
A closer look
the detailed m
and key findin
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at some of
aps, features,
gs available at
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water Ecoregions o


of the World

Freshwater Fish Species Endemism A specie
only in that ecoregion. If an endemic species is l

FEOW's maps of endemic freshwater fish specie
data on over 13,400 fish species. The data shov
single ecoregions, and over 40 ecoregions have
confirm and refine many findings of previous glo
large portions of Central Africa; Lakes Malawi, Ta
and Yangtze basins; parts of southeast Asia's Irra
portions of South America's Amazon and Orinoc
Cuba and Hispaniola, the Amazon's western piec

Freshwater Turtle Species Richness Over 30
the world, and many are imperiled. As with all o
conserving turtles is understanding how they are

The map of freshwater turtle species richness, v
each ecoregion, was generated from species dist

ip between

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invaluable contributions to this project.
s can be found at feow.org

Fr

es is endemic to an ecoregion when it is found
ost from an ecoregion, it is lost globally.

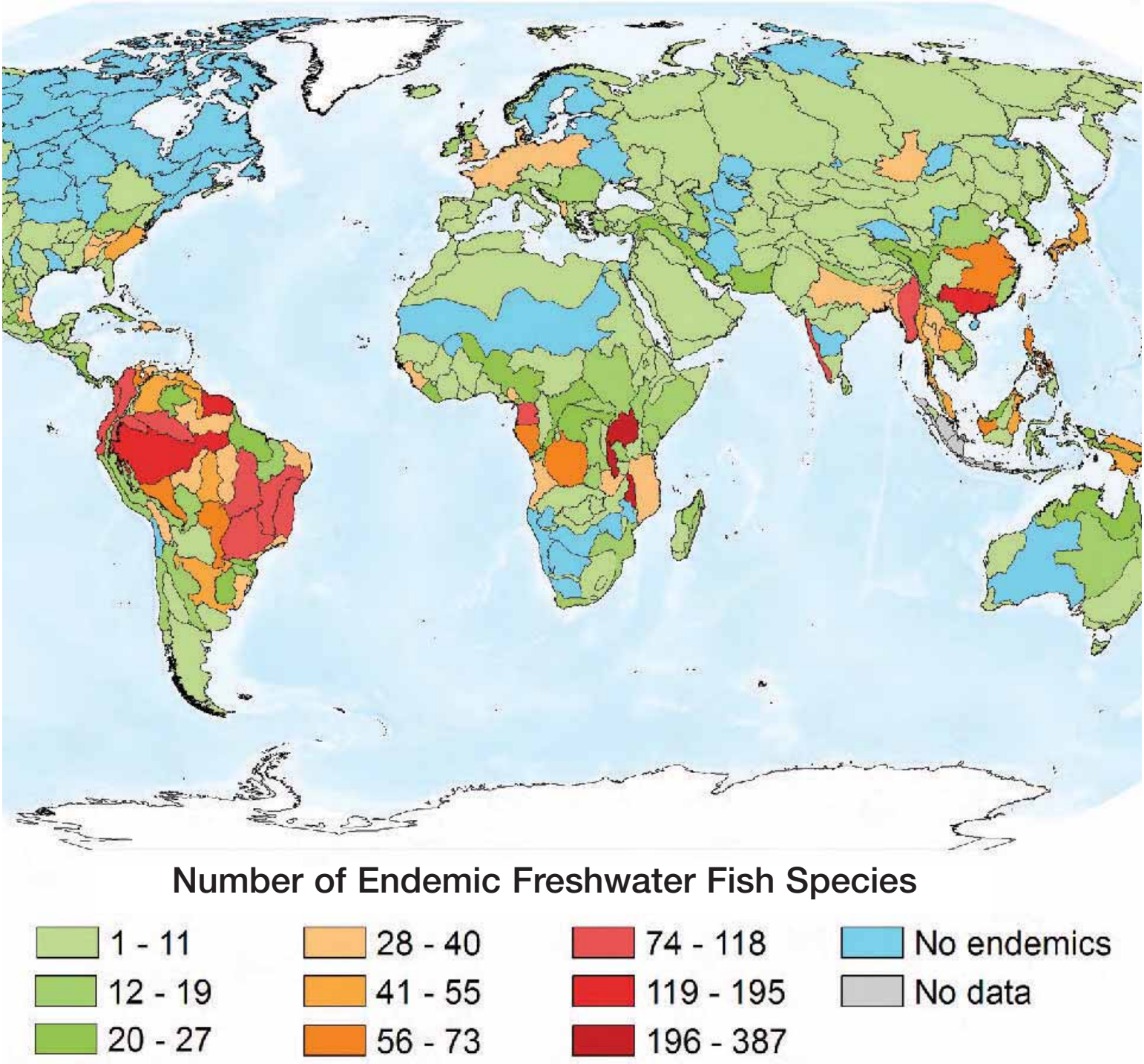
s were generated using a database that contains
v that 6,900 freshwater fish species are found in
greater than 50 percent endemism. These results
bal assessments, including high endemism in
anganyika, and Victoria; Asia's Xi Jiang (Pearl River)
awaddy, Salween and Mekong basins; and large
o basins. Areas highlighted for the first time include
lmont, and the Tocantins-Araguaia system.

