Moreton Bay Regional Council

Planning Scheme Policy for the PineRiversPlan

PSP31 Demonstrating Compliance with the Biodiversity and Waterways Overlay Codes



Planning Scheme Policy for the *PineRiversPlan*

PSP31 Demonstrating Compliance with the Biodiversity and Waterways Overlay Codes

ADOPTION Pine Rivers Shire Council adopted this planning scheme policy on 19 June 2006.

COMMENCEMENT

This planning scheme policy took effect from 15 December 2006.

Amendment 3/2008

ADOPTION OF AMENDMENT

Moreton Bay Regional Council adopted this amendment to the planning scheme policy on 18 November 2008.

COMMENCEMENT OF AMENDMENT

This amendment to the planning scheme policy took effect from 15 December 2008.

I, John Rauber, Chief Executive Officer, of the Moreton Bay Regional Council, hereby certify that this document is a true copy of the original.

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John Rauber Chief Executive Officer



PSP31 - DEMONSTRATING COMPLIANCE WITH THE BIODIVERSITY AND WATERWAYS OVERLAY CODES

HEAD OF POWER

This policy is a document that supports the *PineRiversPlan* and has been made by Council using the process prescribed in the *Integrated Planning Act 1997*.

OBJECTIVE

The objective of this policy is to ensure the efficient and accurate assessment of development applications by:

- 1. ensuring consistency in the data collection methodology and presentation of outcomes in assessment reports;
- 2. ensuring assessment reports are prepared in accordance with recognised standards of ecological assessment;
- 3. ensuring that each report adequately assesses the values of a subject site and the impacts of any proposed development.

DEFINITIONS/APPLICATION

Application

This policy applies to:

- 1. development that is designated as code assessable in Tables 5.2.1 or 5.2.2 of the Waterways Overlay Code and that occurs in any areas identified on Overlay Code Map 5.2 Waterways as:
 - (a) Waterway corridors;
 - (b) a subcatchment of a waterway having a Stream Health Class a to b;
 - (c) a declared Fish Habitat Area;
 - (d) a Ramsar Wetland; or
 - (e) Coastal Wetlands.

AND

- 2. development that is designated as code assessable in Tables 5.1.1 or 5.1.2 of the Biodiversity Overlay Code and that occurs in any of the following areas:
 - (a) Remnant Vegetation identified on Overlay Code Map 5.1A Biodiversity (Remnant Vegetation);
 - (b) Biodiversity Corridors as identified on Overlay Code Map 5.1B Biodiversity (Biodiversity Corridors);
 - (c) Koala Habitats identified on Overlay Code Map 5.1C Biodiversity (Koala Habitat);
 - (d) Protected Vegetation as identified on Overlay Code Map 5.1D Biodiversity (Protected Vegetation).

Definitions

The meanings of specific terms used in this policy are prescribed in the Glossary to the Ecological Assessment Guidelines. Unless otherwise indicated in this policy, all terms used have the meaning prescribed in the *PineRiversPlan*.

POLICY STATEMENT

The *Biodiversity Overlay Code* and the *Waterways Overlay Code* in Chapter 5 of the *PineRiversPlan* contain "specific outcomes" for assessable development in:

- 1) waterway corridors and sub-catchments of waterways having Stream Health Classes a and b, Ramsar Wetlands, Coastal Wetlands, declared Fish Habitat Areas; and
- 2) areas containing Class 1-4 Remnant Vegetation, Koala Habitats, Biodiversity Corridors or Protected Vegetation.



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For development to which this policy applies, the Ecological Assessment Guidelines should be used as a guide to the type and level of detail that must be included in a development application in order to satisfy the assessment officer that the development will meet the specific outcomes. Where the relevant details identified in the Ecological Assessment Guidelines are not provided when the development application is made, they will be the subject of an information request under IDAS.

Ecological Assessment Guidelines

1 Purpose

These Ecological Assessment Guidelines have been prepared to assist in readily determining compliance, or otherwise, with the specific outcomes of the *Biodiversity Overlay Code* and the *Waterways Overlay Code* for development which has been made assessable under either of these codes. Any subsequent development application should be supported by an Ecological Assessment Report addressing those issues relevant to the proposal which have been specifically identified in these guidelines.

The primary purpose of these Guidelines is to ensure the efficient and accurate assessment of development applications by:

- 1. ensuring consistency in the data collection methodology and presentation of outcomes in assessment reports;
- 2. ensuring reports are prepared in accordance with recognised standards of ecological assessment;
- 3. ensuring that each report adequately assesses the values of a subject site and the impacts of any proposed development.

The following flowchart outlines the major components of an Ecological Assessment Report.



