Australian Government

Queensland
Wetlands Program

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Wetland Mapping and Classification Methodology

Overall Framework

A Method to Provide Baseline Mapping and Classification for Wetlands in Queensland

VERSION 1.2

Attachment 8

Local Hydrology / Disturbance Modifier Examples

Introduction

This attachment details practical examples of how the local hydrology and disturbance modifiers should be applied in the assessment of water body data derived from the mapping process.

These examples are indicative (although not exhaustive) of the range of different water body “types” that may be encountered in the manual attribution stage of data development, as well as highlighting some of the problems that may be encountered during this process.

Care should be taken to reference the main Wetland Mapping and Classification document during the interpretation of these examples to ensure consistency in the logic behind the application of the modifiers definition (refer to Table 4: Local Hydrology/Disturbance Modifiers).

H1 – No obvious local hydrology / disturbance modification

- Hydrological and/or other disturbance includes that which can be determined from satellite imagery or aerial photography such as geomorphological changes; built structures; urban development, i.e. building over wetlands; crops; etc. For example free range grazing etc. would not be included as its impacts would not be clearly visible.

- No evidence of any modifications on Geodata or imagery

- Not on pre-clear map (scale) but looks natural on imagery and is on 1960s (or earlier) photography

H1 continued

Note:

- H1 may, at this stage, include many examples of floristically altered wetland systems. These altered systems would not be easy (if not impossible in some cases) to determine from the imagery.
- Modifiers are essentially dealing with condition relating to “water” rather than a vegetative “remnant” or other condition and state concept.
- The “ecological” condition of the water body will be captured in the RE allocation stage.

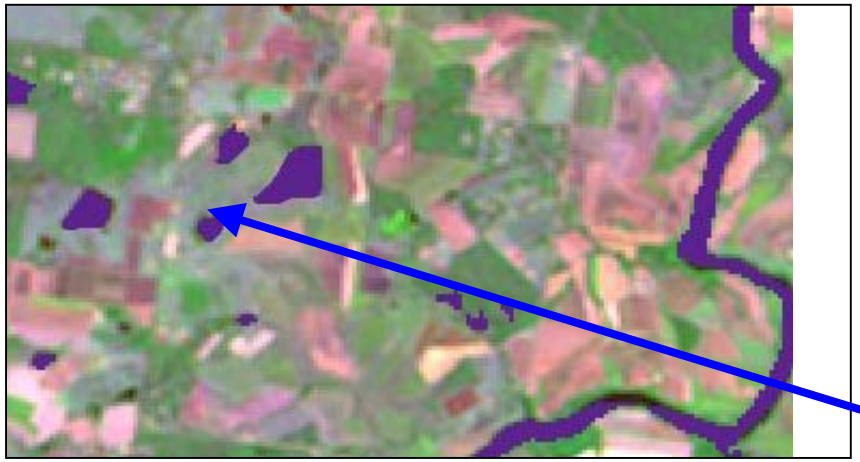
Hymenachne amplexicaulis

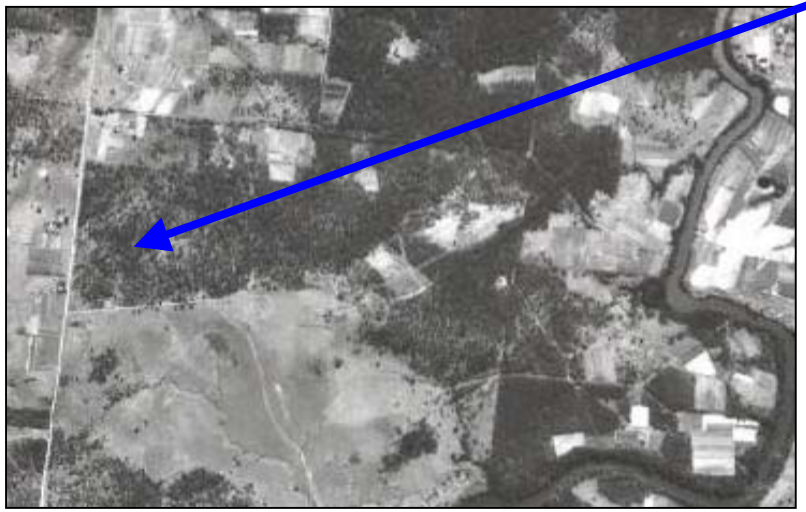
H2M1 – Riverine or ex-riverine (lacustrine) water bodies associated with dams and weirs located in a channel

