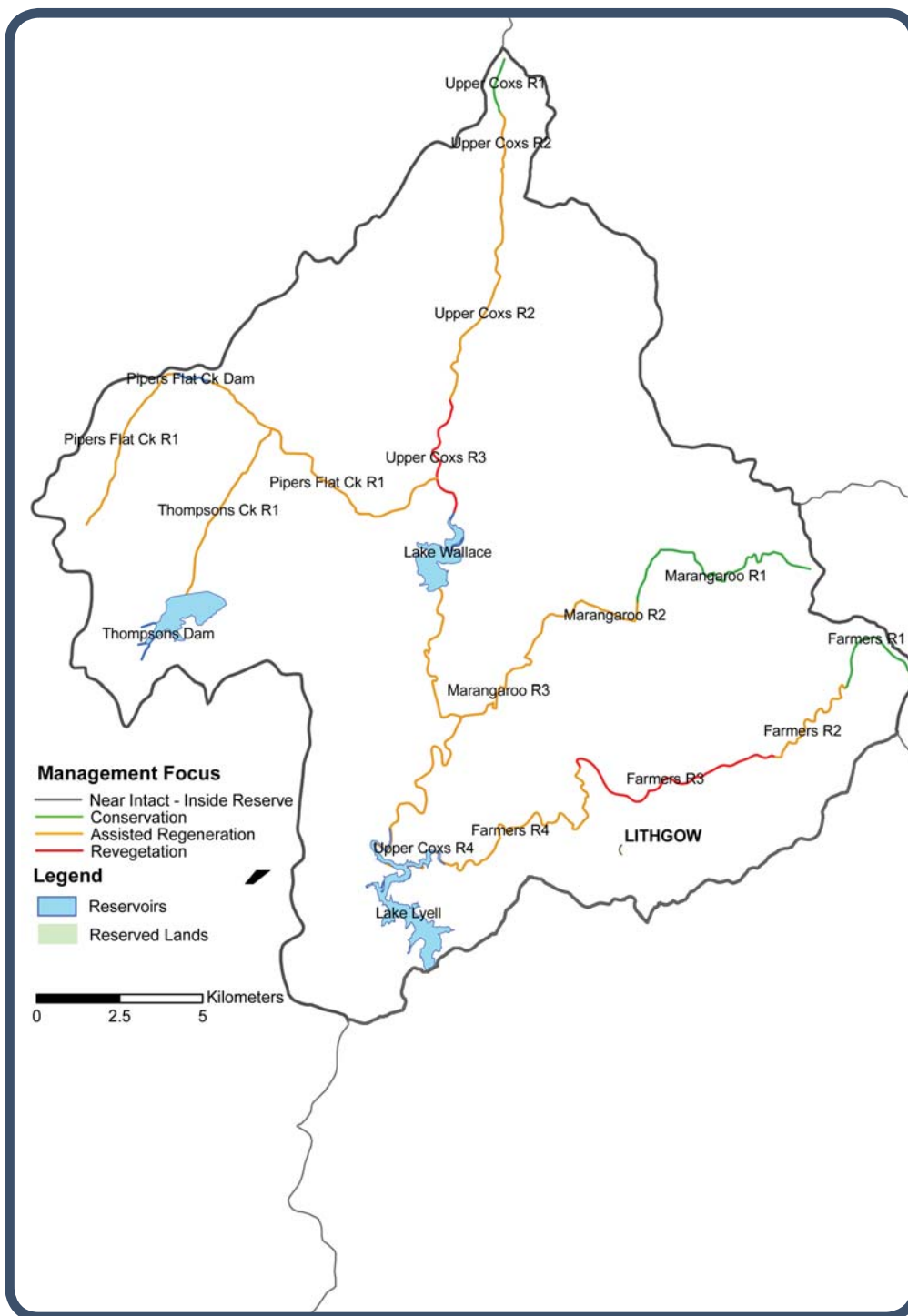


Upper Coxs River Subcatchment



The Upper Coxs River subcatchment contains the largest range of river channel types of any Hawkesbury Nepean subcatchment, ranging from Chain of Ponds to fully concrete lined urban channels. A number of river reaches are in very good condition with a management focus on conservation. These are typically the headwater reaches of the rivers. However, the majority of river reaches are highly degraded. The land has been extensively cleared for industry, agriculture and grazing, and some creeks are highly modified by urban developments.

An extremely rare example of a Chain Of Ponds river channel type in good condition with a high recovery potential is located in the upper reaches of the Coxs River. This is a unique aspect of the subcatchment and should be a priority for management to protect it from degradation.

The Coxs River is impounded at Lake Wallace and Lake Lyell, with another large impoundment at Thompsons Dam at the headwaters of the Thompsons creek tributary. A smaller reservoir is located on Farmers Creek. The impoundments serve the needs of the very significant electricity generation industry of this area and provide town drinking water.

The subcatchment is characterised by a high level of community based environmental activity, much of which is related to the protection and restoration of habitat for the Copper Wing Butterfly.

