

# Determining wetland offset targets

Residual impact  
at development  
site

Water Resources &  
Ecosystem services

Habitat/ecosystem  
conservation

Species of  
conservation  
concern

Water Resources &  
Ecosystem services:

Habitat/ecosystem  
conservation

Species of  
conservation  
concern

Gains at  
offset site

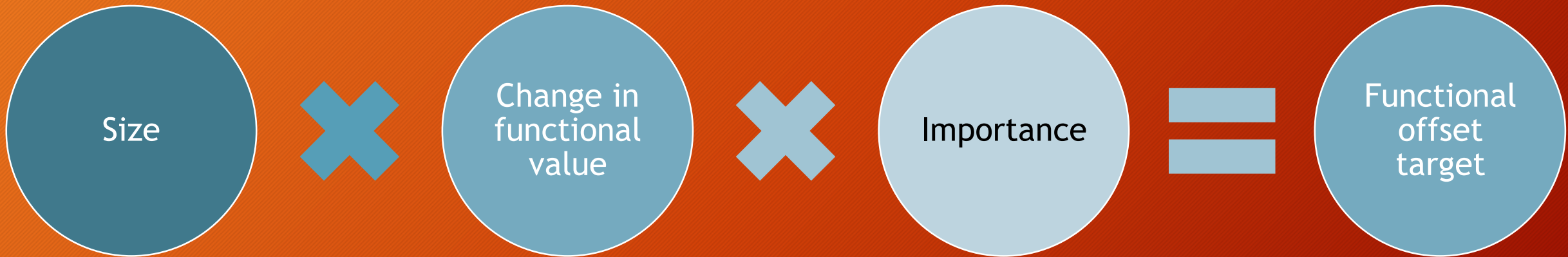
# Calculator to make it easier

## Determining wetland offset targets

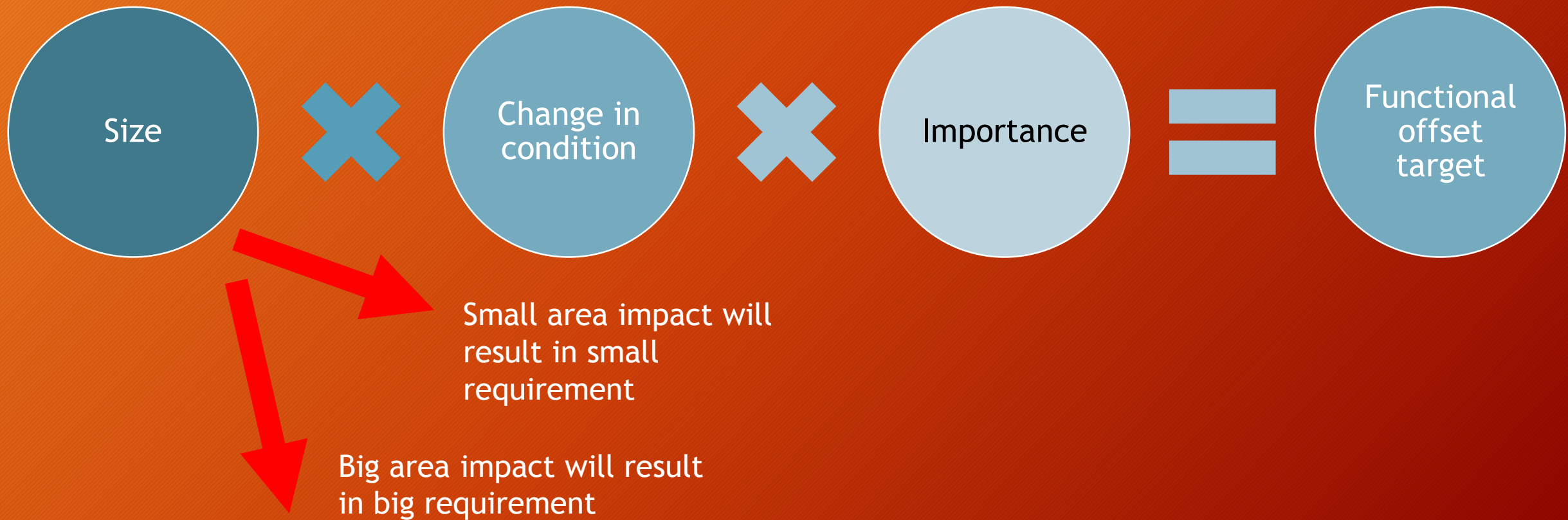
Note: Cells where information must be entered are highlighted in grey

|                        |                                                                                        |                                                                |      |
|------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------|------|
| Impact Assessment      | Prior to development                                                                   | Wetland size (ha)                                              | 0    |
|                        |                                                                                        | Functional value (%)                                           | 0    |
|                        | Post development                                                                       | Functional value (%)                                           | 0    |
|                        |                                                                                        | Change in functional value (%)                                 | 0    |
|                        | Key Regulating and Supporting Services Identified                                      |                                                                |      |
|                        | Development Impact (Functional hectare equivalents)                                    |                                                                | 0.0  |
| Offset calculation     | Offset Ratios                                                                          | Triggers for potential adjustment in exceptional circumstances | None |
|                        |                                                                                        | Functional Importance Ratio                                    | 1.0  |
|                        | Functional Offset Target (Functional hectare equivalents)                              |                                                                | 0.0  |
| Further considerations | Have other key Provisioning or Cultural Services Identified that require compensation? |                                                                |      |
|                        | Additional compensatory mechanisms proposed                                            |                                                                |      |

