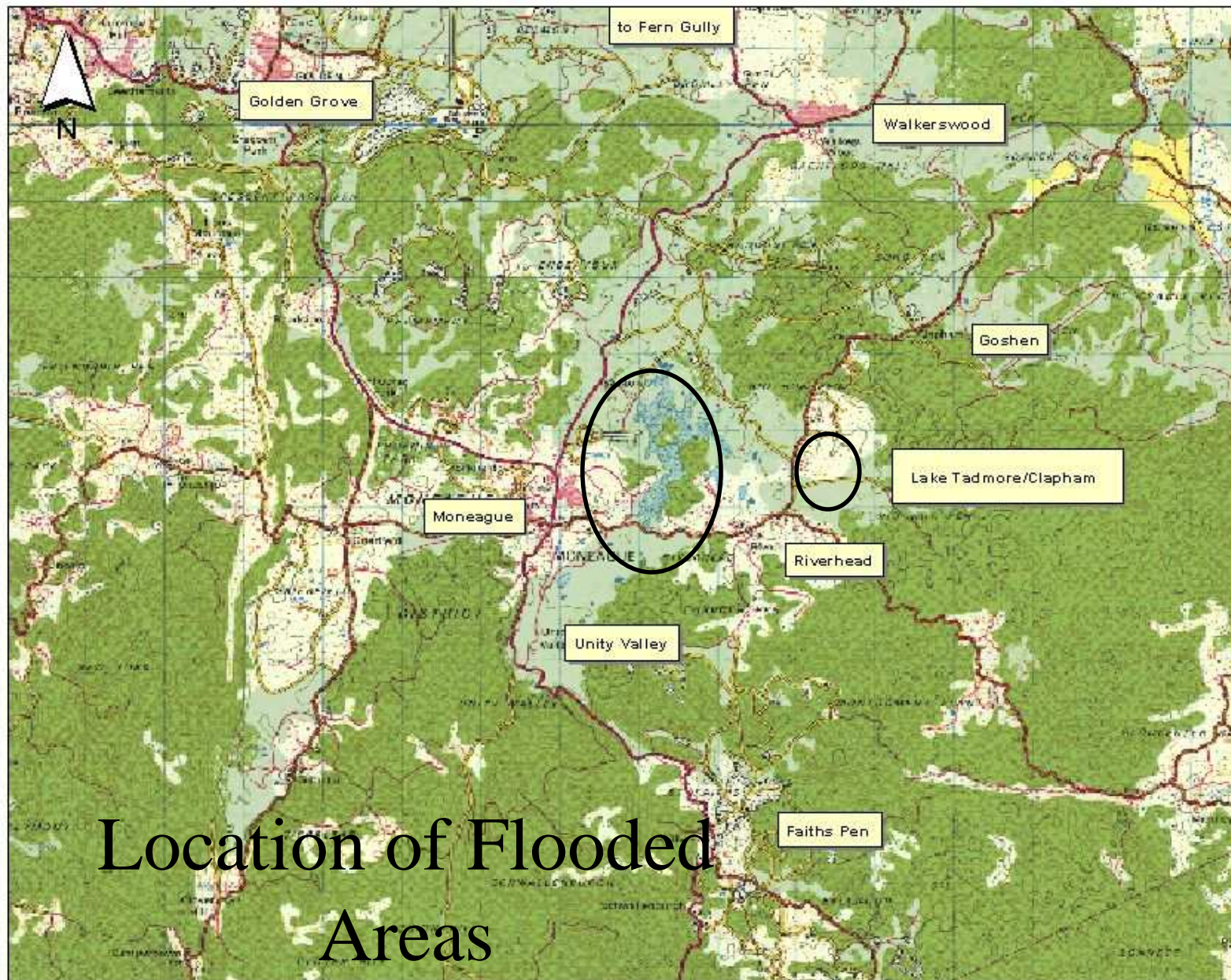
Basil Fernandez
Managing Director



Water Resources Authority

Content

- Site Location and Description
- History of Flooding in Moneague
- Factors Abetting Flooding
- Present status and projections
- Recommendations
- Summary



Location of Flooded Areas

History of Flooding

Year of Rise	Annual Rainfall (mm)	Lake Life (years)	Impact
1810			<u>>4 mi² covered</u>
1863			>1 mi² covered
1874			<1863 Lake
1886	2794		
1916	3,205	3	>0.7 mi² , 8 houses covered, 2 lives lost
1933	3,582	>3	0.8 mi² (500 acres), 18 houses covered, 1 life lost
1963			
1970			
1974		>3	
1988			
2002			
2005-	3,398 (in 2005)	Still rising	0.70 mi² , 12 houses covered 2 lives lost



KINGSTON, JAMAICA, SATURDAY, JANUARY 20, 1917.

A Body of Fresh Water
Set Amid Beautiful
Surroundings.

**Visitors to Moneague
Can get Accommoda-
tion at the Hotel.**



Road is source of new springs

The police had to cut the Land Rover and a 12-foot boat left at the station by three Indian men, about 300 yards from the shore. People attending court to evict the courtneers due to fear of water which flooded the main road and the river.

At Prosperity police station the police could not reach their hall to have their materials and the main hall, a 12-foot boat, and their vehicles were stuck in water on the main road near the White River and Osho River.

Children could not get to school because of a heavy rain, which was the school entrance.

Rough seas hamper feeding of jamaicans

OCRO RIOS, St. Ann, Jamaica (From our correspondent) — Rough seas and gales from the west at Pura Gully, the main mangrove and fishing area, have caused the water across the road to be very high.

Source of the stream is in a marshy area, and the spot in late December, when there was heavy rain, the water was very high.

Another spring has broken out in the area, and the road and is sending a sea of water over the road, and the water is the first stream.

The water has washed in this area in recent times the Ocho Rios police are without a road, and the water is so personed was damaged.

It has been decided that rough seas hamper feeding of jamaicans

1965: Anita Mahfood, a 25-year-old dancer whose stage name was Marguerita, is stabbed to death early in the morning after returning home from an engagement at the Baby Grand Club in Cross Roads, St. Andrew. Marguerita was married to British Honduras boxer Rudolph Bent, and received her divorce last November on the ground of cruelty. She made her first appearance on stage at a Vere Jones Opportunity Show at the age of 12, and played the role of a night club dancer in the documentary, "It Can Happen To You" made by the Jamaica Film Unit.

"De meek shall inherit the eart'
an' de fullness thereof -
but look what she inherit?
six months pregnant, an' five mout' fi feed!" 1976
From: I An I Alone
by Michael Smith

Hartley Neita
1997

Long Continued Rain Inundate Considerable Areas in St. Ann.

NEWS FROM MONEAGUE

**Corn is in Great Demand
At Markets and Price
Is Advancing.**

(From our Correspondent.)

Monongue, Oct. 23.—The local lakes around Monongue have been overflowing with rain water since last week, and the numerous sources of water are overflowing. An up-flood of a great bulk of water from the deep-buried rocks. The vast area of about 1½ miles in circumference on the Holt. Col. Barrett's farm, where the water is covered completely with water. This is known as "Tadmor Lake."

"Swamp, Big Pond, Mary Sterling, and other lakes, which have all been united by local straits and channels into one long expanse of fresh water stretching for miles from Monongue to the sea."

The scene is most beautiful, in creeping down Mt. Diablo on your way from St. Faith's Pen to Monongue, the pleasant scene takes the eye, and presents a form of nature blessed to behold.

Water ducks, coots, and other birds dot the surface, and makes fine game for the hunter. The salt water cool, fresh, and beautiful.

The rain continues day and night. Bridge for pedestrian are inundated. The water is so high that it has cut through private properties in order to make the people get out to shop and do their business.

