



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose permit number:	CPS 185/9
Permit holder:	Water Corporation
Purpose of clearing:	Clearing for <i>project activities</i>
Duration of permit:	20 April 2008 – 20 April 2024

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The permit holder is authorised to clear native vegetation for the above stated purpose, subject to the conditions of this Permit, including as amended or renewed.

PART I - TYPE OF CLEARING AUTHORISED

1. Type of clearing authorised

- (a) In accordance with this Permit, the permit holder may clear native vegetation for *project activities*, which means any one or more of the following:
- (i) new *water services infrastructure*, including *drains*, pipelines, pump stations, and valve pits;
 - (ii) new infrastructure such as building, fences, gates, posts, boards, scaffolding, hurdles, other erections and structures to support the construction or operation of *water services infrastructure*;
 - (iii) new *temporary works*;
 - (iv) new *camps*;
 - (v) in order to maintain the efficacy of the following new and *existing water services infrastructure*, to the following extents:
 - (A) for a building or structure – 20m from the building or structure;
 - (B) for a *drain* or fence line – 5m from the *drain* or fence line;
 - (C) for a vehicle track used to access new and *existing water services infrastructure* – 5m track width;
 - (vi) *project surveys*, including surveying and geotechnical studies;
 - (vii) *pre-construction activities*; and
 - (viii) native vegetation clearing for the purposes of upgrading any of the above activities where such activities are not exempt from requiring a clearing permit.
- (b) This Permit authorises the permit holder to clear native vegetation for *project activities* to the extent that the permit holder has the power to clear native vegetation for those *project activities* under the *Water Corporation Act 1995* or any other *written law*.

2. Clearing not authorised

- (a) This Permit does not authorise the permit holder to clear native vegetation for *project activities* where:
- (i) it does not have the power to clear native vegetation for those *project activities* under the *Water Corporation Act 1995* or any other *written law*;
 - (ii) the clearing is likely to be seriously at variance with one or more of the *clearing principles*;
 - (iii) the clearing and the associated effect on the environment would be inconsistent with any approved policy (as defined in section 3 of the EP Act);
 - (iv) those *project activities* are incorporated in any *proposal* that is *referred* to and assessed under Part IV of the *EP Act* by the *EPA*; or

- (v) the clearing is determined to be a *Controlled Action* under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) as it may have a significant impact on a *matter of national environmental significance*.
- (b) If a *proposal* incorporating a *project activity* has been referred to the EPA, this Permit does not authorise any clearing for that *project activity* until:
 - (i) the EPA has given notice under section 38G(1)(b) of the *EP Act* that it has decided not to assess the *proposal*; and
 - (ii) either:
 - (A) the period within which an appeal against the EPA's decision may be lodged has expired without an appeal being lodged; or
 - (B) an appeal has been lodged against the EPA's decision not to assess the *proposal* and the appeal was dismissed.
- (c) If the permit holder intends to clear native vegetation under this Permit for a *project activity* that is incorporated in a *proposal* referred to in condition 2(b), then the permit holder must have regard to any advice or recommendations made by the EPA under section 38G(7) of the *EP Act*.

3. Application

This Permit allows the permit holder to authorise persons, including employees, contractors and agents of the permit holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit.

PART II - ASSESSMENT PROCEDURE

4. Avoid, minimise, and reduce impacts and extent of clearing

In determining the amount of native vegetation to be cleared, the permit holder must have regard to the following principles, set out in order of preference:

- (a) avoid the clearing of native vegetation;
- (b) minimise the amount of native vegetation to be cleared; and
- (c) reduce the *impact* of clearing on any environmental value.

5. Assessment of Clearing Impacts

- (a) Once the permit holder has complied with condition 4 of this Permit, if any native vegetation is to be cleared the permit holder must conduct a *desktop study* assessing the clearing to be undertaken against each of the *clearing principles* in accordance with the *Assessment Principles* set out in Part III of this Permit.
- (b) The *desktop study* must be conducted having regard to the permit holder's *Preliminary Environmental Impact Assessment Procedure – Clearing of Native Vegetation* and, subject to condition 5(m), must include production of a *PEIA Report*.
- (c) The *PEIA Report* must set out:
 - (i) the manner in which the permit holder has had regard to the principles set out in condition 4 of this Permit;
 - (ii) the manner in which the permit holder has had regard to the permit holder's *Preliminary Environmental Impact Assessment Procedure – Clearing of Native Vegetation* in conducting a *desktop study*;
 - (iii) the amount (in hectares) of clearing required for the *project activity*;
 - (iv) the boundaries of clearing required for the *project activity* recorded on a map(s);
 - (v) how each of the *clearing principles* has been addressed through the *desktop study*;

- (vi) whether the outcome of the desktop study indicates that the clearing is likely to be seriously at variance, at variance, may be at variance, not likely to be at variance or not at variance with each of the *clearing principles*;
 - (vii) whether the outcome of the *desktop study* indicates that the area to be cleared may be affected by *dieback*;
 - (viii) any *impacts* likely to occur as a result of the clearing, including a description of those *impacts* that are likely to be seriously at variance, at variance or may be at variance with one or more of the *clearing principles*; and
 - (ix) whether, in accordance with the *Assessment Principles*:
 - (A) *rehabilitation* and *revegetation*, an *EMP*, a *dieback* management plan, or a *management strategy*, is likely to be required under Part IV of this Permit; and
 - (B) an *offset* is likely to be required under Part V of this Permit.
- (d) Where the outcome of the *desktop study* indicates that the clearing is likely to be seriously at variance, at variance or may be at variance with one or more of the *clearing principles*, the permit holder must undertake *EIA* in accordance with this condition, and seek submissions in accordance with conditions 6 and 7 of this Permit.
- (e) Without limiting condition 5(d), where the information available is insufficient to allow the permit holder to assess the proposed clearing against one or more of the *clearing principles* as part of the *desktop study*, the permit holder must undertake *EIA* in accordance with this condition and seek submissions in accordance with conditions 6 and 7 of this Permit.
- (f) The permit holder is not required to undertake *EIA* if the *CEO* advises so in writing.
- (g) Where required pursuant to condition 5(d), the permit holder must conduct an *EIA* addressing those environmental values identified in the *desktop study* as likely to be affected by the clearing to an extent that is likely to be seriously at variance, at variance or may be at variance with one or more of the *clearing principles*.
- (h) Where required pursuant to condition 5(e), the permit holder must conduct an *EIA* assessing each of those *clearing principles* for which there was insufficient information available to undertake a *desktop study*.
- (i) *EIA* must be conducted having regard to the permit holder's *Preliminary Environmental Impact Assessment Procedure – Clearing of Native Vegetation* and, subject to condition 5(m), must include production of an *EIA Report*.
- (j) *EIA* must include a *biological survey*, and:
- (i) *vegetation condition mapping* and vegetation mapping by delineating on a map the *ecological communities* formed within a given area, and the nature and extent of each combination, within the area to be cleared at the scale of best available mapping information, if the clearing is likely to be seriously at variance, at variance or may be at variance with *clearing principle* (e);
 - (ii) where the area to be cleared may be affected by *dieback*, a *dieback survey*;
 - (iii) where the clearing may have a detrimental *impact* on the environmental values of a *wetland*, a *wetland field assessment*; and
 - (iv) any additional surveys and field assessments that are required to determine the *impacts* of the clearing on any *environmental value* protected by the *clearing principles*,
- and every such survey or field assessment must be conducted by an *environmental specialist*.

- (k) Any *biological survey* carried out pursuant to condition 5(j) must be conducted having regard to the *EPA's* publications:
 - (i) *EPA's* Technical Guidance – Flora EIA; and
 - (ii) *EPA's* Technical Guidance – Terrestrial Vertebrate Fauna EIA.
- (l) The *EIA Report* must set out:
 - (i) copies of any submissions received pursuant to condition 6, and a response to submissions, noting where changes were made to the proposed clearing in response to matters raised in submissions;
 - (ii) the manner in which the permit holder has had regard to the permit holder's *Preliminary Environmental Impact Assessment Procedure – Clearing of Native Vegetation* in conducting an *EIA*;
 - (iii) copies of any mapping and the methodology and the results of any surveys and field assessments carried out pursuant to conditions 5(i) and 5(j);
 - (iv) any *impacts* likely to occur as a result of the clearing, including a description of those *impacts* that is likely to be seriously at variance, at variance or may be at variance with one or more of the *clearing principles*;
 - (v) any *rehabilitation, revegetation, management strategy* or other means of rectification that the permit holder will adopt to address the *impacts*; and
 - (vi) any *offsets* developed in accordance with Part V of this Permit that the permit holder will implement to address the *impacts*.
- (m) Where the permit holder conducts a *PEIA* and an *EIA* simultaneously:
 - (i) the permit holder may produce one report, to be known as an *Environmental Assessment Report*, which contains all of the information required to be provided by this condition in a *PEIA Report* and an *EIA Report*; and
 - (ii) if the permit holder produces an *Environmental Assessment Report*, there is no need to produce a *PEIA Report* or an *EIA Report* for the proposed clearing.
- (n) Subject to condition 5(o), after undertaking the *EIA* the permit holder must prepare, implement, and adhere to an *EMP* to address the *impacts*, in accordance with condition 10 of this Permit.
- (o) Where the results of the *EIA* indicate that clearing for the *project activity* is likely to be seriously at variance with one or more of the *clearing principles*, the permit holder must apply to the *CEO* for a *clearing permit* in respect of that clearing.

6. Submissions – interested parties

- (a) Where required pursuant to conditions 5(d) and 5(e) of this Permit, the permit holder must invite submissions from the following parties about those *impacts* of the proposed clearing that are likely to be seriously at variance, at variance or may be at variance with one or more of the *clearing principles*:
 - (i) the Office of the Commissioner of Soil and Land Conservation in the Department of Primary Industries and Regional Development if those *impacts* relate to *clearing principles* (g), (i) or (j);
 - (ii) the Department of Water and Environmental Regulation's Urban Water Branch if those *impacts* relate to *clearing principles* (f), (i) and (j);
 - (iv) the local government responsible for the area that is to be cleared;
 - (v) the owner (as defined in section 51A of the *EP Act*), or occupier (as defined in section 3 of the *EP Act*), of any land on which the clearing is proposed to be done;
 - (vi) any other environment or community groups that the permit holder reasonably considers may have an interest in the clearing that is proposed to be done; and

- (vii) any other party that the permit holder reasonably considers may have an interest in the clearing that is proposed to be done.
- (b) The permit holder is not required to invite submissions if the *CEO* advises so in writing.
- (c) The permit holder must provide the following information to the parties from whom it invites submissions under condition 6(a):
 - (i) a description of the manner in which the permit holder has complied with condition 4 of this Permit;
 - (ii) a description of the land on which the clearing is to be done;
 - (iii) a description of the *project activities* for which the clearing is to be done;
 - (iv) the size of the area to be cleared (in hectares) for *project activities*;
 - (v) the boundaries of clearing required for the *project activities* recorded on a map;
 - (vi) in what manner the permit holder considers that the clearing is likely to be seriously at variance, at variance, may be at variance, not likely to be at variance or not at variance with each of the *clearing principles*;
 - (vii) an outline of any *rehabilitation, revegetation, management strategy* or *offset* proposed to be implemented in relation to the clearing;
 - (viii) a copy of any *biological surveys* and/or field assessments carried out pursuant to condition 5(j) of this Permit, if these surveys have been carried out at the time of seeking submissions (with location data for conservation significant species omitted where necessary to maintain confidentiality);
 - (ix) the contact details of the person to whom submissions must be sent; and
 - (x) the date by which submissions must be made.
- (d) The permit holder must allow a period of at least 21 days for submissions to be made.

7. Submissions – Department

- (a) Where required pursuant to condition 5(e) of this Permit, the Permit Holder must invite a submission from the *Department's* Functional Area responsible for the administration of clearing permits under the *EP Act*.
- (b) The Permit Holder must provide the following information to the Department when inviting a submission:
 - (i) the *EIA Report*; and
 - (ii) the boundaries of clearing required for *project activities* recorded as an ESRI *shapefile*.
- (c) In making a determination as to whether part or all of the clearing to be done is likely to be seriously at variance, at variance, may be at variance, not likely to be at variance or not at variance with each of the *clearing principles*, the Permit Holder must implement the levels of variance described in the *Department's* submission.

PART III - ASSESSMENT PRINCIPLES

8. Assessment against the Clearing Principles

- (a) In complying with condition 5 of this Permit, the permit holder must have regard to the *Department's A guide to the assessment of applications to clear native vegetation under Part V Division 2 of the Environmental Protection Act 1986*, contained in Annexure 4 to this Permit, when conducting an assessment of the proposed clearing against the *clearing principles*.
- (b) If part or all of the clearing to be done is likely to be seriously at variance with one or more of the *clearing principles* then condition 5(o) applies.
- (c) If part or all of the clearing to be done is or is likely to be at variance with one or more of the *clearing principles*, then the permit holder must implement an *offset* in accordance with Part V of this Permit with respect to that clearing, unless written advice to the contrary is provided by the *CEO*.
- (d) If part or all of the clearing to be done is or is likely to be at variance with one or more of *clearing principles* (g), (i) or (j), the permit holder must implement a *management strategy*, approved by the *CEO* in accordance with condition 11 of this Permit, with respect to that clearing, unless written advice to the contrary is provided by the *CEO*.
- (e) In making a determination under condition 8(b) as to whether part or all of the clearing to be done is likely to be seriously at variance, or under conditions 8(c) and 8(d) as to whether part or all of the clearing to be done is or is likely to be at variance, with one or more of the *clearing principles*, the permit holder must obtain and have regard to the advice of an *environmental specialist*.

9. Other

In assessing the clearing for the *project activity* against the *clearing principles*, the permit holder must have regard to any approved policy (as defined in section 3 of the *EP Act*) and any planning instrument (as defined in section 51O of the *EP Act*), that applies to the area of native vegetation to be cleared.

PART IV – MANAGEMENT

10. Environmental management plan

- (a) The permit holder must prepare, implement, and adhere to an *EMP* if required by condition 5(n) of this Permit unless written advice to the contrary is provided by the *CEO*.
- (b) The *EMP* must have regard to the permit holder's *Drafting and Implementing Environmental Management Plans* and include:
 - (i) a plan for managing the *impacts*;
 - (ii) a table setting out the permit holder's commitments to the *EMP*'s requirements;
 - (iii) a program for monitoring compliance with the permit holder's commitments;
 - (iv) a copy of the *Revegetation Plan*, where required under condition 12 of this Permit.
- (c) If the *impacts* of the clearing that will be addressed by the *EMP* are likely to be at variance or may be at variance with one or more of the *clearing principles*, once the permit holder has developed an *EMP*, the permit holder must provide that *EMP* to the *CEO* for the *CEO*'s approval prior to undertaking any clearing of an area to which the *EMP* is related, and prior to implementing the *EMP*.

- (d) If it is necessary to modify the *EMP* approved by the *CEO*, then the permit holder must provide that modified *EMP* to the *CEO* for the *CEO*'s approval prior to implementing the modified *EMP*.
- (e) The permit holder shall implement the latest version of the *EMP* approved by the *CEO*.

11. Management strategy

- (a) Where the permit holder is required under this Permit to comply with this condition 11, the permit holder must prepare, implement and adhere to a strategy designed by an *environmental specialist*, in consultation with the Commissioner of Soil and Land Conservation, to avoid, mitigate or manage the *land degradation*, *water quality deterioration*, or flooding that triggered the permit holder's obligation to comply with this condition.
- (b) Once the permit holder has developed a *management strategy*, the permit holder must provide that *management strategy* to the *CEO* for the *CEO*'s approval prior to undertaking any clearing of an area to which the *management strategy* is related, and prior to implementing the *management strategy*.
- (c) If it is necessary to modify the *management strategy* approved by the *CEO*, then the permit holder must provide that modified *management strategy* to the *CEO* for the *CEO*'s approval prior to implementing the modified *management strategy*.
- (d) The permit holder shall implement the latest version of the *management strategy* approved by the *CEO*.

12. Revegetation and rehabilitation

- (a) The permit holder must *revegetate* and *rehabilitate* the following areas once those areas are no longer required for the following purpose for which they were cleared under this Permit:
 - (i) *temporary works*;
 - (ii) *extraction sites*;
 - (iii) *camps*;
 - (iv) *project surveys*;
 - (v) *pre-construction activities*; or
 - (vi) other *project activities* where part or all of the area cleared is no longer required to be used for the purpose for which it was cleared.
- (b) The permit holder need not *revegetate* and *rehabilitate* an area specified in condition 12(a) if:
 - (i) the *CEO* advises so in writing; or
 - (ii) the permit holder has scheduled to use that cleared area for another *project activity* within 24 months of that area no longer being required for the purpose for which it was originally cleared under this Permit.
- (c) The *revegetation* and *rehabilitation* of an area pursuant to this condition 12:
 - (i) must be carried out within 24 months from when the area is no longer required for a *project activity*, in accordance with conditions 12(a) and 12(b); and
 - (ii) must be undertaken according to a *Revegetation Plan* designed by an *environmental specialist*.
- (d) A *Revegetation Plan* must be developed having regard to the *Department's A guide to preparing revegetation plans for clearing permits under Part V Division 2 of the*

Environmental Protection Act 1986, contained in Annexure 2 and must involve the following steps:

- (i) a description of the land on which the *revegetation* and *rehabilitation* is required;
 - (ii) the area (in hectares) of *revegetation* and *rehabilitation* required;
 - (iii) the boundaries of *revegetation* and *rehabilitation* required recorded on a map(s);
 - (iv) *site preparation*;
 - (v) *weed control*;
 - (vi) *regeneration, direct seeding or planting, at an optimal time*;
 - (vii) *a vegetation establishment period*;
 - (viii) *revegetation success completion criteria*;
 - (ix) remedial actions to be undertaken if success completion criteria are not met;
 - (x) ongoing maintenance and monitoring of the area to be *revegetated* and *rehabilitated*;
 - (xi) timeframes for completion of the activities; and
 - (xii) management commitments that will be achieved.
- (e) Any area of native vegetation that does not form part of the area to be cleared for the *project activity* and that has been damaged as a result of the clearing by the permit holder must be *revegetated* and *rehabilitated* in accordance with conditions 12(c) and 12(d).
- (f) Once the permit holder has developed a *Revegetation Plan*, the permit holder must provide that *Revegetation Plan* to the *CEO* for the *CEO's* approval, prior to clearing native vegetation from the area that is to be *revegetated* and *rehabilitated*.
- (g) If it is necessary to modify the *Revegetation Plan* approved by the *CEO*, then the permit holder must provide that modified *Revegetation Plan* to the *CEO* for the *CEO's* approval prior to implementing the modified *Revegetation Plan*.
- (h) The permit holder shall implement the latest version of the *Revegetation Plan* approved by the *CEO*.
- (i) The permit holder need not comply with conditions 12(c) to 12(i) if:
- (i) the *CEO* advises so in writing; or
 - (ii) the area to be *revegetated* and *rehabilitated* is:
 - (A) less than 0.5 hectares;
 - (B) not located in an *ESA*; and
 - (C) an area where the proposed clearing that triggers the obligation to *revegetate* and *rehabilitate* is not at variance with the *clearing principles*.

13. Dieback, other pathogen and weed control

- (a) When undertaking any clearing, *revegetation* and *rehabilitation*, or other activity pursuant to this Permit in any part of a *region* that has an average annual rainfall of greater than 400 millimetres and is south of the 26th parallel of latitude, the permit holder must take the following steps to minimise the risk of introduction and spread of *dieback*:
- (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
 - (ii) avoid the movement of soil in wet conditions;
 - (iii) ensure that no *dieback*-affected *road building materials, mulches* or *fill* are brought into an area that is not affected by *dieback*; and
 - (iv) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

- (b) If movement of soil is necessary in conditions other than *dry conditions* and the clearing will impact land managed by Department of Biodiversity, Conservation and Attractions (DBCA), the permit holder must, prior to clearing, implement a *dieback* management plan endorsed by DBCA for minimising the spread of *dieback*.
- (c) If movement of soil is necessary in conditions other than *dry conditions* and the clearing will *impact* land other than DBCA managed land, if the area proposed to be cleared may introduce or spread *dieback* into *uninfested* areas, in addition to the requirements of condition 13(a), the permit holder must minimise the risk of the introduction and spread of *dieback* by:
 - (i) mapping *dieback* areas, including *infested*, *uninfested* and *uninterpretable*, within the area to be cleared, prior to clearing;
 - (ii) ensuring that no clearing occurs in *infested* areas during rain events where there is a risk of transporting material into *uninfested* areas;
 - (iii) demarcating all *dieback* areas, including *infested*, *uninterpretable* and *uninfested*, with flagging tape and appropriate signage prior to clearing;
 - (iv) establishing clean on entry points to ensure machines and other vehicles are clean of soil and vegetation prior to entering *dieback uninfested* and *uninterpretable* areas;
 - (v) establishing clean on exist points to ensure machines and other vehicles are clean of soil and vegetation prior to existing *dieback infested* and *uninterpretable* areas;
 - (vi) ensuring that drainage is directed away from *uninfested* areas; and
 - (vii) monitoring the implementation of *dieback* management actions through daily visual inspections and keeping an inspection log.
- (d) Where the permit holder considers, having regard to the advice of an *environmental specialist*, that the area to be cleared may be susceptible to a pathogen other than *dieback*, the permit holder must take appropriate steps to minimise the risk of the introduction and spread of that pathogen.
- (e) When undertaking any clearing, *revegetation* and *rehabilitation*, or other activity pursuant to this Permit the permit holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:
 - (i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
 - (ii) ensure that no *weed*-affected *road building materials*, *mulch*, *fill* or other material is brought into the area to be cleared; and
 - (iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.
- (f) At least once in each 12 month period for the *term* of this Permit, the permit holder must remove or kill any *weeds* growing within areas cleared, *revegetated* and *rehabilitated*, or the subject of an *offset* implemented by the permit holder under this Permit where those *weeds* are likely, having regard to the advice of an *environmental specialist*, to spread to and result in *environmental harm* to adjacent areas of native vegetation that are in *good or better condition*.

PART V – OFFSETS

14. Determination of offsets

- (a) If part or all of the clearing to be done is likely to be at variance with one or more of the *clearing principles*, then the Permit Holder must prepare an *offset proposal*, designed by

an *environmental specialist*, with respect to that native vegetation, unless written advice to the contrary is provided by the *CEO*.

- (b) In developing an *offset proposal* to be implemented with respect to a particular area of native vegetation proposed to be cleared under this Permit, the permit holder must comply with the principles in the Government of Western Australia, WA Environmental Offsets Policy, September 2011 and have regard to the WA Environmental Offsets Guidelines, August 2014.
- (c) Once the permit holder has developed an *offset proposal*, the permit holder must provide that *offset proposal* to the *CEO* for the *CEO*'s approval, prior to undertaking any clearing to which the *offset* related, and prior to implementing the *offset*.
- (d) If it is necessary to modify the *offset proposal* approved by the *CEO*, then the permit holder must provide that modified *offset proposal* to the *CEO* for the *CEO*'s approval prior to implementing the modified *offset*.
- (e) The permit holder must implement the latest version of the *offset proposal* approved by the *CEO*.

PART VI – MONITORING, REPORTING & AUDITING

15. Monitoring

- (a) The permit holder must monitor:
 - (i) areas *revegetated* and *rehabilitated* under this Permit to determine compliance with the relevant *Revegetation Plan* and the conditions of this Permit; and
 - (ii) areas that are the subject of an *offset* implemented under this Permit to determine compliance with the relevant approved *offset proposal* and the conditions of this Permit.
- (b) Monitoring pursuant to this condition 15 must be done having regard to the *Department's A guide to preparing revegetation plans for clearing permits under Part V Division 2 of the Environmental Protection Act 1986*, contained in Annexure 2.

16. Records that must be kept

The permit holder must maintain the following records for activities done pursuant to this Permit, as relevant:

- (a) in relation to the clearing of native vegetation:
 - (i) a copy of any *PEIA Report*, *EIA Report* and *Environmental Assessment Report* produced in accordance with condition 5;
 - (ii) a copy of the *EMP* produced in accordance with conditions 5 and 10;
 - (iii) the *project activities* for which the clearing was done;
 - (iv) a map showing the location where the clearing occurred for each of the *project activities*, recorded in an *ESRI Shapefile*;
 - (v) the size of the area cleared (in hectares) for each of the *project activities*;
 - (vi) the date(s) on which the clearing was done for each of the *project activities*; and
 - (vii) the total amount of clearing done (in hectares) between 1 January and 31 December of each calendar year.
- (b) in relation to the *revegetation* and *rehabilitation* of areas:
 - (i) a copy of each *Revegetation Plan* approved by the *CEO* in accordance with conditions 12(g) and 12(h) of this Permit;

- (ii) a map showing the location where *revegetation* and *rehabilitation* occurred for each of the *project activities* in accordance with condition 12 of this Permit, recorded in an *ESRI Shapefile*;
 - (iii) a description of the *revegetation* and *rehabilitation* activities undertaken for each of the *project activities* pursuant to condition 12 of this Permit; and
 - (ii) the size of the area *revegetated* and *rehabilitated* (in hectares) for each of the *project activities*;
 - (iii) the date(s) on which *revegetation* and *rehabilitation* for each of the *project activities* commenced;
 - (iv) the date the *revegetation* success completion criteria were achieved for each of the *project activities*, or if they have not been achieved, a description of the progress towards achievement; and
 - (v) the total amount of *revegetation* and *rehabilitation* commenced (in hectares) between 1 January and 31 December of each year.
- (c) in relation to each *offset* implemented:
- (i) a copy of each *offset proposal* approved by the *CEO* in accordance with conditions 14(c) and 14(d) of this Permit;
 - (ii) a map showing the location where each *offset* was implemented for each of the *project activities* pursuant to condition 14 of this Permit, recorded in an *ESRI Shapefile*;
 - (iii) a description of the *offset* activities undertaken for each of the *project activities* pursuant to condition 14 of this Permit;
 - (iv) the size of the area of the *offset* (in hectares) for each of the *project activities*;
 - (v) the date implementation of each *offset* commenced for each of the *project activities*;
 - (vi) the date implementation of each *offset* was completed for each of the *project activities*, or if the *offset* has not been completed, a description of the progress towards completion; and
 - (vii) the total amount of *offsets* commenced (in hectares) between 1 January and 31 December of each year.
- (d) in relation to each *management strategy* implemented:
- (i) a copy of each *management strategy* approved by the *CEO* in accordance with conditions 11(b) and 11(c) of this Permit;
 - (ii) a map showing the location where each *management strategy* has been applied for each of the *project activities* in accordance with condition 11 of this Permit, recorded in an *ESRI Shapefile*;
 - (iii) a description of the *management strategy* activities undertaken for each of the *project activities* pursuant to condition 11 of this Permit;
 - (iv) the size of the area to which the *management strategy* was applied (in hectares) for each of the *project activities*;
 - (v) the date(s) on which the *management strategy* commenced for each of the *project activities*; and
 - (viii) the date the *management strategy* was completed for each of the *project activities*, or if the *management strategy* has not been completed, a description of the progress towards completion.
- (e) in relation to the control of *weeds*, *dieback* and other pathogens:
- (i) a copy of any management plan prepared in accordance with condition 13(b);
 - (ii) a map of the *dieback* management areas and associated clean on entry and exit points in accordance with condition 13(c) of this Permit;
 - (iii) description of the *dieback* management actions undertaken in accordance with condition 13(c) of this Permit;

- (iv) for any pathogen other than *dieback*, the appropriate steps taken in accordance with condition 13(d) of this Permit; and
- (v) for any *weed*, the appropriate steps taken in accordance with conditions 13(e) and 13(f) of this Permit.

17. Reporting

- (a) The permit holder must provide to the *CEO*, on or before 30 June of each year, a written report of records required to be maintained pursuant to condition 16 of this Permit, concerning those activities done by the permit holder under this Permit between 1 January and 31 December of the preceding year.
- (b) The report must set out the records required to be maintained pursuant to condition 16 of this Permit, except for those records relating to cleared areas of less than 0.5 hectares that:
 - (i) are not located in an *ESA*;
 - (ii) do not require an *offset* to be implemented; and
 - (iii) are not at variance with the *clearing principles*.
- (c) If no clearing authorised under this Permit was undertaken between 1 January and 31 December of the preceding calendar year, a written report confirming that no clearing under this permit has been carried out, must be provided to the *CEO* on or before 30 June of each year.
- (d) Prior to 20 January 2024, the permit holder must provide to the *CEO* a written report of records required under condition 16 of this Permit where these records have not already been provided under condition 17(a) of this Permit.

18. Internal auditing

- (a) The permit holder must conduct *internal environmental audits* for areas specified in condition 18(c) to determine the permit holder's compliance with the conditions of this Permit, with particular emphasis on:
 - (i) the location and extent of native vegetation cleared;
 - (ii) the implementation status of any *offsets* imposed;
 - (iii) the effectiveness of any *management strategies* or *EMP* implemented; and
 - (iv) the implementation status of any *revegetation* or *rehabilitation* undertaken.
- (b) The permit holder must conduct its first *internal environmental audit* within 6 months of the date of this Permit. Subsequent *internal environmental audits* must be conducted annually for the *term* of this Permit.
- (c) The areas to be audited under condition 18(a) must be selected by the auditor using a structured and documented risk-based selection framework, and must include at least one cleared area in each *region* in which clearing has been done under this Permit within the previous 12 months.
- (d) The permit holder must implement *corrective action* required to address any non-compliance with conditions of this Permit identified from the *internal environmental audits*.
- (e) The permit holder must provide written reports of the *internal environmental audits* conducted pursuant to this condition 18 to the *CEO* on or before 30 December of each year for the *term* of this Permit. The reports must include details of *corrective action* taken by the permit holder to address any non-compliance with conditions of this Permit.

19. External auditing

- (a) The permit holder must engage an external accredited *lead environmental auditor* to undertake *external environmental audits* of the permit holder's compliance with the conditions of this Permit for each of the *regions* in which clearing is done under this Permit.
- (b) The *external environmental audits* must be done on or before 20 October of every second year for the *term* of this Permit and/or as otherwise required by the *CEO*.
- (c) Where the Permit is due to expire before the next external environmental audits, the permit holder must arrange for a final *external environmental audit* to be conducted prior to the expiry of the Permit.
- (d) The permit holder must implement *corrective action* required to address any non-compliance with conditions of this Permit identified from the *external environmental audits*.
- (e) The permit holder must provide the *lead environmental auditor's* written reports of the *external environmental audits* to the *CEO* on or before 30 December in each year that an *external environmental audit* is conducted and/or as otherwise required by the *CEO*. The reports must include details of *corrective action* taken by the permit holder to address any non-compliance with conditions of this Permit.
- (f) Where a final *external environmental audit* is arranged in accordance with condition 19(c) of this Permit, the permit holder must provide the *lead environmental auditor's* written reports of such an audit to the *CEO* on or before 30 December of the year preceding the expiry date of the permit.
- (g) The permit holder must make the *lead environmental auditor's* written reports of the *external environmental audits* publicly available within 30 days of the submission of the reports to the *CEO*.

PART VII – INTERPRETATION & DEFINITIONS

20. Interpretation

The following rules of interpretation apply to this Permit:

- (a) a reference to any *written law* includes a reference to that *written law* as amended, repealed or replaced from time to time;
- (b) if a word or phrase is defined, other parts of speech and grammatical forms of that word or phrase have corresponding meanings.

21. Severance

It is the intent of these conditions that they shall operate so that, if a condition or part of a condition is beyond the *CEO's* power to impose, or is otherwise ultra vires or invalid, that condition or part of a condition shall be severed and the remainder of these conditions shall nevertheless be valid to the extent that they are within the *CEO's* power to impose and are not otherwise ultra vires or invalid.

22. Inconsistency

- (a) The *EP Act* prevails to the extent of any inconsistency between its provisions and the conditions of this Permit.

- (b) Subject to condition 22(a), this Permit prevails to the extent of any inconsistency between its conditions (including its Schedules), and the provisions of any other document referred to in this Permit.

23. Definitions

The following meanings are given to terms used in this Permit and the attached Advice:

<i>Assessment Principles</i>	means the assessment principles set out in Part III of this Permit;
<i>Assessment Procedure</i>	means the assessment procedure set out in Part II of this Permit;
<i>authorised survey/s</i>	has the meaning given to it in section 3 of the <i>Licensed Surveyors Act 1909</i> ;
<i>biological survey</i>	means a site visit undertaken by an <i>environmental specialist</i> to: (a) verify <i>desktop study</i> information; (b) delineate key flora, fauna, soil, and groundwater and surface water values and potential sensitivity to impact; (c) undertake <i>vegetation condition mapping</i> ; and (d) undertake vegetation mapping by delineating on a map the <i>ecological communities</i> formed within a given area, and the nature and extent of each combination, within the area to be cleared at the scale of the best available mapping information;
<i>bioregion</i>	has the meaning given to it in regulation 3 of the <i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004</i> ;
<i>camp/s</i>	means any facilities required to be established by the permit holder at the site of a project activity such as offices, storerooms, workshops, toilets, washing facilities, accommodation, change rooms, shelter sheds, drying conveniences, mess rooms;
<i>CEO</i>	means the Chief Executive Officer of the Department responsible for the administration of the clearing provisions under the <i>Environmental Protection Act 1986</i> ;
<i>clearing permit/s</i>	means a clearing permit under Part V Division 2 of the EP Act;
<i>clearing principle/s</i>	means the principles for clearing native vegetation set out in Schedule 5 of the <i>Environmental Protection Act 1986</i> ;
<i>condition</i>	means the rating given to native vegetation using the <i>Keighery scale</i> and refers to the degree of change in the structure, density and species present in the particular vegetation in comparison to undisturbed vegetation of the same type;

<i>corrective action</i>	means action to eliminate the cause of non-conformity detected in an <i>internal environmental audit</i> or an <i>external environmental audit</i> ;
<i>defined wetland</i>	has the meaning given to it in clause 3 of the <i>Environmental Protection (Environmentally Sensitive Areas) Notice 2005</i> ;
<i>Department</i>	means the Department of Environment Regulation (Western Australia);
<i>desktop study</i>	means a literature review, including a map-based information search of all current and relevant literature sources and databases;
<i>dieback</i>	means the effect of <i>Phytophthora</i> species on native vegetation;
<i>dieback survey</i>	means a site visit undertaken by an <i>environmental specialist</i> to: <ul style="list-style-type: none"> (a) verify <i>desktop study</i> information; (b) identify indicator species; (c) carry out soil sampling in areas significantly affected by <i>dieback</i>; and (d) map areas of different <i>soil disease status</i>.
<i>direct seeding</i>	means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;
<i>Drafting and Implementing Environmental Management Plans</i>	means the permit holder's corporate procedure for preparing an environmental management plan, Document ID 58535016 Version 12 December 2019, contained in Annexure 3 to this Permit, or other version as approved by the <i>CEO</i> ;
<i>drain</i>	means a conduit on or under any land; or channel provided it is wholly constructed, which was or is used or intended to be used to carry surplus water, and includes any part of such conduit or channel but does not include a watercourse as defined in the <i>Rights in Water and Irrigation Act 1914</i> ;
<i>ecological community/ies</i>	means a naturally occurring biological assemblage that occurs in a particular type of habitat (English and Blythe, 1997; 1999);
<i>EIA</i>	means environmental impact assessment, as described in condition 5 of this Permit;
<i>EIA Report</i>	means the document produced as an outcome of conducting an <i>EIA</i> in accordance with condition 5 of this Permit;
<i>EMP</i>	means environmental management plan;
<i>engineering survey/s</i>	means any inspection or measurement taken by a surveyor engaged by the Permit Holder for the purpose of planning, investigating and design for a <i>project activity</i> ;

<i>Environmental Assessment Report</i>	has the meaning given to that term in condition 5(m) of this Permit;
<i>environmental specialist</i>	means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit, or who is approved by the CEO as a suitable environmental specialist.
<i>EP Act</i>	means the <i>Environmental Protection Act 1986</i> ;
<i>EPA</i>	means the Western Australian Environmental Protection Authority;
<i>EPA's Technical Guidance – Flora EIA</i>	means the publication “ <i>Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment</i> ”, Environmental Protection Authority (2016);
<i>EPA's Technical Guidance – Terrestrial Vertebrate Fauna EIA</i>	means the publication “ <i>Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment</i> ”, Environmental Protection Authority (2020);
<i>ESA</i>	means an environmentally sensitive area, as declared by a regulation under section 51B of the <i>Environmental Protection Act 1986</i> ;
<i>ESRI Shapefile</i>	means an ESRI Shapefile with the following properties: (a) Geometry type: polygon; (b) Geographic Coordinate System: Geocentric Datum of Australia 1994/2020; and (c) Datum: Geocentric Datum of Australia 1994/2020.
<i>existing water services infrastructure</i>	means infrastructure necessary for the provision of water supply, sewerage, drainage (to the extent that these are consistent with the definition of drain) or irrigation services as provided for under the <i>Water Corporation Act 1995</i> and any other written laws, that is in existence at the time clearing is sought to be carried out under this Permit;
<i>external environmental audit</i>	means an audit conducted by a <i>lead environmental auditor</i> in accordance with condition 19 of this Permit;
<i>extraction sites</i>	includes gravel pits, borrow pits, water bores and other sites from which <i>road building materials</i> are extracted;
<i>fill</i>	means material used to increase the ground level, or fill a hollow;
<i>firebreak/s</i>	means a firebreak established in accordance with the <i>Bush Fires Act 1954</i> ;

<i>geological survey/s</i>	means a survey conducted in order to obtain information about the suitability of the ground for a <i>project activity</i> , and includes geotechnical surveys;
<i>good or better condition</i>	means that the vegetation is in either pristine, excellent, very good or good condition according to <i>Keighery scale</i> ;
<i>impacts</i>	means any impact of clearing on <i>environmental values</i> ;
<i>infested</i>	means areas that have been determined to have plant disease symptoms consistent with the presence of the <i>Phytophthora</i> species by an <i>environmental specialist</i> ;
<i>internal environmental audit</i>	means an audit conducted by the permit holder in accordance with condition 18 of this Permit;
<i>Keighery scale</i>	means the vegetation condition scale described in <i>Bushland Plant Survey: A Guide to Plant Community Survey for the Community (1994)</i> as developed by B.J. Keighery and published by the Wildflower Society of WA (Inc). Nedlands, Western Australia;
<i>land degradation</i>	includes salinity, erosion, soil acidity and waterlogging;
<i>lead environmental auditor</i>	means an individual certified as a lead environmental auditor by either: (a) RABQSA International; or (b) an organisation accredited to ISO/IEC 17024 by, or by a body recognised by, the Joint Accreditation System of Australia and New Zealand);
<i>local provenance</i>	means <i>native vegetation</i> seeds and propagating material from natural sources within 50 kilometres and the same IBRA subregion of the area cleared;
<i>management strategy / management strategies</i>	means any activity, method or approach implemented pursuant to condition 11 of this Permit;
<i>matter of national environmental significance</i>	A matter of national environmental significance is any of the following: (i) a declared World Heritage property (ii) a national Heritage place (iii) a declared Ramsar site (iv) a listed threatened species or endangered community (v) a listed migratory species (vi) the marine environment These terms have the same meaning as they do in the <i>Environment Protection and Biodiversity Conservation Act 1999</i> (Cth).