2 Ecological Assessment Report Requirements

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Identify ecological features and processes						
Flora - identify and document	 vegetation communities/species; edge effects and other disturbances; spatial and temporal ecological processes. Describe habitat significance and prepare map. 	\rightarrow	survey sed and d			
Fauna – identify and document	 fauna/species; edge effects and other disturbances; spatial and temporal ecological processes. Describe fauna significance. 	\rightarrow	thodologies: cords acces sts consulte			
Waterways/water bodies - identify and document	 aquatic, riparian and terrestrial vegetation communities/species; aquatic and terrestrial fauna communities/species disturbances to stream health and integrity; Describe significance of waterway/water body. 	\rightarrow	Describe me techniques, re speciali			

	Describe development	proposal	
Details of development			
Outline relevant provisions of the Plan	ning Scheme and other releva	nt legislation	

Identify potential impacts on ecological features and processes						
Flora						
Fauna	Identify potential impacts and discuss consequences;					
Waterways/water bodies	outline whether/how the proposal complies with relevant					
	legislation					

Describe impact mitigation strategies

Provide details of all prevention, minimisation, mitigation and rehabilitation strategies



3 Reporting Requirements

3.1 Preparation of Ecological Assessment Report

- (a) Preparation of this Report must be carried out by personnel with relevant tertiary qualifications in ecology, conservation biology, natural resource management or other appropriate disciplines. In addition, personnel undertaking this work must be suitably experienced in the survey, assessment and reporting of the ecosystems, flora, fauna and threatening processes.
- (b) Persons undertaking fauna surveys must hold an appropriate Scientific Purposes Permit from Queensland Parks and Wildlife Service, and must be registered as a Scientific User under the *Animal Care and Protection Act 2001* and have ethical clearance from an Animal Ethics Committee.

3.2 Scope of Ecological Assessment Report

- (a) It is accepted that the level of detail contained within the Report will vary, reflecting the nature of the development proposal, site attributes, etc. The level of detail required will be determined by the Manager Environmental Services.
- (b) Irrespective of the level of detail, the report will:
 - describe the ecological features and processes (see Glossary) of a development site and adjacent lands and waterways/water bodies;
 - provide an assessment of the nature conservation values of these features and processes;
 - document potential impacts of development on these ecological values and features;
 - · detail mitigation measures which will be undertaken to avoid or mitigate impacts; and
 - detail compliance with the relevant provisions of the Planning Scheme and other relevant legislation.
- (c) Where a specific Information Request is made by Council under the *Integrated Planning Act 1997*, seeking more detailed or targeted information than that outlined in this guideline, the Information Request takes precedence.
- (d) The submitted Report must provide a full description of the field methodology used and assumptions made, demonstrating:
 - adequate coverage of all major habitat types or vegetation communities within the site as well as all waterways and water bodies within or adjacent to the site;
 - use of survey techniques suited to any target flora or fauna life histories;
 - repeatability of survey effort; and
 - adequate accounting for influences such as seasonal variations, timing, duration and climatic conditions.
- (e) The Report will include any past records of the site and adjoining lands, waterways, water bodies and coastal waters being used by native fauna. Records include research reports and databases of e.g. EPA Wildnet, Queensland Museum, Queensland Herbarium, local knowledge etc (refer to **Further Reading**)
- (f) The report will include photographs, figures and maps, where appropriate, to enable the identification and location of important features on the ground and replication of survey effort.
- (g) The report will detail all background investigations undertaken in preparing the Report, including literature reviewed, and recognised specialists, authorities and local naturalists consulted.

4 Identification of Ecological Features and Processes

4.1 General methodology

The following established principles must be observed when undertaking biodiversity surveys for flora and fauna species and vegetation communities:

a) Use a survey methodology which accounts for habitat diversity and species requirements

Account for the life histories and habitat requirements of native wildlife known or likely to inhabit a site in any survey program. A summary of fauna survey techniques is provided in Appendix 1, while Walker & Hopkins (1990) provides an excellent guide to vegetation surveying techniques. A survey program must:-

• provide adequate coverage of all habitat types within the subject site; and



- use survey techniques which are suited to the flora and fauna species and vegetation communities being surveyed and to the site characteristics.
- b) Design the survey to minimise environmental and other factors that may reduce the quality of the survey results

Identify aspects of the survey program that may affect the quality of the data collected and adequately address these aspects.

Assess and redress the accuracy and validity of survey findings when these aspects are taken into account. Examples of influencing factors include:

- seasonal and daily variation in fauna breeding, foraging and migration patterns;
- prevailing weather conditions e.g. temperature, humidity, rainfall, wind, etc. on survey days;
- general weather conditions prior to the survey;
- habitat coverage;
- duration of the surveys e.g. number of trap nights;
- timing of surveys e.g. diurnal, nocturnal, early morning, etc.;
- observer skill and experience.

c) Ensure data collected is in a consistent format

Timely assessment of the Report by Council is dependent, in part, upon the data collection supporting the Report being undertaken in a consistent, transparent and repeatable manner.

