

## A hierarchical collection of political/economic regions for analysis of climate extremes: Supplementary material B (WRAF0.1-v4.1)

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**Abstract** This document lists the WRAF0.1-v4.1 regions, of approximately 0.1Mm<sup>2</sup> size, developed in the manuscript titled “A hierarchical collection of political/economic regions for analysis of climate extremes”.

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**Supplementary Table B 1** List of WRAF0.1 v4.1 regions defined within “NWT and Yukon” (WRAF2 v4.1 region 1.1.1). These regions cover the Canadian territories of the Northwest Territories and Yukon. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
1.1.1.1	Yukon	1.1.1.1.1	north Yukon	0.111	Canada: Yukon (northern)
		1.1.1.1.2	central Yukon	0.109	Canada: Yukon (central)
		1.1.1.1.3	southwest Yukon	0.133	Canada: Yukon (southwestern)
		1.1.1.1.4	southeast Yukon	0.128	Canada: Yukon (southeastern)
1.1.1.2	Inuvik	1.1.1.2.1	north Inuvik	0.124	Canada: NWT: Inuvik (northern)
		1.1.1.2.2	Inuvik Victoria Island	0.089	Canada: NWT: Inuvik (Victoria Island)
		1.1.1.2.3	west mainland Inuvik	0.116	Canada: NWT: Inuvik (western mainland)
		1.1.1.2.4	east mainland Inuvik	0.109	Canada: NWT: Inuvik (eastern mainland)
		1.1.1.2.5	south Inuvik	0.135	Canada: NWT: Inuvik (southern)
1.1.1.3	Fort Smith	1.1.1.3.1	west Fort Smith	0.131	Canada: NWT: Fort Smith (western)
		1.1.1.3.2	northwest central Fort Smith	0.094	Canada: NWT: Fort Smith (northwestern central)
		1.1.1.3.3	southwest central Fort Smith	0.101	Canada: NWT: Fort Smith (southwestern central)
		1.1.1.3.4	north central Fort Smith	0.095	Canada: NWT: Fort Smith (northern central)
		1.1.1.3.5	south central Fort Smith	0.105	Canada: NWT: Fort Smith (southern central)
		1.1.1.3.6	east central Fort Smith	0.112	Canada: NWT: Fort Smith (eastern central)
		1.1.1.3.7	east Fort Smith	0.129	Canada: NWT: Fort Smith (eastern)

NWT = Northwest Territories

**Supplementary Table B 2** List of WRAF0.1 v4.1 regions defined within “Nunavut” (WRAF2 v4.1 region 1.1.2). These regions cover the Canadian territory of Nunavut. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
1.1.2.1	Kitikmeot	1.1.2.1.1	Kitikmeot Victoria Island	0.139	Canada: Nunavut: Kitikmeot (Victoria Island)
		1.1.2.1.2	southwest Kitikmeot	0.088	Canada: Nunavut: Kitikmeot (southwestern)
		1.1.2.1.3	south central Kitikmeot	0.113	Canada: Nunavut: Kitikmeot (southern central)
		1.1.2.1.4	southeast Kitikmeot	0.082	Canada: Nunavut: Kitikmeot (central southeastern)
		1.1.2.1.5	northeast Kitikmeot	0.099	Canada: Nunavut: Kitikmeot (northeastern)
1.1.2.2	Kivalliq	1.1.2.2.1	northwest Kivalliq	0.100	Canada: Nunavut: Kivalliq (northwestern)
		1.1.2.2.2	central north Kivalliq	0.104	Canada: Nunavut: Kivalliq (central northern)
		1.1.2.2.3	northeastern Kivalliq	0.117	Canada: Nunavut: Kivalliq (northeast)
		1.1.2.2.4	southwest Kivalliq	0.117	Canada: Nunavut: Kivalliq (southwestern)
		1.1.2.2.5	southeast Kivalliq	0.103	Canada: Nunavut: Kivalliq (southeastern)
1.1.2.3	north Qikiqtaaluk	1.1.2.3.1	north Ellesmere	0.097	Canada: Nunavut: Qikiqtaaluk (northern Ellesmere Island)
		1.1.2.3.2	south Ellesmere	0.102	Canada: Nunavut: Qikiqtaaluk (southern Ellesmere Island)
		1.1.2.3.3	west Qikiqtaaluk	0.082	Canada: Nunavut: Qikiqtaaluk (western)
		1.1.2.3.4	Parry Islands	0.122	Canada: Nunavut: Qikiqtaaluk: (Parry Islands)
1.1.2.4	south Qikiqtaaluk	1.1.2.4.1	west Baffin	0.110	Canada: Nunavut: Qikiqtaaluk (western Baffin Island)
		1.1.2.4.2	west central Baffin	0.101	Canada: Nunavut: Qikiqtaaluk (west central Baffin Island)
		1.1.2.4.3	east central Baffin	0.104	Canada: Nunavut: Qikiqtaaluk (east central Baffin Island)
		1.1.2.4.4	east Baffin	0.118	Canada: Nunavut: Qikiqtaaluk (eastern Baffin Island)
		1.1.2.4.5	south Baffin	0.120	Canada: Nunavut: Qikiqtaaluk (southern Baffin Island)
		1.1.2.4.6	Melville and Prince Charles	0.084	Canada: Nunavut: Qikiqtaaluk (Melville Peninsula and Prince Charles Island)

**Supplementary Table B 3** List of WRAF0.1 v4.1 regions defined within “west Canada” (WRAF2 v4.1 region 1.2.1). These regions cover the Canadian provinces of Alberta, British Columbia, and Saskatchewan. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
1.2.1.1	north British Columbia	1.2.1.1.1	Stikine	0.135	Canada: British Columbia: Stikine
		1.2.1.1.2	Kitimat-Stikine and Skeena-Queen Charlotte	0.117	Canada: British Columbia: Kitimat-Stikine and Skeena-Queen Charlotte
		1.2.1.1.3	Northern Rockies	0.086	Canada: British Columbia: Northern Rockies
		1.2.1.1.4	Peace River	0.119	Canada: British Columbia: Peace River
1.2.1.2	south British Columbia	1.2.1.2.1	Bulkley-Nechako and Fraser-Fort George	0.130	Canada: British Columbia: Bulkley-Nechako and Fraser-Fort George
		1.2.1.2.2	Cariboo and Central Coast	0.109	Canada: British Columbia: Cariboo and Central Coast
		1.2.1.2.3	southwest British Columbia	0.103	Canada: British Columbia (southwestern)
		1.2.1.2.4	southeast British Columbia	0.156	Canada: British Columbia (southeastern)
1.2.1.3	Alberta	1.2.1.3.1	Clear Hills, Mackenzie, Northern Lights	0.117	Canada: Alberta: Clear Hills, Mackenzie, Northern Lights
		1.2.1.3.2	north central Alberta	0.079	Canada: Alberta: Big Lakes, Lesser Slave River, Northern Sunrise, and Opportunity
		1.2.1.3.3	northeast Alberta	0.137	Canada: Alberta (northeastern)
		1.2.1.3.4	central west Alberta	0.106	Canada: Alberta (central western)
		1.2.1.3.5	southwest Alberta	0.101	Canada: Alberta (southwestern)
		1.2.1.3.6	southeast Alberta	0.120	Canada: Alberta (southeastern)
1.2.1.4	Saskatchewan	1.2.1.4.1	north La Ronge	0.104	Canada: Saskatchewan: La Ronge (northern)
		1.2.1.4.2	central La Ronge	0.108	Canada: Saskatchewan: La Ronge (central)
		1.2.1.4.3	south La Ronge	0.108	Canada: Saskatchewan: La Ronge (southern)
		1.2.1.4.4	central Saskatchewan	0.103	Canada: Saskatchewan (central)
		1.2.1.4.5	southwest Saskatchewan	0.115	Canada: Saskatchewan (southwestern)
		1.2.1.4.6	southeast Saskatchewan	0.112	Canada: Saskatchewan (southeastern)

**Supplementary Table B 4** List of WRAF0.1 v4.1 regions defined within “Manitoba and Ontario” (WRAF2 v4.1 region 1.2.2). These regions cover the Canadian provinces of Manitoba and Ontario. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
1.2.2.1	Manitoba	1.2.2.1.1	west Churchill/ Northern Manitoba	0.133	Canada: Manitoba: Churchill/ Northern Manitoba (western)
		1.2.2.1.2	east Churchill/ Northern Manitoba	0.139	Canada: Manitoba: Churchill/ Northern Manitoba (eastern)
		1.2.2.1.3	Thompson/ North Central	0.107	Canada: Manitoba: Thompson/ North Central
		1.2.2.1.4	Flin Flon/ North West and North East Manitoba	0.147	Canada: Manitoba: Flin Flon/ North West and North East Manitoba
		1.2.2.1.5	south Manitoba	0.121	Canada: Manitoba (southern)
1.2.2.2	west Ontario	1.2.2.2.1	southwest Kenora	0.131	Canada: Ontario: Kenora (southwestern)
		1.2.2.2.2	northwest Kenora	0.103	Canada: Ontario: Kenora (northwestern)
		1.2.2.2.3	central Kenora	0.104	Canada: Ontario: Kenora (central)
		1.2.2.2.4	east Kenora	0.108	Canada: Ontario: Kenora (eastern)
		1.2.2.2.5	Lake Superior, Rainy River, and Thunder Bay	0.167	Canada: Ontario: Lake Superior, Rainy River, and Thunder Bay
1.2.2.3	east Ontario	1.2.2.3.1	Cochrane	0.145	Canada: Ontario: Cochrane
		1.2.2.3.2	middle of Ontario	0.113	Canada: Ontario: Algoma, Greater Sudbury, Sudbury, Timiskaming
		1.2.2.3.3	central south Ontario	0.097	Canada: Ontario (central southern)
		1.2.2.3.4	far south Ontario	0.109	Canada: Ontario (far southern)

**Supplementary Table B 5** List of WRAF0.1 v4.1 regions defined within “east Canada” (WRAF2 v4.1 region 1.2.3). These regions cover the Canadian provinces of New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island, and Québec. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
1.2.3.1	Nord-du-Québec	1.2.3.1.1	Baie-d’Hudson	0.156	Canada: Québec: Nord-du-Québec: Kativik: Baie-d’Hudson
		1.2.3.1.2	northwest Rivière-Koksoak	0.104	Canada: Québec: Nord-du-Québec: Kativik: Rivière-Koksoak (northwestern)
		1.2.3.1.3	southwest Rivière-Koksoak	0.124	Canada: Québec: Nord-du-Québec: Kativik: Rivière-Koksoak (southwestern)
		1.2.3.1.4	east Rivière-Koksoak	0.124	Canada: Québec: Nord-du-Québec: Kativik: Rivière-Koksoak (eastern)
		1.2.3.1.5	northwest Jamésie	0.102	Canada: Québec: Nord-du-Québec: Jamésie (northwestern)
		1.2.3.1.6	northeast Jamésie	0.121	Canada: Québec: Nord-du-Québec: Jamésie (northeastern)
		1.2.3.1.7	south Jamésie	0.119	Canada: Québec: Nord-du-Québec: Jamésie (southern)
1.2.3.2	south Québec	1.2.3.2.1	Abitibi-Témiscamingue and Outaouais	0.098	Canada: Québec: Abitibi-Témiscamingue and Outaouais
		1.2.3.2.2	south central Québec	0.096	Canada: Québec (southern central)
		1.2.3.2.3	SaguenayLac-Saint-Jean	0.106	Canada: Québec: SaguenayLac-Saint-Jean
		1.2.3.2.4	southeast Québec	0.088	Canada: Québec (southeastern)
		1.2.3.2.5	Caniapiscau	0.080	Canada: Québec: Côte-Nord: Caniapiscau
		1.2.3.2.6	southwest Côte-Nord	0.085	Canada: Québec: Côte-Nord: La Haute-Côte-Nord, Manicouagan, and Sept-Rivières
		1.2.3.2.7	Le Golfe-du-Saint-Laurent and Minganie	0.107	Canada: Québec: Côte-Nord: Le Golfe-du-Saint-Laurent and Minganie
1.2.3.3	Atlantic Canada	1.2.3.3.1	Nunatsiavut	0.079	Canada: Newfoundland and Labrador: Nunatsiavut
		1.2.3.3.2	west Labrador-Happy Valley-Goose Bay	0.119	Canada: Newfoundland and Labrador: Labrador-Happy Valley-Goose Bay (western)
		1.2.3.3.3	east Labrador-Happy Valley-Goose Bay	0.105	Canada: Newfoundland and Labrador: Labrador-Happy Valley-Goose Bay (eastern)
		1.2.3.3.4	Newfoundland	0.117	Canada: Newfoundland and Labrador (Newfoundland)
		1.2.3.3.5	Canadian Maritimes	0.136	Canada: New Brunswick, Nova Scotia, and Prince Edward Island

**Supplementary Table B 6** List of WRAF0.1 v4.1 regions defined within “Alaska” (WRAF2 v4.1 region 2.1.1). These regions cover the United States of America state of Alaska. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
2.1.1.1	north Alaska	2.1.1.1.1	west North Slope	0.112	USA: Alaska: North Slope (western)
		2.1.1.1.2	east North Slope	0.120	USA: Alaska: North Slope (eastern)
		2.1.1.1.3	Nome and Northwest Arctic	0.153	USA: Alaska: Nome and Northwest Arctic
		2.1.1.1.4	west Yukon-Koyukuk	0.137	USA: Alaska: Yukon-Koyukuk (western)
		2.1.1.1.5	central Yukon-Koyukuk	0.127	USA: Alaska: Yukon-Koyukuk (central)
		2.1.1.1.6	east Yukon-Koyukuk	0.115	USA: Alaska: Yukon-Koyukuk (eastern)
2.1.1.2	south Alaska	2.1.1.2.1	Bethel and Wade Hampton	0.154	USA: Alaska: Bethel and Wade Hampton
		2.1.1.2.2	southwest Alaska	0.151	USA: Alaska (southwestern)
		2.1.1.2.3	central south Alaska	0.131	USA: Alaska (central southern)
		2.1.1.2.4	central east Alaska	0.118	USA: Alaska (central eastern)
		2.1.1.2.5	Valdez-Cordova	0.098	USA: Alaska: Valdez-Cordova
		2.1.1.2.6	southeast Alaska	0.101	USA: Alaska (Southeast)

USA = United States of America

**Supplementary Table B 7** List of WRAF0.1 v4.1 regions defined within “northwest USA” (WRAF2 v4.1 region 2.1.2). These regions cover the United States of America states within the Office of Management and Budget Regions VIII and X (except Alaska). Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
2.1.2.1	Pacific North-west USA	2.1.2.1.1	west Washing-ton	0.082	USA: Washington (western)
		2.1.2.1.2	east Washing-ton	0.094	USA: Washington (eastern)
		2.1.2.1.3	north Idaho	0.104	USA: Idaho (northern)
		2.1.2.1.4	south Idaho	0.112	USA: Idaho (southern)
		2.1.2.1.5	west Oregon	0.077	USA: Oregon (western)
		2.1.2.1.6	central Ore-gon	0.075	USA: Oregon (central)
		2.1.2.1.7	east Oregon	0.099	USA: Oregon (eastern)
2.1.2.2	Montana and the Dakotas	2.1.2.2.1	northwest Montana	0.116	USA: Montana (northwest-ern)
		2.1.2.2.2	northeast Montana	0.105	USA: Montana (northeast-ern)
		2.1.2.2.3	southwest Montana	0.074	USA: Montana (southwest-ern)
		2.1.2.2.4	southeast Montana	0.084	USA: Montana (southeast-ern)
		2.1.2.2.5	west North Dakota	0.101	USA: North Dakota (west-ern)
		2.1.2.2.6	east North Dakota	0.082	USA: North Dakota (eastern)
		2.1.2.2.7	west South Dakota	0.108	USA: South Dakota (west-ern)
		2.1.2.2.8	east South Dakota	0.091	USA: South Dakota (eastern)
2.1.2.3	Colorado, Utah, Wyoming	2.1.2.3.1	west Wyoming	0.128	USA: Wyoming (western)
		2.1.2.3.2	east Wyoming	0.125	USA: Wyoming (eastern)
		2.1.2.3.3	north Utah	0.102	USA: Utah (northern)
		2.1.2.3.4	south Utah	0.118	USA: Utah (southern)
		2.1.2.3.5	northwest Col-orado	0.081	USA: Colorado (northwest-ern)
		2.1.2.3.6	southwest Col-orado	0.076	USA: Colorado (southwest-ern)
		2.1.2.3.7	east Colorado	0.113	USA: Colorado (eastern)

OMB = Office of Management and Budget, USA = United States of America



**Supplementary Table B 8** List of WRAF0.1 v4.1 regions defined within “Midwest USA” (WRAF2 v4.1 region 2.1.3). These regions cover the United States of America states within the Office of Management and Budget Regions V and VII. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
2.1.3.1	west Great Lakes USA	2.1.3.1.1	north Minnesota	0.119	USA: Minnesota (northern)
		2.1.3.1.2	south Minnesota	0.107	USA: Minnesota (southern)
		2.1.3.1.3	northwest Wisconsin	0.093	USA: Wisconsin (northwestern)
		2.1.3.1.4	southeast Wisconsin	0.076	USA: Wisconsin (southeastern)
		2.1.3.1.5	north Michigan	0.084	USA: Michigan (Lake Superior and Upper Peninsula)
		2.1.3.1.6	southwest Michigan	0.079	USA: Michigan (southwestern)
		2.1.3.1.7	southeast Michigan	0.087	USA: Michigan (southeastern)
2.1.3.2	southwest Midwest USA	2.1.3.2.1	west Nebraska	0.112	USA: Nebraska (western)
		2.1.3.2.2	east Nebraska	0.088	USA: Nebraska (eastern)
		2.1.3.2.3	west Kansas	0.104	USA: Kansas (western)
		2.1.3.2.4	east Kansas	0.109	USA: Kansas (eastern)
		2.1.3.2.5	north Missouri	0.073	USA: Missouri (northern)
		2.1.3.2.6	south Missouri	0.107	USA: Missouri (southern)
2.1.3.3	Corn Belt USA	2.1.3.3.1	Iowa	0.145	USA: Iowa
		2.1.3.3.2	Illinois	0.149	USA: Illinois
		2.1.3.3.3	Indiana	0.094	USA: Indiana
		2.1.3.3.4	Ohio	0.116	USA: Ohio