Reach Management Recommendations – Upper Coxs River Subcatchment

Reach Name	Reach Description	Riparian Land Management Category	Reach Values	Reach Threats	Reach management recommendations (Planning, Education, Works, Monitoring, Institutional)
Upper Coxs R1	Headwaters	Conservation (Near Intact outside reserve)			<ul style="list-style-type: none"> Develop conservation management agreements to protect remnant riparian vegetation (P)
Upper Coxs R2	From approx. 5km upstream of Long Swamp to confluence with Wallerawang Colliery Creek	<p>Conservation (top section of reach where Chain of Ponds is in Good Condition)</p> <p>Assisted Regeneration (remainder of reach)</p>	<ul style="list-style-type: none"> Good riparian vegetation Wetland of local significance (Long Swamp) Rare or threatened river category (Chain of Ponds) Good river condition High geomorphic recovery potential Popular recreational fishing Significant community based environment activity 	<ul style="list-style-type: none"> Damaging access – stock Barriers to ecosystem functioning Flow extraction Potential future threat from mine de-watering 	<ul style="list-style-type: none"> Develop and implement conservation management agreements to protect remnant riparian vegetation and geomorphology (P) Aquatic habitat condition and connectivity improvement (P,W) Riparian wetland management Management of stock impacts on waterways (W) Encourage adoption of sustainable land management practices in riparian lands (E,P) Water quantity / flow management (I) Maintain existing community based environment activity (P,E)
Upper Coxs R3	From Upper Coxs R2 to Lake Wallace	Revegetation	<ul style="list-style-type: none"> Popular recreational fishing Popular non-motor boating High public recreation access Significant irrigation water supply 	<ul style="list-style-type: none"> Modified / engineered channel Damaging access Barriers to ecosystem functioning Flow regulation Flow extraction Stormwater from Wallerawang Gorse (source in Pipers Creek – could infest subcatchment if moves downstream) <p>Action Triggers</p> <ul style="list-style-type: none"> Severe downstream impact – Dam in reach Severe immediate threat – coarse sediment supply to reach 	<ul style="list-style-type: none"> Revegetation with indigenous riparian vegetation (W) Management of stock impacts on waterways (W) Encourage adoption of sustainable land management practices in riparian lands (E) Aquatic habitat condition and connectivity improvement (P,W) Removal/replacement of exotic riparian vegetation (W) Water quantity / flow management (I) Urban water quality and sediment management (I,W) Increase community capacity for environmental restoration (E)
Upper Coxs R4	From Wallerawang Dam (Lake Wallace) to upper edge of Lake Lyell (Lyell's Dam)	Assisted Regeneration	<ul style="list-style-type: none"> Good riparian vegetation Popular recreational fishing 	<ul style="list-style-type: none"> Damaging access (limited to specific points – stock and human) Barriers to ecosystem functioning Flow regulation Flow extraction <p>Action Triggers</p> <ul style="list-style-type: none"> Potential severe immediate threat from hard rock quarry 	<ul style="list-style-type: none"> Aquatic habitat condition and connectivity improvement (P,W) Management of stock impacts on waterways (W) Encourage adoption of sustainable land management practices in riparian lands (E,P) Water quantity / flow management (I) Manage human impacts at public recreation river access points and along foreshores (E,W) Increase community capacity for environmental restoration (E)

