Band Arithmetic function

ArcGIS Pro 3.1

In this topic

Overview

The Band Arithmetic function performs an arithmetic operation on the bands of a raster dataset. You can choose predefined algorithms, or you can enter your own single-line formula. The supported operators are -,+,/,*, and unary -.

Notes

When using the User Defined method to define your band arithmetic algorithm, you can enter a single-line algebraic formula to create a single-band output. The supported operators are -,+,/,*, and unary -. To identify the bands, add B or b to the beginning of the band number. For example:

```
B1 + B2
b1 + (-b2)
(B1 + B2) / 2(B3 * B5)
```

When using the predefined indices, enter a space-delimited list indicating the band numbers to be used. The predefined indices are detailed below.

BAI method

The Burn Area Index (BAI) uses the reflectance values in the red and NIR portion of the spectrum to identify the areas of the terrain affected by fire.

```
BAI = 1/((0.1 -RED)^2 + (0.06 - NIR)^2)
```

- NIR = pixel values from the near-infrared (NIR) band
- Red = pixel values from the red band

Using a space-delimited list, identify the red and NIR bands in the following order: Red NIR. For example, 3 4.

Reference: Chuvieco, E., M. Pilar Martin, and A. Palacios. "Assessment of Different Spectral Indices in the Red-Near-Infrared Spectral Domain for Burned Land Discrimination." *Remote Sensing of Environment* 112 (2002): 2381-2396.

CIg method

The Chlorophyll Index - Green (CIg) method is a vegetation index for estimating the chlorophyll content in leaves using the ratio of reflectivity in the NIR and green bands.

```
CIg = [(NIR / Green)-1]
```

- NIR = pixel values from the near-infrared band
- Green = pixel values from the green band

Using a space-delimited list, you will identify the NIR and green bands in the following order: NIR Green. For example, 7 3.

Reference: Gitelson, A.A., Kaufman, Y.J., Merzlyak, M.N., 1996. "Use of a green channel in remote sensing of global vegetation from EOS-MODIS," *Remote Sensing of Environment*, Vol. 58, 289–298.

CIre method

The Chlorophyll Index - Red-Edge (CIre) method is a vegetation index for estimating the chlorophyll content in leaves using the ratio of reflectivity in the NIR and red-edge bands.

```
Clre = [(NIR / RedEdge)-1]
```

- NIR = pixel values from the near-infrared band
- RedEdge = pixel values from the red-edge band

Using a space-delimited list, you will identify the NIR and red-edge bands in the following order: NIR RedEdge. For example, 7 6.

References:

- Gitelson, A.A., Merzlyak, M.N., 1994. "Quantitative estimation of chlorophyll using reflectance spectra," *Journal of Photochemistry and Photobiology* B 22, 247–252.

Clay Minerals method

The Clay Minerals (CM) ratio method is a geological index for identifying mineral features containing clay and alunite using two shortwave infrared (SWIR) bands. CM is used in mineral composite mapping.

```
CM = SWIR1 / SWIR2
```

- SWIR1 = pixel values from the shortwave infrared band centering around 1.5—1.75µm
- SWIR2 = pixel values from the shortwave infrared band centering around 2.08—2.35µm

For Landsat TM and ETM+, this corresponds to bands 5 (SWIR1) and 7 (SWIR2). For Landsat 8, this corresponds to bands 6 (SWIR1) and 7 (SWIR2).

Using a space-delimited list, you will identify the SWIR2 and SWIR2 bands in the following order: SWIR1 SWIR2. For example, 6 7.

Reference: Dogan, H., 2009. "Mineral composite assessment of Kelkit River Basin in Turkey by means of remote sensing," *Journal of Earth System Science*, Vol. 118, 701-710.

EVI method

The Enhanced Vegetation Index (EVI) method is an optimized vegetation index that accounts for atmospheric influences and vegetation background signal. It's similar to NDVI but is less sensitive to background and atmospheric noise, and it does not become as saturated as NDVI when viewing areas with very dense green vegetation.

```
EVI = 2.5*(NIR - Red) / (NIR + 6*Red - 7.5*Blue + 1)
```

- NIR = pixel values from the near-infrared band
- Red = pixel values from the red band
- Blue = pixel values from the blue band

Using a space-delimited list, you will identify the NIR, red, and blue bands in the following order: NIR Red Blue. For example, 5 4 2.

This index outputs values between 0 and 1.

Reference: Huete, A. et al. 2002, "Overview of the radiometric and biophysical performance of the MODIS vegetation indices." *Remote sensing of environment* , Vol. 83, 195-213.

