National Integrated Land System
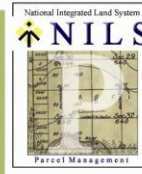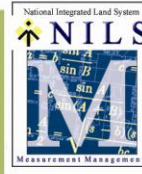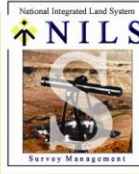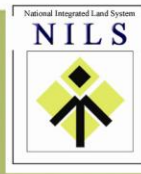
web.geocommunicator.gov
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TownshipGeocoder
Web Service

Method Parameters & Results

Bureau of Land Management
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Overview

This document provides details on the parameters required by a set of methods available through the TownshipGeocoder NILS GeoCommunicator Web Service. The TownshipGeocoder methods described here include:

- GetTRS (and GetTRSFeed)
- GetLatLon (and GetLatLonFeed)

For more information on the NILS GeoCommunicator Web Services see the Map & Data Services page (http://www.blm.gov/nils/GeoComm/home_services.html) available on the GeoCommunicator site (http://www.geocommunicator.gov).

GetTRS and GetTRSFeed Methods

The TownshipGeocoder web service's GetTRS and GetTRSFeed methods return:

- A description of the smallest PLSS survey area intersecting a given coordinate.
- A GeoRSS point feature representing the input coordinate.
- A GeoRSS polygon feature representing the boundary of the intersecting PLSS survey area.

GeoCommunicator hosts test pages for these two methods:

Method	Test Page URL
GetTRS	http://www.geocommunicator.gov/TownshipGeocoder/TownshipGeocoder.asmx?op=GetTRS
GetTRSFeed	http://www.geocommunicator.gov/TownshipGeocoder/TownshipGeocoder.asmx?op=GetTRSFeed

You can use these pages to test the parameters described below and familiarize yourself with the methods' output results.

Input Parameters

Both GetTRS and GetTRSFeed require the following parameters:

Parameter	Value Description
Lat	A value representing the latitude position of the input coordinate
Lon	A value representing the longitude position of the input coordinate
Units	A coded value used to set the format of the input Lat and Lon values
Datum	A value used to set the datum of the coordinate used to perform the PLSS survey area search and the coordinates of the returned GeoRSS elements

The valid domain of values for the Units parameter is eDD and eDMS. Your Units setting determines the format of your Lat and Lon parameters.

If you set Units to eDD, Lat and Lon must be Decimal Degree (DD) values. If you set Units to eDMS, the Lat and Lon of the input coordinate should be described in Degrees Minutes Seconds (DMS). The GetTRS and GetTRSFeed methods require specific formatting for DMS Lat and Lon parameters, however. Concatenate your degree, minutes, and seconds values into a single number, omitting any special characters denoting unit-types. For instance, the latitude DMS value of…

39°46'12.36"N

…would need to be translated to…

394612.36

…to work as a Lat parameter with Units set to eDMS. Similarly, the DMS value "111°55'39.513"W" translates to "-1115539.513" when used as the Lon parameter. Remember to set your translated Lon parameter to a negative number when your search coordinate is in the Western Hemisphere.

To recap:

Parameter	Value Domain	Value Example
Lat	If Units = eDD: Any valid DD latitude position If Units = eDMS: Any valid DMS latitude position formatted as described above.	If Units = eDD: 39.7701 If Units = eDMS: 394612.36
Lon	If Units = eDD: Any valid DD longitude position If Units = eDMS: Any valid DMS longitude position formatted as described above.	If Units = eDD: -111.927643 If Units = eDMS = -1115539.513
Units	eDD or eDMS	eDD
Datum	NAD83 or NAD27	NAD83

Output Results

Both GetTRS and GetTRSFeed return chunks of GeoRSS XML containing:

- The input coordinate used to perform the intersection on PLSS survey areas. The input coordinate is described as text in the first <description> element and as a point feature in the only <georss:point> tag.

- A "TRS"-formatted land description of the intersecting PLSS survey area. The methods return this information in the second <description> element. See sections below about the GetLatLon and GetLatLonFeed methods for details on this specialized TRS format.