The road to the head of Monongue and River Head was damaged by the volume of water between two lakes, when the stream was rapidly seeking its usual bed. A small trail was made to facilitate the flow on top of what the road remains somewhat safe.

Boy drowns in
Moneague lake

[Illegible handwritten notes]

1934
MONEAGUE LAKE
IS STILL RISING
(From our Correspondent's
Lake, Jan. 1934)

22 — 24
 the main
 across the
 Street to Louisa
 and Miss Brown's lodge
 river head side easterly.
 three quarters of a
 several points from
 views of the lake can
 be below the tenth
 means to Ohio River.
 as our sparkling
 left hand side of
 Fern side of
 several miles till
 a rivulet,
 that the spring
 Louisa Lake.
 is nicked a
 low of Amity
 water is on
 latter road.
 Blue Hole,
 at a black
 crystalline
 in (oolite)
 Amity
 or Blue

LAKE STILL RISING

(From our Correspondent.)
MONEAGUE April 24—The Moneague and Tadmore lakes continue to rise and with rainy season approaching, may probably extend its bounds.

The Government has sent a boat up to the Tadmore lake to convey people across. They have also sent a new one to expedite travelling on the Moneague lake. Both lakes have joined together.

The waters are seeking new levels and will make another block on the River Hend road below Watsonville at Andrew Wright's gate from thence there is likelihood of its turning through Dalrymple Park to join the river.

INTERESTING HISTORICAL Highlights

Today's Memory Gem
life shall together.

100

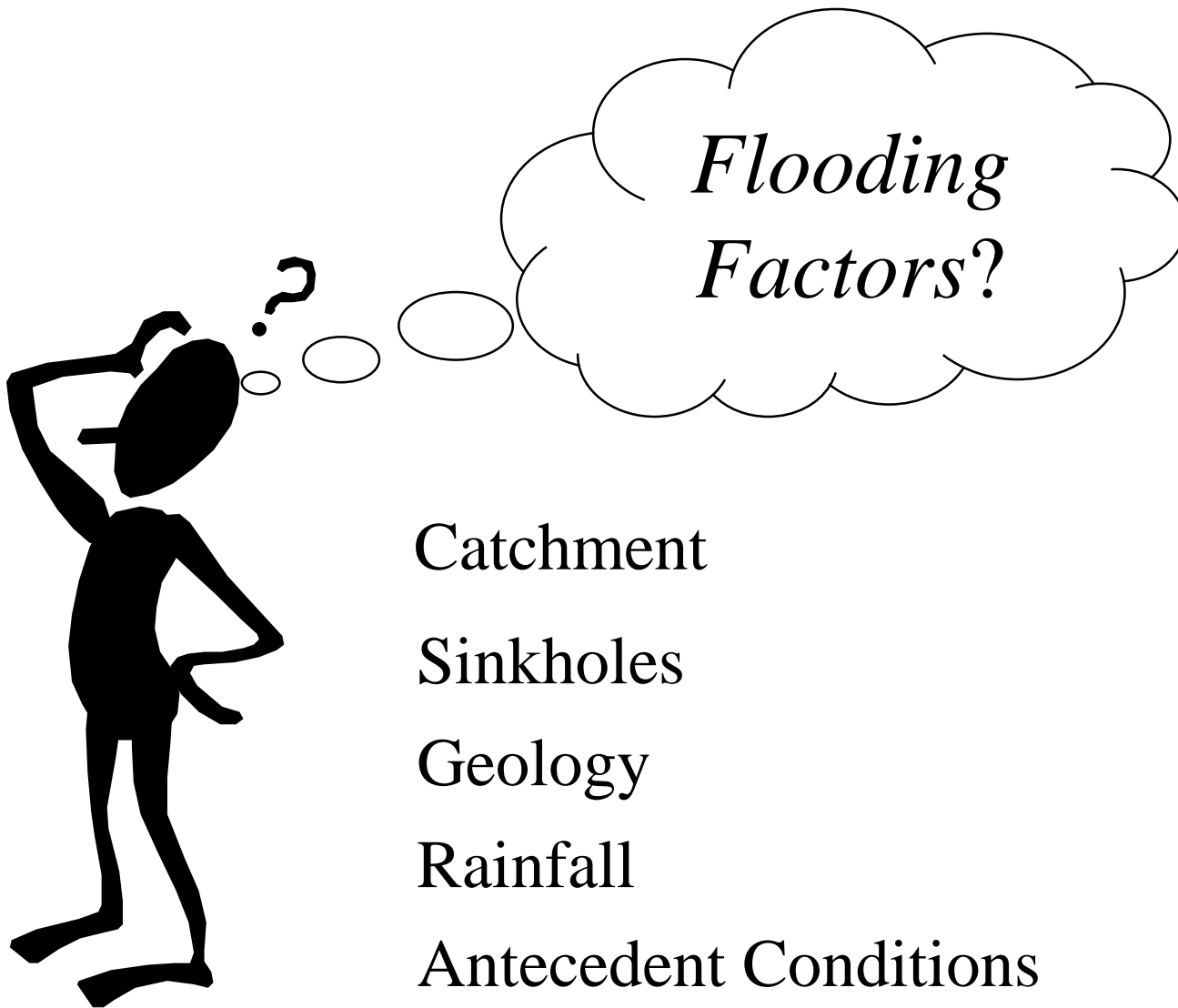
Extracts

1811: The Moneague Lake, which started falling six weeks ago now covers 3 square miles of land. So far it has fallen 2' 3" of its perspective, and is falling approximately 1/2" per day. Because properties have been destroyed by the lake, the Vestry has withdrawn taxes for the properties which have been inundated.

dialect tradition of Dunbar.

1934: Acting Governor, Sir Arthur Jeff, and other senior officials visit the Moneague Lake in St. Ann to assess its potential as a tourist attraction. They find hundreds of acres, roads and 18 houses in the area under water. Motor boats and canoes are being used for transport and recreation, especially at weekends when visitors and Jamaicans from Kingston and other parts of the island visit the site for picnics, swimming and sailing. The Lake started rising on August 15 last year, and a quick search of historical records reveals that the lake appeared in May 1811, and on other occasions.

1938: The first issue of the **Jamaica Labour Weekly**, a single sheet newspaper printed on both sides, is published as an organ for the Jamaica Workers and



Flooding Factors?