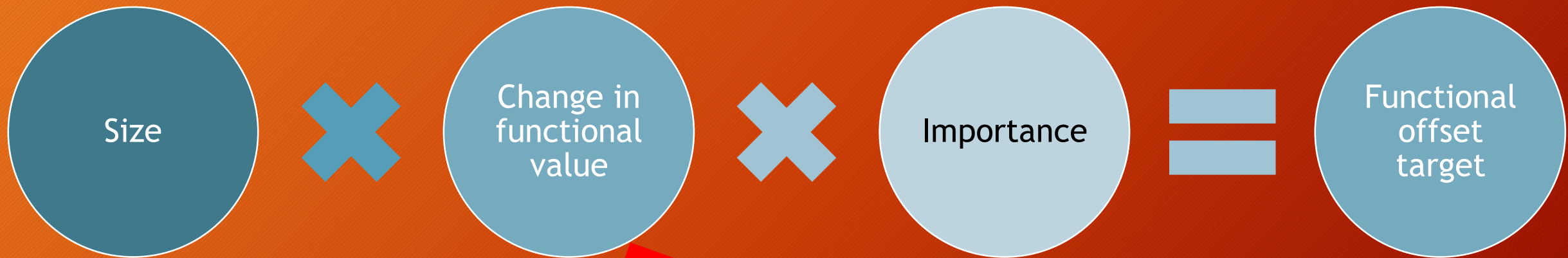
# Water resources and ecosystem services



# Water resources and ecosystem services



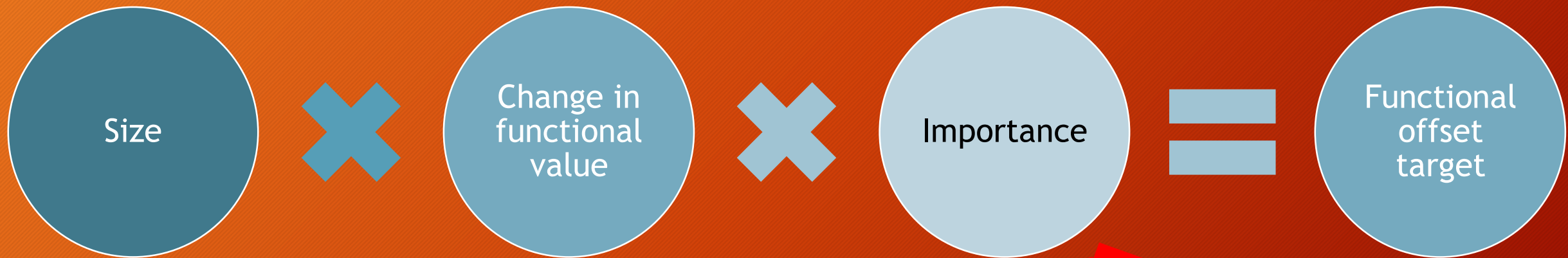
# Water resources and ecosystem services



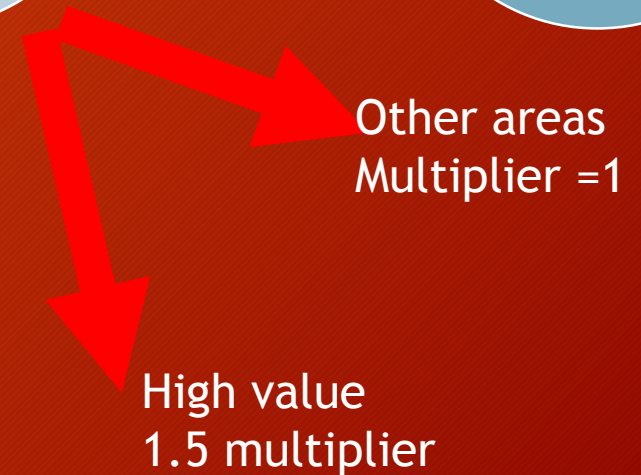
Pristine to destroyed = big target  
 $100\% - 0\% = 100\%$

Heavily impacted to more impacted = small target  
 $40\% - 30\% = 10\%$

# Water resources and ecosystem services



- Wetland loss in a strategic water resource area which could compromise water regulation / supply for downstream users;
- Wetland loss in areas of high water stress (e.g. a water stressed catchment as designated by DWA) where such loss could exacerbate the situation;
- Loss of wetlands providing critical flood attenuation, water quality enhancement or carbon sequestration functions that cannot be easily replaced.