OMB = Office of Management and Budget, USA = United States of America

**Supplementary Table B 9** List of WRAF0.1 v4.1 regions defined within “southwest USA” (WRAF2 v4.1 region 2.2.1). These regions cover the United States of America states within the Office of Management and Budget Regions VI and IX. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
2.2.1.1	California and Nevada	2.2.1.1.1	Northern California coast	0.114	USA: California (coastal Northern)
		2.2.1.1.2	Northern California mountain	0.148	USA: California (Northern mountain)
		2.2.1.1.3	Southern California	0.148	USA: California (Southern)
		2.2.1.1.4	west Nevada	0.089	USA: Nevada (western)
		2.2.1.1.5	northeast Nevada	0.093	USA: Nevada (northeastern)
		2.2.1.1.6	southeast Nevada	0.106	USA: Nevada (southeastern)
2.2.1.2	Arizona and New Mexico	2.2.1.2.1	Colorado Plateau Arizona	0.103	USA: Arizona (Colorado Plateau)
		2.2.1.2.2	Transition Zone Arizona	0.101	USA: Arizona (Transition Zone)
		2.2.1.2.3	Basin and Range Arizona	0.091	USA: Arizona (Basin and Range)
		2.2.1.2.4	Northwest and Southwest New Mexico	0.085	USA: New Mexico (Northwest and Southwest)
		2.2.1.2.5	central New Mexico	0.116	USA: New Mexico (North Central, Mid-region, and South Central)
		2.2.1.2.6	Eastern Plains and Southeastern New Mexico	0.114	USA: New Mexico (Eastern Plains and Southeastern)
2.2.1.3	Texas	2.2.1.3.1	Amarillo and Caprock-Lubbock	0.120	USA: Texas (Amarillo and Caprock-Lubbock)
		2.2.1.3.2	Permian Basin-Odessa	0.127	USA: Texas (Permian Basin-Odessa)
		2.2.1.3.3	northeast Texas	0.109	USA: Texas (North Central-Dallas, Red River Valley-Wichita Falls, Tyler-Longview, and Where the West Begins-Fort Worth)
		2.2.1.3.4	central Texas	0.124	USA: Texas (Heart of Texas-Waco, Highland Lakes-Austin, and Hub of Texas-Abilene)
		2.2.1.3.5	Alamo-San Antonio	0.086	USA: Texas (Alamo-San Antonio)
		2.2.1.3.6	coastal Texas	0.123	USA: Texas (Coastal Bend-Corpus Christi, Golden Pine and Oil Region-Beaumont-Lufkin, Lower Rio Grande Valley-Rio Grande Valley, and San Jacinto-Houston)
2.2.1.4	west South Central USA	2.2.1.4.1	west Oklahoma	0.097	USA: Oklahoma (western)
		2.2.1.4.2	east Oklahoma	0.085	USA: Oklahoma (eastern)
		2.2.1.4.3	Arkansas	0.138	USA: Arkansas
		2.2.1.4.4	Louisiana	0.120	USA: Louisiana

OMB = Office of Management and Budget, USA = United States of America

**Supplementary Table B 10** List of WRAF0.1 v4.1 regions defined within “east USA” (WRAF2 v4.1 region 2.2.2). These regions cover the United States of America states within the Office of Management and Budget Regions I, II, III, and IV (contiguous US). Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
2.2.2.1	Northeast USA	2.2.2.1.1	New York	0.136	USA: New York
		2.2.2.1.2	southeast New England	0.086	USA (southeast New Eng- land)
		2.2.2.1.3	Maine	0.085	USA: Maine
		2.2.2.1.4	Pennsylvania and West Virginia	0.183	USA: Pennsylvania and West Virginia
		2.2.2.1.5	mid-Atlantic USA	0.156	USA (mid-Atlantic)
2.2.2.2	central east USA	2.2.2.2.1	Kentucky	0.104	USA: Kentucky
		2.2.2.2.2	Tennessee	0.109	USA: Tennessee
2.2.2.2	—	2.2.2.2.5	North Car- olina	0.128	USA: North Carolina
		2.2.2.2.6	South Car- olina	0.081	USA: South Carolina
2.2.2.3	southeast USA	2.2.2.3.1	Mississippi	0.125	USA: Mississippi
		2.2.2.3.2	Alabama	0.134	USA: Alabama
		2.2.2.3.3	Georgia	0.152	USA: Georgia
		2.2.2.3.4	north Florida	0.072	USA: Florida (northern)
		2.2.2.3.5	south Florida	0.081	USA: Florida (southern)

OMB = Office of Management and Budget, USA = United States of America

**Supplementary Table B 11** List of WRAF0.1 v4.1 regions defined within “west North Brazil” (WRAF2 v4.1 region 3.1.1). These regions cover the Brazilian states of Amazonas and Rondônia. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
3.1.1.1	Centro and Norte Amazone-nse	3.1.1.1.1	west Rio Negro	0.174	Brazil: Amazonas: Santa Isabel do Rio Negro and São Gabriel de Cahoeira
		3.1.1.1.2	Barcelos and Novo Airão	0.160	Brazil: Amazonas: Barcelos and Novo Airão
		3.1.1.1.3	Japurá	0.073	Brazil: Amazonas (Japurá)
		3.1.1.1.4	Coari and Tefe	0.152	Brazil: Amazonas (Coari and Tefe)
		3.1.1.1.5	Itacoatiara, Manaus, and Rio Preto da Eva	0.099	Brazil: Amazonas (Itacoatiara, Manaus, and Rio Preto da Eva)
		3.1.1.1.6	Parintins	0.107	Brazil: Amazonas (Parintins)
3.1.1.2	Sudoeste and Sul Amazo-nse	3.1.1.2.1	southwest Alto Solimoes	0.109	Brazil: Amazonas: Atalaia do Norte, Benjamin Constant, São Paulo de Olivença, and Tabatinga
		3.1.1.2.2	northeast Alto Solimoes	0.106	Brazil: Amazonas: Amaturá, Fonte Boa, Jutai, Santo Antônio do Içá, and Tonantins
		3.1.1.2.3	Jurua	0.122	Brazil: Amazonas (Jurua)
		3.1.1.2.4	Boca do Acre	0.066	Brazil: Amazonas (Boca do Acre)
		3.1.1.2.5	Tapauá	0.090	Brazil: Amazonas: Tapauá
		3.1.1.2.6	Canutama and Lábrea	0.098	Brazil: Amazonas: Canutama and Lábrea
		3.1.1.2.7	Humaitá, Manicoré, and Novo Aripuanã	0.123	Brazil: Amazonas: Humaitá, Manicoré, and Novo Aripuanã
		3.1.1.2.8	Apuí and Borba	0.098	Brazil: Amazonas: Apuí and Borba
—	—	3.1.1.X.1	Acre	0.153	Brazil: Acre
		3.1.1.X.2	Leste Ron-doniense	0.130	Brazil: Rondônia (Leste Ron-doniense)
		3.1.1.X.3	Madeira-Guapore	0.109	Brazil: Rondônia (Madeira-Guapore)

**Supplementary Table B 12** List of WRAF0.1 v4.1 regions defined within “central North Brazil” (WRAF2 v4.1 region 3.1.2). These regions cover the Brazilian states of Amapá, Pará, and Roraima. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
3.1.2.1	north Pará	3.1.2.1.1	Óbidos	0.158	Brazil: Pará (Óbidos)
		3.1.2.1.2	Santarém	0.094	Brazil: Pará (Santarém)
		3.1.2.1.3	Almeirim and Porto de Moz	0.091	Brazil: Pará: Almeirim and Porto de Moz
		3.1.2.1.4	Marajó	0.106	Brazil: Pará (Marajó)
		3.1.2.1.5	northeast Pará	0.091	Brazil: Pará (Metropolitana de Belém and Nordeste Paraense)
3.1.2.2	south Pará	3.1.2.2.1	Aveiro, Itaituba, Rurópolis, and Trairão	0.098	Brazil: Pará: Aveiro, Itaituba, Rurópolis, and Trairão
		3.1.2.2.2	Jacareacanga and Novo Progresso	0.093	Brazil: Pará: Jacareacanga and Novo Progresso
		3.1.2.2.3	Altamira	0.160	Brazil: Pará: Altamira
		3.1.2.2.4	northwest Altamira region	0.067	Brazil: Pará (northwestern Altamira Microregion)
		3.1.2.2.5	São Félix do Xingu	0.121	Brazil: Pará (São Félix do Xingu)
		3.1.2.2.6	Paragominas and Tucuruí	0.082	Brazil: Pará (Paragominas and Tucuruí)
		3.1.2.2.7	southeast Sudeste Paraense	0.096	Brazil: Pará (Conceição do Araguaia, Marabá, Parauapebas, and Redenção)
—	—	3.1.2.X.1	Norte de Roraima	0.098	Brazil: Roraima (Norte de Roraima)
		3.1.2.X.2	Sul de Roraima	0.128	Brazil: Roraima (Sul de Roraima)
		3.1.2.X.3	Amapá	0.140	Brazil: Amapá

**Supplementary Table B 13** List of WRAF0.1 v4.1 regions defined within “northeast Brazil” (WRAF2 v4.1 region 3.2.1). These regions cover the Brazilian states of Alagoas, Bahia, Maranhao, Paraíba, Pernambuco, Piauí, Sergipe, and Tocantins. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
3.2.1.1	Maranhao and Tocantins	3.2.1.1.1	Oeste Maranhense	0.087	Brazil: Maranhao (Oeste Maranhense)
		3.2.1.1.2	Leste Maranhense and Norte Maranhense	0.122	Brazil: Maranhao (Leste Maranhense and Norte Maranhense)
		3.2.1.1.3	Centro Maranhense and Sul Maranhense	0.122	Brazil: Maranhao (Centro Maranhense and Sul Maranhense)
		3.2.1.1.4	northwest Tocantins	0.078	Brazil: Tocantins (Araguaina, Bico do Papagaio, and Miracema do Tocantins)
		3.2.1.1.5	Gurupi and Rio Formoso	0.079	Brazil: Tocantins (Gurupi and Rio Formoso)
		3.2.1.1.6	Oriental do Tocantins	0.123	Brazil: Tocantins (Oriental do Tocantins)
3.2.1.2	northeast Northeast Brazil	3.2.1.2.1	north Piauí	0.125	Brazil: Piauí: Centro-Norte Piauiense, Norte Piauiense, and Sudeste Piauiense
		3.2.1.2.2	Sudoeste Piauiense	0.129	Brazil: Piauí (Sudoeste Piauiense)
		3.2.1.2.3	Ceará	0.149	Brazil: Ceará
		3.2.1.2.4	Paraíba and Rio Grande do Norte	0.111	Brazil: Paraíba and Rio Grande do Norte
		3.2.1.2.5	Alagoas, Pernambuco, and Sergipe	0.147	Brazil: Alagoas, Pernambuco, and Sergipe
3.2.1.3	Bahia	3.2.1.3.1	Extremo Oeste Baiano	0.117	Brazil: Bahia (Extremo Oeste Baiano)
		3.2.1.3.2	Vale São-Franciscano da Bahia	0.116	Brazil: Bahia (Vale São-Franciscano da Bahia)
		3.2.1.3.3	Centro Norte Baiano	0.081	Brazil: Bahia (Centro Norte Baiano)
		3.2.1.3.4	east Bahia	0.121	Brazil: Bahia (Metropolitana de Salvador, Nordeste Baiano, and Sul Baiano)
		3.2.1.3.5	Centro Sul Baiano	0.129	Brazil: Bahia (Centro Sul Baiano)

**Supplementary Table B 14** List of WRAF0.1 v4.1 regions defined within “Central-West Brazil” (WRAF2 v4.1 region 3.2.2). These regions cover the Brazilian states of Goiás, Mato Grosso, and Mato Grosso do Sul. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
3.2.2.1	Norte Mato-Grossense	3.2.2.1.1	Aripuanã	0.125	Brazil: Mato Grosso (Aripuanã)
		3.2.2.1.2	Alta Floresta, Colíder, and Sinop	0.145	Brazil: Mato Grosso (Alta Floresta, Colíder, and Sinop)
		3.2.2.1.3	Arinos and Parecis	0.114	Brazil: Mato Grosso (Arinos and Parecis)
		3.2.2.1.4	Alto Teles Pires and Paranatinga	0.101	Brazil: Mato Grosso (Alto Teles Pires and Paranatinga)
3.2.2.2	east and south Mato Grosso	3.2.2.2.1	Norte Araguaia	0.083	Brazil: Mato Grosso (Norte Araguaia)
		3.2.2.2.2	Canarana and Medio Araguaia	0.096	Brazil: Mato Grosso (Canarana and Medio Araguaia)
		3.2.2.2.3	Sudoeste Mato-Grossense	0.073	Brazil: Mato Grosso (Sudoeste Mato-Grossense)
		3.2.2.2.4	Centro-Sul Mato-Grossense	0.100	Brazil: Mato Grosso (Centro-Sul Mato-Grossense)
		3.2.2.2.5	Sudeste Mato-Grossense	0.072	Brazil: Mato Grosso (Sudeste Mato-Grossense)
3.2.2.3	central Brazil	3.2.2.3.1	Centro Goiano and Noroeste Goiano	0.096	Brazil: Goiás (Centro Goiano and Noroeste Goiano)
		3.2.2.3.2	Leste Goiano and Norte Goiano	0.112	Brazil: Goiás (Leste Goiano and Norte Goiano)
		3.2.2.3.3	Sul Goiano	0.131	Brazil: Goiás (Sul Goiano)
		3.2.2.3.4	Pantanal Sul Mato-Grossense	0.111	Brazil: Mato Grosso do Sul (Pantanal Sul Mato-Grossense)
		3.2.2.3.5	central Mato Grosso do Sul	0.152	Brazil: Mato Grosso do Sul (Centro Norte de Mato Grosso do Sul and Sudoeste de Mato Grosso do Sul)
		3.2.2.3.6	Leste de Mato Grosso do Sul	0.095	Brazil: Mato Grosso do Sul (Leste de Mato Grosso do Sul)
		—	—	—	Brazil: Distrito Federal

**Supplementary Table B 15** List of WRAF0.1 v4.1 regions defined within “South and Southeast Brazil” (WRAF2 v4.1 region 3.2.3). These regions cover the Brazilian states of Espírito Santo, Minas Gerais, Paraná, Rio Grande do Sul, Santa Catarina, and São Paulo. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
3.2.3.1	north South-east Brazil	3.2.3.1.1	Central Mineira and Noroeste de Minas	0.095	Brazil: Minas Gerais (Central Mineira and Noroeste de Minas)
		3.2.3.1.2	Norte de Minas	0.129	Brazil: Minas Gerais (Norte de Minas)
		3.2.3.1.3	Jequitinhonha and Vale do Mucuri	0.071	Brazil: Minas Gerais (Jequitinhonha and Vale do Mucuri)
		3.2.3.1.4	Triângulo Mineiro/ Alto Paranaíba	0.091	Brazil: Minas Gerais (Triângulo Mineiro/ Alto Paranaíba)
		3.2.3.1.5	southeast Minas Gerais	0.117	Brazil: Minas Gerais (Metropolitana de Belo Horizonte, Vale do Rio Doce, and Zona da Mata)
		3.2.3.1.6	southwest Minas Gerais	0.086	Brazil: Minas Gerais (Campo das Vertentes, Oeste de Minas, and Sul/ Sudoeste de Minas)
		3.2.3.1.7	Espírito Santo and Rio de Janeiro	0.089	Brazil: Espírito Santo and Rio de Janeiro
3.2.3.2	southern Brazil	3.2.3.2.1	northwest São Paulo	0.153	Brazil: São Paulo (northwestern)
		3.2.3.2.2	southeast São Paulo	0.096	Brazil: São Paulo (southeastern)
		3.2.3.2.3	west Paraná	0.121	Brazil: Paraná (Centro Ocidental Paranaense, Centro-Sul Paranaense, Noroeste Paranaense, Norte Central Paranaense, Oeste Paranaense, Sudoeste Paranaense)
		3.2.3.2.4	east Paraná	0.078	Brazil: Paraná (Centro Oriental Paranaense, Metropolitana de Curitiba, Norte Pioneiro Paranaense, Sudeste Paranaense)
		3.2.3.2.5	Santa Catarina	0.095	Brazil: Santa Catarina
		3.2.3.2.6	north Rio Grande do Sul	0.090	Brazil: Rio Grande do Sul (Nordeste Rio-Grandense and Noroeste Rio-Grandense)
		3.2.3.2.7	southwest Rio Grande do Sul	0.089	Brazil: Rio Grande do Sul (Centro Ocidental Rio-Grandense and Sudoeste Rio-Grandense)
		3.2.3.2.8	southeast Rio Grande do Sul	0.092	Brazil: Rio Grande do Sul (Centro Oriental Rio-Grandense, Metropolitana de Porto Alegre, and Sudeste Rio-Grandense)



**Supplementary Table B 16** List of WRAF0.1 v4.1 regions defined within “Argentina” (WRAF2 v4.1 region 3.3.1). These regions cover Argentina. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
3.3.1.1	northwest Argentina	3.3.1.1.1	Jujuy and Salta	0.210	Argentina: Jujuy and Salta
		3.3.1.1.2	Catamarca and Tucumán	0.124	Argentina: Catamarca and Tucumán
		3.3.1.1.3	La Rioja	0.091	Argentina: La Rioja
		3.3.1.1.4	San Juan	0.087	Argentina: San Juan
3.3.1.2	northeast Argentina	3.3.1.2.1	Formosa	0.076	Argentina: Formosa
		3.3.1.2.2	Chaco	0.099	Argentina: Chaco
		3.3.1.2.3	Santiago del Estero	0.135	Argentina: Santiago del Estero
		3.3.1.2.4	Corrientes and Misiones	0.118	Argentina: Corrientes and Misiones
		3.3.1.2.5	Entre Ríos	0.078	Argentina: Entre Ríos
3.3.1.3	west central Argentina	3.3.1.3.1	Mendoza	0.151	Argentina: Mendoza
		3.3.1.3.2	San Luis	0.077	Argentina: San Luis
		3.3.1.3.3	Neuquén	0.094	Argentina: Neuquén
		3.3.1.3.4	La Pampa	0.143	Argentina: La Pampa
		3.3.1.3.5	west Río Negro	0.098	Argentina: Río Negro (western)
		3.3.1.3.6	east Río Negro	0.105	Argentina: Río Negro (eastern)
3.3.1.4	east central Argentina	3.3.1.4.1	north Córdoba	0.085	Argentina: Córdoba (northern)
		3.3.1.4.2	south Córdoba	0.084	Argentina: Córdoba (southern)
		3.3.1.4.3	Sante Fe	0.133	Argentina: Sante Fe
		3.3.1.4.4	north Buenos Aires	0.104	Argentina: Buenos Aires (northern)
		3.3.1.4.5	southwest Buenos Aires	0.112	Argentina: Buenos Aires (southwestern)
		3.3.1.4.6	southeast Buenos Aires	0.091	Argentina: Buenos Aires (southeastern)
3.3.1.5	south Patagonia	3.3.1.5.1	west Chubut	0.130	Argentina: Chubut (western)
		3.3.1.5.2	east Chubut	0.094	Argentina: Chubut (eastern)
		3.3.1.5.3	north Santa Cruz	0.146	Argentina: Santa Cruz (northern)
		3.3.1.5.4	south Santa Cruz	0.098	Argentina: Santa Cruz (southern)
		—	—	—	Argentina: Tierra del Fuego

**Supplementary Table B 17** List of WRAF0.1 v4.1 regions defined within “south Mercosur” (WRAF5 v4.1 region 3.3), but not defined within a WRAF2 v4.1 region. These regions cover Paraguay and Uruguay. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
3.3.X.1	Paraguay	3.3.X.1.1	Alto Paraguay	0.078	Paraguay: Alto Paraguay
		3.3.X.1.2	Boquerón	0.089	Paraguay: Boquerón
		3.3.X.1.3	Presidente Hayes	0.074	Paraguay
		3.3.X.1.4	east Paraguay	0.084	Paraguay (eastern)
		3.3.X.1.5	south Paraguay	0.075	Paraguay (southern)
—	—	3.3.X.X.1	north Uruguay	0.089	Uruguay (northern)
		3.3.X.X.2	south Uruguay	0.089	Uruguay (southern)

**Supplementary Table B 18** List of WRAF0.1 v4.1 regions defined within “Mercosur” (WRAF10 v4.1 region 3), but not defined within a WRAF5 v4.1 region. These regions cover Venezuela. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
3.X.X.1	north Venezuela	3.X.X.1.1	northwest Venezuela	0.105	Venezuela (northwestern)
		3.X.X.1.2	west central north Venezuela	0.099	Venezuela (west central northern)
		3.X.X.1.3	east central north Venezuela	0.083	Venezuela (east central northern)
		3.X.X.1.4	northeast Venezuela	0.123	Venezuela (northeastern)
		3.X.X.1.5	Apure	0.075	Venezuela: Apure
3.X.X.2	Amazonas and Bolivar	3.X.X.2.1	west Bolívar	0.100	Venezuela: Bolívar: Cedeño and Sucre
		3.X.X.2.2	east Bolívar	0.142	Venezuela: Bolívar (eastern)
		3.X.X.2.3	north Amazonas	0.085	Venezuela: Amazonas: Atabapo, Atures, Autana, and Manapiare
		3.X.X.2.4	south Amazonas	0.099	Venezuela: Amazonas: Alto Orinoco, Maroa, and Río Negro

