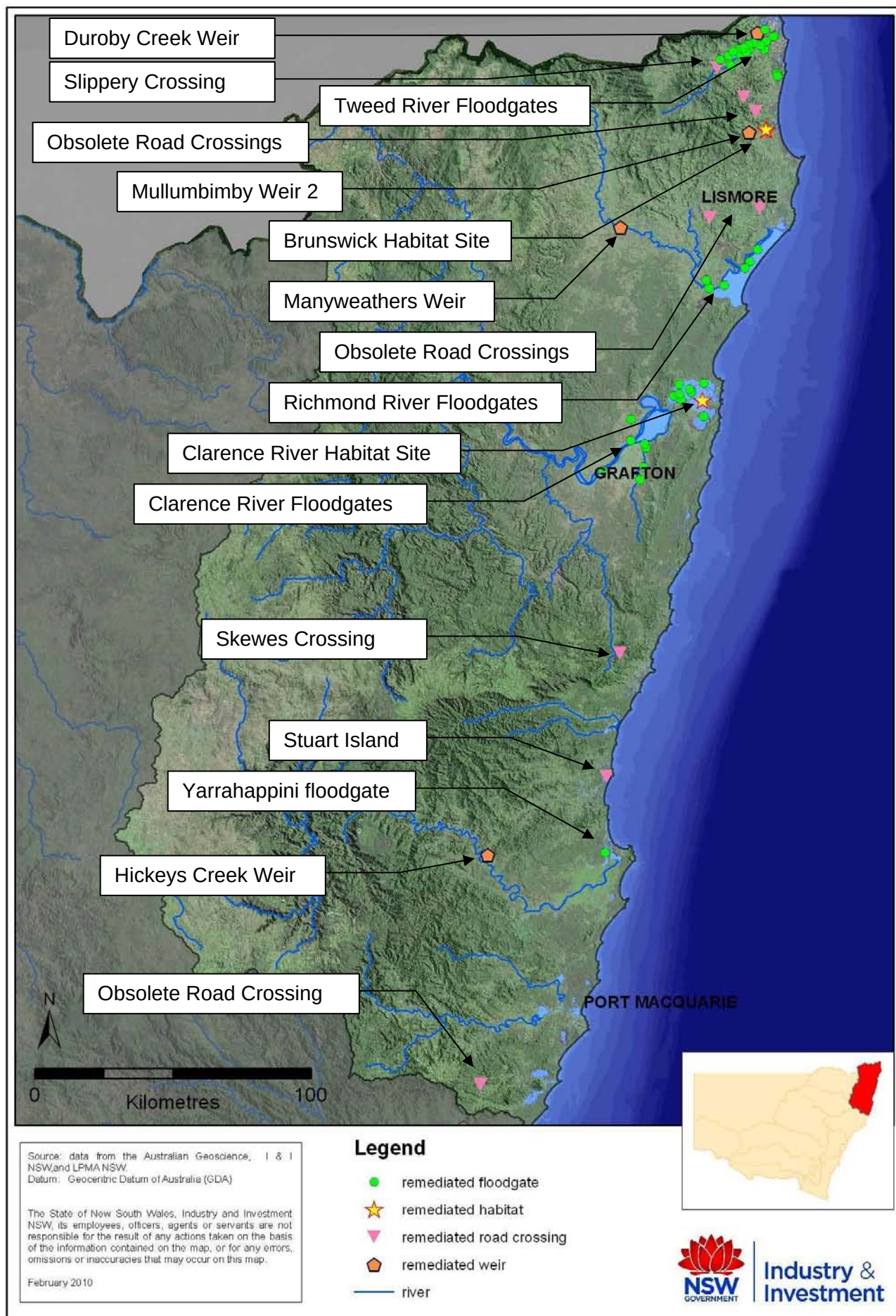


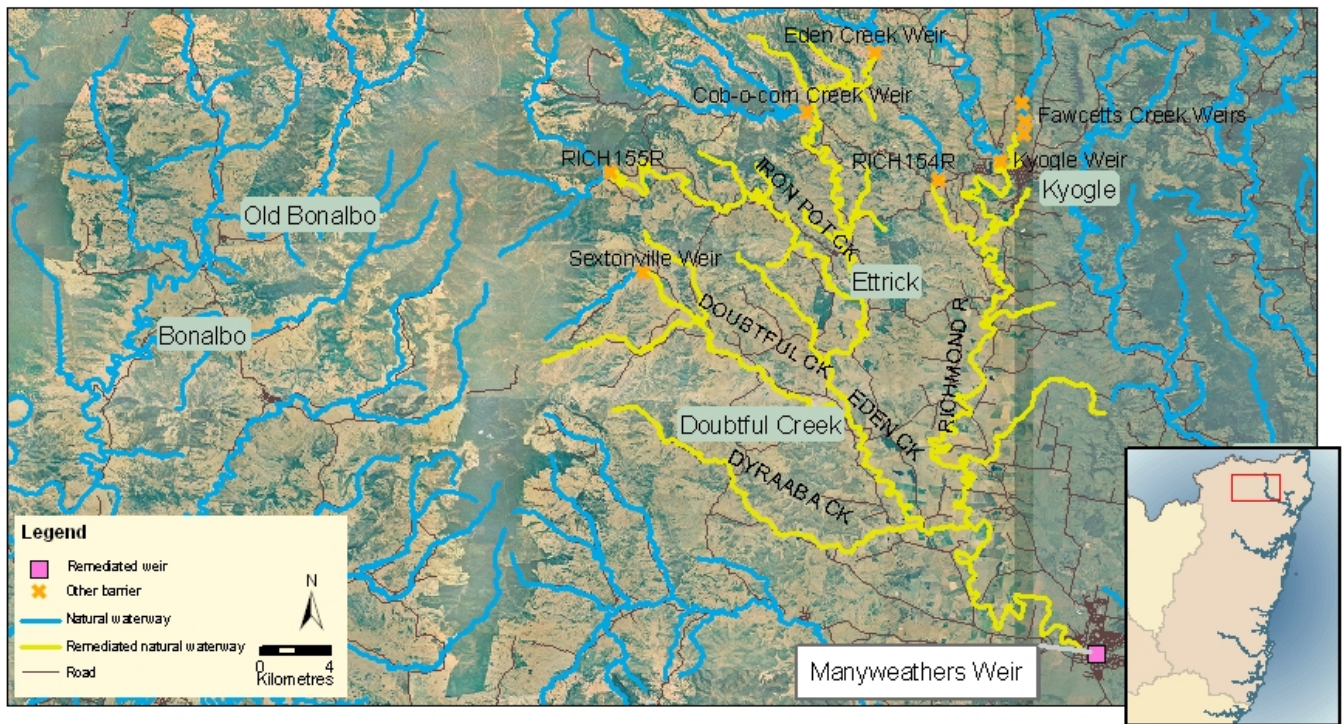
## APPENDIX A: NORTHERN RIVERS CMA SITE SUMMARIES





# MANYWEATHERS WEIR, RICHMOND RIVER

## Richmond Catchment



### Remediation Works

- State Water owned obsolete weir.
- Highest priority barrier (headloss 800 mm) on Richmond River.
- Heritage considerations with structure's name.