To this end, use flora and fauna survey and vegetation community mapping methods consistent with those of Council. Appendix 2 shows key data fields that should be collected as part of fauna surveys. Appendix 3 shows key data fields that must be collected as part of flora surveys and vegetation community mapping exercises.

d) Undertake ecological investigations in accordance with best practice research ethics

Always employ practices that avoid or minimise environmental impacts or disturbances when undertaking any ecological investigations or surveys. Typically, such necessary practices are undertaken in compliance with Scientific Purposes permits held by those personnel undertaking field surveys in support of the Report.

e) Include comprehensive interpretation of data

Always ensure that the data are analysed and the results interpreted in a manner that clearly identifies potential implications of the proposal in terms of its effect on the natural environment.

4.2 Terrestrial Vegetation Assessment

Scope

Any site floral assessment must:

- (a) Describe accurately the terrestrial vegetation communities (e.g. age, structure, flora species present, condition, etc.) within the site and on adjacent lands.
- (b) Identify all nationally, regionally or locally rare, endangered or vulnerable flora species within the site and on adjacent lands (see *Nature Conservation (Wildlife) Regulation* (1994, amended 2004) and *Environment Protection Biodiversity Conservation Act* (1999)).
- (c) Identify any evidence of edge effects and other disturbances (locations, causes and levels) which have in the past influenced or have the potential to influence native flora and fauna species and the overall viability of the vegetation community.
- (d) Include mapping showing (but not limited to) the following elements:
 - vegetation communities and the location of any significant flora species, including trees or areas protected by Local Law 45 Tree Preservation or VMA;
 - location of National and Conservation Parks, Forest Reserves, or World Heritage properties;
 - contours;
 - location of natural features such as waterways, wetlands, estuaries, rock outcrops;
 - areas of cleared or modified vegetation.



Methodology of Flora Surveys and Vegetation Community Mapping

Use plot or transect-based survey methods when establishing a species inventory and/or searching for significant species. When searching, cover all vegetation communities and, within these, all micro-habitats (e.g. dry gullies etc.) appropriate for the target species. Appendix 3 provides an example of acceptable Vegetation Survey Methodology. For more detailed information refer to Walker & Hopkins (1990).

4.3 Fauna Assessment

Scope

Any site fauna assessment must:

- (a) Identify terrestrial fauna species present or likely to be present within a site and adjacent lands throughout any given season or year¹. This will require a comprehensive survey of all fauna communities across the site and adjacent lands, in addition to searches of available literature and fauna databases. Of particular interest are species identified as nationally, regionally or locally rare, endangered or vulnerable (see Nature Conservation (Wildlife) Regulation (1994, amended 2004) and Environment Protection Biodiversity Conservation Act (1999)) and migratory birds protected under CAMBA/JAMBA.
- (b) Identify any evidence of edge effects, exotic pest species and other disturbances (locations, causes and levels) which have the potential to influence native fauna population viability.
- (c) Identify specific habitat features available for fauna or indications of fauna presence such as:
 - potential habitat trees e.g. containing hollows;
 - trees with scratch marks;
 - location and identification of scats, tracks and other traces of fauna;
 - fruit and seed falls;
 - fauna trails;
 - fallen logs;
 - termite mounds;
 - ground diggings;
 - rock outcrops;
 - nests in banks;
 - roost/nest/den trees.

Methodology of Vertebrate Fauna Surveys

Appendix 1 provides a summary of best practice survey techniques for all major vertebrate fauna groups that occur within Pine Rivers. This is only a guide to the most commonly employed standard survey techniques and is not intended to be exhaustive.

For fauna surveys, a minimum of four days and nights survey time is recommended to minimise any sampling duration influences within any given sampling period. In circumstances where less sampling effort may be warranted, appropriate justification must be provided in the Report.

Appendix 1 also includes explanatory notes that highlight significant survey design considerations such as survey duration, number of trap nights, etc. Appendix 2 outlines the key data requirements for vertebrate fauna surveys.

4.4 Waterway/Water Body Assessment

Scope

The level of assessment of any waterways, wetlands, or coastal waters within or adjacent to the site will be subject to the current health, values and sensitivity of that waterway/water body and its location. It is advisable to check with the Council before finalising survey details.

A full assessment of the health and state of a waterway or water body within or adjacent to the site must:

(a) Identify the state and values of the waterway, wetland or coastal waters within a local or regional context, including, but not limited to, the following:

¹ Moreton Bay Regional Council has species lists for all Regional Ecosystems.