**Supplementary Table B 19** List of WRAF0.1 v4.1 regions defined within “west AMU” (WRAF2 v4.1 region 4.1.1). These regions cover the Arab Maghreb Union countries of Mauritania and Morocco. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
4.1.1.1	Morocco	4.1.1.1.1	northwest Morocco	0.111	Morocco (northwestern)
		4.1.1.1.2	northeast Morocco	0.100	Morocco (northeastern)
		4.1.1.1.3	Meknès-Tafilalet and Souss-Massa-Drâa	0.131	Morocco: Meknès-Tafilalet and Souss-Massa-Drâa
		4.1.1.1.4	Guelmim-Es Semara	0.102	Morocco: Guelmim-Es Semara
		4.1.1.1.5	Laâyoune-Boujdour-Sakia El Hamra	0.074	Morocco: Laâyoune-Boujdour-Sakia El Hamra
		4.1.1.1.6	Oued Ed-Dahab-Lagouira	0.076	Morocco: Oued Ed-Dahab-Lagouira
4.1.1.2	north Mauritania	4.1.1.2.1	Bir Moghrein	0.088	Mauritania: Tiris Zemmour: Bir Moghrein
		4.1.1.2.2	north Fderick	0.089	Mauritania: Tiris Zemmour: Fderick (northern)
		4.1.1.2.3	south Fderick	0.085	Mauritania: Tiris Zemmour: Fderick (southern)
		4.1.1.2.4	Adrar	0.223	Mauritania: Adrar
4.1.1.3	south Mauritania	4.1.1.3.1	west Mauritania	0.133	Mauritania (western)
		4.1.1.3.2	Tagant	0.095	Mauritania: Tagant
		4.1.1.3.3	central south Mauritania	0.144	Mauritania (central southern)
		4.1.1.3.4	Hodh Ech Chargui	0.186	Mauritania: Hodh Ech Chargui

AMU = Arab Maghreb Union

**Supplementary Table B 20** List of WRAF0.1 v4.1 regions defined within “central AMU” (WRAF2 v4.1 region 4.1.2). These regions cover the Arab Maghreb Union countries of Algeria and Tunisia. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
4.1.2.1	coastal Algeria	4.1.2.1.1	west coastal Algeria	0.106	Algeria (western coastal)
		4.1.2.1.2	Djelfa, El Bayadh, and Laghouat	0.132	Algeria: Djelfa, El Bayadh, and Laghouat
		4.1.2.1.3	east coastal Algeria	0.095	Algeria (eastern coastal)
		4.1.2.1.4	Biskra, El Oued, Khenchela, and Tébessa	0.088	Algeria: Biskra, El Oued, Khenchela, and Tébessa
4.1.2.2	west Algeria	4.1.2.2.1	Oum El Assel	0.088	Algeria: Tindouf: Oum El Assel
		4.1.2.2.2	Tindouf Commune	0.074	Algeria: Tindouf: Tindouf
		4.1.2.2.3	northeast Béchar	0.083	Algeria: Béchar (northeastern)
		4.1.2.2.4	southwest Béchar	0.078	Algeria: Béchar (southwestern)
		4.1.2.2.5	Aougrou, Aoulef, Timimoun, and Tinerkouk	0.080	Algeria: Adrar: Aougrou, Aoulef, Timimoun, and Tinerkouk
		4.1.2.2.6	northwest Adrar	0.075	Algeria: Adrar (northwestern)
		4.1.2.2.7	Reggane	0.143	Algeria: Adrar: Reggane
		4.1.2.2.8	Bordj Badji Mokhtar	0.134	Algeria: Adrar: Bordj Badji Mokhtar
4.1.2.3	Tamanrasset	4.1.2.3.1	In Ghar and In Salah	0.138	Algeria: Tamanrasset: In Ghar and In Salah
		4.1.2.3.2	Tamanrasset District	0.141	Algeria: Tamanrasset: Tamanrasset
		4.1.2.3.3	Tazrouk	0.145	Algeria: Tamanrasset: Tazrouk
		4.1.2.3.4	Abalessa	0.080	Algeria: Tamanrasset: Abalessa
		4.1.2.3.5	In Guezzam and Tin Zaouatine	0.098	Algeria: Tamanrasset: In Guezzam and Tin Zaouatine
4.1.2.4	east Algeria	4.1.2.4.1	Ghardaia	0.085	Algeria: Ghardaia
		4.1.2.4.2	Ouargla	0.155	Algeria: Ouargla
		4.1.2.4.3	In Amenas	0.130	Algeria: Illizi: In Amenas
		4.1.2.4.4	Illizi District	0.077	Algeria: Illizi: Illizi
		4.1.2.4.5	Djanet	0.088	Algeria: Illizi: Djanet
—	—	4.1.2.X.1	north Tunisia	0.072	Tunisia (northern)
		4.1.2.X.2	south Tunisia	0.083	Tunisia (southern)

AMU = Arab Maghreb Union

**Supplementary Table B 21** List of WRAF0.1 v4.1 regions defined within “Libya” (WRAF2 v4.1 region 4.2.1). These regions cover Libya. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
4.2.1.1	Cirenaica	4.2.1.1.1	northeast Libya	0.135	Libya (northeastern)
		4.2.1.1.2	north Al Wahat	0.088	Libya: Al Wahat (northern)
		4.2.1.1.3	south Al Wahat	0.110	Libya: Al Wahat (southern)
		4.2.1.1.4	northwest Kufra	0.095	Libya: Kufra (northwestern)
		4.2.1.1.5	northeast Kufra	0.104	Libya: Kufra (northeastern)
		4.2.1.1.6	southwest Kufra	0.086	Libya: Kufra (southwestern)
		4.2.1.1.7	southeast Kufra	0.137	Libya: Kufra (southeastern)
4.2.1.2	Fezzan and Tripolitania	4.2.1.2.1	coastal Tripolitania	0.118	Libya (coastal Tripolitania)
		4.2.1.2.2	Ghadamis and Mizdah	0.156	Libya: Ghadamis and Mizdah
		4.2.1.2.3	Wadi al Shatii	0.096	Libya: Wadi al Shatii
		4.2.1.2.4	Jufra	0.115	Libya: Jufra
		4.2.1.2.5	Ghat, Sabha, and Wadi al Hayaa	0.100	Libya: Ghat, Sabha, and Wadi al Hayaa
		4.2.1.2.6	west Murzuq	0.088	Libya: Murzuq (western)
		4.2.1.2.7	central Murzuq	0.101	Libya: Murzuq (central)
		4.2.1.2.8	east Murzuq	0.092	Libya: Murzuq (eastern)

**Supplementary Table B 22** List of WRAF0.1 v4.1 regions defined within “Sudan” (WRAF2 v4.1 region 4.2.2). These regions cover Sudan. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
4.2.2.1	Darfur	4.2.2.1.1	north Mellit	0.125	Sudan: Shamal Darfur: Mellit (northern)
		4.2.2.1.2	south Mellit	0.096	Sudan: Shamal Darfur: Mellit (southern)
		4.2.2.1.3	south Shamal Darfur	0.098	Sudan: Shamal Darfur (southern)
		4.2.2.1.4	Gharb Darfur, and Wasat Darfur	0.060	Sudan: Gharb Darfur and Wasat Darfur
		4.2.2.1.5	Janub Darfur and Sharq Darfur	0.134	Sudan: Janub Darfur and Sharq Darfur
4.2.2.2	north Sudan	4.2.2.2.1	west Wadi Halfa	0.097	Sudan: Ash Shamaliyah: Wadi Halfa (western)
		4.2.2.2.2	east Wadi Halfa	0.092	Sudan: Ash Shamaliyah: Wadi Halfa (eastern)
		4.2.2.2.3	Dongola	0.110	Sudan: Ash Shamaliyah: Dongola
		4.2.2.2.4	Addabah and Merawi	0.068	Sudan: Ash Shamaliyah: Addabah and Merawi
		4.2.2.2.5	Nahr an Nil	0.124	Sudan: Nahr an Nil
		4.2.2.2.6	Halayeb and Port Sudan	0.117	Sudan: Al Bahr al Ahmar: Halayeb and Port Sudan
		4.2.2.2.7	Sinkat and Tokar	0.083	Sudan: Al Bahr al Ahmar: Sinkat and Tokar
4.2.2.3	southern Sudan	4.2.2.3.1	Sowdari	0.108	Sudan: Shamal Kurdufan: Sowdari
		4.2.2.3.2	southeast Shamal Kurdufan	0.081	Sudan: Shamal Kurdufan (southeastern)
		4.2.2.3.3	Gharb Kurdufan	0.113	Sudan: Gharb Kurdufan
		4.2.2.3.4	Janub Kurdufan	0.080	Sudan: Janub Kurdufan
		4.2.2.3.5	Al Jazirah, Khartoum, and An Nil al Abyad	0.082	Sudan: Al Jazirah, Khartoum, and An Nil al Abyad
		4.2.2.3.6	Al Qadarif and Ash Sharqiyah	0.110	Sudan: Al Qadarif and Ash Sharqiyah
		4.2.2.3.7	An Nil al Azraq and Sannar	0.082	Sudan: An Nil al Azraq and Sannar

**Supplementary Table B 23** List of WRAF0.1 v4.1 regions defined within “northeast Arab League” (WRAF2 v4.1 region 4.3.1). These regions cover the Arab League countries of Egypt, Iraq, Jordan, Lebanon, Palestine, and Syria. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
4.3.1.1	north and east Egypt	4.3.1.1.1	Matrouh	0.159	Egypt: Matrouh
		4.3.1.1.2	central Egypt	0.092	Egypt (central)
		4.3.1.1.3	northeast Egypt	0.107	Egypt (northeastern)
		4.3.1.1.4	north Red Sea	0.096	Egypt: Red Sea (northern)
		4.3.1.1.5	south Red Sea	0.097	Egypt: Red Sea (southern)
4.3.1.2	New Valley	4.3.1.2.1	northwest New Valley	0.119	Egypt: New Valley (north- western)
		4.3.1.2.2	northeast New Valley	0.086	Egypt: New Valley (north- eastern)
		4.3.1.2.3	southwest New Valley	0.133	Egypt: New Valley (south- western)
		4.3.1.2.4	southeast New Valley	0.115	Egypt: New Valley (south- eastern)
4.3.1.3	north Arab League	4.3.1.3.1	north Syria	0.106	Syria (northern)
		4.3.1.3.2	south Syria	0.080	Syria (southern)
		4.3.1.3.3	Iraqi Kurdis- tan and Nin- evah	0.086	Iraq (northern)
		4.3.1.3.4	Al Anbar	0.138	Iraq: Al Anbar
		4.3.1.3.5	east Iraq	0.084	Iraq (eastern)
		4.3.1.3.6	south Iraq	0.129	Iraq (southern)
		4.3.1.3.7	Jordan, Lebanon, and Palestine	0.105	Arab League: Jordan, Lebanon, and Palestine

Arab League = League of Arab States

**Supplementary Table B 24** List of WRAF0.1 v4.1 regions defined within “Saudi Arabia” (WRAF2 v4.1 region 4.3.2). These regions cover Saudi Arabia. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
4.3.2.1	north and west Saudi Arabia	4.3.2.1.1	Jawf	0.119	Saudi Arabia: Jawf
		4.3.2.1.2	Al-Ḥudūd Al-Shimāliyyah	0.125	Saudi Arabia: Northern Borders
		4.3.2.1.3	Tabuk	0.100	Saudi Arabia: Tabuk
		4.3.2.1.4	Ha'il	0.122	Saudi Arabia: Ha'il
		4.3.2.1.5	Madinah	0.144	Saudi Arabia: Madinah
		4.3.2.1.6	Makkah	0.140	Saudi Arabia: Makkah
4.3.2.2	central and south Saudi Arabia	4.3.2.2.1	north Riyadh	0.075	Saudi Arabia: Riyadh (northern)
		4.3.2.2.2	west Riyadh	0.110	Saudi Arabia: Riyadh: Ad-Duwadimi, Afif, and Al-Quwayiyah
		4.3.2.2.3	central east Riyadh	0.091	Saudi Arabia: Riyadh (central eastern)
		4.3.2.2.4	south Riyadh	0.101	Saudi Arabia: Riyadh: As-Sulayyil and Wadi ad-Dwasir
		4.3.2.2.5	'Azir, Bahah, and Jizan	0.103	Saudi Arabia: 'Azir, Bahah, and Jizan
		4.3.2.2.6	Najran	0.090	Saudi Arabia: Najran
		—	—	—	Saudi Arabia: Qassim
4.3.2.3	east Saudi Arabia	4.3.2.3.1	north ash-Sharqiyyah	0.099	Saudi Arabia: Eastern Province (northern)
		4.3.2.3.2	north central ash-Sharqiyyah	0.124	Saudi Arabia: Eastern Province (northern central)
		4.3.2.3.3	south central ash-Sharqiyyah	0.101	Saudi Arabia: Eastern Province (southern central)
		4.3.2.3.4	east ash-Sharqiyyah	0.105	Saudi Arabia: Eastern Province (eastern)
		4.3.2.3.5	southwest ash-Sharqiyyah	0.127	Saudi Arabia: Eastern Province (southwestern)



**Supplementary Table B 25** List of WRAF0.1 v4.1 regions defined within “far east Arab League” (WRAF2 v4.1 region 4.3.3). These regions cover the Arab League countries of Somalia and Yemen, and within the Gulf Cooperation Council. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
4.3.3.1	east GCC	4.3.3.1.1	northeast GCC	0.101	GCC (northeastern)
		4.3.3.1.2	east Oman	0.090	Oman (eastern)
		4.3.3.1.3	Al Dhahira and Al Wusta	0.094	Oman: Al Dhahira and Al Wusta
		4.3.3.1.4	Dhofar	0.129	Oman: Dhofar
4.3.3.2	Yemen	4.3.3.2.1	northwest Yemen	0.113	Yemen (northwestern)
		4.3.3.2.2	southwest Yemen	0.107	Yemen (southwestern)
		4.3.3.2.3	northeast Hadhramaut	0.084	Yemen: Hadhramaut (northeastern)
		4.3.3.2.4	southwest Hadhramaut	0.080	Yemen: Hadhramaut (southwestern)
		4.3.3.2.5	Al Mahrah and Soqatra	0.067	Yemen: Al Mahrah and Soqatra
4.3.3.3	Somalia	4.3.3.3.1	Puntland	0.115	Somalia: Puntland
		4.3.3.3.2	Galmudug and Hirshabelle	0.132	Somalia: Galmudug and Hirshabelle
		4.3.3.3.3	Koonfur-Galbeed Soomaaliya	0.096	Somalia: Koonfur-Galbeed Soomaaliya
		4.3.3.3.4	Jubaland	0.111	Somalia: Jubaland

Arab League = League of Arab States, GCC = Gulf Cooperation Council

**Supplementary Table B 26** List of WRAF0.1 v4.1 regions defined within “west ECOWAS” (WRAF2 v4.1 region 5.1.1). These regions cover the Economic Community of West African States countries of Côte d’Ivoire, the Gambia, Guinea, Guinea-Bissau, Liberia, Mali, Senegal, and Sierra Leone. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
5.1.1.1	far west ECOWAS	5.1.1.1.1	north Senegal	0.099	Senegal (northern)
		5.1.1.1.2	south Senegal	0.100	Senegal (southern)
		5.1.1.1.3	The Gambia, Guinea- Bissau, and Sierra Leone	0.116	ECOWAS: The Gambia, Guinea-Bissau, and Sierra Leone
		5.1.1.1.4	west Guinea	0.099	Guinea (western)
		5.1.1.1.5	east Guinea	0.146	Guinea (eastern)
5.1.1.2	north Mali	5.1.1.2.1	west and south Tim- buktu	0.172	Mali: Timbuktu: Diré, Goundam, Gourma-Rharous, and Niafunké
		5.1.1.2.2	north Tombouc- tou	0.109	Mali: Timbuktu: Tombouc- tou (northern)
		5.1.1.2.3	central west Tombouctou	0.125	Mali: Timbuktu: Tombouc- tou (central western)
		5.1.1.2.4	southeast Tombouctou	0.099	Mali: Timbuktu: Tombouc- tou (southeastern)
		5.1.1.2.5	Kidal	0.142	Mali: Kidal
		5.1.1.2.6	west Gao	0.095	Mali: Gao (western)
		5.1.1.2.7	Ménaka	0.082	Mali: Gao: Ménaka
5.1.1.3	south Mali	5.1.1.3.1	Kayes	0.123	Mali: Kayes
		5.1.1.3.2	Bamako and Koulikoro	0.093	Mali: Bamako and Koulikoro
		5.1.1.3.3	Mopti and Ségou	0.144	Mali: Mopti and Ségou
		5.1.1.3.4	Sikasso	0.071	Mali: Sikasso
5.1.1.4	southwest ECOWAS	5.1.1.4.1	Liberia	0.096	Liberia
		5.1.1.4.2	northwest Côte d’Ivoire	0.121	Côte d’Ivoire (northwestern)
		5.1.1.4.3	southwest Côte d’Ivoire	0.099	Côte d’Ivoire (southwestern)
		5.1.1.4.4	east Côte d’Ivoire	0.102	Côte d’Ivoire (eastern)

ECO = Economic Cooperation Organization, ECOWAS = Economic Community of West African States

**Supplementary Table B 27** List of WRAF0.1 v4.1 regions defined within “east ECOWAS” (WRAF2 v4.1 region 5.1.2). These regions cover the Economic Community of West African States of Benin, Burkina Faso, Ghana, Niger, Nigeria, and Togo. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
5.1.2.1	south ECOWAS	5.1.2.1.1	west Burkina Faso	0.095	Burkina Faso: Boucle du Mouhoun, Cascades, Hauts-Bassins, and Sud-Ouest
		5.1.2.1.2	northeast Burkina Faso	0.084	Burkina Faso: Centre, Centre-Nord, Nord, Plateau-Central, and Sahel
		5.1.2.1.3	southeast Burkina Faso	0.094	Burkina Faso: Centre-Est, Centre-Ouest, Centre-Sud, and Est
		5.1.2.1.4	north Ghana	0.097	Ghana: Northern, Upper East, and Upper West
		5.1.2.1.5	south Ghana	0.143	Ghana (southern)
		5.1.2.1.6	Benin and Togo	0.174	ECOWAS: Benin and Togo
5.1.2.2	Agadez	5.1.2.2.1	north Arlet	0.086	Niger: Agadez: Arlet (northern)
		5.1.2.2.2	south Arlet	0.116	Niger: Agadez: Arlet (southern)
		5.1.2.2.3	north Bilma	0.080	Niger: Agadez: Bilma (northern)
		5.1.2.2.4	central Bilma	0.109	Niger: Agadez: Bilma (central)
		5.1.2.2.5	south Bilma	0.090	Niger: Agadez: Bilma (southern)
		5.1.2.2.6	Tchirozérine	0.145	Niger: Agadez: Tchirozérine
5.1.2.3	south Niger	5.1.2.3.1	Dosso, Niamey, and Tillabéri	0.124	Niger: Dosso, Niamey, and Tillabéri
		5.1.2.3.2	Maradi and Tahoua	0.144	Niger: Maradi and Tahoua
		5.1.2.3.3	Zinder	0.147	Niger: Zinder
		5.1.2.3.4	Diffa	0.144	Niger: Diffa
5.1.2.4	north Nigeria	5.1.2.4.1	Katsina, Kebbi, Sokoto, and Zamfara	0.127	Nigeria: Katsina, Kebbi, Sokoto, and Zamfara
		5.1.2.4.2	Bauche, Gombe, Jigawa, and Kano	0.111	Nigeria: Bauche, Gombe, Jigawa, and Kano
		5.1.2.4.3	Borno and Yobe	0.118	Nigeria: Borno and Yobe
		5.1.2.4.4	Kaduna and Niger	0.115	Nigeria: Kaduna and Niger
5.1.2.5	south Nigeria	5.1.2.5.1	southwest Nigeria	0.112	Nigeria (southwestern)
		5.1.2.5.2	central Nigeria	0.095	Nigeria: Benue, Federal Capital Territory, Kogi, and Nasarawa
		5.1.2.5.3	Adamawa, Plateau, and Taraba	0.123	Nigeria: Adamawa, Plateau, and Taraba
		5.1.2.5.4	southeast Nigeria	0.112	Nigeria (southeastern)