0 turtle species use freshwater habitats around
ther freshwater species, a first step toward
e distributed.

which shows the number of species present in
tribution maps provided by Dr. Kurt A. Buhlmann

Threa

eshwater Fish Species Endemism



tened Freshwater Amphibian Spe

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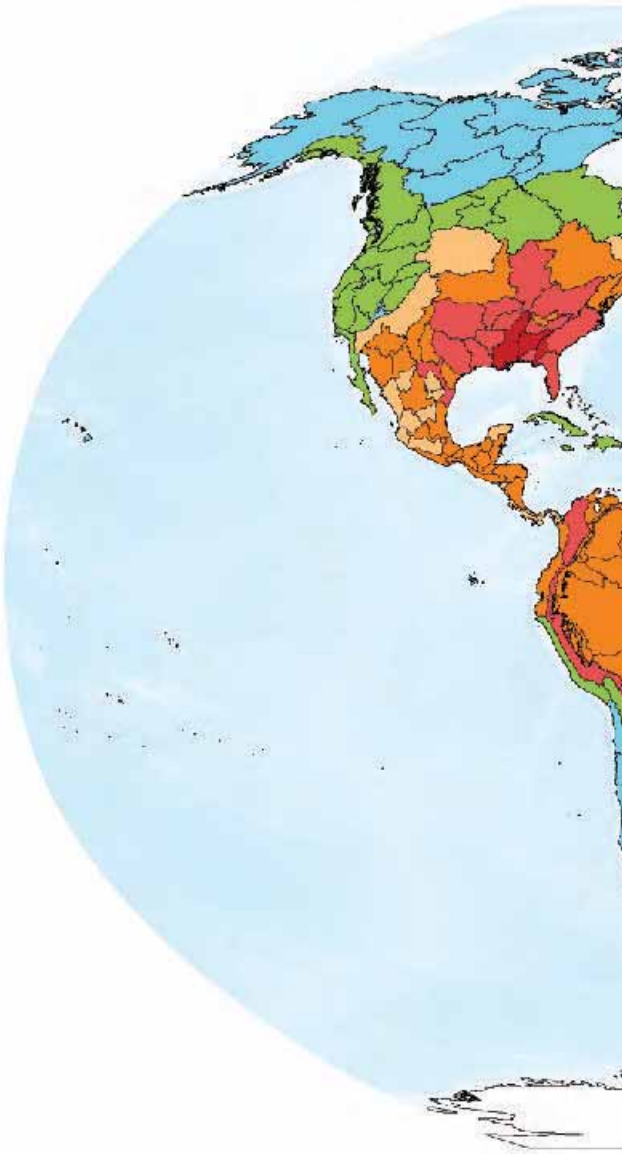

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Cons

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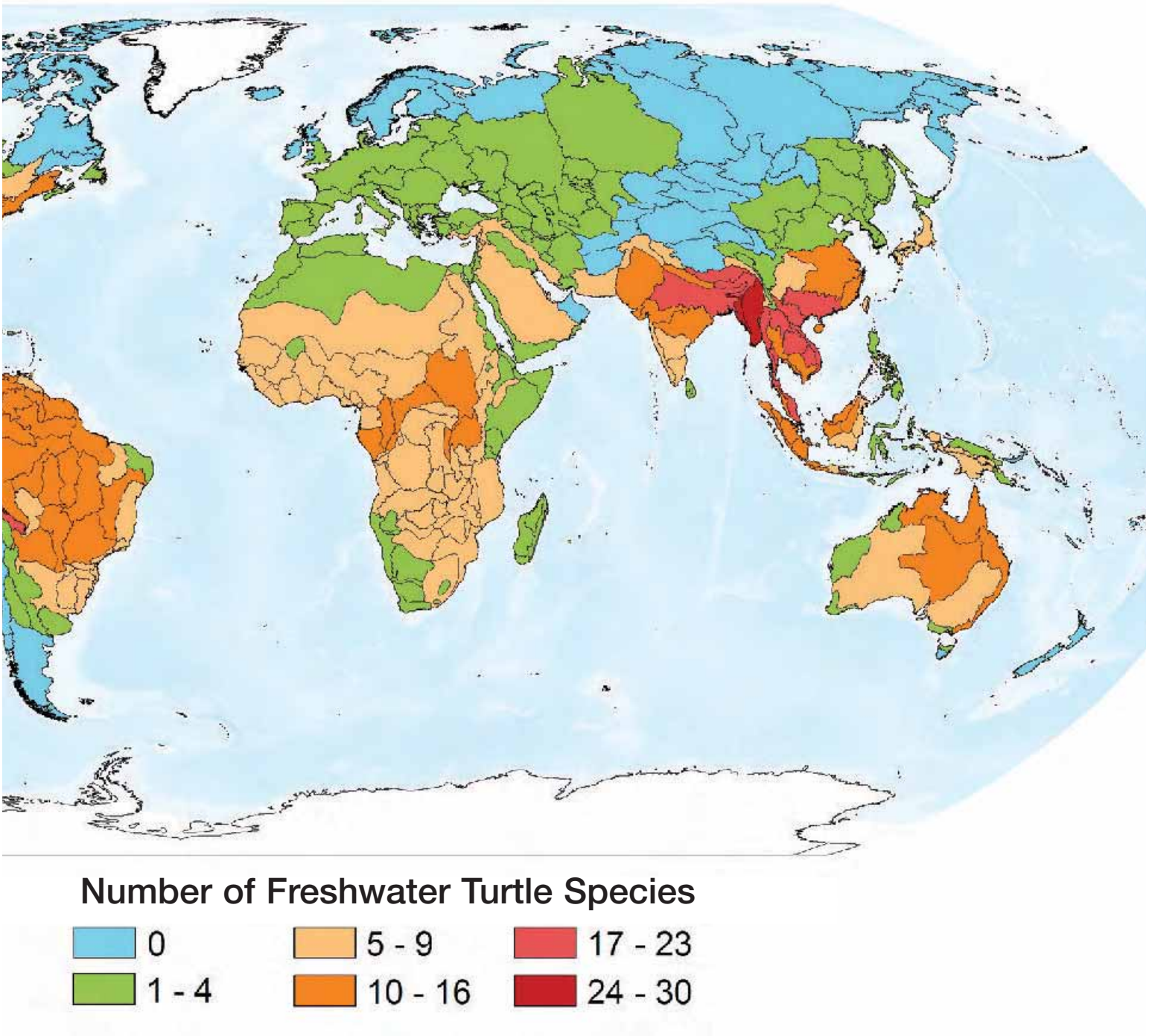

umptive Surface Water Use

of the University of Georgia's Savannah River E
CI/CABS Global Reptile Assessment (prelimina
ranges of where species are expected to be pr
particularly rich in freshwater turtle species inclu
southeastern United States.