- Construction of fishway estimated to cost over \$500,000.
- Full removal proposed.
- Works completed over ten days in July 2009.

### Remediation Benefits

- Improved access to 288 km.
- Fish passage restored at two of five weirs on mainstem Richmond River in past two years.

### Project Costs

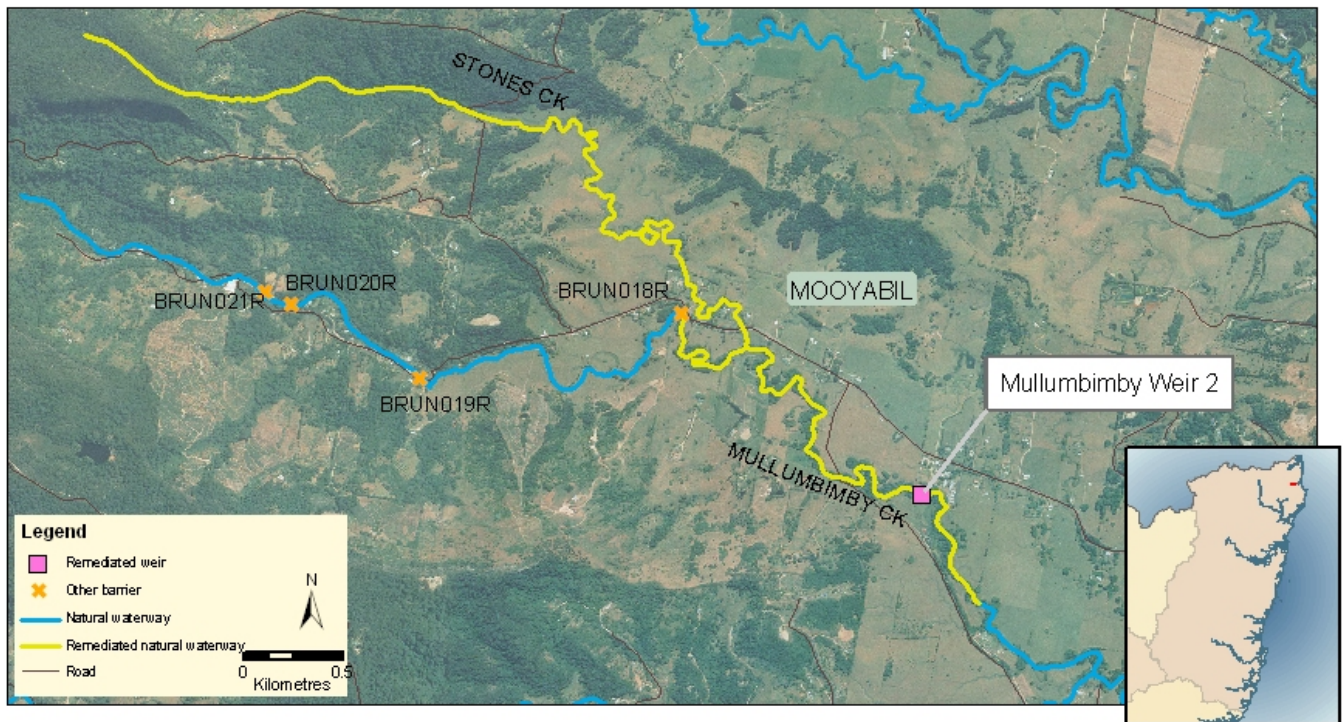
- Total expenditure - \$165,241
- In-kind funding - \$141,106