- location within catchment e.g. in headwaters, mid-reaches, estuarine reaches or near mouth;
- stream health classification as defined in the latest Pine Rivers Shire Council Stream Health map;
- presence and condition of riparian vegetation and overhanging vegetation, presence of instream detritus, stability of banks and beds;
- stream health upstream, within and downstream of development site, including as a minimum those parameters outlined in the PRSC *Stream Health Manual* (Nolte and Loose, 2004);
- variations in flow/water levels with season or due to other factors;
- diversity of aquatic vegetation and algae within the waterway/water body;
- conservation status, including, but not limited to, whether a Ramsar wetland or declared Fish Habitat Area, VMA status of surrounding vegetation, location in relation to National and Conservation Parks, Forest Reserves, or World Heritage properties.
- (b) Identify terrestrial and aquatic fauna and flora species present or likely to be present within or adjacent to the waterway/water body throughout any given season or year. This will require:
 - a comprehensive survey of all aquatic flora and fauna communities, terrestrial vegetation communities, and other ecological features within and adjacent to the waterway/water body (of particular interest are species identified as nationally, regionally or locally rare, endangered or vulnerable (see *Nature Conservation (Wildlife) Regulation* (1994, amended 2004) and *Environment Protection Biodiversity Conservation Act* (1999)) and migratory birds protected under CAMBA/JAMBA);
 - searches of available literature and fauna databases;
 - a survey of macroinvertebrate populations of the waterway/water body.
- (c) Assess the potential impacts of the proposal on quantitative water flows of or into the river, stream or wetland, including effects on base flows, flood flows and natural variations in flow, and subsequent potential damage to instream and riparian habitat, flora and fauna or to properties downstream.

Methodology

Stream/wetland/coastal ecosystem health

Appropriate methods for monitoring the water quality and overall health of streams and rivers are outlined in the PRSC *Stream Health Manual* (Nolte and Loose, 2004) and the ANZECC (2000) guidelines also provide guidance regarding water quality monitoring. Depending on the size of the proposed development, the survey should include at least three sites, including one upstream, one within and one downstream of the site.

Note that specific techniques are required for assessing the health of wetlands and coastal environments and a specialist should be consulted.

Macroinvertebrate survey

This survey should be a full quantitative survey as outlined in Nolte (2004) if:

- the water body is a natural wetland of national or local importance (refer to Directory of Important Wetlands in Australia, 2004);
- the stream or river is classified as **a**, **b** or **c** in the latest Pine Rivers Shire Council Stream Health mapping; or
- the stream or river has not been mapped in the latest Pine Rivers Shire Council Stream Health mapping; or
- the waterway or water body is located within the catchments upstream of the water reservoirs Lake Samsonvale and Lake Kurwongbah; or
- the proposed development is large-scale or is located on the banks of a waterway or water body.

If none of the above apply, the macroinvertebrate assessment can be qualitative as outlined in Nolte (2004).

Vertebrate Fauna

Appendix 1 provides a summary of best practice survey techniques for fish. This is only a guide to the most commonly employed standard survey techniques and is not intended to be exhaustive.



For fauna surveys, a minimum of four days and nights survey time is recommended to minimise any sampling duration influences within any given sampling period. In circumstances where less sampling effort may be warranted, appropriate justification must be provided in the Report.

Appendix 1 also includes explanatory notes that highlight significant survey design considerations such as survey duration, number of trap nights, etc. Appendix 2 outlines the key data requirements for vertebrate fauna surveys.

Note that survey techniques for the vertebrate fauna of coastal environments are highly specialised and a specialist should be consulted.

5 Development Description and Assessment of Potential Impacts

5.1 Description of Proposal

Provide a brief outline of the proposed development including the proposed location of constructed features such as buildings, roads, earthworks, dams etc. Provide detailed maps of the development.

5.2 Detail Relevant Legislation

Identify relevant statutory and non-statutory planning mechanisms that affect (extent and nature) the development site and adjacent lands or trigger development controls. These may include, but are not limited to:

- PineRiversPlan:
 - Biodiversity Code;
 - Waterways Code;
 - Desired Environmental Outcomes;
 - Zoning and Locality Codes as defined within the *PineRiversPlan*;
 - Pine Rivers Shire Council Local Law 45: Tree Preservation.
 - State and Commonwealth planning mechanisms:
 - State Planning Policies;
 - Nature Conservation (Wildlife) Regulation (1994, amended 2004).
 - Queensland Nature Conservation Act 1992;
 - Environment Protection Biodiversity Conservation Act 1999;
 - Queensland Vegetation Management Act as amended 2004;
 - South-East Queensland Regional Plan 2005;
 - Regional Nature Conservation Strategy for South East Queensland 2003-2008.