Ferrous Minerals method

The Ferrous Minerals (FM) ratio method is a geological index for identifying rock features containing some quantity of iron-bearing minerals using the SWIR and NIR bands. FM is used in mineral composite mapping.

```
FM = SWIR / NIR
```

- SWIR = pixel values from the shortwave infrared band
- NIR = pixel values from the near-infrared band

For Landsat TM and ETM+, this corresponds to bands 5 (SWIR) and 4 (NIR). For Landsat 8, this corresponds to bands 6 (SWIR) and 5 (NIR).

Using a space-delimited list, you will identify the SWIR and NIR bands in the following order: SWIR NIR. For example, 6 5.

Reference: Dogan, H., 2009. "Mineral composite assessment of Kelkit River Basin in Turkey by means of remote sensing," *Journal of Earth System Science*, Vol. 118, 701-710.

GEMI method

The Global Environmental Monitoring Index (GEMI) method is a nonlinear vegetation index for global environmental monitoring from satellite imagery. It's similar to NDVI, but it's less sensitive to atmospheric effects. It is affected by bare soil; therefore, it's not recommended for use in areas of sparse or moderately dense vegetation.

```
GEMI = eta*(1-0.25*eta)-((Red-0.125)/(1-Red))
```

where,

```
eta = (2*(NIR^2-Red^2)+1.5*NIR+0.5*Red)/(NIR+Red+0.5)
```

- NIR = pixel values from the near-infrared band
- Red = pixel values from the red band

Using a space-delimited list, you will identify the NIR and red bands in the following order: NIR Red. For example, 4 3.

This index outputs values between 0 and 1.

Reference: Pinty, B. and Verstraete, M. M. 1992, "GEMI: a non-linear index to monitor global vegetation from satellites," *Plant Ecology*, Vol. 101, 15–20.

GNDVI method

The Green Normalized Difference Vegetation Index (GNDVI) method is a vegetation index for estimating photo synthetic activity and is a commonly used vegetation index to determine water and nitrogen uptake into the plant canopy.

```
GNDVI = (NIR-Green)/(NIR+Green)
```

- NIR = pixel values from the near-infrared band
- Green = pixel values from the green band

Using a space-delimited list, you will identify the NIR and green bands in the following order: NIR Green. For example, 5 3.

This index outputs values between -1.0 and 1.0.

Reference: Buschmann, C., and E. Nagel. 1993. "In vivo spectroscopy and internal optics of leaves as basis for remote sensing of vegetation," *International Journal of Remote Sensing*, Vol. 14, 711–722.

GVI (Landsat TM) method

The Green Vegetation Index (GVI) method was originally designed from Landsat MSS imagery and has been modified for Landsat TM imagery. It's also known as the Landsat TM Tasseled Cap green vegetation index. It can be used with imagery whose bands share the same spectral characteristics.

```
GVI=-0.2848*Band1-0.2435*Band2-0.5436*Band3+0.7243*Band4+0.0840*Band5-1.1800*Band7
```

Using a space-delimited list, you will identify the six Landsat TM bands, ordered one through five and six. For example, 1 2 3 4 5 6. If your input contains six bands in the order expected, you don't need to enter a value in the Band Indexes text box.

This index outputs values between -1 and 1.

Reference: Todd, S. W., R. M. Hoffer, and D. G. Milchunas, 1998, "Biomass estimation on grazed and ungrazed rangelands using spectral indices," *International Journal of Remote Sensing*, Vol. 19, No. 3, 427–438.

Iron Oxide method

The Iron Oxide (IO) ratio method is a geological index for identifying rock features that have experienced oxidation of iron-bearing sulfides using the red and blue bands. IO is useful in identifying iron oxide features below vegetation canopies and is used in mineral composite mapping.

```
IronOxide = Red / Blue
```

- Red = pixel values from the red band
- Blue = pixel values from the blue band

For Landsat TM and ETM+, this corresponds to bands 3 (red) and 1 (blue). For Landsat 8, this corresponds to bands 4 (red) and 2 (blue).

Using a space-delimited list, you will identify the red and blue bands in the following order: Red Blue. For example, 4 2.

Reference: Dogan, H., 2009. "Mineral composite assessment of Kelkit River Basin in Turkey by means of remote sensing," *Journal of Earth System Science*, Vol. 118, 701-710.