# Water resources and ecosystem services

10ha



100% to  
start  
0% end  
100% loss



High  
importance  
1.5



15ha

10ha



30% to  
start  
0% to end  
30% loss

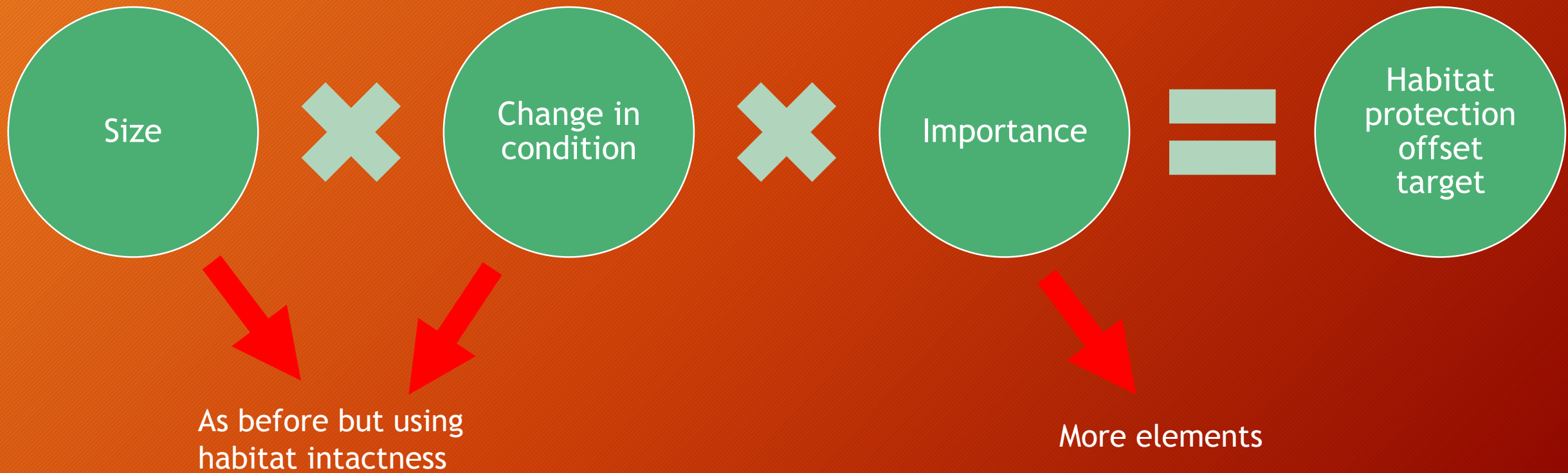


Normal  
Importance  
1

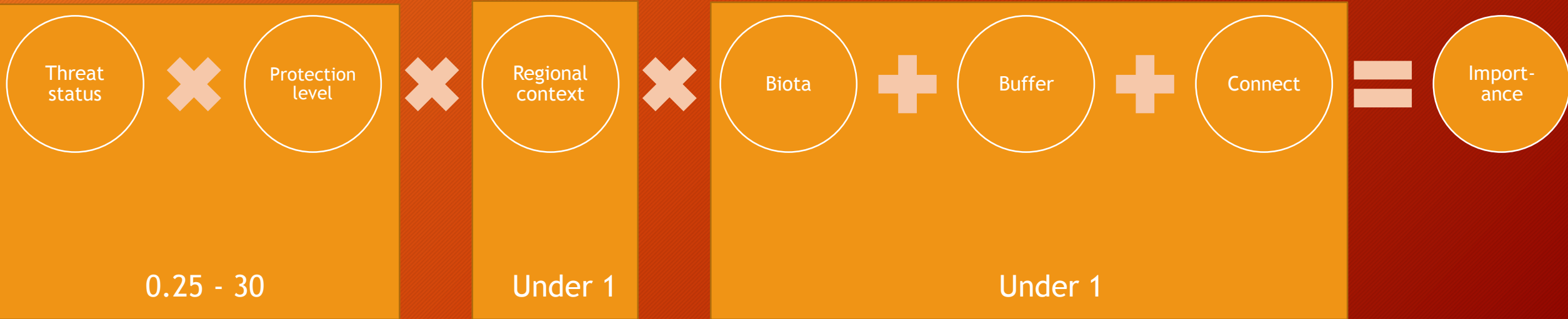


3ha

# Habitat Protection Targets



# Importance



Wetland Group

# Ecosystem status permutations

|                                    |                |
|------------------------------------|----------------|
| Threat status                      | LT             |
| Threat status Score                | 1              |
| Protection level                   | Well Protected |
| Protection level Score             | 0.25           |
| <b>Ecosystem Status Multiplier</b> | <b>0.25</b>    |

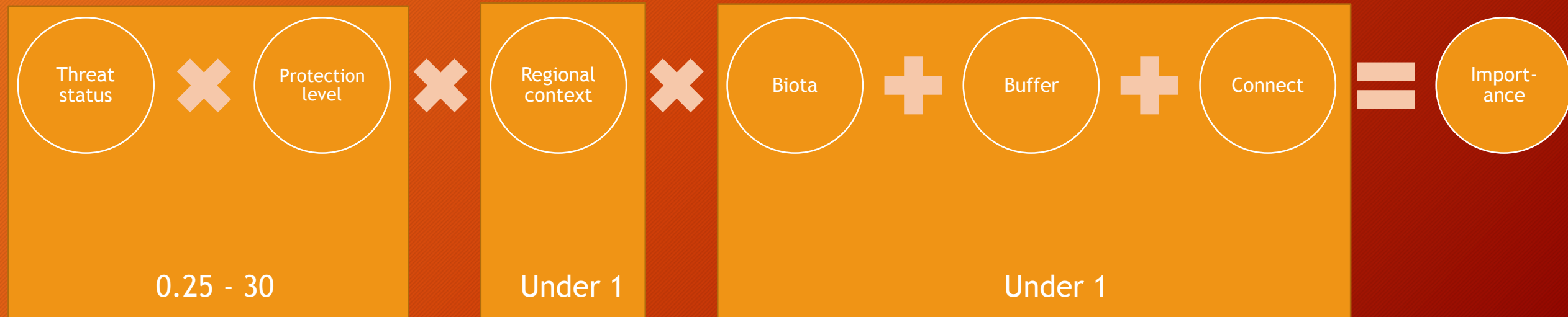
|                                    |               |
|------------------------------------|---------------|
| Threat status                      | CR            |
| Threat status Score                | 15            |
| Protection level                   | Not Protected |
| Protection level Score             | 2             |
| <b>Ecosystem Status Multiplier</b> | <b>30</b>     |

|                                    |                  |
|------------------------------------|------------------|
| Threat status                      | EN               |
| Threat status Score                | 7.5              |
| Protection level                   | Poorly Protected |
| Protection level Score             | 1                |
| <b>Ecosystem Status Multiplier</b> | <b>7.5</b>       |

|                                    |                      |
|------------------------------------|----------------------|
| Threat status                      | VU                   |
| Threat status Score                | 3                    |
| Protection level                   | Moderately Protected |
| Protection level Score             | 0.75                 |
| <b>Ecosystem Status Multiplier</b> | <b>2.25</b>          |

- Threat status: Critically Endangered = 15; Endangered = 7.5; Vulnerable = 3; Least Threatened = 1
- Protection level: Not Protected = 2; Poorly Protected = 1; Moderately Protected = 0.75; Well Protected = 0.25

