WORKING WEEK 2025
AND Locate25
THE NATIONAL GEOSPATIAL CONFERENCE
FIG Geospatial Council of Australia
Collaboration, Innovation and Resilience: Championing a Digital Generation
Brisbane, Australia 6–10 April

Riparian Boundaries, unintended consequences in an unconstrained environment

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Structure

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- Legal history
- Human, Natural and Legal Activity
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Problem

The law struggles to precisely demarcate a riparian boundary where the feature is consistently subject to the forces of nature and is dynamic with no fixed shape, other than one of conformation to the channel within which it flows.

Law v. Landscape when an ambulatory natural feature (typically 'the bank') defines a non-tidal boundary

Cadastral boundaries defined by rules and regulations and the subjective opinion of the individual.

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Riparian Zone and Boundaries

Contiguous (one line) v. Non-contiguous (two line)

Contiguous - demarcation for International/State/Parish

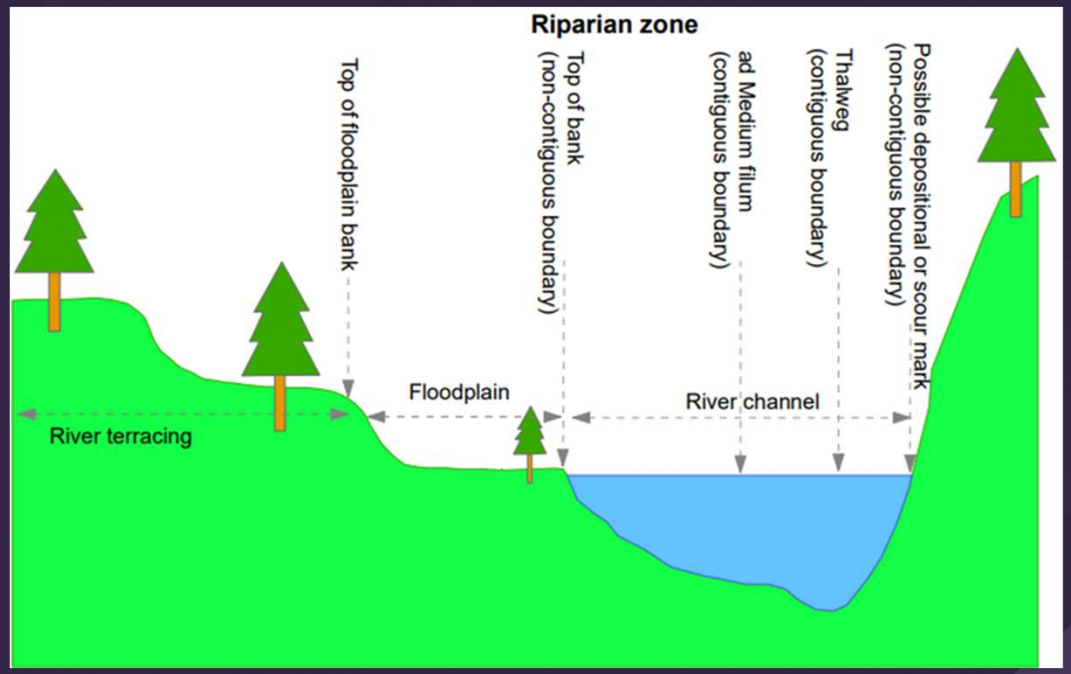

Image: Dr Nab Raj Subedi

Image: Queensland Globe

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Legal History

Origin of Doctrine of Accretion – 6th century AD, Byzantine Emperor Justinian 1 commissions **Institutes of Justinian** to codify imperial Roman Law. Fundamental development of Western Europe legal tenets and common law jurisprudence.

Accretion (Justinian Institutes Book 2 regarding the law *Concerning the Division of Things)* stated "soil which a river has added to your land by alluvion becomes yours by the law of nations…which is added so gradually that you cannot perceive the exact increase from one moment of time to another…". Accretion allows adjustment of a dynamic non-tidal boundary through ***slow and imperceptible*** periods of time.