5.3 Detail Potential Impacts of the Proposed Development

Provide details of potential spatial and temporal (short and long-term) impacts of the development on waterways, water bodies, species and vegetation communities within or adjacent to the subject site, for construction and operational phases of the development. Include an overview of the potential impacts on adjacent lands.

This information must also outline how the proposal conforms with the relevant provisions of the Planning Scheme and other relevant legislation.

These impacts can include, but are not limited to:

(a) Impact on flora (aquatic and terrestrial):

- clearing for construction and/or fire management;
- earthworks;
- stormwater and sewage management and other infrastructure;
- weed or pest invasion, including encroachment of garden plants;
- impacts of domestic animals;
- edge effects;



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- changes to natural flow regimes of runoff, and to nutrient, sediment and pollutant loads.
- (b) Impact on fauna (aquatic and terrestrial):
 - loss, degradation or fragmentation of habitat;
 - loss or degradation of wildlife movement opportunities;
 - effects on breeding or feeding fauna;
 - weed or pest invasion;
 - edge effects;
 - effects of vehicle movements;
 - impacts of pets, stock or other domestic animals.
- (c) Impact on waterways/water bodies:
 - loss, degradation or fragmentation of adjacent terrestrial vegetation including riparian vegetation;
 - physical impacts on banks, bed or floodplains;
 - changes to flow regimes, nutrient, sediment and pollutant loads;
 - impact of stock and other domestic animals.

5.4 Impact Mitigation Strategies

Identify the location, extent and nature of all prevention, minimisation, mitigation and rehabilitation measures. Include design modifications or requirements to be adopted to adequately address the identified impacts. Specifically discuss those impacts that cannot be mitigated and the likely consequences.

Clearly demonstrate how these proposed mitigation strategies meet the relevant objectives or desired outcomes under the Planning Scheme and relevant legislation.

Revegetation/Rehabilitation

Where areas are or could potentially be cleared or degraded, revegetation or rehabilitation should be carried out in accordance with the following techniques:

- 1. Determine the Regional Ecosystem of the site and obtain species lists from the Council Environmental Services Department.
- 2. Identify any native species existing on-site and nearby.
- 3. Initially plant pioneer species, utilising local provenance stock appropriate to the Regional Ecosystem. Do not use cultivars of species.
- 4. Species should be planted in same situation as would occur naturally.
- 5. Use only clean mulch.
- 6. Do not use mulch in areas of undisturbed natural low understorey. Mulch may kill seeds, seedlings and seasonal plants (e.g. ground orchids).
- 7. Use local provenance seed for direct seeding.
- 8. Ensure minimum of 12 months of weed control and plant maintenance.
- 9. Wherever possible, use transplanted stock and topsoil rescued from the development site.
- 10. Remove/control environmental weeds to allow native seed bank to regenerate, but be careful not to remove any species which cannot be identified.
- 11. Limit soil disturbance, which can promote regrowth of target weed species or succession of different weed species.
- 12. As a general rule, space trees at 2m centres (1 per 4m²) and low shrubs etc at 1m centres.
- 13. Incorporate fencing, specifically plain wire fencing to prevent entrance of stock and/or people.
- 14. Provide fencing to exclude stock from riparian zones, drainage depressions, gullies, waterways and their associated buffers.

A full landscape plan must be provided to Council for approval before any revegetation/rehabilitation begins.

	6	Glossary	
	conne	ectivity	The extent to which vegetation is connected to other vegetation so as to facilitate the movement of wildlife, nutrients and energy.
	conse	ervation status	The nature conservation ranking ascribed to a species or area of land (or its sub-components) under local, state or federal legislation or through recognised regional planning initiatives.
	divers	iity	The number (richness) of vegetation communities, flora and/or fauna species occurring in a given area.
	ecolo	gical corridor	A strip or block of habitat connecting otherwise isolated units of suitable habitats and allowing the dispersal of organisms and the consequent mixing of genes. A corridor is also beneficial to plant populations that have been isolated due to fragmentation. A corridor may include areas that are presently degraded or cleared but still offer the potential to act as a linkage if rehabilitated or allowed to regenerate.
	ecolo	gical features	Any natural features which form a component of the ecology of an area, including vegetation communities, wildlife utilising the habitat, natural waterways or water bodies and geological features.
	ecolo	gical processes	Hydrological and riparian processes of wetlands, waterways and coasts; successional, plant dispersal, recruitment and fire regime processes in bushlands; soil formation and stabilisation, erosion and deposition; fauna and flora population dynamics.
	ecosy	stem	A community of organisms interacting with one another and the environment in which they live.
	edge	effects	Occur at or near the boundary between different landscape or habitat types and include changed microclimatic conditions, increased exposure to wind and light, changes in the water regime, increased predation, displacement of some species by more aggressive species including weeds, domestic animals and edge specialists, and changes in vegetation composition and/or structure.
	Regio	nal Ecosystems	Vegetation communities in a bioregion that are consistently associated with a particular geology, landform and soil.
	riparia	an (vegetation)	Vegetation situated on or associated with the banks of a waterway.
	specie	es	A group of plants, animals or micro-organisms that have a high degree of similarity and generally can interbreed only among themselves.
	stag		A standing dead tree, often an emergent, above the surrounding vegetation canopy.
X	viabili	ty	The capacity of an ecosystem, flora or fauna community, species population and supporting ecological processes (e.g. energy, water, nutrient cycles) to persist in the wild in the long term.