MNDWI method

The Modified Normalized Difference Water Index (MNDWI) uses green and SWIR bands for the enhancement of open water features. It also diminishes built-up area features that are often correlated with open water in other indices.

```
MNDWI = (Green - SWIR) / (Green + SWIR)
```

- Green = pixel values from the green band
- SWIR = pixel values from the shortwave infrared band

Using a space-delimited list, identify the green and SWIR bands in the following order: Green SWIR. For example, 3 7.

Reference: Xu, H. "Modification of Normalised Difference Water Index (NDWI) to Enhance Open Water Features in Remotely Sensed Imagery." *International Journal of Remote Sensing* 27, No. 14 (2006): 3025-3033.

Modified SAVI method

The Modified Soil Adjusted Vegetation Index (MSAVI2) method minimizes the effect of bare soil on the SAVI.

$$MSAVI2 = (1/2)*(2(NIR+1)-sqrt((2*NIR+1)^2-8(NIR-Red)))$$

- NIR = pixel values from the near-infrared band
- Red = pixel values from the red band

Using a space-delimited list, you will identify the NIR and red bands in the following order: NIR Red. For example, 4 3.

Reference: Qi, J. et al., 1994, "A modified soil vegetation adjusted index," *Remote Sensing of Environment*, Vol. 48, No. 2, 119–126.

MTVI2 method

The Modified Triangular Vegetation Index (MTVI2) method is a vegetation index for detecting leaf chlorophyll content at the canopy scale while being relatively insensitive to leaf area index. It uses reflectance in the green, red, and NIR bands.

$$MTVI2 = [1.5(1.2(NIR-Green)-2.5(Red-Green))\sqrt{}((2NIR+1)^2-(6NIR-5\sqrt{}(Red))-0.5)]$$

- NIR = pixel values from the near-infrared band
- Red = pixel values from the red band
- Green = pixel values from the green band

Using a space-delimited list, you will identify the NIR, red, and green bands in the following order: NIR Red Green. For example, 7 5 3.

Reference: Haboudane, D., Miller, J.R., Tremblay, N., Zarco-Tejada, P.J., Dextraze, L., 2002. "Integrated narrow-band vegetation indices for prediction of crop chlorophyll content for application to precision agriculture," *Remote Sensing of Environment*, Vol. 81, 416–426.

NBR method

The Normalized Burn Ratio Index (NBRI) uses the NIR and SWIR bands to emphasize burned areas, while mitigating illumination and atmospheric effects. Your images should be corrected to reflectance values before using this index; see the Apparent Reflectance function for more details.

$$NBR = (NIR - SWIR) / (NIR+ SWIR)$$

- NIR = pixel values from the near-infrared band
- SWIR = pixel values from the shortwave infrared band

Using a space-delimited list, identify the NIR and SWIR bands in the following order: NIR SWIR. For example, 4 7.

Reference: Key, C. and N. Benson, N. "Landscape Assessment: Remote Sensing of Severity, the Normalized Burn Ratio; and Ground Measure of Severity, the Composite Burn Index." *FIREMON: Fire Effects Monitoring and Inventory System*, RMRS-GTR, Ogden, UT: USDA Forest Service, Rocky Mountain Research Station (2005).

NDBI method

The Normalized Difference Built-up Index (NDBI) uses the NIR and SWIR bands to emphasize man-made built-up areas. It is ratio based to mitigate the effects of terrain illumination differences as well as atmospheric effects.

$$NDBI = (SWIR - NIR) / (SWIR + NIR)$$

- SWIR = pixel values from the shortwave infrared band
- NIR = pixel values from the near-infrared band

Using a space-delimited list, identify the SWIR and NIR bands in the following order: SWIR NIR. For example, 7 4.

Reference: Zha, Y., J. Gao, and S. Ni. "Use of Normalized Difference Built-Up Index in Automatically Mapping Urban Areas from TM Imagery." *International Journal of Remote Sensing* 24, no. 3 (2003): 583-594.

NDMI method

The Normalized Difference Moisture Index (NDMI) is sensitive to the moisture levels in vegetation. It is used to monitor droughts as well as monitor fuel levels in fire-prone areas. It uses NIR and SWIR bands to create a ratio designed to mitigate illumination and atmospheric effects.

```
NDMI = (NIR - SWIR1)/(NIR + SWIR1)
```

- NIR = pixel values from the near-infrared band
- SWIR1 = pixel values from the first shortwave infrared band

Using a space-delimited list, identify the SWIR and NIR bands in the following order: NIR SWIR1. For example, 4 7.

