List of atmospheric and oceanic indices calculated by Canadian Seasonal to Interannual Prediction System (CanSIPS).

Monsoon Indices	CMC var	Variable (cmc name); Level	Calculation method; equation	Reference
Western North Pacific Monsoon Index	WNPM	Wind (U); 850hpa	Difference between spatial averages of the two regions; U850 (5ºN -15ºN, 90ºE-130ºE) – U850 (22.5ºN - 32.5ºN, 110ºE-140ºE)	Wang and Fan, 1999
Australian Summer Monsoon Index	AUSM	Wind (U); 850hPa	Spatial average; U850 (5ºS-15ºS, 110ºE-130ºE)	Kajikawa et al. 2010
South Asia Monsoon Index	SAM	Wind (V); 850hpa and 200hpa	Difference between spatial averages over two vertical levels; V850-V200 averaged over 10ºN - 30ºN, 70ºE-110ºE	Goswami et al. 1999
East Asian Summer Monsoon index	EASM	Wind (U); 850hPa	Difference between spatial averages of the two regions; U850 (22.5°–32.5°N, 110°–140°E) – U850 (5°–15°N, 90°–130°E)	Wang et al. 2008
Indian Monsoon index	IM	Wind (U); 850hPa	Difference between spatial averages of the two regions; U850(5ºN -15ºN, 40ºE-80ºE) – U850(20ºN -30ºN, 70ºE-90ºE)	Wang et al. 2001
Webster-Yang Monsoon Index	WYM	Wind (U); 850hPa and 200hPa	Difference between spatial averages over two vertical levels; U850-U200 averaged over 0-20ºN, 40ºE-110ºE	Webster and Yang, 1992

Indices based on Sea Surface Temperature Anomalies (SSTA)	CMC var	Region	Calculation method; equation	Reference
El Nino Index, Region 1+2	Nino1+2	Pacific	Spatial mean of SSTA over the region; SSTA (90°W - 80°W, 10°S - 0°)	Trenberth and Stepaniak, 2001
El Nino Index, Region 3	Nino3	Pacific	Spatial mean of SSTA over the region; SSTA (150°W - 90°W, 5°S - 5°N)	Trenberth and Stepaniak, 2001
El Nino Index, Region 4	Nino4	Pacific	Spatial mean of SSTA over the region; SSTA (160°E - 150°W, 5°S - 5°N)	Trenberth and Stepaniak, 2001
El Nino Index, Region 3.4	Nino3.4	Pacific	Spatial mean of SSTA over the region; SSTA (170°W - 120°W, 5°S - 5°N)	Trenberth and Stepaniak, 2001
El Nino Modoki Index	EMI	Pacific	Difference in SSTA spatial means between the three regions; SSTA (165E-140W, 10S-10N) - 0.5*SSTA (110W-70W, 15S-5N) - 0.5*SSTA (125E-145E, 10S-20N)	Ashok et al. 2007
North Atlantic Tropical SST Index	NAT	Atlantic	Spatial mean of SSTA over the region; SSTA (40°W - 20°W, 5°N - 20°N)	Chang et al. 1997
South Atlantic Tropical SST Index	SAT	Atlantic	Spatial mean of SSTA over the region; SSTA (15°W - 5°E, 5°S - 5°N)	Chang et al. 1997
Tropical Atlantic SST Index	TASI	Atlantic	Difference between spatial averages of the two regions; NAT-SAT	Chang et al. 1997
Tropical Northern Atlantic Index	TNA	Atlantic	Spatial mean of SSTA over the region; SSTA (55°W - 15°W, 5°N -25°N)	Enfield et al, 1999
Tropical South Atlantic Index	TSA	Atlantic	Spatial mean of SSTA over the region; SSTA (30°W - 10°E, 20°S - EQ)	Enfield et al, 1999
Western Tropical Indian Ocean SST Index	WTIO	Indian Ocean	Spatial mean of SSTA over the region; SSTA (50°E - 70°E, 10°S - 10°N)	Lizuka and Matsuura, 2000
South Eastern Tropical Indian Ocean SST Index	SETIO	Indian Ocean	Spatial mean of SSTA over the region; SSTA (90°E - 110°E, 10°S - 0°)	Lizuka and Matsuura, 2000
South Western	SWIO	Indian	Spatial mean of SSTA over the region;	http://stateofth

Indian Ocean SST Index		Ocean	SSTA (31°E - 45°E, 32°S - 25°S)	eocean.osmc.noaa.gov/sur/ind/swio.php
Indian Ocean Dipole Mode Index	IOD	Indian Ocean	Difference between spatial averages of the two regions; WTIO-SETIO	Saji et al. 1999
Tripole Index for the Iterdecadal Pacific Oscillation	TPI	Pacific	Difference in SSTA spatial means between the three regions; SSTA (10°S–10°N, 170°E–90°W) – SSTA (25°N–45°N, 140°E–145°W) – SSTA (50°S–15°S, 150°E–160°W)	Henley et al. 2015
Pacific Decadal Oscillation	PDO	Pacific	Calculate the first EOF of North Pacific(20-60N) SSTA from OISST for the 1981-2010 period. Predicted SSTA are projected onto this EOF pattern to obtain predicted PDO index. Standardized using mean and sd of OISST PDO index for 1981-2010	Mantua et al. 1997

Indices based on Sea-Level Pressure (SLP)	CMC var	Calculation method; equation	Reference
South Oscillation Index	SOI	$SOI = \dfrac{Standardized\ Tahiti - Standardized\ Darwin}{MSD}$ $MSD = Monthly\ Stand.Dev =$ $= \sqrt{\sum \dfrac{(Standardized\ Tahiti\ SLP - Standardized\ Darwin\ SLP)^2}{N}}$ $N - number\ of\ months$ $Standardised\ "Station" = \dfrac{Actual\ "Station"\ SLP - Mean\ "Station"\ SLP}{Standard\ Deviation\ "Station"}$ $Standard\ Deviation\ "Station" =$ $= \sum \dfrac{(actual\ "Station"\ SLP - mean\ "Station"\ SLP)^2}{N}$	http://www.ncdc.noaa.gov/teleconnections/enso/indicators/soi/#soi-calculation
North Pacific Index	NPI	Spatial mean of *area-weighted* SLP over the region; SLP (30°S–65°N, 160°E–140°W)	Trenberth and Hurrell, 1994
North Atlantic Oscillations (Azores-Island)	NAO	Not currently available for operational purposes	
North Atlantic Oscillations (35N-65N)	NAO	Not currently available for operational purposes	

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