Avulsion stated "if, however, the violence of the stream sweeps away a parcel of your land and carries it down to the land of your neighbour it clearly remains yours" right of reclamation) and "if in the process of time it becomes firmly attached to your neighbour's land, they are deemed from that time to have become part and parcel thereof." (**if permanence is established, title shifts to the new location**)

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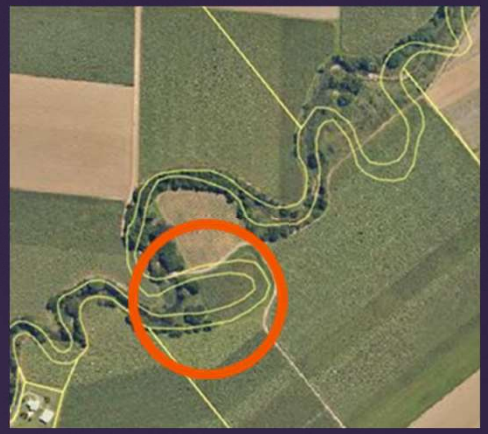
Human, Natural and Title Activity

Image: https://cornerstonewallsolutions.com/



Images: Queensland Globe

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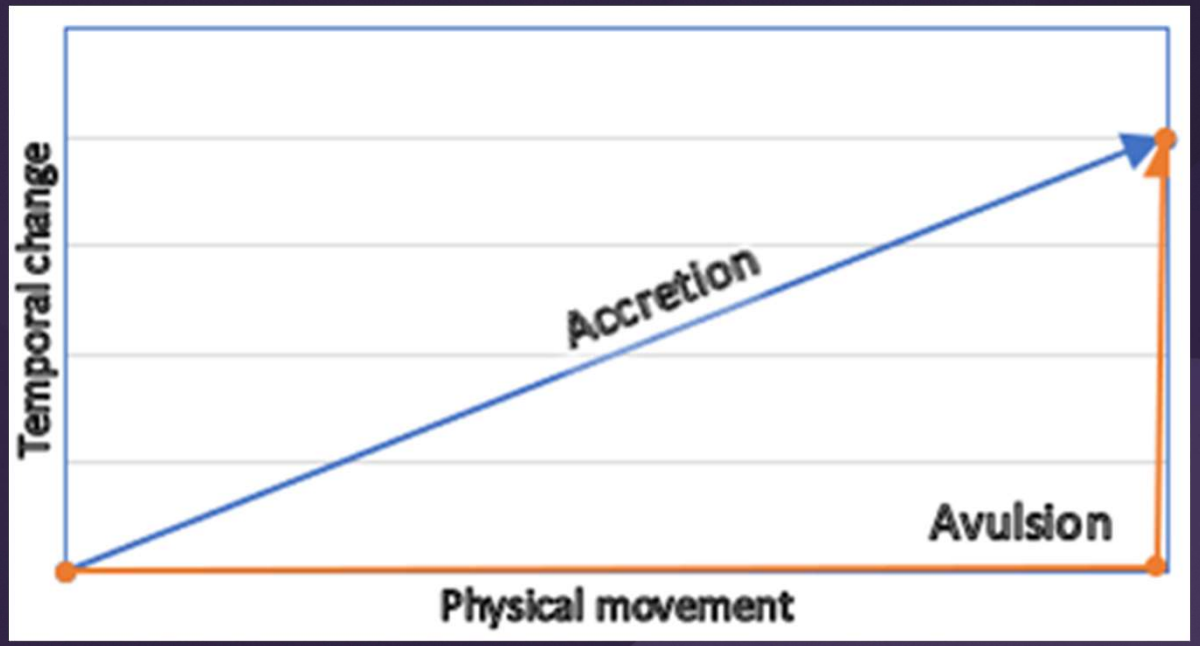
Accretion (or erosion) v. Avulsion
Slow & gradual v. Sudden shift



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Accretion v. Avulsion (non-oxbow)

Two ownership issues – Land area and Riparian access

	Land area Owner	Land area Opposite owner	Water Access Owner	Water Access Opposite owner	Physical description
Accretion (imperceptible, slow and gradual)	Gain	Gain	Yes	Yes	Channel narrows
	Gain	**Loss**	Yes	Yes	Channel moves
	Loss	Gain	Yes	Yes	Channel moves
	Loss	**Loss**	Yes	Yes	Channel widens
Avulsion (both banks significantly affected)	No change to boundary	No change to boundary	**No**	**No**	Channel narrows
	No change to boundary	No change to boundary	Yes	**No**	Channel moves
	No change to boundary	No change to boundary	**No**	Yes	Channel moves
	No change to boundary	No change to boundary	Yes	Yes	Channel widens