### Partners

- NSW State Water Corp., Richmond Valley Council, NSW Recreational Fishing Trust, I&I NSW Aquatic Habitat Protection Unit



## MULLUMBIMBY CREEK WEIR 2, MULLUMBIMBY CREEK Brunswick Catchment



### Remediation Works

- State Water owned obsolete weir
- One of two weirs on Mullumbimby Creek
- Headloss barrier – 750 mm
- Weir foundations failed
- Weir acting as bed control structure
- Full removal proposed followed by insertion of full-width rock-ramp fishway
- Works completed over ten days in December 2009.

### Remediation Benefits

- Improved access to 9 km.
- Weir 2 removal compliments removal of Weir 1 planned for summer 2010.

### Project Costs

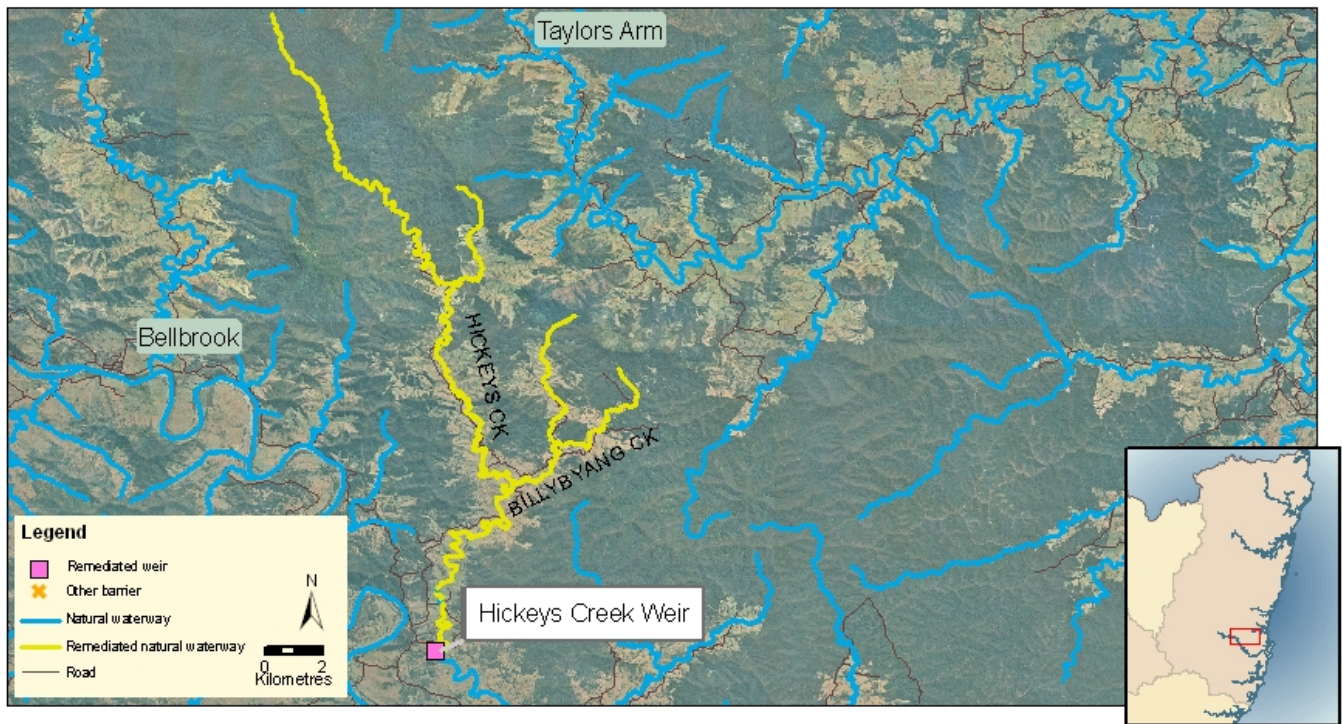
- Total expenditure - \$53,974
- In-kind funding - \$45,547