References:

1. Wilson, E.H. and Sader, S.A., 2002, "Detection of forest harvest type using multiple dates of Landsat TM imagery." *Remote Sensing of Environment*, 80 , pp. 385-396.
2. Skakun, R.S., Wulder, M.A. and Franklin, .S.E. (2003). "Sensitivity of the thematic mapper enhanced wetness difference index to detect mountain pine beetle red-attack damage." *Remote Sensing of Environment*, Vol. 86, Pp. 433-443.

NDSI method

The Normalized Difference Snow Index (NDSI) is designed to use MODIS (band 4 and band 6) and Landsat TM (band 2 and band 5) for identification of snow cover while ignoring cloud cover. Since it is ratio based, it also mitigates atmospheric effects.

```
 NDSI = (Green - SWIR) / (Green + SWIR)
```

- Green = pixel values from the green band
- SWIR = pixel values from the shortwave infrared band

Using a space-delimited list, identify the green and SWIR bands in the following order: Green SWIR. For example, 3 7.

Reference: Riggs, G., D. Hall, and V. Salomonson. "A Snow Index for the Landsat Thematic Mapper and Moderate Resolution Imaging Spectrometer." *Geoscience and Remote Sensing Symposium*, IGARSS '94, Volume 4: Surface and Atmospheric Remote Sensing: Technologies, Data Analysis, and Interpretation (1994), pp. 1942-1944.

NDVI method

The Normalized Difference Vegetation Index (NDVI) method is a standardized index allowing you to generate an image displaying greenness (relative biomass). This index takes advantage of the contrast of the characteristics of two bands from a multispectral raster dataset—the chlorophyll pigment absorptions in the red band and the high reflectivity of plant materials in the NIR band.

The documented and default NDVI equation is as follows:

```
NDVI = ((NIR - Red)/(NIR + Red))
```

- NIR = pixel values from the near-infrared band
- Red = pixel values from the red band

Using a space-delimited list, you will identify the NIR and red bands in the following order: NIR Red. For example, 4 3.

This index outputs values between -1.0 and 1.0.

Reference: Rouse, J.W., R.H. Haas, J.A. Schell, and D.W. Deering, 1973, "Monitoring vegetation systems in the Great Plains with ERTS," *Third ERTS Symposium*, NASA SP-351 I:309–317.

Learn more about NDVI

NDVIre method

The Red-Edge NDVI (NDVIre) method is a vegetation index for estimating vegetation health using the red-edge band. It is especially useful for estimating crop health in the mid to late stages of growth, when the chlorophyll concentration is relatively higher. Also, NDVIre can be used to map the within-field variability of nitrogen foliage to understand the fertilizer requirements of crops.

The NDVIre index is calculated using the NIR and red-edge bands.

```
NDVIre = (NIR - RedEdge)/(NIR + RedEdge)
```

- NIR = pixel values from the near-infrared band
- RedEdge = pixel values from the red-edge band

Using a space-delimited list, you will identify the NIR and red-edge bands in the following order: NIR RedEdge. For example, 7 6.

This index outputs values between -1.0 and 1.0.

Reference: Gitelson, A.A., Merzlyak, M.N., 1994. "Quantitative estimation of chlorophyll using reflectance spectra," *Journal of Photochemistry and Photobiology* B 22, 247–252.

NDWI method

The Normalized Difference Water Index (NDWI) method is an index for delineating and monitoring content changes in surface water. It is computed with the NIR and green bands.

`NDWI = (Green - NIR) / (Green + NIR)`

- NIR = pixel values from the near-infrared band
- Green = pixel values from the green band

Using a space-delimited list, you will identify the NIR and green bands in the following order: NIR Green. For example, 5 3.

This index outputs values between -1.0 and 1.0.

Reference: McFeeters, S., 1996. "The Use of Normalized Difference Water Index (NDWI) in the Delineation of Open Water Features." *International Journal of Remote Sensing*, 17, 1425-1432.

PVI method

The Perpendicular Vegetation Index (PVI) method is similar to a difference vegetation index; however, it is sensitive to atmospheric variations. When using this method to compare images, it should only be used on images that have been atmospherically corrected.

PVI = (NIR - a*Red - b) / (sqrt(1 + a^2))

- NIR = pixel values from the near-infrared band
- Red = pixel values from the red band
- a = slope of the soil line
- b = gradient of the soil line

Using a space-delimited list, you will identify the NIR and red bands and enter the a and b values in the following order: NIR Red a b. For example, 4 3 0.3 0.5.

This index outputs values between -1.0 and 1.0.