ECO = Economic Cooperation Organization, ECOWAS = Economic Community of West African States

**Supplementary Table B 28** List of WRAF0.1 v4.1 regions defined within “Chad” (WRAF2 v4.1 region 5.2.1). These regions cover Chad. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
5.2.1.1	north Chad	5.2.1.1.1	Tibesti	0.127	Chad: Tibesti
		5.2.1.1.2	North Borkou	0.138	Chad: Borkou (northern)
		5.2.1.1.3	south Borkou	0.119	Chad: Borkou (southern)
		5.2.1.1.4	Ennedi Ouest	0.112	Chad: Ennedi Ouest
		5.2.1.1.5	Ennedi Est	0.078	Chad: Ennedi Est
5.2.1.2	south Chad	5.2.1.2.1	Bahr el Gazel and Kanem	0.123	Chad: Bahr el Gazel and Kanem
		5.2.1.2.2	Batha	0.089	Chad: Batha
		5.2.1.2.3	Ouaddaï and Wadi Fira	0.085	Chad: Ouaddaï and Wadi Fira
		5.2.1.2.4	central east Chad	0.097	Chad: Chari-Baguirmi, Hadjer-Lamis, Lac, and N'Djamena
		5.2.1.2.5	Guéra and Sila	0.099	Chad: Guéra and Sila
		5.2.1.2.6	southwest Chad	0.098	Chad (southwestern)
		5.2.1.2.7	Moyen-Chari and Salamat	0.113	Chad: Moyen-Chari and Salamat

**Supplementary Table B 29** List of WRAF0.1 v4.1 regions defined within “central and south CEMAC” (WRAF2 v4.1 region 5.2.2). These regions cover the Economic and Monetary Community of Central Africa. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
5.2.2.1	Cameroon	5.2.2.1.1	Extrême-Nord and Nord Cameroon	0.102	Cameroon: Extrême-Nord and Nord
		5.2.2.1.2	west Cameroon	0.125	Cameroon (western)
		5.2.2.1.3	Adamaoua and Centre Cameroon	0.130	Cameroon: Adamaoua and Centre
		5.2.2.1.4	Est Cameroon	0.110	Cameroon: Est
5.2.2.2	Central African Republic	5.2.2.2.1	Nana-Mambéré, Ouham, and Ouham-Pendé	0.113	Central African Republic: Nana-Mambéré, Ouham, and Ouham-Pendé
		5.2.2.2.2	southwest Central African Republic	0.098	Central African Republic: Bangui, Lobaye, Mambéré-Kadéï, Ombella-M’Poko, and Sangha-Mbaéré
		5.2.2.2.3	Bamingui-Bangoran and Vakaga	0.103	Central African Republic: Bamingui-Bangoran and Vakaga
		5.2.2.2.4	Basse-Kotto, Kémo, Nana-Grébizi, and Ouaka	0.102	Central African Republic: Basse-Kotto, Kémo, Nana-Grébizi, and Ouaka
		5.2.2.2.5	Haute-Kotto	0.086	Central African Republic: Haute-Kotto
		5.2.2.2.6	Haut-Mbomou and Mbomou	0.115	Central African Republic: Haut-Mbomou and Mbomou
5.2.2.3	south CEMAC	5.2.2.3.1	north Gabon	0.076	Gabon (northern)
		5.2.2.3.2	southwest Gabon	0.080	Gabon (southwestern)
		5.2.2.3.3	southeast Gabon	0.107	Gabon (southeastern)
		5.2.2.3.4	Likouala and Sangha	0.125	Republic of the Congo: Likouala and Sangha
		5.2.2.3.5	Cuvette, Cuvette-Ouest, and Plateaux	0.110	Republic of the Congo: Cuvette, Cuvette-Ouest, and Plateaux
		5.2.2.3.6	south Republic of the Congo	0.110	Republic of the Congo (southern)
		—	—	—	Equatorial Guinea

CEMAC = Economic and Monetary Community of Central Africa

**Supplementary Table B 30** List of WRAF0.1 v4.1 regions defined within “DR Congo” (WRAF2 v4.1 region 6.1.1). These regions cover the Democratic Republic of the Congo. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
6.1.1.1	northwest DR Congo	6.1.1.1.1	Mongala, Nord-Ubangi, and Sud-Ubangi	0.167	Democratic Republic of Congo: Mongala, Nord-Ubangi, and Sud-Ubangi
		6.1.1.1.2	Équateur	0.104	Democratic Republic of Congo: Équateur
		6.1.1.1.3	Tshuapa	0.135	Democratic Republic of Congo: Tshuapa
		6.1.1.1.4	Kasaï-Oriental, Lomami, and Sankuru	0.170	Democratic Republic of Congo: Kasaï-Oriental, Lomami, and Sankuru
6.1.1.2	northeast DR Congo	6.1.1.2.1	Bas-Uele	0.149	Democratic Republic of Congo: Bas-Uele
		6.1.1.2.2	Haut-Uele	0.092	Democratic Republic of Congo: Haut-Uele
		6.1.1.2.3	west Tshopo	0.083	Democratic Republic of Congo: Tshopo (western)
		6.1.1.2.4	east Tshopo	0.115	Democratic Republic of Congo: Tshopo (eastern)
		6.1.1.2.5	Ituri and Nord-Kivu	0.126	Democratic Republic of Congo: Ituri and Nord-Kivu
6.1.1.3	west DR Congo	6.1.1.3.1	Mai-Ndombe	0.127	Democratic Republic of Congo: Mai-Ndombe
		6.1.1.3.2	Kinshasa, Kongo-Central, and Kwilu	0.147	Democratic Republic of Congo: Kinshasa, Kongo-Central, and Kwilu
		6.1.1.3.3	Kwango	0.089	Democratic Republic of Congo: Kwango
		6.1.1.3.4	Kasaï and Kasaï-Central	0.154	Democratic Republic of Congo: Kasaï and Kasaï-Central
6.1.1.4	southeast DR Congo	6.1.1.4.1	Maniema and Sud-Kivu	0.193	Democratic Republic of Congo: Maniema and Sud-Kivu
		6.1.1.4.2	Tanganyika	0.131	Democratic Republic of Congo: Tanganyika
		6.1.1.4.3	Haut-Lomami	0.110	Democratic Republic of Congo: Haut-Lomami
		6.1.1.4.4	Lualaba	0.125	Democratic Republic of Congo: Lualaba
		6.1.1.4.5	Haut-Katanga	0.125	Democratic Republic of Congo: Haut-Katanga

DR Congo = Democratic Republic of the Congo

**Supplementary Table B 31** List of WRAF0.1 v4.1 regions defined within “northwest SADC” (WRAF2 v4.1 region 6.1.2). These regions cover the Southern African Development Community countries of Angola, Malawi, Zambia, and Zimbabwe. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
6.1.2.1	northeast Angola	6.1.2.1.1	northwest Angola	0.080	Angola: Bengo, Cabinda, Lunda, Zaire
		6.1.2.1.2	Cuanza Norte and Uige	0.086	Angola: Cuanza Norte and Uige
		6.1.2.1.3	Malanje	0.085	Angola: Malanje
		6.1.2.1.4	Lunda Norte	0.105	Angola: Lunda Norte
		6.1.2.1.5	Lunda Sul	0.078	Angola: Lunda Sul
		6.1.2.1.6	west Moxico	0.096	Angola: Moxico (western)
		6.1.2.1.7	east Moxico	0.106	Angola: Moxico (eastern)
6.1.2.2	southwest Angola	6.1.2.2.1	Cuanza Sul and Huambo	0.089	Angola: Cuanza Sul and Huambo
		6.1.2.2.2	Benguela and Namibe	0.098	Angola: Benguela and Namibe
		6.1.2.2.3	Bie	0.072	Angola: Bie
		6.1.2.2.4	Huila	0.080	Angola: Huila
		6.1.2.2.5	Cunene	0.076	Angola: Cunene
		6.1.2.2.6	north Cuando Cubango	0.115	Angola: Cuando Cubango (northern)
		6.1.2.2.7	south Cuando Cubango	0.085	Angola: Cuando Cubango (southern)
6.1.2.3	north central SADC	6.1.2.3.1	Luapula and North Zambia	0.118	Zambia: Luapula and North Zambia
		6.1.2.3.2	Northwest Zambia	0.125	Zambia: Northwest Zambia
		6.1.2.3.3	Central Zambia, Copperbelt, and Lusaka	0.148	Zambia: Central Zambia, Copperbelt, and Lusaka
		6.1.2.3.4	East Zambia and Muchinga	0.148	Zambia: East Zambia and Muchinga
		6.1.2.3.5	West Zambia	0.128	Zambia: West Zambia
		6.1.2.3.6	South Zambia	0.085	Zambia: South Zambia
		6.1.2.3.7	Malawi	0.120	Malawi
—	—	6.1.2.X.1	Harare and Mashonaland	0.119	Zimbabwe: Harare, Mashonaland Central, Mashonaland East, and Mashonaland West
		6.1.2.X.2	Bulawayo and Matabeleland	0.132	Zimbabwe: Bulawayo, Matabeleland North, and Matabeleland South
		6.1.2.X.3	Manicaland, Masvingo, and Midlands	0.141	Zimbabwe: Manicaland, Masvingo, and Midlands

SADC = Southern Africa Development Community

**Supplementary Table B 32** List of WRAF0.1 v4.1 regions defined within “east SADC” (WRAF2 v4.1 region 6.2.1). These regions cover the Southern African Development countries of Madagascar, Mozambique, and Tanzania. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
6.2.1.1	northeast Tanzania	6.2.1.1.1	northwest Tanzania	0.155	Tanzania (northwestern)
		6.2.1.1.2	Arusha, Manyara, and Singida	0.134	Tanzania: Arusha, Manyara, and Singida
		6.2.1.1.3	Dodoma and Morogoro	0.110	Tanzania: Dodoma and Morogoro
		6.2.1.1.4	northeast Tanzania	0.078	Tanzania (northeastern)
6.2.1.2	southwest Tanzania	6.2.1.2.1	Kigoma and Tabora	0.124	Tanzania: Kigoma and Tabora
		6.2.1.2.2	Katavi, Mbeya, and Rukwa	0.134	Tanzania: Katavi, Mbeya, and Rukwa
		6.2.1.2.3	Iringa, Njombe, and Ruvuma	0.126	Tanzania: Iringa, Njombe, and Ruvuma
		6.2.1.2.4	Lindi and Mtwara	0.085	Tanzania: Lindi and Mtwara
6.2.1.3	Mozambique	6.2.1.3.1	Niassa	0.130	Mozambique: Niassa
		6.2.1.3.2	Cabo Delgado	0.078	Mozambique: Cabo Delgado
		6.2.1.3.3	Tete	0.101	Mozambique: Tete
		6.2.1.3.4	Zambezia	0.104	Mozambique: Zambezia
		6.2.1.3.5	Nampula	0.079	Mozambique: Nampula
		6.2.1.3.6	Manica and Sofala	0.131	Mozambique: Manica and Sofala
		6.2.1.3.7	Gaza, Inhambane, and Maputo	0.169	Mozambique: Gaza, Inhambane, and Maputo
6.2.1.4	Madagascar	6.2.1.4.1	Antsiranana and Toamasina	0.116	Madagascar: Antsiranana and Toamasina
		6.2.1.4.2	Mahajanga	0.155	Madagascar: Mahajanga
		6.2.1.4.3	Antananarivo and Fianarantsoa	0.160	Madagascar: Antananarivo and Fianarantsoa
		6.2.1.4.4	Toliara	0.166	Madagascar: Toliara

SADC = Southern Africa Development Community



**Supplementary Table B 33** List of WRAF0.1 v4.1 regions defined within “south SADC” (WRAF2 v4.1 region 6.2.2). These regions cover the Southern African Development Community countries of Botswana, Namibia, and South Africa. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
6.2.2.1	Namibia	6.2.2.1.1	Kunune	0.117	Namibia: Kunune
		6.2.2.1.2	northeast Namibia	0.148	Namibia (northeastern)
		6.2.2.1.3	Otjozondjupa	0.105	Namibia: Otjozondjupa
		6.2.2.1.4	Erongo and Khomas	0.101	Namibia: Erongo and Khomas
		6.2.2.1.5	Omaheke	0.085	Namibia: Omaheke
		6.2.2.1.6	Hardap	0.111	Namibia: Hardap
		6.2.2.1.7	Karas	0.161	Namibia: Karas
6.2.2.2	Botswana	6.2.2.2.1	North-West Botswana	0.134	Botswana: North-West
		6.2.2.2.2	Ghanzi	0.115	Botswana: Ghanzi
		6.2.2.2.3	east Botswana	0.152	Botswana (eastern)
		6.2.2.2.4	Kgalagadi	0.106	Botswana: Kgalagadi
		6.2.2.2.5	southeast Botswana	0.074	Botswana (southeastern)
6.2.2.3	west South Africa	6.2.2.3.1	north Northern Cape	0.143	South Africa: Northern Cape (northern)
		6.2.2.3.2	Namakwa	0.127	South Africa: Northern Cape: Namakwa
		6.2.2.3.3	Pixley ka Seme	0.104	South Africa: Northern Cape: Pixley ka Seme
		6.2.2.3.4	Western Cape	0.129	South Africa: Western Cape
		6.2.2.3.5	south Eastern Cape	0.084	South Africa: Eastern Cape (southern)
		6.2.2.3.6	north Eastern Cape	0.085	South Africa: Eastern Cape (northern)
6.2.2.4	east South Africa	6.2.2.4.1	Limpopo	0.123	South Africa: Limpopo
		6.2.2.4.2	North West Province	0.106	South Africa: North West
		6.2.2.4.3	Gauteng and Mpumalanga	0.097	South Africa: Gauteng and Mpumalanga
		6.2.2.4.4	Free State	0.130	South Africa: Free State
		6.2.2.4.5	KwaZulu-Natal	0.092	South Africa: KwaZulu-Natal

SADC = Southern Africa Development Community

**Supplementary Table B 34** List of WRAF0.1 v4.1 regions defined within “northwest Russia” (WRAF2 v4.1 region 7.1.1). These regions cover federal subjects in the Russian Central, Northern, and Northwestern Economic Regions. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
7.1.1.1	west Northern Russia	7.1.1.1.1	Murmansk	0.143	Russia: Murmansk
		7.1.1.1.2	north Karelia	0.079	Russia: Karelia (northern)
		7.1.1.1.3	south Karelia	0.094	Russia: Karelia (southern)
		7.1.1.1.4	Franz Josef, Novaya Zemlya, and Victoria	0.096	Russia: Arkhangelsk: Franz Josef, Novaya Zemlya, and Victoria
		7.1.1.1.5	Leshukonsky, Mezensky, and Pinezhsky	0.091	Russia: Arkhangelsk: Leshukonsky, Mezensky, and Pinezhsky
		7.1.1.1.6	west Arkhangelsk	0.115	Russia: Arkhangelsk (western)
		7.1.1.1.7	southeast Arkhangelsk	0.097	Russia: Arkhangelsk (southeastern)
		7.1.1.1.8	Vologda	0.145	Russia: Vologda
7.1.1.2	Komi and Nenets	7.1.1.2.1	Nenets	0.176	Russia: Nenets
		7.1.1.2.2	central Komi	0.113	Russia: Komi (central)
		7.1.1.2.3	northeast Komi	0.083	Russia: Komi (northeastern)
		7.1.1.2.4	southwest Komi	0.125	Russia: Komi (southwestern)
		7.1.1.2.5	southeast Komi	0.094	Russia: Komi (southeastern)
7.1.1.3	Central and Northwestern Russia	7.1.1.3.1	Leningrad and Saint Petersburg	0.085	Russia: Leningrad and Saint Petersburg
		7.1.1.3.2	Novgorod and Pskov	0.111	Russia: Novgorod and Pskov
		7.1.1.3.3	Smolensk and Tver	0.135	Russia: Smolensk and Tver
		7.1.1.3.4	Ivanovo, Kostroma, and Yaroslavl	0.119	Russia: Ivanovo, Kostroma, and Yaroslavl
		7.1.1.3.5	Moscow, Ryazan, and Vladimir	0.116	Russia: Moscow, Ryazan, and Vladimir
		7.1.1.3.6	Bryansk, Kaluga, Oryol, and Tula	0.115	Russia: Bryansk, Kaluga, Oryol, and Tula

**Supplementary Table B 35** List of WRAF0.1 v4.1 regions defined within “southwest Russia” (WRAF2 v4.1 region 7.1.2). These regions cover federal subjects in the Russian Central Black Earth, North Caucasus, Urals, Volga, and Volga-Vyatka Economic Regions. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
7.1.2.1	Central Black Earth and North Caucasus	7.1.2.1.1	west Central Black Earth	0.081	Russia: Central Black Earth Economic Region (western)
		7.1.2.1.2	east Central Black Earth	0.087	Russia: Central Black Earth Economic Region (eastern)
		7.1.2.1.3	Rostov	0.101	Russia: Rostov
		7.1.2.1.4	Adygea and Krasnodar	0.084	Russia: Adygea and Krasnodar
		7.1.2.1.5	Karachay-Cherkess and Stavropol	0.081	Russia: Karachay-Cherkess and Stavropol
		7.1.2.1.6	south North Caucasus	0.090	Russia: North Caucasus Economic Region (southern)
7.1.2.2	Volga and Volga-Vyatka	7.1.2.2.1	south Volga-Vyatka	0.142	Russia: Chuvash, Mari El, Mordovia, and Nizhny Novgorod
		7.1.2.2.2	Kirov	0.119	Russia: Kirov
		7.1.2.2.3	Penza and Ulyanovsk	0.081	Russia: Penza and Ulyanovsk
		7.1.2.2.4	Samara and Tatarstan	0.121	Russia: Samara and Tatarstan
		7.1.2.2.5	Saratov	0.102	Russia: Saratov
		7.1.2.2.6	Volgograd	0.113	Russia: Volgograd
		7.1.2.2.7	Astrakhan and Kalmykia	0.120	Russia: Astrakhan and Kalmykia
7.1.2.3	Urals	7.1.2.3.1	Perm	0.156	Russia: Perm
		7.1.2.3.2	north Sverdlovsk	0.094	Russia: Sverdlovsk (northern)
		7.1.2.3.3	south Sverdlovsk	0.099	Russia: Sverdlovsk (southern)
		7.1.2.3.4	Bashkortostan and Udmurt	0.184	Russia: Bashkortostan and Udmurt
		7.1.2.3.5	Chelyabinsk	0.088	Russia: Chelyabinsk
		7.1.2.3.6	Kurgan	0.071	Russia: Kurgan
		7.1.2.3.7	Orenburg	0.124	Russia: Orenburg