Threatened Freshwater Amphibian Species
on Earth, more than 4,000 use freshwater habitat
Amphibian Assessment (GAA) has documented t

The map of threatened freshwater amphibians c
species per ecoregion that are threatened with e
uses IUCN Red List criteria for assessing extincti
Andean region, Africa's Niger and Asia's Yangtze
of threatened freshwater amphibians.

Consumptive Surface Water Use Freshwater
a range of overlapping threats. Those related to
many regions. Water use analysis can show whe
freshwater systems.

This consumptive surface water use map shows
used in each ecoregion, corrected for ecoregion s
hydrologic model developed by the University of k
withdrawn from surface water systems, and consi
livestock and irrigation. Consumptive surface wate
across parts of Western and Central Europe, Sou

Ecology Laboratory and the IUCN-SSC and
ry results). The source data represent coarse
resent in the wild. Areas that stand out as
de parts of southeast Asia and much of the

Of the nearly 6,000 described amphibian species
ts during some stage of their life cycles. The Global
hat about one-third of these species are imperiled.

displays the number of freshwater amphibian
xtinction. The input data are from the GAA, which
ion risk. Parts of Central America, South America's
basins appear to have the highest concentrations

systems and species around the world suffer from
human water use are among the most critical in
re surface water abstraction may pose a threat to

the average annual amount of surface water
size. The input data are from WaterGAP, a global
Kassel in Germany. The model is restricted to water
iders four water use sectors: industrial, domestic,
r use is highest in western North America and
th and Eastern Asia, and the Middle East.

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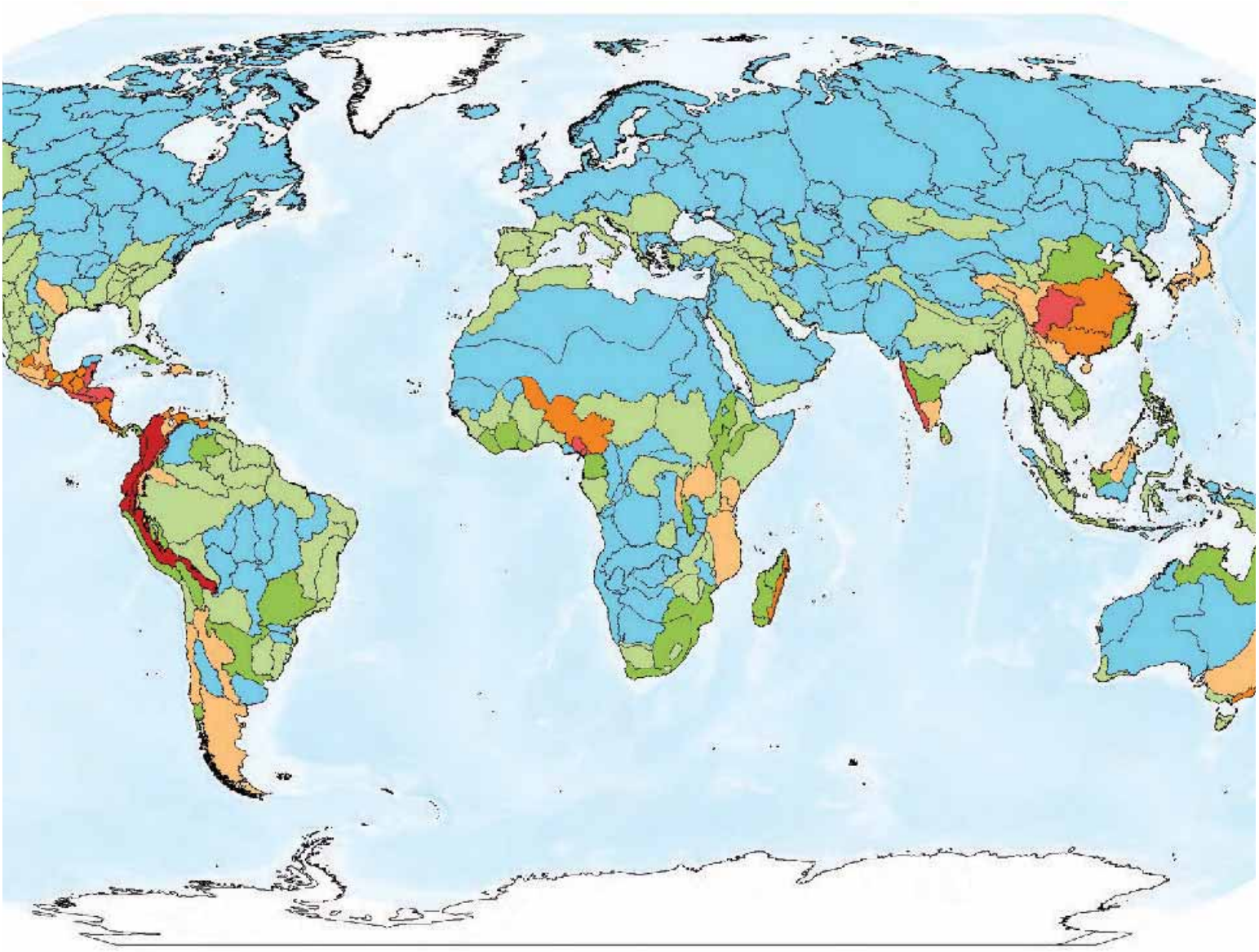
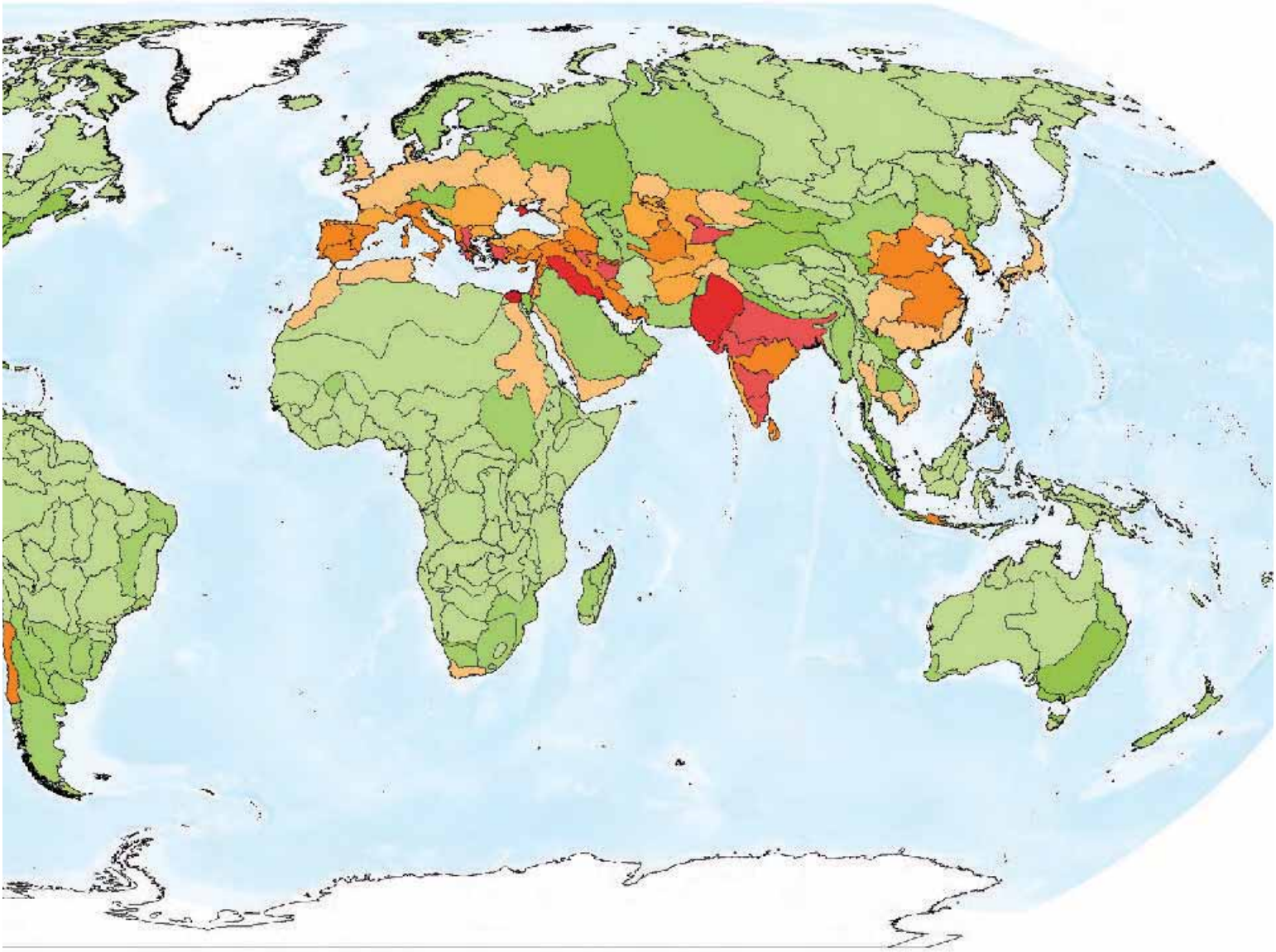


