SC6.6 Planning scheme policy for the biodiversity, waterways and wetlands overlay code

SC6.6.1 Purpose

The purpose of this planning scheme policy is to:-

(a) provide advice about achieving outcomes in the **Biodiversity, waterways and wetlands overlay code**; and

(b) identify and provide guidance about information that may be required to support a development application where subject to the **Biodiversity, waterways and wetlands overlay code**.

Note—nothing within this planning scheme policy limits Council's discretion to request other relevant information under the Development Assessment Rules made under section 68(1) of the Act.

SC6.6.2 Application

This planning scheme policy applies to assessable development which requires assessment against the **Biodiversity, waterways and wetlands overlay code**.

Note—Council may require an ecological assessment to be undertaken for an ecologically important area even if that area is not identified on a Biodiversity, Waterways and Wetlands Overlay Map.

SC6.6.3 Advice for biodiversity, waterways and wetland protection outcomes

The following is advice for achieving outcomes in the **Biodiversity, waterways and wetlands overlay code** relating to the protection of ecologically important areas, management of impacts on ecologically important areas, koala conservation, linking and rehabilitation of ecologically important areas, buffers to natural waterways and wetlands, management of public access and edge effects, hydrological regimes, groundwater and surface water quality outcomes:-

(a) compliance with PO1 to PO12 of **Table 8.2.3.3.2 (Performance outcomes and acceptable outcomes for assessable development)** of the **Biodiversity, waterways and wetlands overlay code** may be demonstrated in part or aided by the submission of:-

  (i) an ecological assessment report prepared by a competent person in accordance with **Section SC6.6.4 (Guidance for the preparation of an ecological assessment report)**;
  (ii) a site rehabilitation plan prepared by a competent person in accordance with **Section SC6.6.5 (Guidance for the preparation of a site rehabilitation plan)** where required to give effect to recommendations in the ecological assessment report; and
  (iii) a biodiversity offset area management plan prepared in accordance with **Section SC6.20.4 (Guidance for the preparation of a biodiversity offset area management plan)** of the **Planning scheme policy for biodiversity offsets**.

Note—for the purposes of this planning scheme policy a competent person is an appropriately qualified and experienced consultant with tertiary qualifications in environmental science, botany, zoology or another related discipline and with appropriate and proven technical expertise in undertaking flora and fauna surveys and regional ecosystem, ecology and biodiversity assessments within the South East Queensland Bioregion.

SC6.6.4 Guidance for the preparation of an ecological assessment report

General

(1) An ecological assessment report is to include the following:-

  (a) an accurate description of the characteristics of the site;

  (b) a detailed assessment of flora and vegetation communities on the site;

  (c) a comprehensive assessment of the fauna on the site, including fauna that could potentially use the site; and

  (d) recommendations for avoidance, minimisation and as a last resort offset of the potential impacts upon the environmental values of the site.

(2) An ecological assessment report is to be supported by surveys necessary to confirm the presence or likely presence of species on the site.

(3) An ecological assessment report is to be provided to Council in electronic form with excel spread sheets including GPS and easting and northing coordinates.

Site Characteristics

(4) An accurate and clear description of the site is to be provided, including:-

(a) a lot on plan description of the site;

(b) an Australian Map Grid (AMG) description of the site for use in GIS data systems;

(c) compass directions;

(d) a description of slope and aspect characteristics;

(e) the location of waterways and wetlands;

(f) position in the terrain;

(g) a description of the underlying soils and geology;

(h) regional ecosystem maps of both mature and regrowth vegetation; and

(i) accurate scale on each map.

Flora and vegetation community assessment

(5) A flora and vegetation community assessment is to be undertaken in conjunction with a fauna assessment of the site.

(6) Maps produced as part of the flora and vegetation community assessment are to be combined with maps produced as part of the fauna assessment to produce a single coordinated report and map for the site.