**Supplementary Table B 36** List of WRAF0.1 v4.1 regions defined within “West Siberia” (WRAF2 v4.1 region 7.2.1). These regions cover federal subjects in the Russian West Siberian Economic Region. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
7.2.1.1	Yamalo-Nenets	7.2.1.1.1	Yamalsky	0.116	Russia: Yamalo-Nenets: Yamalsky
		7.2.1.1.2	Tazovsky	0.134	Russia: Yamalo-Nenets: Tazovsky
		7.2.1.1.3	Priuralsky and Shuryshkarsky	0.122	Russia: Yamalo-Nenets: Priuralsky, Salekhard, and Shuryshkarsky
		7.2.1.1.4	Nadymsky	0.100	Russia: Yamalo-Nenets: Muravlenko, Nadym, Nadymsky, and Novy Urengoy
		7.2.1.1.5	Purovsky	0.106	Russia: Yamalo-Nenets: Noyabrsk and Purovsky
		7.2.1.1.6	Krasnoselkupsky	0.106	Russia: Yamalo-Nenets: Krasnoselkupsky
7.2.1.2	Khanty-Mansi	7.2.1.2.1	Beryozovsky	0.087	Russia: Khanty-Mansi: Beryozovsky
		7.2.1.2.2	central Khanty-Mansi	0.125	Russia: Khanty-Mansi: Belyarsky, Khanty-Mansiysky, and Nefteyugansky
		7.2.1.2.3	Kondinsky, Oktyabrsky, and Sovetskiy	0.111	Russia: Khanty-Mansi: Kondinsky, Oktyabrsky, and Sovetskiy
		7.2.1.2.4	Surgutsky	0.091	Russia: Khanty-Mansi: Surgutsky
		7.2.1.2.5	Nizhnevartovsky	0.117	Russia: Khanty-Mansi: Nizhnevartovsky
7.2.1.3	central West Siberia	7.2.1.3.1	Tobolsky, Uvatsky, and Vagaysky	0.084	Russia: West Siberia: Tyumen: Tobolsky, Uvatsky, and Vagaysky
		7.2.1.3.2	south Tyumen	0.075	Russia: West Siberia: Tyumen (southern)
		7.2.1.3.3	Omsk	0.138	Russia: West Siberia: Omsk
		7.2.1.3.4	Aleksandrovsky and Kargasoksky	0.117	Russia: West Siberia: Tomsk: Aleksandrovsky and Kargasoksky
		7.2.1.3.5	central Tomsk	0.086	Russia: West Siberia: Tomsk (central)
		7.2.1.3.6	east Tomsk	0.111	Russia: West Siberia: Tomsk (eastern)
7.2.1.4	south West Siberia	7.2.1.4.1	west Novosibirsk	0.096	Russia: West Siberia: Novosibirsk (western)
		7.2.1.4.2	east Novosibirsk	0.080	Russia: West Siberia: Novosibirsk (eastern)
		7.2.1.4.3	Altai	0.169	Russia: West Siberia: Altai
		7.2.1.4.4	Altai Republic	0.092	Russia: West Siberia: Altai Republic
		7.2.1.4.5	Kemerovo	0.093	Russia: West Siberia: Kemerovo

**Supplementary Table B 37** List of WRAF0.1 v4.1 regions defined within “north East Siberia” (WRAF2 v4.1 region 7.2.2). These regions cover the Russian East Siberian Economic Region federal subjects of Evenk, Krasnoyarsk, and Taymyr. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
7.2.2.1	Taymyr	7.2.2.1.1	northeast Diksonsky	0.099	Russia: Taymyr: Diksonsky (northeastern)
		7.2.2.1.2	southwest Diksonsky	0.092	Russia: Taymyr: Diksonsky (southwestern)
		7.2.2.1.3	Ust-Yeniseysky	0.092	Russia: Taymyr: Ust-Yeniseysky
		7.2.2.1.4	Dudinka	0.160	Russia: Taymyr: Dudinka
		7.2.2.1.5	west Khatangsky	0.107	Russia: Taymyr: Khatangsky (western)
		7.2.2.1.6	central Khatangsky	0.109	Russia: Taymyr: Khatangsky (central)
		7.2.2.1.7	northeast Khatangsky	0.080	Russia: Taymyr: Khatangsky (northeastern)
		7.2.2.1.8	southeast Khatangsky	0.102	Russia: Taymyr: Khatangsky (southeastern)
7.2.2.2	Evenk	7.2.2.2.1	west Evenk	0.138	Russia: Evenk (western)
		7.2.2.2.2	north central Evenk	0.087	Russia: Evenk (northern central)
		7.2.2.2.3	northeast Evenk	0.092	Russia: Evenk (northeastern)
		7.2.2.2.4	south central Evenk	0.081	Russia: Evenk (southern central)
		7.2.2.2.5	southeast Evenk	0.106	Russia: Evenk (southeastern)
		7.2.2.2.6	Baykitsky	0.148	Russia: Evenk: Baykitsky
		7.2.2.2.7	Tungusko-Chunsky	0.109	Russia: Evenk: Tungusko-Chunsky
7.2.2.3	Krasnoyarsk	7.2.2.3.1	north Turukhansky	0.089	Russia: Krasnoyarsk: Turukhansky (northern)
		7.2.2.3.2	south Turukhansky	0.113	Russia: Krasnoyarsk: Turukhansky (southern)
		7.2.2.3.3	Evenkiysky	0.110	Russia: Krasnoyarsk: Evenkiysky
		7.2.2.3.4	central Krasnoyarsk	0.084	Russia: Krasnoyarsk: Kazachinsky, Motygin-sky, Severo-Yeniseysky, and Taseyevsky
		7.2.2.3.5	Boguchansky and Kezhemsky	0.087	Russia: Krasnoyarsk: Boguchansky and Kezhemsky
		7.2.2.3.6	southwest Krasnoyarsk	0.100	Russia: Krasnoyarsk (southwestern)
		7.2.2.3.7	southeast Krasnoyarsk	0.129	Russia: Krasnoyarsk (southeastern)

**Supplementary Table B 38** List of WRAF0.1 v4.1 regions defined within “south East Siberia” (WRAF2 v4.1 region 8.1.1). These regions cover the Russian East Siberian Economic Region federal subjects of Buryatia, Irkutsk, Tuva, and Zabaykalsky. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
8.1.1.1	Buryatia, Khakassia, and Tuva	8.1.1.1.1	west Tuva	0.076	Russia: Tuva (western)
		8.1.1.1.2	east Tuva	0.093	Russia: Tuva (eastern)
		8.1.1.1.3	northwest Buryatia	0.119	Russia: Buryatia (Lake Baikal)
		8.1.1.1.4	east Buryatia	0.115	Russia: Buryatia (eastern)
		8.1.1.1.5	south Buryatia	0.112	Russia: Buryatia (southern)
—	—	—	—	—	Russia: Khakassia
8.1.1.2	Irkutsk	8.1.1.2.1	Katangsky	0.137	Russia: Irkutsk: Katangsky
		8.1.1.2.2	western Irkutsk	0.102	Russia: Irkutsk: Chunksky, Nizhneudinsk, Nizhneudinsky, Tayshet, and Tayshetsky
		8.1.1.2.3	northwest central Irkutsk	0.087	Russia: Irkutsk: Bratsk, Bratsky, Nizhneilimsky, Ust-Ilimsk, and Ust-Ilimsky
		8.1.1.2.4	northeast central Irkutsk	0.093	Russia: Irkutsk: Kazachinsko-Lensky, Ust-Kut, Ust-Kutsky, and Zhigalovsky
		8.1.1.2.5	Kirensky and Mamsko-Chuysky	0.085	Russia: Irkutsk: Kirensky and Mamsko-Chuysky
		8.1.1.2.6	Bodaybo and Bodaybinsky	0.092	Russia: Irkutsk: Bodaybo and Bodaybinsky
		8.1.1.2.7	southwest central Irkutsk	0.098	Russia: Irkutsk (southwestern central)
		8.1.1.2.8	southeast central Irkutsk	0.075	Russia: Irkutsk (southeastern central)
8.1.1.3	Zabaykalsky	8.1.1.3.1	north Zabaykalsky	0.100	Russia: Zabaykalsky: Kalarsky and Tungiro-Olyokminsky
		8.1.1.3.2	central Zabaykalsky	0.107	Russia: Zabaykalsky (central)
		8.1.1.3.3	west Zabaykalsky	0.091	Russia: Zabaykalsky (western)
		8.1.1.3.4	southeast Zabaykalsky	0.140	Russia: Zabaykalsky (southeastern)

**Supplementary Table B 39** List of WRAF0.1 v4.1 regions defined within “Sakha” (WRAF2 v4.1 region 8.1.2). These regions cover the Russian republic of Sakha. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
8.1.2.1	northwest Sakha	8.1.2.1.1	west Olenyoksky	0.101	Russia: Sakha: Olenyoksky (western)
		8.1.2.1.2	central south Olenyoksky	0.110	Russia: Sakha: Olenyoksky (central southern)
		8.1.2.1.3	northeast Olenyoksky	0.108	Russia: Sakha: Olenyoksky (northeastern)
		8.1.2.1.4	west Bulunsky	0.092	Russia: Sakha: Bulunsky (western)
		8.1.2.1.5	east Bulunsky	0.088	Russia: Sakha: Bulunsky (eastern)
		—	—	—	Russia: Sakha: Anabarsky
8.1.2.2	northeast Sakha	8.1.2.2.1	Ust-Yansky	0.122	Russia: Sakha: Ust-Yansky
		8.1.2.2.2	Allaikhovsky	0.102	Russia: Sakha: Allaikhovsky
		8.1.2.2.3	Abyysky and Verkhnekolymsky	0.137	Russia: Sakha: Abyysky and Verkhnekolymsky
		8.1.2.2.4	Momsky	0.103	Russia: Sakha: Momsky
		8.1.2.2.5	Srednekolymsky	0.124	Russia: Sakha: Srednekolymsky
		8.1.2.2.6	Nizhnekolymsky	0.087	Russia: Sakha: Nizhnekolymsky
8.1.2.3	southwest Sakha	8.1.2.3.1	Mirninsky	0.166	Russia: Sakha: Mirninsky
		8.1.2.3.2	Lensky and Suntarsky	0.135	Russia: Sakha: Lensky and Suntarsky
		8.1.2.3.3	Nyurbinsky, Verkhnevilyuysky, and Vilyuysky	0.148	Russia: Sakha: Nyurbinsky, Verkhnevilyuysky, and Vilyuysky
		8.1.2.3.4	Olyokminsky	0.167	Russia: Sakha: Olyokminsky
8.1.2.4	central Sakha	8.1.2.4.1	Zhigansky	0.137	Russia: Sakha: Zhigansky
		8.1.2.4.2	Eveno-Bytantaysky	0.080	Russia: Sakha: Eveno-Bytantaysky
		8.1.2.4.3	Kobyaysky	0.104	Russia: Sakha: Kobyaysky
		8.1.2.4.4	Verkhoyansky	0.111	Russia: Sakha: Verkhoyansky
		8.1.2.4.5	Tomponsky	0.135	Russia: Sakha: Tomponsky
		8.1.2.4.6	Oymyakonsky	0.093	Russia: Sakha: Oymyakonsky
8.1.2.5	southeast Sakha	8.1.2.5.1	Gorny, Khangalassky, Namsky, and Yakutsk	0.086	Russia: Sakha: Gorny, Khangalassky, Namsky, and Yakutsk
		8.1.2.5.2	Amginsky to Ust-Aldansky	0.090	Russia: Sakha: Amginsky, Churapchinsky, Megino-Kangalassky, Tattinsky, and Ust-Aldansky
		8.1.2.5.3	Ust-Maysky	0.095	Russia: Sakha: Ust-Maysky
		8.1.2.5.4	Aldansky	0.157	Russia: Sakha: Aldansky
		8.1.2.5.5	Neryungrinsky	0.095	Russia: Sakha: Neryungrinsky

**Supplementary Table B 40** List of WRAF0.1 v4.1 regions defined within “north Pacific Russia” (WRAF2 v4.1 region 8.2.1). These regions cover the Russian federal subjects of Chukotka, Kamchatka, and Magadan. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
8.2.1.1	Magadan	8.2.1.1.1	west Magadan	0.110	Russia: Magadan: Susumansky, Tenkinsky, and Yagodninsky
		8.2.1.1.2	Srednekansky	0.092	Russia: Magadan: Srednekansky
		8.2.1.1.3	southeast Magadan	0.154	Russia: Magadan: Khasynsky, Magadan city, Olsky, and Omsukchansky
		8.2.1.1.4	Severo-Evensky	0.103	Russia: Magadan: Severo-Evensky
8.2.1.2	Chukotka	8.2.1.2.1	Bilibinsky	0.173	Russia: Chukotka: Bilibinsky
		8.2.1.2.2	west Anadyrsky	0.091	Russia: Chukotka: Anadyrsky (western)
		8.2.1.2.3	central Anadyrsky	0.101	Russia: Chukotka: Anadyrsky (central)
		8.2.1.2.4	east Anadyrsky	0.094	Russia: Chukotka: Anadyrsky (eastern)
		8.2.1.2.5	east Chukotka	0.195	Russia: Chukotka: Chukotsky, Iultinsky, and Providensky
		8.2.1.2.6	Chaunsky	0.064	Russia: Chukotka: Chaunsky
8.2.1.3	Kamchatka	8.2.1.3.1	Penzhinsky	0.114	Russia: Kamchatka: Penzhinsky
		8.2.1.3.2	Karaginsky and Olyutorsky	0.112	Russia: Kamchatka: Karaginsky and Olyutorsky
		8.2.1.3.3	southeastern Kamchatka	0.110	Russia: Kamchatka: Bystrinsky, Sobolevsky, and Tigilsky
		8.2.1.3.4	southwest Kamchatka	0.121	Russia: Kamchatka (southwestern)



**Supplementary Table B 41** List of WRAF0.1 v4.1 regions defined within “south Pacific Russia” (WRAF2 v4.1 region 8.2.2). These regions cover the Russian federal subjects of Amur, Khabarovsk, Primorsky, Sakhalin, Yevrey. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1			WRAF0.1 v4.1			
ID	Label		ID	Label	Area	Description
8.2.2.1	Amur, Primorsky, and Yevrey		8.2.2.1.1	west Amur	0.095	Russia: Amur: Skovorodinsky, Tynda, and Tyndinsky
			8.2.2.1.2	central Amur	0.098	Russia: Amur: Zeya and Zeysky
			8.2.2.1.3	south Amur	0.099	Russia: Amur (southern)
			8.2.2.1.4	east Amur	0.073	Russia: Amur: Mazanovsky and Selezdzhinsky
			8.2.2.1.5	north Primorsky	0.085	Russia: Primorsky (northern)
			8.2.2.1.6	south Primorsky	0.078	Russia: Primorsky (southern)
			—	—	—	—
8.2.2.2	Khabarovsk		8.2.2.2.1	Okhotsky	0.156	Russia: Khabarovsk: Okhotsky
			8.2.2.2.2	Ayano-Maysky	0.163	Russia: Khabarovsk: Ayano-Maysky
			8.2.2.2.3	Tuguro-Chumikansky	0.098	Russia: Khabarovsk: Tuguro-Chumikansky
			8.2.2.2.4	southwest Khabarovsk	0.127	Russia: Khabarovsk: imemni Poliny Osipenko, Solnechny, and Verkhnebureinsky
			8.2.2.2.5	southeast Khabarovsk	0.097	Russia: Khabarovsk (southeastern)
			8.2.2.2.6	south Khabarovsk	0.136	Russia: Khabarovsk (southern)
—	—	8.2.2.X.1	Sakhalin	0.088	Russia: Sakhalin	

**Supplementary Table B 42** List of WRAF0.1 v4.1 regions defined within “northwest ECO” (WRAF2 v4.1 region 9.1.1). These regions cover the Economic Cooperation Organization countries of Azerbaijan, Turkey, Turkmenistan, and Uzbekistan. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
9.1.1.1	Turkey	9.1.1.1.1	Marmara Turkey	0.074	Turkey (Marmara)
		9.1.1.1.2	Black Sea Turkey	0.117	Turkey (Black Sea)
		9.1.1.1.3	Aegean Turkey	0.090	Turkey (Aegean)
		9.1.1.1.4	west Central Anatolia	0.097	Turkey (western Central Anatolia)
		9.1.1.1.5	east Central Anatolia	0.091	Turkey (eastern Central Anatolia)
		9.1.1.1.6	Eastern Anatolia	0.146	Turkey (Eastern Anatolia)
		9.1.1.1.7	Mediterranean Turkey	0.091	Turkey (Mediterranean)
		9.1.1.1.8	Southeastern Anatolia	0.078	Turkey (Southeastern Anatolia)
9.1.1.2	Turkmenistan	9.1.1.2.1	Balkan	0.119	Turkmenistan: Balkan
		9.1.1.2.2	Daoguz	0.073	Turkmenistan: Daoguz
		9.1.1.2.3	Ahal and Ashgabat	0.101	Turkmenistan: Ahal and Ashgabat
		9.1.1.2.4	Lebap	0.093	Turkmenistan: Lebap
		9.1.1.2.5	Mary	0.086	Turkmenistan: Mary
9.1.1.3	Uzbekistan	9.1.1.3.1	Qongiro	0.076	Uzbekistan: Karakalpakstan: Qongiro
		9.1.1.3.2	east Karakalpakstan	0.089	Uzbekistan: Karakalpakstan (eastern)
		9.1.1.3.3	Navoiy	0.108	Uzbekistan: Navoiy
		9.1.1.3.4	Bukhara, Qashqadaryo, and Surxondaryo	0.096	Uzbekistan: Bukhara, Qashqadaryo, and Surxondaryo
		9.1.1.3.5	east Uzbekistan	0.078	Uzbekistan (eastern)
—	—	9.1.1.X.1	Azerbaijan	0.086	Azerbaijan

ECO = Economic Cooperation Organization

**Supplementary Table B 43** List of WRAF0.1 v4.1 regions defined within “Iran” (WRAF2 v4.1 region 9.1.2). These regions cover Iran. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
9.1.2.1	northwest Iran	9.1.2.1.1	west Iranian Region 3	0.084	Iran: Region 3 (western)
		9.1.2.1.2	east Iranian Region 3	0.087	Iran: Region 3 (eastern)
		9.1.2.1.3	west Iranian Region 1	0.092	Iran: Region 1 (except Semnan)
		9.1.2.1.4	Semnan	0.090	Iran: Region 1: Semnan
		9.1.2.1.5	north Iranian Region 4	0.101	Iran: Region 4 (northern)
		9.1.2.1.6	Ilam and Khuzestan	0.083	Iran: Region 4: Ilam and Khuzestan
9.1.2.2	southwest Iran	9.1.2.2.1	central Iran	0.139	Iran: Chaharmahal and Bakhtiari, Isfahan, and Kohgiluyeh and Boyer-Ahmad
		9.1.2.2.2	Yazd	0.128	Iran: Yazd
		9.1.2.2.3	Bushehr and Hormozgan	0.091	Iran: Bushehr and Hormozgan
		9.1.2.2.4	Fars	0.126	Iran: Fars
9.1.2.3	east Iran	9.1.2.3.1	North Khorasan and Razavi Khorasan	0.162	Iran: North Khorasan and Razavi Khorasan
		9.1.2.3.2	South Khorasan	0.083	Iran: South Khorasan
		9.1.2.3.3	north Kerman	0.084	Iran: Kerman (northern)
		9.1.2.3.4	south Kerman	0.100	Iran: Kerman (southern)
		9.1.2.3.5	north Sistan and Baluchestan	0.087	Iran: Sistan and Baluchestan (northern)
		9.1.2.3.6	south Sistan and Baluchestan	0.090	Iran: Sistan and Baluchestan (southern)