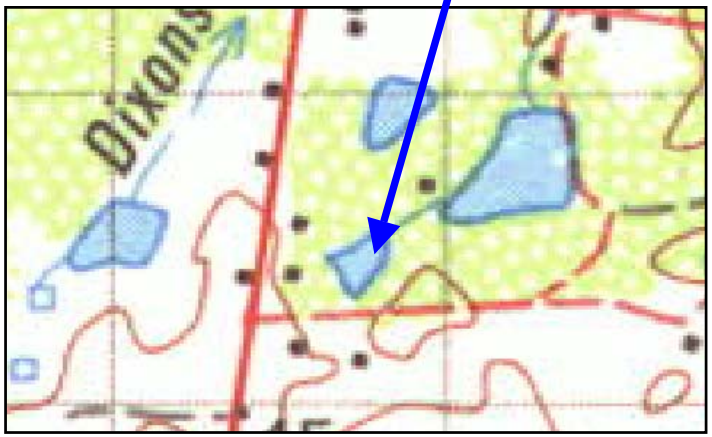
- Indicated as reservoir across a drainage line on Geodata

H2M1 continuned

- Not on pre-clear/old aerial photos as water body
- On Geodata as drainage line

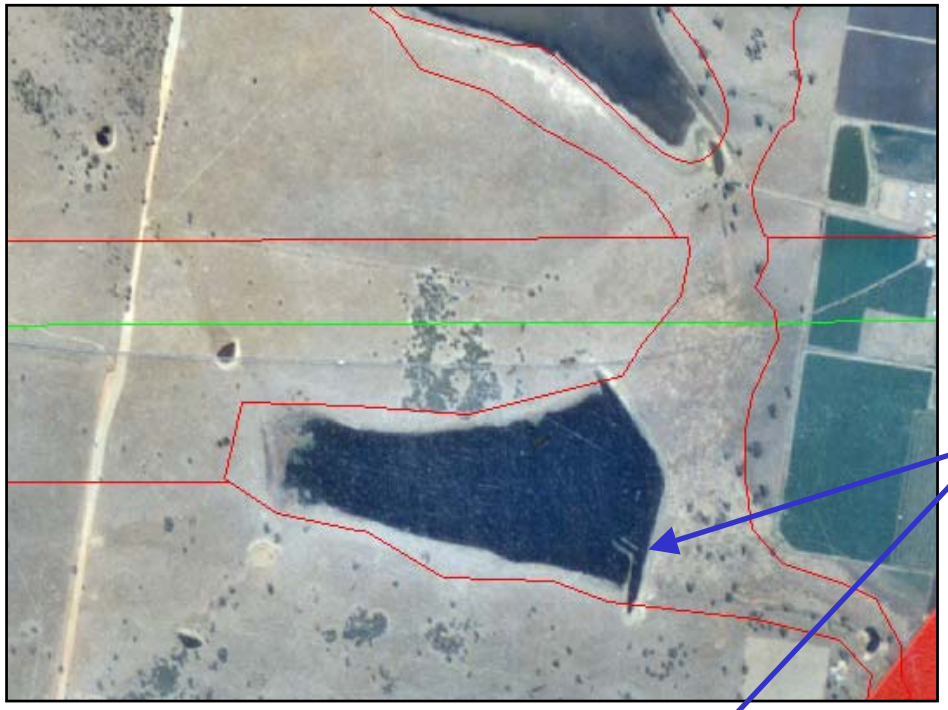






H2M1 – Riverine or ex-Riverine (Lacustrine) water bodies associated with dams and weirs located in a channel