(7) The flora and vegetation community assessment is to:-

(a) cover all vegetation communities and all microhabitats (e.g. gullies, ridges, etc.);

(b) survey all relevant rare, threatened and significant species (that would reasonably be expected to be on the site) listed under the *Nature Conservation 1992 Act* and/or the *Environmental Protection and Biodiversity Conservation Act 1999* and their associated habitats;

(c) provide for multiple survey times where necessary to collect a full list of annuals such as herbs, orchids and grasses which may only be obvious during fruiting/flowering periods; and

(d) provide a Queensland Herbarium determination on the identification of site samples of any rare or unknown plants found during the assessment.

(8) The results of a flora and vegetation community assessment are to be reported in the following way:-

(a) through a flora and vegetation community map of the site which is A3 in size, at a scale not greater than 1:500 and containing the following information:-

(i) existing and proposed buildings, roads, services (sewer, water, power lines etc.), transects of the site and their potential construction impact zones (sheds, stockpile areas, access paths) and buffer setback distances for tree fall zones, waterways, wetlands and bushfire mitigation;
(ii) all vegetation associations (terrestrial and aquatic) and their regional ecosystems, including regrowth vegetation (and time until regional ecosystem status will be reached);
(iii) all rare, threatened or significant species within the site and on relevant adjacent properties;
(iv) fauna and flora environmental corridors, including waterways and wetlands areas;
(v) detail of transects and quadrant areas and locations of all fauna survey sites;
(vi) extent of weed infestation (including species) and/or other disturbances such as erosion, land slippage, etc.;

(vii) core habitat for priority species of flora and fauna (including hollow bearing trees, forage trees and ground habitats such as rocks, dens, logs, etc.);
(viii) a clear legend detailing each element described above; and

(b) through a written report containing the following information:-

(i) date of survey;
(ii) names and qualifications of competent person(s) and staff that undertook the survey, including details of relevant permits;
(iii) a description of the structural and spatial floral diversity;
(iv) a table of all flora species identified on the site with a description of their abundance, estimate of age (juvenile or mature), general health, if fruiting or flowering and GPS location;
(v) any potential or active threatening process;
(vi) an assessment of the biodiversity significance (State, Regional, Local) in accordance with the SEQ Biodiversity Planning Assessment; and
(vii) an assessment against the **Biodiversity, waterways and wetlands overlay code**.

Fauna assessment

(9) A fauna assessment is to be undertaken in conjunction with a flora and vegetation community assessment of the site.

(10) Maps produced as part of the fauna assessment are to be combined with maps produced as part of the flora and vegetation community assessment to produce a single coordinated report and map for the site.

(11) The fauna assessment is to:-

(a) cover all vegetation communities and all microhabitats (e.g. gullies, ridges, etc.);

(b) survey all relevant rare, threatened and significant species (that would reasonably be expected to be on the site) listed under the *Nature Conservation 1992 Act* and/or the *Environmental Protection and Biodiversity Conservation Act 1999* and their associated habitats;

(c) provide for at least one sampling site to be established in each hectare or broad ecosystem and habitat type;

(d) be conducted over a minimum of four days and nights with additional seasonal survey sampling undertaken when appropriate and necessary to fully assess the potential species on the site;

(e) provide for multiple survey times in terms of both time of day and throughout the year to ensure that all cryptic, migratory and/or seasonal species are recorded;

(f) provide a Queensland Museum determination on the identification of rare or unknown animals found during the assessment. A determination by someone recommended by the Queensland Museum is also accepted, provided recommendation of the person is also provided; and

(g) utilise the survey techniques and methods for the minimum duration periods set out in **Table SC6.6A (Fauna survey techniques, methods and minimum duration)**.