Number of Threatened Freshwater Amphibian Species

umptive Surface Water Use

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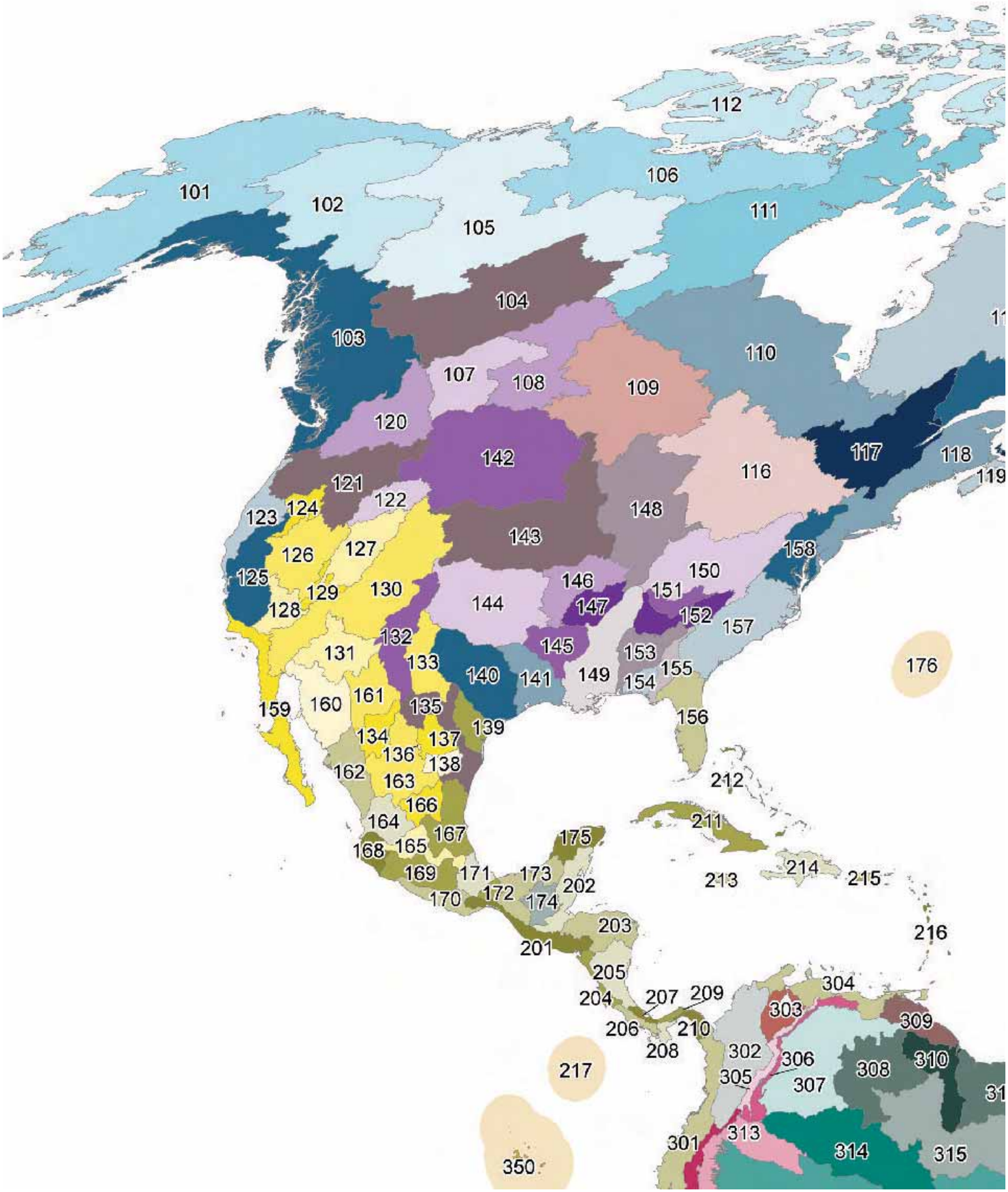
