



Growing season soil moisture deficit, 2009-2010

Metadata

File Identifier

c68af16c-ee8f-5a09-27cb-ff0f48fe449d

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

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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, 2009-2010

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

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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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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/52891-growing-season-soil-moisture-deficit-2009-2010/>

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."

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