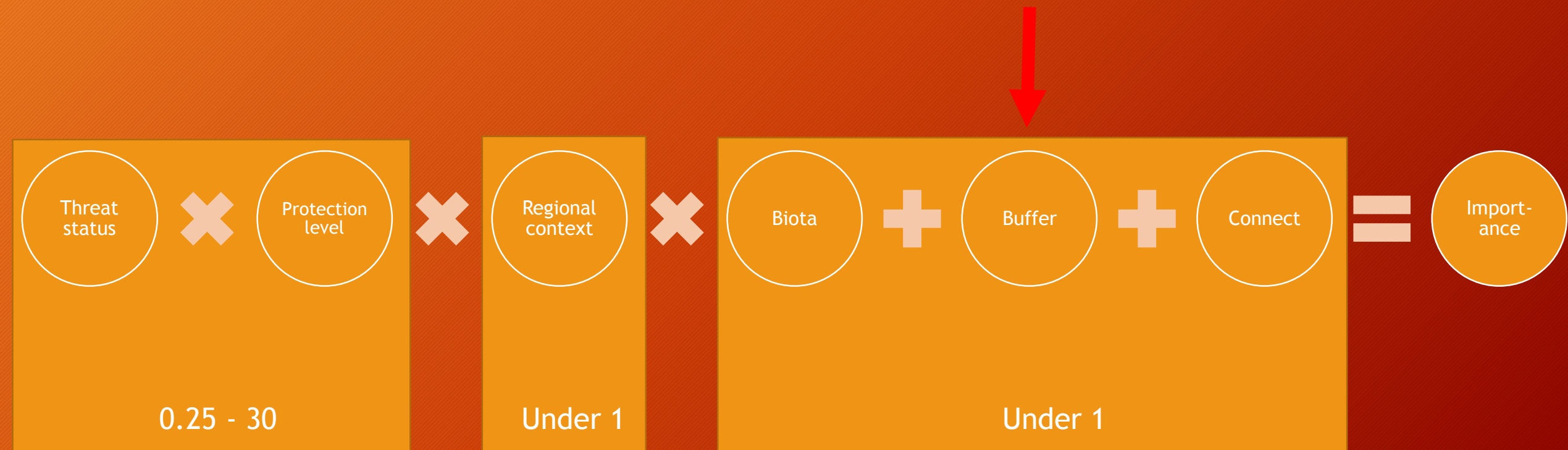
# Importance



# Regional and National Conservation context

| Importance class                         | Description                                                                                                                                     | Multiplier |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Not specifically identified as important | Not a priority wetland in a local or regional conservation plan. Not identified as a wetland priority or within a River FEPA catchment (FEPA1). | 0.5        |
| Moderate importance                      | ESA (Ecological Support Area) identified in a local or regional conservation plan or wetlands located within a River FEPA catchment (FEPA1).    | 0.75       |
| High importance                          | CBA (Critical Biodiversity Area) identified in a local or regional conservation plan or an identified Wetland FEPA.                             | 1.0        |

# Importance



# Local site attributes

Importance  
of biota  
0-1  
70% weight

+

Buffer  
0-1  
20% weight

+

Connection  
0-1  
10% weight



Local site  
attributes  
0-1



Poor sites will have a low ratio



Good sites will have a ratio near 1

# Uniqueness and importance of biota

| Biodiversity value class    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                             | Multiplier |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Low biodiversity value      | The wetland is characterised by low diversity and does not support any particularly important species or populations.                                                                                                                                                                                                                                                                                                                                   | 0.5        |
| Moderate biodiversity value | The wetland is characterised by vegetation and biota typical of the region but which is not particularly unique or diverse. Large populations of wetland-dependant species and / or important migration, breeding or feeding sites are absent from the wetland.                                                                                                                                                                                         | 0.75       |
| High biodiversity value     | The wetland is characterised by one or more special habitat or biodiversity attributes that makes the site important for local conservation efforts. This includes wetlands (i) supporting important populations of species of conservation concern; (ii) supporting large populations of wetland-dependant species; (iii) providing important migration, breeding or feeding sites; or (iv) characterised by unusually high natural habitat diversity. | 1.0        |

# The integrity of the buffer zone around the wetland

- Compatibility of buffer (500m unless otherwise determined)
- Weighted by area
  - If totally lost then value will come to 0
  - If totally intact then value will come to 1

- Can use values from NFEPA if you don't want to calculate this yourself or a simple measure of % transformed in buffer!!

| Broad Landcover Category | Compatibility Score |
|--------------------------|---------------------|
| Cultivated lands         | 0.5                 |
| Degraded natural habitat | 0.5                 |
| Eroded areas             | 0.25                |
| Intact natural habitat   | 1                   |
| Forest plantations       | 0.25                |
| Mines & quarries         | 0                   |
| Urban / built-up land    | 0                   |

# The degree to which the wetland is connected to other aquatic resources

- Discount for wetlands that are not well connected in the landscape

| Biodiversity value class | Description                                                                                                                                                                                          | Multiplier |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|
| Low connectivity         | The wetland has very little connection with other water resources in the landscape (e.g. Very high levels of fragmentation with few wetlands nearby).                                                | 0.5        |
| Moderate connectivity    | The wetland is moderately connected with other water resources in the landscape. (e.g. Moderate levels of fragmentation but with reasonable connectivity to intact wetlands and /or riparian zones). | 0.75       |
| Good connectivity        | The wetland is well connected with other water resources in the landscape. (e.g. Wetland clusters within 1 km of each other and embedded in a relatively natural landscape).                         | 1.0        |

|                                                           |                            |             |
|-----------------------------------------------------------|----------------------------|-------------|
| Uniqueness and importance of biota present in the wetland | Low biodiversity value     | 0.5         |
| Buffer zone integrity (within 500m of wetland)            | Buffer compatability score | 0           |
| Local connectivity                                        | Low connectivity           | 0.5         |
| <b>Local Context Multiplier</b>                           |                            | <b>0.40</b> |



|                                                           |                             |             |
|-----------------------------------------------------------|-----------------------------|-------------|
| Uniqueness and importance of biota present in the wetland | Moderate biodiversity value | 0.75        |
| Buffer zone integrity (within 500m of wetland)            | Buffer compatability score  | 0.5         |
| Local connectivity                                        | Moderate connectivity       | 0.75        |
| <b>Local Context Multiplier</b>                           |                             | <b>0.70</b> |

|                                                           |                            |            |
|-----------------------------------------------------------|----------------------------|------------|
| Uniqueness and importance of biota present in the wetland | High biodiversity value    | 1          |
| Buffer zone integrity (within 500m of wetland)            | Buffer compatability score | 1          |
| Local connectivity                                        | Good connectivity          | 1          |
| <b>Local Context Multiplier</b>                           |                            | <b>1.0</b> |