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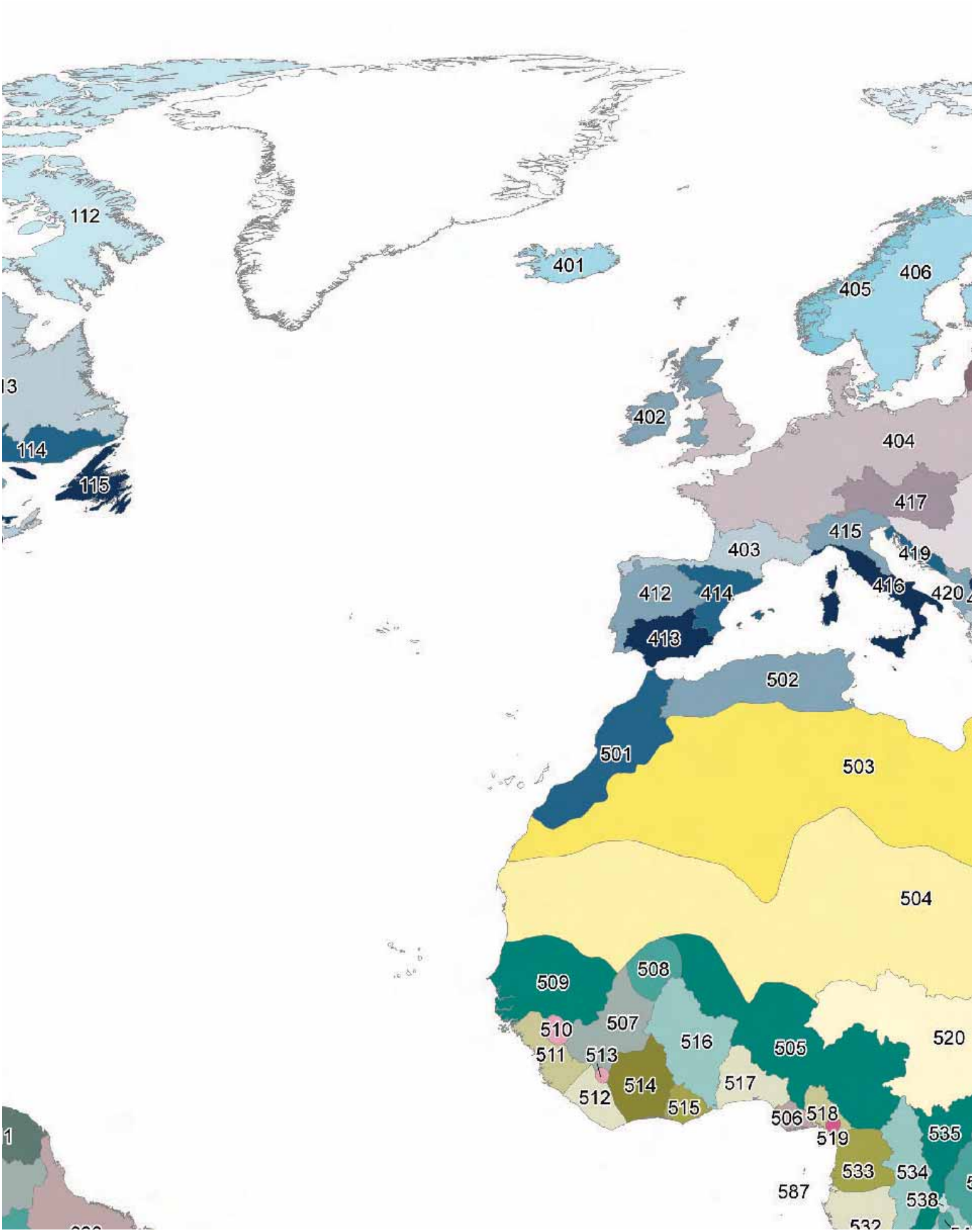
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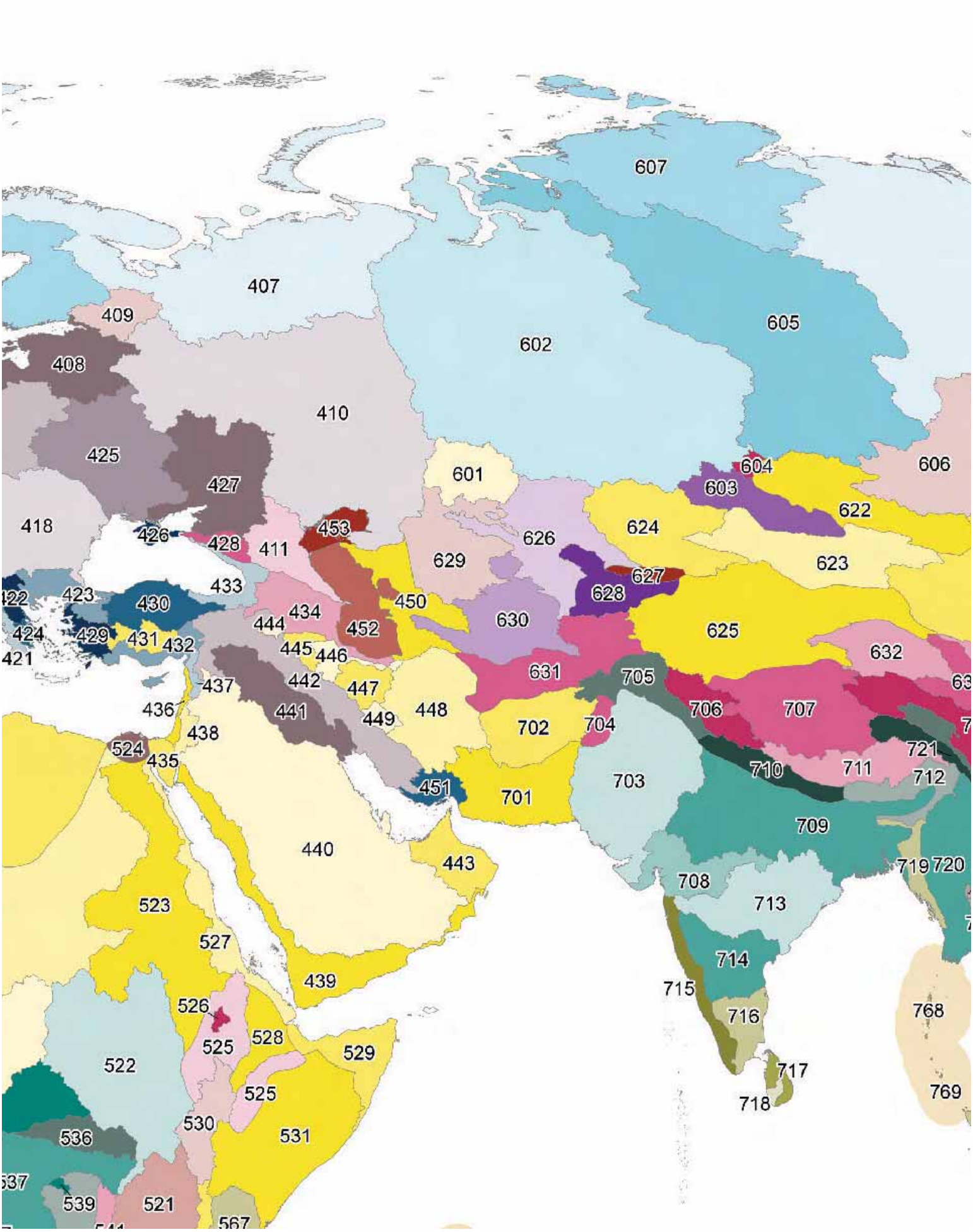