<i>mulch/es</i>	means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;
<i>offset/s</i>	means an offset required to be implemented under Part V of this Permit;
<i>offset proposal</i>	means an offset developed by the Permit Holder in accordance with condition 14(a);
<i>optimal time</i>	means the optimal time for undertaking <i>direct seeding</i> and <i>planting</i> as set out in the table in Schedule 1 of this Permit;
<i>PEIA</i>	means preliminary environmental impact assessment, as described in condition 5 of this Permit;
<i>PEIA Report</i>	means the document produced as an outcome of conducting a preliminary environmental impact assessment in accordance with conditions 5(a) and (c) of this Permit;
<i>planting</i>	means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;
<i>pre-construction activities</i>	means establishing storage areas, erecting fences and doing similar activities that are required to be done prior to, and in association with, the carrying out of a project activity;
<i>Preliminary Environmental Impact Assessment Procedure – Clearing of Native Vegetation</i>	means the permit holder’s corporate procedure for undertaking preliminary environmental impact assessment, Document ID 58618591, dated 1 December 2020, contained in Annexure 1 to this Permit, or other version as approved by the <i>CEO</i> ;
<i>project activity/ies</i>	means those activities described in condition 1(a) of this Permit;
<i>project surveys</i>	means <i>authorised surveys</i> , <i>engineering surveys</i> and <i>geological surveys</i> ;
<i>proposal</i>	has the meaning given to it in section 3 of the <i>Environmental Protection Act 1986</i> ;
<i>referred</i>	means referred to the Environmental Protection Authority under Part IV of the <i>Environmental Protection Act 1986</i> ;
<i>regeneration</i>	means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing <i>mulch</i> ;

<i>region</i>	means one of the following regions: (a) Metropolitan; (b) South West; (c) Wheatbelt South; (d) Wheatbelt North; (e) Great Southern; (f) Goldfields-Esperance; (g) Midwest; (h) Gascoyne; (i) Pilbara; and (j) Kimberley;
<i>rehabilitate/ed/ion</i>	means actively managing an area containing native vegetation in order to improve the ecological function of that area;
<i>revegetate/ed/ion</i>	means the re-establishment of a cover of <i>local provenance</i> native vegetation in an area using methods such as natural <i>regeneration</i> , <i>direct seeding</i> and/or <i>planting</i> , so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;
<i>Revegetation Plan</i>	means a plan developed by the Permit Holder for the <i>revegetation</i> and <i>rehabilitation</i> of a site in accordance with condition 12 of this Permit;
<i>road building materials</i>	means rock, gravel, soil, stone, timber, boulders and water;
<i>site preparation</i>	means management of existing site topsoil and preparation of the finished soil surface, for example by ripping or tilling the soil surface and respreading site topsoil and chipped native vegetation;
<i>temporary works</i>	means access tracks, spoil areas, side tracks, site offices, storage areas, laydown areas and similar works associated with a <i>project activity</i> that are temporary in nature;
<i>term</i>	means the duration of this Permit, including as amended or renewed;
<i>uninfested</i>	means areas that have been determined to be free of the pathogen <i>Phytophthora</i> by an <i>environmental specialist</i> (all susceptible indicator plant species are healthy; no plant disease symptoms normally attributed to <i>Phytophthora</i> are evident);
<i>uninterpretable</i>	means areas situated in locations which received an average annual rainfall of greater than 400 millimetres and is south of the 26th parallel of latitude where indicator plants are absent or too few to determine the presence or absence of disease caused by the pathogen <i>Phytophthora</i> ;
<i>vegetation condition mapping</i>	means to delineate on a map the condition attributes of vegetation within an area, according to the <i>Keighery scale</i> ;

<i>vegetation establishment period</i>	means a period of at least two summers after the <i>revegetation</i> during which time replacement and infill <i>revegetation</i> works may be required for areas in which <i>revegetation</i> has been unsuccessful, and involves regular inspections of <i>revegetation</i> sites to monitor the success of <i>revegetation</i> ;
<i>water quality deterioration</i>	includes sedimentation, turbidity, eutrophication, salinity, or alteration of pH affecting surface water or groundwater;
<i>water services infrastructure</i>	means infrastructure necessary for the provision of water supply, sewerage, drainage or irrigation services as provided for under the <i>Water Corporation Act 1995</i> ;
<i>weed/s</i>	means any plant - <ul style="list-style-type: none"> (a) that is a declared pest under section 22 of the <i>Biosecurity and Agriculture Management Act 2007</i>; or (b) published in a Department of Biodiversity, Conservation and Attractions species-led ecological impact and invasiveness ranking summary, regardless of ranking; or (c) not indigenous to the area concerned.
<i>wetland field assessment</i>	means a site visit by an <i>environmental specialist</i> to: <ul style="list-style-type: none"> (a) verify <i>desktop study</i> information; and (b) delineate key flora and fauna values of <i>defined wetlands</i> and their potential sensitivity to impact, in accordance with the permit holder's <i>Environmental Guideline: Supplementary Guidance on Environmental Impact Assessment</i>;
<i>wetland/s</i>	means an area of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, and includes a lake, swamp, marsh, spring, dampland, tidal flat or estuary; and
<i>written law</i>	has the same meaning as it is given in section 5 of the <i>Interpretation Act 1984</i> .



Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

19 April 2022


SCHEDULE 1

Optimal Timing for Seeding and Planting

Region	Optimal Timing	
	Seeding	Planting
Gascoyne	May in south of <i>region</i> ; November-December in north of <i>region</i> .	No <i>planting</i> without irrigation.
Goldfields – Esperance	April-May. Earlier in south than in north.	No <i>planting</i> without irrigation.
Great Southern	April-May throughout <i>region</i> . Seeding during September-October within 30km of the coast can also be successful due to warm temperatures and spring coastal showers.	May-June.
Kimberley	October-December, preferably just before rain.	No <i>planting</i> without irrigation.
Metropolitan	April-June.	May-July.
Midwest	April-May in south of <i>region</i> ; November-December in extreme north of <i>region</i> .	May-June in southern part of <i>region</i> only.
Pilbara	November-December but preferably just before rain.	No <i>planting</i> without irrigation.
South West	April-June.	May-June.
Wheatbelt North	May – June.	June- July.
Wheatbelt South	April-June.	May-June.

ANNEXURE 1

Preliminary Environmental Impact Assessment Procedure – Clearing of Native Vegetation

 <small>WATER CORPORATION</small> <small>ABN 28 003 434 917</small>	HSEAA-WI-069 Preliminary environmental impact procedure – clearing of native vegetation
Doc ID 58618591	Custodian Team Leader – Environmental Approvals
Version Date 1 Dec 20	Accountability Framework Level 1: Manage Environment and Aboriginal Affairs Level 2: Manage Environmental Approvals
Next Review Date 11 Jun 23	

1 Purpose

This work instruction defines the process of assessing and generating an internal environmental approval, or obtaining an external state level (Part V, Environmental Protection Act 1986 only) environmental approval, for the clearing of native vegetation.

This work instruction outlines the administrative and technical processes involved and will ensure a consistent and robust approach is taken.

This work instruction supports HSEAA-WI-065 [Environmental Assessment and Approvals](#). It complies with the conditions of the state-wide purpose clearing permits [CPS185](#) and [CPS186](#). Any substantial changes to this work instruction must be approved (in writing) by the Department of Water and Environmental Regulation (DWER).

2 Scope

This work instruction applies to all workers at Water Corporation who are assessing and obtaining approvals for the clearing of native vegetation.

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3 Training

There is no mandatory training associated with this work instruction.

4 Flowchart

The flowchart below outlines the process defined in this work instruction.

Native Vegetation Clearing Approvals Procedure - Flowchart

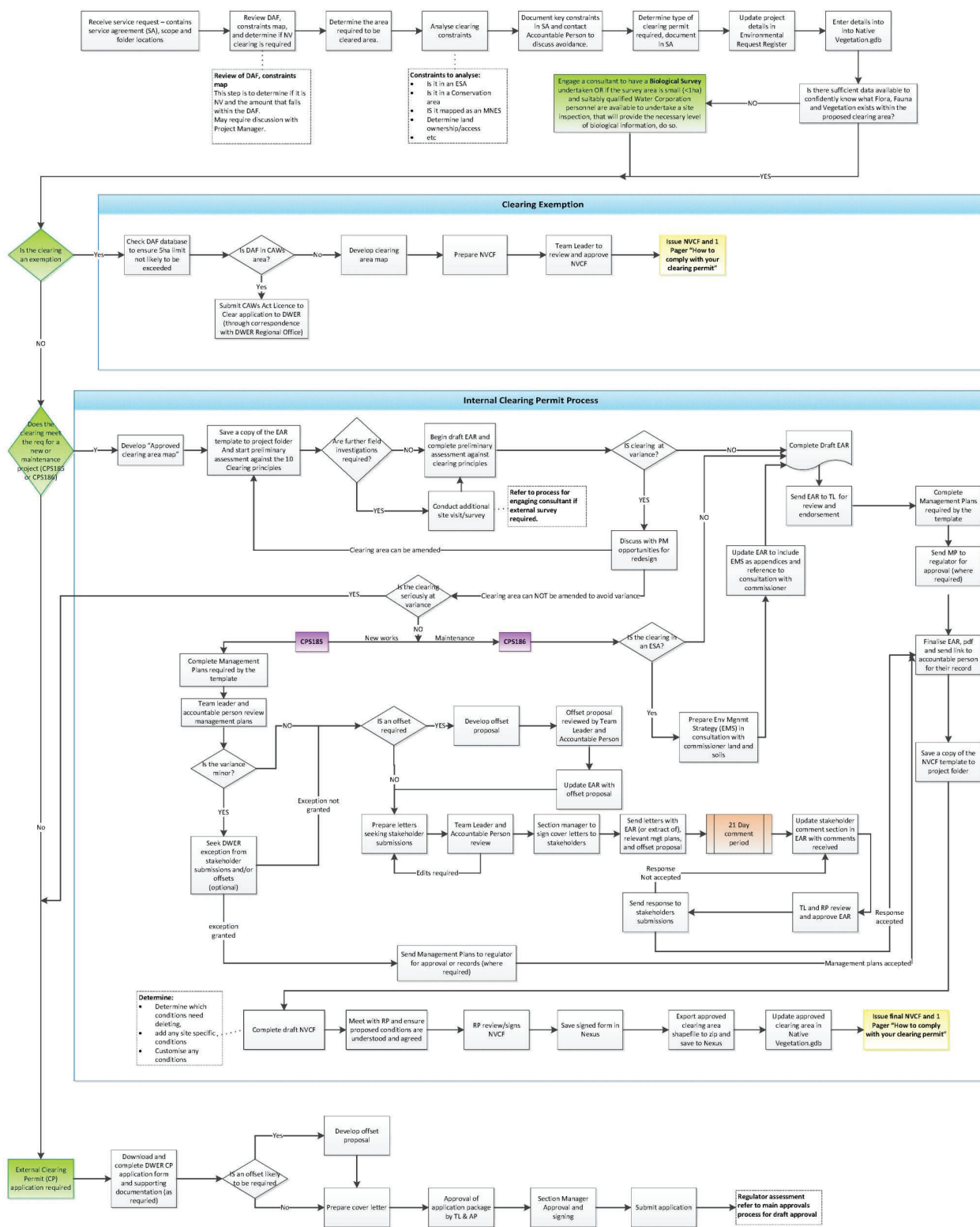


Figure 1: Native Vegetation Clearing Approvals

5 Work Instruction – Native Vegetation Clearing Approvals

This work instruction describes the process of applying for approval for clearing of native vegetation. Planned works that require removal or disturbance of native vegetation must follow this work instruction to obtain a native vegetation clearing approval.

Before implementing this work instruction, the planned scope of work must be screened and assessed through the process defined in HSEAA-WI-065 [Environmental Assessment and Approvals](#).

Clearing native vegetation is an offence under the *Environmental Protection Act 1986* (WA) (EP Act), unless:

- The clearing is for an exempt purpose (as defined in Schedule 6 of the EP Act or the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (WA)), or
- Vegetation is cleared as per a clearing permit (where clearing is not exempt).

Water Corporation has two state-wide clearing purpose permits, [CPS185](#) and [CPS186](#). The permits were issued by DWER and allow internal assessment and approval of clearing of vegetation for certain purposes. The purposes allowed include:

- Clearing for new project activities ([CPS185](#)).
- Clearing for the maintenance, removal, and decommissioning of existing water services infrastructure ([CPS186](#)).
- Clearing to prevent imminent danger to human life or health ([CPS186](#)).

5.1 Determine Clearing Approval Type

The Environmental Advisor must determine the clearing approval type required using the project Environmental Risk and Constraints document, Project Service Agreement (PSA) and any other relevant reference material and regulatory guidance.

Native vegetation clearing approval types include:

- Clearing approved as per a clearing permit ([CPS185](#) and [CPS186](#)).
- Clearing for an exempt purpose.
- Clearing approved externally by DWER.

Table 1 and

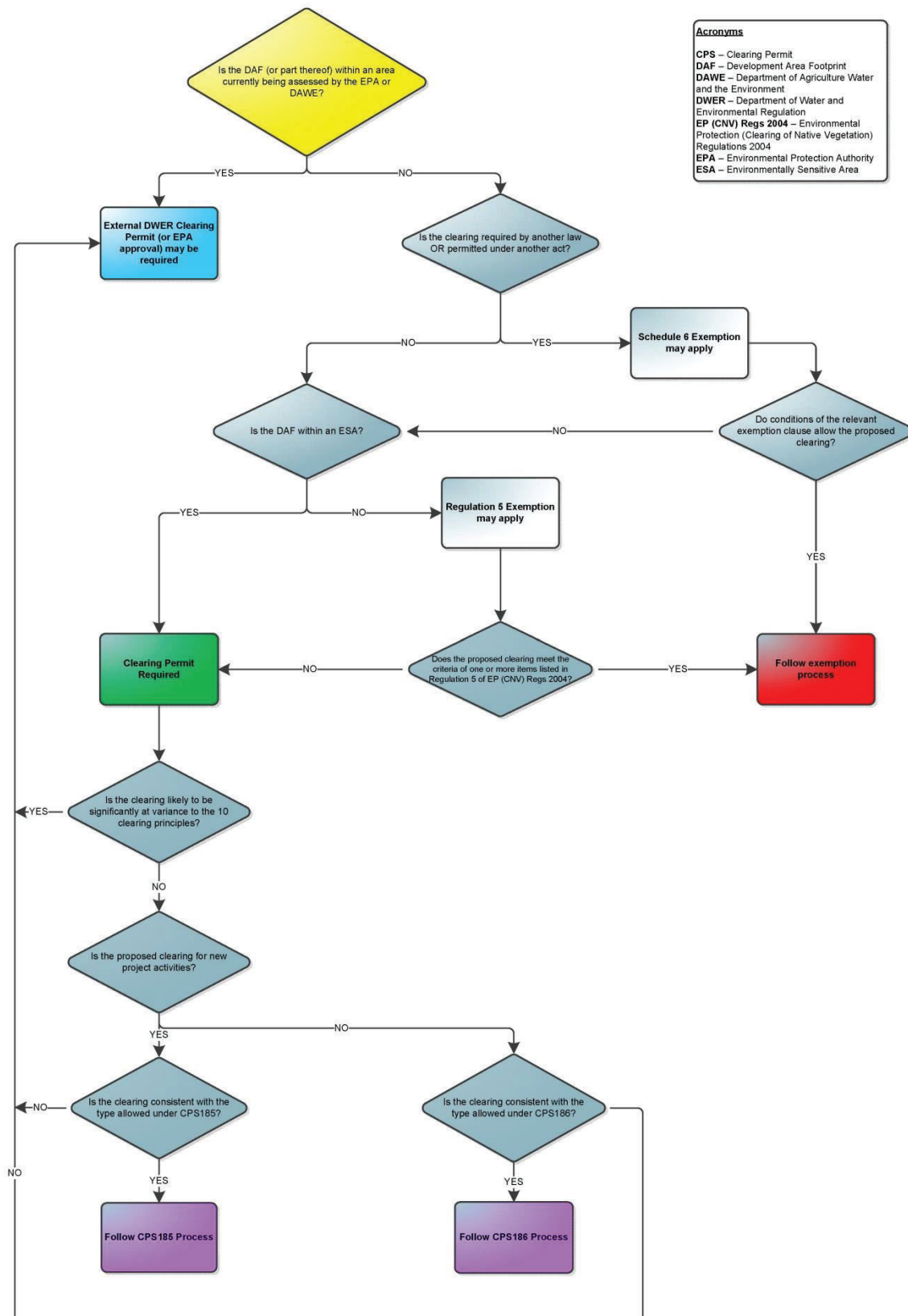


Figure 2 provide further details on when a clearing is within the scope of a clearing permit or for an exempt purpose.

If the clearing is not for an exempt purpose or approved under [CPS185](#) or [CPS186](#), the clearing must be assessed and approved by the regulator through an external Clearing Permit assessment (refer section 5.4).

If the scope of work impacts on:

- Matters of National Environmental Significance (MNES) - refer to HSEAA-WI-066 [Application for approval under the Environmental Protection and Biodiversity Conservation Act 1999](#).
- Significant state biodiversity values or features – refer to HSEAA-WA-068 [Applications to obtain or amend Approvals under Part IV of the Environmental Protection Act](#)

Table 1: Scope of available clearing permits

Clearing instrument	Can be used for	Cannot be used for	Refer
Exemptions – Schedule 6	<ul style="list-style-type: none"> Clearing that is required under other laws. Clearing that has gained approval following Assessment by the Environmental Protection Authority. Taking flora as per an authorisation under the Biodiversity Conservation Act 2016 (WA). Clearing approved under the Planning and Development Act 2005 (WA). Clearing of aquatic vegetation authorised under the Fish Resources Management Act 1994 (WA). 	Each clause has further terms of use found in the DWER publication: A Guide to the Exemptions and Regulations for Clearing of Native Vegetation .	Section 5.2
Exemptions – Regulations	<p>Clearing for activities prescribed under Regulation 5 of the <i>Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (WA)</i>. Relevant prescribed activities include:</p> <ul style="list-style-type: none"> Clearing to construct a building or structure. Clearing to reduce danger (imminent). Clearing for fire hazard reduction. Clearing along a fence line. Clearing for vehicular tracks. Clearing to maintain existing cleared areas around infrastructure. Clearing as per a Bed and Banks permit. Clearing of isolated trees. 	<p>Certain items under the Regulations only exempt clearing to the extent that the total combined clearing under any of these exemptions does not exceed five hectares in any financial year.</p> <p>The exemptions under Regulations do not apply in environmentally sensitive areas (ESAs) declared under section 51B of the EP Act.</p> <p>Each exemption item has further stipulated terms of use that can be found in the DWER publication: A Guide to the Exemptions and Regulations for Clearing of Native Vegetation.</p>	Section 5.2
CPS185	<ul style="list-style-type: none"> New water services infrastructure, including drains, pipelines, pump stations and valve pits. New infrastructure such as building, fences, gates, posts, boards, scaffolding, hurdles, other erections and structures to support the construction or operation of water services infrastructure. New temporary works. New camps. In order to maintain the efficacy of the following new and existing water services infrastructure, to the following extents: <ul style="list-style-type: none"> a) for a building or structure- 20m from the building or structure. 	<ul style="list-style-type: none"> Project activities where the WC does not have the power to clear native vegetation for this purpose under the Water Corporation Act 1995 (WA) or any other written law. Clearing that may be seriously at variance with any of the clearing principles. Project activities where the clearing is incorporated in any proposal that is referred and assessed under Part IV of the EP Act by the Environmental Protection Authority of WA (EPA). Project activities where the clearing is incorporated in any proposal that is referred and currently pending final decision under Part IV of the EP Act by 	Section 5.3

Clearing instrument	Can be used for	Cannot be used for	Refer
	<ul style="list-style-type: none"> b) for a drain or fence line- 5m from the drain or fence line. c) for a vehicle track used to access new and existing water services infrastructure - 5m track width. • Project surveys, including surveying and geotechnical studies. • Pre-construction activities. • Native vegetation clearing for the purposes of upgrading any of the above activities where such activities are not exempt from requiring a clearing permit. 	<ul style="list-style-type: none"> the EPA (including within appeal periods). • Clearing that may have a significant impact on a matter of national environmental significance (MNES) under the Environment Protection and Biodiversity Conservation Act 1999 (Cth). 	
CPS186	<ul style="list-style-type: none"> • Maintaining the efficacy of the existing water services infrastructure to the maximum extent cleared within the previous 10 years. • Maintaining the efficacy of the following existing water services infrastructure, to the following extents: <ul style="list-style-type: none"> a) For a building or structure - 20m from the building or structure. b) For a drain or fence line- 5m from the drain or fence line. c) For a vehicle track used to access existing water services infrastructure -5m track width. • Prevention of imminent danger to human life or health. • Removal and/or decommissioning of existing water services infrastructure. • Includes clearing within an Environmentally Sensitive Area (ESA). 	<ul style="list-style-type: none"> • Maintenance where the WC does not have the power to clear native vegetation for this purpose under the Water Corporation Act 1995 or any other written law. • Clearing that may be seriously at variance with any of the clearing principles. • Maintenance of existing water services infrastructure where the clearing is incorporated in any proposal that is referred and assessed under Part IV of the EP Act by the EPA. • Maintenance of existing water services infrastructure where the clearing is incorporated in any proposal that is referred and currently pending final decision under Part IV of the EP Act by the EPA (including within appeal periods). • Clearing that may have a significant impact on a MNES under the Environment Protection and Biodiversity Conservation Act 1999 (Cth). 	Section 5.3

The Environmental Advisor must refer to the DWER publication: [A Guide to the Exemptions and Regulations for Clearing of Native Vegetation](#) to confirm that the proposed type of clearing activities are prescribed as exempt. This confirmation is to be documented within the PSA, outlining which item/clause the activity is exempt under.

Note: *If there is insufficient information available to determine if the proposed clearing is exempt, biological surveys, site visits and/or further design information may be required.*

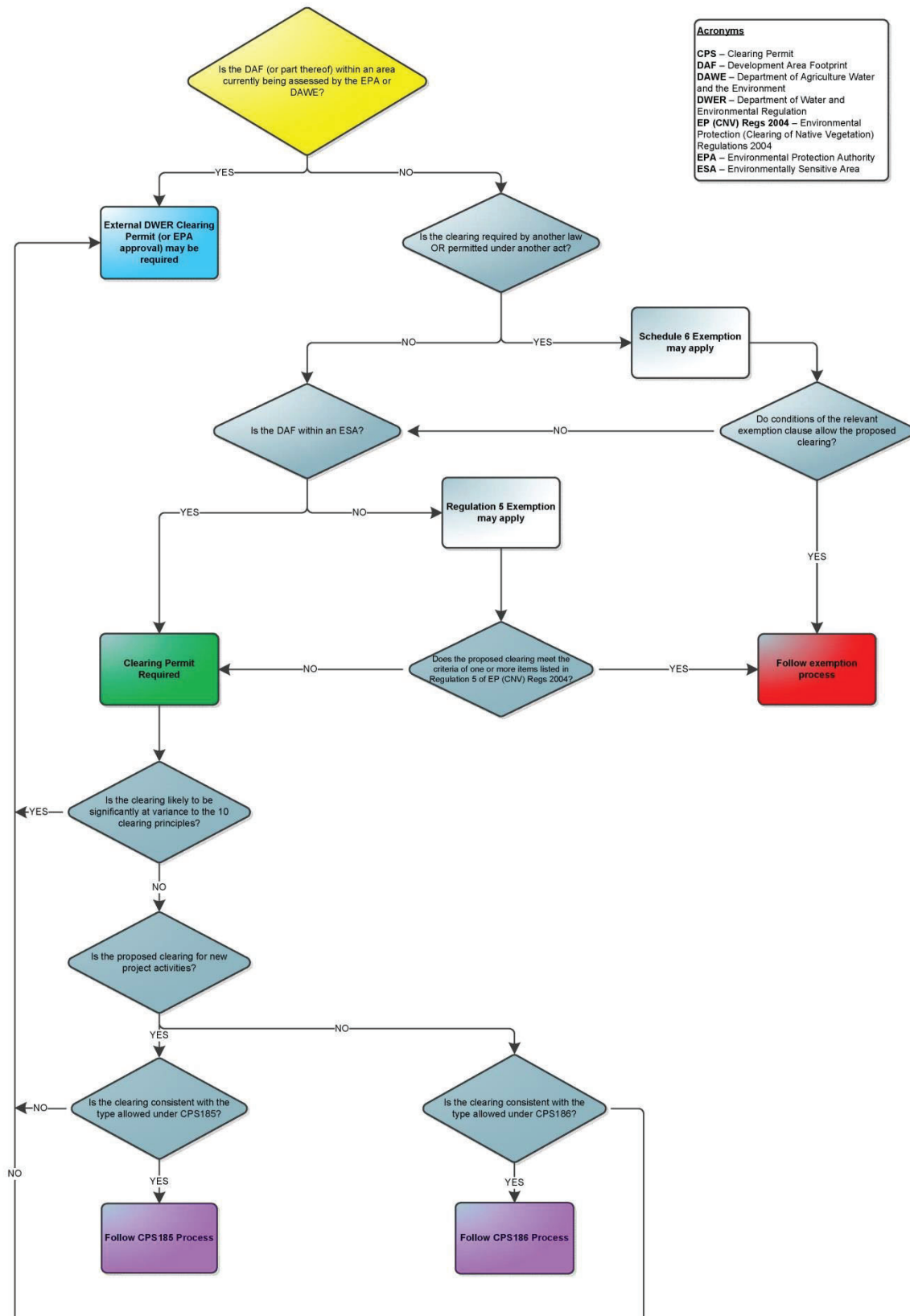


Figure 2: Determine Clearing Approval Type

5.1.1 Add New Record in the Native Vegetation Geodatabase

All project records and communication must be saved as part of corporate record keeping. Spatial data relating to clearing activities is recorded in the Native Vegetation Geodatabase (GDB). This geodatabase also generates the Project ID, which is a unique identifying number for each project. The Environmental Advisor must refer to the Native Vegetation GDB Quick User Guides as follows:

- [Append new approved clearing](#) – to lodge the new proposed clearing area and generate a unique identifier.
- [Edit approved clearing](#) – to ensure the final approved clearing data is up to date.
- [Append actual clearing](#) - to record the actual cleared area.

The project ID is to be used in the naming of the Clearing Permit or Exemption, e.g. CPS185-8-PROJECT ID #.

5.2 Assessment and Approval of Exempt Clearing

This section outlines the requirements for assessing and approving clearing that has been determined to be exempt under the EP Act and Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (refer Section 5.1).

5.2.1 Check Development Area Footprint

The Environmental Advisor must open the DAF in ArcGIS and check that the proposed clearing is for an exempt purpose.

A clearing must not be assessed as an exemption if:

- The DAF intersects a mapped ESA.
- The DAF (or cumulative clearing) exceeds 5ha.

Note: this means the DAF either on its own or in combination with other DAFs within land parcels (that are managed as one property) that may have been cleared within the last 12 months.

In these instances, another approvals type will need to be used (refer to section 5.1).

5.2.2 CAWS Act Catchment Clearing

The Environmental Advisor must use GIS datasets or online information from DWER to determine if the DAF is within a Country Areas Water Supply Act 1947 (CAWS) catchment. A CAWS catchment clearing may require a revegetation offset. Refer to DWER [Fact Sheet Clearing in controlled catchments](#).

If the DAF is within a CAWS catchment, the Environmental Advisor must contact the relevant regional DWER office and seek advice on how to proceed with the clearing approval.

5.2.3 Develop Clearing Area Map

The Accountable Person and Environmental Advisor must determine the areas of vegetation that are required to be cleared. When determining this:

- The scope of works must be used to determine the areas that will require clearing for project activities.
- All clearing areas must be located within the Development Area Footprint (DAF).
- Any strategies to reduce or avoid clearing must be documented.

Once the total clearing area has been agreed, the Environmental Advisor must document this spatial area in a shapefile called 'Clearing area - Clearing Permit number – Project Number/Name'.

The Environmental Advisor must develop a map using the template from - S:\AA_EIA_GIS\2_Templates\Map Templates. The map must be saved in the Clearing Permit folder for the scope of works.

As a minimum the following features should be included on the Clearing Area Map:

- Grid of an appropriate scale around the outside of data frame.
- Clear and meaningful title.
- Figure number.
- Clear legend (with meaningful labels) of a suitable size and scale to stay within the printable area.
- Colours as per template to show DAF (orange outline), approved clearing area (yellow cross-hatch).
- Include main roads (with Labels on the line).

- Include cadastral boundaries.
- North arrow.

The Accountable Person must review and approve the draft map and clearing area.

5.2.4 Prepare Native Vegetation Clearing Approval Form

The Environmental Advisor must develop and issue an internal Native Vegetation Clearing Form (NVCF) for the exempt clearing activities.

The NVCF must be documented in the TEMPLATE [Native Vegetation Clearing Form](#). The Team leader – Environmental Approvals must review and approve the draft NVCF.

The Environmental Advisor must save the draft NVCF in the project folder (Naming convention: Clearing Permit Number – Document Type - Project Name).

5.2.5 Issue NVCF

The Environmental Advisor must save all documentation to the project folder. This includes uploading the zipped file containing the approved clearing area shapefiles.

The Environmental Advisor must update the Native Vegetation geodatabase and issue the final NVCF to the Accountable Person via email, accompanied by the 1 pager – [“How to comply with your clearing permit”](#). A phone call or email to discuss the conditions of the NVCF and the 1 pager should follow the initial email to ensure the Accountable Person fully understands their commitments. The Accountable Person must sign off on the NVCF (or an updated version if any adjustments required). The clearing can start when the NVCF has been signed.

5.3 Assessment and Approval of Clearing under CPS 185 or CPS 186

5.3.1 Develop Clearing Area Map

The Accountable Person and Environmental Advisor must determine the areas of vegetation that are required to be cleared. When determining this:

- All clearing areas must be located within the Development Area Footprint (DAF).
- The scope of works must be used to determine the areas that will require clearing for all project activities (including access, lay down, stockpiling etc).
- Any strategies to reduce or avoid clearing must be documented in the Environmental Assessment Report.

Once the total clearing area has been agreed, the Environmental Advisor must document this spatial area in a shapefile called 'Approved Clearing area - Clearing Permit number – Project Number/Name'. The Approved Clearing Area shapefile will not necessarily match the DAF as it is to be limited to areas of clearing only – however it must not exceed the extent of the DAF. The Approved Area shapefile should be drawn in a practical manner that is easily delineated in the field (i.e. try to use straight lines and simple shapes).

The Environmental Advisor must develop a map using the template from - S:\AA_EIA_GIS\2_Templates\Map Templates. The map must be saved in the project folder.

As a minimum, the following features should be included on the Clearing Area Map:

- Grid of an appropriate scale around the outside of data frame.
- Clear and meaningful title.
- Figure number.
- Clear legend (with meaningful labels) of a suitable size and scale to stay within the printable area.
- Colours as per template to show DAF (orange outline), approved clearing area (yellow cross-hatch). In the case where the clearing area extends for the whole extent of the DAF show 'approved clearing area' only.
- Include main roads (with Labels on the line).
- Include cadastral boundaries.
- Key environmental constraints (ESA areas, Bush Forever, Wetland boundaries, SRT areas) – note: not all layers need to be shown, just those that are key to the assessment and permit conditions.
- North arrow.

The Accountable Person, and the Approvals team GIS Advisor, must review and approve the draft map and clearing area prior to the Environmental Advisor undertaking further assessment.

5.3.2 Commence Environmental Assessment Report

The Environmental Advisor must commence the assessment of the clearing by:

- Saving a copy of [Environmental Assessment Report \(EAR\) for Native Vegetation Clearing](#) to the clearing permit folder using the naming convention:
 - Clearing Permit Number – Document Type - Project Name (e.g. CPS185-1034 – Environmental Assessment Report - Donnybrook Pump Station)
- Start developing the 'Purpose', 'Scope', 'Clearing Requirements', 'EIA' and 'Ten clearing principles' sections of the EAR template using:

- An approved clearing area shapefile and map.
- The completed Environmental Risk and Constraints Document.
- Any biological surveys completed for the project area (see section 5.3.3)
- Information on ways in which vegetation clearing has been avoided or minimised.
- The DWER guidance document: [A Guide to the Assessment of Applications to Clear Native Vegetation](#).

5.3.3 Conduct Biological Surveys

5.3.3.1 Surveys required when Clearing is Assessed under CPS 185 or 186

The Environmental Advisor must arrange the following surveys as required when clearing is being assessed using [CPS185](#) or [CPS186](#). The surveys must be undertaken as per the conditions of the permit.

A biological survey is required when:

- There is insufficient information to assess the proposed clearing against the relevant clearing principles (refer to the Environmental risk assessment documentation or site inspection report)
- It is likely, based on the results of the constraints analysis, and draft EIA that the clearing will be at variance to one or more of the ten clearing principles.

A dieback survey must be undertaken if the proposed clearing area is in a location susceptible to dieback (i.e. where average annual rainfall of greater than 400 millimetres and is south of the 26th parallel of latitude).

A wetland field survey assessment must be undertaken if the clearing may have a detrimental impact on the environmental value of a wetland.

All survey spatial data is to be provided to Water Corporation, by the consultant, as per the requirements of the EPA Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA). See the HSEAA-WI-065 Environmental assessment and approvals for Water Corporation IBSA requirements.

5.3.3.2 Using Consultants for Surveys and Saving Documentation

The Environmental Advisor must follow the work instruction [Engaging Consultants to Undertake Environmental Assessments](#) when engaging consultants to undertake surveys.