# Importance



|                   |                                                  |                                  |     |
|-------------------|--------------------------------------------------|----------------------------------|-----|
| Impact Assessment | Prior to development                             | Wetland size (ha)                | 1   |
|                   |                                                  | Habitat intactness (%)           | 100 |
|                   | Post development                                 | Habitat intactness (%)           | 0   |
|                   |                                                  | Change in habitat intactness (%) | 100 |
|                   | Development Impact (Habitat hectare equivalents) |                                  | 1   |

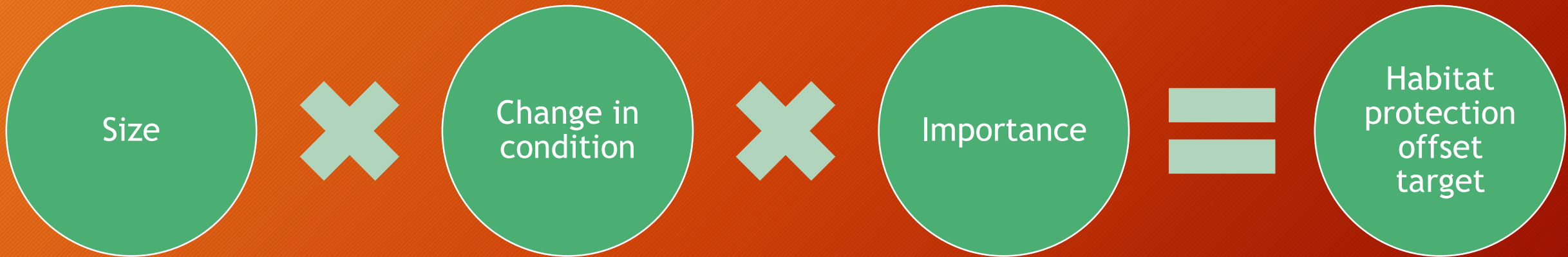
|                                                   |                |
|---------------------------------------------------|----------------|
| Threat status                                     | LT             |
| Threat status Score                               | 1              |
| Protection level                                  | Well Protected |
| Protection level Score                            | 0.25           |
| <b>Ecosystem Status Multiplier</b>                | <b>0.25</b>    |
| High Importance                                   | 1              |
| <b>Regional &amp; National Context Multiplier</b> | <b>1.0</b>     |
| High biodiversity value                           | 1              |
| Buffer compatability score                        | 1              |
| Good connectivity                                 | 1              |
| <b>Local Context Multiplier</b>                   | <b>1.00</b>    |
| <b>Ecosystem Conservation Ratio</b>               | <b>0.25</b>    |

|                                                   |                      |
|---------------------------------------------------|----------------------|
| Threat status                                     | EN                   |
| Threat status Score                               | 7.5                  |
| Protection level                                  | Moderately Protected |
| Protection level Score                            | 0.75                 |
| <b>Ecosystem Status Multiplier</b>                | <b>5.625</b>         |
| Moderate Importance                               | 0.75                 |
| <b>Regional &amp; National Context Multiplier</b> | <b>0.75</b>          |
| Moderate biodiversity value                       | 0.75                 |
| Buffer compatability score                        | 0.5                  |
| Low connectivity                                  | 0.5                  |
| <b>Local Context Multiplier</b>                   | <b>0.68</b>          |
| <b>Ecosystem Conservation Ratio</b>               | <b>2.85</b>          |

|                                                   |               |
|---------------------------------------------------|---------------|
| Threat status                                     | CR            |
| Threat status Score                               | 15            |
| Protection level                                  | Not Protected |
| Protection level Score                            | 2             |
| <b>Ecosystem Status Multiplier</b>                | <b>30</b>     |
| Not specifically identified as important          | 0.5           |
| <b>Regional &amp; National Context Multiplier</b> | <b>0.5</b>    |
| Low biodiversity value                            | 0.5           |
| Buffer compatability score                        | 0             |
| Low connectivity                                  | 0.5           |
| <b>Local Context Multiplier</b>                   | <b>0.40</b>   |
| <b>Ecosystem Conservation Ratio</b>               | <b>6.00</b>   |

|                                                   |               |
|---------------------------------------------------|---------------|
| Threat status                                     | CR            |
| Threat status Score                               | 15            |
| Protection level                                  | Not Protected |
| Protection level Score                            | 2             |
| <b>Ecosystem Status Multiplier</b>                | <b>30</b>     |
| High Importance                                   | 1             |
| <b>Regional &amp; National Context Multiplier</b> | <b>1.0</b>    |
| High biodiversity value                           | 1             |
| Buffer compatability score                        | 1             |
| Good connectivity                                 | 1             |
| <b>Local Context Multiplier</b>                   | <b>1.00</b>   |
| <b>Ecosystem Conservation Ratio</b>               | <b>30.00</b>  |

# Are you still with me?



# Species



- Set out principles - but needs a lot of nuance
- Each significant residual impact on threatened species needs to be examined

Residual impact  
at development  
site

Water Resources &  
Ecosystem services

Habitat/ecosystem  
conservation

Species of  
conservation  
concern

Water Resources &  
Ecosystem services:

Habitat/ecosystem  
conservation

Species of  
conservation  
concern

Gains at  
offset site



# Water resources and ecosystem services



# Some help in selecting suitable sites for rehabilitation

| Criterion                                         | Site attributes                                                                                                                 | Acceptability Guidelines |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Wetland type                                      | Wetland is of the same type as the impacted wetland.                                                                            | Ideal                    |
|                                                   | Wetland is of a different type to the impacted wetland.                                                                         | Acceptable               |
| Key services targeted                             | Selected wetland is well placed to contribute meaningfully towards improving key regulating and supporting services identified. | Ideal                    |
|                                                   | Selected wetland is reasonably placed to improve key regulating and supporting services identified.                             | Acceptable               |
|                                                   | Selected wetland is poorly placed to improve key regulating and supporting services identified.                                 | Generally unacceptable   |
| Offset site location relative to impacted wetland | Selected wetland is located within the same local catchment as the impacted wetland.                                            | Ideal                    |
|                                                   | Selected wetland is located within the same quaternary catchment.                                                               | Acceptable               |
|                                                   | Selected wetland is located within the same tertiary catchment.                                                                 | Generally unacceptable   |
|                                                   | Selected wetland is located in a different tertiary catchment.                                                                  | Generally unacceptable   |