Catchment

Sinkholes

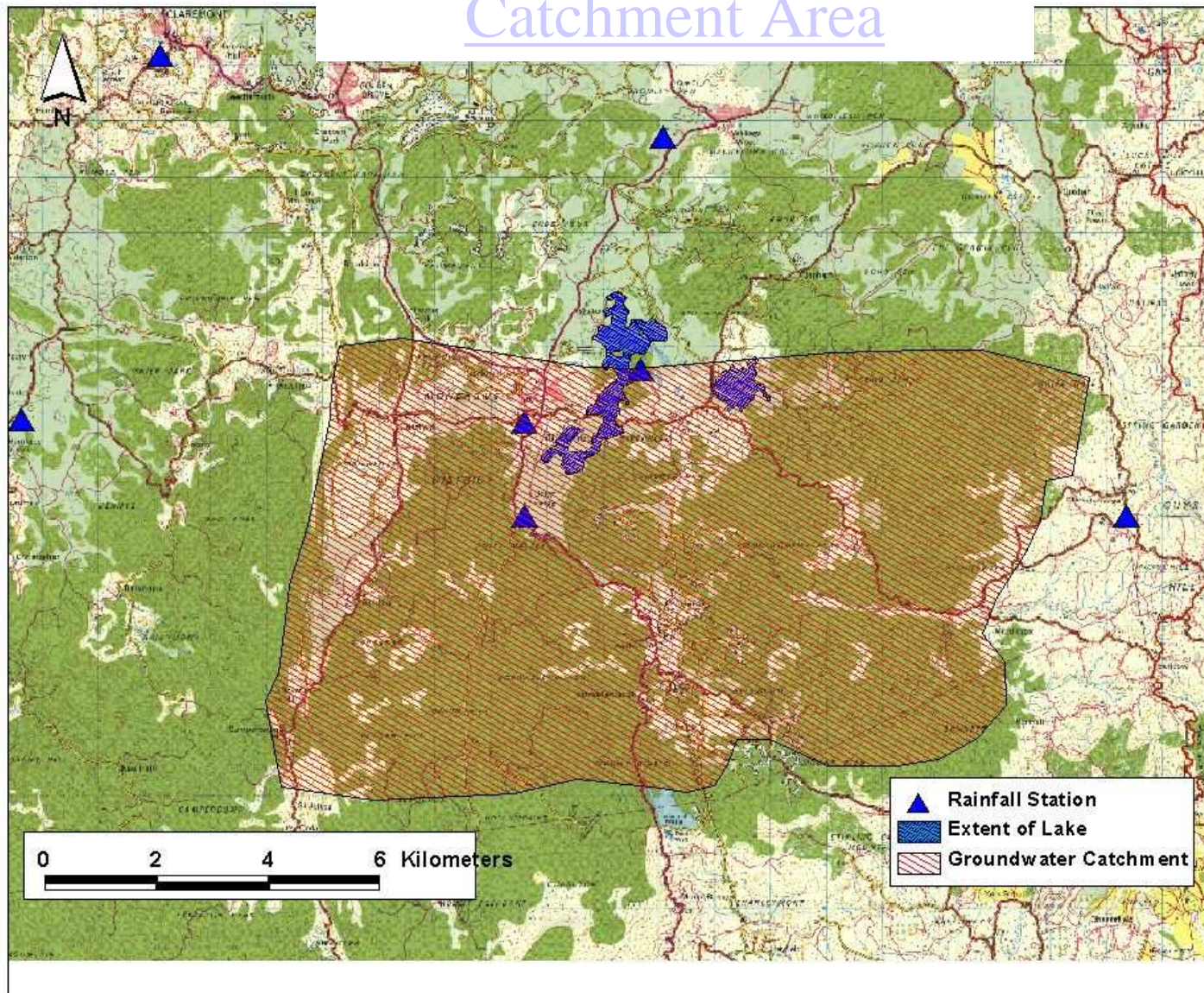
Geology

Rainfall

Antecedent Conditions

Groundwater Levels

Catchment Area









Sinkhole map