The Environmental Advisor must save completed survey reports within:

- The project folder structure and,
- If relevant to an area containing an asset, the 'Environmental Surveys and Reports' folder for the Asset.

The following naming convention is to be used:

- Project ID (if applicable) – Project Name – Survey Type – Consultant - Location – Date of Survey (DDMMYYYY).

5.3.4 Complete Assessment of Impacts and Assessment against the Ten Clearing Principles

At the completion of the assessment of the impact a determination must be made whether the clearing “may be” or “is” at variance with any of the clearing against the Ten Clearing Principles. The levels of variance are defined in Table 2.

Table 2: Levels of variance

Level of variance	Impact
Clearing not at variance	Where there is sufficient data to indicate certainty e.g. there are no wetlands or watercourses.
Clearing not likely to be at variance	Where there is a small element of uncertainty e.g. surveys undertaken did not locate threatened flora but potential habitat exists.
Clearing may be at variance	Where an impact to an environmental value may result from clearing. This level of variance may trigger further action, such as additional survey, or where the impact is not so significant, conditions can be imposed or application is amended.
Clearing at variance	Where there are known impacts or significant risk of impact, e.g. Commissioner has advised likelihood of land degradation through salinity or flora surveys identified rare flora in the area under application.
Clearing seriously at variance	Where the clearing will result in a substantial and irreversible impact, including impacts to critical habitat for a threatened fauna species.

The method of determination of variance is unique to each principle. The Environmental Advisor should use the DWER document: [A Guide to the Exemptions and Regulations for Clearing Native Vegetation](#).

5.3.5 Determine the Environmental Management and Stakeholder Consultation Requirements

The Environmental Advisor must use the results of the EIA assessment and Table 3 to determine the management actions that may be required to be developed and implemented for the clearing.

The Environmental Advisor must document the justification as to whether each management action is needed or not. This must be documented within the Construction Environmental Management Framework (CEMF) section of the EAR.

Table 3: Environmental Management Action Triggers

Trigger	CPS 185 requirement	CPS 186 Requirement	Guidance Documentation/Templates
The clearing 'may be at variance' to clearing principles (a), (b), (c), (d), (e), (f), or (h)	CEMF is required. Stakeholder Submissions are required to be sought. Documents to be submitted to DWER for approval.	No specific requirements	Drafting and Implementing Environmental Management Plans TEMPLATE Construction Environment Management Framework
The clearing 'is at variance' to clearing principles (a), (b), (c), (d), (e), (f), or (h)	CEMF is required. Offset Proposal is required. Stakeholder Submissions are required to be sought. Documents to be submitted to DWER for approval.	No specific requirements	Drafting and Implementing Environmental Management Plans TEMPLATE Environmental Offset Proposal TEMPLATE Construction Environment Management Framework
The clearing 'may be at variance' or 'is at variance' to principle (g), (i), or (j)	CEMF is required and must include an environmental management strategy for land or water quality degradation, or flooding – prepared with advice from the Commissioner of Soil and Land Conservation. Offset Proposal is required. Stakeholder Submissions are required to be sought. All documents to be submitted to DWER for approval.	If the vegetation comprises an ESA - CEMF is required and must include an environmental management strategy for land or water quality degradation, or flooding.	Drafting and Implementing Environmental Management Plans TEMPLATE Environmental Offset Proposal TEMPLATE Construction Environment Management Framework
The clearing occurs in an area affected by dieback (determined by survey) OR The clearing occurs in an area susceptible to dieback (i.e. average annual rainfall of greater than 400 millimetres and is south of the 26th parallel of latitude) AND movement of soil in wet conditions is required.	CEMF is required and must include measures to manage dieback. CEMF, with specific reference to Dieback Management Section, to be prepared in consultation with Department of Biodiversity Conservation and Attractions (DBCA) and submitted to DWER for approval.		DBCA <i>Phytophthora cinnamomi</i> and disease caused by it – Volume 1 – Management Guidelines

Trigger	CPS 185 requirement	CPS 186 Requirement	Guidance Documentation/Templates
Clearing is in an area adjacent to vegetation in good or better condition and may cause the spread of weeds to these adjacent areas resulting in environmental harm	CEMF is required and must include weed management measures. CEMF, with specific reference to Weed Management Section, to be submitted to DWER for their records only.		Weed Management Guideline Bushland Weeds – A practical guide to their management. Brooks and Brown, 2002 DBCAs website – how to control weeds
Clearing proposal requires temporary clearing (note: this excludes clearing that meets the following criteria: <ul style="list-style-type: none"> • <0.5ha; and • Not in an ESA; and • 'Not at variance' or 'not likely to be at variance' 	Revegetation Plan is required. Revegetation plan must be sent to DWER for approval.		DWER Guide to Preparing Revegetation Plans for Clearing Permits TEMPLATE Revegetation Plan

5.3.5.1 Exceptions to certain Environmental Management requirements

In certain circumstances, an exception to the following management requirements can be granted by DWER:

- Invitation of Stakeholder Submissions.
- Revegetation of temporary clearing areas (and subsequently development of Revegetation Plan).
- Provision of Offsets.

To apply for an exception the clearing should meet the following criteria:

- The impact related to the clearing will be minor (e.g. small size, low significance with regards to local and regional context).
- The use of revegetation would not be practicable (e.g. limited chance of success, size or nature of area).

To request an exception, the Environmental Advisor must develop a written request for an exception from these requirements. At a minimum the request must include:

- Justification why the requirement is not appropriate.
- A GIS shapefile of the clearing area
- A copy of the draft Environmental Assessment Report
- Available biological survey reports for the area to be cleared
- Any draft Environmental Management Plans that have been prepared for the scope of work.

The request for an exception must be:

- Reviewed by the Team Leader – Environment Approvals and then reviewed and signed by the Manager – Environment.
- Submitted to DWER (check website for current address and address to “the CEO”).
- Saved in the Clearing Approval folder for the Job.

If DWER respond in writing and provide an exception to the requirements, then the sections of this work instruction related to these management requirements no longer apply. If no response is received, or the exception is only provided verbally, the requirements of this work instruction still apply.

5.3.6 Prepare Construction Environmental Management Framework

The Environmental Advisor must develop a CEMF if it is triggered by the requirements in Table 3. When developing the CEMF the Environmental Advisor must use the TEMPLATE [Construction Environment Management Framework](#).

The CEMF must outline key objectives and outcomes, and where required (at the request of a stakeholder or as outlined in Table 3) minimum measures to be implemented to achieve these goals. [CPS185](#) and [CPS186](#) stipulate the minimum management measures for Weed and Hygiene (dieback) that must be implemented. These must be referenced within the CEMF.

The CEMF must include a table setting out the permit holder's commitments and a program for monitoring compliance.

Specific steps to prepare the CEMF document include:

- Save it into the project folder (Naming convention: Project ID – CEMF – Project Name).

- Populate the template with project specific information.
- The Team Leader – Environmental Approvals and Accountable Person review the CEMF.
- Finalise the CEMF and save a pdf copy in the project folder.
- Add the CEMF as an appendix to EAR and NVCF documentation.
- Send the final version of the CEMF (and all associated shapefiles) to DWER and/or with the invite for stakeholder submissions.

5.3.7 Develop Revegetation Plan

The Environmental Advisor must develop a Revegetation Plan if it is triggered by the requirements in Table 3.

Specific steps to prepare the Revegetation Plan include:

- Save the draft TEMPLATE [Revegetation Plan](#) to the project folder called 'Management Plans'.
- Meet the requirements of the DWER [Guide to Preparing Revegetation Plans for Clearing Permits](#).
- Include the following details at a minimum:
 - Site preparation
 - Weedcontrol
 - Timing of regeneration, direct seeding or planting, at an optimal time
 - A vegetation establishment period
 - Revegetation success completion criteria based on reference sites
 - Completion criteria to include target weed cover, vegetation condition, density and structure
 - Ongoing maintenance and monitoring
 - Remedial actions if completion criteria are not met
- The Team Leader – Environmental Approvals and Accountable Person review the plan.
- Finalise the plan and save a copy in the project folder.
- Add the Revegetation Plan as an appendix to the EAR and NVCF documentation.
- Send the final version of the Revegetation Plan (and all associated shapefiles) to DWER with the invite for stakeholder submissions (if applicable). If stakeholder submissions are not required, send this to DWER for their records.
- Prepare a cover letter for review by the Team Leader – Environmental Approvals and the Manager – Environment. The Manager - Environment must sign the cover letter.

5.3.8 Prepare Offset Proposal

5.3.8.1 Using the Federal Offsets Calculator

The Environmental Advisor should use the following to develop the offset proposal:

- [DWER WA Environmental Offsets Policy](#)
- [DWER WA Environmental Offsets Guideline](#)

The [Department of Agriculture, Water and Environment \(DAWE\) Offsets Calculator](#) can be used as a quantitative tool in the absence of a state calculator. Some aspects of the federal calculator will

not be directly relevant to the proposal. However, all fields must be completed in order for the auto-calculate functions of the spreadsheet to work. See the [DAWE How to Use the Offsets Assessment Guide](#).

The [Government of Western Australia online offsets register](#) can also be used to determine an appropriate offsets ratio, and demonstrate precedent, by researching other similar proposals and their approved offsets.

5.3.8.2 Preparing the Offsets Proposal

The Environmental Advisor must develop an Offset Proposal if it is triggered by the requirements in Table 3. When developing the Offset Proposal the Environmental Advisor must use the TEMPLATE [Environmental Offset Proposal](#).

Specific steps to prepare the Offset Proposal include:

- Save it into the project folder (Naming convention: Project ID – Document Type – Project Name).
- Use the [WA Environmental Offset guidelines](#) to determine the required offset.
- If an area for direct offset is required, consult internally with the Procurement and Property Team (contact Daniel Stevens) to determine if any suitable land banking scenarios are available and/or if there are any other properties they have earmarked for offset purposes, including the consideration of implementing revegetation and rehabilitation measures.
- If Water Corporation has no specific land area in mind for the direct offset, the Environmental Advisor must contact DBCA to identify if they have listed any areas of land that they would recommend for rehabilitation/revegetation, or for purchase to be added to DBCA conservation estate, as an offset. It can also be asked at this stage if they would prefer a monetary contribution to purchase part of a larger identified offset site.
- If required, engage a consultant to conduct a Biological Survey of the proposed offset area (refer to HSEAA-WI-065 [Environmental Assessment and Approvals](#)).
- Add project specific information and offset justification.
- The Team Leader – Environmental Approvals and Accountable Person review the proposal.
- Finalise the Offset Proposal and save a pdf copy into the project folder.
- Add the Offset Proposal as an appendix to EAR and NVCF documentation.
- Send the final version of the Offset Proposal (and all associated shapefiles – for both project area and offset site) to DWER with the invitation for stakeholder submissions.

5.3.9 Complete the draft Environmental Assessment Report

The Environmental Advisor must complete the draft of the Environmental Assessment Report (started in 5.3.2) by adding:

- Biological report findings.
- Finalised assessment against the ten clearing principles.
- Reference to any exceptions from conditions granted from DWER.
- Reference to CEMF (if required) and include as attachment.
- Reference to Revegetation Plan (if required) and include as attachment.
- Reference to Offset Proposal (if required) and include as attachment.

The Team Leader – Environmental Approvals (or delegate) and Accountable Person must review the draft EAR.

5.3.10 Stakeholder Consultation (Invitation for Stakeholder Submissions)

The Environmental Advisor must invite stakeholder submissions if this is triggered by the requirements in Table 3 and an exception has not been granted by DWER (refer section 5.3.5)

For clearing approvals made under the [CPS185](#) permit, the invite for stakeholder submissions must be accompanied by:

- The management plan (if it is required to be approved or provided for comment).
- The CEMF (if the clearing is at variance to the clearing principles ([CPS185](#) only)).
- A cover letter that draws attention to the sections of the CEMF that require feedback and approval.

For clearing approvals made under the [CPS186](#) permit, or where the invite for stakeholder submissions is not triggered by Table 3, the CEMF and a cover letter must be sent directly to relevant parties. The Environmental Advisor must write the cover letter and ask the Team Leader – Environmental Approvals to review it. The Manager – Environment must sign the cover letter. Any responses received must be outlined in the final EAR document and records of all correspondence must be kept in the appropriate project folder.

5.3.10.1 Identification of Stakeholders

The Environmental Advisor should obtain support in identifying all required stakeholders from the Accountable Person and Communications Officer assigned to the scope of work (if one has been assigned).

The Environmental Advisor must invite submissions from the following parties about those impacts of the proposed clearing that may be at variance or is at variance with the clearing principles (Table 4).

Table 4: Stakeholder Information

Stakeholder	When to Engage	Contact Details
Department of Water and Environmental Regulation (DWER) – Regulatory Services (Environment) Branch	If “may be at variance” or “is at variance” to any of the ten clearing principles and no exception from stakeholder submissions has been granted.	Manager Native Vegetation Regulation Locked Bag 10 Joondalup DC WA 6919 info@dwer.wa.gov.au Tel: (08) 6364 7000
Department of Primary Industry and Regional Development	If “may be at variance” or “is at variance” to principles (g), (i) or (j) and no exception from stakeholder submissions has been granted.	Commissioner of Soil and Land Conservation Locked Bag 4 Bentley Delivery Centre WA 6983
DWER – Regional Office(s)	If “may be at variance” or “is at variance” to principles (f), (i) or (j) and no exception from stakeholder submissions has been granted.	Address correspondence to the “Regional Manager” To determine regional office contact details refer to the website: DWER – Regional Office Contact Details
Conservation Council of Western Australia	If “may be at variance” or “is at variance” to any of the ten clearing principles and no exception from stakeholder submissions has been granted.	Executive Director 20/2 Delhi Street West Perth WA 6005 conswa@ccwa.org.au Tel: (08) 9420 7266
Local Government (the local government responsible for the area that is to be cleared)	If “may be at variance” or “is at variance” to any of the ten clearing principles and no exception from stakeholder submissions has been granted.	Address correspondence to the “Environmental Manager” Use the Local Government – find my council tool to determine the Local Government that the project site is within. Then search that Local Government’s specific website for contact details. Address correspondence to the Environmental Manager.
Department of Planning, Lands and Heritage (DPLH) – Bush Forever Office	If “may be at variance” or “is at variance” to any of the ten clearing principles, no exception from stakeholder submissions has been granted and the project footprint is located within a Bush Forever Site.	Bush Forever Office Locked Bag 2506 Perth WA 6001 info@dplh.wa.gov.au Tel: (08) 6551 8002

Stakeholder	When to Engage	Contact Details
The landowner(s) (freehold land) of any land on which the clearing is proposed to be done	If “may be at variance” or “is at variance” to any of the ten clearing principles and no exception from stakeholder submissions has been granted.	The online Landgate map viewer (with LandGate login) OR a copy of the certificate of title can be used to identify the current landowner (can be obtained by Property Acquisitions team).
The occupier of any land (crown) on which the clearing is proposed to be done	If “may be at variance” or “is at variance” to any of the ten clearing principles and no exception from stakeholder submissions has been granted.	A representative from the Procurement and Property branch, or the assigned Communications Officer should be able to give advice of the current land occupier.
Any other environment or community groups that may have an interest in the clearing that is proposed to be done (e.g. ‘Friends of’ groups, landcare or NRM groups)	If “may be at variance” or “is at variance” to any of the ten clearing principles and no exception from stakeholder submissions has been granted.	The online DPAW find a conservation group tool can be utilised to identify conservation groups in the local area Additionally the Communications Officer assigned to the project should be able to advise of any previous community engagement for nearby projects
Department of Planning, Lands and Heritage – Heritage Division	If “may be at variance” or “is at variance” to any of the ten clearing principles, no exception from stakeholder submissions has been granted and the project footprint is located within or nearby a state heritage area (please note that other approvals pertaining to heritage may also be required additional to the Clearing Permit).	Manager Heritage Division Locked Bag 2506 Perth WA 6001 info@dplh.wa.gov.au Tel: (08) 6551 8002

5.3.10.2 Invite Stakeholder Comments

The Environmental Advisor must draft a letter inviting stakeholder submissions using the [Invite for Submissions \(Condition 7 CPS 185\) Letter Template](#). The letter must be saved in the clearing permit folder for the project.

The letter and attachments must include the following information (as a minimum):

- A description of the land on which the clearing is to be done.
- A description of the project activities for which the clearing is to be done.
- The size of the area to be cleared (in hectares).
- In what manner the permit holder considers that the clearing may be at variance with the clearing principles.
- A copy of any biological survey reports (for clearing area and/or offset site).
- An outline of any rehabilitation, revegetation, management strategy or offset proposed to be implemented in relation to the clearing.
- The contact details of where submissions must be sent.
- The date by which submissions must be received (to be 21 days from the date of the letter).

When inviting stakeholder submissions from the Commissioner of Soil and Land Conservation, the cover letter must refer to the environmental management strategy pertaining to land and water quality degradation and seek their review and approval.

The Team Leader – Environmental Approvals and Accountable Person must review and approve the draft letter and attachments. The Manager – Environment must sign the cover letter.

The Environmental Advisor must send the letters and attachments to the stakeholders via email (refer to Table 4).

5.3.10.3 Respond to Stakeholder Submissions

Stakeholders have a 21 day stakeholder consultation period. At the end of the 21 days, the Environmental Advisor must complete the steps in Table 5.

Table 5: Response to Stakeholder Submissions

Step	Instruction	Notes
1.	Save each submission received from stakeholders in the Clearing Permit folder.	
2.	Develop a response for each issue raised by a stakeholder.	<ul style="list-style-type: none"> The response must detail how the issue or comment has been addressed, or why the comment has not been addressed. When addressing the comments, the Environmental Advisor should consider them in the context of regulator guidance and the regulatory framework.
3.	Send a formal letter of response to each stakeholder.	<ul style="list-style-type: none"> The Environmental Advisor must write the letter. The Team Leader – Environmental Approvals must review the letter. The Manager – Environment must sign the letter. The letter must outline the interpretation of the stakeholder's submission and explain where the comments have been incorporated into the assessment or assessment outcome. The letter can be sent via email or post.
4.	Record the comments from and response to each stakeholder submission in a table in the EAR.	<ul style="list-style-type: none"> If a response was not received from a stakeholder this must also be noted in the EAR.

If further comments are received from any of the Stakeholders then they are to be addressed as appropriate.

5.3.11 Finalise Environmental Assessment Report and Management Plans

The Environmental Advisor must finalise the EAR document and CEMF so that they reflect responses to stakeholder submissions received and outcomes from stakeholder consultation.

The Team Leader – Environmental Approvals and Accountable Person must review and endorse the EAR.

The Environmental Advisor must save a PDF copy of the endorsed EAR document to the project folder along with all relevant GIS data (in zipped format).

5.3.12 Prepare Native Vegetation Clearing Approval Form

The Environmental Advisor must develop and issue an internal Native Vegetation Clearing Form (NVCF) when the EAR and management plans are approved.

The NVCF must be documented in the TEMPLATE [Native Vegetation Clearing Form](#). The Team leader – Environmental Approvals must review and approve the draft NVCF prior to the Accountable Person signing.

The Environmental Advisor must save the draft NVCF in the project folder (Naming convention: Clearing Permit Number – Document Type - Project Name).

5.3.13 Communication of Clearing Permit Conditions

The Accountable Person and the Environmental Advisor must meet to review the conditions and requirements for a clearing. This meeting must be undertaken for all moderate or high risk projects (based on of the Overall Project Environmental Complexity tool).

The meeting should cover:

- Project specific requirements and conditions of the clearing permit or exemption (e.g. maximum area, location, methodology, etc.)
- Expectations and hold points
- Document requirements prior to commencement of groundwork
- ongoing management requirements (e.g. weed, hygiene)
- Roles and responsibilities
- Record keeping and reporting requirements
- Penalties and ramifications of non-compliance
- An agreement that signing the document means that it has been read and understood.

After this meeting, the Accountable Person must sign off on the NVCF (or an updated version if any adjustments required).

The Environmental Advisor must save all documentation to the project folder. This includes uploading the zipped file containing the approved clearing area shapefiles.

The Environmental Advisor must update the Native Vegetation geodatabase and issue the final NVCF to the Accountable Person with the 1 pager – [“How to comply with your clearing permit”](#). The clearing can start when the NVCF has been signed.

5.4 Assessment and Approval of Clearing by DWER

DWER administers the clearing provisions of the EP Act. Applications for clearing permits are assessed by DWER. DWER make a decision to grant or refuse the application as per the EP Act.

Clearing Permit applications to be submitted to DWER must include:

- Supporting documentation (e.g. biological survey reports, CEMF, Offset Proposal).
- A DWER [Clearing Permit Application Form](#).
- A cover letter signed by the Manager - Environment.

5.4.1 Develop Clearing Area Map

The Accountable Person and Environmental Advisor must determine the areas of vegetation that are required to be cleared. When determining this:

- The scope of works must be used to determine the areas that will require clearing for project activities.
- All clearing areas must be located within the Development Area Footprint (DAF).
- Any strategies to reduce or avoid clearing must be documented.

Once the total clearing area has been agreed, the Environmental Advisor must document this spatial area in a shapefile called 'Clearing area - Clearing Permit number – Project Number/Name'.

The Environmental Advisor must develop a map using the template from - S:\AA_EIA_GIS\2_Templates\Map Templates. The map must be saved in the Clearing Permit folder for the scope of works. The map should include key environmental constraints where relevant.

The Accountable Person must review and approve the draft map and clearing area.

5.4.2 Conduct Biological Surveys

A biological survey should be undertaken to support all applications for clearing permits that are sent to DWER.

The Environmental Advisor must arrange for a suitably qualified environmental specialist to conduct biological surveys. Biological Surveys must be conducted as per relevant EPA guidance documentation. All data is to be provided to Water Corporation, by the consultant, as per the requirements of the [EPA Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments \(IBSA\)](#). See the HSEAA-WI-065 [Environmental assessment and approvals](#) for Water Corporation IBSA requirements.

The Environmental Advisor must follow the work instruction [Engaging Consultants to Undertake Environmental Assessments](#) when engaging consultants to undertake surveys.

Survey reports and spatial data are to be saved into the appropriate file structure for the project and will be used as supporting documentation in the Clearing Permit Application form. The following naming convention is to be used: Project ID (if applicable) – Project Name – Survey Type – Consultant - Location – Date of Survey (DDMMYYYY).

5.4.3 Prepare Clearing Permit Application

The Environmental Advisor must download the DWER [Clearing Permit Application Form](#). A copy of the form must be saved in the project folder.

The Environmental Advisor must complete the form with reference to all available material and develop a cover letter.

The Team Leader – Environmental Approvals and Accountable Person must review the application form.

The Manager – Environment must sign the application form.

5.4.4 Prepare Construction Environmental Management Framework

The Environmental Advisor must develop a CEMF (refer to section 5.3.6).

5.4.5 Submit application

The Team Leader – Environmental Approvals and Accountable Person must review the application form and cover letter.

The Manager – Environment must sign the cover letter and application form.

The application must be submitted as per the directions on the form.

The Environmental Advisor must manage the response from DWER as per HSEAA-WI-065 [Environmental Assessment and Approvals](#).

5.4.6 Prepare Offset Proposal

An Offset Proposal may be requested following the submission of the DWER Clearing Permit application. If an Offset Proposal is requested refer to section 5.3.8.

6 Definitions

Definitions are available in the [online glossary](#).

Term	Description
Accountable Person	<p>The person who is accountable for ensuring environmental risks are identified and environmental approvals are obtained for a given scope of work, prior to this work being undertaken.</p> <p>The person does not necessarily provide direct supervision while the scope of work is being undertaken (i.e. may not be a Workplace Manager or Responsible Person). The person who fulfils this role may also change dependent on the phase of the scope of work. For example:</p> <ul style="list-style-type: none"> • In the 'Assets Planning' phase this person is normally an Asset Planner. • In the 'Asset Delivery' phase this person is normally a Project Manager. • In 'Operational' phase (e.g. maintenance) depending on the type of work this person may be a Team Leader, Operations Manager, or Project Leader.
Clearing	<p>Means -</p> <ol style="list-style-type: none"> a) killing or destruction of; or b) the removal of; or c) the severing or ringbarking of trunks or stems of; or d) the doing of any other substantial damage to, <p>Some or all of the native vegetation in an area, and includes the draining or flooding of land, the burning of vegetation, the grazing of stock, or any other act or activity, that causes the above listed outcomes. (as defined in the <i>Environmental Protection Act 1986</i>)</p>
Clearing Principles	The 'ten clearing principles' for assessment of the clearing of native vegetation, as specified in Schedule 5 of the EP Act.
Native Vegetation	<p>Indigenous aquatic or terrestrial vegetation and includes dead vegetation unless that dead vegetation is of a class declared by regulation to be excluded from this definition.</p> <p>It also includes native vegetation that was intentionally planted if:</p> <ol style="list-style-type: none"> a) that vegetation was sown, planted or propagated as required under this

Term	Description
	<p>Act or another written law; or</p> <p>b) that vegetation is of a class declared by regulation to be included in this definition; or</p> <p>c) the planting was funded (wholly or partly) by a person who was not the owner of the land AND for the purpose of biodiversity conservation or land conservation; or</p> <p>d) one of the following is in effect in relation to the vegetation —</p> <p>(i) a conservation covenant or agreement to reserve under section 30B of the Soil and Land Conservation Act 1945;</p> <p>(ii) a covenant to conserve under section 21A of the National Trust of Australia (W.A.) Act 1964;</p> <p>(iii) a restrictive covenant to conserve under section 129BA of the Transfer of Land Act 1893;</p> <p>(iv) some other form of binding undertaking to establish and maintain, or maintain, the vegetation.</p>

7 Records

Records must be stored as per table below.

Record	To be retained by	Nexus folder location	Naming convention
Biological Survey Report	Environmental Advisor	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Surveys Reports	PROJECT # - REPORT TYPE - PROJECT NAME - CONSULTANT
Construction Environment Management Framework	Environmental Advisor and Accountable Person	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Construction Support	PROJECT # - CEMF - PROJECT NAME
Clearing Area Map	Environmental Advisor and Accountable Person	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> Clearing Permit	PROJECT # - CLEARING AREA MAP - PROJECT NAME LOCATION
Development Area Footprint (ZIPPED ESRI FILE)	Environmental Advisor and Accountable Person	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Admin and Info	PROJECT # - DAF PROJECT NAME LOCATION
Dieback Management Plan	Environmental Advisor	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> RELEVANT APPROVAL FOLDER	PROJECT # - DIEBACK MANAGEMENT PLAN - PROJECT NAME

Record	To be retained by	Nexus folder location	Naming convention
DWER CPS185/186 Condition Exception Correspondence	Environmental Advisor and Accountable Person	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> Clearing Permit	PROJECT # - PROJECT NAME - DWER CONDITION EXCEPTION CORRESPONDENCE - DATE
DWER clearing permit application form	Environmental Advisor	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> Clearing Permit	PROJECT # - DWER CLEARING PERMIT APPLICATION FORM - PROJECT NAME
DWER granted Clearing Permit	Environmental Advisor and Accountable Person	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> Clearing Permit	CPS##### - DWER CLEARING PERMIT - PROJECT NAME
Environmental Assessment Report (EAR)	Environmental Advisor	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> Clearing Permit	PROJECT # - EAR - PROJECT NAME
Exemption advice email to AP	Environmental Advisor and Accountable Person	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> Exemption	PROJECT # - CLEARING EXEMPTION - PROJECT NAME
Native Vegetation Clearing Form	Environmental Advisor and Accountable Person	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> Clearing Permit	PROJECT # - NVCF - PROJECT NAME
Offset Proposal	Environmental Advisor and Accountable Person	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> Offset	PROJECT # - OFFSET PROPOSAL - PROJECT NAME
Revegetation Plan	Environmental Advisor	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -	PROJECT # - REVEGETATION PLAN - PROJECT NAME

Record	To be retained by	Nexus folder location	Naming convention
		> RELEVANT APPROVAL FOLDER	
Stakeholder submissions and responses	Environmental Advisor	Enterprise -> Managed content -> Assets Planning and Delivery -> Environment -> REGION -> PROJECTFOLDER -> Project Specific Approvals -> Clearing Permit	PROJECT # - STAKEHOLDER SUBMISSION/RESPONSE – STAKEHOLDER NAME - PROJECT NAME

8 References

8.1 Internal References

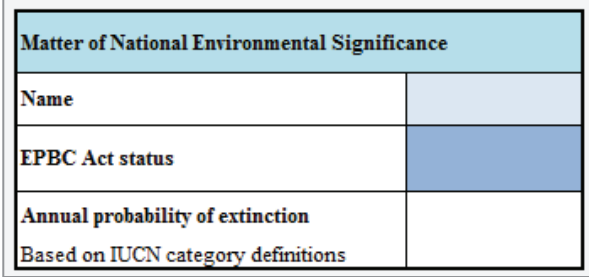
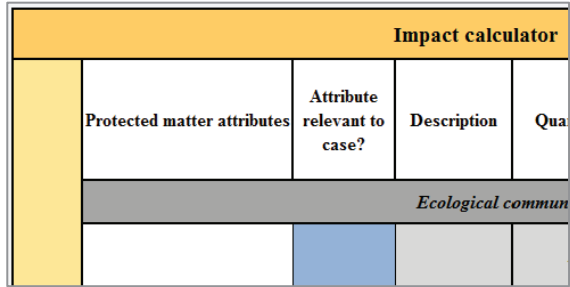
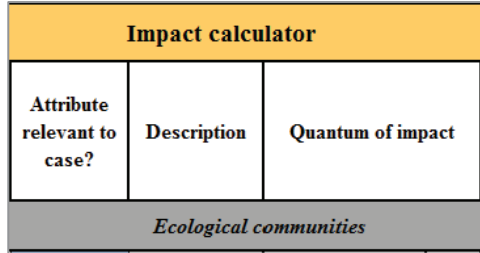
Document Number	Title
HSEAA-WI-065	Environmental Assessment and Approvals
HSEAA-WI-066	Application for approval under the Environmental Protection and Biodiversity Conservation Act 1999
	Drafting and Implementing Environmental Management Plans Procedure
	Weed Management Guideline
TEMPLATE	Environmental Assessment Report (EAR) for Native Vegetation Clearing
TEMPLATE	Environmental Offset Proposal
TEMPLATE	Construction Environment Management Framework
TEMPLATE	Native Vegetation Clearing Form
TEMPLATE	Revegetation Plan
	Clearing Permit 185
	Clearing Permit 186
	Invite for Submissions (Condition 7 CPS 185) Letter Template
	Map Templates in network drive: S:\AA_EIA_GIS\2_Templates\Map Templates
	Native Vegetation Management Database in network drive: S:\AA_AEnvironment Branch\Environment\Spatial\Project Information Database\Master\Native Vegetation Management Database.accdb
	Quick Reference Sheet - Use of the Native Vegetation Management Database
	Work Instruction Engaging Consultants to Undertake Environmental Assessments

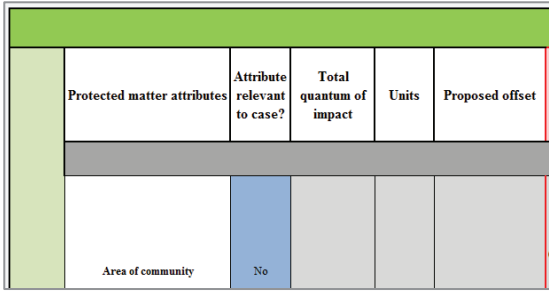
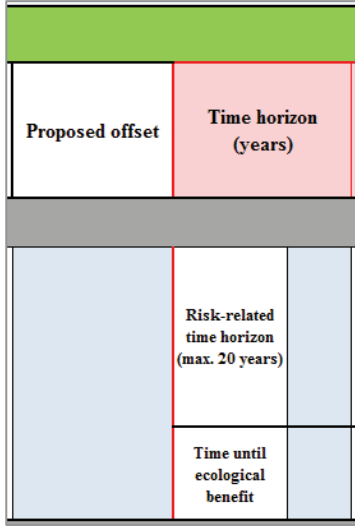
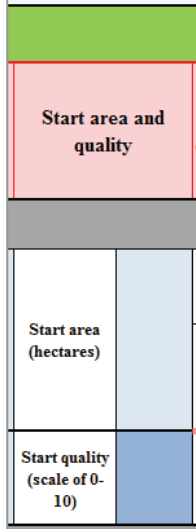
8.2 External References

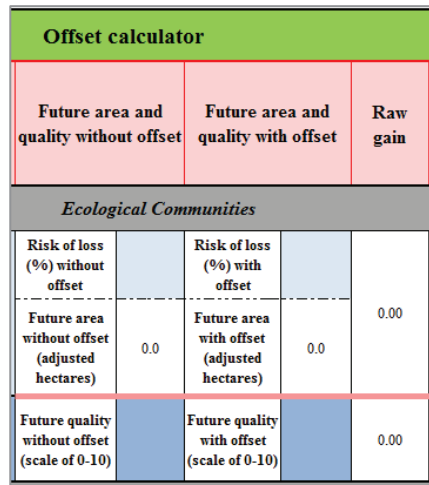
Document Number	Title
	Bushland Weeds – A practical guide to their management. Brooks and Brown, 2002
	DBCA <i>Phytophthora cinnamomi</i> and disease caused by it – Volume 1 – Management Guidelines
	DBCA website – how to control weeds
	DAWE How to Use the Offsets Assessment Guide
	DAWE Offsets Calculator
	DPAW find a conservation group tool
	DWER A Guide to the Assessment of Applications to Clear Native Vegetation
	DWER A Guide to the Exemptions and Regulations for Clearing Native Vegetation
	DWER A Guide to Preparing Revegetation Plans for Clearing Permits
	DWER Clearing Application Form
	DWER Fact Sheet Clearing in controlled catchments
	DWER WA Environmental Offsets Policy
	DWER WA Environmental Offsets Guideline
	DWER – Regional Office Contact Details
	EPA Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (IBSA)
	Government of Western Australia online offsets register
	Landgate Map Viewer
	Local Government – Find My Council Tool

To provide feedback, email the [HSE Systems Team](#) or visit Waterfront.

Appendix A How to use the Federal Offsets Calculator

Step	Instruction	Screenshots and comments
1.	<p>Select an '<i>EPBC Act status</i>' from the drop down box in the top left.</p> <p>Note: EPBC means the Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)</p>	<ul style="list-style-type: none"> If the species in the proposal has not been attributed an IUCN status, select "other" 
2.	<p>Use the '<i>Impact calculator</i>'.</p> <p>Determine whether the offset has regards to threatened flora and vegetation communities and/or threatened fauna habitats. Use the column '<i>Attribute relevant to case?</i>'.</p> <p>Select 'Yes' from the drop down in this column to use the rows in the following steps.</p>	
3.	Describe the impact.	<ul style="list-style-type: none"> Use column '<i>Description</i>'
4.	<p>Input '<i>Quantum of impact</i>' data using the Government of Western Australia online offsets register.</p> <p>Note: Quality is NOT a direct representation of vegetation condition. Rather it is a combined score based on the condition, context (connectivity, size in local area, presence of other threats) and species stocking rate (usage and/or density of a species at a particular site). The key factor when determining quality for use in the calculator is to maintain a consistent approach to assessment for both the impact and offset areas. The offset area needs to be at least as high quality as the impact area, or better.</p>	<ul style="list-style-type: none"> Use column '<i>Quantum of impact</i>' to record the area and quality score. 