- The bounding polygon of the intersecting PLSS survey area. This appears as a polygon feature in the only <georss:polygon> element.

The GetTRSFeed method only returns GeoRSS XML. The GetTRS method packages its GeoRSS into a larger XML payload encompassed by a root <TownshipGeocoderResult> tag. Sub-elements of this tag include single <CompletionStatus> and <Message> tags. The GeoRSS content resides in the sole <Data> element.

GetLatLon and GetLatLonFeed Methods

The TownshipGeocoder web service's GetLatLon and GetLatLonFeed methods return:

- A text description of the input PLSS survey area's center-coordinate.

- A GeoRSS point feature representing the center-coordinate of the input PLSS survey area.

- A GeoRSS polygon feature representing the boundary of the input PLSS survey area.

GeoCommunicator hosts test pages for these two methods:

Method	Test Page URL
GetLatLon	http://www.geocommunicator.gov/TownshipGeocoder/TownshipGeocoder.asmx?op=GetLatLon
GetLatLonFeed	http://www.geocommunicator.gov/TownshipGeocoder/TownshipGeocoder.asmx?op=GetLatLonFeed

You can use the form controls on these pages to test the parameters described below and familiarize yourself with the methods' output results.

Input Parameters

Both GetLatLon and GetLatLonFeed require the following parameter:

Parameter	Value Description
TRS	A comma-separated String of Township Range properties describing a single PLSS survey area.

GetLatLon and GetLatLonFeed require specifically formatted TRS values. You create TRS parameter values by stringing together individual Township Range properties in a particular order. Delimit the Township Range

properties in a TRS string with commas. The following table describes the component Township Range properties in order:

TRS Order	Township Range Property	Property Description	Required?	Example(s)
1	State	2-character state abbreviation	Yes	CO, UT, WY, etc.
2	Principal Meridian	Numeric code for the township's principal meridian	Yes	6, 26, 34, etc.
3	Township Number	Township's number	Yes	001, 1, 032, 32, etc.
4	Township Fraction	Numeric code for the township's fraction	Yes	0, 1, 2, or 3
5	Township Direction	1-character direction code	Yes	N or S
6	Range Number	Range's number	Yes	001, 1, 067, 67, etc.
7	Range Fraction	Numeric code for the range's fraction	Yes	0, 1, 2, or 3
8	Range Direction	1-character direction code	Yes	E or W
9	Section	Section number	Yes	001-036, 1-36
10	Section Division	Text describing subsection area	No	SW, NE, SWNE, NWNW, LOT 4, etc.
11	Township Duplicate	Township's duplicate code	Yes	0

TRS Format Examples

TRS strings describing individual sections:

AZ,14,1,0,N,1,0,E,35,,0

CO,06,001,0,S,068,0,W,016,,0

Note that the section division parameters are left blank; there is no space between the commas separating the "null" section division parameter from the section number and township-duplicate code.

TRS strings describing quarter-sections:

UT,26,012,0,S,001,0,W,015,NW,0

NV,21,8,0,N,44,0,E,26,SE,0

TRS strings describing aliquot quarter-quarters:

CA,21,016,0,N,002,0,W,029,NENE,0

WY,34,1,0,N,4,0,E,16,SESE,0

TRS strings describing lots:

ID,08,4,0,N,4,0,W,6,LOT 6,0

AZ,14,001,0,N,001,0,E,035,LOT 15,0

Output Results

Both GetLatLon and GetLatLonFeed return chunks of GeoRSS XML containing:

- The input TRS land description string used to perform the search on PLSS survey areas. This appears in the second <description> element.

- The center-coordinate of the returned survey area. This appears as text in the first <description> element and as a point feature in the only <georss:point> tag.

- The bounding polygon of the located survey area. This appears as a polygon feature in the only <georss:polygon> element.

The GetLatLonFeed method only returns GeoRSS XML. The GetLatLon method packages its GeoRSS into a larger XML payload encompassed by a root <TownshipGeocoderResult> tag. Sub-elements of this tag include single <CompletionStatus> and <Message> tags. The GeoRSS content resides in the sole <Data> element.