### Partners

- NSW State Water Corporation, Byron Shire Council, Shearwater Steiner School



# HICKEYS CREEK WEIR, HICKEYS CREEK Macleay Catchment



## Remediation Works

- State Water owned obsolete weir
- Headloss (300 mm) and water velocity barrier
- Weir foundations failed
- Weir located on private freehold land
- Full removal proposed followed by insertion of rock cut-off trench
- Works completed over three days in September 2009.

## Remediation Benefits

- Improved access to 62 km.
- Reinstated fluvial and hydrological regimes

## Project Costs

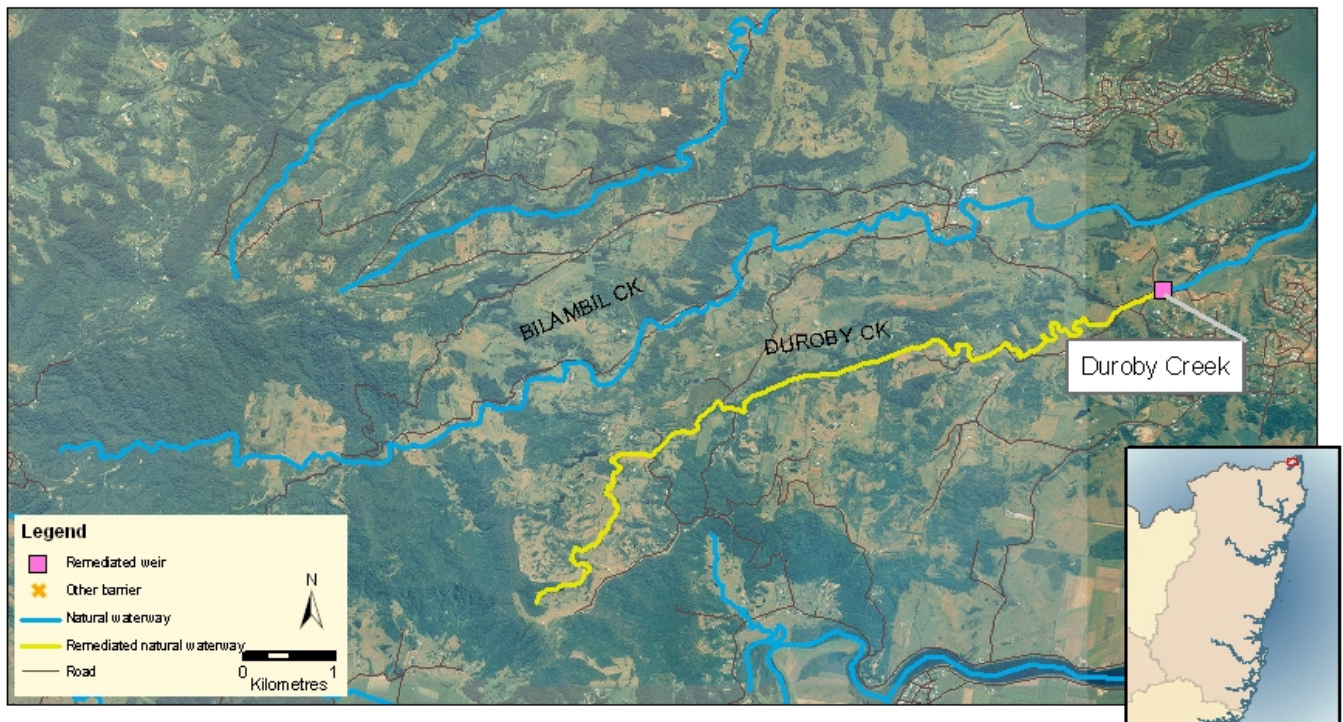
- Total expenditure - \$51,105
- In-kind funding - \$45,105

## Partners

- NSW State Water Corporation



## DUROBY CREEK WEIR, DUROBY CREEK Tweed Catchment



### Remediation Works

- Orphaned unlicensed block-bank weir
- Tidal barrage barrier
- Crossing located on Crown Land.
- No identified private or public use.
- Full removal proposed
- Works completed over three days in April 2008.