**Supplementary Table B 44** List of WRAF0.1 v4.1 regions defined within “Kazakhstan” (WRAF2 v4.1 region 9.2.1). These regions cover Kazakhstan. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
9.2.1.1	western Kazakhstan	9.2.1.1.1	West Kazakhstan	0.153	Kazakhstan: West Kazakhstan
		9.2.1.1.2	Atyrau	0.112	Kazakhstan: Atyrau
		9.2.1.1.3	Beyneu and Mangystau District	0.089	Kazakhstan: Mangystau: Beyneu and Mangystau District
		9.2.1.1.4	Karakiya, Munaily, and Tupkaragan	0.078	Kazakhstan: Mangystau: Karakiya, Munaily, and Tupkaragan
9.2.1.2	north Kazakhstan	9.2.1.2.1	north Kostanay	0.107	Kazakhstan: Kostanay (northern)
		9.2.1.2.2	south Kostanay	0.094	Kazakhstan: Kostanay (southern)
		9.2.1.2.3	North Kazakhstan	0.090	Kazakhstan: North Kazakhstan
		9.2.1.2.4	Akmola and Astana	0.145	Kazakhstan: Akmola and Astana
		9.2.1.2.5	Pavlodar	0.123	Kazakhstan: Pavlodar
9.2.1.3	southwest Kazakhstan	9.2.1.3.1	northwest Aktobe	0.100	Kazakhstan: Aktobe (northwestern)
		9.2.1.3.2	Ayteke Bi and Yrgyz	0.077	Kazakhstan: Aktobe: Ayteke Bi and Yrgyz
		9.2.1.3.3	Bayganin and Shalkar	0.124	Kazakhstan: Aktobe: Bayganin and Shalkar
		9.2.1.3.4	Aral, Karmakshy, and Kazaly	0.125	Kazakhstan: Kyzylorda: Aral, Karmakshy, and Kazaly
		9.2.1.3.5	east Kyzylorda	0.105	Kazakhstan: Kyzylorda (eastern)
		9.2.1.3.6	South Kazakhstan	0.114	Kazakhstan: South Kazakhstan
9.2.1.4	central Kazakhstan	9.2.1.4.1	Ulytau	0.128	Kazakhstan: Karaganda: Ulytau
		9.2.1.4.2	Nura and Zhanaarka	0.110	Kazakhstan: Karaganda: Nura and Zhanaarka
		9.2.1.4.3	Abay, Bukhar-Zhyrau, Osakarov, and Shet	0.099	Kazakhstan: Karaganda: Abay, Bukhar-Zhyrau, Osakarov, and Shet
		9.2.1.4.4	Aktogay and Karkaraly	0.092	Kazakhstan: Karaganda: Aktogay and Karkaraly
		9.2.1.4.5	Jambyl	0.140	Kazakhstan: Jambyl
9.2.1.5	east Kazakhstan	9.2.1.5.1	north Almaty	0.122	Kazakhstan: Almaty (northern)
		9.2.1.5.2	south Almaty	0.108	Kazakhstan: Almaty (southern)
		9.2.1.5.3	northwest East Kazakhstan	0.089	Kazakhstan: East Kazakhstan (northwestern)
		9.2.1.5.4	northeast East Kazakhstan	0.087	Kazakhstan: East Kazakhstan (northeastern)
		9.2.1.5.5	south East Kazakhstan	0.104	Kazakhstan: East Kazakhstan (southern)

**Supplementary Table B 45** List of WRAF0.1 v4.1 regions defined within “southeast ECO” (WRAF2 v4.1 region 9.2.2). These regions cover the Economic Cooperation Organization countries of Afghanistan, Kyrgyzstan, Pakistan, and Tajikistan. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
9.2.2.1	Afghanistan	9.2.2.1.1	north Afghanistan	0.085	Afghanistan (northern)
		9.2.2.1.2	northwest Afghanistan	0.089	Afghanistan (northwestern)
		9.2.2.1.3	Badghis, Ghor, and Herat	0.112	Afghanistan: Badghis, Ghor, and Herat
		9.2.2.1.4	central Afghanistan	0.079	Afghanistan (central)
		9.2.2.1.5	west Afghanistan	0.074	Afghanistan (western)
		9.2.2.1.6	Farah and Nimruz	0.091	Afghanistan: Farah and Nim- ruz
		9.2.2.1.7	Helmand and Kandahar	0.111	Afghanistan: Helmand and Kandahar
9.2.2.2	Pakistan	9.2.2.2.1	FATA, Is- lamabad, and Khyber Pakhtunkhwa	0.103	Pakistan: FATA, Islamabad, and Khyber Pakhtunkhwa
		9.2.2.2.2	Azad Kashmir and Gilgit- Baltistan	0.078	Pakistan: Azad Kashmir and Gilgit-Baltistan
		9.2.2.2.3	Makran and Quetta	0.119	Pakistan: Balochistan: Makran and Quetta
		9.2.2.2.4	Kalat	0.138	Pakistan: Balochistan: Kalat
		9.2.2.2.5	Nasirabad, Sibi, and Zhob	0.089	Pakistan: Balochistan: Nasir- abad, Sibi, and Zhob
		9.2.2.2.6	north Punjab	0.100	Pakistan: Punjab (northern)
		9.2.2.2.7	Bahawalpur, Dera Ghazi Khan, and Multan	0.107	Pakistan: Punjab: Ba- hawalpur, Dera Ghazi Khan, and Multan
		9.2.2.2.8	Sindh	0.141	Pakistan: Sindh
—	—	9.2.2.X.1	west Kyrgyzs- tan	0.091	Kyrgyzstan (western)
		9.2.2.X.2	east Kyrgyzs- tan	0.107	Kyrgyzstan (eastern)
		9.2.2.X.3	Tajikistan	0.142	Tajikistan

ECO = Economic Cooperation Organization

**Supplementary Table B 46** List of WRAF0.1 v4.1 regions defined within “northwest China” (WRAF2 v4.1 region 10.1.1). These regions cover the Chinese provinces of Gansu, Qinghai, and Xinjiang Uyghur. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
10.1.1.1	north Xinjiang Uyghur	10.1.1.1.1	Altay	0.117	China: Xinjiang Uyghur: Altay
		10.1.1.1.2	Karamay and Tacheng	0.104	China: Xinjiang Uyghur: Karamay and Tacheng
		10.1.1.1.3	Börtala Mongol and Ili Kazakh	0.080	China: Xinjiang Uyghur: Börtala Mongol and Ili Kazakh
		10.1.1.1.4	Changji Hui, Turpan, and Ürümqi	0.157	China: Xinjiang Uyghur: Changji Hui, Turpan, and Ürümqi
		10.1.1.1.5	Hami	0.136	China: Xinjiang Uyghur: Hami
10.1.1.2	west Xinjiang Uyghur	10.1.1.2.1	Kizilsu Kirghiz	0.068	China: Xinjiang Uyghur: Kizilsu Kirghiz
		10.1.1.2.2	Aksu	0.131	China: Xinjiang Uyghur: Aksu
		10.1.1.2.3	Kashgar	0.113	China: Xinjiang Uyghur: Kashgar
		10.1.1.2.4	east Hotan	0.082	China: Xinjiang Uyghur: Hotan: Hotan City, Hotan County, and Pishan
		10.1.1.2.5	central Hotan	0.071	China: Xinjiang Uyghur: Hotan: Lop, Moyu, and Qira
		10.1.1.2.6	east Hotan	0.097	China: Xinjiang Uyghur: Hotan: Minfeng and Yutian
10.1.1.3	Bayingolin	10.1.1.3.1	north Bayingolin	0.136	China: Xinjiang Uyghur: Bayingolin (northern)
		10.1.1.3.2	Qiemo	0.140	China: Xinjiang Uyghur: Bayingolin: Qiemo
		10.1.1.3.3	west Ruoqiang	0.110	China: Xinjiang Uyghur: Bayingolin: Ruoqiang (western)
		10.1.1.3.4	east Ruoqiang	0.088	China: Xinjiang Uyghur: Bayingolin: Ruoqiang (eastern)
10.1.1.4	Gansu and Ningxia	10.1.1.4.1	Jiuquan	0.145	China: Gansu: Jiuquan
		10.1.1.4.2	central Gansu	0.122	China: Gansu (central)
		10.1.1.4.3	south Gansu	0.137	China: Gansu (southern)
		—	—	—	China: Ningxia
10.1.1.5	Qinghai	10.1.1.5.1	northwest Haixi Mongol and Tibetan	0.105	China: Qinghai: Haixi Mongol and Tibetan: Da'qaidam, Lenghu, and Mangnai
		10.1.1.5.2	east Haixi Mongol and Tibetan	0.113	China: Qinghai: Haixi Mongol and Tibetan: Delingha, Dulan, Tianjun, and Ulan
		10.1.1.5.3	Golmud	0.109	China: Qinghai: Haixi Mongol and Tibetan: Golmud
		10.1.1.5.4	east Qinghai	0.115	China: Qinghai (eastern)
		10.1.1.5.5	north Yushu Tibetan	0.122	China: Qinghai: Yushu Tibetan (northern)
		10.1.1.5.6	south Yushu Tibetan	0.081	China: Qinghai: Yushu Tibetan (southern)
		10.1.1.5.7	Golog Tibetan	0.076	China: Qinghai: Golog Tibetan

**Supplementary Table B 47** List of WRAF0.1 v4.1 regions defined within “northeast China” (WRAF2 v4.1 region 10.1.2). These regions cover the Chinese provinces of Hebei, Heilongjiang, Jilin, Inner Mongolia, Liaoning, and Shandong. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
10.1.2.1	west Inner Mongolia	10.1.2.1.1	Ejin	0.085	China: Inner Mongolia: Alxa: Ejin
		10.1.2.1.2	Alxa Right	0.075	China: Inner Mongolia: Alxa: Alxa Right
		10.1.2.1.3	Alxa Left	0.080	China: Inner Mongolia: Alxa: Alxa Left
		10.1.2.1.4	Baotou and Bayannur	0.090	China: Inner Mongolia: Baotou and Bayannur
		10.1.2.1.5	Hohhot and Ulanqab	0.074	China: Inner Mongolia: Hohhot and Ulanqab
		10.1.2.1.6	Ordos and Wuhai	0.088	China: Inner Mongolia: Ordos and Wuhai
10.1.2.2	east Inner Mongolia	10.1.2.2.1	west Xilin Gol	0.118	China: Inner Mongolia: Xilin Gol (western)
		10.1.2.2.2	east Xilin Gol	0.086	China: Inner Mongolia: Xilin Gol (eastern)
		10.1.2.2.3	Chifeng	0.085	China: Inner Mongolia: Chifeng
		10.1.2.2.4	Tongliao and Hinggan	0.113	China: Inner Mongolia: Tongliao and Hinggan
		10.1.2.2.5	west Hulunbuir	0.112	China: Inner Mongolia: Hulunbuir (western)
		10.1.2.2.6	east Hulunbuir	0.141	China: Inner Mongolia: Hulunbuir (eastern)
10.1.2.3	Heilongjiang and Jilin	10.1.2.3.1	north Heilongjiang	0.131	China: Heilongjiang: Daxing'anling and Heihe
		10.1.2.3.2	west Heilongjiang	0.098	China: Heilongjiang: Daqing, Qiqihar, and Suihua
		10.1.2.3.3	east Heilongjiang	0.103	China: Heilongjiang: Hegang, Jiamusi, Shuangyashan, and Yichun
		10.1.2.3.4	south Heilongjiang	0.122	China: Heilongjiang: Harbin, Jixi, Mudanjiang, and Qitaihe
		10.1.2.3.5	west Jilin	0.082	China: Jilin: Baicheng, Changchun, Liaoyuan, Siping, and Songyuan
		10.1.2.3.6	east Jilin	0.104	China: Jilin: Baishan, Jilin, Tonghua, and Yanbian Korean
10.1.2.4	northern east China	10.1.2.4.1	north Hebei	0.096	China: Hebei (northern)
		10.1.2.4.2	south Hebei	0.090	China: Hebei (southern)
		10.1.2.4.3	Liaoning	0.146	China: Liaoning
		10.1.2.4.4	Shandong	0.156	China: Shandong
		—	—	—	China: Beijing and Tianjin

**Supplementary Table B 48** List of WRAF0.1 v4.1 regions defined within “south-west China” (WRAF2 v4.1 region 10.2.1). These regions cover the Chinese provinces of Chongqing, Guizhou, Sichuan, Tibet-Xizang, and Yunnan. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
10.2.1.1	northeast Tibet-Xizang	10.2.1.1.1	north Nyima	0.093	China: Tibet-Xizang: Nagchu: Nyima (northern)
		10.2.1.1.2	south Nyima	0.082	China: Tibet-Xizang: Nagchu: Nyima (southern)
		10.2.1.1.3	Raingoin and Xainza	0.125	China: Tibet-Xizang: Nagchu: Raingoin and Xainza
		10.2.1.1.4	east Nagchu	0.093	China: Tibet-Xizang: Nagchu (eastern)
		10.2.1.1.5	Chamdo	0.106	China: Tibet-Xizang: Chamdo
		10.2.1.1.6	Nyingtri	0.081	China: Tibet-Xizang: Ny- ingtri
10.2.1.2	southwest Tibet-Xizang	10.2.1.2.1	Rutog	0.073	China: Tibet-Xizang: Ngari: Rutog
		10.2.1.2.2	Coqên and Gêrzê	0.120	China: Tibet-Xizang: Ngari: Coqên and Gêrzê
		10.2.1.2.3	southwest Ngari	0.101	China: Tibet-Xizang: Ngari (southwestern)
		10.2.1.2.4	west Shigatse	0.076	China: Tibet-Xizang: Shi- gatse (western)
		10.2.1.2.5	east Shigatse	0.106	China: Tibet-Xizang: Shi- gatse (eastern)
		10.2.1.2.6	Lhasa and Shannan	0.077	China: Tibet-Xizang: Lhasa and Shannan
10.2.1.3	Chongqing and Sichuan	10.2.1.3.1	Garzê Tibetan	0.148	China: Sichuan: Garzê Ti- betan
		10.2.1.3.2	Ngawa Ti- betan and Qiang	0.084	China: Sichuan: Ngawa Ti- betan and Qiang
		10.2.1.3.3	east Sichuan	0.114	China: Sichuan (eastern)
		10.2.1.3.4	south Sichuan	0.138	China: Sichuan (southern)
		10.2.1.3.5	Chongqing	0.081	China: Chongqing
10.2.1.4	Guizhou and Yunnan	10.2.1.4.1	northwest Yunnan	0.117	China: Yunnan (northwest- ern)
		10.2.1.4.2	southwest Yunnan	0.087	China: Yunnan (southwest- ern)
		10.2.1.4.3	northeast Yunnan	0.101	China: Yunnan (northeast- ern)
		10.2.1.4.4	southeast Yunnan	0.079	China: Yunnan (southeast- ern)
		10.2.1.4.5	west Guizhou	0.071	China: Guizhou (western)
		10.2.1.4.6	east Guizhou	0.106	China: Guizhou (eastern)



**Supplementary Table B 49** List of WRAF0.1 v4.1 regions defined within “southeast China” (WRAF2 v4.1 region 10.2.2). These regions cover the Chinese provinces of Anhui, Fujian, Guangdong, Guangxi, Henan, Hubei, Hunan, Jiangsu, Jiangxi, Shaanxi, Shanghai, Shanxi, and Zhejiang. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
10.2.2.1	Henan, Shaanxi, and Shanxi	10.2.2.1.1	north Shaanxi	0.080	China: Shaanxi: Yan'an and Yulin
		10.2.2.1.2	south Shaanxi	0.126	China: Shaanxi (southern)
		10.2.2.1.3	Shanxi	0.155	China: Shanxi
		10.2.2.1.4	northeast Henan	0.072	China: Henan (northeastern)
		10.2.2.1.5	southwest Henan	0.094	China: Henan (southwestern)
10.2.2.2	central east China	10.2.2.2.1	west Hubei	0.092	China: Hubei (western)
		10.2.2.2.2	east Hubei	0.094	China: Hubei (eastern)
		10.2.2.2.3	Anhui	0.139	China: Anhui
		10.2.2.2.4	Jiangsu and Shanghai	0.108	China: Jiangsu and Shanghai
		10.2.2.2.5	Zhejiang	0.103	China: Zhejiang
10.2.2.3	Fujian, Hunan, and Jiangxi	10.2.2.3.1	west Hunan	0.115	China: Hunan (western)
		10.2.2.3.2	east Hunan	0.098	China: Hunan (eastern)
		10.2.2.3.3	north Jiangxi	0.084	China: Jiangxi (northern)
		10.2.2.3.4	south Jiangxi	0.084	China: Jiangxi: Fuzhou, Ganzhou, and Ji'an
		10.2.2.3.5	Fujian	0.121	China: Fujian
10.2.2.4	south coast China	10.2.2.4.1	west Guangxi	0.129	China: Guangxi (western)
		10.2.2.4.2	east Guangxi	0.108	China: Guangxi (eastern)
		10.2.2.4.3	west Guangdong	0.092	China: Guangdong (western)
		10.2.2.4.4	east Guangdong	0.089	China: Guangdong (eastern)
		—	—	—	China: Hainan, Hong Kong, and Macau

**Supplementary Table B 50** List of WRAF0.1 v4.1 regions defined within “Western Australia” (WRAF2 v4.1 region 11.1.1). These regions cover the Australian state of Western Australia. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
11.1.1.1	Kimberley	11.1.1.1.1	Broome and Derby-West Kimberley	0.165	Australia: Western Australia: Broome and Derby-West Kimberley
		11.1.1.1.2	Wyndham-East Kimberley	0.123	Australia: Western Australia: Wyndham-East Kimberley
		11.1.1.1.3	Halls Creek	0.144	Australia: Western Australia: Halls Creek
11.1.1.2	Gascoyne and Pilbara	11.1.1.2.1	Gascoyne	0.136	Australia: Western Australia: Gascoyne
		11.1.1.2.2	west Pilbara	0.130	Australia: Western Australia (western Pilbara)
		11.1.1.2.3	west East Pilbara	0.106	Australia: Western Australia: East Pilbara (western)
		11.1.1.2.4	west central East Pilbara	0.086	Australia: Western Australia: East Pilbara (western central)
		11.1.1.2.5	east central East Pilbara	0.111	Australia: Western Australia: East Pilbara (eastern central)
		11.1.1.2.6	east East Pilbara	0.074	Australia: Western Australia: East Pilbara (eastern)
11.1.1.3	southwest Western Australia	11.1.1.3.1	west Mid West Western Australia	0.098	Australia: Western Australia (western Mid West)
		11.1.1.3.2	central Mid West Western Australia	0.089	Australia: Western Australia (central Mid West)
		11.1.1.3.3	Meekatharra	0.101	Australia: Western Australia: Meekatharra
		11.1.1.3.4	west Wiluna	0.082	Australia: Western Australia: Wiluna (western)
		11.1.1.3.5	east Wiluna	0.101	Australia: Western Australia: Wiluna (eastern)
		11.1.1.3.6	Wheatbelt	0.155	Australia: Western Australia (Wheatbelt)
		11.1.1.3.7	far southwest Western Australia	0.073	Australia: Western Australia (Great Southern, Peel, Perth Metropolitan Area, and South West)
11.1.1.4	Goldfields-Esperance	11.1.1.4.1	Ngaanyatjarraku	0.162	Australia: Western Australia: Ngaanyatjarraku
		11.1.1.4.2	west Laverton	0.092	Australia: Western Australia: Laverton (west)
		11.1.1.4.3	east Laverton	0.089	Australia: Western Australia: Laverton (eastern)
		11.1.1.4.4	Leonora and Menzies	0.156	Australia: Western Australia: Leonora and Menzies
		11.1.1.4.5	Coolgardie and Kalgoorlie/ Boulder	0.126	Australia: Western Australia: Coolgardie and Kalgoorlie/ Boulder
		11.1.1.4.6	south Goldfields-Esperance	0.152	Australia: Western Australia: Dundas, Esperance, and Ravensthorpe