Step	Instruction	Screenshots and comments
5.	<p>Move over to the 'Offset calculator'.</p> <p>Use the column 'Attribute relevant to case?'.</p> <p>Select 'Yes' from the drop down in this column to use the rows in the following steps.</p>	<ul style="list-style-type: none"> Selecting 'yes' will transfer details from the Impact calculator. 
6.	Describe the proposed offset in the column 'Proposed offset'.	
7.	<p>Enter data in the column 'Time horizon (years)'.</p> <ul style="list-style-type: none"> Risk-related time horizon is how long the risk will be averted for. If the proposal is to transfer land to conservation estate to be protected in perpetuity, input "20" which is the maximum. An offset will unlikely be accepted without it be conserved in perpetuity. Time until ecological benefit refers to how long it will take to implement the offset. If it's a land transfer put 1 year. If it is a 3 year rehabilitation program put 3 years, etc. 	
8.	<p>Enter data in the column 'Start area and quality'.</p> <p>Use the Government of Western Australia online offsets register for quality scoring as required.</p>	

Step	Instruction	Screenshots and comments
9.	<p>Enter risk weightings in the columns:</p> <ul style="list-style-type: none"> ‘Future area and quality without offset’ ‘Future area and quality with offset’ <p>Use the Government of Western Australia online offsets register for quality scoring as required.</p>	<div style="text-align: center;">  </div> <p>Note: Risk refers to the percentage risk that the habitat will be completely lost (i.e. no longer hold value for the environmental matter). Risk of loss is an estimate based on current protection mechanisms (e.g. zonings or covenants), impending developments, mining leases, or loss of similar sites elsewhere. Maintain a consistent approach to assessment for both the risk of loss with or without offset in place. Examples:</p> <ul style="list-style-type: none"> Within existing proposed development area – risk of loss 80% Zone commercial or residential but no proposed development known – risk of loss 60% Within existing residential or rural residential development – 40% Reserved for water services – risk of loss 20% Transferred to conservation estate – risk of loss 10%
10.	Enter a percentage in the column ‘Confidence in result (%)’.	<p>Note: This is a percentage based on confidence in result (change of quality) being achieved. Note that a lower risk of failure in turn generates higher confidence in result. 90% high confidence, 50% moderate confidence, 20% low confidence.</p>
11.	Check the column ‘Minimum (90%) direct offset requirement met?’	<p>If the outcome is yes then proceed to section 5.3.8.2 Preparing the Offsets Proposal.</p> <p>If the outcome is no, consider offering additional area or an area with higher quality and/or methodology with more confident outcomes.</p>

ANNEXURE 2

**A guide to preparing revegetation plans for clearing permits under Part V Division 2 of the
*Environmental Protection Act 1986***



Government of **Western Australia**
Department of **Water and Environmental Regulation**

A Guide to Preparing Revegetation Plans for Clearing Permits

under Part V of the *Environmental Protection Act 1986*

Department of Water and Environmental Regulation

March 2018

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This publication is available at www.dwer.wa.gov.au or for those with special needs it can be made available in alternative formats such as audio, large print, or Braille.

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Definitions¹

CEO means the Chief Executive Officer of the Department of Water and Environmental Regulation

density means the number of individual plants of a defined group that are present in a given area at a particular time, for example stems per unit area.

dieback survey means an onsite survey undertaken by an environmental specialist to: (a) verify desktop study information; (b) identify indicator species; and (c) carry out soil sampling in areas significantly affected by dieback.

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species.

disease means organisms (pathogens) that cause adverse outcomes (symptoms) in another organism (host). Dieback of native plants caused by *Phytophthora* species is an example of a serious plant disease that is a major problem in Western Australia (Environmental Protection Authority 2006).

dominant species means the tallest and/or most common plant in the overstorey or each layer.

environmental specialist means a person who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide, or is approved by the CEO as a suitable environmental specialist.

local provenance means native vegetation, seeds and propagating material from natural sources geographically similar and within as close proximity as practicably possible. Local provenance in higher diversity bioregions, such as the Swan Coastal Plain, can be within less than 50 kilometres, while in areas with homogenous diversity, such as the Central Kimberley, it may be within 200 kilometres.

mulching means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation.

¹ The definitions of terms in individual clearing permits, where inconsistent with this Guide, take precedence for the time that the permit is valid.

optimal time means the specified period for the activity in a particular area of the State as follows:

Area	Optimal time for direct seeding	Optimal time to undertake planting
Gascoyne	May in south or November–December in north	no planting without irrigation
Goldfields Esperance	April–May	no planting without irrigation
Great Southern	April–May	May–June
Kimberley	October–December	no planting without irrigation
Metropolitan	April–June	May–July
Midwest	April–May or November–December in extreme north	May–June
Pilbara	November–December	no planting without irrigation
South West	April–June	May–June
Wheatbelt northern	May–June	June–July
Wheatbelt southern	April–June	May–June

permit holder means the holder of a clearing permit granted and in force under Part V Division 2 of the *Environmental Protection Act 1986*.

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species.

quadrat means a sample plot established for the purpose of data collection and monitoring vegetation characteristics, for example species composition, structure, density and condition.

qualified disease interpreter means a person who holds a tertiary qualification in environmental science or equivalent, and has a minimum of two years' work experience in plant disease identification and remediation techniques.

reference site means a site used to provide baseline data for planning a revegetation project. Measurements from fixed reference points or plots where biodiversity components are measured are used to set measurable completion criteria for revegetation projects.

regenerate/ion means the re-establishment of vegetation from in-situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing mulch.

rehabilitation means actively managing an area containing native vegetation in order to improve the ecological function of that area.

remedial action means any activity that is required to ensure successful re-establishment of vegetation to its pre-clearing composition, structure and density, and may include a combination of soil treatments and revegetation.

revegetate/ion means the re-establishment of a cover of local provenance native vegetation in an area using methods such as natural regeneration, direct seeding and/or planting, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

revegetation plan means a plan prepared by the permit holder, or an appropriate environmental specialist delegated by the permit holder, for the revegetation and rehabilitation of a site in accordance with a permit condition.

site preparation means management of existing site topsoil and preparation of the finished soil surface, for example by ripping or tilling the soil surface and re-spreading site topsoil and chipped native vegetation.

species richness means the number of species that are present in a habitat or ecosystem.

vegetation condition means the rating given to native vegetation which refers to the impact of disturbance on each of the layers and the ability of the community to regenerate (Keighery 1994). The Keighery scale (1994) is used for the South West and Interzone Botanical Province, and Trudgen (1991) is used for the Eremaean and Northern Botanical Provinces (see Appendices C and D).

vegetation unit means any group of plants or a plant community, regardless of vegetation category or level.

1 Purpose

This guide sets out the Department of Water and Environmental Regulation's (DWER) recommended approach to preparing a revegetation plan, where land revegetation is proposed as an offset or required, as a condition of a clearing permit granted under the *Environmental Protection Act 1986* (EP Act). It provides general guidance to key stakeholders including landowners, consultants, local government authorities and state government agencies, regarding the information that should be provided to DWER to ensure that an assessment of the adequacy of a revegetation plan can be made.

2 Introduction

Revegetation is the intentional establishment and management of native vegetation to recreate or improve the environmental values of a site to achieve a species composition, structure and diversity similar to that which existed prior to disturbance.

Depending on the purpose of the revegetation, it may be necessary to revegetate land within the clearing impact area (onsite) or at a separate location (environmental offset). Revegetation will generally be in accordance with an approved revegetation plan as a condition to a clearing permit.

Onsite revegetation (onsite mitigation) may be conducted when some or all of the land cleared is no longer required for the purpose for which it was cleared. Restoring the clearing footprint to a self-sustaining state, or as close to its pre-clearing state as possible, aims to reduce long-term environmental impacts of the clearing.

Offsite revegetation (environmental offset) may be required when clearing results in a significant residual environmental impact. DWER's Chief Executive Officer (CEO) may require a permit holder to offset the loss of native vegetation by undertaking offsite revegetation, whether on the same or another property.

Successful revegetation requires appropriate planning and preparation to establish objectives and completion criteria, and identify tasks and resources to ensure the success of the revegetation. It is important for revegetation projects to be guided by a revegetation plan appropriate to the specific conditions and requirements of the revegetation site.

The revegetation plan should be prepared by, or in consultation with, an environmental specialist with appropriate expertise in revegetation techniques, and demonstrated revegetation experience specific to Western Australian native vegetation and environmental conditions.

To facilitate the consideration and approval of revegetation plans, checklists of the recommended contents of a revegetation plan and monitoring report are provided in Appendices A and B of this guide.

This guide provides a recommended approach for preparing a revegetation plan and is not intended to detail revegetation techniques. Sections 7 and 8 references some other publications that provide detailed guidance on revegetation techniques.

3 Legislation

The clearing of native vegetation in Western Australia is regulated under Part V Division 2 of the EP Act and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Clearing Regulations). Clearing of native vegetation is an offence unless a clearing permit has been granted, or an exemption applies.

A clearing permit may be granted subject to conditions that the CEO considers necessary or convenient for mitigating environmental harm or offsetting the loss of cleared vegetation (section 51H). Such conditions may include requirements relating to the revegetation of an area (whether onsite or offsite). This includes the preparation of a revegetation plan for the establishment and maintenance of vegetation on land (other than land cleared under the permit to offset the loss of the cleared vegetation).

The CEO has delegated the clearing provisions of the EP Act to the Department of Mines, Industry Regulation and Safety for clearing regulated under the *Mining Act 1978*, various petroleum legislation and under state agreements administered by the Department of Jobs, Tourism, Science and Innovation.

4 Reporting Requirements

Under section 51I(2)(d) of the EP Act, a permit holder may be required to monitor operations and environmental harm, conduct analysis of monitoring data, and provide reports of monitoring data and analysis to the CEO.

The completion criteria for revegetation must be measurable so that the effectiveness of the revegetation can be monitored, reported and assessed. Monitoring reports and the evaluation of monitoring data must be provided to the CEO before the date specified on the clearing permit.

Reporting must continue until the expiry of the clearing permit or until the CEO or delegate agrees that the conditions of the clearing permit and the revegetation completion criteria are met (provided that this is prior to the expiry of the permit).

5 Revegetation Plan

The revegetation plan must include an outline of the permit holder's revegetation commitments; background information about the impact site prior to clearing and, if offsite revegetation is proposed, the revegetation site; relevant information collected from reference sites; and completion criteria. The revegetation plan should also outline a monitoring and management program.

Appendix A contains a checklist of the recommended content of a revegetation plan. The revegetation plan checklist must be completed and attached to the revegetation plan upon submission to DWER. If revegetation is required as a condition of a clearing permit, typically an applicant will be requested to provide a revegetation plan to DWER for review, prior to the granting of the permit. DWER may require the permit holder to amend the revegetation plan where it is insufficient. This checklist can be modified to meet specific circumstances as required.

5.1 Revegetation Commitments

The permit holder's overall objectives for the revegetation project should be outlined in the revegetation plan.

The Environmental Protection Authority's (EPA) *Guidance Statement No. 6 – Rehabilitation of Terrestrial Ecosystems* (2006) provides information on setting effective objectives for rehabilitation and revegetation. The vision and objectives of a revegetation plan should be consistent with the SMART (specific, measurable, achievable, relevant, time-bound) principles.

Examples of a revegetation project objective are to ensure the:

- ecosystem has the capacity to become self-sustaining or become sustainable with minimal management; and
- revegetation is representative of the original vegetation unit.

5.2 Background Information

The revegetation plan should include the following information about the impact site prior to clearing and, if offsite revegetation is proposed, the revegetation site:

- ownership, vesting and zoning of the land;
- description of the site's physical and biological features (such as soil type, landform, topography, hydrology/drainage, vegetation type and fauna);
- description of the site's history, including historical disturbance such as grazing and logging;
- description of disturbances and threats potentially exacerbated by clearing such as erosion and weeds;
- existing site conditions that require remediation such as soil compaction, erosion, surface water diversion, weeds, feral animals and plant pathogens;
- evidence of any agreements necessary to access the site for the purpose of undertaking revegetation; and
- maps, photographs and spatial datasets relating to the site.

Maps and shapefiles

Maps, spatial datasets and other information referred to in the revegetation plan are to be provided to DWER electronically. Spatial datasets provided should be as Environmental Systems Research Institute (ESRI) shapefiles with the following properties:

- geometry type: polygon shape;
- coordinate system: GDA 1994 (Geographic latitude/longitude); and
- datum: GDA 1994 (Geocentric Datum of Australia 1994).

Aerial photographs or maps should be used to show features of a site, for example, the boundaries of the clearing footprint, the revegetation site/s, the reference site/s and vegetation unit boundaries.

5.3 Reference Sites

Reference sites enable the collection of baseline data that assist in determining the completion criteria to be developed in sufficient detail.

Selecting reference sites

Reference sites are an important source of information on the type of vegetation, for example species composition and structure, that is proposed to be revegetated. Baseline floristic data can be collected from the following types of reference sites:

- floristic surveys of the pre-disturbance vegetation that is in 'excellent condition' (Keighery, 1994) or 'very good condition' (Trudgen 1991) or better;
- in consultation with DWER, adjacent vegetation of the same vegetation unit/s and is in 'excellent condition' (Keighery 1994) or 'very good condition' (Trudgen, 1991) or better, and occurs on the same soil type; or
- in consultation with DWER, vegetation located in close proximity that has the same vegetation unit/s and is in 'excellent condition' (Keighery 1994) or 'very good condition' (Trudgen 1991) or better, and occurs on the same soil type.

Where it can be demonstrated that a suitable reference site meeting the above criteria is not available, DWER may consider and approve an alternative reference site (e.g. occurring on a different soil type).

Existing datasets can be used to supplement reference site data.

Data to collect

Collecting baseline data using quadrats for the overall site is necessary to develop the completion criteria. Other information such as existing datasets may be used in some circumstances. Baseline data should be collected for each relevant component, for example, each vegetation type impacted or proposed to be revegetated, and the completion criteria developed for each of these. Compilation of baseline floristic and associated data from reference site surveys also assists in the development of species lists for revegetation.

Table 1 outlines example data and methods of collection that may be used to develop the completion criteria (see Section 5.4) and monitoring reports (see Section 6). The methods of collection outlined should be based on site characteristics and justification provided.

Table 1: Example data and methods of collection

Scale	Data	Method
Quadrat-level	Species richness	Number of species within quadrats.
	Species list (includes weeds)	List in order of dominance and grouped by structural component (for example trees and shrubs). Dominance is determined by ranking species based on density. Density is described below.
	Density of trees and large shrubs using stems/ha (includes weeds)	For trees and large shrubs use stems/ha as quadrat based counts may be inaccurate where trees and large shrubs are not numerous.
	Density of small shrubs and herbs using plants/quadrat (includes weeds)	For small shrubs such as herbs, conversion between stems/ha and count/quadrat is possible, as long as the quadrat size is known.
	Vegetation structure	ESCAVI (2003), Muir (1977) or similar.
	Vegetation condition	Use Keighery (1994) or Trudgen (1991) depending on botanical province (Appendices C and D respectively).
	% Bare ground	Visual estimate for quadrats or site (if small). Bare ground includes soil and/or rock.
	Photos (photo monitoring points)	Taken at each quadrat for future reference.
Site level	Species richness	The number of species found at the site.
	Species list (includes weeds)	List in order of dominance and grouped by structural component (for example trees and shrubs. Dominance is determined by ranking species based on their density. Use density as described above.
	Vegetation condition site mapping	Use Keighery (1994) or Trudgen (1991) depending on botanical province (Appendices C and D respectively).
	Weed mapping	Use polygons and % cover classes.
	Disease mapping	To be completed by a qualified disease interpreter.

When to survey

Floristic surveys should be conducted close to the peak flowering period for the majority of species in the vegetation unit. Site type, latitude and conditions specific to the season, such as late or early rains, should be considered (Department of Biodiversity, Conservation and Attractions 2017).

www.dpaw.wa.gov.au/images/documents/plants-animals/monitoring/forms/threatened-priority-flora-field-manual.pdf).

Where Threatened or Priority flora species are present, or are likely to be present, specific consideration should be given to the peak flowering period for these species. (www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities).

Further information on optimal survey times can be found in the [EPA's Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment \(2016\)](#). Province and bioregion maps can be viewed on the FloraBase website, <https://florabase.dpaw.wa.gov.au/help/ibra>.

Quadrat quantity, placement and size

The number of quadrats required will vary depending on the size of the site being surveyed. Sufficient replication is required to ensure that physical and biological variation within the site is adequately sampled (Harding and Williams 2010). The revegetation plan should demonstrate that appropriate sampling techniques were used to determine the optimum number of quadrats.

Appropriate quadrat placement is important in the establishment of suitable and realistic completion criteria:

- quadrats must be placed in vegetation that is in ‘excellent condition’ (Keighery, 1994) or ‘very good condition’ (Trudgen 1991) to ensure that completion criteria reflect the vegetation type that is compositionally and structurally intact (for example, placed 50–100 metres from the edge of a site to avoid edge effects). If this is not possible, contact DWER for advice;
- the placement of quadrats should avoid ecotones (transitional vegetation areas) to ensure data is representative of a unique vegetation unit; and
- quadrats must include common or dominant species, and species representative of and endemic to the ecosystem (Department of Environment and Conservation 2009).

Quadrat locations must be reported to DWER at the time of the clearing permit application assessment.

The selection of quadrat size is dependent on the spatial scale of ecological and floristic variation within the bioregion. Bioregions of higher diversity, such as the Geraldton Sandplains and Swan Coastal Plain, may require smaller quadrats than those located within the more homogenous Central Kimberley bioregions.

Further information on sampling design and intensity can be found in the [EPA’s Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment \(2016\)](#).

Vegetation condition

The condition of vegetation at a reference site is to be determined by assessing the impact of disturbance on the vegetation structure and its capacity to regenerate. Appendices C and D list vegetation condition scales for different Western Australian botanical provinces.

Vegetation condition maps are to be included in the revegetation plan.

Weeds and diseases

Recording the species, extent and density of weeds or diseases present in a reference site assists in determining the appropriate techniques to manage weeds and diseases within the revegetation site.

Use of existing datasets

A substantial volume of ‘grey’ literature (that is, academic literature that has not been formally published) exists, which may be useful in the development or refinement of completion criteria.

Existing floristic datasets can be used to supplement data collected from reference sites. If a reference site is missing key structural components due to disturbance, previously collected relevant data (especially from regional baseline surveys) may provide relevant information on the site’s likely vegetation prior to disturbance.

The revegetation plan should clearly differentiate between data obtained through surveys undertaken by (or on behalf of) the permit holder, and data obtained from existing datasets. If existing floristic datasets are used, the currency of species names should be checked. Existing floristic datasets must be referenced.

5.4 Completion Criteria

Revegetation plans should include quantitative completion criteria. Each completion criterion must be defined by a measurable outcome so that the effectiveness of the revegetation action(s) can be assessed over time. The measurable outcomes of a revegetation project that are to be regularly monitored and reported, should be included in the revegetation plan. DWER may assist permit holders with the development of appropriate completion criteria.

Completion criteria must be designed to allow effective reporting and auditing for the duration of the clearing permit. Floristic data from reference sites are useful in setting the completion criteria for the revegetation site. Revegetation is generally considered complete once the completion criteria have been met. DWER will ensure that an approved revegetation plan and the clearing permit conditions are consistent. If approved completion criteria have not been met towards the end of the permit, the permit holder or DWER may seek an extension of the permit.

Developing completion criteria

Completion criteria are developed based on data collected from a reference site (where possible) and must be consistent with the SMART principles (see Section 5.1). Completion criteria will depend on the revegetation purpose and objectives.

Table 2 outlines a typical framework for the completion criteria of a revegetation project to increase biodiversity. Other criteria may be proposed, provided there is sufficient evidence to justify use. DWER may discuss specific criteria with the permit holder during the assessment.

Table 2: Example framework for the completion criteria of a revegetation project aimed at improving biodiversity

Criterion		Measure	Units
A	Species richness	i. Total species richness (site)	species count
		ii. Quadrat species richness (average across quadrats)	species count
		iii. Tree species richness	species count
		iv. Shrub species richness	species count
B	Species density	i. Tree density (for each dominant species)	stems/ha
		ii. Shrub density	stems/ha (large shrubs) or count/quadrat (small shrubs)
C	Herbs, sedges, grasses		count and/or percentage cover per quadrat
D	Weed cover	i. Minor, non-competitive species	percentage cover or count
		ii. Major competitive weeds	percentage cover or count
		iii. Declared weeds	percentage cover or count
E	Bare ground		percentage
F	Vegetation structure		refer Table 1
G	Other measures as required		

Table 3 outlines an example of completion criteria developed, based on baseline data collected from a fictional reference site, *Banksia woodland X*, which is to be cleared, and the completion targets. In this example, the completion criteria include ‘duplicate criteria’ for the number of stems per hectare to be achieved at the revegetation site (see criteria B and F), for example, criteria B is attained by achieving criteria F. DWER will accept ‘duplicate criteria’ that are complementary, but will not accept criteria that are in conflict with other completion criteria, for example targeted outcomes which contradict each other.

Table 3: Example completion targets and criteria developed for *Banksia woodland X*
(Note: Criterion C - Herbs, sedges and grasses is not a significant measure for this revegetation.)

The vegetation unit to be revegetated is identified as <i>Banksia woodland X</i> . As it is to be cleared, <i>Banksia woodland X</i> is used as the reference site, upon which completion criteria will be developed.			
Criterion	Baseline floristic data	Completion targets	Completion criteria
A(i)	Site species richness is 55 (native sp. only).	Minimum of 60% of native species returned, based on reference sites.	The revegetation site needs to achieve a minimum species richness of 33 native species, as recorded at the reference sites.
A(ii)	Species richness of the 10m x 10m quadrats were 30, 35, 32, 25 and 36. Therefore, the average number of species/quadrat is 32.	Minimum of 60% of native species returned, based on reference sites.	The revegetation site needs a minimum of 19 native species per quadrat, as recorded at the reference sites.
A(iii)	There are four dominant tree species.	Return dominant tree species present at reference sites.	The revegetation site needs to have the four dominant tree species (<i>Banksia attenuata</i> , <i>B. menziesii</i> , <i>B. ilicifolia</i> and <i>Eucalyptus marginata</i>) recorded at the reference sites.

A(iv)	Shrub species richness is 20.	Minimum of 60% of native species returned, based on reference sites.	The revegetation site needs a minimum of 12 shrub species, as recorded at the reference site.
B(i)	Common tree species by dominance are <i>Banksia attenuata</i> 200 stems/ha; <i>B. menziesii</i> 150 stems/ha; <i>B. ilicifolia</i> 50 stems/ha; <i>Eucalyptus marginata</i> 25 stems/ha	Minimum of 60% of stems/ha for dominant tree species returned, based on reference sites.	The revegetation site needs a minimum of stems/ha for: <i>Banksia attenuata</i> 120 stems/ha; <i>B. menziesii</i> 90 stems/ha; <i>B. ilicifolia</i> 30 stems/ha; <i>Eucalyptus marginata</i> 15 stems/ha, as recorded at the reference site.
B(ii)	Shrub species by dominance are <i>Bossiaea eriocarpa</i> 500 stems/ha; <i>Acacia pulchella</i> 50 stems/ha; <i>Adenanthos cygnorum</i> 20 stems/ha; <i>Leucopogon conostephioides</i> 300 stems/ha; <i>Scholtzia involucrata</i> 400 stems/ha	Minimum of 60% of stems/ha for dominant shrub species returned, based on reference sites.	The revegetation site needs a minimum of stems/ha for: <i>Bossiaea eriocarpa</i> 300 stems/ha; <i>Acacia pulchella</i> 30 stems/ha; <i>Adenanthos cygnorum</i> 12 stems/ha; <i>Scholtzia involucrata</i> 240 stems/ha; as recorded at the reference site.
D(i)	Weed cover at the site is 15% (minor non-competitive species).	Weed cover is no greater than in the reference sites.	The revegetation site should have a maximum of 15% weed cover, as recorded at the reference site.
D(ii)	5% cover of major competitive weeds.	Absent from the revegetation site.	The revegetation site needs to have major competitive weeds absent from the site.
D(iii)	No declared weeds are present.	Managed as required by the <i>Biosecurity and Agriculture Management Regulations 2013</i> .	Absent.
E	Bare ground is 15%.	No more than 5% greater than in the reference sites.	The revegetation site average for bare ground is to be no more than 15%, as recorded at the reference site.
F(i)	Clearing will result in loss of Carnaby's habitat.	The site must be fully revegetated to at least 75% cover or density of the reference sites using native food plants for Black Cockatoos, and high to medium priority food species.	The revegetation site needs to have a minimum of stems/ha for: <i>Banksia attenuata</i> 150 stems/ha; <i>B. menziesii</i> 110 stems/ha; <i>B. ilicifolia</i> 35 stems/ha.
F(ii)	Survival rate to be achieved.	If after 5 years of planting a survival rate of at least 80% is not achieved, all planted trees that have not survived must be replanted within 12 months and monitored for a further 2 years.	The revegetation site needs to ensure a survival rate for trees of at least 80% is achieved after five years, and replant any trees within 12 months of dying.

5.5 Methodology

The revegetation plan should include the revegetation methodology. Some common methods of site preparation and revegetation establishment are discussed below. Information on revegetation techniques in this guide are of a general nature only and must be considered on a site-by-site basis. Other techniques may be considered, depending on the site's characteristics. Permit holders undertaking revegetation activities are advised to consult an environmental specialist.

Advice on correct site preparation should be sought from an environmental specialist to minimise maintenance after vegetation establishment, and enhance progress towards completion criteria.

Species for revegetation should be selected to replicate dominant species at the reference site. Reasonable attempts should be made to obtain diverse relevant species for revegetation. Where it is not possible to obtain a particular species, consultation with an environmental specialist is required to determine if there are any suitable substitute species.

Revegetation techniques

Effective revegetation techniques differ across local soil and climatic conditions. In arid regions, topsoil management with some direct seeding may be the most effective method of vegetation establishment. In higher rainfall regions of the south-west, planting and seeding may be the most effective.

Seeds and seedlings should be obtained from disease-free sources to ensure that plant pathogens are not introduced to the revegetation site.

Dieback mapping and site hygiene

Phytophthora sp. dieback is a soil-borne plant pathogen that is spread through wet soil, water and root-to-root contact between plants in areas that receive 400 millimetres of rainfall per year or more (e.g. the south-west of Western Australia).

If *Phytophthora* sp. dieback is suspected at a site, a dieback survey undertaken by an environmental specialist will be required prior to the commencement of site works to prevent accidental spread. The mapping can be used as a baseline for ongoing dieback monitoring, management and reporting to DWER. Sites may require a site hygiene protocol to reduce the spread of dieback at already infected sites and prevent the spread of dieback to uninfected sites.

Ripping

Some revegetation sites may need to be ripped prior to establishment to promote the best chance of survival for seeds and plantings in the first year. Ripping has a number of advantages, including breaking up soil compaction to allow root and water penetration, promoting better root development, and lifting roots and rocks that may interfere with vegetation establishment.

Pre-vegetation establishment weed control

Pre-vegetation establishment weed control is important to ensure that competition for resources between weeds and the native plants or seeds is minimised. Where necessary, weed control should commence at least 12 months prior to vegetation establishment. An environmental specialist should be consulted to develop a site-specific weed management plan. Alternatively, the revegetation plan may refer to an existing weed management plan if appropriate for the revegetation site, a copy of which must be provided to DWER.

Fencing

Consideration should be given to fencing as part of site preparation ahead of revegetation, where sheep and other livestock may otherwise have access to the site. Temporary fencing may be required to deter kangaroos and rabbits from grazing establishing plants. Fencing also assists in reducing unauthorised access by people to the site, either by foot or in off-road vehicles.

Tubestock and direct seeding

A program of works should avoid weather that is detrimental to vegetation establishment. This may include strong winds, heavy rain, very dry conditions or temperature extremes. Vegetation establishment should occur at the optimal time of year for that bioregion, or as otherwise specified in the clearing permit. Local or seasonal conditions that could influence the optimal timing for seeding or planting should be detailed in the revegetation plan.

Tubestock will need to be sourced in advance of any planned revegetation activities to ensure required species are available for planting and direct seeding. Seed obtained for revegetation must comply with any definition of local provenance in the clearing permit. Collection of seed from Crown land requires a 'Scientific or Other Prescribed Purposes' licence under the *Wildlife Conservation Act 1950*. On private property, the landowner's permission is required.

Depending on species and to allow for seasonal variation, it is suggested that seed collection commences at least two years prior to revegetation. Seed stocks may be supplemented by purchase through a seed supplier from local provenance sources.

Topsoil

Where a site to be cleared has relatively intact and weed-free vegetation, topsoil (the upper layer within a soil profile, which normally contains organic matter) may contain valuable native plant seeds, organic matter and other nutrients. Topsoil is best used immediately after clearing, however where this is not possible, topsoil can be stockpiled. Stockpiled topsoil must be managed as there is an exponential decrease in seed viability and soil nutrients over time.

Mulch

Where a site to be cleared contains relatively intact and weed-free vegetation, mulching can provide a good source of seed (especially canopy stored seeds) to be spread over the site. The mulched material can be spread over the top of re-spread topsoil and help to suppress weeds.

5.6 Maintenance and Contingency Measures

The revegetation plan should outline maintenance activities that will be undertaken over the life of the revegetation project (for example, weed control and nuisance animal control). Contingency measures should also be included in case monitoring identifies deficiencies in the revegetation, for example if a significant number of plants die during a drought.

5.7 Schedule and budget

A schedule of actions, including dates for the start of activities, an estimated budget and funding sources, should be included in a revegetation plan. An example of an indicative schedule is provided in Table 4. Appendix E provides two examples of budgets for revegetation in Western Australian bioregions. Permit holders must take into consideration the requirements of the clearing permit where applicable.

Table 4: Example of a schedule of actions

Stage	Actions	Timing	Responsibility	Year 1	Year 2	Year 3	Year 4 and beyond	Cost and funding source
COMPLETION CRITERIA	Reference site surveys and development of completion criteria	Spring	WA Revegetation Consultants are the lead consultancy and will engage and coordinate specific sub-contractors as required.	X				Insert cost estimate and source of funding for each action
SITE PREPARATION	Dieback mapping and development of hygiene plan	Spring	XYZ dieback interpretive services	X				
	Onsite clearing	February	LMN contractors		X			
	Fencing and ripping	Autumn	LMN contractors		X			
	Weed control	Autumn	EFG weed control contractors	X	X			
VEGETATION ESTABLISHMENT	Seed collection and seed management	Spring	WA Revegetation Consultants	X		X if required		
	Place tubestock orders with nursery	Summer	WA Revegetation Consultants ordering from ABC Native Nursery.	X	Until completion criteria have been met and maintained for two years (within the timeframe of the clearing permit).			
	Plant tubestock and undertake direct seeding	May–July	WA Revegetation Consultants		X	Until completion criteria have been met and maintained for two years (within the timeframe of the clearing permit).		
	Vegetation monitoring against completion criteria	Spring	WA Revegetation Consultants		X	Until completion criteria have been met and maintained for two years (within the timeframe of the clearing permit).		

Stage	Actions	Timing	Responsibility	Year 1	Year 2	Year 3	Year 4 and beyond	Cost and funding source
MAINTENANCE & CONTINGENCY	Weed monitoring	Spring	WA Revegetation Consultants		X	Ongoing annually until completion criteria met and maintained for two years (and as required in the clearing permit)		
	Dieback monitoring	Spring	XYZ dieback interpretive services		X	Ongoing annually		
	Weed control	After winter rains	EFG weed control contractors		X	Ongoing annually until completion criteria met and maintained for two years (and as required in the clearing permit)		
	Remedial planting	May to July	WA Revegetation Consultants			X	Ongoing as indicated by monitoring	
	Dieback treatment	Summer	XYZ dieback interpretive services		As required and indicated by monitoring			
REPORTING	Revegetation plan		WA Revegetation Consultants Includes datasets in their entirety (electronically), data analysis, results, discussion. Includes all from Appendix A checklist including completed checklist. Mapping and GIS shapefiles included	X				
	Annual progress report	June 30 each year	WA Revegetation Consultants Includes all datasets in their entirety (electronically), data analysis, results, discussion. Includes all from Appendix B checklist including completed checklist. Mapping and GIS shapefiles included		X	Ongoing annually until completion criteria met and maintained for two years (and as required in the clearing permit)		

6 Revegetation Monitoring Reports

Clearing permit conditions may include a requirement to monitor revegetation and measure the progress of revegetation activities undertaken to determine if maintenance and contingency actions are required. This section provides guidance on monitoring requirements, including information to be included in annual reporting. Appendix B provides a checklist of the recommended content of monitoring reports for submission to DWER.

6.1 Monitoring methods

Data to collect

The types of data and methods of collection at a reference site apply to data collection for monitoring purposes (refer to Section 5.3).

Quadrats

The aim of quadrat-level monitoring is to collect data in a consistent way for use in detecting changes in revegetation over time, in order to determine if revegetation is progressing towards meeting the completion criteria. By using the same data collection methods, the data can be analysed year to year to compare the progress of the revegetation.

Determining the appropriate time to undertake a floristic survey, and the appropriate number, placement and size of quadrats for monitoring revegetation, follows the same principles as those outlined for reference sites (refer to Section 5.3):

- floristic surveys should be conducted close to the peak flowering period for the majority of species in the vegetation unit revegetated, taking into consideration seasonal variations; and
- sufficient replication of quadrats is required to encompass variability in the monitoring area, and quadrat location must be random to ensure this variation is taken into account.

The monitoring report must demonstrate that appropriate sampling techniques were used to determine the optimum number of quadrats for replication, and describe the method for quadrat location randomisation.

If permanent monitoring quadrats are used, these should be established in accordance with the [Standard Operating Procedure Establishing Vegetation Quadrats \(Department of Environment and Conservation 2009\)](#), the [EPA's Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment \(2016\)](#) and the requirements specified in the clearing permit.

Photopoint monitoring

Photopoint monitoring provides a visual comparison of changes to vegetation over time. This requires photographs to be taken from the same location at set intervals

(for example, in January, April, July and October each year for three years), and using the same method (such as camera settings). Images must be provided to DWER in accordance with records and reporting conditions on the clearing permit.

Weeds and disease

Monitoring can be useful to identify whether weed control methods have been effective. This includes whether the composition and density of native species are responding positively to weed control, and whether modification to the control methods is required, for example, planting trees closer together to shade out weeds.

If disease is present within a revegetation site, hygiene management must be implemented to prevent the spread of the disease within or outside the affected area. Ongoing investigation by an environmental specialist is also recommended to ensure that disease is not being inadvertently spread through the revegetation site and to evaluate the effectiveness of hygiene protocols.

6.2 Monitoring Schedule

The frequency and duration of monitoring and documentation of changes in revegetation over time are outlined in Table 5.

Table 5: Example monitoring requirements

Scale	Monitoring type	Output	Frequency	Duration
Quadrat-level	Quadrat floristics	Floristic survey data, analysis (ordinations), discussion, list of coordinates and site map with quadrats.	Annual	Until completion criteria have been met (within the timeframe of the clearing permit).
	Vegetation structure	Data, analysis and discussion.	Annual	
	Photopoint monitoring	Images, list of coordinates, map of photopoints.	Annual	
Site-level	Vegetation condition	Data and map.	Annual	
	Weed monitoring and mapping	Data and map.	Annual	
	Disease monitoring and mapping	Data, map, name and qualifications of dieback interpreter.	Annually or as required	

6.3 Detecting Change through Data Analysis

Both multivariate (multiple variable) and univariate (single variable) analysis are used to monitor change in vegetation over time. Multivariate analysis identifies changes in the vegetation unit as a whole (that is, change in multiple species from year to year in a single test), whereas univariate analysis identifies change in one feature (for example, the change in *Banksia attenuata* stems/ha from year to year). Analysis by an experienced statistical analyst who is familiar with botanical data is recommended.

Multivariate analysis can assist in providing an indication of how revegetation is progressing towards the completion criteria. As a minimum, analyses should be completed to compare the species' richness (presence/absence) and species density (plants/ha or stems/ha) between the revegetation site and reference sites.

For transparency, an outline and justification of data treatment and analysis must be included in the monitoring report. Data pre-treatment may be required and logarithmic, square root or other transformations should also be considered.

6.4 Maintenance and Contingency Measures

Results from the monitoring data may trigger corrective or contingency measures where revegetation is compromised by weeds, feral or stock animals, human activities, fire and drought. Maintenance and contingency measures should include:

- post-planting weed control, for example spot-spraying, hand weeding and mulch;
- remedial planting or seeding requirements (dependent on establishment and ongoing success);
- disease treatment (if required);
- inspection and maintenance of fencing (if required);
- erosion (causes and remedial actions); and
- other maintenance actions.

Timing and methods of these measures should be documented.

7 Useful Resources

7.1 General

Australian and New Zealand Minerals and Energy Council and Minerals Council of Australia 2000, *Strategic framework for mine closure*, ANZMEC and MCA, Canberra.

Department of the Environment and Energy n.d., *Australia's bioregions – maps*, Australian Government. www.environment.gov.au/land/nrs/science/ibra/australias-bioregions-maps.

Casson, N, Downes, S and Harris, A 2009, *Native vegetation condition assessment and monitoring manual for Western Australia*, Department of Environment and Conservation, Western Australia. www.dbca.wa.gov.au.