# Risk – discourage risky activity

Averted loss is the same as rehab in terms of risk

|                                                                  |                                                                                                                                                                                                  |                             |                   |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|-------------------|
| Prior to offset activities                                       | Wetland size (ha)                                                                                                                                                                                | 100                         |                   |
|                                                                  | Functional value (%)                                                                                                                                                                             | 0                           |                   |
| Following successful offset implementation                       | Functional value (%)                                                                                                                                                                             | 100                         |                   |
|                                                                  | Change in functional value (%)                                                                                                                                                                   | 100                         |                   |
| Preliminary Offset Contribution (Functional hectare equivalents) |                                                                                                                                                                                                  | 100.0                       |                   |
| Criterion                                                        | Relevance                                                                                                                                                                                        | Offset activity             | Adjustment factor |
| Types of offset activities proposed                              | The risk of offset failure is linked to the type of offset activity planned with wetland establishment considered less preferable and more risky than rehabilitation or averted loss activities. | Rehabilitation & Protection | 0.66              |
| Final Offset Contribution (Functional hectare equivalents)       |                                                                                                                                                                                                  | 66.0                        |                   |

|                                                                  |                                                                                                                                                                                                  |                            |                   |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------|
| Prior to offset activities                                       | Wetland size (ha)                                                                                                                                                                                | 100                        |                   |
|                                                                  | Functional value (%)                                                                                                                                                                             | 0                          |                   |
| Following successful offset implementation                       | Functional value (%)                                                                                                                                                                             | 100                        |                   |
|                                                                  | Change in functional value (%)                                                                                                                                                                   | 100                        |                   |
| Preliminary Offset Contribution (Functional hectare equivalents) |                                                                                                                                                                                                  | 100.0                      |                   |
| Criterion                                                        | Relevance                                                                                                                                                                                        | Offset activity            | Adjustment factor |
| Types of offset activities proposed                              | The risk of offset failure is linked to the type of offset activity planned with wetland establishment considered less preferable and more risky than rehabilitation or averted loss activities. | Establishment & Protection | 0.33              |
| Final Offset Contribution (Functional hectare equivalents)       |                                                                                                                                                                                                  | 33.0                       |                   |

# Habitat protection gains - guidance on suitability

| Criterion          | Site attributes                                                                                                                                  | Acceptability Guidelines |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Like for Like      | Wetland is of the same wetland type within the same wetland vegetation group.                                                                    | Ideal                    |
|                    | Wetland is of an alternative wetland type of the same or higher threat status as the impacted wetland, within the same wetland vegetation group. | Acceptable               |
|                    | Wetland is of an alternative wetland type of a lower threat status within the same wetland vegetation group.                                     | Potentially acceptable   |
|                    | Wetland is of an alternative wetland type of a lower threat status in another wetland vegetation group (trading down).                           | Generally unacceptable   |
| Landscape planning | Wetlands have not been specifically identified as important in landscape planning.                                                               | May be acceptable        |
|                    | Wetlands have been identified as moderately important in landscape planning                                                                      | Acceptable               |
|                    | Wetlands have been identified as being of high importance in landscape planning                                                                  | Ideal                    |
| Wetland condition  | Final habitat condition is likely to be better than that of the impacted wetland.                                                                | Ideal                    |
|                    | Final habitat condition is likely to be as good as that of the impacted wetland.                                                                 | Acceptable               |
|                    | Final habitat condition is likely to be lower than that of the impacted wetland.                                                                 | Generally unacceptable   |

# Habitat protection gains - guidance on suitability

|                                              |                                                                                       |            |
|----------------------------------------------|---------------------------------------------------------------------------------------|------------|
| Local biodiversity value                     | The wetland is characterised by habitat and / species of high biodiversity value.     | Ideal      |
|                                              | The wetland is characterised by habitat and / species of moderate biodiversity value. | Acceptable |
|                                              | The wetland is characterised by habitat and / species of low biodiversity value.      | Not ideal  |
| Viability of maintaining conservation values | The offset provides an opportunity to consolidate / expand existing protected areas.  | Ideal      |
|                                              | The wetland is well connected to other intact natural areas.                          | Acceptable |
|                                              | The wetland is poorly connected with other intact ecosystems.                         | Not ideal  |

# Habitat protection gains

- Incentivize desirable activities
  - Protection of good condition wetlands
  - Protection of buffers
  - Long term secure protection

# Good condition wetlands

|                             |                                                           |             |
|-----------------------------|-----------------------------------------------------------|-------------|
| Wetland areas to be secured | Wetland size (ha)                                         | 100.0       |
|                             | Habitat intactness (%)                                    | 50          |
|                             | <b>Wetland habitat contribution (hectare equivalents)</b> | <b>50.0</b> |

|                             |                                                           |              |
|-----------------------------|-----------------------------------------------------------|--------------|
| Wetland areas to be secured | Wetland size (ha)                                         | 100.0        |
|                             | Habitat intactness (%)                                    | 100          |
|                             | <b>Wetland habitat contribution (hectare equivalents)</b> | <b>100.0</b> |

# Incentivize protection of buffers

- Buffer must be intact and secured
- The better the condition the buffer the more credit (same calculation as at impacted site)
- We want to secure buffers but still want it to be a wetland offset:
  - 25% of the buffer area contributes
  - Value capped at 50% of the contribution from the wetland

# Incentivize protection of buffers

|                             |                                                                 |              |
|-----------------------------|-----------------------------------------------------------------|--------------|
| Wetland areas to be secured | Wetland size (ha)                                               | 100.0        |
|                             | Habitat intactness (%)                                          | 100          |
|                             | <b>Wetland habitat contribution (hectare equivalents)</b>       | <b>100.0</b> |
| Buffer zones to be secured  | Area of wetland buffer zone included in the wetland offset site | 500          |
|                             | Integrity of buffer zone                                        | 1            |
|                             | Buffer zone hectare equivalents                                 | 125.0        |
|                             | <b>Buffer zone contribution (hectare equivalents)</b>           | <b>50.0</b>  |
| Buffer zones to be secured  | Area of wetland buffer zone included in the wetland offset site | 100          |
|                             | Integrity of buffer zone                                        | 0.6          |
|                             | Buffer zone hectare equivalents                                 | 15.0         |
|                             | <b>Buffer zone contribution (hectare equivalents)</b>           | <b>15.0</b>  |