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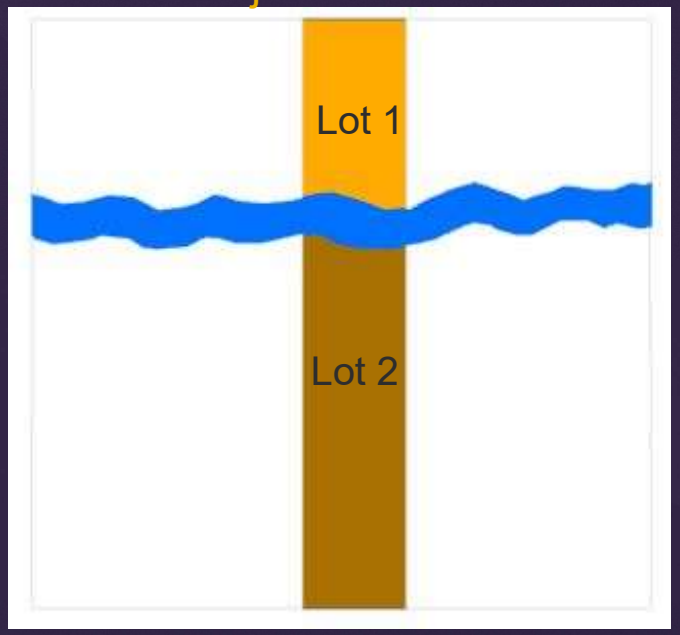
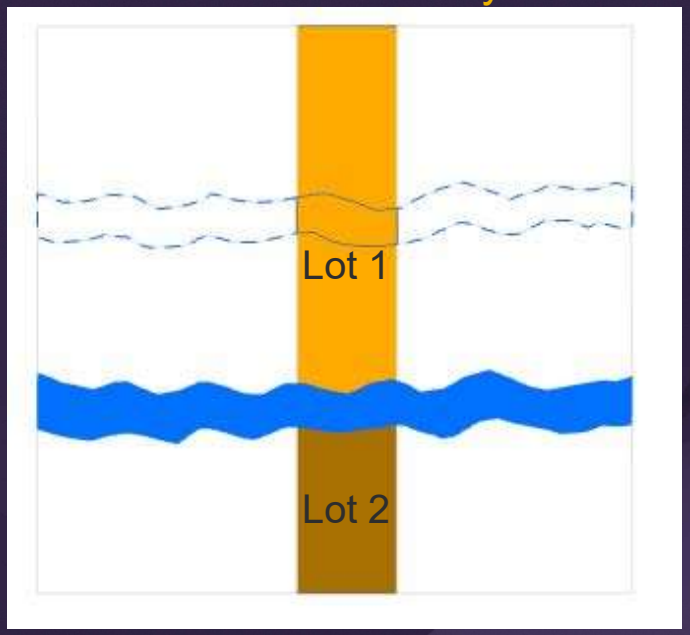
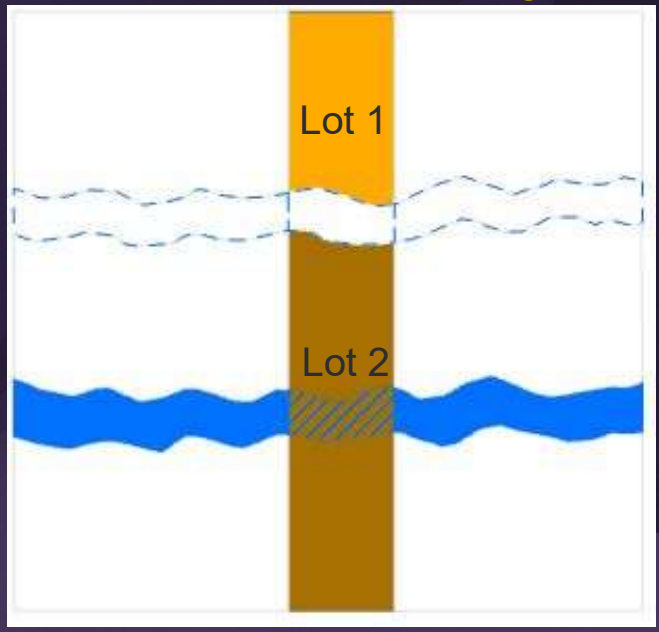
Accretion v. Avulsion (non-oxbow)