### Remediation Benefits

- Improved access to 10 km.
- Reinstated natural tidal flushing cycle
- Reduced flooding of residential land

### Project Costs

- Total expenditure - \$23,970
- In-kind funding - \$20,545

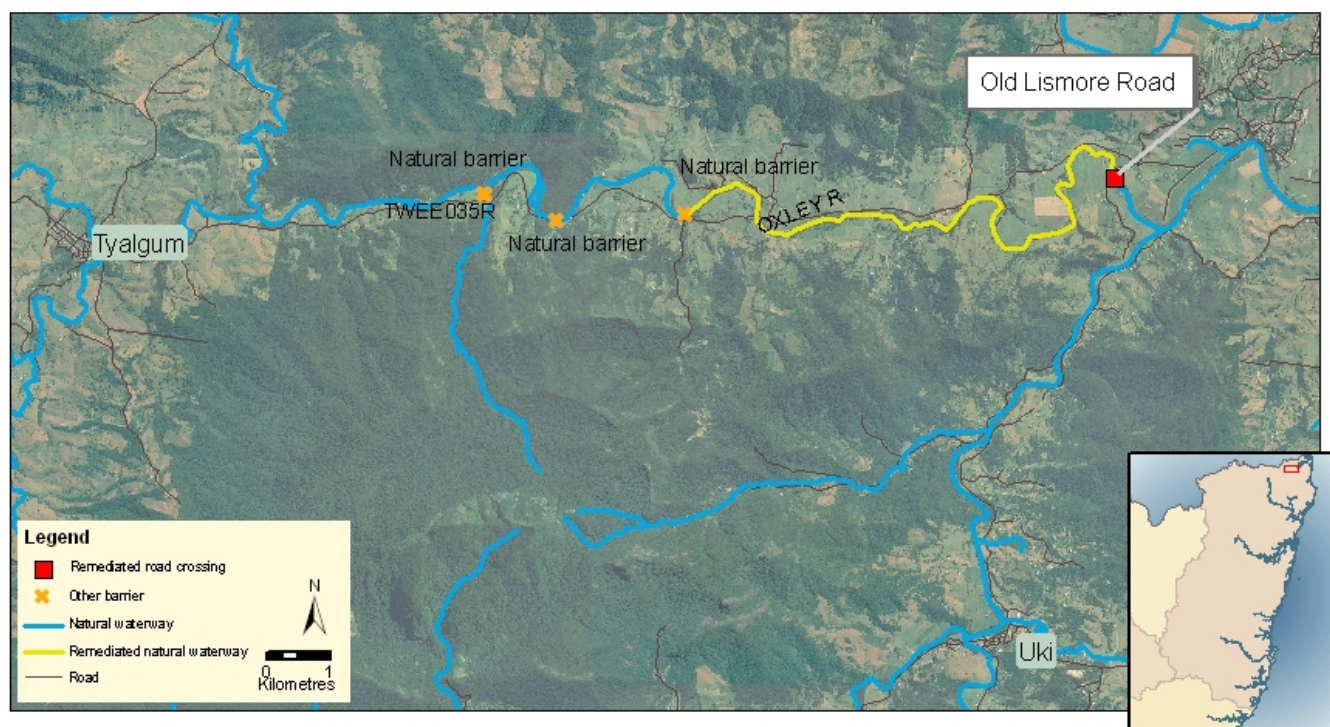
### Partners

- Tweed Shire Council, NSW Recreational Fishing Trust, I&I NSW Aquatic Habitat Protection Unit



## SLIPPERY CROSSING, OXLEY RIVER

Old Lismore Road, Tweed Catchment



### Remediation Works

- Twenty-two celled box culvert
- Highest priority road barrier in Tweed catchment
- Headloss barrier – 500 mm
- Four-cell low-flow box culvert (10 m) proposed.
- Stabilisation of eroding northern bank
- Works completed over three weeks in September 2009.