7 Further Reading

Allen, G R, Midgley, S H & Allen M. (2002) *Field Guide to the Freshwater Fishes of Australia*. Western Australian Museum.

Applied Freshwater Science (2001) *Defining and Protecting Resources of Ecological Significance: health and biodiversity values of streams in the Pine Rivers Shire, Queensland.* Report prepared for Environmental Services, Pine Rivers Shire Council.

Australia and New Zealand Environment and Conservation Council (ANZECC) (2000a) Australian and New Zealand Guidelines for Fresh and Marine Water Quality.



Australia and New Zealand Environment and Conservation Council (ANZECC) (2000b) Australian Guidelines for Water Quality Monitoring and Reporting.

Environment Australia (2001 as amended 2004) *Directory of Important Wetlands in Australia.* Environment Australia, Canberra. Website: <u>http://www.environment.gov.au/wetlands/wet2.html</u>

Environment Protection Agency (2003) *Regional Nature Conservation Strategy for South East Queensland 2003-2008.* Prepared by the Regional Nature Conservation Strategy Advisory Group.

McDonald, R C, Isbell, R F, Speight, J G, Walker, J & Hopkins, M S (eds) (1990) *Australian Soil and Land Survey: Field Handbook.* Inkata Press, Melbourne-Sydney.

Nolte, U (2004) *Methods for biological monitoring of waterways using macroinvertebrates.* Internal report prepared for Environmental Services, Pine Rivers Shire Council.

Nolte, U & Loose, P (2004) *The Stream Health Manual.* Report prepared by Environmental Services, Pine Rivers Shire Council.

Office of the Queensland Parliamentary Counsel (1994) Nature Conservation (Wildlife) Regulation (amended 2004).

Office of Urban Management (2004) *South-East Queensland Regional Plan.* Report prepared for the Department of Local Government, Planning, Sport and Recreation. Website: <u>http://www.dip.qld.gov.au/seq</u>

Queensland Government (1992) Queensland Nature Conservation Act.

Queensland Government (1999, as amended 2004) *Queensland Vegetation Management Act.* <u>http://www.legislation.qld.gov.au/LEGISLTN/CURRENT/V/VegetManA99.pdf</u>

Sattler, P & Williams, R (eds) (1999) *The Conservation Status of Queensland's Bioregional Ecosystems.* EPA, Brisbane.

Walker, J & Hopkins, M S (1990) Vegetation. In: *Australian Soil and Land Survey: Field Handbook*. Pages 58-86.

Inkata Press, Melbourne-Sydney.

Department of the Environment and Heritage (1999) *Environment Protection Biodiversity Conservation Act* 1999 Website: <u>http://www.deh.gov.au/epbc/about/index.html</u>

REVIEW TRIGGERS

This policy is reviewed internally for applicability, continuing effect and consistency with planning scheme and other legislative provisions when any of the following occurs:

- (1) the planning scheme is amended;
- (2) the planning scheme is replaced by a new planning scheme;
- (3) amendments which affect the allowable scope and effect of a planning scheme policy are made to the *Integrated Planning Act 1997*; and
- (4) other circumstances as determined from time to time by a resolution of Council.

RESPONSIBILITY

This policy is to be:

- (1) implemented by the Senior Manager, Development Services; and
- (2) reviewed and amended in accordance with the "Review Triggers" by the Senior Manager, Regional and Environmental Planning, in consultation with the Senior Manager, Development Services.