Reference: Richardson, A. J. and C. L. Wiegand, 1977, "Distinguishing vegetation from soil background information," *Photogrammetric Engineering and Remote Sensing*, 43, 1541–1552.

RTVIcore method

The Red-Edge Triangulated Vegetation Index (RTVICore) method is a vegetation index for estimating leaf area index and biomass. This index uses reflectance in the NIR, red-edge, and green spectral bands.

`RTVICore = [100(NIR-RedEdge)-10(NIR-Green)]`

- NIR = pixel values from the near-infrared band
- RedEdge = pixel values from the red-edge band
- Green = pixel values from the green band

Using a space-delimited list, you will identify the NIR, red-edge, and green bands in the following order: NIR RedEdge Green. For example, 7 6 3.

Reference: Haboudane, D., Miller, J.R., Pattey, E., Zarco-Tejada, P.J., Strachan, I.B., 2004. "Hyperspectral vegetation indices and novel algorithms for predicting green LAI of crop canopies: modeling and validation in the context of precision agriculture," *Remote Sensing of Environment*, Vol. 90, 337–352.

SAVI method

The Soil-Adjusted Vegetation Index (SAVI) method is a vegetation index that attempts to minimize soil brightness influences using a soil-brightness correction factor. This is often used in arid regions where vegetative cover is low, and it outputs values between -1.0 and 1.0.

`SAVI = ((NIR - Red) / (NIR + Red + L)) x (1 + L)`

- NIR = pixel values from the near-infrared band
- Red = pixel values from the red band

- L = the soil brightness correction factor, which varies depending on the amount of green vegetative cover. In areas with no green vegetation cover, L=1; in areas of moderate green vegetative cover, L=0.5; and in areas with very high vegetation cover, L=0, which is equivalent to the NDVI method.

Using a space-delimited list, you will identify the NIR and red bands and enter the L value in the following order: NIR Red L. For example, 4 3 0.5.

Reference: Huete, A. R., 1988, "A soil-adjusted vegetation index (SAVI)," *Remote Sensing of Environment*, Vol 25, 295–309.

SR method

The Simple Ratio (SR) method is a common vegetation index for estimating the amount of vegetation. It is the ratio of light scattered in the NIR and absorbed in red bands, which reduces the effects of atmosphere and topography.

Values are high for vegetation with a large leaf area index, or high canopy closure, and low for soil, water, and nonvegetated features. The range of values is from 0 to approximately 30, where healthy vegetation generally falls between values of 2 to 8.

```
SR = NIR / Red
```

- NIR = pixel values from the near-infrared band
- Red = pixel values from the red band

Using a space-delimited list, you will identify the NIR and red bands in the following order: NIR Red. For example, 4 3.

Reference: Birth, G.S., and G.R. McVey, 1968. "Measuring color of growing turf with a reflectance spectrophotometer," *Agronomy Journal* Vol. 60, 640-649.

SRre method

The Red-Edge Simple Ratio (SRre) method is a vegetation index for estimating the amount of healthy and stressed vegetation. It is the ratio of light scattered in the NIR and red-edge bands, which reduces the effects of atmosphere and topography.

Values are high for vegetation with high canopy closure and healthy vegetation, lower for high canopy closure and stressed vegetation, and low for soil, water, and nonvegetated features. The range of values is from 0 to approximately 30, where healthy vegetation generally falls between values of 1 to 10.

```
SRre = NIR / RedEdge
```

- NIR = pixel values from the near-infrared band
- RedEdge = pixel values from the red-edge band

Using a space-delimited list, you will identify the NIR and red-edge bands in the following order: NIR RedEdge. For example, 7 6.

Reference: Anatoly A. Gitelson, Yoram J. Kaufman, Robert Stark, and Don Rundquist, 2002, "Novel algorithms for remote estimation of vegetation fraction," *Remote Sensing of Environment*, Vol. 80, 76–87.

Sultan's Formula method

The Sultan's process takes a six-band 8-bit image and uses the Sultan's Formula method to produce a three-band 8-bit image. The resulting image highlights rock formations called ophiolites on coastlines. This formula was designed based on the TM or ETM bands of a Landsat 5 or 7 scene. The equations applied to create each output band are as follows:

```
Band 1 = (Band5 / Band7) x 100
Band 2 = (Band5 / Band1) x 100
Band 3 = (Band3 / Band4) x (Band5 / Band4) x 100
```

Using a space-delimited list, you will identify the indexes of the five bands required. For example, 1 3 4 5 6. If your input contains six bands in the order expected, you do not need to enter a value in the Band Indexes text box.