### Remediation Benefits

- Improved access to 16 km.
- Bank stabilisation & revegetation – 200 m

### Project Costs

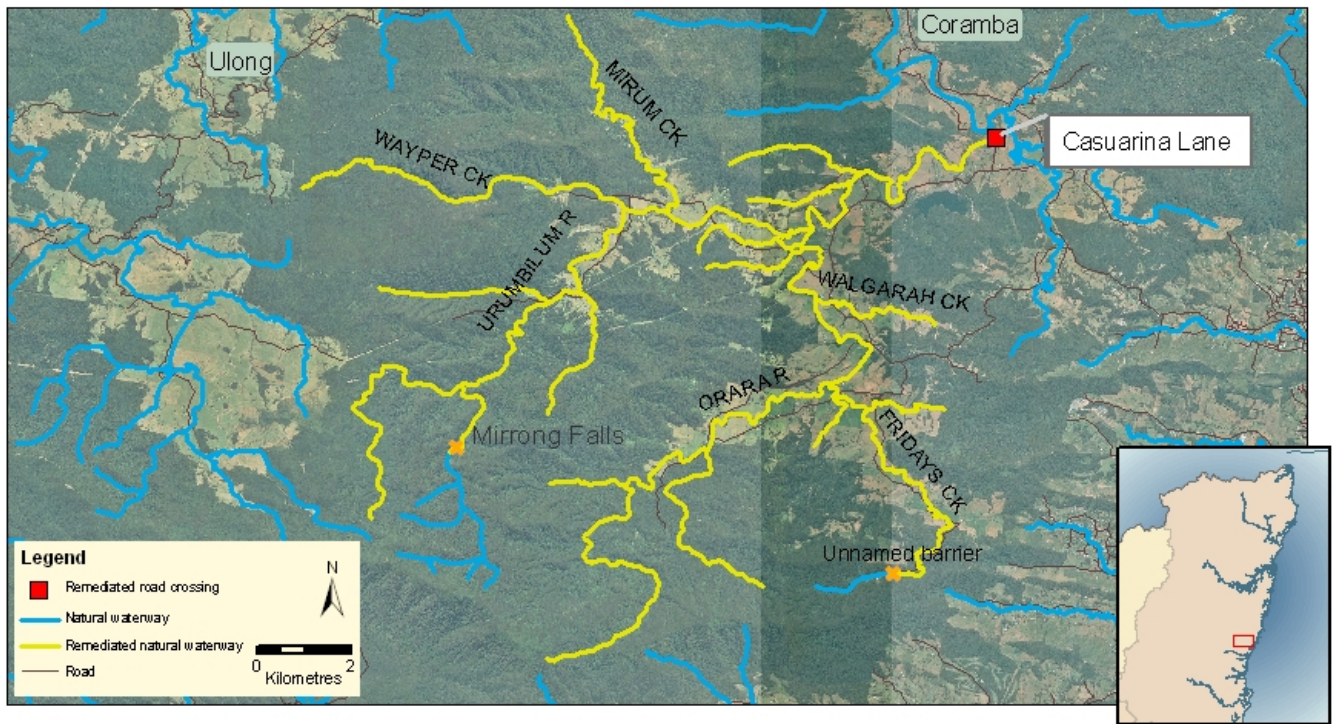
- Total expenditure - \$153,930
- In-kind funding - \$69,155

### Partners

- Tweed Shire Council, NSW Recreational Fishing Trust



## KEWES CROSSING, ORARA RIVER Casuarina Lane, Clarence Catchment



### Remediation Works

- Single cell 35 m wide causeway
- Significant bed control structure in upper Orara River
- Headloss barrier – 1100 mm
- Full-width rock-ramp fishway proposed with low-flow channel leading to larger box culvert
- Works completed over 10 weeks in spring 2008.