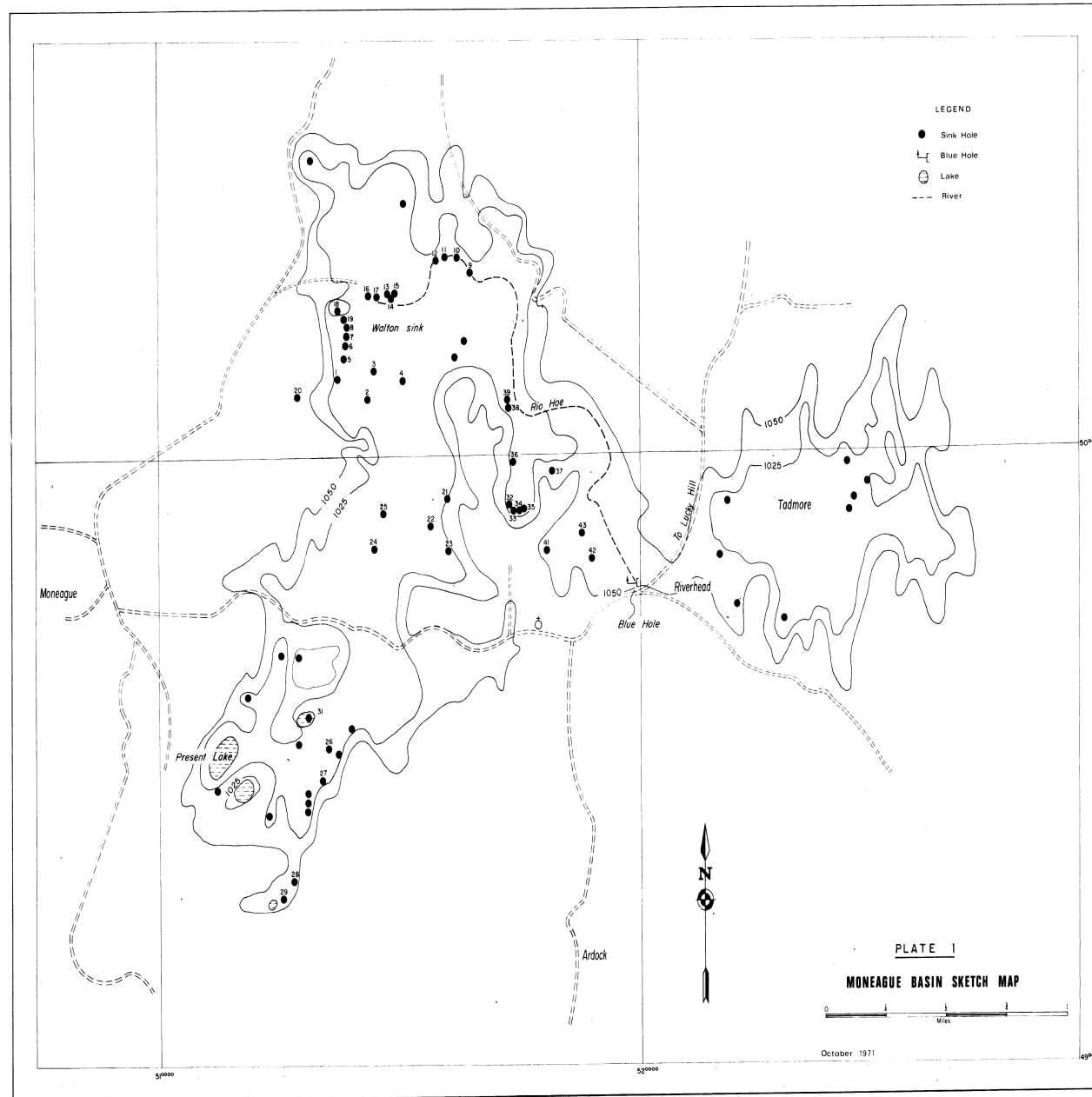
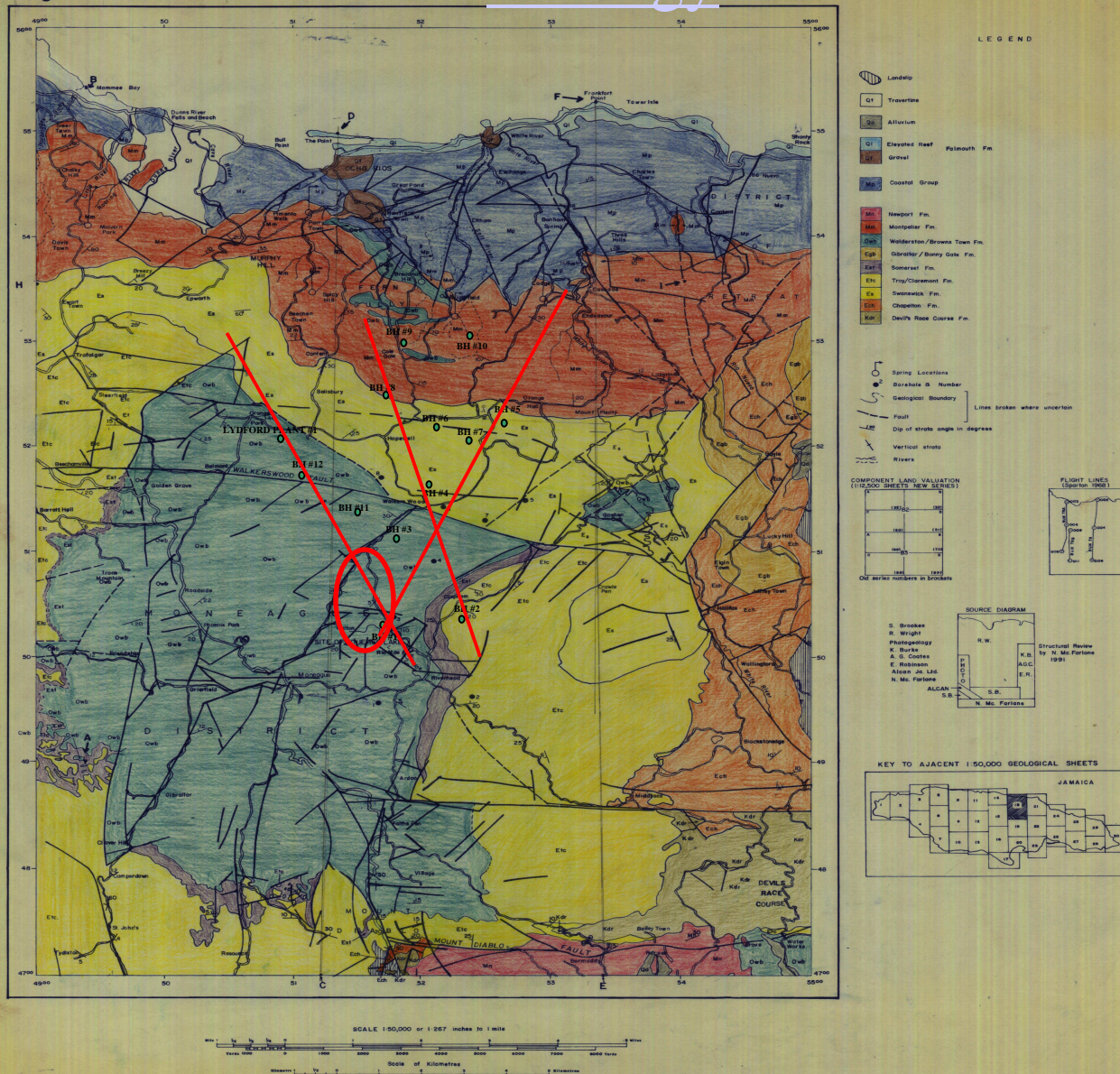
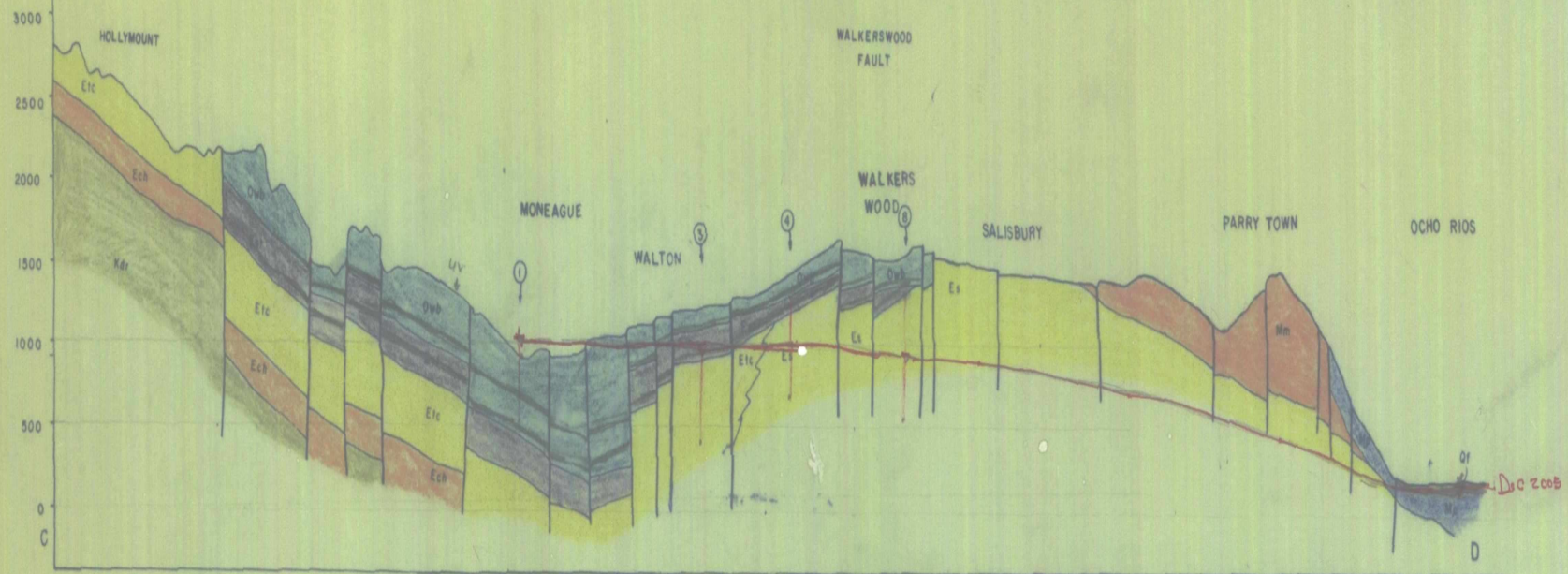


Fig. 2 GEOLOGY OF WHITE RIVER BASIN.