- Does not include reinforced channels in urban areas that are based on natural stream systems (e.g. Norman Creek)

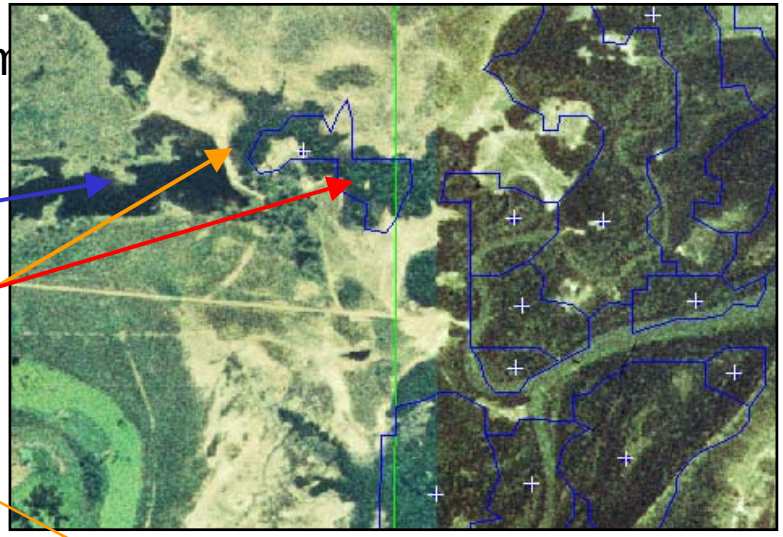


H2M2 – Palustrine/lacustrine water bodies where size and/or hydrology has changed due to levee bank (uncontrolled wall)

- Shown as palustrine wetland on pre-clear (red line) and old aerial photos
- No drainage line on geodata
- Dam wall/levee clearly evident on imagery and in the field

H2M3 – Palustrine/lacustrine water bodies where size and/or hydrology has changed the water body classification from estuarine or marine systems to a fresh water system classification

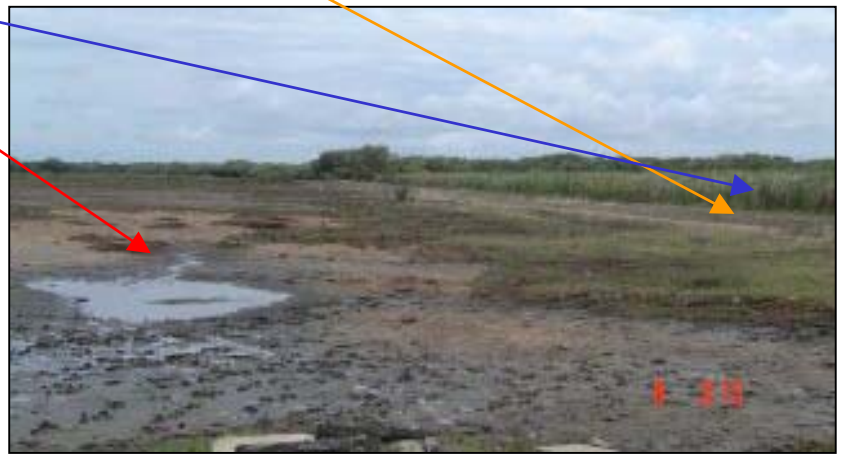
- Currently freshwater areas that have been converted from estuarine by construction of levees
- Will require detailed inspection of remote imagery to determine modifiers