### Remediation Benefits

- Improved access to 96 km.
- Known habitat of Endangered Eastern Freshwater Cod

### Project Costs

- Total expenditure - \$197,625
- In-kind funding - \$95,500

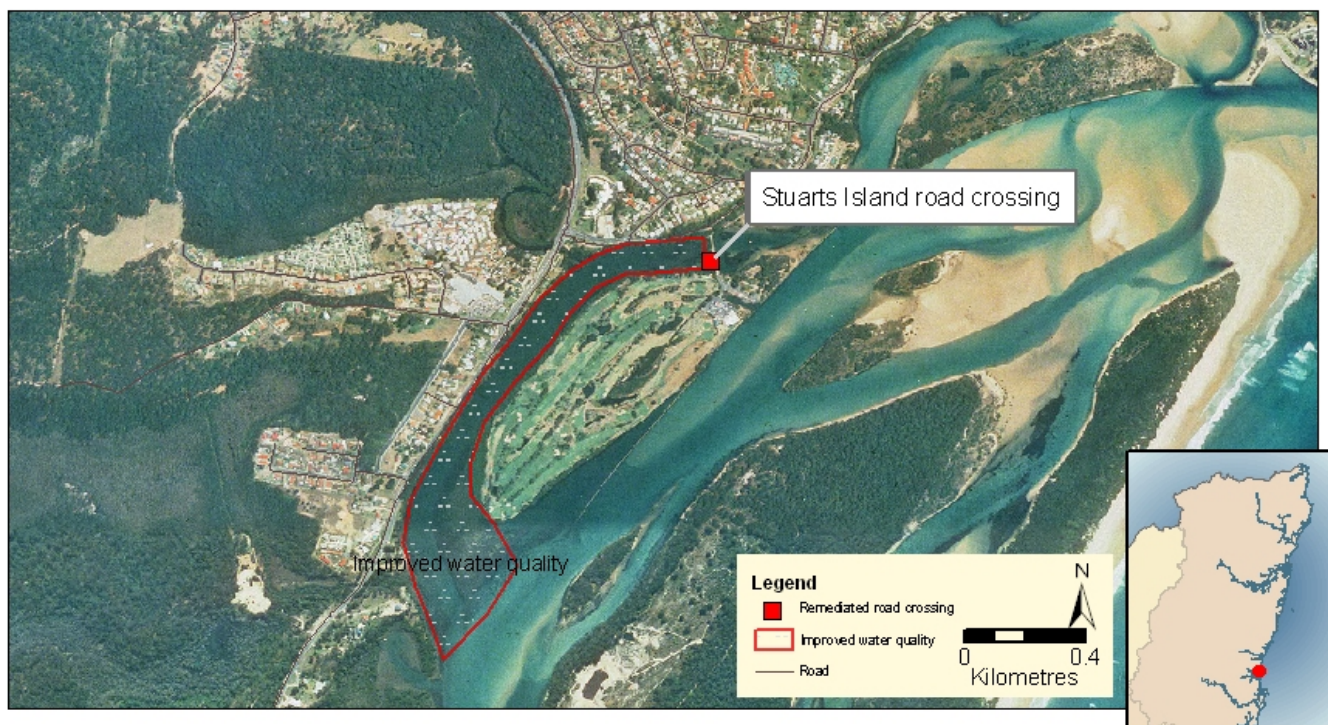
### Partners

- Northern Rivers CMA, Coffs Harbour City Council, Orara Valley RiverCare, NSW Recreational Fishing Trust, Fishway Consulting Services, Streamline River Restoration



## STUARTS ISLAND, NAMBUCCA RIVER

Nambucca Catchment



### Remediation Works

- Causeway (100 m) connecting Stuart Island to mainland
- Tidal exchange barrier resulting in poor water quality behind structure.
- Significant indigenous cultural site
- Two-celled box culvert proposed
- Works completed over 6 weeks in spring 2007.

### Remediation Benefits

- Improved tidal flows to 1 km and 23 ha of estuary.
- Enhanced water quality and seagrass health

### Project Costs

- Total expenditure - \$128,020
- In-kind funding - \$113,020

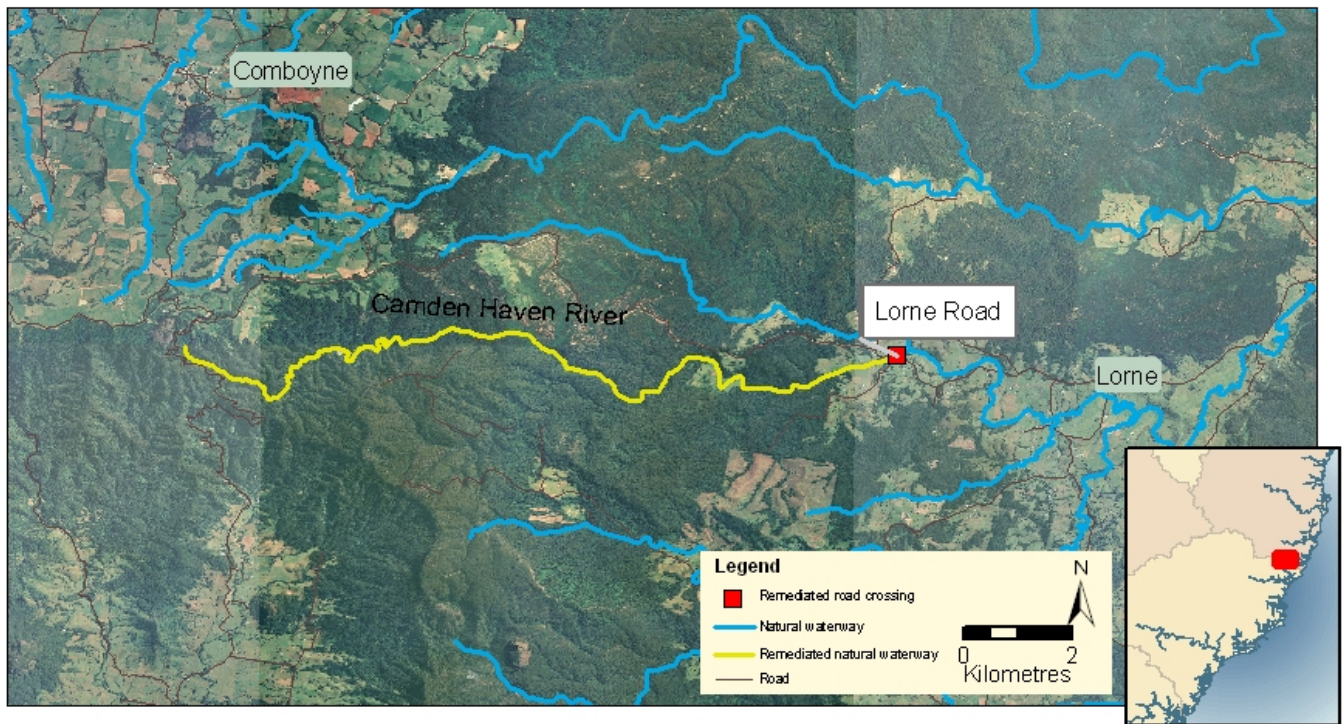
### Partners

- Nambucca Shire Council, NSW Recreational Fishing Trust, Ngurrula Aboriginal Corporation



## OBSOLETE CROSSING, CAMDEN HAVEN RIVER

Lorne Road, Camden Haven Catchment



### Remediation Works

- Obsolete temporary crossing used during bridge refurbishment
- Water velocity barrier and debris
- No identified private or public use.
- Full removal proposed
- Works completed over single day in June 2007.