Channel subject to accretion/avulsion→ Accretion – boundary shifts





Avulsion – loss riparian rights



Images: Dr Nab Raj Subedi

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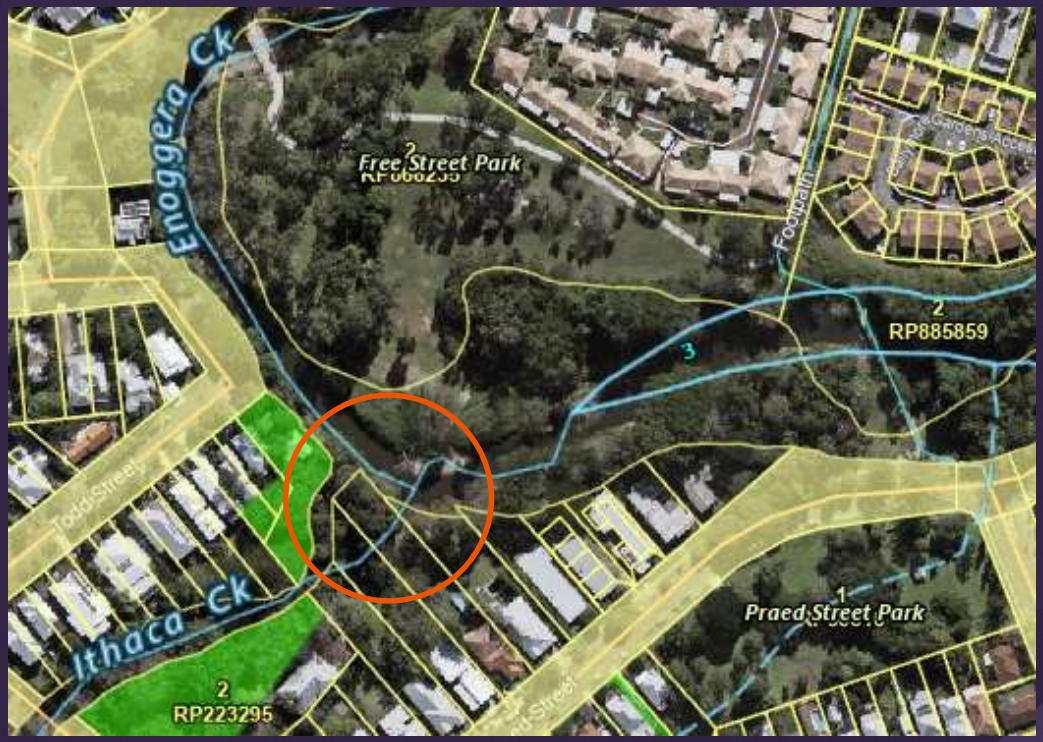
Case Study

Ashgrove (intersection Ithaca and Enoggera Creeks, Praed Street)