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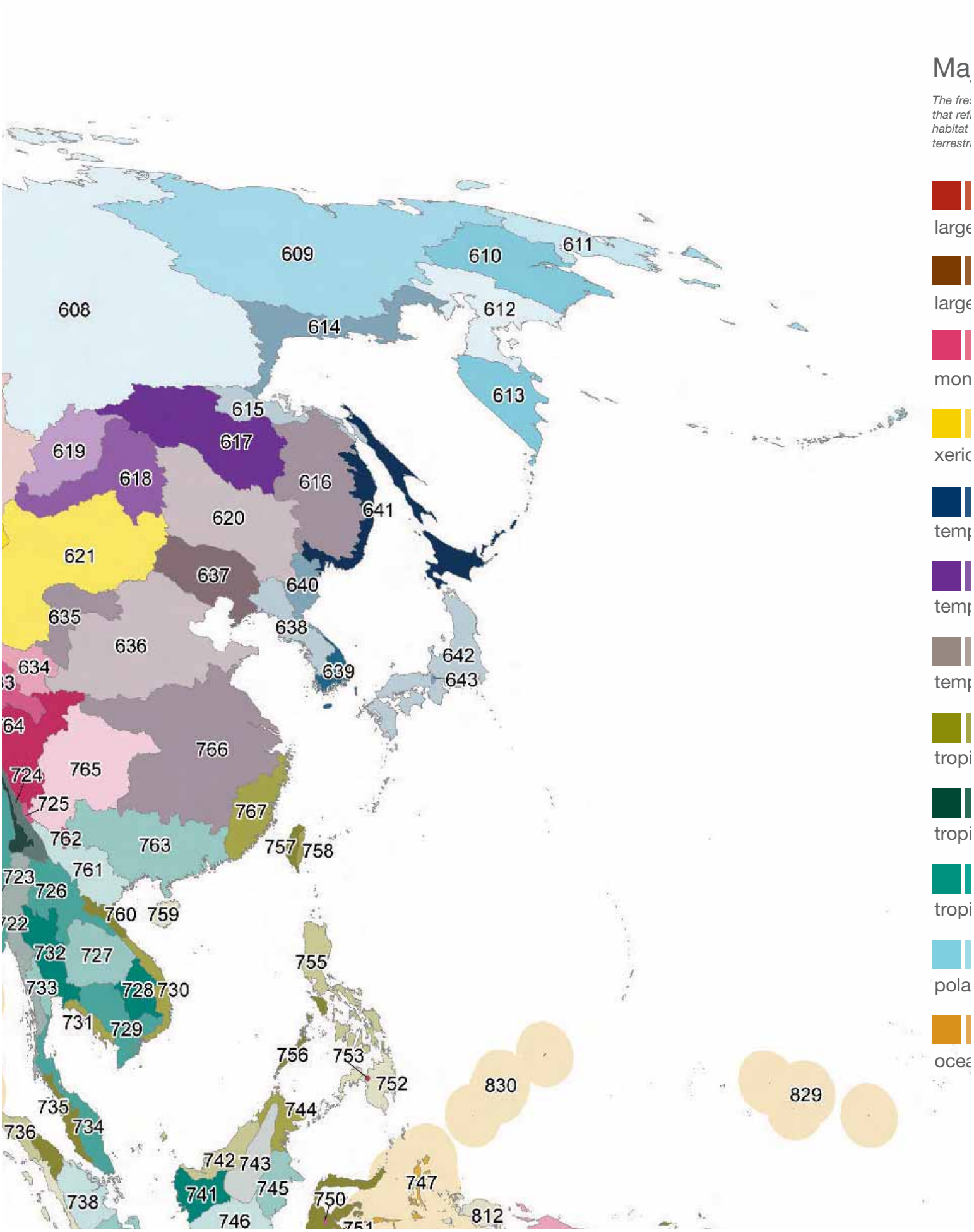
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jor Habitat Type Key