Palustrine

Estuarine

Levee



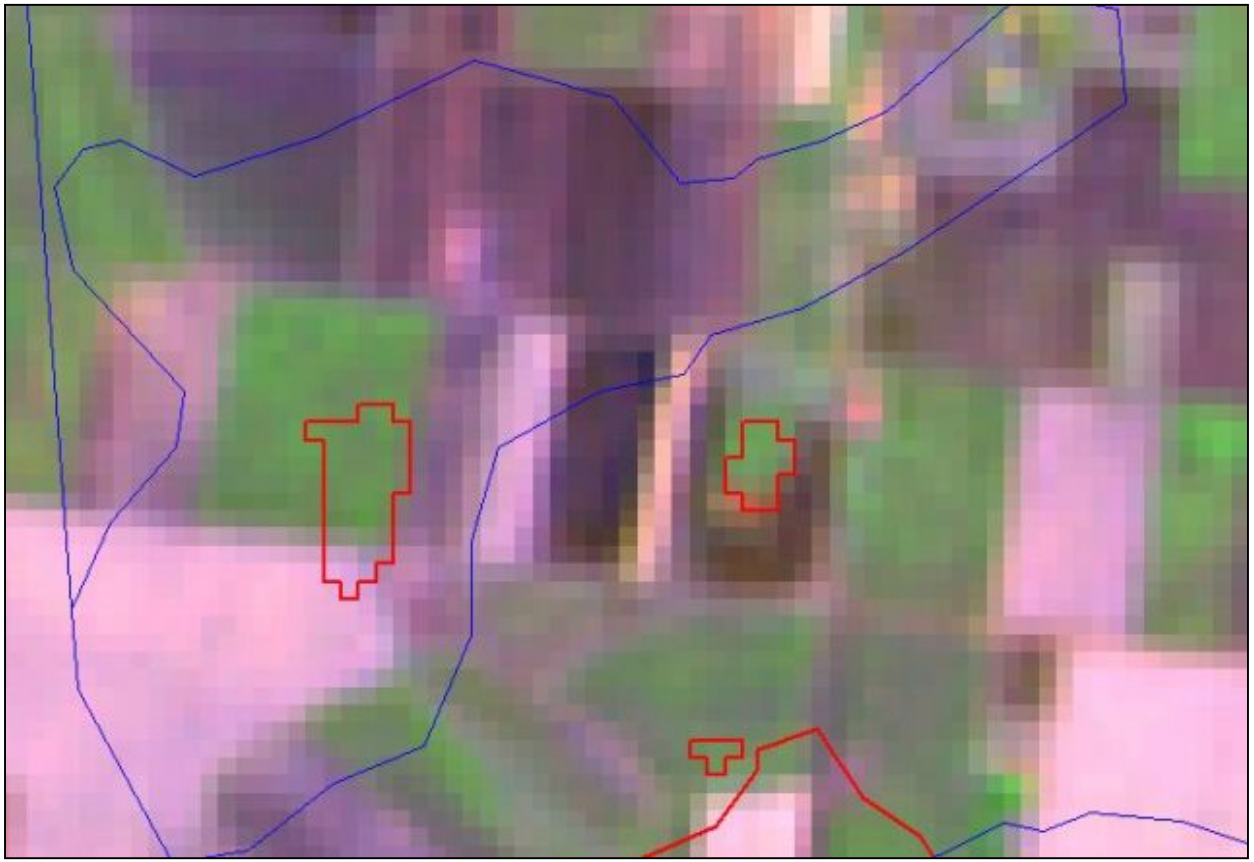
H2M4 – Modified Springs

- Location and modification derived from springs data base which is developed and maintained by Rod Fensham at the Queensland Herbarium

- “Point” feature that will be added to the final wetland data set

H2M5 – Palustrine/lacustrine water bodies where ecological character has changed due to gross mechanical disturbance, e.g. cropping

- Wetland on pre-clear RE map
- Water body from satellite



Pre-clearing wetland

Cropped water body

H2M6 – Palustrine/lacustrine water bodies that have been converted, completely or mostly, to a ring tank or other controlled storage