**Supplementary Table B 51** List of WRAF0.1 v4.1 regions defined within “southeast Australia” (WRAF2 v4.1 region 11.1.2). These regions cover the Australian state of New South Wales, South Australia, Tasmania, and Victoria. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
11.1.2.1	Far North South Australia	11.1.2.1.1	northwest Unincorp Far North South Australia	0.104	Australia: South Australia: Unincorporated Far North (northwestern)
		11.1.2.1.2	northeast Unincorp Far North South Australia	0.126	Australia: South Australia: Unincorporated Far North (northeastern)
		11.1.2.1.3	central Unincorp Far North South Australia	0.105	Australia: South Australia: Unincorporated Far North (central)
		11.1.2.1.4	south Unincorp Far North South Australia	0.132	Australia: South Australia: Unincorporated Far North (southern)
11.1.2.2	south South Australia	11.1.2.2.1	Anangu Pitjantjatjara	0.102	Australia: South Australia: Anangu Pitjantjatjara
		11.1.2.2.2	Maralinga Tjarutja	0.103	Australia: South Australia: Maralinga Tjarutja
		11.1.2.2.3	southwest South Australia	0.087	Australia: South Australia (southwestern)
		11.1.2.2.4	central west South Australia	0.120	Australia: South Australia (central western)
		11.1.2.2.5	southeast South Australia	0.108	Australia: South Australia (southeastern)
11.1.2.3	New South Wales	11.1.2.3.1	Broken Hill and Unincorporated Far West	0.094	Australia: New South Wales: Broken Hill and Unincorporated Far West
		11.1.2.3.2	west North Western New South Wales	0.107	Australia: New South Wales (western North Western)
		11.1.2.3.3	east North Western New South Wales	0.088	Australia: New South Wales (eastern North Western)
		11.1.2.3.4	North Coast, Northern, and Richmond-Tweed	0.132	Australia: New South Wales (North Coast, Northern, and Richmond-Tweed)
		11.1.2.3.5	Central Darling and Murrumbidgee	0.109	Australia: New South Wales (Central Darling and Murrumbidgee)
		11.1.2.3.6	Murray	0.098	Australia: New South Wales: Murray
		11.1.2.3.7	Central West and Hunter	0.102	Australia: New South Wales (Central West and Hunter)
		11.1.2.3.8	Canberra Region, Illawarra, and Sydney	0.072	Australia: New South Wales (Canberra Region, Illawarra, and Sydney)
—	—	11.1.2.X.1	west Victoria	0.137	Australia: Victoria (Barwon South West, Grampians, and Loddon Mallee)
		11.1.2.X.2	Gippsland, Greater Melbourne, and Hume	0.090	Australia: Victoria (Gippsland, Greater Melbourne, and Hume)
		11.1.2.X.3	Tasmania	0.069	Australia: Tasmania

**Supplementary Table B 52** List of WRAF0.1 v4.1 regions defined within “Northern Territory” (WRAF2 v4.1 region 11.2.1). These regions cover the Australian territory of Northern Territory. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
11.2.1.1	Darwin, East Arnhem, and Katherine	11.2.1.1.1	north Northern Territory Australia	0.153	Australia: Northern Territory (northern)
		11.2.1.1.2	Victoria Daly	0.157	Australia: Northern Territory: Victoria Daly
		11.2.1.1.3	west Roper Gulf	0.102	Australia: Northern Territory: Roper Gulf (western)
		11.2.1.1.4	east Roper Gulf	0.094	Australia: Northern Territory: Roper Gulf (eastern)
11.2.1.2	Alice Springs and Barkly Tableland	11.2.1.2.1	northwest Barkly	0.096	Australia: Northern Territory: Barkly (northwestern)
		11.2.1.2.2	northeast Barkly	0.099	Australia: Northern Territory: Barkly (northeastern)
		11.2.1.2.3	south Barkly	0.109	Australia: Northern Territory: Barkly (southern)
		11.2.1.2.4	Northern Tanami and Southern Tanami	0.144	Australia: Northern Territory: Central Desert: Northern Tanami and Southern Tanami
		11.2.1.2.5	Akityarre and Anmatjere	0.141	Australia: Northern Territory: Akityarre and Anmatjere
		11.2.1.2.6	west MacDonnell	0.110	Australia: Northern Territory: MacDonnell (western)
		11.2.1.2.7	central MacDonnell	0.084	Australia: Northern Territory: MacDonnell (central)
		11.2.1.2.8	east MacDonnell	0.072	Australia: Northern Territory: MacDonnell (eastern)

**Supplementary Table B 53** List of WRAF0.1 v4.1 regions defined within “Queensland” (WRAF2 v4.1 region 11.2.2). These regions cover the Australian state of Queensland. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
11.2.2.1	north Queensland	11.2.2.1.1	north Far North Queensland	0.132	Australia: Queensland (northern Far North)
		11.2.2.1.2	southwest Far North Queensland	0.140	Australia: Queensland (southwestern Far North)
		11.2.2.1.3	southeast Far North Queensland	0.114	Australia: Queensland (southeastern Far North)
		11.2.2.1.4	Cloncurry and Mount Isa	0.092	Australia: Queensland: Cloncurry and Mount Isa
		11.2.2.1.5	Flinders, McKinlay, and Richmond	0.109	Australia: Queensland: Flinders, McKinlay, and Richmond
		11.2.2.1.6	east North Queensland	0.080	Australia: Queensland (eastern North)
11.2.2.2	central Queensland	11.2.2.2.1	Boulia and Winton	0.115	Australia: Queensland: Boulia and Winton
		11.2.2.2.2	Diamantina	0.095	Australia: Queensland: Diamantina
		11.2.2.2.3	Barcoo and Longreach	0.103	Australia: Queensland: Barcoo and Longreach
		11.2.2.2.4	Barcaldine and Blackall-Tambo	0.084	Australia: Queensland: Barcaldine and Blackall-Tambo
		11.2.2.2.5	east central Queensland	0.125	Australia: Queensland (eastern Central)
		11.2.2.2.6	Mackay, Isaac, and Whitsunday	0.093	Australia: Queensland: Mackay, Isaac, and Whitsunday
11.2.2.3	south Queensland	11.2.2.3.1	Quilpie and Murweh	0.108	Australia: Queensland: Quilpie and Murweh
		11.2.2.3.2	Bulloo and Paroo	0.122	Australia: Queensland: Bulloo and Paroo
		11.2.2.3.3	Balonne and Maranoa	0.090	Australia: Queensland: Balonne and Maranoa
		11.2.2.3.4	Darling Downs	0.071	Australia: Queensland (Darling Downs)
		11.2.2.3.5	South East and Wide Bay Burnett	0.071	Australia: Queensland (South East and Wide Bay Burnett)

**Supplementary Table B 54** List of WRAF0.1 v4.1 regions defined within “north Andean Community” (WRAF2 v4.1 region X.1.1). These regions cover the Andean Community countries of Colombia and Ecuador. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.1.1.1	west Colombia	X.1.1.1.1	north Colombia	0.096	Colombia (northern)
		X.1.1.1.2	Antioquia, Cordoba, and Sucre	0.100	Colombia: Antioquia, Cordoba, and Sucre
		X.1.1.1.3	north central Colombia	0.100	Colombia (northern central)
		X.1.1.1.4	central west Colombia	0.105	Colombia (central western)
		X.1.1.1.5	Cauca, Huila, and Narino	0.081	Colombia: Cauca, Huila, and Narino
X.1.1.2	east Colombia	X.1.1.2.1	Arauca, Casanare, and Meta	0.155	Colombia: Arauca, Casanare, and Meta
		X.1.1.2.2	Vichada	0.099	Colombia: Vichada
		X.1.1.2.3	Guainia	0.070	Colombia: Guainia
		X.1.1.2.4	Caqueta and Putumayo	0.116	Colombia: Caqueta and Putumayo
		X.1.1.2.5	Guaviare and Vaupes	0.108	Colombia: Guaviare and Vaupes
		X.1.1.2.6	Amazonas	0.108	Colombia: Amazonas
		X.1.1.X.1	north Ecuador	0.086	Ecuador (Regions 1 and 2)
		X.1.1.X.2	west Ecuador	0.090	Ecuador (Regions 4, 5, and 7)
		X.1.1.X.3	central Ecuador	0.081	Ecuador (Regions 3 and 6)

**Supplementary Table B 55** List of WRAF0.1 v4.1 regions defined within “south Andean Community” (WRAF2 v4.1 region X.1.2). These regions cover the Andean Community countries of Bolivia and Peru. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.1.2.1	southwest Peru	X.1.2.1.1	northwest Peru	0.114	Peru (northwestern)
		X.1.2.1.2	Amazonas and San Martín	0.091	Peru: Amazonas and San Martín
		X.1.2.1.3	central west Peru	0.115	Peru (central western)
		X.1.2.1.4	Huánuco, Junín, and Pasco	0.105	Peru: Huánuco, Junín, and Pasco
		X.1.2.1.5	Arequipa and Ayacucho	0.107	Peru: Arequipa and Ayacucho
		X.1.2.1.6	Apurímac and Cuzco	0.095	Peru: Apurímac and Cuzco
		X.1.2.1.7	Moquegua, Puno, and Tacna	0.104	Peru: Moquegua, Puno, and Tacna
X.1.2.2	northeast Peru	X.1.2.2.1	Mariscal Ramón Castilla and Putumayo	0.083	Peru: Loreto: Mariscal Ramón Castilla and Putumayo
		X.1.2.2.2	Maynas	0.078	Peru: Loreto: Maynas
		X.1.2.2.3	east Loreto	0.097	Peru: Loreto: Alto Amazonas, Datem del Marañón, and Ucayali
		X.1.2.2.4	Loreto Province and Requena	0.121	Peru: Loreto: Loreto and Requena
		X.1.2.2.5	Ucayali	0.104	Peru: Ucayali
		X.1.2.2.6	Madre de Dios	0.083	Peru: Madre de Dios
X.1.2.3	northeast Bolivia	X.1.2.3.1	west Beni	0.124	Bolivia: Beni (western)
		X.1.2.3.2	east Beni	0.097	Bolivia: Beni (eastern)
		X.1.2.3.3	northwest Santa Cruz	0.112	Bolivia: Santa Cruz (northwestern)
		X.1.2.3.4	Ángel Sandoval and José Miguel de Velasco	0.095	Bolivia: Santa Cruz: Ángel Sandoval and José Miguel de Velasco
		X.1.2.3.5	Chiquitos, Cordillera, and Germán Busch	0.151	Bolivia: Santa Cruz: Chiquitos, Cordillera, and Germán Busch
		X.1.2.3.6	Pando	0.064	Bolivia: Pando
X.1.2.4	southwest Bolivia	X.1.2.4.1	La Paz	0.133	Bolivia: La Paz
		X.1.2.4.2	Cochabamba and Oruro	0.109	Bolivia: Cochabamba and Oruro
		X.1.2.4.3	Potosí	0.118	Bolivia: Potosí
		X.1.2.4.4	Chuquisaca and Tarija	0.088	Bolivia: Chuquisaca and Tarija

**Supplementary Table B 56** List of WRAF0.1 v4.1 regions defined within “north EEA” (WRAF2 v4.1 region X.2.1). These regions cover the European Economic Area countries of Belgium, the Czech Republic, Estonia, Finland, Germany, Hungary, Iceland, Ireland, Latvia, Lithuania, Luxembourg, the Netherlands, Norway, Poland, Slovakia, Sweden, and the United Kingdom. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.2.1.1	northwest EEA	X.2.1.1.1	Ireland	0.070	Ireland
		X.2.1.1.2	Northern Ireland and Scotland	0.093	United Kingdom: Northern Ireland and Scotland
		X.2.1.1.3	England and Wales	0.149	United Kingdom: England and Wales
		X.2.1.1.4	Finnmark and Svalbard	0.111	Norway: Finnmark and Svalbard
		X.2.1.1.5	Nordland, Troms, and Trøndelag	0.104	Norway: Nordland, Troms, and Trøndelag
		X.2.1.1.6	southwest Norway	0.074	Norway (southwestern)
		X.2.1.1.7	southeast Norway	0.095	Norway (southeastern)
		—	—	—	—
X.2.1.2	Sweden	X.2.1.2.1	Norrbottnen	0.105	Sweden: Norrbotten
		X.2.1.2.2	Jämtland and Västerbotten	0.113	Sweden: Jämtland and Västerbotten
		X.2.1.2.3	central Sweden	0.110	Sweden (central)
		X.2.1.2.4	south Sweden	0.120	Sweden (southern)
X.2.1.3	northeast EEA	X.2.1.3.1	Lapland	0.097	Finland: Lapland
		X.2.1.3.2	central finland	0.108	Finland (central)
		X.2.1.3.3	south Finland	0.127	Finland (southern)
		X.2.1.3.4	Baltic states	0.175	EEA: Estonia, Latvia, and Lithuania
X.2.1.4	central EEA	X.2.1.4.1	Benelux	0.070	EEA: Belgium, Luxembourg, and the Netherlands
		X.2.1.4.2	northwest Germany	0.121	Germany (northwestern)
		X.2.1.4.3	east Germany	0.109	Germany (eastern)
		X.2.1.4.4	south Germany	0.127	Germany: Baden-Württemberg, Freistaat Bayern, and Hesse
X.2.1.5	Visegrad EEA	X.2.1.5.1	North and Northwest Poland	0.128	Poland (North and Northwest)
		X.2.1.5.2	Central, Southwest, and South Poland	0.110	Poland (Central, Southwest, and South)
		X.2.1.5.3	East Poland	0.075	Poland (East)
		X.2.1.5.4	Czech Republic and Slovakia	0.127	EEA: Czech Republic and Slovakia
		X.2.1.5.5	Hungary	0.093	Hungary
—	—	X.2.1.X.1	Iceland	0.103	Iceland

EEA = European Economic Area



**Supplementary Table B 57** List of WRAF0.1 v4.1 regions defined within “south EEA” (WRAF2 v4.1 region X.2.2). These regions cover the European Economic Area countries of Austria, Bulgaria, Croatia, France, Greece, Italy, Liechtenstein, Portugal, Romania, Slovenia, and Spain. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.2.2.1	Iberian EEA	X.2.2.1.1	Portugal	0.092	Portugal
		X.2.2.1.2	northwest Spain	0.135	Spain: Asturias, Cantabria, Castile y León, and Galicia
		X.2.2.1.3	central north Spain	0.076	Spain (central northern)
		X.2.2.1.4	east Spain	0.072	Spain (eastern)
		X.2.2.1.5	central Spain	0.129	Spain (central)
		X.2.2.1.6	south Spain	0.096	Spain (southern)
X.2.2.2	France	X.2.2.2.1	northwest France	0.129	France: Bretagne, Centre-Val de Loire, Normandie, and Pays de la Loire
		X.2.2.2.2	northeast France	0.101	France: Grand Est, Hauts-de-France, and Île-de-France
		X.2.2.2.3	Nouvelle-Aquitaine	0.085	France: Nouvelle-Aquitaine
		X.2.2.2.4	central east France	0.119	France: Auvergne-Rhône-Alpes and Bourgogne-Franche-Comté
		X.2.2.2.5	Mediterranean France	0.114	France: Corse, Occitanie, and Provence-Alpes-Côte d’Azur
		X.2.2.2.6	Guyane	0.084	France: Guyane
X.2.2.3	Adriatic EEA	X.2.2.3.1	Austria and Liechtenstein	0.083	EEA: Austria and Liechtenstein
		X.2.2.3.2	Croatia and Slovenia	0.076	EEA: Croatia and Slovenia
		X.2.2.3.3	Nord-Est and Nord-Ovest Italy	0.120	Italy (Nord-Est and Nord-Ovest)
		X.2.2.3.4	Centro and Insulare Italy	0.109	Italy (Centro and Isole)
		X.2.2.3.5	Sud Italy	0.074	Italy (Sud)
X.2.2.4	southeast EEA	X.2.2.4.1	west Romania	0.128	Romania: Centru, Nord-Vest, Sud-Vest Oltenia, and Vest
		X.2.2.4.2	east Romania	0.108	Romania: Bucuresti-Ilfov, Nord-Est, Sud-Est, and Sud-Muntenia
		X.2.2.4.3	Bulgaria	0.112	Bulgaria
		X.2.2.4.4	Greece	0.133	Greece

EEA = European Economic Area

**Supplementary Table B 58** List of WRAF0.1 v4.1 regions defined within “north India” (WRAF2 v4.1 region X.3.1). These regions cover the Indian Northern and North-Central Zonal Councils. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.3.1.1	Northern India	X.3.1.1.1	Jammu and Kashmir	0.105	India: Jammu and Kashmir
		X.3.1.1.2	central Northern India	0.149	India: Chandigarh, Haryana, Himachal Pradesh, and Punjab
		X.3.1.1.3	west Rajasthan	0.133	India: Rajasthan (western)
		X.3.1.1.4	northeast Rajasthan	0.106	India: Rajasthan (northeastern)
		X.3.1.1.5	southeast Rajasthan	0.105	India: Rajasthan (southeastern)
X.3.1.2	North-Central India	X.3.1.2.1	west Uttar Pradesh	0.131	India: Uttar Pradesh (Agra, Aligarh, Bareilly, Jhansi, Kanpur, Lucknow, Meerut, Moradabad, and Saharanpur)
		X.3.1.2.2	east Uttar Pradesh	0.111	India: Uttar Pradesh (Allahabad, Azamgarh, Basti, Chitrakoot, Devipatan, Faizabad, Gorakhpur, Mirzapur, and Varanasi)
		X.3.1.2.3	Bihar	0.095	India: Bihar
		X.3.1.2.4	west Madhya Pradesh	0.128	India: Madhya Pradesh (Bhopal, Indore, Narmadapuram, and Ujjain)
		X.3.1.2.5	central Madhya Pradesh	0.083	India: Madhya Pradesh (Chambal, Gwalior, and Sagar)
		X.3.1.2.6	east Madhya Pradesh	0.097	India: Madhya Pradesh (Jabalpur, Rewa, and Shahdol)
		—	—	—	India: Uttarakhand

**Supplementary Table B 59** List of WRAF0.1 v4.1 regions defined within “south and east India” (WRAF2 v4.1 region X.3.2). These regions cover the Indian Eastern, Northeastern, Southern, and Western Zonal Councils. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.3.2.1	Western India	X.3.2.1.1	west Gujarat	0.098	India: Gujarat (western)
		X.3.2.1.2	east Gujarat	0.084	India: Gujarat (eastern)
		X.3.2.1.3	northwest Maharashtra	0.101	India: Maharashtra (northwestern)
		X.3.2.1.4	southwest Maharashtra	0.105	India: Maharashtra (southwestern)
		X.3.2.1.5	east Maharashtra	0.103	India: Maharashtra (eastern)
X.3.2.2	Eastern and Northeastern India	X.3.2.2.1	Chhattisgarh	0.135	India: Chhattisgarh
		X.3.2.2.2	Orissa	0.156	India: Orissa
		X.3.2.2.3	Jharkhand, Sikkim, and West Bengal	0.171	India: Jharkhand, Sikkim, and West Bengal
		X.3.2.2.4	north Northeastern India	0.097	India: Northeastern Zonal Council (northern)
		X.3.2.2.5	south Northeastern India	0.156	India: Northeastern Zonal Council (southern)
X.3.2.3	Southern India	X.3.2.3.1	north Karnataka	0.099	India: Karnataka (northern)
		X.3.2.3.2	south Karnataka	0.094	India: Karnataka (southern)
		X.3.2.3.3	Telangana	0.116	India: Telangana
		X.3.2.3.4	northeast Andhra Pradesh	0.080	India: Andhra Pradesh (northeastern)
		X.3.2.3.5	southwest Andhra Pradesh	0.080	India: Andhra Pradesh (southwestern)
		X.3.2.3.6	Kerala, Puducherry, and Tamil Nadu	0.170	India: Kerala, Puducherry, and Tamil Nadu