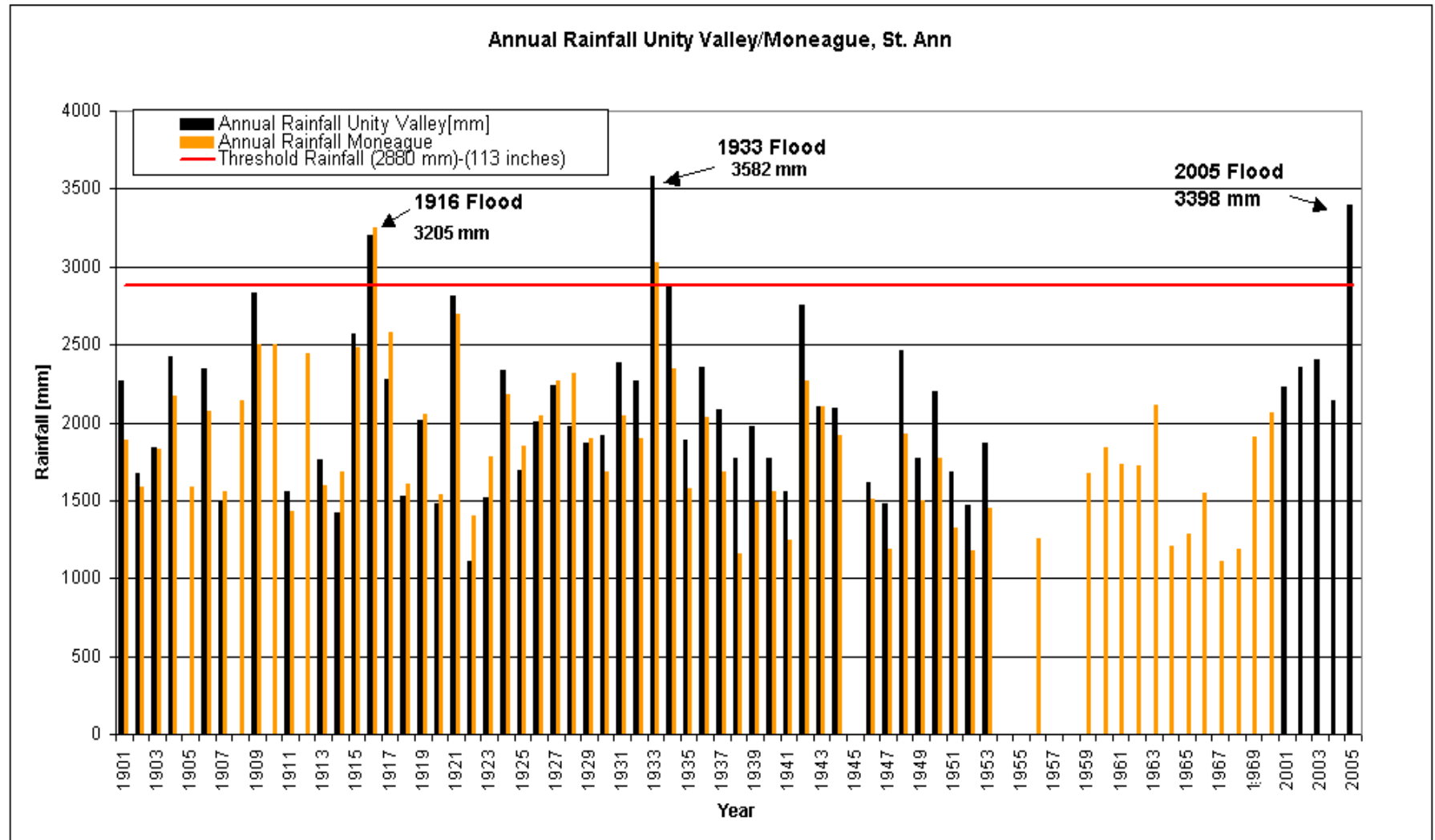


Geologic Factors

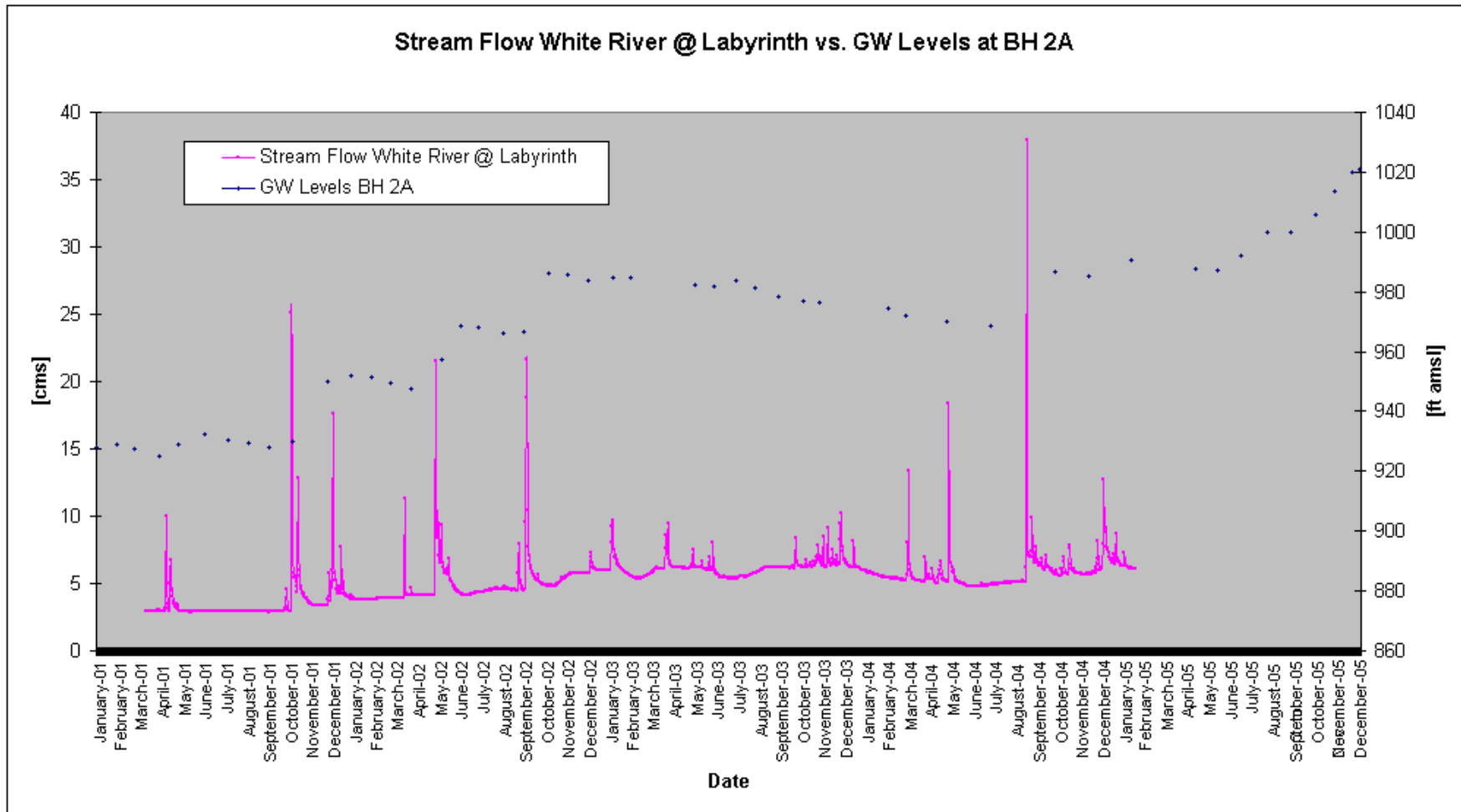
- Volcanics – runoff from - which is recharge to the Limestone Formation
- Basin underlain by White Limestone Formation
- Features; faults, fractures and sinkholes
- Water ponded by low permeable formation to the north.