Table SC6.6A Fauna survey techniques, methods and minimum duration

Survey technique	Methods	Minimum duration
Diurnal search	This involves intensive investigation of streams, ground layer (under logs, rocks and leaf litter), low vegetation (under bark and tree stumps) and caves for target invertebrates and all amphibians, reptiles, bats and animal signs (e.g. scats, owl pellets, remains and tracks). Records of search area must be shown on an A3 plan with a scale of 1:500.	1-2hr/day for each vegetation community during the middle of the day during winter or 1-2 hours at the beginning and end of each day during summer.
Pitfall traps	A pitfall trap line should comprise 3 of more pits (20L containers) and appropriate drift fencing. At least 1 pitfall trap line for each habitat type/vegetation community with a minimum of 3 pitfall trap lines for the site. Pitfall traps should be cleared early morning and late afternoon.	4 days and 4 nights.
Opportunistic records	Covers all fauna outside the systematic survey times.	None.
Spotlighting	Using a combination of high powered spotlights and head torches to be carried out on foot only. This method surveys nocturnal fauna.	2hr/night for 4 nights.
Elliot traps	The Elliot transects should comprise of approximately 20 Elliot traps (varying sizes should be used). At least 1 Elliot transect for each habitat type/vegetation community with a minimum of 4 Elliot transects for the site.	4 days and 4 nights.
Wire cage (possum) and Arboreal traps	Each Elliot transect should include 2 wire cage traps and up to 5 platform mounted arboreal traps which are secured to selected trees.	4 days and 4 nights.
Bird surveys	Transects are walked with 10 minutes spent at each spot. Birds are recorded indicating method of identification (i.e. call or visual observation). Surveys are conducted for 1 hour from dawn to early morning, 1 hour at dusk to early evening and 1 hour during night for nocturnal species.	1hr/day and night for 4 days and nights.
Nocturnal voice playback and call recording	This technique uses voice playback to determine the presence of species that may be difficult to physically observe in the field (e.g. owls and frogs).	1hr/night for 4 nights.
Ultrasonic batt call detectors And/or Harp traps and mist nets	This device records the ultrasonic calls of micro chiropteran bats. For the capture of micro chiropteran bats.	1hr/night for 4 nights. 2hr/night for 4 nights.
Hair tubes	Different sizes of hair tube should be left on site as an additional method of mammal detection. Identification of samples must be undertaken by an expert in this method and their names must be provided in the report.	2 weeks.
Scats, tracks and other traces search	Evidence of fauna can be determined from scats, tracks, scratches, bones, etc.	1hr/night for 4 nights.
Aquatic bait trap/netting	Various methods of aquatic surveying should be undertaken where there is a water body on the site.	To be undertaken when water body is on site.

(12) The results of the fauna assessment are to be reported in the following way:-

(a) through provision of a fauna map for the site which is A3 in size, at a scale no greater than 1:500 and containing the following information:-

(i) all vegetation associations (terrestrial and aquatic) and their regional ecosystem status, including regrowth vegetation (and time until regional ecosystem status will be reached);
(ii) all rare, threatened or significant species within the site and on relevant adjacent properties;
(iii) fauna and flora environmental corridors, including waterways and wetland areas;
(iv) details of fauna sampling areas;

(v) core habitat for priority species of flora and fauna;
(vi) a clear legend detailing each element described above; and

(b) through provision of a written report containing the following information:-

(i) date of survey;
(ii) names and qualifications of competent person(s) and staff that undertook the survey, including details of relevant permits;
(iii) a table of all fauna species identified on the site with a description of their abundance, estimate of age (juvenile or mature), if nesting or feeding, if observed more than once during trapping;
(iv) any potential or active threatening process;
(v) an assessment of the biodiversity significance (State, Regional, Local) in accordance with the SEQ Biodiversity Planning Assessment;
(vi) an assessment against the **Biodiversity, waterways and wetlands overlay code**;
(vii) a description of the potential impacts of the proposed development on the species on the site, including during the design, construction and operational phases of the development;
(viii) recommendations to avoid or minimise adverse impacts through sympathetically designed development layout plans;
(ix) identified areas for the retention, protection, buffering and fencing of remnant native vegetation and native fauna habitat; and
(x) identified areas requiring weed control and revegetation/regeneration to enhance fauna and flora habitat.

Survey parameters

(13) A fauna survey conducted to inform an ecological assessment report is to:-

(a) be conducted for a minimum of 4 days and nights unless otherwise specified by Council's environmental assessment officers for larger sites and for areas of significant environmental value;

(b) include the maximum area likely to be affected by the construction and ongoing operation of the proposed development and adjacent properties that could provide habitat for animals that may migrate to and from the site; and

(c) record the survey dates, weather conditions, locations of all survey sites, methods used to survey fauna, justification for locations and methods used and any other relevant information about the activities undertaken during the survey period.

