Pohara-Clifton
Water quality issues and management options

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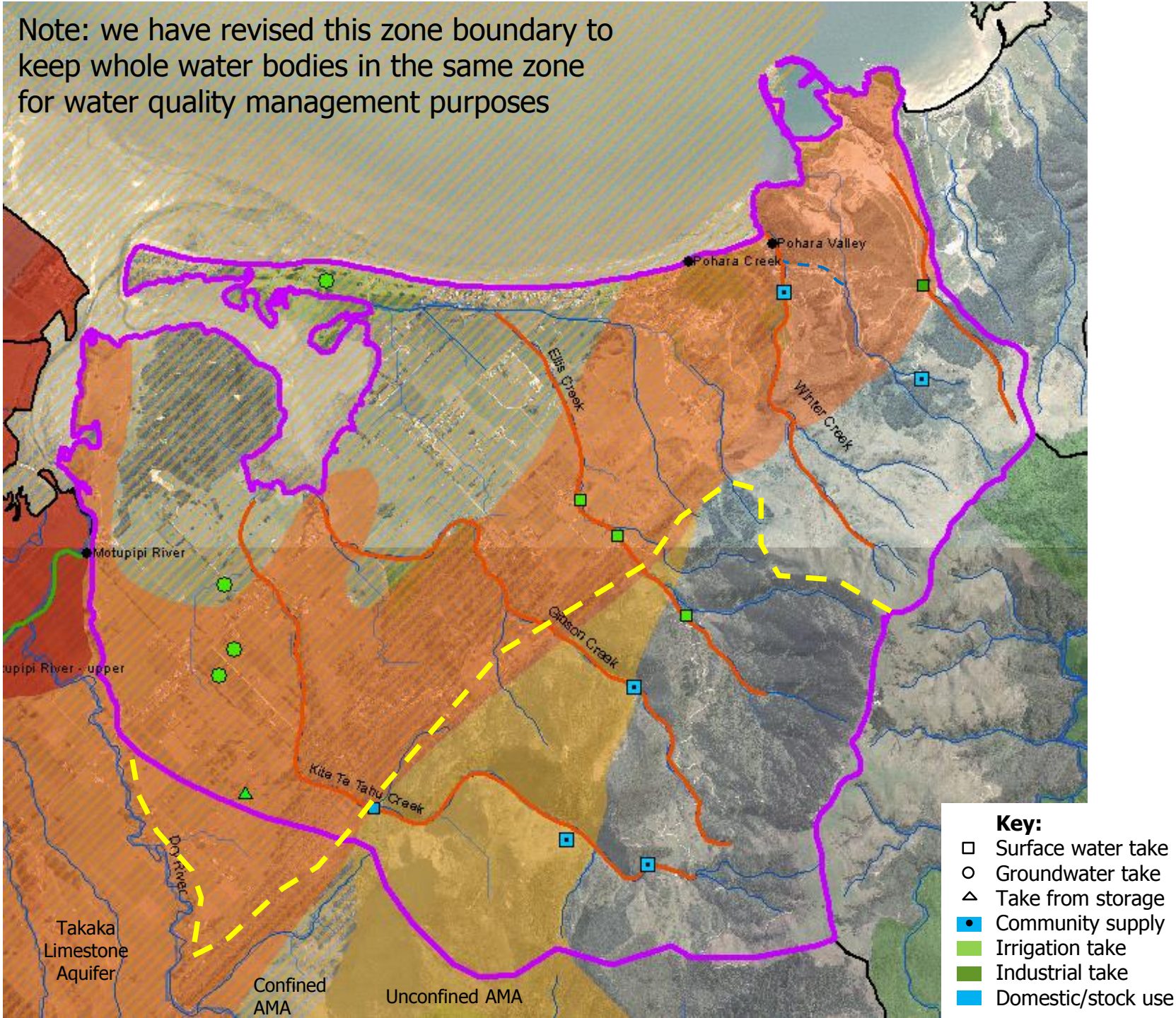
Zone overview

