



## Growing season soil moisture deficit, 2002-2003

### Metadata

#### File Identifier

ab4eb05b-a162-b418-4c07-8d071816c35a

#### 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

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23 Kate Sheppard Place, PO Box 10362

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Wellington 6143

##### Country

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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**

2193

**Identification Info****Data Identification****Citation****Citation****Title**

Growing season soil moisture deficit, 2002-2003

**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 dataset is one of a series that show annual average soil moisture (potential evapotranspiration deficit (PED)) across New Zealand for years 1972 to 2014. 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 annual PED total (in millimetres) 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. Geometry: raster catalogue Unit: mm/y r For more information see DATA QUALITY INFORMATION FOR AVERAGE GROWING SEASON SOIL MOISTURE DEFICIT.."

**Status****Progress Code**

completed

**Point Of Contact****Responsible Party****Organisation Name**

Environmental Reporting, Ministry for the Environment and Statistics New Zealand

**Position Name**

Analyst

**Contact Info****Contact****Address**

Address

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**City**

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**Country**

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**Electronic Mail Address**

Environmental.Reporting@mfe.govt.nz

**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

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Access Constraints

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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/52882-growing-season-soil-moisture-deficit-2002-2003/>

#### 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 annual PED total (mm) 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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