(14) All surveys are to identify any past records of rare, threatened or significant species in the general vicinity from Council's Ecological Report Card, Nature Search (Wildnet), Queensland Museum, Queensland Herbarium and other databases from local naturalists.

Recommendations for threat abatement

(15) Recommendations for threat abatement are to be provided that address all measures or changes to the development design required to avoid or mitigate the impacts of the proposed development. These measures may include, but not necessarily be limited to:-

(a) threat abatement plans;

(b) species recovery plans;

(c) conservation management plans;

(d) environmental management plans;

(e) fire management plans;

(f) site rehabilitation plans;

(g) sediment and erosion control plans;

(h) water quality management plans; and

(i) fauna management plans for both operational works phase and rehabilitation phase.

(16) Where a proposed development has the potential to adversely impact on biodiversity values, Council may request the preparation of one or more of the above plans, in conjunction with other measures to abate potential impacts.

Provision of biodiversity offsets

(17) For development proposing biodiversity offsets, an ecological assessment of the receiving site is also to be provided in accordance with the **Planning scheme policy for biodiversity offsets**.

SC6.6.5 Guidance for the preparation of a site rehabilitation plan

(1) A site rehabilitation plan is to reflect and be guided by the SEQ Ecological Restoration Framework (as amended) and must include ground fauna habitat restoration.

(2) A site rehabilitation plan is to incorporate/depict the following as relevant to the site and the development:-

(a) reference to any ecological assessment report(s) for the site and how they are addressed in the site rehabilitation plan;

(b) details from any fauna management plan that requires ground fauna habitat restoration and nesting boxes or native bee hives to be located in the revegetation or retained vegetation areas;

(c) a revegetation layout on A3 plans at a scale of not greater than 1:500;

(d) a species palette incorporating the selection of native indigenous species only that are of the appropriate regional ecosystems for the area;

(e) clear zone delineation of species suitable for waterways, wetlands, steep slopes, edge planting, bushfire reduction areas, etc.;

(f) details of ground habitat such as rocks and hollow logs and other structural elements are provided at a similar density and diversity to that which occurs within the regional ecosystem being rehabilitated;

(g) near to equal numbers of each species to be used within the relevant revegetation areas or a bias towards understory species targeted for recovery of a specific flora or fauna species;

(h) as a minimum, the following diversity of species (in appropriate location):-

(i) 3 species of wetland sedges;
(ii) 5 species of macrophytes;
(iii) 5 species of native grasses;
(iv) 20 species of native shrubs; and
(v) 10 species of native trees;

(i) as a minimum, planting at the following density:-

(i) sedges, macrophytes and grasses – 0.5 metre centres;
(ii) shrubs – 1.5 metre centres;
(iii) trees – 3 metre centres for those species 4 metres from the boundary of the rehabilitation works for weed exclusion purposes and 3 to 5 metre centres where further from the edge;

(j) measurable and achievable criteria on which the performance of the floristic and structural components of the revegetation strategy can be assessed annually over three years;

(k) the requirement that the area be weed free at the end of the revegetation period;

(l) nomination of a total bond amount of 1.5 times the schedule of works estimate of costs (plus GST) for the revegetation works, including maintenance for at least three years to be paid to Council;

(m) nomination of triggers for the release of this bond at 10% for the first year, 10% for the second year, and 80% in the third year; and

(n) a methodology for monitoring success of the revegetation.

Note—For areas larger than 5,000m² in area refer to **Section SC6.6.6 (Monitoring requirements for rehabilitation of large sites)**.

(3) For those sites proposing natural regeneration or the translocation of ground flora via the transport of clumps of vegetation or the use of 'live' topsoil with minimal 'infill' planting the following requirements are also to be detailed in a site rehabilitation plan:-

(a) criteria on which the performance of the floristic and structural components of the natural regeneration or translocation strategy can be assessed;

(b) the requirement for inspections to be undertaken at monthly intervals for the first 2 years to ensure that regeneration is meeting the performance criteria, including weed removal;

(c) the requirement that if the natural recruitment of species is not similar in density and diversity as the areas of revegetation within 12 or 24 months (at the discretion of Council) the non-performing natural regeneration or translocation areas are to be immediately revegetated to achieve these densities;

(d) the requirement that a supplementary report be provided to Council detailing the performance criteria for the revegetation of the non-performing natural regeneration or translocation areas;

(e) the requirement that a new/additional bond be provided to Council providing for at least 3 years of maintenance at the end of 12 months for the areas of non-performing natural regeneration areas; and

(f) the requirement that no bond be released for any revegetation works until such time as the natural regeneration areas have either met the performance criteria specified above or a plan of works has been approved by Council and a bond for the extra revegetation works paid to Council.