shwater Major Habitat Types are groupings of ecoregions lect the dynamics of ecological systems and the broad structures that define them; they are roughly equivalent to al biomes.

e lakes

e river deltas

tane freshwaters

freshwaters & endorheic basins

perate coastal rivers

perate upland rivers

perate floodplain rivers & wetlands

cal & subtropical coastal rivers

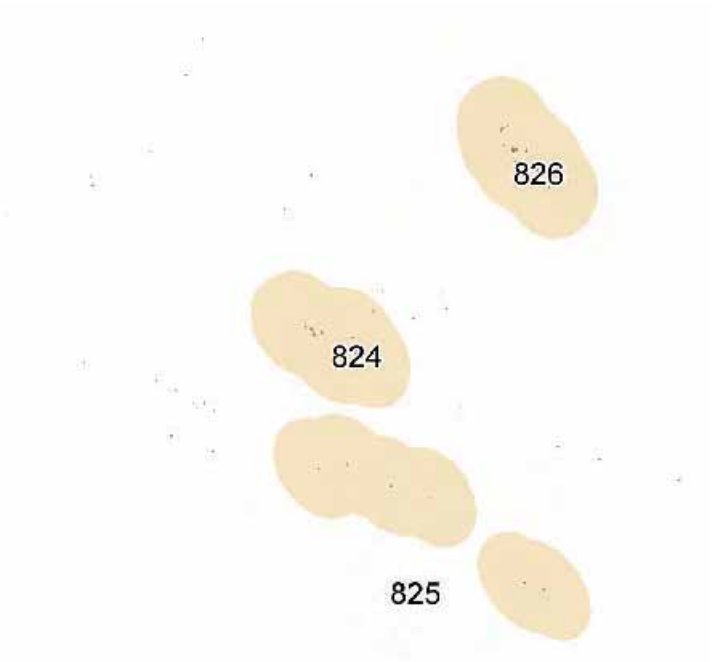
cal & subtropical upland rivers

cal & subtropical floodplain rivers & wetlands

r freshwaters

anic islands

This lightest shade denotes the buffer around ecoregions that consist of single or multiple islands.



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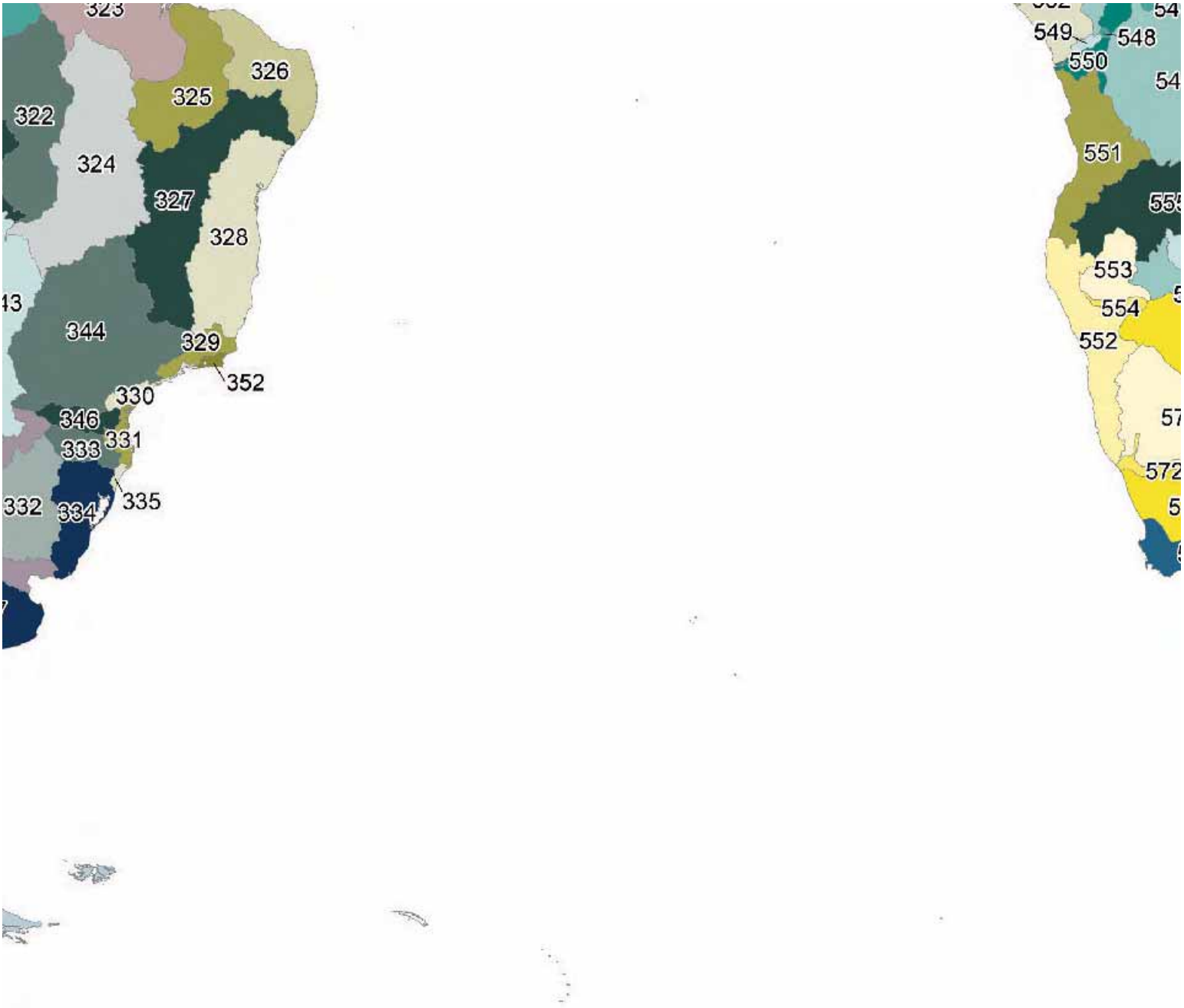
FEOW provides a new global biogeographic r
of the Earth's freshwater biodiversity. Covering v
freshwater habitats on Earth, this first-ever ecor
together with associated species data, is a usef
can be used to