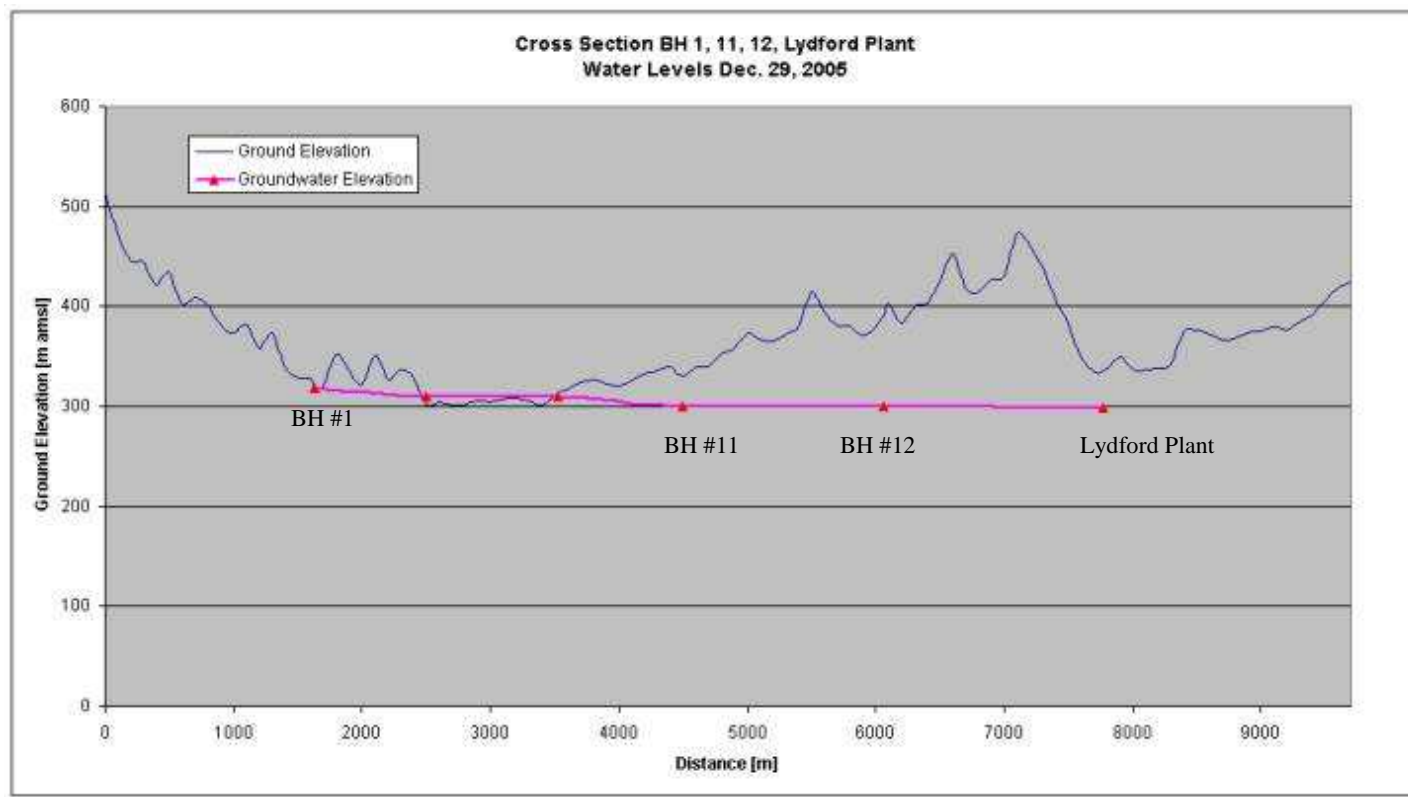
Rainfall



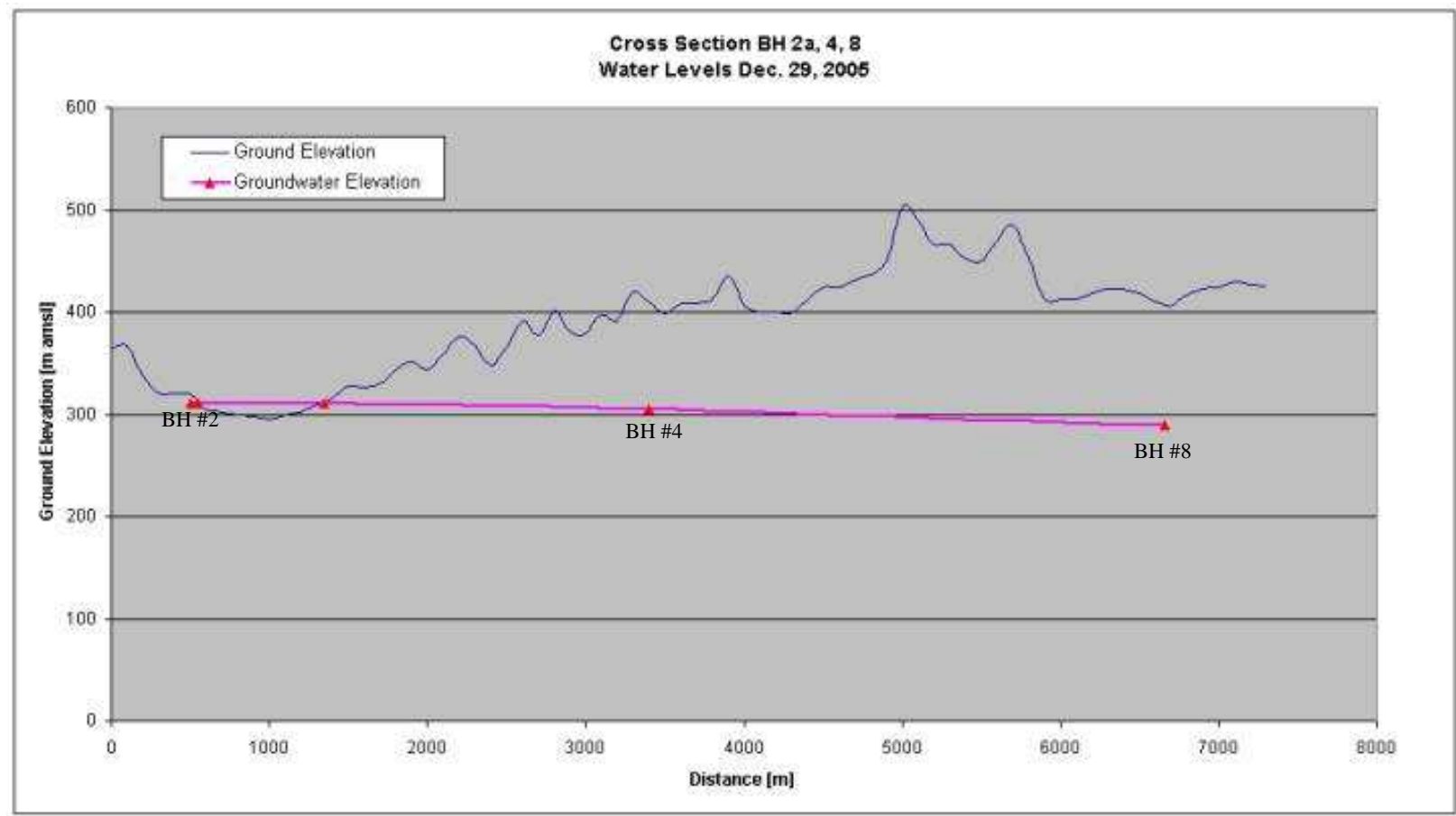
Antecedent Conditions



X-sec BH 1,11,12, Lydford Plant

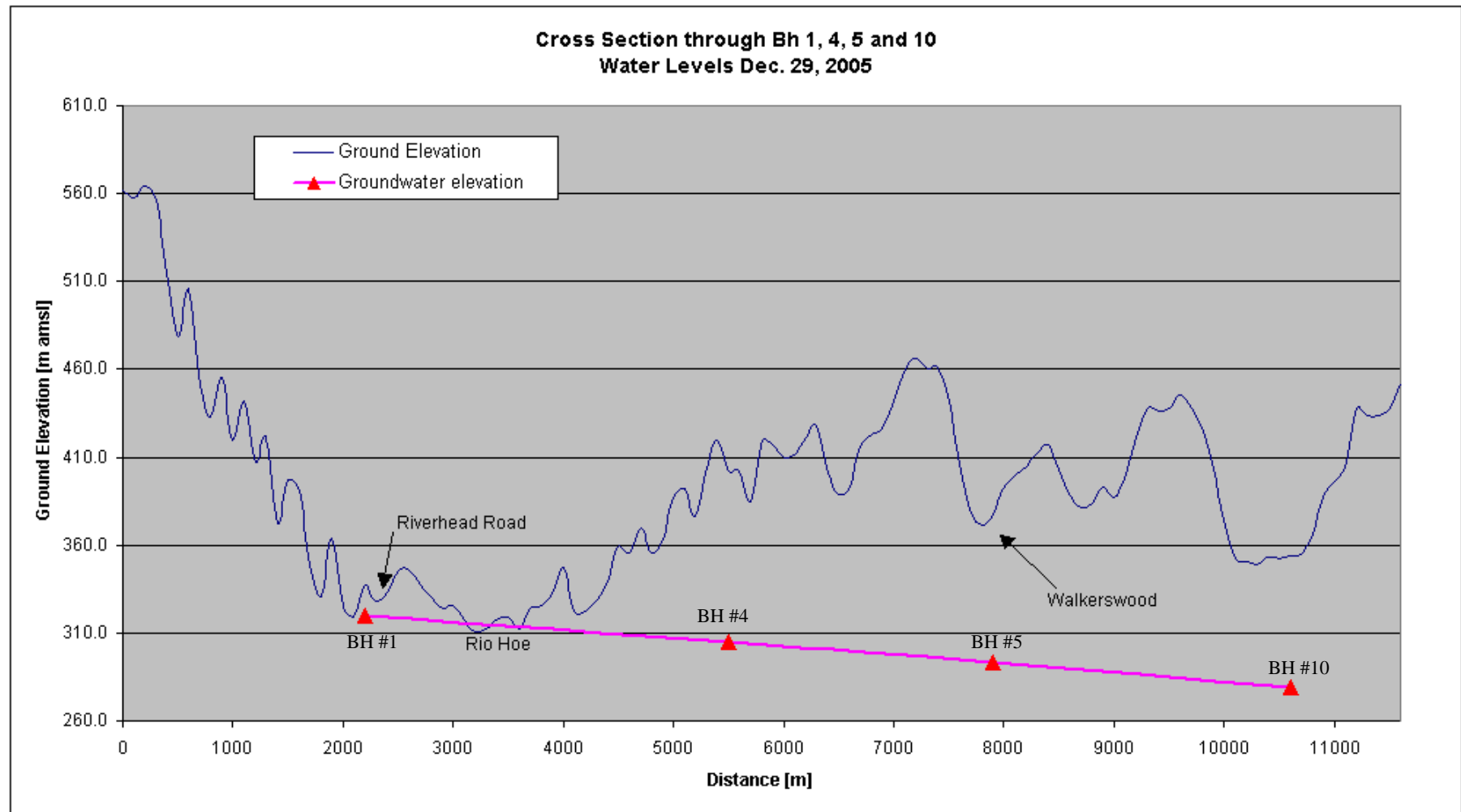


X-Sex BH 2,4,8

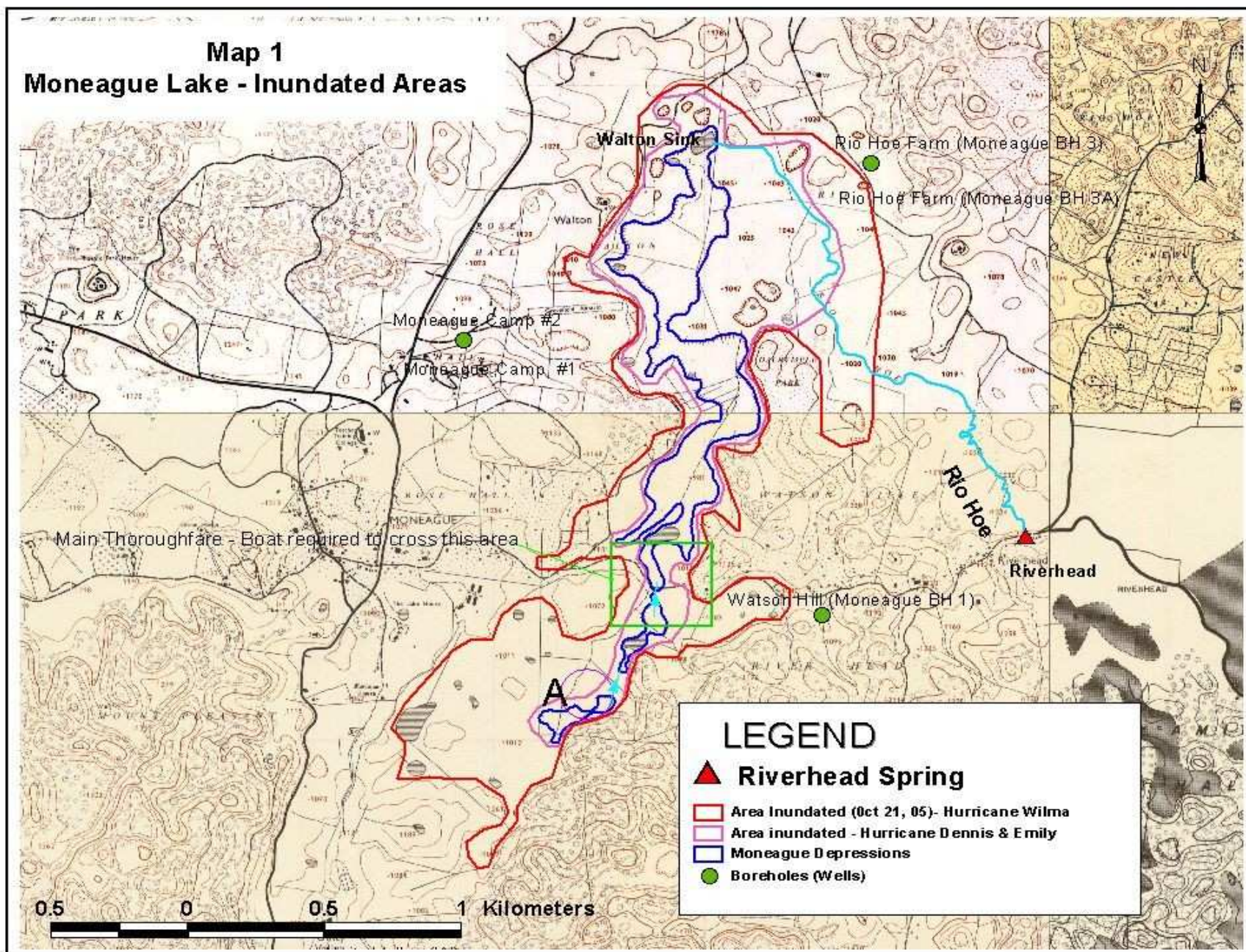


BH – Bore Hole

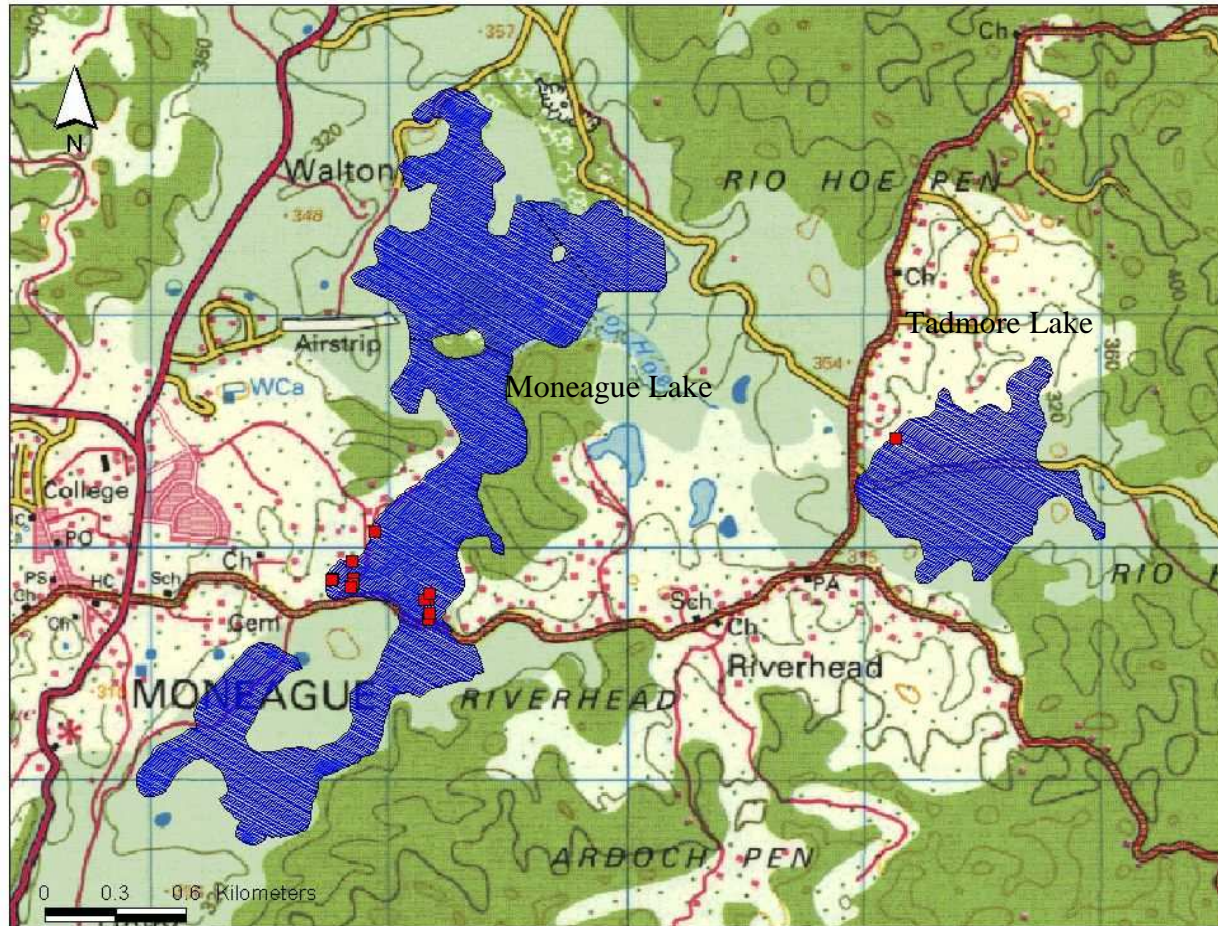
X Sec BH 1,4,5,10



Map 1
Moneague Lake - Inundated Areas



Present Flooding



Moneague Lake

- Area covered 1,680,859 m² (415 acres)
- Max depth – 12.5 m (41ft)
- Storage – 20 Mm³
- 12 house inundated
- Road flooded - limited access to communities
- Riverhead road depth – 7.5 m
- Rate of rise .01 ft /day
- Rate of decline-0.01 ft/day

Tadmore (Clapham) Lake

- Area covered 491468 sq. m (121 acres)
- 2 houses inundated
- Goshen road threatened
- Road in Village inundated
- Mining Pits open-risk to life