(4) A site rehabilitation plan may be required to be supported by a soil assessment report which incorporates the following:-

(a) the results of a soil test conducted under *Australian Standard AS4419* for each distinct soil type that works are to be conducted in;

(b) an additional soil test for any excessive nutrients identified by the first soil test; and

(c) recommendations for soil amelioration to amend the planting medium in response to the results of the soil tests.

SC6.6.6 Monitoring requirements for rehabilitation of large sites

(1) Where a site rehabilitation plan provides for revegetation and natural regeneration of sites larger than 5,000m² in area, monitoring is to be carried out in accordance with Council's ecological restoration monitoring protocol.

(2) The monitoring conducted under this protocol provides a framework for an inexpensive and quick understanding of the state of success of revegetation works and natural regeneration.

(3) The protocol relies upon completion of a table of assessment (see **Appendix SC6.6B (Example table of assessment for monitoring)**) which provides an indication of the type and diversity of species, their health, density and mulch cover. The table of assessment is not intended to provide a scientific comparison with a regional ecosystem reference site, but is a simple guide to see how revegetation works are succeeding.

(4) Under the protocol, every six months each ecosystem (i.e. wetlands, riparian, dry heath, open forest, etc.) targeted for revegetation/natural regeneration is to be subject to the following monitoring:-

(a) two permanent 21 metre transects, placed along the contour are to be established for every 5,000m² of area, as detailed in the protocol;

(b) at each end and 7 metres along the 21 metre transect a small quadrant of 2 metres x 2 metres is centred, for monitoring species of plants less than 1 metre high at time of monitoring;

(c) at each end of the transect a large quadrant 7 metres x 7 metres is centred for monitoring of species of plants greater than 1 metre high at time of monitoring;

(d) diversity is shown by the number of species and how many of each there is;

(e) density is shown by the number of stems per 100m²;

(f) health of plants is recorded for each species as a group, on a subjective scale of 0 (dead), 1 (poor) to 5 (good), either as an average or individually if there is too much of a difference between them;

(g) mulch is recorded for each quadrant for depth and % cover; and

(h) other issues such as erosion, vandalism, pests, feral animals, etc. are also recorded.

Appendix SC6.6A Example table of assessment for monitoring

Table SC6.6B Diversity and density of plants in Transect No.A (large quadrant 49m², small quadrant 4m²)

Quad	Species	Height (m)	Veg type	No. in quad	Stems/ 100m²	Ave heath (outlier)	Mulch depth Mulch % Cover Other issues
X	Acmena smithii	1.7, 1.5, 1.25	Tree	3	6	4	Depth 5cm Cover 60%
X	Euc grandis	1, 1.5	Tree	2	4	5	
1	Thermeda triandra	.90, .80, .80, .75, .50, .70	Grass	6	150	4	Depth 1cm Cover 20%
1							**Erosion rills need mulching**
2	Dianella caerulea	.30, .40, .10	Herb	3	75	4(1)	Depth 1cm Cover 80%
2	Lomandra hysterix	.85	Herb	1	25	5	
3	Crinum pedunculatum	.45, .55	GC	2	50	4	Depth 2cm Cover 80%
3							**Extra plants in quad**
4	Crinum pedunculatum	.45, .55, .55	GC	3	70	4	Depth 2cm Cover 80%
4	Lomandra hysterix	.85, .95	Herb	2	25	5	
Y	Banksia spp.	1, 1.5, 1.5	S Tree	3	6	4	Depth 2cm Cover 50%
Y	Euc grandis	1, 1.5	Tree	2	4	5	**Weeds 25%**