- Key waterbodies
  - Kite te Tahu Creek
  - Gibson Creek
  - Ellis Creek
  - Pohara Creek
  - Winter Creek
  - *Tarakohe Creek (behind the quarry- informal name)*

  - Takaka Karst Aquifer
  - Part of the unconfined AMA


Note: we have revised this zone boundary to keep whole water bodies in the same zone for water quality management purposes
Pohara Valley
Pohara Creek
Ellis Creek
Wynter Creek
Motupipi River
upipi River - upper
Gibson Creek
Kite Te Tahu Creek
Dry River
Takaka Limestone Aquifer
Confined AMA
Unconfined AMA
Key:
Surface water take
Groundwater take
Take from storage
Community supply
Irrigation take
Industrial take
Domestic/stock use

Summary – monitoring and values

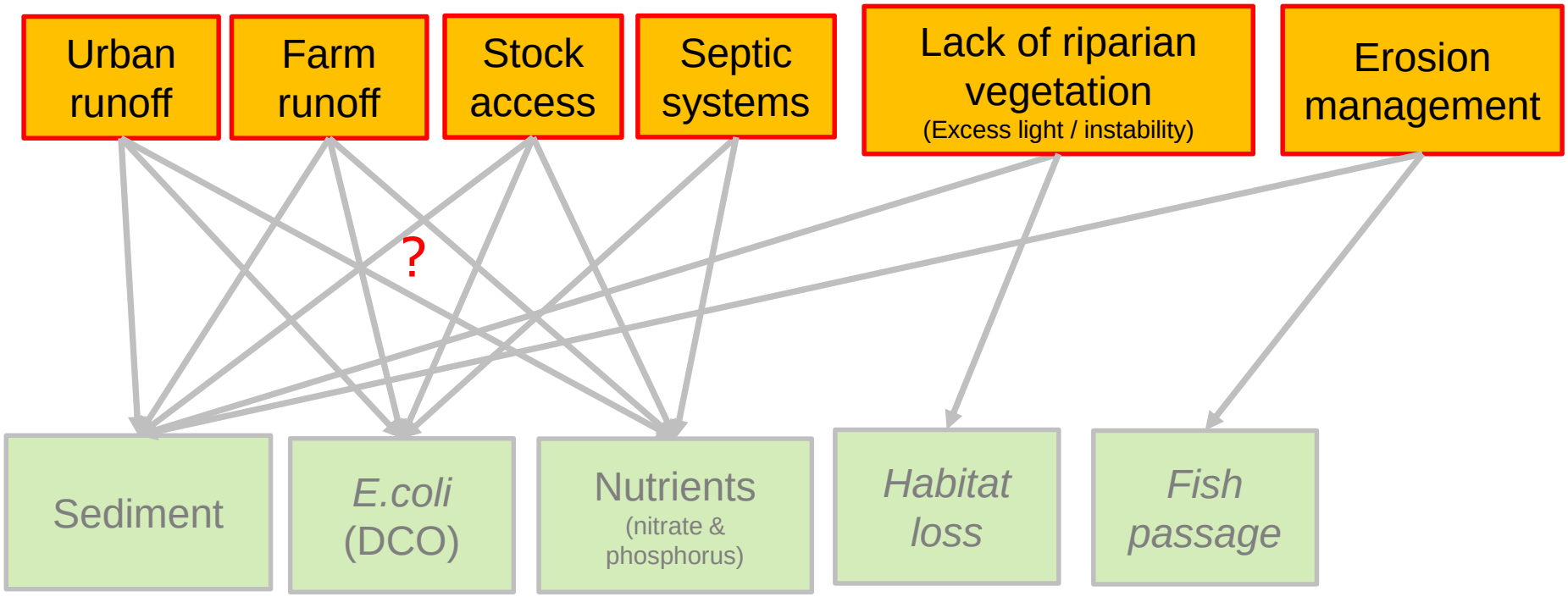
- Only waterbodies monitored by TDC for water quality:
  - Winter Creek (outflows at eastern end of Pohara Beach) – no water quality issues raised
  - Pohara Creek (in association with Pohara Beach) - ongoing E.coli issues