# Incentivize high quality protection

| Planned protection measures                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                    | Adjustment factor |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Minimum acceptable security of tenure for shortest acceptable period | Wetland is secured through a legal mechanism such as a conservation servitude on the title deed which prevents change of land use to a type incompatible with maintaining desired wetland offset state for at least 30 years or the specific project life.                                                                                                                                                                     | 1.0               |
| Minimum acceptable security of tenure for a longer period            | Wetland receives full legal protection through a legal mechanism such as a conservation servitude on the title deed which prevents change of land use to a type incompatible with maintaining desired wetland offset state for at least 99 years.                                                                                                                                                                              | 1.5               |
| Highest possible level of protection permanently secured             | Wetland receives full legal protection through permanent inclusion in and declaration as (part of) a Nature Reserve or area of equivalent status under NEMPAA, or alternatively securing the site through other legal mechanisms such as a conservation servitude on the title deed in combination with long term contractual obligations to manage and maintain the site as if it was a declared Protected Area under NEMPAA. | 2                 |

# Example (1)

|                             |                                                                                                                                                                            |                                                                      |                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------|
| Wetland areas to be secured | Wetland size (ha)                                                                                                                                                          | 100.0                                                                |                          |
|                             | Habitat intactness (%)                                                                                                                                                     | 100                                                                  |                          |
|                             | <b>Wetland habitat contribution (hectare equivalents)</b>                                                                                                                  | 100.0                                                                |                          |
| Buffer zones to be secured  | Area of wetland buffer zone included in the wetland offset site                                                                                                            | 0                                                                    |                          |
|                             | Integrity of buffer zone                                                                                                                                                   | 1                                                                    |                          |
|                             | Buffer zone hectare equivalents                                                                                                                                            | 0.0                                                                  |                          |
|                             | <b>Buffer zone contribution (hectare equivalents)</b>                                                                                                                      | 0.0                                                                  |                          |
| <b>Criterion</b>            | <b>Relevance</b>                                                                                                                                                           | <b>Site attributes</b>                                               | <b>Adjustment factor</b> |
| Security of tenure          | Offset activities that formally secure offset sites for longer than the minimum requirement are more likely to be maintained in the long-term and are therefore preferred. | Minimum acceptable security of tenure for shortest acceptable period | 1                        |
| <b>Offset Contributions</b> | Wetland habitat contribution (hectare equivalents)                                                                                                                         | 100.0                                                                |                          |
|                             | Buffer zone contribution (hectare equivalents)                                                                                                                             | 0.0                                                                  |                          |
|                             | <b>Functional Offset Contribution (hectare equivalents)</b>                                                                                                                | 100.0                                                                |                          |

# Example (1 with buffer)

|                             |                                                                                                                                                                            |                                                                      |                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------|
| Wetland areas to be secured | Wetland size (ha)                                                                                                                                                          | 100.0                                                                |                          |
|                             | Habitat intactness (%)                                                                                                                                                     | 100                                                                  |                          |
|                             | <b>Wetland habitat contribution (hectare equivalents)</b>                                                                                                                  | 100.0                                                                |                          |
| Buffer zones to be secured  | Area of wetland buffer zone included in the wetland offset site                                                                                                            | 100                                                                  |                          |
|                             | Integrity of buffer zone                                                                                                                                                   | 1                                                                    |                          |
|                             | Buffer zone hectare equivalents                                                                                                                                            | 25.0                                                                 |                          |
|                             | <b>Buffer zone contribution (hectare equivalents)</b>                                                                                                                      | 25.0                                                                 |                          |
| <b>Criterion</b>            | <b>Relevance</b>                                                                                                                                                           | <b>Site attributes</b>                                               | <b>Adjustment factor</b> |
| Security of tenure          | Offset activities that formally secure offset sites for longer than the minimum requirement are more likely to be maintained in the long-term and are therefore preferred. | Minimum acceptable security of tenure for shortest acceptable period | 1                        |
| <b>Offset Contributions</b> | Wetland habitat contribution (hectare equivalents)                                                                                                                         | 100.0                                                                |                          |
|                             | Buffer zone contribution (hectare equivalents)                                                                                                                             | 25.0                                                                 |                          |
|                             | <b>Functional Offset Contribution (hectare equivalents)</b>                                                                                                                | 125.0                                                                |                          |

# Example (1 with buffer and better protection)

|                             |                                                                                                                                                                            |                                                          |                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------|
| Wetland areas to be secured | Wetland size (ha)                                                                                                                                                          | 100.0                                                    |                          |
|                             | Habitat intactness (%)                                                                                                                                                     | 100                                                      |                          |
|                             | <b>Wetland habitat contribution (hectare equivalents)</b>                                                                                                                  | 100.0                                                    |                          |
| Buffer zones to be secured  | Area of wetland buffer zone included in the wetland offset site                                                                                                            | 100                                                      |                          |
|                             | Integrity of buffer zone                                                                                                                                                   | 1                                                        |                          |
|                             | Buffer zone hectare equivalents                                                                                                                                            | 25.0                                                     |                          |
|                             | <b>Buffer zone contribution (hectare equivalents)</b>                                                                                                                      | 25.0                                                     |                          |
| <b>Criterion</b>            | <b>Relevance</b>                                                                                                                                                           | <b>Site attributes</b>                                   | <b>Adjustment factor</b> |
| Security of tenure          | Offset activities that formally secure offset sites for longer than the minimum requirement are more likely to be maintained in the long-term and are therefore preferred. | Highest possible level of protection permanently secured | 2                        |
| <b>Offset Contributions</b> | Wetland habitat contribution (hectare equivalents)                                                                                                                         | 200.0                                                    |                          |
|                             | Buffer zone contribution (hectare equivalents)                                                                                                                             | 50.0                                                     |                          |
|                             | <b>Functional Offset Contribution (hectare equivalents)</b>                                                                                                                | 250.0                                                    |                          |