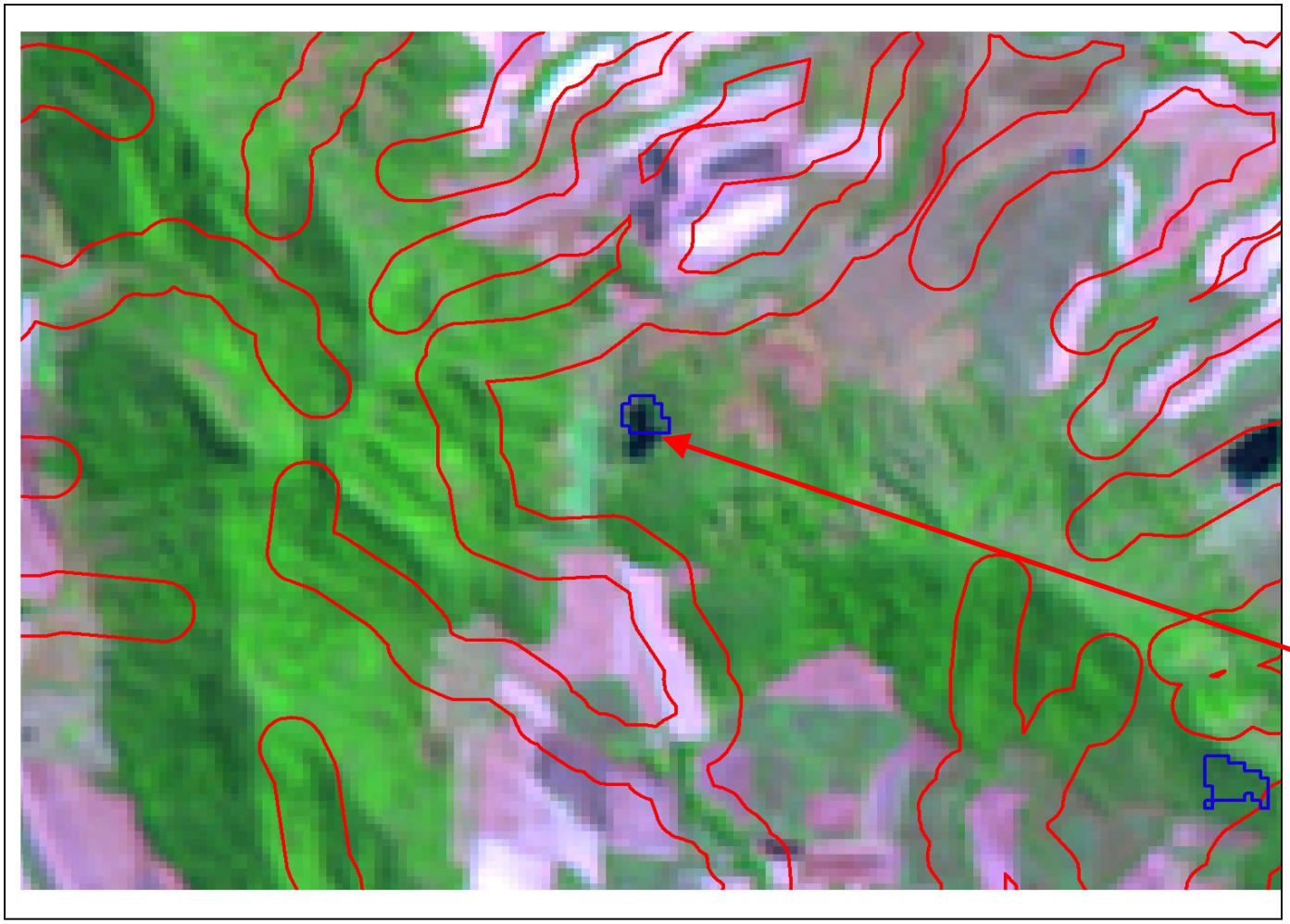
- Stand-alone water body on imagery
- Wetland on pre-clear or old aerial photos
- Usually ring tanks etc.