Environmental Protection Authority 2006, *Guidance for the assessment of environmental factors: rehabilitation of terrestrial ecosystems*, guidance no. 6, EPA, Western Australia. www.epa.wa.gov.au

Hussey, BMJ and Wallace, KJ 1993, *Managing your bushland*, Department of Conservation and Land Management, Western Australia.

7.2 Photo monitoring

Hussey, BMJ 2001, 'Photographic monitoring of vegetation', *Wildlife Notes*, no. 9, Department of Conservation and Land Management, Western Australia.

www.dbca.wa.gov.au.

7.3 Plants and seeds

Apac WA n.d., *Revegetation catalogues*. <http://apacewa.org.au/revegetation-catalogues/>.

Bradby, K and Morris, V 1997. 'Seed collection from native plants', *Wildlife Notes*, no. 4, Department of Conservation and Land Management, Western Australia.

www.dbca.wa.gov.au.

Department of Biodiversity, Conservation and Attractions n.d., *FloraBase*, Government of Western Australia. <https://florabase.dpaw.wa.gov.au/>.

Department of Biodiversity, Conservation and Attractions 2014, *Plants for Carnaby's search application*, Government of Western Australia.

www.dpaw.wa.gov.au/apps/plantsforcarnabys/index.html.

Department of Biodiversity, Conservation and Attractions n.d., *Threatened species and communities*, Government of Western Australia. www.dpaw.wa.gov.au/plants-and-animals/threatened-species-and-communities.

Department of Biodiversity, Conservation and Attractions 2013, *Seed notes for Western Australia*, Government of Western Australia. www.dpaw.wa.gov.au/about-us/science-and-research/publications-resources/114-seed-notes-for-western-australia.

Greening Australia and Commonwealth Scientific and Industrial Research Organisation n.d., *Species navigator – a Florabank decision support tool*.

www.florabank.org.au.

Kings Park and Botanic Gardens 1999, *Smoke to sow and grow*, Kings Park and Botanic Gardens, Western Australia. Email: scienceadmin@bgpa.wa.gov.au

Ralph, M 2003, *Growing native trees from seed*, CSIRO Publishing.

7.4 Vertebrate pests, weeds and disease

Brown, K and Brooks, K 2002, *Bushland weeds: a practical guide to their management with case studies from the Swan Coastal Plain and beyond*, Environmental Weeds Action Network, Greenwood.

Brown, KL and Bettink, KA (2009-), *Swan weeds: management notes*, FloraBase — The Western Australian Flora, Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/weeds/swanweeds/>.

Department of Biodiversity, Conservation and Attractions. Forest Ecosystem Management Division. Email: enquiries@dbca.wa.gov.au Phone: (08) 9219 9000.

Department of Biodiversity, Conservation and Attractions 2014, *Rabbits*, Government of Western Australia. www.dpaw.wa.gov.au/management/pests-diseases/181-rabbits

Department Primary Industries and Regional Development n.d., *Rabbit control in urban and semi-urban areas*, Government of Western Australia. www.agric.wa.gov.au/

Dieback Working Group n.d., *Expert directory*. www.dwg.org.au/expert-directory.

Dieback Working Group n.d., *Publications*. www.dwg.org.au/publications.

Hussey, BMJ, Keighery, GJ, Dodd, J, Lloyd, SG and Cousens, RD 2007, *Western weeds: a guide to the weeds of Western Australia*, 2nd Edition, The Plant Protection Society of Western Australia, Victoria Park.

7.5 Restoration/Rehabilitation

Clewell, A, Reiger, J and Munro, J 2005, *Guidelines for developing and managing ecological restoration projects*, Society for Ecological Restoration International. www.ser.org.

Davidson, N and Freudenberger, D 2012, *A revegetation guide for eucalypt woodlands*, Greening Australia, Canberra. www.greeningaustralia.org.au.

Botanic Gardens and Parks Authority n.d., *Science staff*, Department of Biodiversity Conservation and Attractions. www.bgpa.wa.gov.au/about-us/conservation/research/science-staff#content.

Department of Biodiversity, Conservation and Attractions n.d, *Land for wildlife publications - wildlife notes*, Government of Western Australia. www.dpaw.wa.gov.au/management/off-reserve-conservation/land-for-wildlife/187-publications.

Department of Mines and Petroleum and the Environmental Protection Authority 2015, *Guidelines for preparing mine closure plans*, Government of Western Australia. www.dmp.wa.gov.au/Documents/Environment/ENV-MEB-121.pdf.

McGregor, J, Gardner J and Robinson, J 2012, *A revegetation guide for mallee woodlands*. Greening Australia, Canberra.

Schirmer, J. and Field, J 2000, *The cost of revegetation: final report*, Greening Australia Limited and Australian National University, Canberra.

Standards Reference Group Society for Ecological Restoration Australasia 2017, *National standards for the practice of ecological restoration in Australia*, SERA. www.seraustralasia.com.

Stevens, JC, Rockich, DP, Newton, VJ, Barrett, RL and Dixon, KW 2016, *Banksia woodlands: a restoration guide for the Swan Coastal Plain*, University of Western Australia Publishing, Perth.

7.6 Western Australian vegetation reference data

Gibson, N, Keighery, B, Keighery, G, Burbidge, A and Lyons, M 1994. *A floristic survey of the southern Swan Coastal Plain*, Department of Conservation and Land Management and Western Australian Conservation Council, Western Australia.
<https://library.dbca.wa.gov.au/static/FullTextFiles/916249.e.pdf>.

Harvey, JM and Keighery, GJ 2012, *Benchmarking Wheatbelt vegetation communities, classification and description of eucalypt woodlands*, Wheatbelt Baseline Project, Wheatbelt Natural Resource Management Region and Department of Environment and Conservation, Perth. www.dbca.wa.gov.au.

Perth Region Plant Biodiversity Project n.d., *Bush Forever reference sites*, Western Australian Local Government Association, Department of Environment and Department of Conservation and Land Management.
<http://pbp.walga.asn.au/ProjectPrograms/PerthRegionPlantBiodiversityProject.html>

8 References

Department of Environment and Conservation 2009, *Standard operating procedure, establishing vegetation quadrats*, Government of Western Australia.

www.dbca.wa.gov.au.

Department of Biodiversity, Conservation and Attractions 2017, *Threatened and Priority Flora Report Form – Field Manual*, Government of Western Australia.

www.dbca.wa.gov.au

Environmental Protection Authority 2006, *Guidance for the assessment of environmental factors: rehabilitation of terrestrial ecosystems*, guidance no. 6, Government of Western Australia. www.epa.wa.gov.au.

Environmental Protection Authority 2016, *Technical guidance, flora and vegetation surveys for environmental impact assessment*, Government of Western Australia.

www.epa.wa.gov.au.

Executive Steering Committee for Australian Vegetation Information 2003, *Australian vegetation attribute manual: National Vegetation Information System*, Version 6.0, Department of Environment and Heritage, Canberra. www.environment.gov.au.

Harding C and Williams M 2010, *Designing a monitoring project for significant native flora*, Department of Environment and Conservation, Perth. www.dbca.wa.gov.au.

Keighery, B 1994, *Bushland plant survey: a guide to plant community survey for the community*, Wildflower Society of Western Australia (Inc.), Nedlands.

Muir, B 1977, *Biological survey of the Western Australian Wheatbelt, Part 2: Vegetation and habitat of Bendering Reserve*. Records of the Western Australian Museum, Supplement No. 3, Western Australia Museum, Perth.

<http://museum.wa.gov.au/research/records-supplements/records/biological-survey-western-australian-wheatbelt>

Trudgen, ME 1991, 'Vegetation condition scale', in National Trust (WA) 1993 *Urban Bushland Policy*. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Appendices

Appendix A: Recommended Content for a Revegetation Plan

PERMIT HOLDER MUST COMPLETE THIS CHECKLIST AND SUBMIT TO DEPARTMENT OF WATER AND ENVIRONMENTAL REGULATION (DWER) TOGETHER WITH THE REVEGETATION PLAN.

Relevant boxes should be ticked to demonstrate that the information has been provided within the submitted revegetation plan.

- ☐ Title which clearly outlines the name of the revegetation project and its location.
- ☐ Table of contents. Suggested headings include:
 - Introduction
 - Reporting requirements
 - Background of revegetation site
 - Current disturbances and threats
 - Reference site floristic data collection
 - Revegetation commitments and completion criteria
 - Site preparation
 - Vegetation establishment
 - Proposed monitoring plan
 - Maintenance and contingency measures
 - Schedule and budget
 - References and appendices

Introduction

This section should contain the following information on the background of the site and include, but is not limited to:

- ☐ Purpose of the plan.
- ☐ Section explaining how the proposed revegetation addresses the impacts of the clearing.
- ☐ Clearing permit number (CPS xxx/x) that the revegetation plan relates to.
- ☐ Key contacts and details of person who developed the plan.
- ☐ Level of qualification and experience of person who developed the plan.
- ☐ Location of clearing, property details, clearing size and purpose.
- ☐ Location of revegetation site, property details and size of revegetation site.
- ☐ Map outlining the boundary of the clearing area, the revegetation site, aerial photography, cadastral boundaries, roads and other relevant factors. Include area in hectares.
- ☐ Associated spatial data for the clearing area is provided in approved format (for example, shapefile).
- ☐ Name and qualifications of company providing expertise on completion criteria development and onsite revegetation techniques.

Background of revegetation site

This section should contain information on the existing environment and land details of the revegetation site and include:

- ☐ Details of ownership, vesting and zoning of the land (current and/or proposed).

- ☐ Details of agreement with landowner to access and carry out revegetation (if not the owner of the revegetation site).
- ☐ Details on how the long-term security of the revegetation site will be ensured, including any existing or proposed management arrangements (for example, a conservation covenant).
- ☐ Map outlining the existing vegetation unit/s, summary structure and condition. When mapping each vegetation unit and vegetation condition across the site, include area in hectares.
- ☐ Map outlining the existing soil types, landforms and topography. Include area in hectares.
- ☐ Associated spatial data for the revegetation site (vegetation units, soil types, landforms and topography) is provided in Geographic Information Systems (GIS) format (for example shapefile).
- ☐ Existing hydrology and drainage.
- ☐ Existing evidence of fauna.
- ☐ Photos of the existing environment should be provided.

Current disturbance and threats

This section should contain the current disturbances and threats to the revegetation site:

- ☐ Site history (for example, grazing or logging).
- ☐ Existing land use disturbances that need to be addressed such as grazing, rubbish dumping, four wheel drive access and fire.
- ☐ Existing physical site factors that need to be addressed or repaired such as soil compaction, erosion and surface water diversion.
- ☐ Existing biological site conditions that need to be repaired such as weed invasion, disease, lack of fauna habitat, feral animals and low floristic diversity.

Revegetation commitments

This section should contain the overall vision of the plan as well as objectives for the revegetation project.

- ☐ Vision: an overarching statement of the intent of the plan and its ultimate goal.
- ☐ Objectives: set the main goals of the revegetation (for example, safe and stable landforms and soils, establishment of natural hydrology, resilient and self-sustaining vegetation, reaching agreed numeric targets for revegetation recovery and to provide fauna habitat).

Reference site floristic data collection

If more than one vegetation unit is being revegetated, reference site data for each vegetation unit is required. Species lists from different vegetation units are not to be combined.

- ☐ Identify each unique vegetation unit to be revegetated (if there are many vegetation units, contact DWER to discuss).
- ☐ Describe and justify chosen reference site/s in the context of developing completion criteria.
- ☐ Provide map showing reference site location, tenure and size; boundaries of vegetation units; aerial photograph; and quadrat locations, size and number. Also include site vegetation condition mapping, site weed mapping and site disease mapping (include area in hectares).
- ☐ Associated spatial data for the reference site/s is provided in GIS format (for example shapefile).
- ☐ Provide all reference site data sets as outlined in Section 5.3 in this guide. This includes entire floristics for each quadrat as outlined (electronically). If more than one vegetation unit is being revegetated, separate reference site data is required.

Targets and completion criteria

If more than one vegetation unit is being revegetated, each will require a set of unique completion criteria. Do not combine different vegetation units into one, unless through prior discussion with DWER.

- ☐ Outline targets and completion criteria.
- ☐ Describe clearly how each target and completion criterion was developed and how they meet the SMART principles. If existing data sets were used, describe and justify their inclusion.

Species list compilation and revegetation techniques

This section should include details on how and when vegetation establishment is to occur.

- ☐ Species list and amounts from completion criteria. Describe and confirm where these species can be acquired, in the required amounts and at the correct time of year.
- ☐ Seed collection (for either direct seeding or seedling propagation). Details on the timing of seed collection and the source and methods used to collect seeds are required. Include provenance.
- ☐ Direct seeding. A species list, timing and details on the methods used to direct seed are required as well as the target species composition and sowing rate (kilogram per hectare). Justify species composition and sowing rate (if undertaken).
- ☐ Topsoil. A list of expected species and species composition from the topsoil is required, along with the methods and timing of collecting, stockpiling and spreading the topsoil on the revegetation site (if undertaken).
- ☐ Mulching. Details on timing and methods are required.
- ☐ Confirm that seedlings are obtained from dieback-free sources to prevent introduction or spread of disease.

Site preparation

This section should contain details on the site preparation required prior to vegetation establishment.

- ☐ Describe techniques, timing and methods to be used to undertake site preparation actions. For example, actions may include ripping; grading and contouring; stockpiling of topsoil; mulching or matting; and pre-planting weed control.
- ☐ Describe revegetation site protection actions to be undertaken including methods and timing. For example:
 - Protecting the site through fencing and providing protection from grazing. Provide map of current and proposed fencing boundaries.
 - Signage and schedule for installation.
 - Provide dieback mapping and site hygiene plan showing hygiene boundaries to prevent spread of dieback and other plant diseases. Please provide map in report and associated spatial data in GIS format (for example shapefile).
 - Provide weed mapping and hygiene boundaries to prevent spread of dieback and other plant diseases. Please provide map in report and associated spatial data in GIS format (for example shapefile).

Maintenance and contingency measures

This section should outline the maintenance and contingency measures that will be put in place to ensure revegetation is successful.

- ☐ Post-planting weed control (for example, spot-spraying, hand weeding and mulching). Timing and methods used should be documented.
- ☐ Remedial planting or seeding requirements (dependent on establishment and ongoing success). Timing and methods used should be documented.

- ☐ Dieback treatment if required. Contractor name, timing and methods used should be documented.
- ☐ Inspection of fencing. Timing and methods used should be documented.
- ☐ Erosion. Cause and remedial action to be used should be documented.
- ☐ Other maintenance actions. Timing and methods used should be documented.

Schedule and budget

This section should include a detailed work plan that outlines the timing for each action per year including monitoring and maintenance. It should also outline the costings and source of funding for each revegetation action.

- ☐ Schedule of actions (timeline) in table format (see Table 4) showing actions to be undertaken per month/season and per year of the project. This includes specialist environmental consultancy services, materials, site preparation, on ground works, maintenance, monitoring and overheads/administration. A date for the commencement of revegetation should be identified.
- ☐ The entity or person responsible to implement each action outlined in the schedule of actions.
- ☐ Budget and costings (see examples in Appendix E).
- ☐ Source of funding.

Monitoring and analysis

This section should include details on the proposed methods for monitoring and data analysis. Describe monitoring methods to be used:

- ☐ Describe monitoring frequency and timing (month / year).
- ☐ Outline the statistical analysis to use and the features of the revegetation to analyse.

References and appendices

This section should include references used to create the plan and any appendices.

- ☐ References used to create the revegetation plan.
- ☐ Aerial photographs.
- ☐ Onsite photographs (photopoints) of both reference site/s and revegetation site.
- ☐ Required datasets in entirety. Both reference site/s and revegetation site (site floristics, quadrat vegetation structure, quadrat vegetation condition, quadrat per cent bare ground and vegetation. Datasets are to be clearly named with a basic description of each required.
- ☐ Maps of fence boundary, dieback mapping, vegetation condition mapping, photopoint locations and monitoring quadrat locations.
- ☐ Associated spatial data of the revegetation site features is provided in GIS format (for example shapefile). Shapefiles are to be clearly named to reflect content.
- ☐ Copy of written agreement with landowner (if not the owner of the revegetation site).

Appendix B: Recommended Content for Monitoring

PERMIT HOLDER MUST COMPLETE THIS CHECKLIST AND SUBMIT TO DEPARTMENT OF WATER AND ENVIRONMENTAL REGULATION (DWER) TOGETHER WITH THE MONITORING REPORT.

Relevant boxes should be ticked to demonstrate that the information has been provided within the submitted revegetation annual report.

- ☐ Title which clearly outlines the name of the revegetation project and its location
- ☐ Table of contents. Suggested headings include:
 - Introduction
 - Summary of revegetation site:
 - background of revegetation site;
 - current disturbances and threats;
 - site preparation; and
 - initial vegetation establishment.
 - Monitoring outcomes
 - Progress against completion criteria:
 - data analysis;
 - results; and
 - discussion.
 - Maintenance and contingency measures
 - Updated schedule and budget
 - References and appendices

Introduction

The following should be included, but not limited to:

- ☐ Purpose of the report.
- ☐ Section explaining how the proposed revegetation addresses the impacts of the clearing.
- ☐ Clearing permit number (CPS xxx/x) that the revegetation plan relates to.
- ☐ Key contacts and details of person who wrote the report.
- ☐ Level of qualification and experience of person who wrote the report.
- ☐ Location of clearing, property details, clearing size and purpose.
- ☐ Location of revegetation site, property details and size of revegetation site.
- ☐ Map outlining the boundary of the clearing area, the revegetation site, aerial photography, cadastral boundaries, roads and other relevant factors (include areas in hectares).
- ☐ Associated spatial data for the clearing area is provided in GIS format (for example shapefile).

Summary of revegetation site

This section should include the components below which are from the original revegetation plan:

- ☐ The background of the revegetation site.
- ☐ Current disturbances and threats.
- ☐ Summary of initial site preparation.
- ☐ Summary of initial vegetation establishment.
- ☐ Revegetation sites and/or activities that have occurred should be illustrated on a detailed site plan and provided in GIS format (for example shapefile).

Monitoring outcomes

This section should state the monitoring outcomes and include:

- ☐ A description of monitoring methods to be used (particularly if changed from what was suggested in the revegetation plan).
- ☐ A description of the monitoring frequency and timing (month/year).
- ☐ The monitoring data sets (electronically), monitoring summaries, analysis and interpretation of findings for data outlined in table below.
- ☐ Records of the weed density or cover. Provide weed map in report and GIS format (for example shapefile).
- ☐ A vegetation condition map in the report and in GIS format (for example shapefile).
- ☐ Disease mapping (if relevant) in the report and in GIS format (for example shapefile).
- ☐ The success of additional actions, for example weed control, fencing and rabbit control.

Progress against completion criteria

This section should comprise data analysis, results and discussion on changes in the revegetation over time. This includes:

- ☐ Who completed the analysis?
- ☐ The data analysis methods used and justification for their use.
- ☐ Why/why not data pretreatment was/was not undertaken.
- ☐ The type of pretreatment used.
- ☐ Results and discussion.

Maintenance and contingency measures

This section should outline the maintenance and contingency measures that are required based on monitoring results and progress against completion criteria, including:

Maintenance measures

- ☐ A list of the maintenance measures.
- ☐ The trigger for maintenance measures.
- ☐ Timing.
- ☐ How often these measures will be undertaken.

Contingency measures

- ☐ A list of the contingency measures
- ☐ The trigger for contingency measures.
- ☐ Timing.
- ☐ How often these measures will be undertaken.

Updated schedule and budget

This section should include any modifications to the original detailed work plan.

- ☐ Schedule of actions (timeline) in table format (see Table 4) showing actions to be undertaken per month/season and per year of the project. Highlight any changes from the original revegetation management plan and provide explanation.
- ☐ The entity or person responsible to implement each action outlined in the schedule of actions.
- ☐ Budget and costing of actions (see examples in Appendix E).
- ☐ Source of funding.

References and appendices

This section should include references used to create the plan and any appendices.

- ☐ References used to create the revegetation plan.
- ☐ Aerial photographs.
- ☐ Onsite photographs (photopoints).
- ☐ Required monitoring datasets in entirety.
- ☐ Maps of fence boundary, dieback mapping, vegetation condition mapping, photopoint locations and monitoring quadrat locations.
- ☐ Associated spatial data of the revegetation site features is provided in GIS format (for example shapefile). Shapefiles are to be clearly named to reflect content.
- ☐ Copy of written agreement with landowner (if not the owner of the revegetation site).

Appendix C: Measuring Vegetation Condition for the South West and Interzone Botanical Province (Keighery scale)

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation's ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Score	Condition	Description	General Management Response
1	Pristine	Pristine or nearly so, with no obvious signs of disturbance.	Monitoring
2	Excellent	Vegetation structure intact, with disturbance affecting individual	Weed control plus above
3	Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, and/or grazing, dieback and logging.	Remedial planting plus above
4	Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.	Rehabilitation including above
5	Degraded	Basic vegetation structure severely impacted by regeneration but not to a state approaching good condition without disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance of vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.	Revegetation with scope for rehabilitation but will require intensive, ongoing management.
6	Completely degraded	The structure of the vegetation is no longer intact and the area is completely, or almost completely, without native species. These areas are often described as "parkland cleared" with the flora comprising weed or crop species with isolated native trees or shrubs.	Complete revegetation

Source: Keighery 1994

Appendix D: Measuring Vegetation Condition for the Eremaean and Northern Botanical Provinces (Trudgen scale)

Condition	Description
E Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
VG Very Good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
G Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
P Poor	Still retains basic vegetation structure or ability to regenerate after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
VP Very Poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
D Completely Degraded	Areas that are completely or almost completely without native species in the structure of their vegetation, such as areas that are cleared or 'parkland cleared' with flora comprising weed or crop species with isolated native trees or shrubs.

Source: Trudgen 1991

Appendix E: Examples of Budgets for Revegetation in Two Different Western Australian Landscapes

Note: The costs used in these examples are for illustrative purposes only and should not be considered as recommended costs for these or similar activities.

Example 1

Swan Coastal Plain

Impact: Clearing 1.9 hectares of native vegetation (which included Black Cockatoo foraging habitat).

Revegetation: 4.1 hectares of offsite revegetation.

Background: Most of the revegetation site has been heavily modified or degraded, with numerous weed species dominating most of the area. In addition, the revegetation site is threatened by the dumping of rubbish, edge effects from residential gardens, grazing by kangaroos, and uncontrolled access to remnant vegetation, feral animals and, potentially, dieback.

Stage	Actions	Timing	Commitments / Completion criteria	Estimated unit cost	Total estimated cost (where possible)	Comments
INITIAL DATA COLLECTION AND SURVEY	Control/baseline site selection and data collection to inform target setting.	Year 1		\$14,000	\$14,000	
	Surveys of flora species to be used in revegetation.	Years 1–3		\$500	\$500	

SITE PREPARATION					Secure land tenure.	Immediately			-	-	The site is vested as Crown Land managed by a local government authority.
					Weed control.	1. 18 months prior to planting 2. Autumn 2015 3. Winter 2015 4. Year 1				1. \$1,800/ha 2. \$1,800/ha 3. \$1,800/ha 4. \$1,800/ha Total: \$25,632	
					Review existing tracks and determine placement of new access tracks.	Year 1			\$5,000	\$5,000	
					Fencing and gates.	Year 1	To be established prior to planting/seeding.	\$2,500/km \$850/gate		-	
					Signage.	Year 1		\$2,000		\$2,000	
					Fire prevention (management plan and installation of fire break).	Year 1	To be established prior to planting/seeding.	\$5,000		\$5,000	
					Rubbish removal.	Year 1		\$1,000		\$1,000	
					Grading, scalping, ripping and other protection actions.	Year 1		\$85/ha		\$300	
					Apply fertiliser and water crystals.	Year 1–2		\$2,100/ha		-	

VEGETATION ESTABLISHMENT	Seed collection.	Year 1			\$250/kg	-	
	Treatment to break dormancy and mulching for direct seeding.	Years 1–3			\$275/ha	-	
	Purchase and plant seedlings.	Years 1–3			\$2.80/seedling	-	
	Purchase and plant mature shade trees around the perimeter of the revegetation site with 10m spacing.	Years 1–3		Target of 300 trees/ha of native plant species preferred by Black Cockatoos for foraging within 10 years of planting/seeding	\$25/plant	-	
	Replacement planting and seeding, if necessary	Years 2–3		<ul style="list-style-type: none"> No reduction in areas considered to be in Good or Very Good condition from baseline surveys. Target density of revegetation within 5 years of 40% of control site coverage/ha of native plant species. Target density of revegetation within 10 years of 75% of control site coverage/ha of native plant species. Target species diversity of revegetation within 5 years of 40% of native species diversity at control site. Target species diversity of revegetation within 10 years of 75% of native species diversity at control site. Target overstorey, midstorey and understorey ratios of revegetation within 5 years of 40% of ratios at control site. Target overstorey, midstorey and understorey ratios of revegetation within 10 years of 75% of ratios at control site. 	\$2.80/seedling	-	

MONITORING	Monitoring to be undertaken for a period of 10 years.	Year 1 and ongoing		\$100,000	\$100,000	Examples: vegetation quadrats, photopoint monitoring, fauna habitat assessment, weed monitoring, fences and firebreaks, and threatening processes.
MAINTENANCE	Implement and maintain fire management plan.	Year 1 and ongoing		\$5,000	\$5,000	
	Remove litter/rubbish on a regular basis as required.	Year 1 and ongoing		\$3,000	\$3,000	
	Maintenance of fencing, gates and signage.	Year 2 and ongoing		\$5,000	\$5,000	
	Weed control.	Year 2 and ongoing	Target of less than 20% weed cover of grassy weeds and less than 10% weed cover of herbaceous weeds (consistently) for the first 10 years after planting/seeding.	\$1,800/ha	-	
REPORTING	Annual reporting to DWER.	Annually, ongoing		\$5,000	\$5,000	

Example 2

South West

Impact: Clearing of 6.7 hectares of native vegetation with environmental values Priority 4 conservation significant flora, Carnaby's Cockatoo, Forest Red-tailed Black-Cockatoo, Baudin's Black-Cockatoo, Western Ringtail Possum and Rainbow Bee-eater. The site is also in an area of vegetation identified as part of an ecological link.

Revegetation: 4.9 hectares; 3 hectares of offsite revegetation; and 1.9 hectares of onsite revegetation.

Stage	Actions	Timing	Commitments / Completion criteria	Estimated unit costs	Total estimated cost	Comments
INITIAL DATA COLLECTION AND SURVEY	Reference site surveys and development of completion criteria.	Autumn		-	-	
	Dieback survey.	Prior to seed collection		\$1,500	\$1,500	
SITE PREPARATION	Fencing of Management Zone 1.			-	-	
	Weed control.	May	Reduce existing weeds in degraded areas.	\$750–\$1,000	\$750–\$1,000	
	Mulch spreading.	May		-	-	
	Ripping and mounding.	March–May from 2015 onwards		\$3,000	\$3,000	
	Fencing and signage.		Fence the boundary, restrict access and install signage to revegetation sites.	-	-	
	Apply fertiliser and water crystals.			-	-	

VEGETATION ESTABLISHMENT	Seed collection, sorting and treatment.	Spring 2014 and continuing for a minimum of 3 years		\$2,000/year	Minimum of \$6,000	
	Purchase seedlings.			-	-	
	Plant propagation.	June–July		\$3,000	\$3,000	
	Direct seeding.	June–July	<ul style="list-style-type: none"> • 20% overstorey, 50% midstorey and 30% understorey. • Revegetate with endemic native species identified in the reference site surveys. Plant density should average 500 plants/ha. • Use local provenance seed if available. • No introduction of dieback to the site. • Retain large trees where possible. <p>1 year (2 years; 3 years; 5 years) after planting:</p> <ul style="list-style-type: none"> • 95% (90%; 90%; 75%) survival of planted seedlings. • 5% (10%; 25%; 50%) native plant cover. • 30% (40%; 40%; 70%) plant diversity. 	-	-	

MONITORING	Vegetation monitoring and overall site inspection.	Autumn and spring of each calendar year for a period of three years after planting. If completion criteria have not been met, monitoring will continue for another 2 years.	If completion criteria have not been met after 5 years, contingency actions and further monitoring will be discussed with the Department of Environment Regulation.	-	-	
MAINTENANCE AND CONTINGENCY	Weed control.	Annually in late spring with a follow-up in Autumn as required, for a minimum of 3 years following cessation of planting (including replacement or infill planting).	No introduction of new weed species or spread of existing species.	\$750–\$1,000 for Year 2	\$750–\$1,000 for Year 2	
	Application of plant guards.	If required.		-	-	
	Remove rubbish.	If required.	Remove all rubbish and debris from the site.	-	-	
	Infill planting.	If required.		-	-	
REPORTING	Monitoring report.	Submit to DWER by 30 June each year.		-	-	

ANNEXURE 3

Drafting and Implementing Environmental Management Plans

 WATER CORPORATION <small>ABN 28 003 434 917</small>	Drafting and Implementing Environmental Management Plans Procedure
Doc ID 58535016	Custodian Manager HSE Assurance & Reporting
Version Date 12 Dec 2019	Accountabilities Framework Level 1 – Manage Environment and Aboriginal Affairs Level 2 – Manage Environmental Compliance
Next Review Date 31 Jan 2022	

1 Purpose

Water Corporation is required to prepare Environmental Management Plans (EMPs) to meet its obligations for statutory environmental approvals. This procedure outlines Water Corporation's expectations with regards to the drafting and implementation of EMPs.

2 Scope

This procedure applies to:

1. All Water Corporation staff preparing EMPs for Water Corporation.
2. External consultants preparing EMPs for Water Corporation.

3 Definitions

1. Condition – a legally binding requirement imposed by a regulator. Conditions also include Proponent Commitments made under Part IV of the *Environmental Protection Act 1986*.
2. EMP – a document that describes the actions to be undertaken by Water Corporation regarding a specified number of environmental matters.
3. Statutory Approval – an authorisation under a written law to conduct a specified activity.
4. CEMS – Water Corporation's Corporate Environmental Management System.
5. RCMS – Water Corporation's Regulatory Conditions Management System.
6. AQUA – Water Corporation's electronic document management system.

4 References

The following references apply to this procedure:

1. [PCY276 Corporate Compliance Policy](#)
2. [PCY230 Environmental Policy](#)
3. [Asset Cycle Environmental Risk Assessment Procedure](#)
4. [Drafting Environmental Management Conditions Guideline](#)
5. [Using the Regulatory Conditions Management System \(RCMS\) Work Instruction](#)
6. [Compliance with Environmental Legal and Other Requirements Procedure](#)
7. [CEMF and CEMP Template](#)

5 Procedure

Environmental Management Plans (EMP) are required in the following situations.

In Response to Statutory Approvals

Water Corporation obtains statutory approvals under environmental legislation to develop and operate water, wastewater and drainage infrastructure. Examples of statutory environmental approvals include Licences, Permits, Works Approvals and Statements issued by the Department of Environment and Conservation.

Statutory approvals contain conditions to which Water Corporation must comply. The conditions imposed often require the preparation of an EMP(s) for the management and/or monitoring of specified

environmental matter(s). In most cases such EMPs are written and/or implemented by consultants on behalf of Water Corporation.

Failure to comply with a statutory condition that requires the preparation and/or implementation of an EMP is a criminal offence for which penalties apply. It is important that staff and consultants drafting and/or implementing EMPs understand the potential legal consequences related to the drafting and implementation of EMPs.

As a Result of the Project Risk Assessment

All asset acquisition projects undertaken by Water Corporation require the assessment of Project Risk as set out by PMB procedures. The Asset Cycle Environmental Risk Assessment Procedure provides advice on how the environmental risk should be determined, input to the project risk assessment and what EMP may be needed for the project.

EMP are required as follows:

- For projects with High to Extreme environmental risks an EMP is prepared by the successful contractor in response to the Construction Environmental Management Framework (CEMF) as developed by Water Corporation.
- For projects with Low to Moderate environmental risk an EMP should be developed in accordance with this procedure as required by the contract documentation and specification.

Drafting an EMP

The following **Principles** apply to drafting EMPs:

1. An EMP must state the relevant statutory approval and condition(s) to which it applies. An EMP must address all requirements of the relevant condition(s), and should be limited to that scope.
2. An EMP should specify the actions to be undertaken (when, what, where, why, who and how) such that no further consideration is required for its implementation. EMPs should be concise and free of unnecessary detail.
3. An EMP should consider application of the following matters:
 - Element/issue.
 - Performance criteria and/or statutory requirement.
 - Actions to be undertaken.
 - Implementation strategy.
 - Monitoring/measurement of performance.
 - Timing of actions.
 - Contingency actions.
 - Decommissioning.
 - Stakeholder consultation.
 - Reporting & review.

Not all of the above matters will be relevant for all EMPs.

4. All EMPs must contain the following text within the body of the EMP under the heading of **Specifications**:

The materials and methodology stated in this plan are correct as at the publication date. The materials and/or methodology may change during implementation of the project provided that those changes do not result in an additional or significant environmental impact. Changes to the materials or methodology that may cause an additional environmental impact will be referred to the relevant advisory agencies.

5. All EMPs must contain the following text within the body of the EMP under the heading of **Changes to this Plan**:

The requirements of this plan may be reviewed from time to time. Any change to the requirements of this plan resulting from such reviews will be determined on advice of the relevant advisory agencies.

If the legal requirement is different to seeking the 'advice' of the relevant advisory/regulatory agencies, that different requirement should be inserted.

6. The EMP must not create requirements for additional EMPs to be prepared.

Implementing an EMP

The following **Principles** apply to implementing EMPs:

1. The EMP should be developed to meet the requirements of the CEMF (for projects of High and Extreme risk) and contract (for projects of Low to Moderate risk) which in turn is developed to address the outcomes and requirements of the:
 - a. Project Risk that includes the Asset Cycle Environmental Risk Assessment.
 - b. Relevant statutory approvals and conditions imposed.
 - c. Relevant Water Corporation Cordocs for environmental management.
2. An EMP must be implemented only as described in the EMP.
3. If there is a need to amend the manner of implementation, amendments must be approved by Manager Environment & Aboriginal Affairs Branch (E&AAB) prior to a change to implementation. Manager E&AAB will assess whether such amendments require consideration/approval from the Department of Environment and Conservation and/or specified advisory agencies.
8. Implementation of an EMP should be recorded where specified actions are required. Inspections should be scheduled in accordance with the requirements of [Asset Cycle Environmental Risk Assessment Procedure](#). Findings should be documented using the [General Environmental Observation Checklist](#) which should be modified for individual project use. Relevant conditions should be included in this checklist to ensure site inspections and audits are thorough.
4. Reporting on the implementation of an EMP (if required) should be clear and concise. Reporting should be completed using the project modified version of the [General Environmental Observation Checklist](#). Where necessary an additional report may be completed that contains:
 - a. A summary (1-2 pages) that includes
 - i. identification of the relevant statutory approval and condition(s).
 - ii. a description of the infrastructure and its location (a map or aerial photograph may also be beneficial)
 - iii. a summary of results (including any variances to agreed standards or targets) related to any recorded environmental impacts or absence thereof.
 - b. Results (not raw data) and a description of the results for each measured parameter. Where the results are at variance to an agreed standard or target, an explanation of why the variance occurred should be provided (where known).
 - c. Appendix containing raw data, laboratory analysis reports, chain of custody forms, specialist consultant reports, etc. (as appropriate).

EMPs prepared by external consultants are to be submitted to Water Corporation for review **prior** to them being included in tender documentation and/or used on site. Water Corporation, as the client, has the final authority on any inclusions, exclusions or amendments to an EMP for Water Corporation's infrastructure.

Manager Environment is responsible for submission of EMPs to the relevant regulators and/or advisory agencies on behalf of the Water Corporation as and where required. A copy of each EMP should be saved in AQUA and added to the project link in CEMS. An EMP that is prepared in accordance with a condition should be loaded into RCMS as detailed in the [Using the Regulatory Conditions Management System \(RCMS\)](#) work instruction.

Document Revision History	
January 2007	Original version
February 2009	Document AQUA links added, minor updates made.
March 2011	Minor updates including reference to CEMF as source document
April 2013	Revision to reflect risk assessment changes and procedure change, links to Asset Cycle Environmental Risk procedure, General Environmental Observation Checklist.
26 Jul 2013	Updated from guideline to procedure after review of Env Process CorDocs
18 January 2019	Low level review
11 Jul 2019	Low level review – Nexus document number added
12 Dec 2019	Low level review. Aligned with Project Plan 19/20.