Reach Management Recommendations – Upper Coxs River Subcatchment

Reach Name	Reach Description	Riparian Land Management Category	Reach Values	Reach Threats	Reach management recommendations (Planning, Education, Works, Monitoring, Institutional)
Thompsons Creek R1	From Thompsons Dam wall downstream to Pipers Flat Creek, through Falnash State Forest	Assisted Regeneration	<ul style="list-style-type: none"> • Good riparian vegetation • Popular recreational fishing • Identified flagship species (Black Swan; Trout) • Significant irrigation water supply • Some community based environment activity 	<ul style="list-style-type: none"> • Modified / engineered channel (Thompsons Creek Dam wall upstream) • Flow extraction • Thompsons Creek Dam upstream – changed sediment and hydrology for this downstream reach 	<ul style="list-style-type: none"> • Water quantity / flow management (I) • Increase community capacity for environmental restoration (E)
Marangaroo R1		Conservation (Near Intact outside reserve)			<ul style="list-style-type: none"> • Develop conservation management agreements to protect remnant riparian vegetation (P)
Marangaroo R2	Section near “Fernbrook” and Hermitage colliery – upstream of highway (R1 headwater is near intact and mostly in Newnes State Forest)	Assisted Regeneration	<ul style="list-style-type: none"> • Good riparian vegetation • Rare or threatened river category (meandering vertical) • Identified flagship species (Platypus) 	<ul style="list-style-type: none"> • Barriers to ecosystem functioning • Flow extraction • Urbanising catchment – stormwater related threats such as sediment and nutrient input. • Mine dewatering from Springvale Colliery discharges into this reach which could affect riparian vegetation <p>Action Triggers</p> <ul style="list-style-type: none"> • Rare river category (meandering vertical) 	<ul style="list-style-type: none"> • Aquatic habitat condition and connectivity improvement (P,W) • Urban water quality and sediment management (P,W) • Water quantity / flow management (I) • Increase community capacity for environmental restoration (E)
Marangaroo R3	From colliery rail line (upstream of Wallerawang Rd) to Coxs River	Assisted Regeneration	<ul style="list-style-type: none"> • Good riparian vegetation • Popular recreational fishing • Identified flagship species (Platypus) • Significant irrigation water supply • Commercial fishing (Trout Farm) 	<ul style="list-style-type: none"> • Modified / engineered channel (weir in reach affects the channel) • Barriers to ecosystem functioning • Flow extraction • Potential sediment from quarry 	<ul style="list-style-type: none"> • Aquatic habitat condition and connectivity improvement (P,W) • Management of off-stream land use impacts (W) • Water quantity / flow management (I) • Increase community capacity for environmental restoration (E)
Pipers Flat Creek R1	Whole length of the creek to Coxs River junction. Includes railway dam	Assisted Regeneration	<ul style="list-style-type: none"> • Good riparian vegetation cover • Significant irrigation water supply 	<ul style="list-style-type: none"> • Modified / engineered channel (reach includes Railway Dam) • Damaging access (industrial estate at Wallerawang) • Flow extraction • Stormwater / industrial runoff from Wallerawang impacting on water quality <p>Action Triggers</p> <ul style="list-style-type: none"> • Severe downstream impact (STP) 	<ul style="list-style-type: none"> • Manage human impacts at public recreation river access points and along foreshores (E,W) • Water quantity / flow management (I) • Urban water quality and sediment management (I,W) • Increase community capacity for environmental restoration (E)

Reach Management Recommendations – Upper Coxs River Subcatchment

Reach Name	Reach Description	Riparian Land Management Category	Reach Values	Reach Threats	Reach management recommendations (Planning, Education, Works, Monitoring, Institutional)
Farmers R1		Conservation (Near Intact outside reserve)			<ul style="list-style-type: none"> Develop conservation management agreements to protect remnant riparian vegetation (P)
Farmers R2	Confined reach which includes Farmers Creek Dam, extending from Oaky Park to just downstream of mine rail line crossing at upstream edge of Morts Estate	Assisted Regeneration	<ul style="list-style-type: none"> Good river condition Town drinking water supply 	<ul style="list-style-type: none"> Modified / engineered channel High woody weed invasion (Scotch Broom) Damaging access Barriers to ecosystem functioning Flow regulation (drinking water dams) Flow extraction Subdivisions on creek side 	<ul style="list-style-type: none"> Aquatic habitat condition and connectivity improvement (P,W) Removal/replacement of exotic riparian vegetation (P,W) Management of stock impacts on waterways (W) Encourage adoption of sustainable land use practices in riparian lands (P,E) Water quantity / flow management (I) Rural water quality and sediment management (P,W) River corridor planning and protection (P) Increase community capacity for environmental restoration (E) <ul style="list-style-type: none"> Develop conservation management agreements to protect remnant riparian vegetation (P)
Farmers R3	Largely channelised running through Lithgow urban to area just above STP discharge point	Revegetation	<ul style="list-style-type: none"> Significant environmental program tied to flagship species (Copper Wing Butterfly) Significant community based environment activity (Lithgow Community Nursery) High public recreation access (footpath beside reach) 	<ul style="list-style-type: none"> Modified / engineered channel (mostly concrete channel through urban area) Woody weed invasion – Broom and Tree of Heaven Barriers to ecosystem functioning Flow regulation Flow extraction Cracking of concrete channel bed Urbanisation impact – stormwater and changed flow and increased nutrients <p>Action Triggers</p> <ul style="list-style-type: none"> Severe downstream impact – discontinuity of flow due to concrete channel Severe immediate threat – Tree of Heaven weed 	<ul style="list-style-type: none"> Revegetation with indigenous riparian vegetation (W) Removal/replacement of exotic riparian vegetation (W) Aquatic habitat condition and connectivity improvement (P,W) Water quantity / flow management (I) Urban water quality and sediment management (I,W) Maintain existing community based environment activity (E,P)
Farmers R4	From STP and tip discharge points, upstream of highway, past Great Western Highway and Western railway, past Woollen Mill, to top of Lake Lyell.	Assisted Regeneration	<ul style="list-style-type: none"> Good riparian vegetation Significant vegetation community (Tableland Granite Grassy Woodland) 	<ul style="list-style-type: none"> Barriers to ecosystem functioning Flow regulation Flow extraction Sedimentation from urban subdivision <p>Action Triggers</p> <ul style="list-style-type: none"> Severe downstream impact (STP discharge; stormwater; Blue Green Algae) 	<ul style="list-style-type: none"> Aquatic habitat condition and connectivity improvement (P,W) Water quantity / flow management (I) Urban water quality and sediment management (P,W) Increase community capacity for environmental restoration (E)