H2M7 – Riverine water bodies that have been converted mostly to canals or irrigation channels

- Pre-clear riverine systems
- Converted to reinforced channels for flood mitigation etc.
- Usually urban areas – perhaps some irrigation scenarios?
- Example – Sandy Creek at Wacol
- Must fall on natural drainage system (compare H3C2)

H3C1 – Artificial stand-alone water storages not within a natural water body or channel

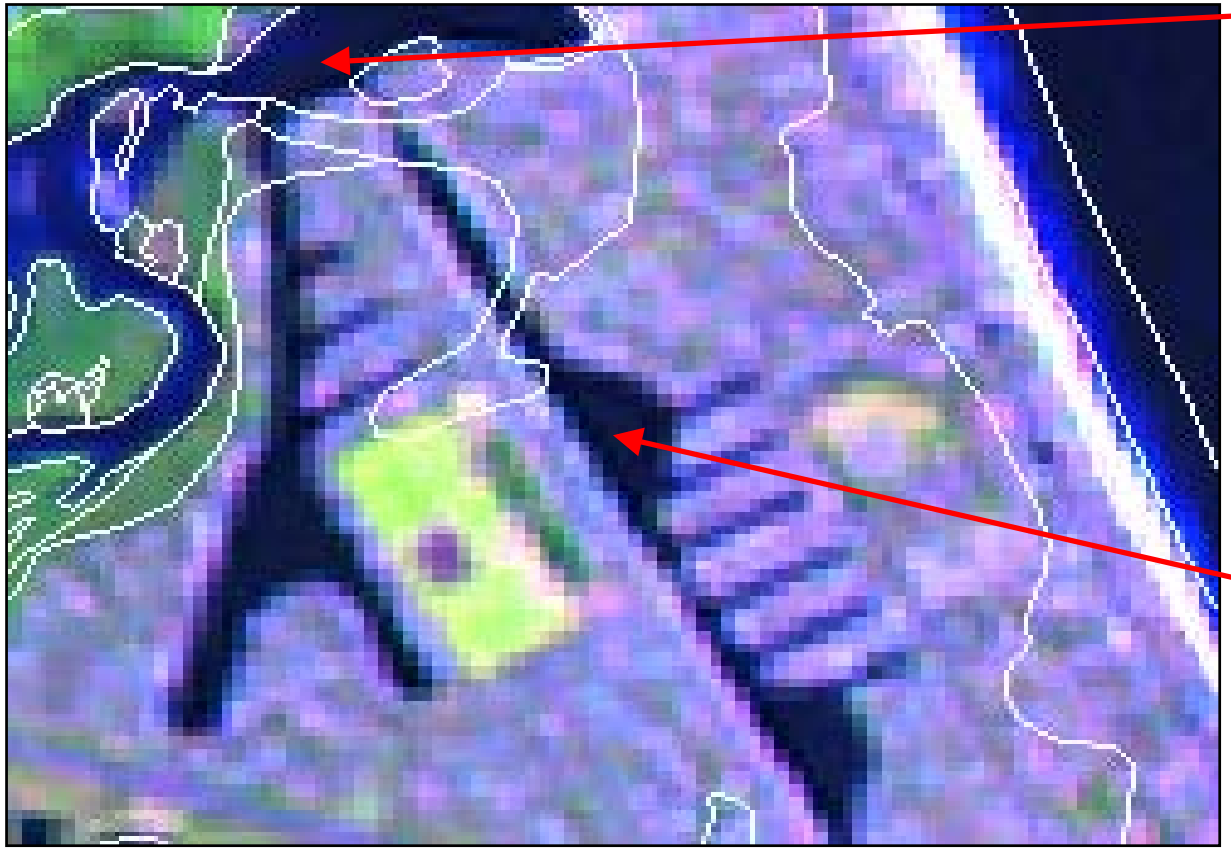
- Artificial entities completely divorced from original drainage network
- Walled structures



‘Offline’ water body outside riverine buffer:
wb_nat_mod = H3C1
wb_sal_mod = S1
wb_class = L

H3C2 – Artificial channel drain/canal – bore drains, swales, bores and irrigation channels overflows/ponding