- Reasonable inanga egg production in most of the small creeks in this zone
- Ellis Creek has Giant Kokopu
- Water used for community and domestic water:
  - Winter (including public Pohara supply)
  - Gibson
  - Kite te Tahu

Summary - Water Quality Issues

- Disease causing organisms (*E.coli*)
  - Pohara Creek and beach - regular triggers of alert and alarm levels
- Nitrates in aquifers
  - Takaka Limestone aquifer (Clifton part): high levels >5.8mg/l, likely from farm/stock or septic systems
  - Shallow gravel aquifers: No data on nitrates
  - Coastal sandy aquifers (eg golfcourse): generally poor quality, iron/salt
- Sediment
  - Largely natural, due to erodible Separation Point Granites – these need careful management
- Riparian habitat loss
  - Ellis Creek- huge potential for improvement with planting and meandering of straight sections
  - Wetlands in the flatter areas (esp. Ellis Ck tribs) in the back of Pohara (these have added function of mitigating flooding from residential areas)
- Fish Passage – a lot of barriers due to erodible geology

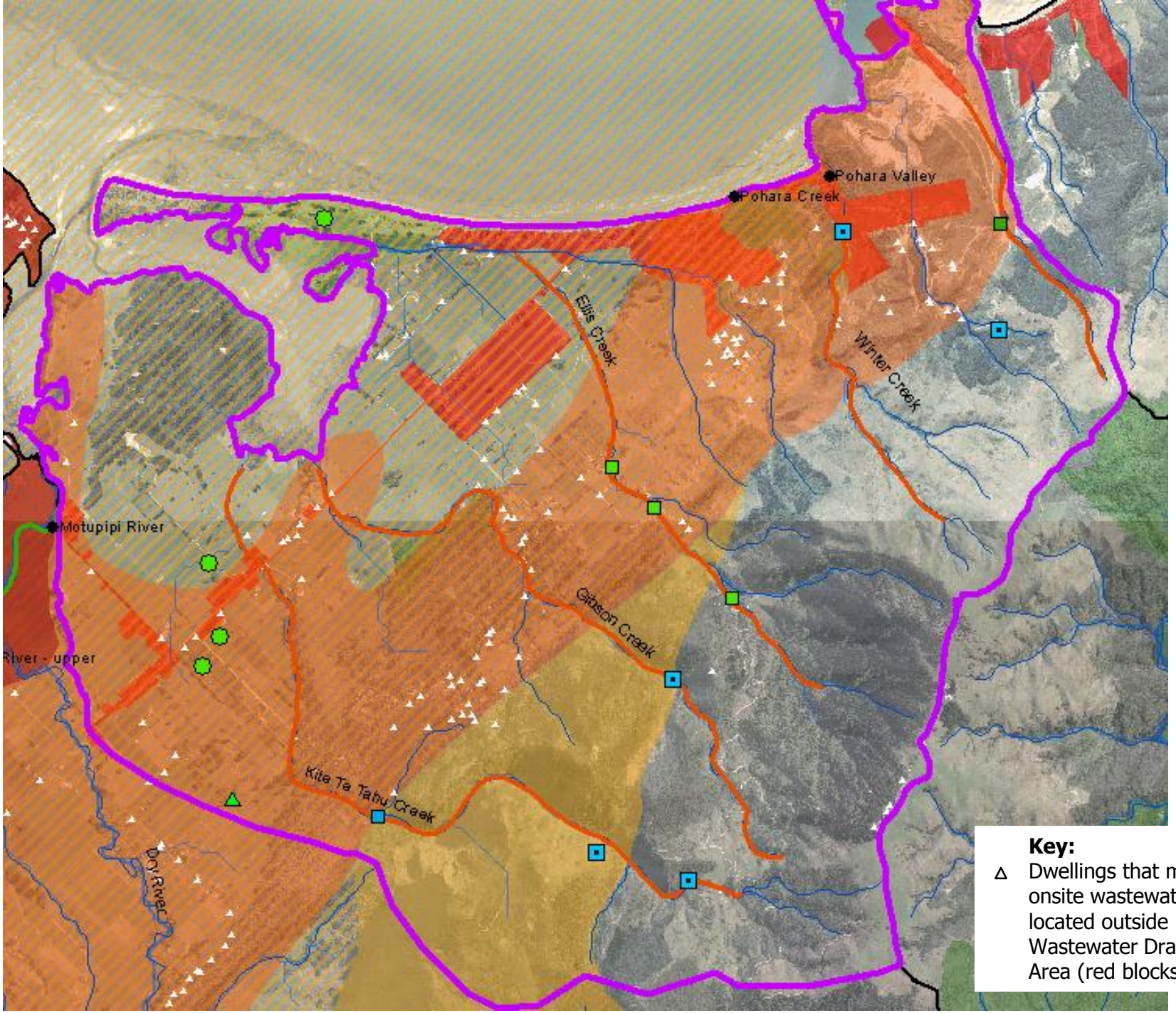
Key attribute drivers



Disease Causing Organisms

- Options for resolution of Pohara Creek E.coli issue being discussed at end of this season (April/May)
  - Very small flow
  - Regular triggers of alert and alarm levels
  - May be natural
  - Source tracking has pointed to avian, ruminant and human (recently just avian)
  - Source still unknown, usual suspects cleared (eg w/w checked, etc)

- Options for management
  - Further faecal source tracking & further investigations