APPENDIX 1 BIODIVERSITY SURVEY TECHNIQUE CHECKLIST FOR FAUNA

Technique	Mammals	Birds	Insectivorous Bats	Fruit Bats	Reptiles	Frogs	Fish	Comments & Guidelines
Diurnal survey	~	~			~			 Birds (dawn chorus): slowly walk along transect or plot, stopping for 5-10 minutes at the start and end of transects. Minimum duration: 20 minutes/transect or plot. Complete surveys within 3 hours of sunrise. Stagger starting times. Reptiles: ground search throughout day to cover crepuscular and strictly diurnal species. Look under rocks, debris etc. for a minimum of 1 hour (site-dependent).
Spotlighting	*	*	•	•	*	•	~	 Do not spotlight soon after or during nocturnal voice playback using predator calls e.g. owls. Do not use vehicles – search on foot. Minimise disturbance. Restrict globe strength to 30 – 50 watts. Use red or opaque filters once an animal has been detected. Limit survey team size to 2 persons per transect any one time. Start surveys at least 1 hour after sunset. Stagger sessions throughout evening. Minimum duration of survey should be one hour (site dependent).
Arboreal trapping	*							 Appropriate method for gliders. Survey design dependent upon site characteristics. Set traps 5 - 7 metres above ground. Bait as for ground-based traps. Clear daily, at or before sunrise.
Pitfall traps	~				v	*		 Typically use no less than 5x 20 litre buckets, 5 metres apart along each transect. Use drift fencing (30 cm high) to direct animal movement toward traps. Bury buckets flush with the ground.
Elliot traps (type A&B) Cage traps	~				~		C	 Place traps at least 5 metres apart. Place Cage and Elliot traps (type B) at each end of transect. Bait typically with either, rolled oats, peanut butter, honey and vanilla essence or with sweet potato soaked in linseed oil. Set traps late afternoon and check at or just before sunrise.



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Technique	Mammals	Birds	Insectivorous Bats	Fruit Bats	Reptiles	Frogs	Fish	Comments & Guidelines
Electronic bat detector			*					 Specialised survey technique. Only to be undertaken by a suitably qualified/experienced person. Accurate ultrasonic call analysis is critical. Record ultrasonic calls by walking a transect and stopping to record calls or by remote recording at specific locations e.g. stag trees. Duration dependent upon bat activity (generally minimum 20 minutes).
Voice playback/call recording		~				~		 Do not use this technique in conjunction with spotlighting with mammals and other prey species – especially after broadcasting predator calls e.g. owls. Note that failure to attract an answering call to a recording does not prove absence of a species.
Nocturnal amphibian survey						*		 Use a combination of spotlighting and voice playback/call recording techniques to identify frog species present. Avoid handling the frogs – ensure the frogs do not contact any chemicals e.g. insect repellant etc. and use clean wet hands and glass containers. Keep the frogs moist. Release all frogs in the same location where captured, immediately following identification. Minimise habitat disturbance.
Aquatic bait trap/netting Electrofishing		•					*	 Bait trap: bait with dried cat food. Set for at least 15 minutes. Seine net and dip nets: survey as a minimum a 50 metre stretch of waterway within, upstream and downstream of the subject site with both seine and dip nets. Use dip nets for sampling weed beds and undercut banks. Electrofishing: use where netting is impractical.
Stag- watching	~	~						 Complements spotlighting and arboreal trapping. Use for cryptic species and for forming accurate estimates of population densities or numbers. Observe known or suspected nest or retreat trees at dusk and record observed fauna movements.
Hairtube	~						0	 Typically consists of a 50 mm diameter plastic pipe approx. 15-20 cm long, lined with 3 or more strips of double sided tape. Bait as for Elliot traps. Traps are either open at both ends with bait in middle or sealed at one end.
								 Tubes must be secured to prevent trap movement. Hair samples trapped on the tape require expert identification.



APPENDIX 2	FAUNA DATA REQUIREMENTS
Start date and time	The date the survey began in day/month/year format and the time of day the survey was carried out.
End date and time	The date and time the survey was completed.
Location	Map coordinates of the survey location in Northing and Easting format or as Longitude and Latitude.
Location precision	The accuracy of the location information provided. GPS instruments provide a certain level of accuracy. The highest possible accuracy is preferred.
Weather	Weather conditions at the time of the survey including rainfall, cloud cover, air temperature. Include rainfall for previous month.
Species scientific nam	e Identify all fauna to genus and species level.
Species common name	e It is preferable to provide the common name as well as the scientific name.



APPENDIX 3 VEGETATION MAPPING METHODOLOGY

SITE SURVEY FORM –VEGETATION SURVEY DATE: SURVEYOR:

SITE DETAILS

SITE CHARACTERISTICS	
Tag Number:	
E:	
N:	
Aspect:	
Vegetation Classification – Pre-clearing	
Vegetation Classification - Remnant	
Conservation Status	
Conservation Status	

LANDFORM PATTERN & GEOMORPHOLOGY

LANDFORM PATTERN	RELIEF	MODAL SLOPE	STREAM CHANNEL PATTERNS	GEOMORPHOLOGICAL ACTIVTY
Plains and peneplains	<9m	1:100 – 1:30	Non-tributary, unidirectional, Alluvial	Aggraded, eroded
Rises	9m-30m	1:30 - 1:10	Tributary, Non-	Eroded
Low Hills	30m-90m	1:10 - 1:3	directional, Erosional	
Hills	90m-300m	1:3 – 1:2		
Mountains	300m+	1:2 – 1:1		