Images: Queensland Globe

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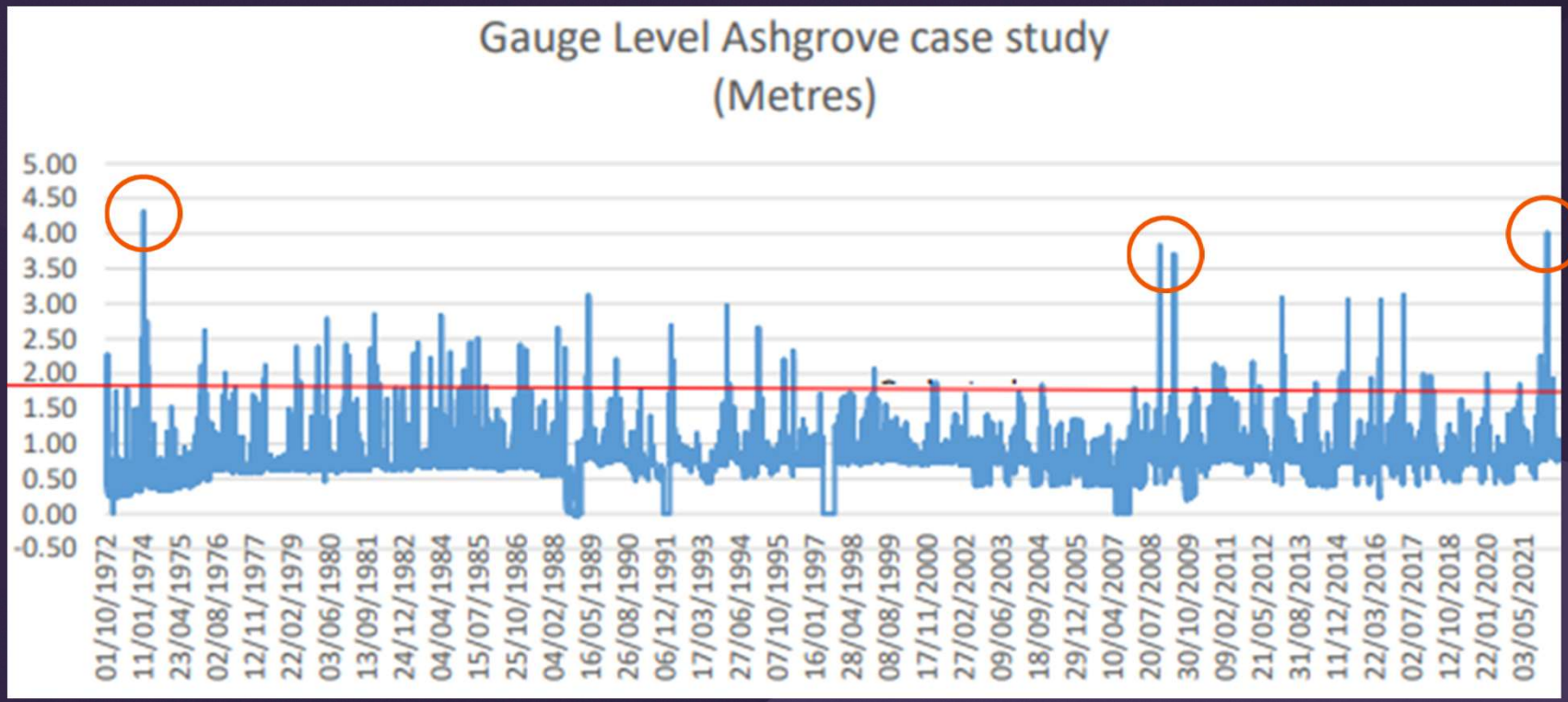
Case Study cont.

Ashgrove Flood gauge data 1972 - 2022



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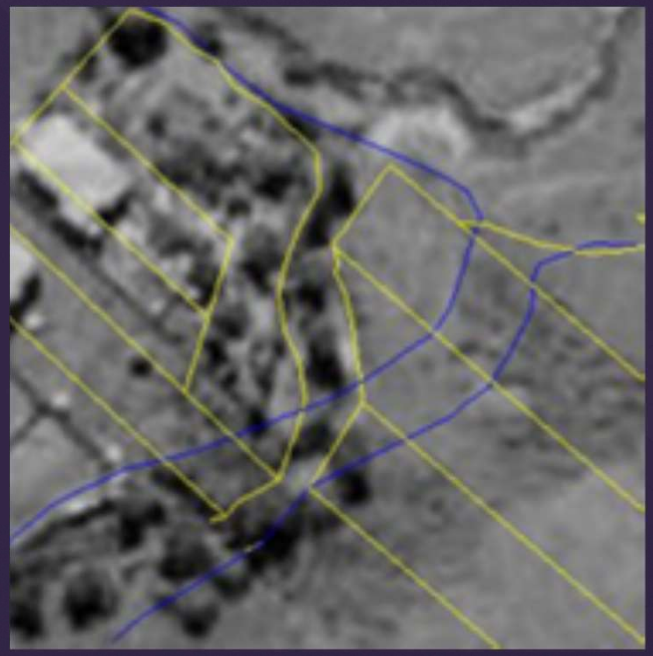
Case Study cont.

Ashgrove (intersection Ithaca and Enoggera Creeks, Praed Street)
Accretion or Avulsion?