  - Education and WOF for remaining onsite wastewater systems
    - 96-126, 18-25? in Pohara Creek catchment
  - Good/best land use practice (need to define)
  - Ongoing *E.coli* monitoring


Pohara Valley
Pohara Creek
Ellis Creek
Winter Creek
Motupipi River
River - upper
Gibson Creek
Kite Te Tahu Creek
Dry River
Key:
Dwellings that may have onsite wastewater as located outside Wastewater Drainage Area (red blocks)

Nitrates

- Not sampled regularly, but one 1995 sample was 5.8mg/l
- Sources could be farm/stock and onsite WW systems
- Nitrates not a toxicity issue due to water hardness
  - Dr Hickey numbers for Motupipi River should apply

- Options for management
  - Source tracking may help identify key sources
  - Good/best land use practice (need to define)
  - Education and WOF for onsite wastewater systems (96-126)
  - Initiate regular nitrate/phosphorus monitoring

Erosion and Sediment

- Potentially from: land disturbance and land use runoff, river bank erosion and urban discharges
- Exacerbated by erodible Separation Point Granites (SPGs)
  - Tarakohe, Winter and Ellis Creek systems
  - 2011 Pohara (and Ligar Bay) damage from flooding/debris flow
- Options for management
- Review of existing TRMP rules
  - Slope Instability Risk Area (SPG + limestone + others)
  - Land Disturbance Risk Area 2 (SPGs)
  - Good/best land use practice - with focus on land disturbance and sediment control practices
  - Stock exclusion from river banks
  - Riparian planting to stabilize and shade stream banks
  - River bed restoration (sediment build-up removal)
  - Ongoing estuary and stream sediment monitoring

