



## Standardised soil moisture deficit 1990-1991

### Metadata

#### File Identifier

8e79899d-b915-cc03-94f4-4f3b341384c6

#### Language

eng

#### Character Set

##### Character Set Code

utf8

#### Hierarchy Level

##### Scope Code

dataset

#### Hierarchy Level Name

dataset

### Contact

#### Responsible Party

##### Organisation Name

Environmental Reporting, Ministry for the Environment and Statistics New Zealand

##### Position Name

Analyst

#### Contact Info

##### Contact

##### Address

##### Address

##### Delivery Point

23 Kate Sheppard Place, PO Box 10362

##### City

Wellington 6143

##### Country

New Zealand

##### Electronic Mail Address

Environmental.Reporting@mfe.govt.nz

#### Role

##### Role Code

distributor

### Date Stamp

#### Date

2016-01-27

### Metadata Standard Name

ANZLIC Metadata Profile: An Australian/New Zealand Profile of AS/NZS ISO 19115:2005, Geographic information - Metadata

### Metadata Standard Version

1.1

### Reference System Info

#### Reference System

##### Reference System Identifier

##### Identifier

##### Code

## Identification Info

### Data Identification

#### Citation

##### Citation

##### Title

Standardised soil moisture deficit 1990-1991

##### Date

### Abstract

"Soil moisture is important for plant growth. A lack of moisture content over a growing season is a good indicator of drought, which can have social, environmental, and economic impacts. Increasing temperatures and changes in rainfall patterns are expected to increase the frequency and intensity of drought in many regions. Growing season soil moisture deficits are estimated by the potential evapotranspiration deficit, the difference between rainfall and evapotranspiration. This layer shows the standardised annual soil moisture (potential evapotranspiration deficit (PED)) across New Zealand for 1990 as part of the data series for years 1972 to 2013. Evapotranspiration is the loss of water by evaporation and plant transpiration. PED is the difference between estimated evapotranspiration and rainfall. We produced maps of the standardised annual PED (the departure from the 1981-2010 average, divided by the 1981-2010 standard deviation) were produced for every growing season (calculated as July-June years) from 1972 to 2013. Care should be taken when comparing maps from year to year - days may be missing from the PED GIS data, and data may have been interpolated to complete the dataset. The interpolation accuracy is lowest in areas of high elevation, where there are fewer climate stations and complex terrain affects accuracy. Climate stations may also open and close, affecting the accuracy of the data provided. This dataset relates to the "Soil moisture and drought" measure on the Environmental Indicators, Te taiao Aotearoa website.

### Status

#### Progress Code

completed

### Point Of Contact

#### Responsible Party

##### Organisation Name

Environmental Reporting, Ministry for the Environment and Statistics New Zealand

##### Position Name

Analyst

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#### Role

##### Role Code

distributor

### Resource Maintenance

#### Maintenance Information

##### Maintenance And Update Frequency

##### Maintenance Frequency Code

irregular

### Resource Format

#### Format

Name  
|.xml

Version  
|Unknown

## Descriptive Keywords

### Keywords

Keyword  
|New Zealand

Type  
|Keyword Type Code  
|theme

### Thesaurus Name

Citation  
|Title  
|ANZLIC Jurisdictions

Date

Edition  
|Version 2.1

Edition Date  
|Date  
|2008-10-29

Identifier  
|Identifier  
|Code  
|<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-jurisdic.xml#anzlic-jurisdic>

Cited Responsible Party  
|Responsible Party  
|Organisation Name  
|ANZLIC the Spatial Information Council

Role  
|Role Code  
|custodian

## Descriptive Keywords

### Keywords

Keyword  
|CLIMATE-AND-WEATHER

Keyword  
|CLIMATE-AND-WEATHER-Rainfall

Keyword  
|SOIL

Keyword  
|HAZARDS-Drought

Keyword  
|CLIMATE-AND-WEATHER-Drought

Type  
|Keyword Type Code  
|theme

### Thesaurus Name

Citation  
|Title  
|ANZLIC Search Words

Date

Edition

Version 2.1

Edition Date

Date

2008-05-16

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-theme.xml#anzlic-theme>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role

Role Code

custodian

Resource Constraints

Legal Constraints

Use Limitation

Creative Commons Attribution 3.0 New Zealand by Ministry for the Environment

Access Constraints

Restriction Code

license

Resource Constraints

Legal Constraints

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Restriction Code

license

Language

eng

Character Set

Character Set Code

utf8

Topic Category Code

environment

Extent

EX\_ Extent

Geographic Element

EX\_ Geographic Description

Identifier

Authority

Citation

Title

ANZMet Lite Country codelist

Date

Edition

Version 1.0

Edition Date

Date

2009-03-31

Identifier

Identifier

Code

<http://asdd.ga.gov.au/asdd/profileinfo/anzlic-country.xml#Country>

Cited Responsible Party

Responsible Party

Organisation Name

ANZLIC the Spatial Information Council

Role

Role Code

custodian

Code

nzl

Extent

EX\_ Extent

Geographic Element

EX\_ Geographic Bounding Box

164.87562896179.99254331-47.3872810785-34.1529060945

Distribution Info

Distribution

Transfer Options

Digital Transfer Options

On Line

Online Resource

Linkage

URL

<https://data.mfe.govt.nz/layer/53073-standardised-soil-moisture-deficit-1990-1991/>

Data Quality Info

DQ\_ Data Quality

Scope

DQ\_ Scope

Level

Scope Code

dataset

Level Description

Scope Description

Other

dataset

Lineage

LI\_ Lineage

Statement

Source: National Institute for Water and Atmospheric Research Method: "Potential evapotranspiration deficit (PED) is the difference between potential evapotranspiration and actual evapotranspiration. Maps of the standardised annual PED (the departure from the 1981-2010 average divided by the 1981-2010 standard deviation, no units) were produced for every growing-season, July to June year, from 1972 to 2013. Soil needs to be moist enough to allow plants to grow. Evapotranspiration is the process whereby water held in the soil is gradually released to the atmosphere through a combination of direct evaporation and transpiration from plants. Over the course of a growing season, the amount of water lost from the soil through evapotranspiration typically exceeds rainfall. This causes an increase in soil moisture deficit. As soil moisture decreases, pasture production becomes constrained, and evapotranspiration decreases. The amount of evapotranspiration falls below what could potentially occur if there were sufficient soil moisture (potential evapotranspiration) (Porteous et al., 1994). Some areas of the country always have an annual PED total of 0. These areas are high elevation regions (e.g., in the Southern Alps). At these locations, it is not possible to generate a standardised annual PED value because the standard deviation is 0 (i.e., there is a 'divide-by-0' problem). The Geographic Information Systems (GIS) datasets show 'No Data' for these grid cells. The accuracy of the data source is of high quality.

References: Porteous, AS, Basher, RE, & Salinger, MJ (1994). Calibration and performance of the single-layer soil water balance model for pasture sites. New Zealand Journal of Agricultural Research, 37(1), 107-118, DOI: 10.1080/00288233.1994.9513047. Available from [www.tandfonline.com](http://www.tandfonline.com)."

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