- Artificial entities completely divorced from original drainage network
- Will be separated from adjacent drainage system on basis of original hydrology
- Differentiated from H2M7 reinforced channels in natural streams



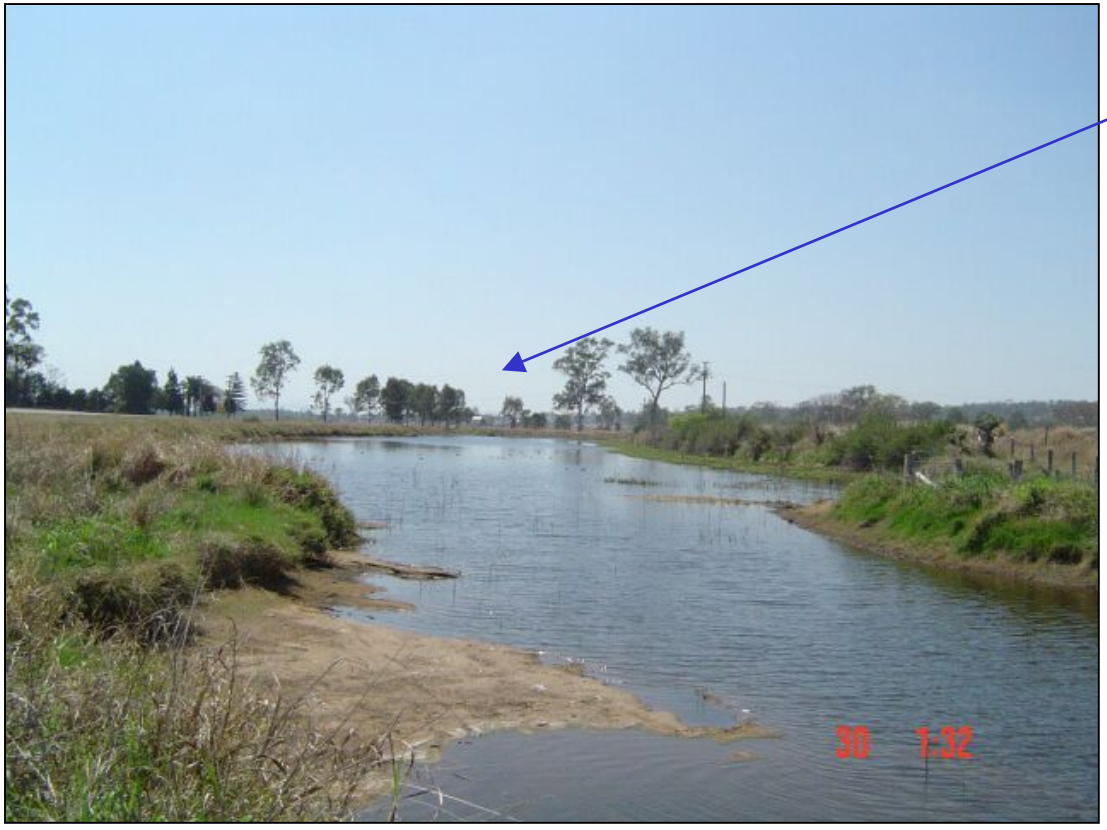
Original stream channel H1 or H2. If remnant classified as RE water feature:
wb_nat_mod = H1
wb_sal_mod = N.A.
wb_class = E

Not present as water feature in pre-clearing or historical aerial photography:
wb_nat_mod = H3C2
wb_sal_mod = N.A.
wb_class = E (recalculated)

Misclassification Issues

- H1 Water body with no obvious local hydrological and/or other disturbance, which may be distinguished from the mapping – riverine area with no obvious modifications

- But ground truthing/DNRM water storage mapping revealed construction of a dam wall; drainage line that has been modified should therefore be H2M6



Misclassification as H1

- no obvious walls

- but ground truthing DNRM water storage mapping found that the water body is used as a water storage and should be H2M6