Lack of riparian vegetation

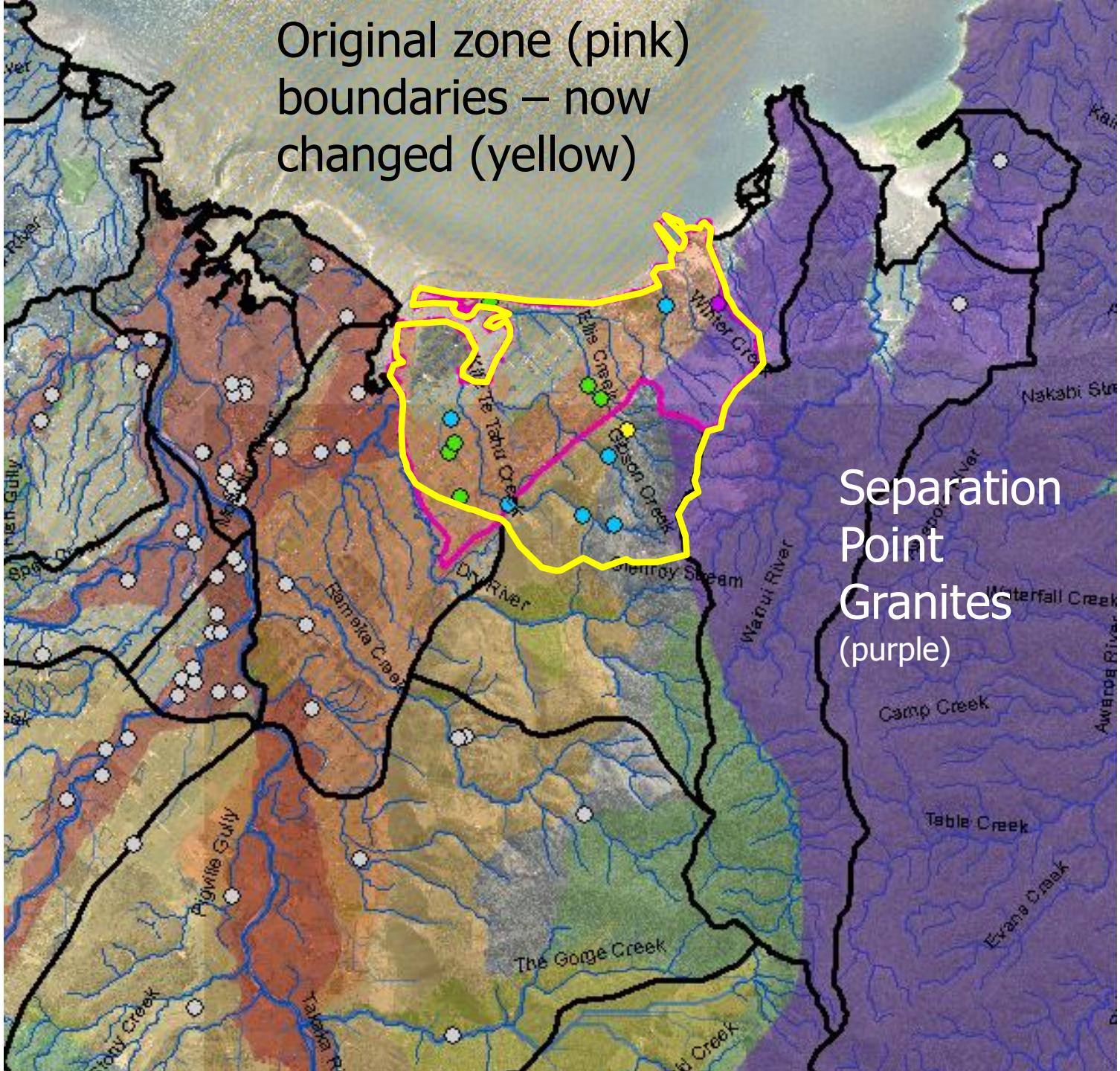
- Historic losses and ongoing from stock grazing
- Causing habitat degradation and loss of:
  - Shading and cooling temperatures (microclimate effects)
  - Resilience of aquatic ecology during low flows
  - Food provision from leaf and insect fall
  - Habitat provision from woody material and root exposure
- Options for management
  - Replanting (including wetlands)
    - Requires intensive management during establishment phase
    - Requires ongoing plant pest management
    - Time lag before sufficient canopy growth occurs to get full benefits
  - Fencing to control stock access to replanted areas
  - Limited replanting and fencing has been done so far – lots of opportunity

Questions for FLAG

Have we missed any key issues?

Have we missed any management options?

Are there any management options you have concerns about?


Original zone (pink) boundaries – now changed (yellow)
Separation Point Granites (purple)
Ellis Creek
Winter Creek
Te Tahu Creek
Gibson Creek
Dry River
Wanui River
Camp Creek
Table Creek
The Gorge Creek
Evans Creek
Nakahi Stream
Waterfall Creek