### Remediation Benefits

- Improved fish access to 15 km.

### Project Costs

- Crossing Removal - \$3,332

### Partners

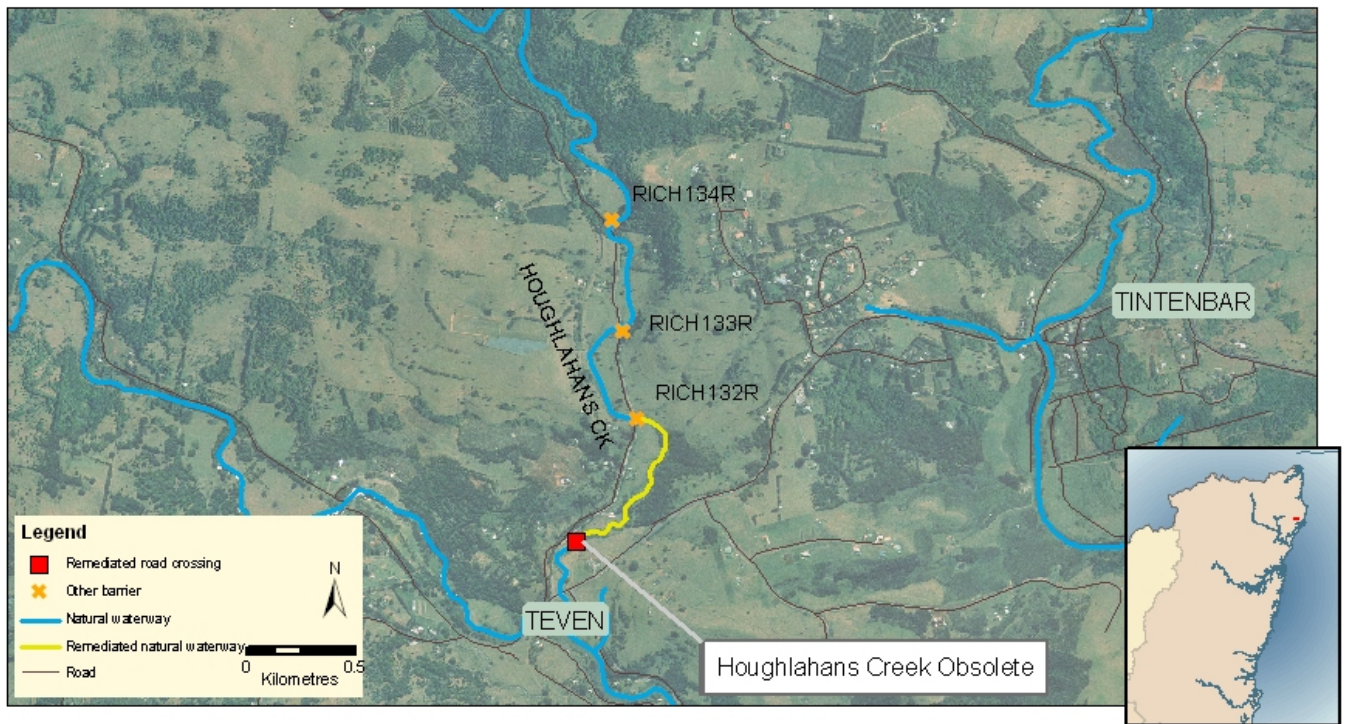
- Port Macquarie-Hastings Council





# OBSOLETE CROSSING, HOUGHLAHANS CREEK

Unnamed Road, Richmond Catchment



## Remediation Works

- Four-celled pipe culvert crossing made redundant due to historic road realignment.
- Headloss (200 mm) and water velocity barrier
- No identified private or public use.
- Full removal proposed followed by insertion of rock protection to maintain upstream pool for existing water license.
- Works completed over single day in August 2009.

## Remediation Benefits

- Improved access to 1 km.
- Two of initial five road crossing barriers on Houghlahans Creek have been remediated in past two years.

## Project Costs

- Crossing Removal - \$2,634
- Bed survey - \$500

## Partners

- LPMA, Ballina Shire Council