



Seven Creeks Action Plan

Fact Sheet 4 – Threats to High Value Attributes

What is a Threat?

In this factsheet, threats are defined as human activities or processes that have caused, are causing or may cause impacts to high value attributes.

Identification of threats to the high value attributes of Seven Creeks is a critical step in determining appropriate management responses.

What are the Key Threats to the Project Area?

Based on a two-day field assessment of the project area, the following key threats were identified:

- Residential and Recreational Development
- Agriculture
- Biological Resource Use
- Human Intrusions and Disturbance
- Natural System Modifications
- Invasive/Problematic Species
- Pollution
- Climate Change and Severe Weather

These threats, together with their potential impacts on the high value attributes of Seven Creeks, are detailed in the following tables.

High Value Attribute – Abundant Birdlife

Threat	Description	Potential Impacts to High Value Attribute
Residential & Recreation Areas	Strathbogie Township	<ul style="list-style-type: none"> reduction in available habitat for some terrestrial species eg Powerful Owl
	Recreation Areas	<ul style="list-style-type: none"> disruption/ interference with breeding habitats adjacent to active recreational zones
Agriculture	Uncontrolled stock access	<ul style="list-style-type: none"> overgrazing and over-browsing of riparian vegetation leading to: <ul style="list-style-type: none"> degradation of feeding/breeding habitat; degradation of prey habitat; trampling/grazing of aquatic macrophytes, leading to degradation of feeding/breeding habitat; pugging of shallows, leading to degradation of feeding habitats
Biological Resource Use	Duck hunting	<ul style="list-style-type: none"> injury or loss of non-game species
	Bush camping	<ul style="list-style-type: none"> collection of firewood reducing ground habitat
	Recreational fishing	<ul style="list-style-type: none"> disruption/ interference with breeding habitats
Natural System Modifications	Over-harvesting of surface/ sub-surface water supplies	<ul style="list-style-type: none"> degradation of aquatic habitats important to a number of waterbird groups, for example: <ul style="list-style-type: none"> grazing waterfowl (eg Black Swan). Key habitats include large expanses of open water. shoreline foragers (eg Dusky Moorhen, Lewin’s Rail). Key habitats include well vegetated swamps. large waders (eg Royal Spoonbill). Key habitats include freshwater wetlands.
	Removal of aquatic macrophytes	<ul style="list-style-type: none"> loss of breeding/feeding habitat for a number of waterbird groups (eg the endangered Australasian Bittern feeds and builds nests within tall, dense wetland vegetation)
Invasive/Problematic Species	Foxes and feral cats	<ul style="list-style-type: none"> predation of eggs and juveniles birds
Climate Change and Severe Weather	Drought	<ul style="list-style-type: none"> degradation of terrestrial and aquatic habitats
	Wildfire	<ul style="list-style-type: none"> degradation of terrestrial and aquatic habitats

High Value Attribute – Native Fish Species

Threat	Description	Potential Impacts to High Value Attribute
Agriculture	Uncontrolled livestock access to waterways	<ul style="list-style-type: none"> • increased turbidity • degraded benthic habitats eg siltation of stream beds, infilling of deep holes (primary Macquarie Perch habitat) • degraded spawning habitats eg siltation of log habitats (for Blackfish) • degraded fringing macrophyte vegetation habitats (for Western Carp Gudgeon and Southern Pygmy Perch) • degraded riparian vegetation, leading to: <ul style="list-style-type: none"> ○ lack of overhanging vegetation that supplies terrestrial food source (invertebrates); ○ lack of long term supply of habitat (timber) to stream; and ○ increased water temperatures from lack of shading.
Biological Resource Use	Recreational fishing	<ul style="list-style-type: none"> • overfishing, in particular: <ul style="list-style-type: none"> ○ sedentary species with limited home ranges (eg Blackfish); and ○ spawning runs of Macquarie Perch.
Natural System Modifications	Over-harvesting of surface/sub-surface water supplies	<ul style="list-style-type: none"> • reduction in stream flushes (and hence increased siltation of habitats) • degradation of water quality
	Desnagging of waterways	<ul style="list-style-type: none"> • loss of spawning habitats (Blackfish) • increased siltation of benthic habitats (due to reduced flow velocities) • infilling of deep holes (primary habitat for Macquarie Perch)
Invasive/Problematic Species	Brown trout	<ul style="list-style-type: none"> • direct predation (eg Macquarie Perch and Mountain Galaxia) • general competition for food resources
Climate Change and Severe Weather	Drought	<ul style="list-style-type: none"> • reduction in stream flushes (and hence increased siltation of habitats) • degradation of water quality • barrier to migration (Macquarie Perch)
	Severe storms	<ul style="list-style-type: none"> • increased sediment delivery to stream
	Wildfire	<ul style="list-style-type: none"> • degradation and/or loss of riparian vegetation • increased sediment inputs • reduced stream flows