The HSEAA Management System is currently Under Review this is the current and latest document

ANNEXURE 4

A guide to the assessment of applications to clear native vegetation under Part V Division 2 of the *Environmental Protection Act 1986*



A guide to the assessment of applications to clear native vegetation

Under Part V Division 2 of the Environmental Protection Act 1986

December 2014

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Please note: *The following information provides a general guide to the assessment of applications to clear native vegetation under Part V Division 2 of the Environmental Protection Act 1986. Persons who intend to undertake activities that may involve clearing are advised to consult the actual legislation and seek advice, including legal advice, where necessary. Whilst DER has endeavoured to ensure the accuracy of the contents of this document, it accepts no responsibility for any inaccuracies and persons relying on this document do so at their own risk.*

Accessibility This document is available in alternative formats and languages on request.

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Purpose

This guide sets out the Department of Environment Regulation's (DER) approach for assessing an application to clear native vegetation under the *Environmental Protection Act 1986* (EP Act).

It also provides information on how native vegetation clearing applications are assessed under a bilateral agreement between the Commonwealth of Australia (Commonwealth) and the State of Western Australia (WA) under the *Environment Protection and Biodiversity Act 1999* (EPBC Act).

Introduction

This guide is intended to assist applicants for a clearing permit, including landowners, consultants, local government authorities, and State government agencies, to:

- understand the clearing permit assessment process under the EP Act; and
- plan to undertake appropriate studies and surveys for projects that involve clearing.

Where a word has a specific meaning in the context of this guideline, the first time it is used it is in italics, and it is explained in the glossary on page 43.

Further information

If you have any questions about this guide or are not sure if you can clear under a clearing exemption, you should contact DER on (08) 6467 5020.

For clearing permit assessments relating to mines or petroleum related activities under delegation, contact DMP on (08) 9222 3333.

More general information about clearing native vegetation is found at the DER website www.der.wa.gov.au/nvp.

Legislation

Environmental Protection Act 1986

Under section 51C of the EP Act, clearing of native vegetation is an offence unless it is done under the authority of a clearing permit or an exemption applies.

Exemptions for clearing that is a requirement of another written law, or authorised under certain statutory processes are contained in Schedule 6 of the EP Act.

Exemptions for routine land management practices are prescribed in the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*. These exemptions do not apply within environmentally sensitive areas (ESAs) declared by the Minister for Environment. ESAs can be viewed on Landgate's Shared Land Information Platform (SLIP) viewable through the WA Atlas, with instructions available at www.der.wa.gov.au/nvp.

Further information on exemptions is contained in Guide 1 – [A Guide to the Exemptions and Regulations for Clearing Native Vegetation](#).

The CEO, in making a decision about a clearing permit application under section 51O of the EP Act, shall have regard to the clearing principles contained in Schedule 5 of the EP Act so far as they are relevant to the matter under consideration.

Under section 51O of the EP Act the CEO shall also have regard to any planning instrument or other matter that the CEO considers relevant (see the '[Planning Instruments and Other Relevant Matters](#)' section).

For more information on the EP Act and Clearing Regulations see [DER's Factsheet 1 Legislation](#).

Environment Protection and Biodiversity Conservation Act 1999

An action requires approval from the Commonwealth Minister for the Environment if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance (NES) protected under the EPBC Act.

In accordance with Chapter 3, Part 5 of the EPBC Act, the Commonwealth and the State have entered into a bilateral agreement that provides for the accreditation of the clearing permit assessment process. This allows the Commonwealth Minister for the Environment to rely on the state's assessment in assessing the impact of certain actions that relate to clearing on matters of NES under the EPBC Act. The bilateral assessment agreement commences on 1 January 2015.

More information is provided in 'Bilateral Agreement' on page 46 and available in additional guidance documents at www.der.wa.gov.au/nvp. More information on the EPBC Act is available on the Commonwealth Department of the Environment website at www.environment.gov.au/epbc.

Assessment

The assessment considers the likely environmental impacts of an application in accordance with the requirements of the EP Act and bilateral agreement (where relevant). The guidelines and information sources are used by assessors in gathering the information required for objective assessment under each clearing principle. The

information sources assist applicants in determining the significance of the native vegetation in their application area.

This guide provides the basis for assessment and is not intended to be an exclusive or exhaustive list of relevant considerations and information. In addition, while this guide is based on the best available scientific information and ecological principles, it is recognised that scientific knowledge is constantly evolving and therefore this guide may be subject to change.

The timeframes to assess the application will depend on the complexity of the application and the significance of the native vegetation and surrounding environment. DER applies a risk-based assessment approach in the context of clearing permit applications. More information on risk based assessment is located in Fact sheet 16.

Clearing principles against which applications to clear are assessed are listed under Schedule 5 of the EP Act. The planning instruments and other relevant matters which applications to clear are also assessed are under section 51O of the EP Act.

Table 1 Clearing principles for native vegetation under Schedule 5 of the EP Act

Principle	Page
Principle (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.	6
Principle (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	10
Principle (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	13
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Assessment is a judgment in accordance with the requirements of the EP Act on whether or not a clearing permit application is likely to have a significant effect on the environment. The guidelines and tools assist assessors in making that judgment.

Site visits, surveys and gathering information

Once a valid application to clear native vegetation has been made, assessors undertake an initial desktop assessment. This includes a review of non-spatial databases, geographic information system (GIS) spatial data, and other relevant information and documents as available.

Surveys and information may be required from the applicant where the scale and nature of the clearing application is likely to have a moderate or high impact on the environment. Where applications are to be assessed under a bilateral agreement, these surveys, reports and information are required to be submitted as part of the initial application. For other applications, if after an initial assessment, the assessor identifies that insufficient information is available for the CEO to make an informed decision, further surveys or information may be required by the applicant.

It is the responsibility of the applicant to provide required information, which might include flora, vegetation or fauna surveys or detailed investigations of land degradation or water issues. Some key considerations include:

- the study and survey must be carried out by a *suitably qualified person*; and
- the methodology used should be consistent with the [EPA's standards, policies and guidance](#), and with established standards for analysis. These methodologies and standards are referenced where relevant to a clearing principle.

In some circumstances a site visit is required to:

- verify information provided in the application or obtained during the initial desktop assessment;
- delineate key flora, fauna, soil, and groundwater and surface water values and potential sensitivity to impact; and
- undertake broad-scale vegetation and vegetation *condition* mapping based on selected sites.

A site visit may involve more than one government agency in order to identify the multiple *environmental values* of an area. These agencies could include:

- DER
- DMP
- Department of Parks and Wildlife (Parks and Wildlife)
- Department of Agriculture and Food WA (DAFWA)
- Department of Water (DoW)

Further guidance on surveys and gathering information is provided in Appendix A.

Assessment under a bilateral agreement

The clearing permit assessment process under Part V Division 2 of the EP Act has been accredited by the Commonwealth of Australia under the EPBC Act. If a clearing permit is required and the action has or is likely to have a significant impact on a matter of NES, under a bilateral agreement, DER can assess the clearing application on the Commonwealth's behalf.

The assessment bilateral agreement requires the applicant to submit application forms to DER, or DMP under delegation, for assessment after a controlled action decision has been made by Commonwealth Minister for the Environment.

Assessing officers must consider this application, as well as relevant guidelines, plans and policies (including those of the Commonwealth, where applicable), when undertaking the assessment of the application in accordance with the requirements of section 51O and 51P of the EP Act. Guidance on the information considered by DER when assessing an application under a bilateral agreement is provided under the applicable clearing principle and in the chapter [Bilateral Agreement](#). For further information see [Fact sheet 25](#) and [A guide to native vegetation clearing processes under the assessment bilateral agreement](#) at www.der.wa.gov.au.

Environmental offsets

Environmental offsets are actions that provide environmental benefits which counterbalance the significant residual environmental impacts or risks of a project¹ or activity.

Under section 51I(2)(b) of the EP Act, the CEO may grant a clearing permit that includes a condition to “establish and maintain vegetation on land other than land cleared under the permit in order to offset the loss of the cleared vegetation, or make monetary contributions to a fund maintained for the purpose of establishing or maintaining vegetation”.

For applications assessed under the assessment bilateral agreement, DER and DMP will work with the Commonwealth to minimise duplication between offset requirements.

For more information on offsets see DER's [Fact sheet 11](#) and [Guideline - Clearing of native vegetation – offsets procedure](#).

¹ Project refers to a proposal under Part IV and an application under Part V of the EP Act.

Principle (a) – Native vegetation should not be cleared if it comprises a high level of biological diversity.

Guidelines

This principle aims to protect areas of high *biodiversity*. This principle protects intact natural systems with naturally occurring high levels of *species diversity*, *ecosystem diversity* or *genetic diversity* and natural systems that may be degraded but contain high levels of diversity compared with the remaining native vegetation of that *ecological community*.

The Threatened Species Scientific Committee for the Australian Government has identified areas as Biodiversity Hotspots for priority action. Many of these areas of outstanding biodiversity occur within Western Australia. These hotspots in WA include:

- North Kimberley;
- Hamersley – Pilbara;
- Carnarvon Basin;
- Geraldton to Shark Bay sand plains;
- Mount Lesueur – Eneabba;
- Central and Eastern Avon Wheat Belt;
- Busselton Augusta; and
- Fitzgerald River Ravensthorpe.

Assessment of biodiversity is complex because of the huge number of species, genetic variation within species and associations of species that exist within Western Australian ecosystems. In general, there are only reasonable data on the diversity and distribution of vertebrates, limited data on the diversity and distribution of vascular plants, and little data on invertebrates and micro-organism diversity.

It is recognised that this principle may concentrate on vascular flora as information on vascular plant biodiversity is relatively easy to collect and there are sufficient regional datasets available to allow for the comparisons that are inherent in the principle. This focus does not exclude other measures of biological diversity.

Genetic diversity is poorly understood and adequate information to assess this criterion is difficult to obtain. Taxon diversity (species, subspecies, variety and forms) is an alternative approach to address this issue where genetic diversity data are not available.

The EPA has noted that ecosystem diversity is harder to measure than species or genetic diversity because the boundaries of communities (i.e. variety of unique assemblages of plants and animals and ecosystems) are hard to define. As long as a consistent set of criteria is used to define communities and ecosystems, their number and distribution can be measured. Even using a relatively simplified measure, any given area contributes to biodiversity in at least two different ways: through its richness in numbers of species and through the endemism (geographical uniqueness) of these species. The relative importance of these two factors changes at different geographical scales ([EPA Position Statement No.3](#)).

Priority flora and other *significant flora* such as uncommon or range-restricted species are another measure of biodiversity values and should be considered under this principle. *Priority fauna* refers to conservation significant animal species and are also a measure of biodiversity values. Similarly, *priority ecological communities* provide a

measure of biodiversity for ecological communities. The presence of significant flora or priority ecological communities is indicative of *environmental values* worthy of protection and a higher level of biological diversity than might typically be expected in an area.

Examples

Under this principle, clearing of 'degraded' condition vegetation with low comparable diversity where there are significant areas of that vegetation in 'good' condition elsewhere in the *bioregion* and *local area*, is unlikely to be at variance with this principle.

- However the following is likely to be at variance:
- clearing of native vegetation that is representative of an area of high biodiversity, such as the northern sandplains in the vicinity of Mount Lesueur;
- clearing of a diverse native vegetation remnant that supports the whole, or a part of, a significant population of priority flora;
- clearing of a diverse native vegetation remnant that comprises the whole, or a part of, a significant occurrence of a priority ecological community;
- clearing of native vegetation that has a higher diversity than other examples of an ecological community in a bioregion; and
- clearing of native vegetation that is in 'degraded' condition yet is in better condition than other vegetation of the same ecological community in the local area (for example, a largely degraded rangelands ecological community).

Steps

Adequate assessment of this principle as part of an initial assessment will rely on existing site and regional studies for comparative purposes. The assessor will need to have skills in assessing vegetation *condition*, flora species diversity and plant ecological community diversity generically to enable such comparisons to be made. In assessing vegetation condition, the assessor will determine the condition rating based on the disturbance to the vegetation related to human activities. When the vegetation has recently been disturbed due to a natural event such as a wildfire, the assessor will identify the condition of the vegetation prior to that natural event using current and past studies. More information on vegetation condition rating is located in Appendix B.

Where more information is needed the scope of the assessment will be determined on a case-by-case basis, but would be consistent with EPA Position Statement No. 3. Position Statement No. 3 outlines the EPA's principles for environmental impact assessment of biodiversity. The EPA requires that the assessor have an appropriate understanding of the requirements of adequate surveys. This is central to achieving a sound assessment of biodiversity.

Further EPA guidance on survey requirements is provided in the [following documents](#):

- EPA Guidance Statement No 10, Level of assessment for proposals affecting natural areas within the System 6 region and Swan Coastal Plain portion of the System 1 region
- EPA Guidance Statement No 51, Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia
- EPA Guidance Statement No. 56, Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia

- EPA Technical Guide on Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment
- EPA Guidance Statement 20, Sampling of Short Range Endemic Invertebrate Fauna for Environmental Impact Assessment in Western Australia

Some key factors in using surveys to assess biodiversity include:

- The methodology used should be consistent with the approaches recommended in the EPA guidance statements. The methodology used, and any limitations of the surveys, should be outlined in the resulting report;
- The timing and time allocated should be determined by the natural cycles of the region (such as growth and flowering);
- The intensity of the sampling (number of sites; their spacing; and their area) should be based on the complexity of the flora, vegetation and faunal assemblages of the permit application area; and
- The level of effort should correspond with the existing data for that area, i.e. where less existing information is available, a greater survey effort would be required.

In undertaking an assessment specific measures of diversity include:

Plant species:

- total vascular plant taxa (species, subspecies and varieties) diversity; and
- vascular plant taxa diversity for each ecological community.

Fauna species:

- total vertebrate and invertebrate fauna taxa (genera, species and subspecies) diversity.

Ecosystem diversity:

- number of ecological communities (plant communities);
- number of ecological communities (fauna communities (assemblages));
- macrohabitat diversity;
- microhabitat diversity in each macrohabitat;
- a variety of soil types or geological formations; and
- micro-topographical diversity and edaphic variation.

Useful information sources for assessing principle (a)

- [National Land and Water Resources Audit \(NLWRA\) – Current Extent of Native vegetation in Western Australia](#)
- Pre-European vegetation / Mattiske vegetation / Heddle vegetation complexes
- Soil types
- Regional Flora, Vegetation or Biological Surveys (e.g. [Geraldton Regional Flora and Vegetation Survey](#), [Albany Regional Vegetation Survey](#), [The Natural Values of the Whicher Scarp](#), [Swan Bioplan – Peel Regionally Significant Natural Areas](#) and the published Parks and Wildlife Biological Surveys)
- Conservation estate, Parks and Wildlife managed lands and waters
- Significant wetlands and watercourses (e.g. [Ramsar wetlands](#), [Directory of Important Wetlands](#), conservation category wetlands)
- [Bush Forever sites](#)
- Threatened and Priority Flora Database
- [Specially protected, threatened and priority fauna lists](#) and databases

- Threatened and Priority Ecological Community Database
- Ecological linkages and corridors (e.g. [South West Regional Ecological Linkage](#), [Bush Forever](#), [Swan Bioplan – Peel Regionally Significant Natural Areas](#))
- Some spatial data are publicly available from [Landgate's Shared Land Information Platform \(SLIP\)](#).

Additional information sources for assessing applications under the bilateral agreement

Under the bilateral agreement additional Commonwealth policies, plans and guidelines may be considered in the assessment of the clearing application in relation to matters of NES. Such documents include the following where relevant and available:

- Recovery plans and interim recovery plans;
- [Strategic assessments](#);
- [Conservation agreements](#);
- [Approved conservation advice](#) under section 266B of the EPBC Act;
- [Matters of National Environmental Significance, Significant Impact Guidelines 1.1](#);
- Ecological character descriptions for individual sites including [Eighty Mile Beach](#), [Forrestdale and Thomsons Lake](#), [Lake Gore](#), [Lake Warden System](#), [Lakes Argyle](#), [Kununurra](#), [Muir-Byenup System](#), [Ord River Floodplain](#), [Peel-Yalgorup System](#), [Roebuck Bay](#), [Toolibin Lake](#) and [Vasse-Wonnerup System](#); and
- [Department of the Environment Species of National Environmental Significance maps](#)

Current copies may be available on the Commonwealth Department of the Environment's [Species Profile and Threats Database](#).

Principle (b) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Guidelines

This principle aims to maintain indigenous fauna species and assemblages of species in their local natural habitat. This principle protects habitat for threatened fauna and *significant habitat* for *meta-populations* of fauna.

Fauna plays an important role in maintaining ecosystems and the life-supporting services provided by ecosystems by:

- cycling of material, through the browsing of flora, predation, digging, the consumption of organic matter generally, excretion, death and decay;
- the pollination, fertilisation and germination of plants; and
- maintaining the dynamic balance in ecosystems. The balance between assemblages of plants, animals and diseases, and environmental elements such as fire, soil structure and chemistry, can be destabilised by changes to any of the ecosystem components.

The ecological relationships between fauna, vegetation and their physical environment are affected by habitat decline and a consequent loss of ecological functions and processes. These may include:

- increasing edge to area ratios of native vegetation, which reduce the width of a remnant and increase its perimeter;
- loss of corridors, stepping stones (*ecological linkages*) and *buffering* vegetation;
- loss of large intact areas of native vegetation capable of supporting breeding populations of species with limited dispersal;
- loss of vegetation areas that support meta-populations;
- the loss of key habitat requirements, e.g. loss of tree hollows and fallen trees and branches that may be used for breeding or sheltering sites; the loss of proximity of the required combination of habitat types (for example Carnaby's cockatoo is threatened because it requires a combination of woodland for breeding and heath habitat for feeding, and both habitat types have been extensively cleared);
- increased probability of weed invasion due to external influences such as nutrient enrichment, drainage water or wind-blown material;
- increased risk of disease entry and subsequent reduction in habitat values; and
- adjacent land uses which may impact adversely on habitat values.

In extensively cleared *landscapes* fauna specialist species have declined as a result of habitat loss and in many cases are declining further as a result of natural attrition and an inability to recruit. For example, specialist bird species of heathlands and specialist bird species of woodlands in the wheatbelt and Swan Coastal Plain have declined at least in proportion to the loss of those habitats.

It may be necessary to identify, from the total pool of faunal species present, the species that would become (more) vulnerable if a habitat was lost. For example, in the fragmented habitats of the WA Wheatbelt, Lambeck (1997) found that birds were useful indicators of habitats.

To identify which species or communities may be vulnerable to local extinction, consideration should include whether:

- the breeding, sheltering and feeding sites within the subject land would be lost or reduced;
- the subject land provides an important linkage; or
- the habitat area would be reduced so that a breeding pair or functioning social group could not survive.

Examples

The following is likely to be at variance with this principle:

- clearing of native vegetation that is habitat for specially protected or threatened fauna;
- clearing of native vegetation that is habitat for meta-populations of fauna; and
- clearing of native vegetation that is necessary for the maintenance of habitat of priority, migratory, specially protected, threatened fauna or meta-populations of fauna.

Under this principle, a clearing proposal where only widespread fauna species are present, which are supported by the surrounding extensive, intact vegetation would not be at variance with this principle. An example could be common, widespread species of the Pilbara within extensive and intact Pilbara habitat.

Steps

To determine the likelihood of species or populations of *fauna that is otherwise significant*, ecological communities or their habitat within the site or its vicinity, an assessment should include the following considerations.

1. Consult fauna references and/or key agencies (Parks and Wildlife; WA Museum) to determine whether any specially protected or threatened fauna, *priority fauna* or otherwise significant fauna occurs within the geographic range of the land. Compile a field list of each of these species, and their habitat requirements.
2. Note the presence or absence of each of the specific habitat elements required by field list species. Identify relevant areas on the application area map.
3. Determine if any of the following habitats are present in the area where populations of fauna that is otherwise significant may exist:
 - foraging areas (food sources) – studies also need to record species that may only be present on a seasonal basis and rely on the vegetation in that season, e.g. nest hollows or an autumn food source;
 - trees with hollows;
 - abundance of ground cover and/or fallen trees;
 - caves, rock outcrops, overhangs or crevices;
 - permanent or intermittent waterways or water bodies; and
 - other (with a description).
4. Determine whether the habitat is part of either an ecological linkage or forms a large area of intact vegetation that may support meta-populations of fauna.
5. Note any signs of fauna presence, including distinctive scratches, nests, diggings, scats, pellets, calls, burrows, bones, etc. Record any sightings of fauna, including the habitat in which they were seen.

If the results of the assessment show the potential for significant fauna values, a

survey of fauna habitats and values may need to be undertaken. The scope of the survey will be determined on a case-by-case basis, but would be consistent with [EPA Guidance Statement No.56](#). In marine environments, [EPA Environmental Assessment Guidelines No.3](#) provides a set of principles to be applied when considering proposals that may result in removal or destruction of, or damage to, marine benthic primary producer communities or the habitats which support them.

Useful information sources for assessing principle (b)

- [National Land and Water Resources Audit \(NLWRA\) – Current Extent of Native vegetation in Western Australia](#)
- Pre-European vegetation / Mattiske vegetation / Heddle vegetation complexes;
- Regional Flora, Vegetation or Biological Surveys (e.g. [Geraldton Regional Flora and Vegetation Survey](#), [Albany Regional Vegetation Survey](#))
- Regional fauna surveys, assessments and habitat mapping (e.g. Summary of vertebrate fauna values of the area between Dawesville and Binningup, Southern Swan Coastal Plain (EPA), Parks and Wildlife Carnaby's cockatoo breeding and feeding areas or roosting sites dataset)
- Ecological linkages and corridors (e.g. [South West Regional Ecological Linkage, Bush Forever](#), [Swan Bioplan – Peel Regionally Significant Natural Areas](#))
- Significant wetlands and watercourses (e.g. [Ramsar wetlands](#), [Directory of Important Wetlands](#), conservation category wetlands)
- [Specially protected, threatened and priority fauna lists](#) and databases
- Recovery plans and interim recovery plans
- Aerial imagery
- Advice from Parks and Wildlife

Some spatial data are publicly available from [Landgate's Shared Land Information Platform \(SLIP\)](#). Parks and Wildlife's [Naturemap](#) also provides spatial data for flora and fauna distribution.

Additional information sources for applications assessed under the bilateral agreement

For assessments under the bilateral agreement, the following types of additional Commonwealth policies, plans and guidelines, where relevant and available should also be considered:

- bioregional plans;
- recovery plans and interim recovery plans (e.g. [Chuditch \(*Dasyurus geoffroii*\) Recovery Plan 2012](#); [Forest Black Cockatoo \(*Baudin's Cockatoo Calyptorhynchus baudinii* and Forest Redtailed Black Cockatoo *Calyptorhynchus banksii naso*\) Recovery Plan](#));
- [threat abatement plans](#);
- [strategic assessments](#);
- approved conservation advice under section 266B of the EPBC Act (e.g. [Approved Conservation advice for *Calyptorhynchus banksii naso* \(Forest Red-tailed Black Cockatoo\)](#); [Approved Conservation Advice for *Myrmecobius fasciatus* \(numbat\)](#); [Approved Conservation advice for *Phascogale calura* \(red-tailed phascogale\)](#));

- conservation agreements (e.g. [Research and monitoring of the Western Ringtail Possum in urban development areas](#) of Busselton and Bunbury (Satterley Property Group, Dalyellup Beach, The Housing Authority and Home Satterley Dalyellup));
- [Matters of National Environmental Significance, Significant Impact Guidelines 1.1](#);
- [Significant Impact Guidelines for 36 migratory shorebird species draft background paper](#);
- [Western ringtail possum in the southern Swan Coastal Plain, WA 2009](#);
- [Referral guidelines for three threatened black cockatoo species: Carnaby's cockatoo, Baudin's cockatoo and Forest red-tailed black cockatoo](#);
- [Referral guidelines for the northern quoll, *Dasyurus hallucatus*](#)
- [Commonwealth Department of the Environment Species of National Environmental Significance maps](#); and
- [migratory species mapping](#).

Current copies of documents and datasets may be available on the Commonwealth Department of the Environment's website and the [Species Profile and Threats Database](#).

Principle (c) – Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

Guidelines

Rare flora refers to flora that is declared as rare under section 23F of the *Wildlife Conservation Act 1950* and gazetted from time to time in the *Wildlife Conservation (Rare Flora) Notice*.

This principle aims to provide for the continuing *in situ* existence of rare flora and protects habitat necessary for its maintenance. This principle also considers the buffer necessary to protect the rare flora from deleterious impacts by maintaining ecological processes and functions within the habitat of the surrounding vegetation.

Rare flora are protected under the *Wildlife Conservation Act 1950* and may not be taken except with the written consent of the Minister for Environment. The term “to take” includes “to gather, pluck, cut, pull up, destroy, dig up, remove or injure the flora or to cause or permit the same to be done by any means” and includes activities such as burning and grazing.

Areas within the buffer necessary to maintain ecological processes and functions for rare flora should not be cleared under this principle. The value of the subject land for the ongoing maintenance of rare flora should be determined. Buffer areas are measured from location of the flora, or in the case of more than one individual, from the outermost individual(s). The determination of a buffer as an ongoing and viable area to protect the rare flora and ecological processes and functions, should be made on a case-by-case basis, and is related to the characteristics of the species being protected and the surrounding land uses.

All studies must be undertaken by a suitably qualified person of a timing, duration and extent necessary for the adequate identification of rare flora.

Examples

The following is likely to be at variance with this principle:

- clearing of flora declared as rare or listed as threatened; and/or
- clearing of buffers or other areas necessary to maintain ecological processes and functions for rare flora.

Steps

To determine the likelihood of rare flora or habitat suitable for rare flora within the site or its vicinity, an assessment should be carried out which would ideally use the following approach:

1. Consult flora references and/or key agencies (Parks and Wildlife; WA Herbarium) for advice on the presence of known populations of rare flora, and site-specific studies for the presence of rare flora. This advice may attract a fee.
2. Refer to Parks and Wildlife’s [FloraBase](#) and any appropriate regional or area-specific studies to determine whether habitats likely to support rare flora are present.

3. Compile a field list of each of the taxa that may occur within the geographic area and its habitat requirements. The appropriate geographic area for this should be determined on a case-by-case basis in consultation with Parks and Wildlife.
4. Note the presence or absence of each of the specific habitats recorded in the field list. Identify relevant areas on the property map.

Adequate assessment of this principle may not be possible as part of an assessment unless comprehensive and adequate site surveys to identify rare flora have been undertaken unless no habitat likely to be suitable for such species occurs.

The scope of a survey (if required) would be determined on a case-by-case basis, and should be consistent with [EPA Guidance Statement No.51](#). Appropriate buffers would also need to be determined as part of this.

Useful information sources for assessing principle (c)

Threatened and priority flora database

- Declared Rare and Poorly Known Flora Wildlife Management Plans
- WA Herbarium Specimen Collection Database ([FloraBase](#))
- Pre-European vegetation / Mattiske vegetation / Heddle vegetation complexes
- Regional Flora or Vegetation Surveys (e.g. [Geraldton Regional Flora and Vegetation Survey](#), [Albany Regional Vegetation Survey](#))
- Soil classification
- Advice from Parks and Wildlife

Some spatial data are publicly available from [Landgate's Shared Land Information Platform \(SLIP\)](#). [Parks and Wildlife's Nature Map](#) also provides spatial data for flora distribution.

Additional information sources for applications assessed under the bilateral agreement

For assessments under the bilateral agreement, assessments must have regard to relevant guidelines, policies and plans, including where available:

- bioregional plans;
- [recovery plans and interim recovery plans](#) (e.g. [Badgingarra box](#) (*Eucalyptus absita*); [dwarf spider orchid](#) (*Caladenia bryceana* subsp. *bryceana*); [Dunsborough spider orchid](#) (*Caladenia viridescens*));
- [strategic assessments](#);
- [approved conservation advice under section 266B of the EPBC Act](#) (e.g. *Eucalyptus argutifolia*, *Grevillea flexuosa*, *Reedia spathacea*, *Scaevola macrophylla*, *Synaphea stenoloba*)
- survey guidelines (e.g. [draft survey guidelines for Australia's threatened orchids](#))
- [Matters of National Environmental Significance, Significant Impact Guidelines 1.1](#)
- Commonwealth [Department of the Environment Species of National Environmental Significance maps](#)

Current copies of documents and datasets may be available on the Commonwealth Department of the Environment's website and the [Species Profile and Threats Database](#).

Principle (d) – Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.

Guidelines

The aim of this principle is to provide for the continuing *in situ* existence of threatened ecological communities declared under section 51B of the EP Act to be environmentally sensitive areas and those listed under the *Environment Protection and Biodiversity Conservation Act 1999*. This principle also protects habitat necessary for the maintenance of these threatened ecological communities.

Vegetation that has a *bioregional conservation status* of *depleted* or worse (less than 50 per cent representation) is more likely to contain threatened or other significant ecological communities.

The principle also considers the buffer necessary to protect the ecological communities from deleterious impacts by maintaining ecological processes and functions within these habitats. Buffer areas are measured from outermost edge of the ecological community. To ensure an ongoing and viable area remains to protect the ecological communities and their ecological processes and functions, a buffer is recommended. This should be determined on a case-by-case basis and is related to the characteristics of the ecological communities being protected, and the surrounding land uses.

Examples

The following is likely to be at variance with this principle:

- clearing of native vegetation in which threatened ecological communities are present;
- clearing of native vegetation if habitat necessary for the maintenance of threatened ecological communities is present.

Steps

To determine the likelihood of occurrence of threatened ecological communities or their habitat within the site or its vicinity, an assessment should use the following approach:

1. Consult references and/or key agencies (Parks and Wildlife and the Commonwealth Department of the Environment Flora and Fauna databases)) for advice regarding known sites of threatened ecological communities declared by the Minister for Environment under section 51B or listed in the EPBC Act. This advice may attract a fee.
2. Refer to any appropriate regional or area-specific studies to determine whether areas are likely to support threatened ecological communities. These can be determined on a case-by-case basis in consultation with Parks and Wildlife.
3. Based on a site visit, determine whether habitats are present that may contain threatened ecological communities.

Adequate assessment of this principle may not be possible as part of an assessment unless comprehensive and adequate site surveys to identify threatened ecological communities have been undertaken or the habitat is unsuitable for such communities. The scope of a survey (if required) would be determined on a case-by-case basis, and should be consistent with [EPA Guidance Statement No.51](#). Appropriate buffers would also need to be determined as part of this survey.

Useful information sources for assessing principle (d)

- [Parks and Wildlife Threatened ecological communities data search](#)
- [Parks and Wildlife Threatened ecological community management plans, recovery plans or interim recovery plans](#)
- Advice from Parks and Wildlife

Additional information sources for applications assessed under the bilateral agreement

Where threatened ecological communities listed under the EPBC Act or their likely habitat are found within the site or its vicinity, the assessment should also consider additional policies, plans and guidelines where relevant and available, including:

- bioregional plans;
- recovery plans and interim recovery plans (e.g. [Interim Recovery Plan for the *Corymbia calophylla* – *Kingia australis* woodlands on heavy soil](#); [Shrubland Association on Southern Swan Coastal Plain Ironstone \(Busselton area\)](#));
- [threat abatement plans](#);
- [strategic assessments](#);
- approved conservation advice under section 266B of the EPBC Act (e.g. [Approved Conservation Advice for Clay Pans of the Swan Coastal Plain](#); [Approved Conservation Advice for Thrombolite Community of a Coastal Brackish Lake \(Lake Clifton\)](#));
- [conservation agreements](#);
- [Matters of National Environmental Significance, Significant Impact Guidelines 1.1](#); [and](#)
- [Stirling Range National Park](#) Gazettal Notice, [The West Kimberley](#) Gazettal Notice.

Current copies of documents and datasets may be available under the relevant profile on the Commonwealth Department of the Environment's website and the [Species Profile and Threats Database](#).

Principle (e) – Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Guidelines

This principle aims to maintain sufficient native vegetation in the landscape for the maintenance of ecological values. It also recognises the need to protect ecological communities that have been extensively cleared and to retain a representation of each ecological community in local areas throughout its pre-European range. It is in this principle that the cumulative impacts of clearing within a particular area should be considered.

The [National Objectives and Targets for Biodiversity Conservation 2001–2005](#) recognise that the retention of 30 per cent or more of the pre-clearing extent of each ecological community is necessary if Australia's biological diversity is to be protected. This is the threshold level, below which species loss appears to accelerate exponentially and loss below this level should not be permitted. This level of recognition is in keeping with the targets recommended in the review of the [National Strategy for the Conservation of Australia's Biological Diversity](#) and in [EPA Position Statement No.2 on Environmental Protection of Native Vegetation in Western Australia](#).

Ecological communities that are naturally rare or restricted may require substantially greater than 30 per cent of their pre-European extent to be retained for effective representation and ecological viability.

The level of 30 per cent representation within a bioregion does not consider the effect of habitat fragmentation and isolation. Studies have shown that larger areas of native vegetation generally support a greater number and diversity of species than smaller areas (e.g. Kitchener *et al.*, 1980a; Kitchener *et al.* 1980b; Kitchener *et al.* 1982), and that smaller areas are more vulnerable to edge effects and other disturbances. Habitat fragmentation acts to reduce the area of available habitat. Representation levels may need to be increased considerably above 30 per cent in already fragmented landscapes in order to maintain biodiversity.

A typical pattern of vegetation clearing in highly fragmented landscapes (for example from analysis of vegetation in the Greater Bunbury Regional Scheme study area) shows that relatively few large remnants remain, and the vast majority of remnant areas are small, mostly less than five hectares. In these fragmented landscapes, larger remnants should be retained as a priority as they provide core habitat areas necessary to support populations of species that are unable to survive in smaller areas of native vegetation. Note that these areas should also be significant when assessed against Principle (a) and Principle (b).

In extensively cleared landscapes the task of mapping and classifying the extent of woody vegetation remaining becomes increasingly more complex as areas of native vegetation become smaller and more fragmented, and the quality of the vegetation more variable. Thus in fragmented landscapes the estimates of remaining native vegetation are less reliable. In these areas mapping is likely to incorporate aggregations of trees and degraded native vegetation with limited understorey component, as well as intact native bushland. There is also likely to have been some

further reduction in vegetated areas since the information was captured. Therefore the current area of intact native vegetation is likely to be significantly less than the indicated figure.

To perform some ecosystem services, retention of more than 30 per cent of some ecological communities may be necessary; for example, retention of riverine vegetation is necessary to assist in maintaining healthy river systems or to maintain hydrological balance in areas at risk of salinity.

In some areas there may be less than 30 per cent of pre-European extent of native vegetation in good condition if the systems are degraded for example in the rangelands. These areas may be significant despite an overall level of greater than 30 per cent of pre-European extent remaining.

[EPA Guidance Statement No. 10](#) includes criteria for the identification of regionally significant natural areas in the System 6 / part System 1 region (outside the Bush Forever study area). The criteria include representation of ecological communities, diversity, rarity, maintaining ecological processes or natural systems, scientific or evolutionary importance and general criteria for protection of wetland, streamline, and estuarine *fringing vegetation* and coastal vegetation. In applying the criteria, individual area attributes are considered including size and shape, vegetation condition and uplands and wetlands.

[EPA Guidance Statement No. 33](#) provides information and advice on a range of environmental issues and their protection and management in the context of planning and development. It is of particular use in relation to *constrained areas*.

Examples

The following is likely to be at variance with this principle:

- clearing of native vegetation which contains habitat for a threatened fauna species and is below the national target and objective for biodiversity conservation;
- clearing of biologically diverse remnant vegetation within an extensively cleared landscape;
- clearing of remnant vegetation which is part of a significant ecological linkage and is located within an extensively cleared landscape; and/or
- clearing in landscapes where the existing vegetation is required to maintain ecosystem services (e.g. hydrological processes), or to compensate for a high degree of fragmentation.

Under this principle, clearing in areas with greater than 30 per cent native vegetation is not likely to be at variance if there is greater than 30 per cent of the total vegetation in the local area and within the bioregion in 'good' condition. A Jarrah-Marri forest that is in an area with significant forests on public land may be an example.

It is important to consider the context and condition of vegetation in assessing this principle.

Steps

Remnant vegetation data exist for the whole state, but reliable statistics are difficult to obtain. To determine whether there is significant remnant vegetation present, an assessment should be carried out using the following approach.

1. Determine the ecological communities within the application area. The best available knowledge should be used in determining the ecological communities in an area.