Images: Queensland Globe and SP325743 Physical Features Report

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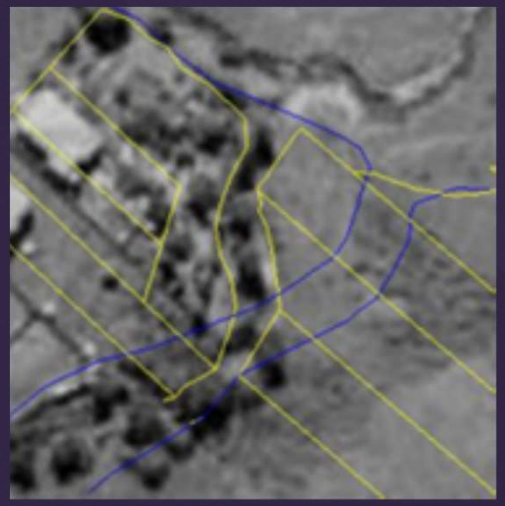
Case Study cont.

Identification Survey North Bank – Human activity



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Case Study cont.

Ashgrove (intersection Ithaca and Enoggera Creeks, Praed Street)

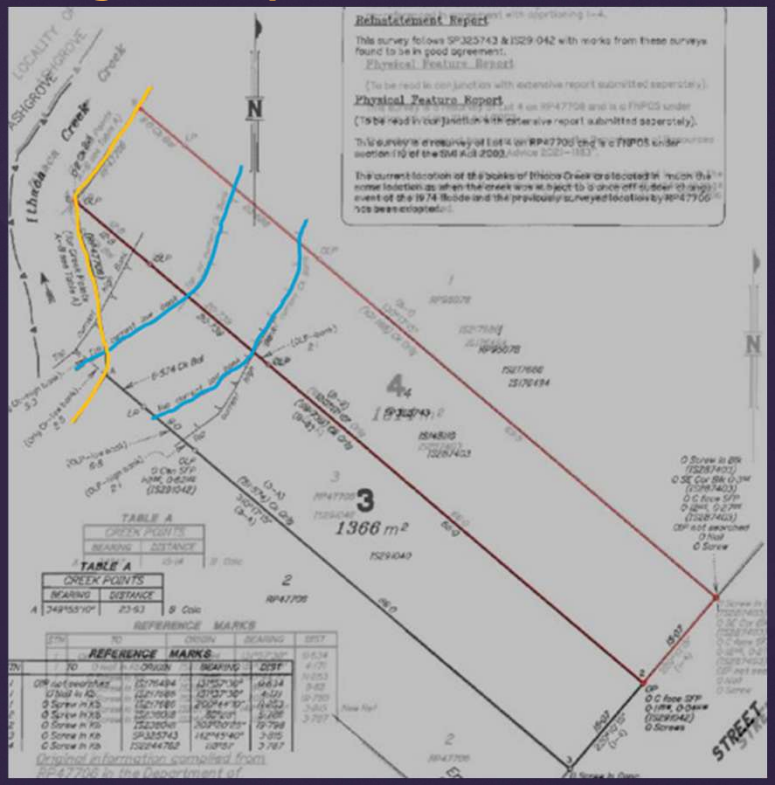

Image: Queensland Globe

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Current remedies

Can be complex: two surveys - same time on opposites sides of a watercourse: Surveyor A claims watercourse changes are avulsion, legal boundary stays as is; Surveyor B other side of watercourse states changes accretive, legal boundary moves with the changed physical feature; creates possibility of overlapped legal boundaries.

Remedies available:

Re-survey Lots (FNPOS) [S.62 SMI Act 2003, S.50 Land Title Act 1994].

Resolve inconsistencies between plans of survey [S.17 SMI Act (2003)]

Avulsive title amendment to physical feature boundaries: surrender or reclamation of land [S.'s 358/10/127 Land Act 1994 and Sect.4.13 CSR 2021], surrender 'lost' land by plan of subdivision or purchase additional land by State land plan.

Former watercourse land (permanence) can apply for land to be dealt with as unallocated State land under [S.13B Land Act 1994 and Sect. 4.14 CSR 2021]

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Summary

If a change to the ambulatory boundary has permanence and occurred lawfully, a landowner should have options available to re-define the boundary.

Remote sensing and imagery allows temporal analysis of the impact of human activity.

A Title system requires mechanisms to resolve both accretive and avulsive events, for both gradual and imperceptible measures AND sudden change that leads to permanence.

The most relevant SDGs related to the presentation and theme of this session

1st relevant SDG

2nd relevant SDG

3rd relevant SDG

SUSTAINABLE DEVELOPMENT GOALS

International Federation of Surveyors supports the Sustainable Development Goals

Thank You!