High Value Attribute – Healthy Riparian Vegetation

Threat	Description	Potential Impacts to High Value Attribute
Residential and Recreational Development	Strathbogie Township	<ul style="list-style-type: none"> • limits riparian width • limits scale and species mix of revegetation • high cover of introduced ground flora (particularly buttercup)
	Polly McQuinns Water Reserve	<ul style="list-style-type: none"> • high cover of pasture grass • large trees are well below target number for Swampy Riparian Woodland • no recruitment of shrub species
Agriculture	Uncontrolled stock access	<ul style="list-style-type: none"> • overgrazing and over-browsing of riparian vegetation (in particular shrub and ground layers), leading to: <ul style="list-style-type: none"> ○ low species diversity and cover in shrub layer; ○ low recruitment of tree and shrub species; ○ poor canopy health of existing vegetation (through loss of understorey insectivore bird habitat); ○ increased weediness of ground layer (particular buttercups and pasture grasses)
Biological Resource Use	Bush camping	<ul style="list-style-type: none"> • collection of firewood reducing ground log cover
Invasive/Problematic Species	Riparian weeds	<ul style="list-style-type: none"> • introduced tree species (willow) displacing native shrub species • introduced ground flora (eg blackberry, buttercup, pasture grasses) invade riparian land, replacing tussock grasses
	Wombats	<ul style="list-style-type: none"> • over-browsing of natural regeneration
Pollution	Urban stormwater (point source) and agricultural effluents (diffuse source)	<ul style="list-style-type: none"> • increased soil nutrient levels within the riparian zone, favouring the establishment of weed species
Climate Change and Severe Weather	Drought	<ul style="list-style-type: none"> • degradation of swampy riparian vegetation
	Wildfire	<ul style="list-style-type: none"> • degradation and/or loss of riparian vegetation

High Value Attribute – Wetland Springs and Bogs

Threat	Description	Potential Impacts to High Value Attribute
Agriculture	Uncontrolled stock access	<ul style="list-style-type: none"> • overgrazing and over-browsing of riparian vegetation (in particular shrub and ground layers), leading to: <ul style="list-style-type: none"> ○ weed invasion; ○ reduced species diversity and cover through selective grazing and trampling; ○ low recruitment of native plant species; and ○ poor canopy health of existing vegetation (through loss of understorey insectivore bird habitat).
Natural System Modifications	Over-harvesting of surface/sub-surface water supplies	<ul style="list-style-type: none"> • loss/reduction in active springs, leading to loss of native plant species
Invasive/Problematic Species	Riparian weeds	<ul style="list-style-type: none"> • introduced ground flora (eg blackberry, pasture grasses) invade springs, replacing sedge layer
Pollution	Agricultural effluents (diffuse source)	<ul style="list-style-type: none"> • increases in nutrients leading to: <ul style="list-style-type: none"> ○ weed invasion; and ○ elimination of native plants.
Climate Change and Severe Weather	Drought	<ul style="list-style-type: none"> • loss/reduction in active springs, leading to loss of native plant species
	Wildfire	<ul style="list-style-type: none"> • direct loss native vegetation • loss/reduction in active springs, leading to loss of native plant species

High Value Attribute – Permanent Water Supply

Threat	Description	Potential Impacts to High Value Attribute
Natural System Modifications	Over-harvesting of surface/ sub-surface water supplies	<ul style="list-style-type: none"> • increase in magnitude of low flows • increase in the proportion of zero flow
Climate Change and Severe Weather	Drought	<ul style="list-style-type: none"> • increase in magnitude of low flows • increase in the proportion of zero flow
	Wildfire	<ul style="list-style-type: none"> • increase in magnitude of low flows • increase in the proportion of zero flow