Vegetation complexes, which are mapped for the extent of the Swan Coastal Plain in the System 6 and System 1 Region (Hedde *et al.*, 1980; Mattiske & Havel, 1998) and the area covered by the Regional Forest Agreement, which includes the Jarrah Forest bioregion within System 6 (Havel *et al.*, 2000), are used as the base mapping of ecological communities.

On the Swan Coastal Plain, this should be supplemented by information on floristic community types (Gibson *et al.*, 1994), (Department of Environmental Protection, 1996). Where more detailed vegetation mapping is not available, *vegetation types* as defined by Beard (1990) are used as the base mapping of ecological communities.

2. Determine the percentage remaining of these types within the bioregion, subregion and local area. This can be determined using the *vegetation type* / vegetation complex and floristic community type at Interim Biogeographic Regionalisation for Australia (IBRA) region and subregion scale and the local area of that type.
3. Determine if the application area is a constrained area (including urban, urban deferred or industrial) within the constrained area of urban development.

In recognition of past land use planning decisions, constrained areas have been identified on the Swan Coastal Plain of the Greater Bunbury Region Scheme, Peel Region Scheme and within the Bush Forever study area. Within these constrained areas, retention objectives may be varied to “at least 10%”. However, other principles do apply within these constrained areas, subject to exemptions for assessed schemes and deemed works of subdivisions. This includes the need to recognise locally significant bushland.

Outside of these defined constrained areas of the Perth Metropolitan, Peel and Greater Bunbury Region Schemes, the target (noting that in many regions clearing has proceeded well beyond this point) to achieve at least 30 per cent representation applies.

4. Determine the degree of fragmentation of the local area, and consider that highly fragmented landscapes and naturally rare or restricted ecological species require a high level of representation to maintain a full suite of values for the long term.
5. Determine the significance of the remnant vegetation through review of biodiversity-related information sources, including flora, fauna and ecological community databases.

Useful information sources for assessing principle (e)

[Interim Biogeographic Regionalisation for Australia](#) (IBRA bioregions)

Pre-European vegetation / Matiske vegetation / Heddle vegetation complexes

- Regional Flora or Vegetation Surveys (e.g. [Geraldton Regional Flora and Vegetation Survey](#), [Albany Regional Vegetation Survey](#)),
- [Region schemes](#) (e.g. Metropolitan Region Scheme, Greater Bunbury Region Scheme, Peel Regional Scheme)
- Bush Forever
- [State Planning Policy 2.8 Bushland Policy for the Perth Metropolitan Region](#)
- [EPA Position Statement No.2 Environmental Protection of Native Vegetation in Western Australia](#)
- [Aerial imagery](#)
- [Regional ecological linkages](#) (e.g. [South West Regional Ecological Linkages](#))
- [National Land and Water Resources Audit \(NLWRA\) – Current Extent of Native vegetation in Western Australia](#)

Many vegetation maps and vegetation statistic reports are publicly available from [Landgate's Shared Land Information Platform \(SLIP\)](#).

Additional information sources for applications assessed under the bilateral agreement

For applications assessed under the bilateral agreement the assessment should also consider additional policies, plans and guidelines where relevant and available, including:

- bioregional plans;
- recovery plans and interim recovery plans;
- [threat abatement plans](#);
- [strategic assessments](#);
- approved conservation advice under section 266B of the EPBC Act;
- [conservation agreements](#); and
- [Matters of National Environmental Significance, Significant Impact Guidelines 1.1.](#)

Current copies of documents and datasets may be available under the relevant profile on the Commonwealth Department of the Environment's website and the [Species Profile and Threats Database](#).

Principle (f) – Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Guidelines

This principle aims to conserve vegetated watercourses and wetlands and their buffers. In this principle, the word “association” refers to the buffer area. The criteria consider both the area identified as watercourse or wetland and an appropriate buffer required to maintain the hydrological and ecological values of the watercourse or wetland. The watercourse or wetland buffer generally commences from the outside edge of the native vegetation dependent on seasonally or intermittently waterlogged soil. Under this principle, vegetation dependent on seasonally or intermittently waterlogged soils is considered to be part of a wetland, watercourse or buffer (e.g. damplands and floodplains) and would be protected.

Watercourses and wetlands are an integral part of the environment, have diverse ecological functions and support a wide range of activities including agriculture and tourism. Watercourses provide important linkages between landforms in our predominantly dry landscape. Wetlands are widely recognised as important wildlife habitats and as being among the most biologically productive and diverse habitats on the planet. They directly and indirectly supply food to a broad range of animals and also serve important water purification functions. Both watercourses and wetlands support specialist plant assemblages and restricted plant species. However, as a result of human land use and inappropriate management, many have been degraded.

Buffers are designed to protect watercourse and wetland vegetation from potentially deleterious impacts caused by surrounding land uses. Buffers aid in safeguarding and maintaining the ecological processes and functions occurring directly within or adjacent to watercourses or wetlands and, wherever possible, promote these processes within the buffer itself. For wetland and watercourse ecosystems, the buffers are measured from the edge of the boundary, which encompasses both waterlogged and inundated areas and the wetland-dependent vegetation, to the outside edge of any proposed development or activity. For example rushes, melaleucas/paperbarks and flooded gums are included as part of the wetland or watercourse. The buffer may include dryland areas with dryland vegetation community types (e.g. certain banksia woodlands).

For watercourses the process for determining appropriate buffer areas should be based on biological and physical criteria. These criteria are summarised as, but not limited to, vegetation, hydrology, soil type, erosion, geology, climate, topography, function/uses, habitat, land use and heritage.

For wetlands, the [Parks and Wildlife wetlands webpage](#), and [Guideline for the Determination of Wetland Buffer Requirements](#) provides recommended buffer widths for certain land uses. [EPA Position Statement No. 4](#) has as a goal of “no net loss of wetland values and functions” and recognises the need for appropriate buffers to ensure adequate protection of these values.

Biological communities associated with groundwater-dependent ecosystems, such as wetlands, groundwater-dependent terrestrial vegetation, cave streams and springs, have adapted to existing water regimes. Clearing can alter these regimes and cause

degradation of existing biological communities. Degradation could result in local extinction of vegetation species, loss of diversity of fauna or loss of habitat diversity.

Where groundwater-dependent ecosystems are likely to be affected by changes in water table caused as a result of clearing, assessment of the ecological water requirements of groundwater-dependent ecosystems (generally by qualified ecologists) may be required. Hydrogeological modelling can then be used to ensure that the proposed clearing of native vegetation does not breach the water level criteria.

On the Swan Coastal Plain, groundwater-dependent ecosystems most likely to be affected by a rising water table are those in areas with a depth to groundwater of zero to six metres.

Examples

Under this principle, clearing of native vegetation that is watercourse or wetland dependent is likely to be at variance (e.g. damplands and floodplains). Clearing of native vegetation that is growing within the identified or known buffer of a watercourse or wetland, is also likely to be at variance.

Steps

To determine whether vegetation is associated with a wetland or watercourse an assessment should be carried out to include the following.

1. Identify watercourses and wetlands including their associated riparian zones, wetland-dependent vegetation and appropriate buffers.

Determine whether the watercourse or wetland is listed as significant. These include those listed as:

- *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992;*
- *Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998;*
- *Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992;*
- conservation category wetlands in the geomorphic wetland maps available from Parks and Wildlife;
- significant wetlands of the South Coast Region;
- wetlands listed under the Ramsar Convention;
- wetlands in the [Directory of Important Wetlands in Australia](#) available from the Commonwealth Department of the Environment;
- other wetlands and watercourses declared under section 51B of the EP Act as environmentally sensitive areas;
- [wild rivers](#) identified by the DoW; and
- watercourses and wetlands listed in EPA Redbook Recommended Conservation Reserves 1976-1991 (systems 1-12).

Sources of information that will aid in the identification of significant watercourses and wetlands are listed below. This is not a definitive list. Parks and Wildlife (wetlands) and DoW (watercourses) offices should be contacted to ensure the most up to date information for the area is used. Information is limited for areas outside the south-west of Western Australia.

- Swan Coastal Plain wetland mapping is available in Hill *et al.*, (1996) *Wetlands of the Swan Coastal Plain Volume 2B: Wetland Mapping, Classification and Evaluation*. Wetland Atlas.
 - Additional wetland mapping around the state is provided in the following reports:
 - V & C Semeniuk Research Group (2000) *Wetlands of the northwestern Great Sandy Desert in the LaGrange hydrological sub-basin*. Unpublished report for the Water and Rivers Commission.
 - V & C Semeniuk Research Group (2000) *Wetlands of the Pilbara Region: description, consanguineous suites, significance*. Unpublished report for the Water and Rivers Commission.
 - V & C Semeniuk Research Group (1994) *Ecological Assessment and Evaluation of Wetlands in the System 5 Region*. Report to the Australian Heritage Commission.
 - V & C Semeniuk Research Group (1998) *Evaluation of Wetlands on the Southern Swan Coastal Plain*. Unpublished report for the Water and Rivers Commission.
 - Pen, L. (1997) *A Systematic Overview of Environmental Values of the Wetlands, Rivers and Estuaries of the Busselton-Walpole Region*. WRC Report # WRAP 7.
 - V & C Semeniuk Research Group (1997) *Mapping and Classification of Wetlands from Augusta to Walpole in the South West of Western Australia*. WRC Report # WRT12.
 - V & C Semeniuk Research Group (1998) *Preliminary Delineation of Consanguineous Wetland Suites Between Walpole and Fitzgerald Inlet, Southern Western Australia*. Unpublished report for the Water and Rivers Commission.
 - V & C Semeniuk Research Group (1999) *Preliminary Delineation of Consanguineous Wetland Suites in the Pallinup-North Stirling Region, South Western Australia*. Unpublished report for the Water and Rivers Commission.
 - ecologia Environmental Consultants (2000) *A Preliminary Evaluation of Wetlands in the Esperance Water Resource Region*. Unpublished report for the Water and Rivers Commission.
2. Determine appropriate buffers (where necessary) for watercourses and wetlands. Additional information that may aid in the application of buffers to watercourses and wetlands:
- [Parks and Wildlife](#) Wetlands webpage;
 - [Water and Rivers Commission Restoration Report no. 16 Determining Foreshore Reserves](#);
 - Guide to Water and Rivers Commission Foreshore Policy 1: *Identifying the Foreshore Area*; and
 - DEC 2009 Soil and Water Conservation Guideline.

Watercourse and wetland buffers

In order to protect a watercourse or wetland and its associated vegetation, a *foreshore area* or buffer is determined based on an assessment of the biological and physical features associated with the watercourse or wetland, and its values and threatening processes associated with adjacent land use. The features to be used in the assessment are known as ‘biophysical criteria’.

These criteria can be summarised as, but are not limited to, the following:

- vegetation – fringing vegetation and native vegetation associated with or influencing the watercourse or wetland, and its condition or value;
- hydrology – processes and changes in water levels and flow regimes; water quality; flood-prone land and areas subject to changes in channel location over time;
- soil type – soil types that influence the extent of fringing vegetation, active channel processes or wetland processes, and/or the fate of potential contaminants;
- erosion – soil types prone to erosion;
- geology – geological features which influence the watercourse or wetland;
- climate – climatic variations and resultant changes in flow regimes, vegetation etc
- topography – landscape features including slope, shape, relief and diversity that influence, or are influenced by, the watercourse or wetland;
- function/uses – the function of the watercourse or wetland and foreshore area or buffer area – flood protection, recreation or habitat conservation—and relative values;
- habitat – habitats such as river pools, woody debris, riffles and fringing vegetation and their condition and values;
- land use – land uses, activities and/or associated contaminants that influence, or are influenced by, the riparian area or fringing vegetation (i.e. how the pressure / contaminant may affect the buffer / watercourse / wetland and how the buffer / watercourse / wetland may affect the pressure / contaminant); management response to contamination; and
- heritage – archaeological and ethnographic sites.

The Department of Water’s operational policy [4.3 Identifying and establishing waterways foreshore areas](#) provides some guidance on compatible land or water activities for foreshore areas or buffers. However, within a buffer area there is a presumption against supporting any activity likely to degrade its protective function, including activities that are likely to require, cause, or result in the following: clearing, filling, mining, drainage into or out of, effluent discharge into, pollution of, or environmental harm.

Details of how to use biophysical criteria to determine the size or width of a foreshore area or watercourse buffer, including the underlying rationale, can be found in the

Department of Water Guidance Note 6—Identifying and establishing waterways foreshore areas.

Wetland buffers are determined using a similar, biophysical assessment process. For a guide to wetland buffer requirements refer to the Parks and Wildlife wetlands webpage.

Useful information sources for assessing principle (f)

- [Wild Rivers](#)
- [Geomorphic Wetland Mapping](#) and other wetland mapping where available
- Environmental Protection Policy wetland mapping
- [Ramsar wetlands](#)
- [A Directory of Important Wetlands in Australia \(ANCA\)](#)
- Hydrology (linear and hierarchy)
- Topographical contours, geology, soil and climate mapping
- Vegetation complex mapping
- Aerial photography

Some spatial data are publicly available from Landgate's [Shared Land Information Platform](#) (SLIP), Parks and Wildlife's WetlandBase and DoW's [Geographic Data Atlas](#).

Additional information sources for applications assessed under the bilateral agreement

Where an application has been determined to have, or likely to have a significant impact on a matter of NES, such as a Ramsar wetland, the assessment must have regard to relevant policies, plans and guidelines including the following documents, as available and relevant:

bioregional plans;

- recovery and interim recovery plans;
- threat abatement plans;
- [strategic assessments](#);
- approved conservation advice under section 266B of the EPBC Act;
- [Significant Impact Guidelines 1.1](#); and
- ecological character descriptions for individual sites including [Eighty Mile Beach, Forrestdale and Thomsons Lake, Lake Gore, Lake Warden System, Lakes Argyle, Kununurra, Muir-Byenup System, Ord River Floodplain, Peel-Yalgorup System, Roebuck Bay, Toolibin Lake and Vasse-Wonnerup System](#).

Current documents and datasets may be available on the Commonwealth Department of the Environment website.

Principle (g) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Guidelines

This principle aims to maintain sufficient native vegetation in the landscape to prevent land degradation. Native vegetation should not be cleared if it is likely to cause land degradation. This includes soil erosion, salinity, nutrient export, acidification, waterlogging and flooding that affect the present or future use of land.

The assessment of land degradation risk takes into consideration a number of often interacting factors including soil type, landform and slopes, rainfall zone and intended land use.

Land capability

Generally land of low or very low capability for its intended use should not be cleared. Such land has severe physical limitations not usually overcome by standard development techniques and/or has a high risk of land degradation. For example, the clearing of sand dunes or areas of deep pale sands for crops and pasture production may result in increased ground water recharge, surface water runoff, soil erosion or nutrient export.

Soil erosion

Soil erosion generally occurs where there is insufficient vegetative cover to protect soils from high intensity winds and rainfall. In the south-west land division, the vulnerability of land to water erosion is dependent upon a combination of factors including rainfall intensity, soil properties (soil type, organic matter, structure and permeability), slope length and gradient, land use and soil conservation practices. In general, land with slopes greater than nine per cent should not be cleared.

In the arid tropics, high intensity rainfall is commonly experienced and severe soil erosion can occur on land with as little as one to two per cent slopes if it is cleared and/or cultivated. Land use systems that maintain greater than 2.5 tonnes/ha of standing dry matter are usually required to achieve soil stability on such land.

The rangelands comprise a diverse range of soils and land forms, including some that are particularly prone to wind and water erosion. Many potentially erodible soils are protected by stony mantles. Accelerated erosion usually occurs where the protective vegetation or stony mantles are removed or natural flow regime (often sheet flow) is altered. Once gullies have established, vegetation communities down gradient that are dependent upon receiving sheet flows can be seriously compromised.

Wind erosion risk is determined by a combination of soil strength, structure, particle size and landform. Thus fine loose sands on a dune or exposed flat plain are particularly prone to erode. Similarly fine textured kopi soils in and around salt lake systems are particularly prone to erode if cleared and can be difficult to stabilise and rehabilitate.

In the rangelands, loss of nutrient-rich top soil and leaf litter through wind and water erosion greatly reduces productivity and when severe can cause scalding. Scalds tend to become permanent landscape features. Alluvial plains adjacent to rivers are particularly prone to erosion.

Soil acidity

Soil acidification results in a lack of crop performance and can occur after clearing certain soil types. In the northern and central agricultural regions, yellow sand plain soils supporting wodgil vegetation should be tested for pH and risk of aluminium toxicity. Generally soils that show pH<4.0 in 1:5 0.5M KCl and >20 μ M Al are unsuitable for crop and pasture production. Such land is a wind erosion risk as well as increased groundwater recharge causing salinity down gradient.

Localised soil acidity may also occur where pyritic material is exposed to air and rainfall. The resulting acid run off or drainage water will kill most vegetation and may have severe impacts on wetlands systems.

Salinity

Dryland salinity occurs where the hydrological balance has been altered by clearing and the subsequent land use. It is an intractable problem of the medium and low rainfall zones of the wheatbelt on soils developed over crystalline rock. Irrigation salinity is dependent upon soil type, water quality and water management practice.

Risk assessment is site-specific and takes into account average annual rainfall; catchment information including soil types, landform, underlying geology and hydrology; and the intended use of the land after clearing.

Examples

Under this principle, the following types of clearing are likely to be ‘at variance’:

- clearing of land that is likely to increase salinity either on site or off site;
- clearing of land that is likely to increase waterlogging either on site or off site;
- clearing of land that is likely to result in nutrient export;
- clearing of land that is likely to increase water and wind erosion on site or off site; and
- clearing of land that is likely to increase in soil acidity.

Steps

Advice on land degradation is available from the Commissioner of Soil and Land Conservation (at DAFWA).

Soil-landscape and land capability mapping is available on the [Natural Resource Management Shared Land Information Platform](#). Land capability refers to the ability of land to support a type of land use without causing damage. The DAFWA [Technical Report 298: Land evaluation standards for land resource mapping: assessing land qualities and determining land capability in South-Western Australia](#) (van Gool, et al., 2005) provides further detail on land use capability assessment. Information is available from www.agric.wa.gov.au

The [Report card on sustainable natural resource use in agriculture—status and trend in the agricultural areas of the south-west of Western Australia](#) (Department of

Agriculture and Food WA, 2013) provides information on the condition (or risk to condition) and trend in condition of the natural resources that support agriculture.

GIS databases can highlight potential dry land salinity, groundwater salinity, and erosion risk using topographic contours to determine slope gradient.

Useful information for assessing principle (g)

- Salinity risk / mapping / monitoring
- Groundwater salinity, confined / superficial aquifers
- Soils, statewide
- Land System Mapping (Kimberley / Rangelands)
- Topographic contours
- Rainfall, Mean Annual
- Hydrology / hydrogeology
- [Geomorphic Wetland Mapping](#) and other wetland mapping, where available
- DAFWA Land Degradation Report and advice from the Commissioner of Soil and Land Conservation including Ag Maps, where available

Some spatial data are publicly available from Landgate's [Shared Land Information Platform](#) (SLIP) and DAFWA's Natural Resource Management [Shared Land Information Platform](#).

Principle (h) – Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Guidelines

This principle aims to ensure that the conservation values of *conservation areas* are not reduced as a result of native vegetation clearing.

Habitat fragmentation poses one of the greatest threats to biodiversity. When core habitat reserves are isolated from one another by human land uses, the diversity of native species generally declines and the probability of species extinction increases. This process of ecosystem decay has been well-documented in fragmented landscapes throughout the world.

Ecological linkages and buffers in the context of this principle contribute to the functioning and viability of existing conservation estate by:

- establishing connectivity between conservation areas and other areas of native vegetation;
- contributing to the maintenance or restorability of one or more key ecological processes required to sustain the conservation areas; and
- expanding the functional size of an existing conservation area or partially compensating for less than ideal shape.

The basic ecological functions of smaller, remnant natural areas can only be maintained through connectivity with the broader natural landscape.

Native vegetation adjacent to or near conservation reserves improves the viability and conservation values of the reserve by providing larger core areas, buffering the reserve from edge effects, consolidating boundaries or adding plant communities and habitats not represented or under-represented in the reserve. The size of a buffer to be effective will depend on the vegetation types present and their resilience.

Ecological linkages of vegetation between larger areas of conservation value are important for enabling fauna to continue to move through the landscape and between reserves. This is vital both for species that are nomadic and for maintaining populations of less mobile species that may otherwise become locally extinct in individual reserves.

Remnant patches within the vicinity of large contiguous areas of native vegetation (outliers) are more likely to support wildlife than more isolated patches – with greater separation distances fewer species will have the mobility necessary to maintain access.

Steps

To determine whether native vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area an assessment should be carried out to include the following:

1. Determine if land held or managed for conservation is present (see information sources section below).

2. Determine whether the land provides a buffer, ecological linkage or outlier to a conservation area. These may include areas that provide large, regional connections to conservation areas and buffer the conservation area from adverse impacts. Alternatively, a narrow, disjunct, impacted, or otherwise tenuous habitat linkage connecting to conservation areas may exist. These are essential to maintain landscape-level connectivity, but are particularly in danger of losing connectivity function. An example is a narrow peninsula of habitat, surrounded by a human-dominated land uses, that connects larger habitat blocks, such as the South Coast Region Macro-corridor project.
3. Factors to consider in determining whether an area has a function as an ecological linkage or buffer, or contributes significantly to the environmental values of a conservation area include:
 - distance to the conservation area and between other possible ecological linkages;
 - size and shape of the ecological linkage or buffer;
 - types of habitats (riparian, coastal, woodland, etc.) present within the linkage or buffer and key focal species and ecological processes that may be present that would indicate connectivity;
 - types of land cover (e.g. natural vegetation, pastoral/grazing, cropland/irrigated agricultural, low density residential, etc.) within and immediately adjacent to the linkage;
 - primary barriers that are impediments to faunal movement, gene flow and ecological processes (dirt road, agriculture, urban areas); and features that facilitate these within a linkage (watercourses, riparian habitat, continual habitat coverage, underpasses,); and
 - any studies that exist to demonstrate the use and functions of the linkage or buffer, including any anecdotal evidence or field studies conducted on this particular linkage or buffer.
4. Determine if the land provides habitats not well represented on the conservation land. Less than 15 per cent representation in conservation reserves is a benchmark.

Useful information sources for assessing principle (h)

- Parks and Wildlife managed lands and waters spatial data
- Bush Forever
- Conservation covenants and agreements to reserve under the *Soil and Land Conservation Act 1945* (registered as a memorial on the Certificate of Title)
- Parks and Wildlife or other conservation covenants and binding agreements
- Significant wetlands and watercourses (e.g. [Ramsar wetlands](#), [Directory of Important Wetlands](#), conservation category wetlands)
- Ecological character descriptions for individual sites including [Eighty Mile Beach](#), [Forrestdale and Thomsons Lake](#), [Lake Gore](#), [Lake Warden System](#), [Lakes Argyle](#), [Kununurra](#), [Muir-Byenup System](#), [Ord River Floodplain](#), [Peel-Yalgorup System](#), [Roebuck Bay](#), [Toolibin Lake](#) and [Vasse-Wonnerup System](#)
- World or National Heritage areas or biosphere reserves
- [WA Environmental Offsets Register](#)

- [Perth Biodiversity Project Local Biodiversity Guidelines](#) and subsequent Local Biodiversity Plans for regional and local ecological linkages and Local Biodiversity Areas with high priority for retention and protection (i.e. Local Conservation Areas or shire reserves with a dual vesting purpose)
- Ecological linkages such as SWERL, Bush Forever
- Aerial imagery

Additional information sources for applications assessed under the bilateral agreement

Where an application has been determined to have, or likely to have a significant impact on a matter of NES, the assessment must have regard to relevant policies, plans and guidelines including the following documents, as available and relevant:

- bioregional plans;
- recovery plans and interim recovery plans;
- threat abatement plans;
- [strategic assessments](#);
- [Significant Impact Guidelines 1.1](#); and
- conservation advice and notices (e.g. [Purnululu National Park](#) Statement of Outstanding Universal Value, [Shark Bay, Western Australia](#) Statement of Outstanding Universal Value, [The Ningaloo Coast](#) Statement of Outstanding Universal Value [Porongurup National Park](#) Gazettal Notice, [Purnululu National Park](#) Gazettal Notice, [Shark Bay Western Australia](#) Gazettal Notice, [Stirling Range National Park](#) Gazettal Notice, [The Ningaloo Coast](#) Gazettal Notice, [The West Kimberley](#) Gazettal Notice).

Principle (i) – Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Guidelines

This principle considers biological, chemical and physical parameters, and water quantity as far as these affect overall environmental quality of surface and groundwater. This principle aims to ensure that the quality of water supplies is not reduced, that salinity, pH or levels of nutrients in water bodies and discharge water, are not significantly altered by clearing, and that water regimes and environmental water provisions are not adversely affected.

The assessment should consider both on-site and off-site impacts, so that problems are not transferred from the cleared site to another part of the catchment or aquifer.

Within Public Drinking Water Supply Catchments, the impacts of clearing must be compatible with the Public Drinking Water Supply Catchments guidelines and [Water Source Protection Plans](#).

In certain controlled catchments reserves under the *Country Areas Water Supply Act 1947* (CAWS), clearing controls are in place to prevent salinity. If clearing is proposed within these areas, DER can advise the applicant whether a clearing permit and/or a CAWS licence are required. Clearing may be restricted through compensation payments or due to location in the catchment and salinity risk.

Consideration should be given to clearing that may be likely to significantly alter the salinity or pH of water tables. Consideration should also be given to the possibility that sedimentation, erosion, turbidity or *eutrophication* of water bodies on or off site is likely to be caused or increased.

It need to be noted that clearing of relatively substantial areas of vegetation can alter existing water regimes and cause degradation of groundwater-dependent ecosystems (discussed under Principle (f)). Degradation could result in local extinction of flora species or ecological communities, loss of diversity of fauna or loss of habitat diversity.

Examples

Under this principle, the following types of clearing are likely to be at variance:

- clearing of native vegetation where the clearing is likely to lead to adverse environmental impacts through sedimentation of water bodies;
- clearing of native vegetation where the impacts of the clearing are likely to contribute to increased nutrient levels in the catchment;
- clearing of native vegetation where there is potential for low pH waters and/or acid sulphate soils to form as a result of clearing;
- clearing of native vegetation where the impacts of the clearing are likely to contribute to increased salinity in catchments already affected by or likely to be affected by salinity; and

- clearing of native vegetation where the clearing is likely to lead to changes in water regimes of, or result in breaches of environmental water provisions for, groundwater-dependent ecosystems (GDEs) on or off site and subsequent degradation of the biological communities associated with these systems.

Steps

An assessment should include consideration of the following factors.

General

The Interactive Geological Map (DMP) is available online and identifies soil types and geomorphology.

Groundwater

1. Locate Water Information Network (WIN) sites, estimate depth to water table, and obtain existing water quality readings and drilling project reports from the [Water Information Reporting](#) website.
2. Consult [salinity risk mapping](#) series to identify if salinity (electrical conductivity) is rising in the area (south-west only). If it is, then obtain all water quality monitoring parameters from WIN and look at the long-term trend, focusing on pH and electrical conductivity.
3. Where clearing is likely to have a high impact on groundwater, advice should be sought from DoW. Hydrogeological modelling may be necessary to determine the likely spatial and temporal extent and magnitude of impact on the water table of clearing, particularly where large areas of vegetation are proposed to be cleared.

Where GDEs are likely to be affected by water table rises, assessment of the ecological water requirements of GDEs (by qualified ecologists) may be required. Hydrogeological modelling can then be employed to ensure that the proposed clearing of native vegetation does not breach the water level criteria.

Surface water

1. Identify the nearest [WIN](#) surface water site and view historical pH, electrical conductivity and nitrogen and phosphorus readings. The [Phosphorus Retention Index \(PRI\)](#) may be useful to determine the nutrient capacity of the soils. If there is a trend, then obtain all WIN readings for the area and consider long term trends.
2. Determine nutrient trends for wetlands in the catchment where data exist. Determine soils in the catchment and their risk of erosion and nutrient holding capacity.
3. Determine soil types in the catchment and the risk of erosion of nutrient-rich soil particles and/or leaching. No increase in nutrient levels is acceptable in systems with a trend towards elevated nutrient levels.

4. In other areas, determine whether soil types have the potential to generate acid sulfate soils. Consult the [Acid Sulfate Soils Guideline Series](#) for information on this. Consider any previous studies carried out in the area.

Within the north-west of the state, mangrove areas and tidal flats provide the main indicator of conditions that may potentially result in acid sulfate soils and low pH waters.

In the southwest, the situation is more complex. The following geomorphic or site description criteria should be used to determine if acid sulfate soils are likely to be present within the south-west:

- land with elevation less than five metres AHD;
- soil and sediment of recent geological age (Holocene);
- marine or estuarine sediments and tidal lakes;
- low-lying coastal wetlands or back swamp areas, waterlogged or scalded areas, stranded beach ridges and adjacent swales, interdune swales or coastal sand dunes;
- coastal alluvial valleys;
- areas where the dominant vegetation is tolerant of salt, acid and/or waterlogging conditions e.g. mangroves, saltcouch, swamp-tolerant reeds, rushes, paperbarks (*Melaleuca* sp.) and swamp oak (*Casuarina* sp.); and
- areas identified in geological descriptions or in maps as:
 - bearing sulfide minerals,
 - coal deposits or marine shales/sediments (geological maps and accompanying descriptions may need to be checked), and
 - deep older estuarine sediments below ground surface of either Holocene or pre-Holocene age.

The [Acid Sulfate Soils Guideline Series](#) available from DER provides further information on this issue.

Useful information sources for assessing principle (i)

- [Salinity risk / mapping / monitoring \(Land Monitor\)](#)
- [Public Drinking Water Source Areas \(PDWSA\)](#)
- [Acid sulfate soil risk mapping](#)
- WIN groundwater sites (monitoring / Water Corporation / other)
- WIN surface water sites (stream gauging, other)
- WIN telemetry sites and uncatalogued sites
- Evaporation isopleths
- Isohyets
- Topographic contours
- Groundwater salinity, confined / superficial aquifers
- Hydrography, linear, catchments, sub-catchments
- Rainfall, mean annual
- Potential groundwater-dependent ecosystem areas
- Geodata, Lakes
- Surface water / groundwater areas, irrigation districts, rivers under the *Rights in Water and Irrigation Act 1914*
- *Country Area Water Supply Act 1947* [Clearing Control Catchments](#)
- Environmental Protection (Swan Coastal Plain Lakes) Policy 1992

- Environmental Protection (South West Agricultural Zone Wetlands) Policy 1998
- Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992
- [Geomorphic Wetland Mapping](#)

DoW has published a variety of documents and databases which may assist with the collection of information relevant to this principle including the Geographic data atlas, Hydrogeological data atlas, Perth groundwater atlas, Proclaimed area maps, Water Quality Protection Notes and the [Water Information Reporting website](#).

Some spatial data are publicly available from Landgate's [Shared Land Information Platform](#) (SLIP).

Principle (j) – Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Guidelines

This principle aims to ensure that there is no increase in the frequency or intensity of flooding resulting from native vegetation clearing.

Consideration of this principle may require extensive modelling of the whole catchment and should only be considered for large clearing proposals.

For smaller applications, clearing should not cause waterlogging (localised flooding). This is already considered under principle (g) (land degradation). Flooding and/or waterlogging may also exacerbate criteria under principle (i) such as salinity, sedimentation, low pH waters or eutrophication, or result in unacceptable changes in water regimes or environmental water provisions, both on and off site.

Steps

To determine if clearing the vegetation is likely to cause, or exacerbate the incidence of flooding an assessment should consider the following factors:

1. Determine possible waterlogging problems using the following indicators:
 - soil compaction and infiltration,
 - soil profile depth,
 - soil drainage/recharge rates,
 - perched water tables – groundwater contours and monitoring well water levels could be considered,
 - waterlogging observed on adjacent properties, and
 - catchment mapping.
2. Floodplain mapping for major towns (1 in 100 year flood levels).
3. Determine possible waterlogging problems using the following indicators:
 - soil compaction and infiltration,
 - soil profile depth,
 - soil drainage/recharge rates,
 - perched water tables – groundwater contours and monitoring well water levels could be considered, and
 - waterlogging observed on adjacent properties.
4. Floodplain mapping for major towns (1 in 100 year flood levels).

Useful information sources for assessing principle (j)

- Evaporation Isopleths
- Hydrography, hydrographic linear and hydrographic catchments;
- Hydrogeology
- Aquifers
- Topographic contours
- Rainfall, mean annual
- Watercourse and wetland mapping

- Floodplain mapping
- Catchment mapping
- Soil classification
- Aerial imagery

To assist in the collection of data, the DoW [Hydrogeological Atlas](#) and [Geographic Data Atlas](#) contains a number of useful databases and spatial information. Some spatial data are publicly available from Landgate's [Shared Land Information Platform](#).

To further determine the risk of flooding, hydrological modelling or hydrological advice maybe required as part of a secondary assessment.

Planning instruments and other relevant matters

Planning instruments

In considering a clearing matter under section 51O of the EP Act, the CEO shall have regard to any planning instrument and other relevant matters when making decisions as to clearing permits.

When assessing planning instruments, relevant local and regional level planning strategies, by-laws and policies should be considered as part of the recommendations to the CEO. Examples of these include local biodiversity guidelines and related local biodiversity plans prepared by local government, or regional planning strategies dealing with public infrastructure.

The EPA's [Environmental Protection Bulletin No. 20 Protection of naturally vegetated areas through planning and development](#) and [Guidance Statement No. 33 Environmental Guidance for Planning and Development](#) are useful resources in considering planning and development issues in the context of environmental impact.

In addition, the Western Australian Planning Commission's [State Planning Policies](#) including *2.8 Bushland Policy for the Perth Metropolitan Region* and *2 Environment and Natural Resources Policy* provides guidance on principles for good environmental planning.

Other relevant matters

In considering a permit application the CEO shall also have regard for any other relevant matter. 'Other matters' are not defined in the EP Act, and consequently are any matters the CEO considers relevant. Other matters are generally environmental issues not directly within the scope of the clearing principles, but within the object and principles of the Act.

Other matters typically include consideration of land use impacts, previous decisions related to the area, other legislative requirements related to the application and the necessity of the clearing.

Land use impacts

Environmental, economic and social impacts arising from land use is an 'other matter' the CEO would consider when making a decision regarding the clearing application.

Previous decisions

Any previous decisions related to the area should be considered in undertaking an assessment. These decisions could include whether the EPA has formally assessed the proposal and any advice given. It could also include any decisions under the previous Notice of Intent to Clear system under the *Soil and Land Conservation Act 1945*.

Legislative requirements

Legislative requirements under other written laws may be a consideration in assessing the clearing of native vegetation. These include whether the proposal requires a prescribed premise works approval or licence under the EP Act, a groundwater or surface water licence under the *Rights in Water and Irrigation Act 1914* and native title

requirements under Commonwealth *Native Title Act 1993*, Aboriginal Sites of Significance under the *Aboriginal Heritage Act 1972* and local government requirements such as extractive industry licences.

Necessity

Native vegetation clearing should only be considered after all other reasonable attempts to mitigate adverse impacts have been exhausted. Potential environmental impacts should be addressed using the impact mitigation sequence:

- avoid – avoid impact altogether;
- minimise – limit the severity of the impact;
- rehabilitate – restore maximum environmental value of the impact; and
- offset – offset significant residual impacts.

In determining the necessity of the clearing higher priority will be given to clearing for public use than private benefit or commercial gain.

Environmental protection policies (EPPs)

Under section 51P, the CEO shall refuse to grant a clearing permit if the CEO considers that the associated effect on the environment would be inconsistent with any approved policy. An approved policy is an [environmental protection policy](#) approved by the Minister for Environment under section 31(d) of the EP Act. Further information on these is available by contacting DER.

Approved policies for which clearing may be inconsistent include:

- *Environmental Protection (Gnangara Mound Crown Land) Policy 1992;*
- *Environmental Protection (Peel Inlet - Harvey Estuary) Policy 1992;*
- *Environmental Protection (Swan Coastal Plain Lakes) Policy 1992;*
- *Environmental Protection (South West Agriculture Zone Wetlands) Policy 1998;*
- *Environmental Protection (Western Swamp Tortoise Habitat) Policy Approval Order 2002.*

Agreements to reserve, conservation covenants and soil conservation notices under the *Soil and Land Conservation Act 1945*

The CEO is prevented from making a decision to grant a clearing permit on land which is subject to an agreement to reserve under the *Soil and Land Conservation Act 1945* without the written approval of the Commissioner of Soil and Land Conservation. DER will contact the Commissioner to seek his written advice if the land under application is subject to an agreement to reserve.