RAINFALL

Est. Rainfall (av annual at nearest recording point of similar altitude and aspect)

Mt Glorious 625m 1661mm				
Mt Nebo 610m 1420mm				
Dayboro 52m 1257mm				
Samford 53m 1113mm				
Petrie 8m 1215mm				
Strathpine 25m 1189mm				

LAND ZONE	
LAND ZONE	
1 – Quaternary marine deposits	
3 – Cainozoic alluvial plains	
5 – Laterite	
8 – Cainozoic igneous rocks	
9/10 – Mesozoic consolidated sediments	
11 Palaeozoic sedimentary rocks	
12 – Igneous rocks (granitoids and intermediate to volcanics)	



FLORISTICS	
CANOPY	
Indicator species	
Most common species	
Other common species	
Uncommon species	
Unexpected species	

MID-STOREY	
Indicator species	
Most common species	
Other common species	
Uncommon species	
Unexpected species	

GROUND-STOREY	
Indicator species	
Most common species	
Other common species	
Uncommon species	
Unexpected species	

RARE & THREATENED SPECIES Species

DISTURBANCE

(circle most appropriate)

RATING	RATING DESCRIPTION		
0	no effective disturbance - natural		
1	no effective disturbance other than grazing by hoofed animals		
2	limited clearing eg selective logging		
2a	limited clearing of canopy, understorey cleared and/or mostly weeds		
3	extensive clearing eg poisoning or ringbarking		
4	complete clearing - pasture, native or improved but never cultivated		
5	complete clearing - pasture, cultivated at some time		
6	cultivation or exotic plantation		
7	cultivation and irrigated, past or present		
8	highly disturbed - eg quarry, sand or clay extraction, landfill, urban		
9	completely cleared or highly disturbed - now mostly weed regrowth		
10	completely cleared or highly disturbed - now mostly natural regrowth		
11	completely cleared or highly disturbed - rehabilitated		

Disturbance of site based on criteria (p88 McDonald et. al.) and any additional description

Fire:

Storm damage:

Habitat trees remaining:

Other information:

Wildlife observations:



ENDNOTES

	Amendment No – 3/2008 Planning Scheme Policy Reference		Date Adopted – 18 November 2008	Effective Date – 15 December 2008		
			Description of Amendment			
	Page 1 Head of Power	Reword statement.				
	Page 1 Application 1		 At (c) insert "declared" prior to "Fish" and amend "Reserve" to 'Area". Delete "a Fish habitat Reserve Buffer (100m)" and renumber. 			
		• L • Ir	nsert "Coastal Wetlands" and renumber.			
	Page 1 Application 2	 At (a) amend "Terrestrial Ecosytem" to "Remnant Vegetation" and amend map name. Reorder maps. Amend "Ecological Corridors" to "Biodiversity Corridors" and amend map name. At (d) delete "Areas". 				
	Page 1 Definitions	 Delete word "Schedule". Amend to refer to <i>PineRiversPlan</i> rather than individual section. 				
	Page 1 Policy Statement	Amend "planning scheme for the Shire" to "PineRiversPlan".				
	Page 1 Policy Statement 1)	 Delete "and Buffers" twice. Delete word "declared". Amend word "Reserves" to "Areas". Insert "Coastal Wetlands". 				
	Page 1 Policy Statement 2)	 Amend word "Cateogry" to "Class". Insert word "Remnant" prior to "Vegetation". Amend word "Ecological" to "Biodiversity". 				
	Page 2 Policy Statement	Delete word "Schedule".				
	Page 7 Scope under 4.4	At las	t dot point under (a) insert "declared" and a	mend "Reserve" to "Area".		
	Page 7 Macroinvertebrate survey under Methodology (under 4.4)	• D • D a	Delete "or estuary". Delete "Note that survey techniques for inver re highly specialized and a specialist should	rtebrate fauna of costal environment d be consulted.".		
	Page 8 5.2 Detail Relevant Legislation	 Amend "IPA Planning Scheme" to "<i>PineRiversPlan</i>". Amend "Planning Scheme" to "<i>PineRiversPlan</i>". 				
	Page 9 5.3 (c)	Insert	further dot point.			
	Page 9 5.4 Impact Mitigation Strategies	Delet	e "(refer Section 3.3)".			
	Page 9 Revegetation/Rehabilitation under 5.4	Insert	further point 14.			
	Page 11 Responsibility	Amer	nd position names.			
		Amer	nd formatting across document.			
		Upda	te web site references where applicable.			
		Amer	nd Pine Rivers Shire Council to Moreton Bay	y Regional Council where applicable.		