# Example (1 with big buffer)

|                             |                                                                                                                                                                            |                                                          |                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|--------------------------|
| Wetland areas to be secured | Wetland size (ha)                                                                                                                                                          | 100.0                                                    |                          |
|                             | Habitat intactness (%)                                                                                                                                                     | 100                                                      |                          |
|                             | <b>Wetland habitat contribution (hectare equivalents)</b>                                                                                                                  | 100.0                                                    |                          |
| Buffer zones to be secured  | Area of wetland buffer zone included in the wetland offset site                                                                                                            | 1000                                                     |                          |
|                             | Integrity of buffer zone                                                                                                                                                   | 1                                                        |                          |
|                             | Buffer zone hectare equivalents                                                                                                                                            | 250.0                                                    |                          |
|                             | <b>Buffer zone contribution (hectare equivalents)</b>                                                                                                                      | 50.0                                                     |                          |
| <b>Criterion</b>            | <b>Relevance</b>                                                                                                                                                           | <b>Site attributes</b>                                   | <b>Adjustment factor</b> |
| Security of tenure          | Offset activities that formally secure offset sites for longer than the minimum requirement are more likely to be maintained in the long-term and are therefore preferred. | Highest possible level of protection permanently secured | 2                        |
| <b>Offset Contributions</b> | Wetland habitat contribution (hectare equivalents)                                                                                                                         | 200.0                                                    |                          |
|                             | Buffer zone contribution (hectare equivalents)                                                                                                                             | 100.0                                                    |                          |
|                             | <b>Functional Offset Contribution (hectare equivalents)</b>                                                                                                                | 300.0                                                    |                          |

# Examples (1 with minimum protection)

|                             |                                                                                                                                                                            |                                                                      |                          |
|-----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|--------------------------|
| Wetland areas to be secured | Wetland size (ha)                                                                                                                                                          | 100.0                                                                |                          |
|                             | Habitat intactness (%)                                                                                                                                                     | 100                                                                  |                          |
|                             | <b>Wetland habitat contribution (hectare equivalents)</b>                                                                                                                  | 100.0                                                                |                          |
| Buffer zones to be secured  | Area of wetland buffer zone included in the wetland offset site                                                                                                            | 100                                                                  |                          |
|                             | Integrity of buffer zone                                                                                                                                                   | 1                                                                    |                          |
|                             | Buffer zone hectare equivalents                                                                                                                                            | 25.0                                                                 |                          |
|                             | <b>Buffer zone contribution (hectare equivalents)</b>                                                                                                                      | 25.0                                                                 |                          |
| <b>Criterion</b>            | <b>Relevance</b>                                                                                                                                                           | <b>Site attributes</b>                                               | <b>Adjustment factor</b> |
| Security of tenure          | Offset activities that formally secure offset sites for longer than the minimum requirement are more likely to be maintained in the long-term and are therefore preferred. | Minimum acceptable security of tenure for shortest acceptable period | 1                        |
| <b>Offset Contributions</b> | Wetland habitat contribution (hectare equivalents)                                                                                                                         | 100.0                                                                |                          |
|                             | Buffer zone contribution (hectare equivalents)                                                                                                                             | 25.0                                                                 |                          |
|                             | <b>Functional Offset Contribution (hectare equivalents)</b>                                                                                                                | 125.0                                                                |                          |

# Species

- Similar principles
- Evaluate gains against specific species targets
- Take risk into account
- Incentivize high quality protection



# Species - incentivize high quality protection

| Planned protection measures                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                    | Adjustment factor |
|----------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Minimum acceptable security of tenure for shortest acceptable period | Wetland is secured through a legal mechanism such as a conservation servitude on the title deed which prevents change of land use to a type incompatible with maintaining desired wetland offset state for at least 30 years or the specific project life.                                                                                                                                                                     | 1.0               |
| Minimum acceptable security of tenure for a longer period            | Wetland receives full legal protection through a legal mechanism such as a conservation servitude on the title deed which prevents change of land use to a type incompatible with maintaining desired wetland offset state for at least 99 years.                                                                                                                                                                              | 1.5               |
| Highest possible level of protection permanently secured             | Wetland receives full legal protection through permanent inclusion in and declaration as (part of) a Nature Reserve or area of equivalent status under NEMPAA, or alternatively securing the site through other legal mechanisms such as a conservation servitude on the title deed in combination with long term contractual obligations to manage and maintain the site as if it was a declared Protected Area under NEMPAA. | 2                 |

# Species - take risk into account

| Risk Class  | Example of offset activities                                                                                                                                                                                                          | Adjustment factor |
|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| Low risk    | Protection of a site already supporting a viable population of the targeted species.                                                                                                                                                  | 1                 |
| Medium risk | Site already supports suitable habitat with re-introductions planned together with supporting management to establish a viable population of the species.                                                                             | 0.5               |
| High risk   | Site requiring a high level of rehabilitation in order to provide suitable habitat and / or risks associated with re-establishment of populations is high based on the characteristics of the species and population characteristics. | 0.25              |

# Key changes in ratios and approaches

## Impact site

- Stronger adjustment for condition and local characteristics
- Less focus on broader national metrics
- Stronger water resource focus
- Aggregated at the group level
- Better alignment with conservation plans etc
- Still have high ratios for pristine sites in highest value areas but we have far lower ratios for other sites and impacted sites

## Receiving site

- Significant discounts for better protection
- Credits for buffers
- Favour less risky activities
- Effectively more exchangeability

# Summary

Residual impact  
at development  
site

Water Resources &  
Ecosystem services

Habitat/ecosystem  
conservation

Species of  
conservation  
concern

Water Resources &  
Ecosystem services:

Habitat/ecosystem  
conservation

Species of  
conservation  
concern

Gains at  
offset site