The CEO is also prevented from making a decision to grant a clearing permit:

- on land which is the subject of a conservation covenant under section 30B(2) of the *Soil and Land Conservation Act 1945*; or
- in contravention of a soil conservation notice imposed under Part V of the *Soil and Land Conservation Act 1945*.

DER will advise any applicant affected by these instruments or requirements in writing.

Steps

Consideration of planning instruments and other relevant matters typically includes the following.

1. Determine whether the clearing is consistent with a region or local planning scheme, any relevant planning approvals, approved policy or local planning strategy.
2. Consider whether any previous decisions have been made related to the proposal or other legislative requirements need to be fulfilled for the proposal to proceed. These could include:
 - prescribed premise works approval or licence;
 - groundwater or surface water licence;
 - extractive industry licences;
 - native title requirements;
 - Aboriginal Sites of Significance; or
 - local government requirements.

Information sources for assessing planning and other matters

- [Region schemes](#)
- [Town planning schemes](#)
- [Environmental impact assessment decisions](#)
- [State planning policies](#)
- [EPA position and guidance statements](#)
- [Environmental protection policies](#)
- [Native title claims](#)
- [Aboriginal sites of significance](#)
- [Environmentally sensitive areas](#)
- [Offset and conservation covenant mapping](#)
- [DoW proclaimed area maps displaying RIWI Areas](#) or *Country Areas Water Supply Act 1947* areas
- [Acid sulfate soil risk map](#)
- Ag Maps and soil mapping
- DER's Incident Complaint Management System (ICMS)
- World and national heritage areas
- end land use

Some spatial data are publicly available from Landgate's [Shared Land Information Platform](#).

Assessment bilateral agreement under the EPBC Act

All applications for a clearing permit which will be assessed under a bilateral agreement are assessed in accordance with the requirements under Part V Division 2 of the EP Act and Schedule 1 of the assessment bilateral agreement.

The information below describes some of the additional considerations for applications being assessed under this bilateral agreement.

Significant impact

According to the Commonwealth's [Significant Impact Guidelines 1.1](#), a significant impact is *"an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts"*.

Each identified or potential impact to a matter of NES is required to be explicitly addressed in the assessment report. The significant impact guidelines are a useful resource that assessors consider when determining the significance of an impact of an action on matters of NES. The criteria also assist applicants in identifying whether their action will require approval under the EPBC Act.

Some of the relevant matters of NES under Part 3 of Division 1 of the EPBC Act include:

- World heritage properties;
- national heritage places;
- wetlands of international importance (Ramsar);
- nationally listed threatened species and ecological communities; and
- listed migratory species.

Under an assessment bilateral agreement, the Commonwealth will determine the matters of NES on which the proposed action may significantly impact (e.g. Ramsar wetlands or threatened species); these are known as the 'controlling provisions' for the action.

Aboriginal values

The applicant and assessors are encouraged to recognise the role and interests of Aboriginal peoples, as applicable, in promoting conservation and ecologically sustainable use of natural resources and promote the cooperative use of Aboriginal peoples' knowledge of biodiversity and Indigenous heritage.

The views of Aboriginal peoples are likely to be a primary source of information on Aboriginal cultural heritage that relates to matters of NES. The CEO will have due regard to relevant guidelines that address consultation with Aboriginal peoples including, but not limited to, [DER Fact sheet 22—Assessment of Aboriginal heritage values for native vegetation clearing applications](#) and WA's [Aboriginal Heritage Due Diligence Guidelines](#).

Useful information sources on assessing Aboriginal heritage values

- [Fact sheet 22](#) —Assessment of Aboriginal heritage values for native vegetation clearing applications
- [Fact sheet 23](#) —Native Title and native vegetation clearing applications
- The National Native Title Tribunal website: www.nntt.gov.au
- WA [Aboriginal Heritage Due Diligence Guidelines](#)
- [Aboriginal Heritage Inquiry System](#)
- [EPA Guidance Statement 41—Assessment of Aboriginal heritage](#)

Application and public submissions

The information required in an application to clear native vegetation to be assessed under the assessment bilateral agreement is described in the application forms and checklists available at www.der.wa.gov.au/nvp.

The information to be provided by the applicant must include a description of:

- the proposed action;
- the likely relevant impacts on matter/s of NES (as prescribed through an EPBC Act controlled action decision, if made);
- feasible alternatives to the proposed action;
- possible mitigation measures; and
- an assessment of the relevant impacts of the clearing.

Under section 51E(4) of the EP Act, a validly made clearing permit application is advertised publicly in the prescribed manner, inviting any person to comment within the period specified in the advertisement. Applications to clear native vegetation which are assessed under the assessment bilateral agreement will also be publicly advertised.

The applicant will be provided the public submissions received and is required to respond to the matters raised by preparing additional information and/or a summary response. The response is to be provided to the CEO for consideration in the assessment and decision-making and will be made publicly available with the application, if applicable.

Assessment report and recommendations

Under the assessment bilateral agreement, the CEO will make a decision under the EP Act on the clearing permit application and may attach conditions relating to matters of NES to a granted clearing permit.

The CEO's decision report and where applicable supporting documentation is provided to the Commonwealth Minister for the Environment for an approval decision under the EPBC Act. The Commonwealth will use its best endeavours to ensure that conditions under the EPBC Act are limited to matters not already addressed, or not likely to be addressed by the CEO's conditions under the EP Act.

Under section 101A of the EP Act, the CEO's decision is subject to appeal. The Commonwealth must use its best endeavours to ensure its decision and conditions under the EPBC Act are consistent, where practicable, with any decision of the WA Minister for Environment after an appeal determination, where applicable.

For more guidance on the native vegetation clearing processes under the bilateral agreements, please refer to www.der.wa.gov.au/nvp.

Glossary

Biodiversity describes the variety of life forms: the different plants, animals and microorganisms, the genes they contain, and the ecosystems they form. It is usually considered at three levels: **genetic diversity**, **species diversity** and **ecosystem diversity**. Also referred to as **biological diversity**.

Bioregion means a bioregion of Western Australia as defined in *Revision of the Interim Biogeographic Regionalisation of Australia (IBRA) and the Development of Version 5.1 – Summary Report* (2000) published by the Commonwealth Commonwealth Department of the Environment and Heritage, Canberra. A bioregion represents an area with common ecological characteristics, including climate, geomorphology, landforms, lithology and characteristic flora and fauna. The IBRA regions represent a **landscape**-based approach to classifying the land surface. Specialist ecological knowledge combined with regional and continental scale data on ecological characteristics were interpreted to describe these patterns. The resulting integrated regions were ascribed the term biogeographic regions. The IBRA was developed in 1993–94 under the coordination of Environment Australia by the states and territories as a basis for developing priorities for the Commonwealth in funding additions to the reserve system under the National Reserve System Cooperative Program. It has been subsequently revised in the light of new knowledge.

Bioregional conservation status of ecological vegetation classes

Presumed extinct:	probably no longer present in the bioregion
Endangered*:	Less than 10 per cent of pre-European extent remains
Vulnerable*:	10–30 per cent of pre-European extent exists
Depleted *:	More than 30 per cent and up to 50 per cent of pre-European extent exists
Least concern:	More than 50 per cent pre-European extent exists and subject to little or no degradation over a majority of this area

*or a combination of depletion, loss of quality, current threats and rarity gives a comparable status (Department of Natural Resources and Environment, 2002).

Buffer means an area designed to protect significant **environmental values**, including **significant flora**, significant **ecological communities**, and wetlands and watercourses, from deleterious impacts by maintaining ecological processes and functions in the habitat. Refer also **watercourse or wetland buffer**.

Clearing means (a) the killing or destruction of; (b) the removal of; (c) the severing or ringbarking of trunks or stems of; or (d) the doing of any other substantial damage to, some or all of the native vegetation in an area; and includes the draining or flooding of land, the burning of vegetation, the grazing of stock, or any other act or activity that causes (e) the killing or destruction of; (f) the severing of trunks or stems of; or (g) any other substantial damage to, some or all of the native vegetation in the area.

Condition, in an environmental context, is a rating given to vegetation to categorise disturbance related to human activities. This rating refers to the degree of change in the structure, density and species present in vegetation in relation to undisturbed vegetation of the same type. The most widely used condition system is that defined by Keighery (1994):

1. Pristine: No obvious signs of disturbance.
2. Excellent: Vegetation structure intact; disturbance affecting individual species and weeds are non-aggressive.
3. Very Good: Vegetation structure altered; obvious signs of disturbance.
4. Good: Vegetation structure significantly altered by obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it.
5. Degraded: Basic vegetation structure severely impacted by disturbance. Scope for regeneration of vegetation structure, but not to a state approaching 'good' **condition** without intensive management.
6. Completely Degraded: The structure of the vegetation is no longer intact and the area is completely or almost completely without native species.

Other condition ratings commonly used are described in Bush Forever (Western Australian Planning Commission, 2000).

Conservation area is a term used in the *Environmental Protection Act 1986* to describe a conservation park, national park, nature reserve, marine nature reserve, marine park or marine management area within the meaning of the *Conservation and Land Management Act 1984* or any other land or waters reserved or managed for the purpose of, or purposes including, nature conservation.

Constrained areas, for the purpose of this document, are those defined within the:

- Perth Metropolitan Regional Scheme (and Bush Forever Study Area);
- Greater Bunbury Regional Scheme; and
- Peel Regional Scheme,

where there is a reasonable expectation that development will be able to proceed. This may include areas zoned urban, urban deferred or industrial zoned land. Regional schemes, town planning schemes and local planning strategies can be viewed on the Western Australian Planning Commission's website at <http://www.wapc.wa.gov.au/Region+schemes>.

Critical assets represent the most important environmental assets in the state that must be fully protected and conserved for the state to meet its statutory requirements and to remain sustainable in the longer term.

Declared rare flora refer to **rare flora**.

Depleted refer to **bioregional conservation status**.

Ecological community describes a naturally occurring biological assemblage that occurs in a particular type of habitat. Note: the scale at which ecological communities are defined will often depend on the level of detail in the information source, therefore no particular scale is specified (English and Blyth 1999).

Ecological linkage describes a network of native vegetation that maintain some ecological functions of natural areas and counter the effects of habitat fragmentation.

Ecological system diversity is the variety of habitats, biotic communities and ecological processes in a given area.

Ecological processes are the interactions, changes or evolutionary development processes of the ecosystem over time.

Ecosystem describes a dynamic complex of plant, animal, fungal, and microorganism communities and the associated non-living environment interacting as an ecological unit, including abiotic components, being partly determined by soil, parent material and climate.

Ecosystem diversity is the diversity of all living organisms and non-living components within a given area and their relationships.

Ecosystem services describes the processes by which the environment produces resources that provide benefits to humans e.g. flood and disease control, clean air.

Eutrophication is a natural process of accumulation of nutrients leading to increased or abnormal aquatic plant growth in lentic wetlands, rivers, harbours and estuaries. Human activities contributing fertilisers and other high nutrient wastes can speed up the process, leading to algal blooms and deterioration in water quality.

Environmental values are the particular values or uses of the environment that are important for a healthy ecosystem or for public benefit, welfare, safety or health and which requires protection from the effects of pollution and harm (ANZECC and ARMCANZ, 2000; see *Environmental Protection Act 1986*).

A **beneficial use**, in an environmental context, means the use of the environment which is:

- (a) conducive to public health or aesthetic enjoyment and which requires the protection from the effects of emissions or environmental harm; or
- (b) identified and declared within the *Environmental Protection Act 1986* to be a beneficial use to be protected under an approved policy.

An **ecosystem health condition** means a condition of the ecosystem that is:

- (a) relevant to the maintenance of ecological structure, ecological function or ecological process and which requires the protection from the effects of emissions or of environmental harm; or
- (b) identified and declared to be a beneficial use to be protected under an approved policy.

Fauna that is otherwise significant are defined as:

- Threatened / **specially protected fauna** as endorsed by the Minister;
- fauna species that are habitat specialists;
- wide-ranging fauna species with reduced populations in the **bioregion**;
- short-range endemic species;
- fauna species that have few populations in the **bioregion**;
- fauna species which have reduced ranges or few recent records in the **bioregion**; and/or
- internationally-listed migratory species.

Foreshore reserve means the foreshore area or watercourse **buffer** set aside as a reserve under planning legislation.

Fringing vegetation refers to the **riparian vegetation** adjacent to a water body and directly dependent on the proximity of a watercourse or wetland. **Riparian vegetation** may include both wetland and dryland vegetation. Wetland vegetation can tolerate some period of inundation and is typically found below the high water mark or within the floodway, for example flooded gums and paperbarks, and submerged and emergent species like rushes. Dryland vegetation is not tolerant of permanently or seasonally waterlogged conditions. **Riparian vegetation** provides many important functions including habitat for many aquatic and terrestrial species, stabilisation of the banks, energy dissipation, **ecological linkages**, and sediment and nutrient retention; it assists in maintaining the integrity of the watercourse or wetland in a number of ways.

Genetic diversity represents the heritable variation within and between populations of organisms. Variation of genes / genetic information contained in all individual plants, animals and micro-organisms both within and between populations of organisms that comprise individual species as well as between species. There are so many genes and different possible combinations of genes that for most types of organism every individual, population and species is genetically distinct.

High value asset/s represents those environmental assets that are in 'good' or better condition (refer to Appendix B for condition rating), are considered valuable by the community and/or government, but are not identified as 'critical'.

Landscape describes the physical environment made up of basic elements – climate, geology, topography, vegetation, fauna and humans – biophysical characteristics that can be used to identify differences between different **landscapes**.

Local area summarises the surrounding environment within a radius that varies with region and indicates the distance across which there is little change in a vegetation community. For example, in the mallee region of the south-west, a local area is typically a radius of 15 kilometres from the subject land. For **ecological communities** where there is rapid change over distance, such as the Lesueur and Fitzgerald River areas, a distance of five kilometres is more appropriate. In the Eremaean Province, a distance of 50 kilometres is recommended. This will need to be determined on a region and vegetation specific basis.

Meta-population describes a population of populations. A defined set of geographically separate populations with at least some exchange of individuals between the separate populations – in other words, systems of local populations connected by dispersing individuals.

Native vegetation means indigenous aquatic or terrestrial vegetation but does not include vegetation that was intentionally sown, planted or propagated unless (a) that vegetation was sown, planted or propagated as required under this Act or another written law; or (b) that vegetation is of a class declared by regulation to be included in this definition, and includes dead vegetation unless that dead vegetation is of a class declared by regulation to be excluded. Note that this definition includes non-vascular plants (e.g. mosses, fungi, algae) and marine plants (seagrass, macroalgae / seaweed).

Offset: An environmental offset is an off-site action or actions to address significant residual environmental impacts of a development or activity (see WA Environmental Offsets Policy)

Planning instrument means:

- (a) a scheme or a strategy, policy or plan made or adopted under a scheme;
- (b) a State planning policy approved under section 29 of the *Planning and Development Act 2005* and published in the *Gazette*; or
- (c) a local planning strategy made under the *Planning and Development Act 2005*.

Plant association is a vegetation unit that considers plant associations that have a similar physiognomy (a combination of vegetation structure and growth-form) independent of specific floristic composition, and is the component species with particular dominants of a given area. If the vegetation of another area has the same dominants it is in the same association.

Plant formation is the basic unit of vegetation as determined by the component species with particular dominants of a given area to define the **vegetation association** that considers plant associations that have a similar physiognomy (a combination of vegetation structure and growth-form), independent of specific floristic composition.

Priority ecological community means an ecological community that does not meet survey criteria for 'threatened' status or that are not adequately defined. They are listed by Parks and Wildlife under one of five categories ranked in order of priority for survey and/or definition of the community, and evaluation of conservation status, so that consideration can be given to their declaration as threatened ecological communities.

Priority fauna refers to conservation significant animal species listed by the Threatened Species Consultative Committee, but which are not currently listed under Section 14(2)(ab) of the *Wildlife Conservation Act 1950* as **specially protected fauna**.

Priority flora refers to plant taxa that are either under consideration by the Environment Minister for recommendation as **rare flora** but are in need of further survey to adequately determine their status, are adequately known but require ongoing monitoring to ensure their security does not decline, or are conservation dependent and require active management to maintain their status.

Protected area/s describes an area of land especially dedicated to the protection and maintenance of biological diversity and managed through legal and other effective means. (ICUN 1994).

Rare flora refers to flora that is declared rare in the current *Wildlife Conservation (Rare Flora) Notice* under section 23F of the *Wildlife Conservation Act 1950*.

Representativeness describes the extent to which areas selected for inclusion in the national reserves system are capable of reflecting the known biological diversity and ecological patterns and processes of the **ecological community** or ecosystem concerned (Commonwealth of Australia 1996).

Riparian vegetation means the distinctive vegetation associated with a wetland or watercourse. This vegetation is influenced by the passage and storage of water.

Significant flora are defined as:

- species that are confined to a specific area (ie endemic to the **bioregion**) or otherwise geographically restricted;
- distinctive local forms that have not been recognised taxonomically (not a species, subspecies or variety);
- populations that are outside the main geographic range (ie disjunct populations);
- populations at the end of the plant's geographic range;
- populations that represent a significant number of the known individuals of the taxon in the **bioregion**; or
- **priority flora** of priority 1 to 4 as listed by Parks and Wildlife – taxa that are under consideration as **rare flora** but are in need of further survey or continued monitoring.

Significant habitat/s refers to habitat that provides resources (breeding, resting and feeding), connectivity or habitat area for a species or community that is critical for its survival.

Specially protected fauna refers to fauna that is declared in the current gazetted *Wildlife Conservation (Specially Protected Fauna) Notice* under the *Wildlife Conservation Act 1950*.

Species diversity can be considered as the variety of individual species within a given area, such as a region. While such diversity can be measured in many ways, the number of species (species richness) is most often used. A more precise measurement of taxonomic diversity also considers the relationship of species to each other. The greater the difference between one species and another species, the greater its contribution to any overall measure of biological diversity. The ecological importance of a species can have a direct effect on community structure and thus on overall **biodiversity**. The variety of species increases with genetic change and evolutionary processes.

Suitably qualified person means a person with specific training and/or experience in a field of interest relating to Western Australian ecosystems and/or landscapes, e.g. flora and/or fauna identification, ecology, threatening processes, hydrology and land degradation.

Threatened ecological community means an ecological community listed, designated or declared under a written law or a law of the Commonwealth as threatened, endangered or vulnerable. In practice, these are those declared under section 51B of the EP Act as an environmentally sensitive area, and those under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*. Categories relating to the status of the threat to a particular community are determined following assessment, and are 'presumed totally destroyed', 'critically endangered', 'endangered' or 'vulnerable'.

Vegetation association / complex / type

Associations as defined by Beard (1980) are based on three principal characteristics of vegetation:

1. Floristic Composition: the species of plants, which comprise vegetation.
2. Vegetation Structure: the height of plants in layers, their shape and their spacing
3. Growth Form: the morphological characteristics of the component plants, such as woody or herbaceous, annual or perennial, thorny or succulent, evergreen or deciduous, and leaves of a certain texture, size and shape.

Complexes as defined by Heddle *et al* (1980) and Matiske and Havel (1998) are based on the pattern of vegetation at a regional scale as it reflects the underlying key determining factors of landforms, soils and climate.

Types as defined by Beard (1980) are mapped principally at the level of **plant formation** and most often at the 1:250,000 scale with minor attention to **plant associations** where they could be readily distinguished.

Watercourse means:

- (a) any river, creek, stream or brook in which water flows;
 - (b) any collection of water (including a reservoir) into, through or out of which any thing coming within paragraph (a) flows;
 - (c) any place where water flows that is prescribed by local by-laws to be a watercourse;
- and includes the bed and banks of any thing referred to in paragraph (a), (b) or (c).

For the purposes of this definition:

- (a) a 'flow' or 'collection' of water includes those that are intermittent or occasional;
- (b) a river, creek, stream or brook includes a conduit that wholly or partially diverts it from its natural course and forms part of the river, creek, stream or brook; and
- (c) it is immaterial that a river, creek, stream or brook or a natural collection of water may have been artificially improved or altered.

Watercourse or wetland buffer means land adjoining, or directly influencing a watercourse or wetland that is managed to protect watercourse and wetland values, including any riparian areas. It is basically an area outside a watercourse or wetland where clearing and certain activities are inappropriate. The size of the buffer area should take into account watercourse or wetland values, condition, pressures and responses to pressures.

Wetland means an area of seasonally, intermittently or permanently waterlogged or inundated land, whether natural or otherwise, and includes a lake, swamp, marsh, spring, dampland, tidal flat or estuary.

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Appendix A: Surveys and gathering additional information

During the preliminary assessment of a clearing application it may become apparent that insufficient information exists to make a confident determination of variance against one or more of the clearing principles. In this instance it will be necessary to obtain the additional information required by undertaking a survey and gathering additional information.

Where a site inspection, survey and gathering additional information is needed the scope of this will be determined on a case-by-case basis, but would be consistent with [*EPA Position Statement No.3 Terrestrial Biological Surveys as an Element of Biodiversity Protection*](#). This document outlines the EPA's principles for environmental impact assessment of biodiversity. The EPA sees proper understanding of the requirements of adequate surveys as central to achieving a sound assessment of biodiversity.

[*EPA Guidance Statement No.10*](#), [*EPA Guidance Statement No.51*](#), and [*EPA Guidance Statement No.56*](#) also provide guidance as to survey requirements.

Some key factors in using surveys to assess biodiversity include:

- the methodology used should be consistent with the approaches recommended by the EPA Guidance Statements No's 10, 51 and 56 – the methodology used, and any limitations of the surveys, should be outlined in the resulting report;
- the timing and time allocated should be determined by the natural cycles of the region (such as growth and flowering);
- the intensity of the sampling (number of sites; their spacing; and their area) should be based on the complexity of the flora, vegetation and faunal assemblages of the permit application area; and
- the level of effort should correspond with the existing data for that area, i.e. where less existing information is available, a greater survey effort would be required.

In undertaking a survey and gathering additional information, specific measures of diversity include the following.

Plant species

- total vascular plant taxa (species, subspecies and varieties) diversity; and
- vascular plant taxa diversity for each ecological community.

Fauna species

- total vertebrate and invertebrate fauna taxa (genera, species and subspecies) diversity.

Ecosystem diversity

- number of ecological communities (plant communities; fauna communities/assemblages);
- macrohabitat diversity;
- microhabitat diversity in each macrohabitat;
- a variety of soil types or geological formations; and
- micro-topographical diversity and edaphic variation.

Other aspects

It may be necessary to gather more detailed information on the physical aspects of an application, such as the extent of land degradation and possible hydrological changes as a result of an incidence clearing.

Appendix B: Determining vegetation condition

Bush Forever Volume 2 defines vegetation condition:

“Condition is a rating given to bushland to categorise disturbance related to human activities. This rating refers to the degree of change in the structure, density and species present in the bushland in relation to undisturbed bushland of the same type. Different people have used a series of scales of disturbance. Condition ratings used commonly in the Perth Metropolitan Region are described in Bush Forever Volume 2 (2000) and Keighery (1994)”.

In assessing the vegetation condition for clearing permit applications, assessors require the current condition of the vegetation. This can be provided by the applicant or identified by the assessor through a desktop and/or site analysis. Vegetation condition is rated using the scale in Table 2.

Where the vegetation under assessment is likely to have been unlawfully cleared prior to an application for a clearing permit being submitted, or is part of an investigation, the condition rating is based on the pre-clearing vegetation if this can be assessed. The pre-clearing vegetation condition is identified using a combination of desktop analysis and comparison of the condition of the same vegetation type adjoining or nearby the site.

Vegetation communities have the ability to regenerate following natural disturbance events to which the ecosystem is adapted (e.g. fire or flood). Regeneration occurs through the recruitment of seeds from the soil seedbank and physiological adaptations such as lignotubers and epicormic buds which allow resprouting to occur. Methods of regeneration are species specific and may allow the vegetation at a disturbed site to regenerate following disturbance. In addition, habitat values can be retained through disturbance events and have the ability to return with time. To ensure the vegetation's ability to regenerate is acknowledged in condition ratings, where a natural disturbance event has occurred, consideration is also given to the vegetation's regenerative capacity and environmental values of the site which have the ability to return with time without intervention.

In some situations it may be more appropriate to identify a range of condition ratings to acknowledge the current disturbances and ability to regenerate (e.g. degraded to very good).

Table 2. Vegetation Condition Scale (Keighery, 1994)

Condition Scale (Extract from Table 12 on page 48 of Bush Forever Volume 2 from Keighery B.J. (1994)2)	
Pristine	Pristine or nearly so, no obvious signs of disturbance.
Excellent	Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
Very Good	Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
Completely Degraded	The structure of the vegetation is no longer intact and the areas is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora composing weed or crop species with isolated native trees or shrubs.

ADVICE

1. Monitoring by the CEO

The *CEO* may monitor the implementation of clearing and other activities done under this Permit in order to determine whether the permit holder is complying with the conditions of this Permit. In the event that the *CEO* determines that the permit holder is not complying with one or more conditions of this Permit, the *CEO* may amend, suspend or revoke this Permit as the *CEO* considers necessary.

2. Reports

Reports provided by the permit holder to the *CEO* under Part VI of this Permit may be made publicly available.

3. Clearing likely to have a significant impact on the environment

The permit holder must ensure that it complies with any obligation under section 38(4) of the *EP Act* to refer to the *EPA* a *proposal* that appears to the permit holder to be likely, if implemented, to have a significant effect on the environment.

4. Cumulative impacts of clearing

In accordance with the intent of the *clearing principles* in Schedule 5 of the *EP Act*, the permit holder must consider the cumulative *impacts* of clearing of native vegetation done under this Permit and other clearing done in that *bioregion*. The cumulative *impacts* of clearing done under this Permit will be considered by the *CEO* annually upon receipt of the permit holder's reports pursuant to Part VI of this Permit, and this Permit may be amended as necessary.

5. Temporary clearing

The permit holder must ensure that, wherever possible, new *temporary works*, *camps* and rest areas are located in areas that have already been cleared of native vegetation.

6. Review of Assessment Procedure

If the permit holder amends its *Preliminary Environmental Impact Assessment Procedure – Clearing of Native Vegetation* in a manner that affects the assessment of the proposed clearing against the *clearing principles* in accordance with condition 5 of this Permit, the permit holder must provide a copy of that amended document to the *CEO* within 1 month of finalising the amendments. The *CEO* will consider whether the amended document is sufficient to meet the requirements of this Permit and, if so, the *CEO* may amend this Permit in accordance with section 51K of the *EP Act*.

7. Review of Environmental Guidelines

If the permit holder amends its *Drafting and Implementing Environmental Management Plans* in a manner that affects the environmental management plan prepared in accordance with condition 10 of this Permit, the permit holder must provide a copy of that amended document to the *CEO* within 1 month of finalising the amendments. The *CEO* will consider whether the amended document is sufficient to meet the requirements of this Permit and, if so, the *CEO* may amend this Permit in accordance with section 51K of the *EP Act*.

8. External Audit

When conducting an *external audit* under condition 19 of this Permit, the *lead environmental auditor* will determine which conditions of this Permit in respect of which he or she will conduct the audit.



1. Application details

1.1. Permit application details

Permit application No.: 185/9
Permit type: Purpose Permit

1.2. Applicant details

Applicant's name: Water Corporation
Application received date: 17 February 2022

1.3. Property details

Property: The State of Western Australia
Localities: Statewide

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	Purpose category:
N/A		Mechanical Removal	Infrastructure Maintenance

1.5. Decision on application

Decision on Permit Application: Granted
Decision Date: 19 April 2022

Reasons for Decision: This clearing permit amendment application was received on 17 February 2022 and has been made in order to extend the permit duration from 20 April 2022 to 20 April 2024.

In addition to extending the permit duration, the Delegated Officer determined that the following amendments to the existing permit conditions were also required to bring them in line with current departmental policies and procedures:

- The addition of condition 2(a)(iii), indicating that the permit does not authorise the permit holder to clear native vegetation for the purpose of maintaining the efficacy of the existing water services infrastructure where the clearing and the associated effect on the environment would be inconsistent with any approved policy (as defined in section 3 of the EP Act),
- Updates to conditions 2(b)-(c) to reflect changes in sections of the *Environmental Protection Act 1986* pursuant to the *Environmental Protection Act Amendment Bill 2020*,
- Minor updates to the wording of condition 5 and the addition of conditions 5(c)(iv), (vii) and (viii) to align with current departmental assessment procedures,
- Updates to the wording of condition 6 and the addition of conditions 6(c)(i), 6(c)(v) and 6(c)(viii), to improve transparency with stakeholders when seeking submissions,
- The addition of condition 7, to align with current departmental practices for seeking submissions,
- The addition of conditions 10(c)-(e), requiring the Environmental Management Plan (EMP) to be approved by the CEO where the impacts of the clearing are likely to be at variance or may be at variance with one or more of the clearing principles, to align with current departmental practices,
- The addition of conditions 11(c)-(d), requiring any changes to the approved Management Strategy to be approved by the CEO prior to implementation, to align with current departmental practices,
- Updates to the wording of condition 12 and the addition of conditions 12(f)-(h), explicitly requiring the Revegetation Plan to be approved by the CEO prior to implementation, to align with current departmental practices,
- The addition of conditions 13(b)-(c) to align with current departmental practices for dieback management,
- The addition of condition 14(a), to specify when an offset proposal must be prepared, aligning with current departmental practices,
- The addition of conditions 14(c)-(d), requiring any changes to the approved Offset Proposal to be approved by the CEO prior to implementation, to align with current departmental practices,
- The removal of condition 15, to reflect that offsets implemented under the permit are implemented in perpetuity or for the timeframe specified in the approved offset proposal, not just for the life of the permit,
- Updates to conditions 16 and 17 to align with current department practices for record keeping and reporting,

- Updates to the wording of condition 18 and the inclusion of condition 18(d) to explicitly require corrective action to address any non-compliances identified during internal environmental audits,
- Updates to condition 19 to align with current departmental practices for external environmental auditing
- Minor updates to the wording of existing conditions and definitions to align with current departmental procedures and policies, and
- Updates to and removal of Annexures, to reflect changes in Water Corporation procedures.

The Delegated Officer also took into consideration the requirement for Water Corporation to undertake project activities relating to the State's water services infrastructure, in order to maintain the efficacy of infrastructure and ensure the effective delivery of water services throughout the state.

The Delegated Officer determined that environmental impacts associated with clearing activities undertaken through the clearing permit can be appropriately mitigated and managed through the conditions imposed on the permit and are unlikely to lead to an unacceptable risk to the environment.

2. Site Information

Clearing Description:

The proposed amendment to Clearing Permit CPS 185/8 is for the purpose of extending the permit duration to 20 April 2024 and relates to clearing of native vegetation for project activities relating to the State's water services infrastructure.

Vegetation Condition:

As clearing is to occur state-wide, the condition of native vegetation to be cleared under this permit is likely to range from Completely Degraded to Excellent (Keighery, 1994) condition, described as:

- Completely Degraded: The structure of the vegetation is no longer intact, and the area is completely or almost without native species;
- Degraded: Basic vegetation structure severely impacted but disturbance. Scope for regeneration but not to a state approaching good condition without intensive management;
- Good: Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retain basic vegetation structure or ability to regenerate to it;
- Very Good: Vegetation structure altered, obvious signs of disturbance; and

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

3. Assessment of application against clearing principles and planning instruments and other matters

This assessment recognises the requirement for Water Corporation to undertake project activities relating to the State's water services infrastructure, as provided for under the *Water Corporation Act 1995*.

In determining the amount of native vegetation required to be cleared for project activities, Water Corporation is required to have regard to three principles as outlined under condition 4 of the clearing permit, being, avoid the clearing of native vegetation, minimise the amount of native vegetation to be cleared and reduce the impact of clearing on any environmental value.

Clearing for project activities will occur state-wide. Therefore, after adhering to condition 4, if clearing is still required, it is likely that some areas proposed to be cleared will:

- comprise a high level of biodiversity,
- comprise whole or part of, or be necessary for the maintenance of, a significant habitat for fauna,
- include or be necessary for the continued existence of, threatened flora,
- comprise the whole or a part of, or be necessary for the maintenance of a threatened ecological community,
- be a significant remnant of native vegetation in an area that has been extensively cleared,
- be growing in, or in association with, an environment associated with a watercourse or wetland,
- cause appreciable land degradation,
- will impact on the environmental value of adjacent or nearby conservation areas,
- cause deterioration in the quality of surface or underground water, and
- cause or exacerbate the incidence or intensity of flooding.

Where areas proposed to be cleared are identified in Water Corporation's desktop study as being seriously at variance, at variance or may be at variance, with one or more of the ten clearing principles listed in Schedule 5 of the *Environmental Protection Act 1986* (EP Act) or the information available is insufficient to allow Water Corporation to assess the proposed clearing against one or more of the clearing principles, then the assessment procedure set out in Part II of the clearing permit will require Water Corporation to:

- undertake an environmental impact assessment, including a biological survey, dieback survey, wetland field assessment and any other necessary surveys or field assessments to determine the impacts of the clearing;
- prepare, implement, and adhere to an environmental management plan to address the clearing impacts, in accordance with Part IV of the clearing permit; and
- seek submissions from relevant stakeholders and government organisations.

If Water Corporation's environmental impact assessment under Part II of the clearing permit determines that part or all of the clearing for a project activity is likely to be at variance with one or more of the clearing principles, Part III of the clearing permit will require Water Corporation to implement an offset in accordance with Part V of the clearing permit. If the proposed clearing is at variance with clearing principles (g), (i) or (j), then Part III of the clearing permit will require Water Corporation to implement a management strategy that is developed in consultation with the Commissioner of Soil and Land Conservation, to address the impacts of clearing on land degradation, in accordance with Part IV of the clearing permit.

Under conditions 11 and 12 of the clearing permit, Water Corporation will also be required to undertake weed and dieback management measures, including implementing specific dieback management measures or a dieback management plan developed in consultation with the Department of Biodiversity Conservation and Attractions where movement of soil in wet conditions is necessary, and to revegetate and rehabilitate areas that have been temporarily cleared, to reduce impacts.

The permit does not authorise clearing for any project activities if the clearing is likely to be seriously at variance with one or more of the clearing principles. If Water Corporation's environmental impact assessment determines that part or all of the clearing for a project is likely to be seriously at variance with one or more of the clearing principles, Water Corporation is required to apply to the CEO for a clearing permit in respect of that clearing.

In considering the above, the Delegated Officer determined that any environmental impacts associated with clearing activities under the clearing permit can be appropriately managed through the conditions imposed on the permit and are unlikely to lead to an unacceptable risk to the environment.

Planning instruments and other relevant matters.

Clearing Permit CPS 185/1 was granted to the Water Corporation on 20 March 2008 by the then Department of Environment. The clearing permit authorises the clearing of native vegetation for project activities relating to the State's water services infrastructure. The permit has since been amended seven times, with CPS 185/8 being the latest amendment.

CPS 185/8 was due to expire on 20 April 2022. This amendment was made by the applicant to extend the permit duration until 20 April 2023. The Delegated Officer considered that an extension to the duration of the permit by two years to 20 April 2024 was more appropriate to allow sufficient time to complete a review of the conditions and permit processes, whilst ensuring an efficient approvals pathway for project activities relating to the delivery of the State's water services infrastructure.

The clearing permit amendment application was advertised on the DWER website on 22 March 2022 with a 14-day submission period. No public submissions were received in relation to this application.

In reviewing the operation of CPS 185/8, the Delegated Officer considered that the clearing permit should meet community expectations with respect to transparency and protection of the environment, whilst also providing an efficient approvals pathway for important project activities relating to the State's water services infrastructure. To improve transparency with stakeholders, government organisations, and members of the public, the Delegated Officer determined that the following amendments to the permit conditions were required:

- The addition of condition 6(c)(viii), requiring a copy of Water Corporation's environmental impact assessment report to be provided to the relevant stakeholders when seeking submissions, and
- The addition of condition 19(g), requiring the lead environmental auditor's written reports of the external environmental audits to be made publicly available.

The remaining assessment against other *Relevant planning instruments and other matters* is unchanged and can be found in the Decision Reports prepared for Clearing Permits CPS 185/1 and CPS 185/2.

4. References

Keighery, B. J. (1994) *Bushland Plant Survey: A Guide to Plant Community Survey for the Community*. Wildflower Society of WA (Inc). Nedlands, Western Australia.