**Supplementary Table B 60** List of WRAF0.1 v4.1 regions defined within “north ASEAN” (WRAF2 v4.1 region X.4.1). These regions cover the Association of Southeast Asian Nations (except Indonesia). Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.4.1.1	Myanmar	X.4.1.1.1	Sagaing	0.098	Myanmar: Sagaing
		X.4.1.1.2	Kachin	0.088	Myanmar: Kachin
		X.4.1.1.3	Chin and Rakhine	0.073	Myanmar: Chin and Rakhine
		X.4.1.1.4	Magway and Mandalay	0.083	Myanmar: Magway and Mandalay
		X.4.1.1.5	Shan	0.155	Myanmar: Shan
		X.4.1.1.6	Ayeyarwady, Bago, and Yangon	0.080	Myanmar: Ayeyarwady, Bago, and Yangon
		X.4.1.1.7	Kayah, Kayin, Mon, and Tanintharyi	0.090	Myanmar: Kayah, Kayin, Mon, and Tanintharyi
X.4.1.2	central north ASEAN	X.4.1.2.1	north Laos	0.132	Laos (northern)
		X.4.1.2.2	south Laos	0.095	Laos (southern)
		X.4.1.2.3	north Vietnam	0.116	Vietnam (Northwest, Northeast, and Red River Delta)
		X.4.1.2.4	central coastal Vietnam	0.098	Vietnam (North Central Coast and South Central Coast)
		X.4.1.2.5	south Vietnam	0.120	Vietnam (Central Highlands, Mekong River Delta, and Southeast)
		X.4.1.2.6	west Cambodia	0.096	Cambodia (western)
		X.4.1.2.7	east Cambodia	0.085	Cambodia (eastern)
X.4.1.3	Thailand	X.4.1.3.1	North Thailand	0.157	Thailand (North)
		X.4.1.3.2	west North-east Thailand	0.090	Thailand (western North-east)
		X.4.1.3.3	east Northeast Thailand	0.079	Thailand (eastern Northeast)
		X.4.1.3.4	Central and East Thailand	0.108	Thailand (Central and East)
		X.4.1.3.5	South Thailand	0.086	Thailand (South)
X.4.1.4	central ASEAN	X.4.1.4.1	Peninsular Malaysia	0.133	Malaysia (Peninsular)
		X.4.1.4.2	Sarawak	0.124	Malaysia: Sarawak
		X.4.1.4.3	Labuan and Sabah	0.075	Malaysia: Labuan and Sabah
		X.4.1.4.4	Luzon	0.115	Philippines (Luzon except Mimaropa)
		X.4.1.4.5	Mimaropa and Visayas	0.083	Philippines (Mimaropa and Visayas)
		X.4.1.4.6	Mindanao	0.101	Philippines (Mindanao)
—	—	—	—	—	Brunei

ASEAN = Association of Southeast Asian Nations

**Supplementary Table B 61** List of WRAF0.1 v4.1 regions defined within “Indonesia” (WRAF2 v4.1 region X.4.2). These regions cover Indonesia. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.4.2.1	west Indonesia	X.4.2.1.1	Aceh and Sumatera Utara	0.130	Indonesia: Aceh and Sumatera Utara
		X.4.2.1.2	Riau and Sumatera Barat	0.133	Indonesia: Riau and Sumatera Barat
		X.4.2.1.3	Bangka-Belitung and Sumatera Selatan	0.103	Indonesia: Bangka-Belitung and Sumatera Selatan
		X.4.2.1.4	Bengkulu, Jambi, and Lampung	0.106	Indonesia: Bengkulu, Jambi, and Lampung
		X.4.2.1.5	Java	0.134	Indonesia (Java)
		X.4.2.1.6	Bali and Nusa Tenggara	0.074	Indonesia: Bali and Nusa Tenggara
X.4.2.2	Kalimantan	X.4.2.2.1	Kalimantan Barat	0.148	Indonesia: Kalimantan Barat
		X.4.2.2.2	Kalimantan Tengah	0.152	Indonesia: Kalimantan Tengah
		X.4.2.2.3	Kalimantan Utara	0.071	Indonesia
		X.4.2.2.4	Kalimantan Selatan and Kalimantan Timur	0.167	Indonesia: Kalimantan Selatan and Kalimantan Timur
X.4.2.3	east Indonesia	X.4.2.3.1	northern Sulawesi	0.089	Indonesia (northern Sulawesi)
		X.4.2.3.2	south Sulawesi	0.099	Indonesia (southern Sulawesi)
		X.4.2.3.3	Maluku and Maluku Utara	0.077	Indonesia: Maluku and Maluku Utara
		X.4.2.3.4	Irian Jaya Barat	0.097	Indonesia: Irian Jaya Barat
		X.4.2.3.5	west Papua	0.098	Indonesia: Papua (western)
		X.4.2.3.6	northeast Papua	0.101	Indonesia: Papua (northeastern)
		X.4.2.3.7	south Papua	0.120	Indonesia: Papua (southern)

**Supplementary Table B 62** List of WRAF0.1 v4.1 regions defined within “Greenland” (WRAF2 v4.1 region X.X.1). These regions cover Greenland. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.X.1.1	Qaasuitsup	X.X.1.1.1	northwest Qaasuitsup	0.102	Greenland: Qaasuitsup (northwestern)
		X.X.1.1.2	central north Qaasuitsup	0.101	Greenland: Qaasuitsup (central northern)
		X.X.1.1.3	northeast Qaasuitsup	0.125	Greenland: Qaasuitsup (northeastern)
		X.X.1.1.4	central Qaasuitsup	0.121	Greenland: Qaasuitsup (central)
		X.X.1.1.5	south Qaasuitsup	0.126	Greenland: Qaasuitsup (southern)
X.X.1.2	NE Greenland NP	X.X.1.2.1	northwest Northeast Greenland NP	0.098	Greenland: NE Greenland NP (northwestern)
		X.X.1.2.2	northwest central Northeast Greenland NP	0.129	Greenland: NE Greenland NP (northeastern central)
		X.X.1.2.3	northeast central Northeast Greenland NP	0.132	Greenland: NE Greenland NP (northeastern central)
		X.X.1.2.4	northeast Northeast Greenland NP	0.136	Greenland: NE Greenland NP (northeastern)
		X.X.1.2.5	southwest Northeast Greenland NP	0.104	Greenland: NE Greenland NP (southwestern)
		X.X.1.2.6	southwest central Northeast Greenland NP	0.105	Greenland: NE Greenland NP (southwestern central)
		X.X.1.2.7	southeast central Northeast Greenland NP	0.085	Greenland: NE Greenland NP (southeastern central)
		X.X.1.2.8	southeast Northeast Greenland NP	0.082	Greenland: NE Greenland NP (southeastern)
X.X.1.3	south Greenland	X.X.1.3.1	Qeqqata	0.104	Greenland: Qeqqata
		X.X.1.3.2	north central Sermersooq	0.098	Greenland: Sermersooq (northern central)
		X.X.1.3.3	east central Sermersooq	0.106	Greenland: Sermersooq (eastern central)
		X.X.1.3.4	east Sermersooq	0.099	Greenland: Sermersooq (eastern)
		X.X.1.3.5	southwest Sermersooq	0.133	Greenland: Sermersooq (southwestern)
		X.X.1.3.6	south central Sermersooq	0.106	Greenland: Sermersooq (southern central)
		—	—	—	Greenland: Kujalleq

NE Greenland NP = Northeast Greenland National Park

**Supplementary Table B 63** List of WRAF0.1 v4.1 regions defined within “Mexico” (WRAF2 v4.1 region X.X.2). These regions cover Mexico. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.X.2.1	northwest Mexico	X.X.2.1.1	baja California	0.148	Mexico: Baja California and Baja California Sur
		X.X.2.1.2	north Sonora	0.092	Mexico: Sonora (northern)
		X.X.2.1.3	south Sonora	0.094	Mexico: Sonora (southern)
		X.X.2.1.4	north Chihuahua	0.135	Mexico: Chihuahua (north)
		X.X.2.1.5	south Chihuahua	0.105	Mexico: Chihuahua (south)
X.X.2.2	northeast Mexico	X.X.2.2.1	Coahuila	0.150	Mexico: Coahuila
		X.X.2.2.2	Nuevo Leon and Tamaulipas	0.145	Mexico: Nuevo Leon and Tamaulipas
		X.X.2.2.3	Zacatecas	0.075	Mexico: Zacatecas
		X.X.2.2.4	Hidalgo and San Luis Potosi	0.086	Mexico: Hidalgo and San Luis Potosi
X.X.2.3	southwest Mexico	X.X.2.3.1	Nayarit and Sinaloa	0.085	Mexico: Nayarit and Sinaloa
		X.X.2.3.2	Durango	0.120	Mexico: Durango
		X.X.2.3.3	Aguascalientes, Colima, and Jalisco	0.092	Mexico: Aguascalientes, Colima, and Jalisco
		X.X.2.3.4	Guanajuato, Michoacán, and Querétaro	0.102	Mexico: Guanajuato, Michoacán, and Querétaro
		X.X.2.3.5	central Mexico	0.132	Mexico: Distrito Federal, Guerrero, México, Morelos, and Tlaxcala
X.X.2.4	south Mexico	X.X.2.4.1	Tabasco and Veracruz	0.096	Mexico: Tabasco and Veracruz
		X.X.2.4.2	Oaxaca	0.093	Mexico: Oaxaca
		X.X.2.4.3	Campeche, Quintana Roo, and Yucatán	0.141	Mexico: Campeche, Quintana Roo, and Yucatán
		X.X.2.4.4	Chiapas	0.074	Mexico: Chiapas

**Supplementary Table B 64** List of WRAF0.1 v4.1 regions defined within “central IGAD” (WRAF2 v4.1 region X.X.3). These regions cover the Intergovernmental Authority on Development countries of Djibouti, Eritrea, Ethiopia, Kenya, South Sudan, Uganda. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.X.3.1	South Sudan	X.X.3.1.1	Northern and Western Bahr el Ghazal	0.125	South Sudan: Northern Bahr el Ghazal and Western Bahr el Ghazal
		X.X.3.1.2	Lakes and Warrap	0.073	South Sudan: Lakes and Warrap
		X.X.3.1.3	Unity and Upper Nile	0.110	South Sudan: Unity and Upper Nile
		X.X.3.1.4	Jonglei	0.121	South Sudan: Jonglei
		X.X.3.1.5	Western Equatoria	0.082	South Sudan: Western Equatoria
		X.X.3.1.6	Central Equatoria and Eastern Equatoria	0.115	South Sudan: Central Equatoria and Eastern Equatoria
X.X.3.2	west Ethiopia	X.X.3.2.1	Amhara and Benishangul-Gumuz	0.189	Ethiopia: Amhara and Benishangul-Gumuz
		X.X.3.2.2	west Oromia	0.139	Ethiopia: Oromia (western)
		X.X.3.2.3	northeast Oromia	0.076	Ethiopia: Oromia: Arsi, East Hararghe, West Arsi, and West Hararghe
		X.X.3.2.4	south Oromia	0.125	Ethiopia: Oromia: Bale, Borena, and Guji
		X.X.3.2.5	southwest Ethiopia	0.138	Ethiopia: Gambela and Southern Nations, Nationalities, and Peoples’ Region
X.X.3.3	east Ethiopia	X.X.3.3.1	Afar and Tigray	0.145	Ethiopia: Afar and Tigray
		X.X.3.3.2	Fafan, Jarar, Nogob, and Sitti	0.097	Ethiopia: Somali: Fafan, Jarar, Nogob, and Sitti
		X.X.3.3.3	Dollo, Korahe, and Shabelle	0.119	Ethiopia: Somali: Dollo, Korahe, and Shabelle
		X.X.3.3.4	Afder and Liben	0.099	Ethiopia: Somali: Afder and Liben
X.X.3.4	south IGAD	X.X.3.4.1	Samburu, Turkana, and West Pokot	0.095	Kenya: Samburu, Turkana, and West Pokot
		X.X.3.4.2	Eastern Kenya	0.160	Kenya (Eastern)
		X.X.3.4.3	Northeastern Kenya	0.127	Kenya (Northeastern)
		X.X.3.4.4	southwest Kenya	0.123	Kenya (southwestern)
		X.X.3.4.5	Coastal Kenya	0.086	Kenya (Coastal)
		X.X.3.4.6	Central and Western Uganda	0.117	Uganda: Central and Western
		X.X.3.4.7	Eastern and Northern Uganda	0.125	Uganda: Eastern and Northern
—	—	X.X.3.X.1	Djibouti and Eritrea	0.145	IGAD: Djibouti and Eritrea

IGAD = Intergovernmental Authority on Development



**Supplementary Table B 65** List of WRAF0.1 v4.1 regions defined within “Mongolia” (WRAF2 v4.1 region X.X.4). These regions cover Mongolia. Areas are in  $\text{Mm}^2$ .

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.X.4.1	west Mongolia	X.X.4.1.1	Bayan-Ölgii and Khovd	0.120	Mongolia: Bayan-Ölgii and Khovd
		X.X.4.1.2	Uvs and Zavkhan	0.150	Mongolia: Uvs and Zavkhan
		X.X.4.1.3	Govi-Altai	0.142	Mongolia: Govi-Altai
		X.X.4.1.4	Bayankhongor	0.116	Mongolia: Bayankhongor
X.X.4.2	northeast Mongolia	X.X.4.2.1	Khövsgöl	0.100	Mongolia: Khövsgöl
		X.X.4.2.2	Arkhangai, Bulgan, and Orkhon	0.103	Mongolia: Arkhangai, Bulgan, and Orkhon
		X.X.4.2.3	central north Mongolia	0.123	Mongolia (central northern)
		X.X.4.2.4	Khentii	0.080	Mongolia: Khentii
		X.X.4.2.5	Dornod	0.121	Mongolia: Dornod
		X.X.4.2.6	Sükhbaatar	0.082	Mongolia: Sükhbaatar
X.X.4.3	south Mongolia	X.X.4.3.1	Dundgovi and Övörkhangai	0.137	Mongolia: Dundgovi and Övörkhangai
		X.X.4.3.2	west Ömnögovi	0.085	Mongolia: Ömnögovi (western)
		X.X.4.3.3	east Ömnögovi	0.079	Mongolia: Ömnögovi (eastern)
		X.X.4.3.4	Dornogovi	0.114	Mongolia: Dornogovi

**Supplementary Table B 66** List of WRAF0.1 v4.1 regions not within a WRAF2 v4.1 region. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
X.X.X.1	central SICA	X.X.X.1.1	Belize and Guatemala	0.132	SICA: Belize and Guatemala
		X.X.X.1.2	El Salvador and Honduras	0.134	SICA: El Salvador and Honduras
		X.X.X.1.3	Nicaragua	0.130	Nicaragua
		X.X.X.1.4	Costa Rica and Panama	0.128	SICA: Costa Rica and Panama
X.X.X.2	Chile	X.X.X.2.1	north Chile	0.182	Chile: Antofagasta, Arica and Parinacota, and Tarapacá
		X.X.X.2.2	Atacama and Coquimbo	0.118	Chile: Atacama and Coquimbo
		X.X.X.2.3	central Chile	0.117	Chile: Bío Bío, Maule, O'Higgins, Santiago, and Valparaíso
		X.X.X.2.4	Araucanía, Los Lagos, and Los Ríos	0.098	Chile: Araucanía, Los Lagos, and Los Ríos
		X.X.X.2.5	Aisén	0.105	Chile: Aisén
		X.X.X.2.6	Magallanes	0.125	Chile: Magallanes
X.X.X.3	Ukraine	X.X.X.3.1	west Ukraine	0.111	Ukraine (western)
		X.X.X.3.2	west central Ukraine	0.151	Ukraine (western central)
		X.X.X.3.3	east central Ukraine	0.084	Ukraine (eastern central)
		X.X.X.3.4	east Ukraine	0.084	Ukraine (east)
		X.X.X.3.5	southwest Ukraine	0.089	Ukraine (southwestern)
		X.X.X.3.6	southeast Ukraine	0.081	Ukraine (southeastern)
X.X.X.4	far east ACD	X.X.X.4.1	South Korea	0.099	South Korea
		X.X.X.4.2	Hokkaido	0.079	Japan: Hokkaido
		X.X.X.4.3	Kantō and Tōhoku	0.101	Japan (Kantō and Tōhoku)
		X.X.X.4.4	Chūbu and Kansai	0.102	Japan (Chūbu and Kansai)
		X.X.X.4.5	Chūgoku, Kyūshū, and Shikoku	0.099	Japan (Chūgoku, Kyūshū, and Shikoku)
X.X.X.5	Papua New Guinea	X.X.X.5.1	East Sepik and Saudaun	0.080	Papua New Guinea: East Sepik and Saudaun
		X.X.X.5.2	central Papua New Guinea	0.094	Papua New Guinea: Highlands and Madang
		X.X.X.5.3	Islands and Morobe	0.093	Papua New Guinea: Islands and Morobe
		X.X.X.5.4	Western Papua New Guinea	0.100	Papua New Guinea: Western
		X.X.X.5.5	Papua	0.102	Papua New Guinea: Papua

**Supplementary Table B 67** List of WRAF0.1 v4.1 regions not within a WRAF0.5 v4.1 region. Areas are in Mm<sup>2</sup>.

WRAF0.5 v4.1		WRAF0.1 v4.1			
ID	Label	ID	Label	Area	Description
—	—	X.X.X.X.1	Cuba	0.112	Cuba
		X.X.X.X.2	north Guyana	0.099	Guyana (northern)
		X.X.X.X.3	south Guyana	0.112	Guyana (southern)
		X.X.X.X.4	Suriname	0.147	Suriname
		X.X.X.X.5	west Belarus	0.098	Belarus (western)
		X.X.X.X.6	east Belarus	0.108	Belarus (eastern)
		X.X.X.X.7	west CEFTA	0.119	Central European Free Trade Agreement (western)
		X.X.X.X.8	east CEFTA	0.122	Central European Free Trade Agreement (eastern)
		X.X.X.X.9	Georgia	0.070	Azerbaijan
		X.X.X.X.10	Western Sahara	0.090	Western Sahara
		X.X.X.X.11	west Somaliland	0.078	Somaliland: Awdal, Maroodi-Jeeh, and Saaxil, and Togdheer
		X.X.X.X.12	Sanaag and Sool	0.093	Somaliland: Sanaag and Sool
		X.X.X.X.13	Nepal	0.147	Nepal
		X.X.X.X.14	Bangladesh	0.136	Bangladesh
		X.X.X.X.15	Sri Lanka	0.067	Sri Lanka
		X.X.X.X.16	North Korea	0.123	North Korea
		X.X.X.X.17	North Island New Zealand	0.116	New Zealand (North Island)
		X.X.X.X.18	South Island New Zealand	0.154	New Zealand (South Island)
		X.X.X.X.19	east Pacific Islands Forum	0.090	Pacific Islands Forum (eastern)

SICA = Central American Integration System, ACD = Asia Cooperation Dialogue

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