Reference: Sultan, M., Arvidson, R.E, Sturchio, N.C. & Guiness, E.A. 1987, "Lithologic mapping in Arid Regions with Landsat thematic mapper data: Meatig Dome, Egypt," *Geological Society of America Bulletin*99: 748-762

Transformed SAVI method

The Transformed Soil Adjusted Vegetation Index (TSAVI) method is a vegetation index that minimizes soil brightness influences by assuming the soil line has an arbitrary slope and intercept.

$$TSAVI = (s * (NIR - s * Red - a)) / (a * NIR + Red - a * s + X * (1 + s^2))$$

- NIR = pixel values from the near-infrared band

- Red = pixel values from the red band
- s = the soil line slope
- a = the soil line intercept
- X = an adjustment factor that is set to minimize soil noise

Using a space-delimited list, you will identify the NIR and red bands and enter the s, a, and X values in the following order: NIR Red s a X. For example, 3 1 0.33 0.50 1.50.

Reference: Baret, F. and G. Guyot, 1991, "Potentials and limits of vegetation indices for LAI and APAR assessment," *Remote Sensing of Environment*, Vol. 35, 161–173.

VARI method

The Visible Atmospherically Resistant Index (VARI) method is a vegetation index for estimating vegetation fraction quantitatively with only the visible range of the spectrum.

```
VARI = (Green - Red) / (Green + Red – Blue)
```

- Red = pixel values from the red band
- Green = pixel values from the green band
- Blue = pixel values from the blue band

Using a space-delimited list, you will identify the red, green, and blue bands in the following order: Red Green Blue. For example, 3 2 1.

Reference: Anatoly A. Gitelson, Yoram J. Kaufman, Robert Stark, and Don Rundquist, 2002, "Novel algorithms for remote estimation of vegetation fraction," *Remote Sensing of Environment*, Vol. 80, 76–87.

WNDWI method

The Weighted Normalized Difference Water Index (WNDWI) method is a water index developed to reduce errors typically encountered in other water indices, including water turbidity, small water bodies, or shadow in remote sensing scenes.

```
WNDWI = [Green – α * NIR – (1 – α) * SWIR ] / [Green + α * NIR + (1 – α) * SWIR]
```

- Green = pixel values from the green band
- NIR = pixel values from the near-infrared band
- SWIR = pixel values from the shortwave infrared band
- α = a weighted coefficient ranging from 0 to 1. The default value is 0.5.

Using a space-delimited list, you will identify the green, NIR and SWIR bands and the α coefficient in the following order: Green NIR SWIR α. For example, 2 5 6 0.5.

Reference: Qiandong Guo, Ruiliang Pu, Jialin Li & Jun Cheng, 2017, "A weighted normalized difference water index for water extraction using Landsat imagery," *International Journal of Remote Sensing*, Vol. 38, 5430-5445.

Parameters

Parameter	Description
Raster	The input raster.
Method	The type of band arithmetic algorithm to be deployed. You can define a custom algorithm, or choose a predefined index. User Defined—Define a custom band arithmetic expression. NDVI—Normalized Difference Vegetation Index SAVI—Soil Adjusted Vegetation Index Transformed SAVI—Transformed Soil Adjusted Vegetation Index Modified SAVI—Modified Soil Adjusted Vegetation Index GEMI—Global Environmental Monitoring Index PVI—Perpendicular Vegetation Index GVI (Landsat TM)—Green Vegetation Index Landsat TM

Parameter	Description
	Sultan's Formula—Sultan's Formula VARI—Visible Atmospherically Resistant Index GNDVI—Green Normalized Difference Vegetation Index SR—Simple Ratio NDVIre—Red-Edge Normalized Difference Vegetation Index SRre—Simple Ratio MTVI2—Modified Triangulated Vegetation Index (second iteration) RTVICore—Red Edge Triangulated Vegetation Index CIre—Chlorophyll Index - Red Edge CIg—Chlorophyll Index - Green NDWI—Normalized Difference Water Index EVI—Enhanced Vegetation Index Iron Oxide—Iron Oxide Ratio Ferrous Minerals—Ferrous Minerals Ratio Clay Minerals—Clay Minerals Ratio WNDWI—Weighted Normalized Difference Water Index
Band Indexes	Define the band arithmetic formula if you chose User Defined for the Method parameter. If you chose a predefined index for the Method parameter, define the proper bands of the input raster dataset that correspond to the index.

Related topics

- Raster functions
- An overview of the Math toolset