Australian Government

Queensland
Wetlands Program

Queensland
Government

Wetland Mapping and Classification Methodology

Overall Framework

A Method to Provide Baseline Mapping and Classification for Wetlands in Queensland

VERSION 1.2

Attachment 7j

Separation of Riverine, Palustrine and Lacustrine – Perimeter^2:Area Ratio

Contents

1. The Purpose

Where a water body has less than 20 percent of its area located within a channel, the perimeter^2:area ratio provides a good indication of the linear nature of the feature, which in turn provides an indication of whether the wetland is riverine (linear) or palustrine/lacustrine (non-linear).

2. The Process

It is common to examine the relationship between perimeter and area of an object to make an assessment of its shape. This technique continues to be used across many disciplines including geometry, geology, landscape ecology, medical sciences and pathology.

When calculated as perimeter^2/area, the ratio is designed to produce a dimensionless measure of the shape. The object's ratio then is not influenced by size and can be interpreted, strictly, as a size-independent index of shape. When calculated as perimeter/area, objects with the same shape but different sizes will have different ratios.

Example:

Square
5m x 5m

Square
8m x 8m
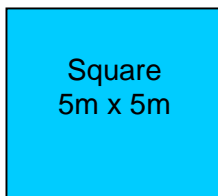
P = 20 m
A = 25 m^2
P/A = 0.8
P^2/A = **16**
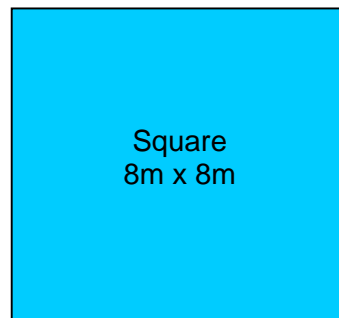
P = 32 m
A = 64 m^2
P/A = 0.5
P^2/A = **16**

This relationship is widely discussed through the mathematical, biostatistical and ecological literature.

Mapping Rule
If the perimeter^2 to area ratio is greater than or equal to 65 then the water body is elongated and classified as riverine. If the perimeter^2 to area ratio is less than 65 then it is attributed with lacustrine/palustrine and is further assessed during the intersection with regional ecosystems.

For further technical information please refer to the Technical Specifications and Data Recording Standards (Decision Rule 11 in the main text of the Method).