- Lives severely affected
- High social cost







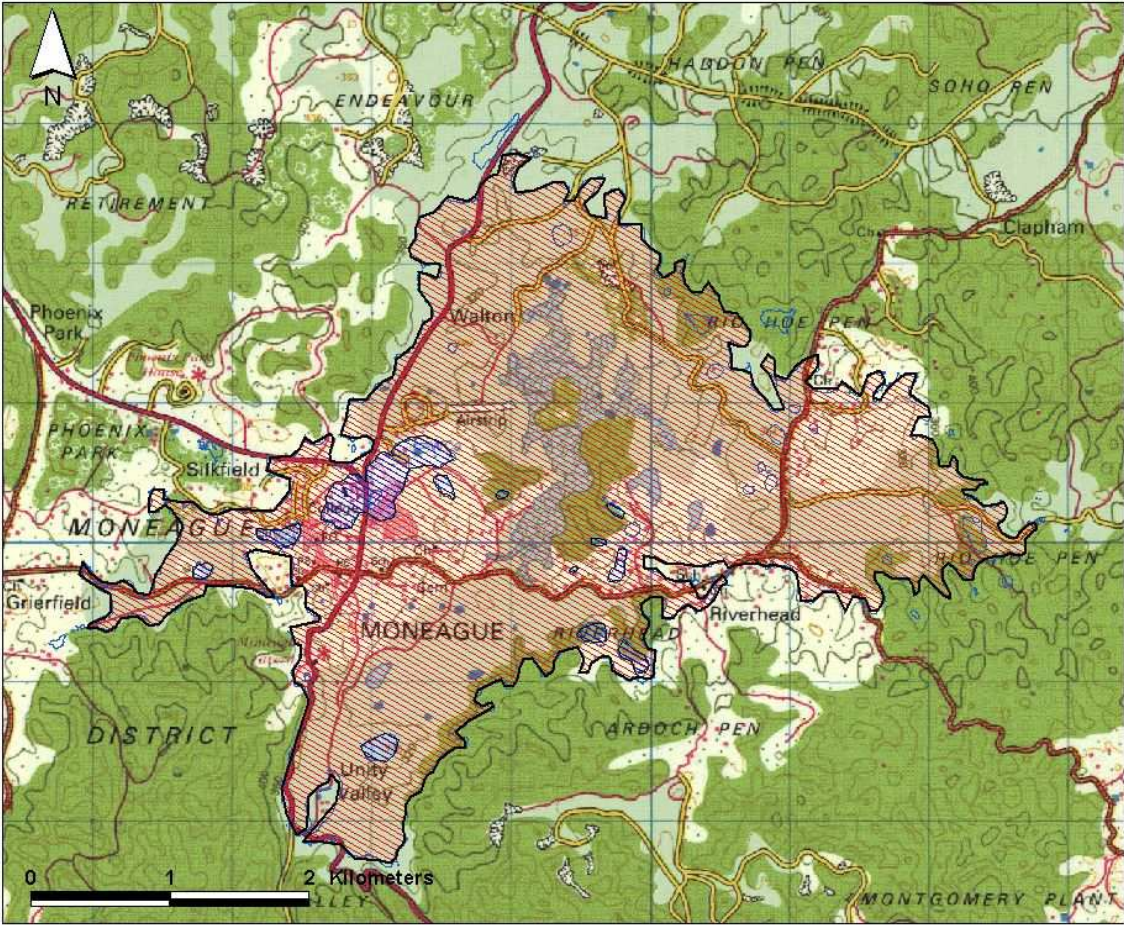








Moneague Lake approx. 3000 acres



Recommendations

- Investigate the feasibility of dyking or raising the level of the threatened Riverhead to Goshen Road and implement the appropriate action.
- Regular monitoring of the water quality and dissemination information to the community with the collaboration of the Ministry of Health
- Assess the suitability of the lake for recreational enterprises and provide support for safe implementation.
- Demarcate based on 1933 flood levels, the zones for appropriate landuse. (Restrict the flood zones to agriculture)
- Relocate houses from within the flood zones
- Clean sinkholes once water has withdrawn and keep them open to assist with drainage.
- Record data, implement monitoring programme and use information to give early warning of future flooding

The citizens of Moneague venerate the lakes because it stands almost unparalleled in our island where forces of nature have destroyed our cultivations, submerged our homes and at the same time counter-balanced their evil by giving us the opportunity to construct our bamboo rafts and other crafts to earn a daily bread on the bosom of the lakes. It gives pleasure to see how the visitors smile as they stand on its shores day after day. There is a sad feature also which is that reports say outsiders are contemplating to bring boats here to compete or take away the little pittance that the rafts and boats belonging to those whose fields and lands are submerged are earning.

LUCIUS A. RICHARDS.
Moneague, January 15, 1924.