High Value Attribute – Good Water Quality

Threat	Description	Potential Impacts to High Value Attribute
Agriculture	Uncontrolled stock access	<ul style="list-style-type: none"> • decreased streambank stability, leading to release of nutrients and sediments to waterway • direct contamination of waterway (manure/urine) from stock camps, stock access • loss of vegetative buffer to overland flow by overgrazing of riparian vegetation • loss of sediment trapping function of instream macrophytes via overgrazing
Natural System Modifications	Over-harvesting of surface/sub-surface water supplies	<ul style="list-style-type: none"> • increase proportion of zero flows, leading to an increased likelihood of an algal bloom • loss/reduction in creek/spring inputs (that may be critical to maintaining low turbidity)
Pollution	Urban stormwater (point source) and agricultural effluents (diffuse source)	<ul style="list-style-type: none"> • degradation of water quality
Climate Change and Severe Weather	Drought	<ul style="list-style-type: none"> • increase proportion of zero flows, leading to an increased likelihood of an algal bloom • loss of grass buffer to overland flow
	Severe storms	<ul style="list-style-type: none"> • bank erosion and loss of stabilising riparian vegetation
	Wildfire	<ul style="list-style-type: none"> • increase proportion of zero flows, leading to an increased likelihood of an algal bloom • loss of vegetative buffer to overland flow by overgrazing of riparian vegetation • loss of sediment trapping function of instream macrophytes via overgrazing • input of ash, sediment to waterway

High Value Attribute – Grazing Land

Threat	Description	Potential Impacts to High Value Attribute
Residential and Recreational Development	Crown frontage licences change from primary production to public purposes reserve	<ul style="list-style-type: none"> • loss of access to grazing lands and water supply
Agriculture	Uncontrolled stock access	<ul style="list-style-type: none"> • reduced feed due to: <ul style="list-style-type: none"> ○ overgrazed and over-rested plants; and ○ increased spaces between tussocks enabling the spread of weeds (eg buttercup) • reduced stock shelter by grazing/browsing of native vegetation leading to: <ul style="list-style-type: none"> ○ poor canopy health of existing vegetation (through loss of understorey insectivore bird habitat); and ○ limited regeneration and maintenance of woodland structure.
Natural System Modifications	Over-harvesting of surface/sub-surface water supplies	<ul style="list-style-type: none"> • reduced streamflows (pools may remain but in inaccessible areas) • degradation of water quality
	Stock exclusion fencing	<ul style="list-style-type: none"> • removing access to riparian lands • removing direct access to waterway
Invasive/Problematic Species	Riparian weeds	<ul style="list-style-type: none"> • weed species (eg blackberry, buttercup) invade riparian land, replacing palatable species
	Wombats	<ul style="list-style-type: none"> • wombats burrows create hazards for stock
Climate Change and Severe Weather	Drought	<ul style="list-style-type: none"> • reduced streamflows (pools may remain but in inaccessible areas) • degradation of water quality
	Increased flooding	<ul style="list-style-type: none"> • limit to access for extended time periods • potential damage to stock fencing
	Wildfire	<ul style="list-style-type: none"> • reduced streamflows (pools may remain but in inaccessible areas) • degradation of water quality

High Value Attribute – Recreational Opportunities

Threat	Description	Potential Impacts to High Value Attribute
Residential and Recreational Development	Lack of recreational facilities at Polly McQuinns Weir	<ul style="list-style-type: none"> • loss of recreational opportunities (eg canoeing) • inappropriate use of recreational area
	Strathbogie township	<ul style="list-style-type: none"> • property boundaries dictate location of tracks/ facilities
Agriculture	Unintentional livestock access	<ul style="list-style-type: none"> • degradation of natural and planted riparian vegetation • degradation of fringing macrophyte vegetation
	Livestock fencing	<ul style="list-style-type: none"> • limits/restricts easy recreational access to Polly McQuinns weir pool
Biological Resource Use	Duck hunting	<ul style="list-style-type: none"> • limits other recreational pursuits with Polly McQuinns weir pool during open season
Human Intrusions and Disturbance	Poor maintenance OR removal of Polly McQuinns weir structure	<ul style="list-style-type: none"> • loss of weir pool
Natural System Modifications	Over-harvesting of surface/ sub-surface water supplies	<ul style="list-style-type: none"> • reduced streamflows (impacting activities such as swimming and fishing) • degradation of water quality (particularly at the weir pool)
Invasive/Problematic Species	Riparian weeds	<ul style="list-style-type: none"> • blackberries within gullies restricts easy recreational access to Polly McQuinns weir pool
	Wombats	<ul style="list-style-type: none"> • over-browsing of planted vegetation
Pollution	Urban stormwater (point source) and agricultural effluents (diffuse source)	<ul style="list-style-type: none"> • degradation of water quality restricting primary contact activities eg swimming
Climate Change and Severe Weather	Drought	<ul style="list-style-type: none"> • reduced streamflows (impacting activities such as swimming and fishing) • degradation of water quality (particularly at the weir pool)
	Wildfire	<ul style="list-style-type: none"> • reduced streamflows (impacting activities such as swimming and fishing) • degradation of water quality (particularly at the weir pool)

Also refer to *Native Fish* and *Abundant Birdlife* threat tables for threats to recreational fishing and bird-watching.