- identify outstanding and imperiled freshwa
- set global and regional conservation priorit
- define appropriate areas for large-scale fre
  conservation plans



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North America

101 Alaskan Coastal
102 Upper Yukon
103 Alaska & Canada Pacific Coastal
104 Upper Mackenzie
105 Lower Mackenzie
106 Central Arctic Coastal
107 Upper Saskatchewan
108 Middle Saskatchewan
109 English - Winnipeg Lakes
110 Southern Hudson Bay
111 Western Hudson Bay
112 Canadian Arctic Archipelago
113 Eastern Hudson Bay - Ungava
114 Gulf of St. Lawrence Coastal Drainages
115 Canadian Atlantic Islands
116 Laurentian Great Lakes
117 St. Lawrence
144 US Southern Plains
145 Ouachita Highlands
146 Central Prairie
147 Ozark Highlands
148 Upper Mississippi
149 Lower Mississippi
150 Teays - Old Ohio
151 Cumberland
152 Tennessee
153 Mobile Bay
154 West Florida Gulf
155 Apalachicola
156 Florida Peninsula
157 Appalachian Piedmont
158 Chesapeake Bay
159 Southern California Coastal - Baja California
160 Sonora
161 Guzman - Samalayuca
211 Cuba - Cayman Isl
212 Bahama Archipelag
213 Jamaica
214 Hispaniola
215 Puerto Rico - Virgin
216 Windward & Leewa
217 Cocos Island (Cost

South America

301 North Andean Paci
302 Magdalena - Sinu
303 Maracaibo
304 South America Car Drainages - Trinic
305 Orinoco High Ande
306 Orinoco Piedmont
307 Orinoco Llanos
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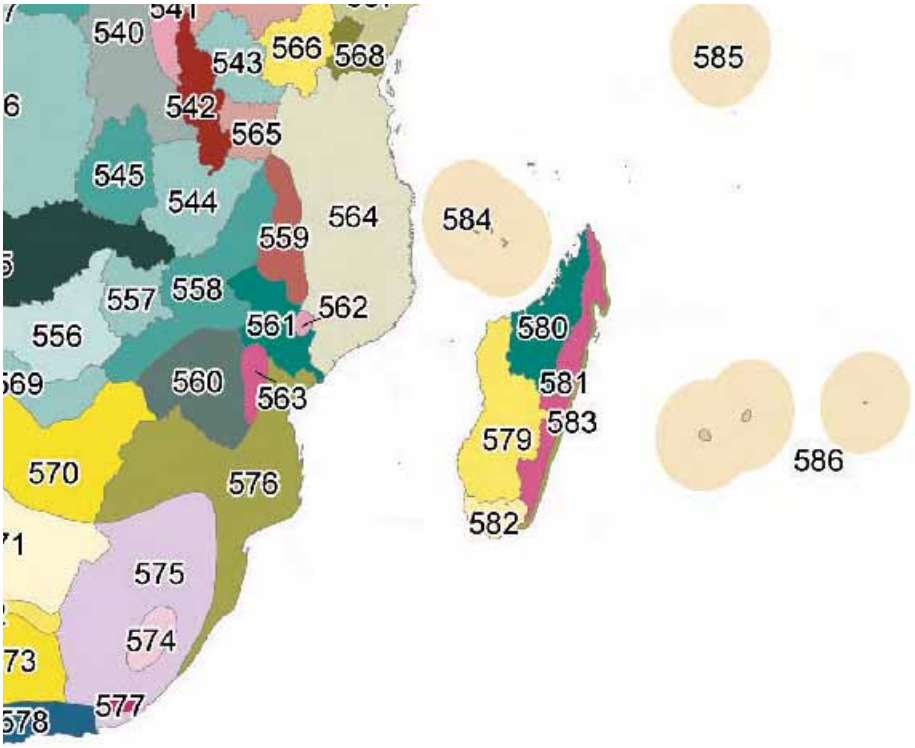
309 Orinoco Delta & Co



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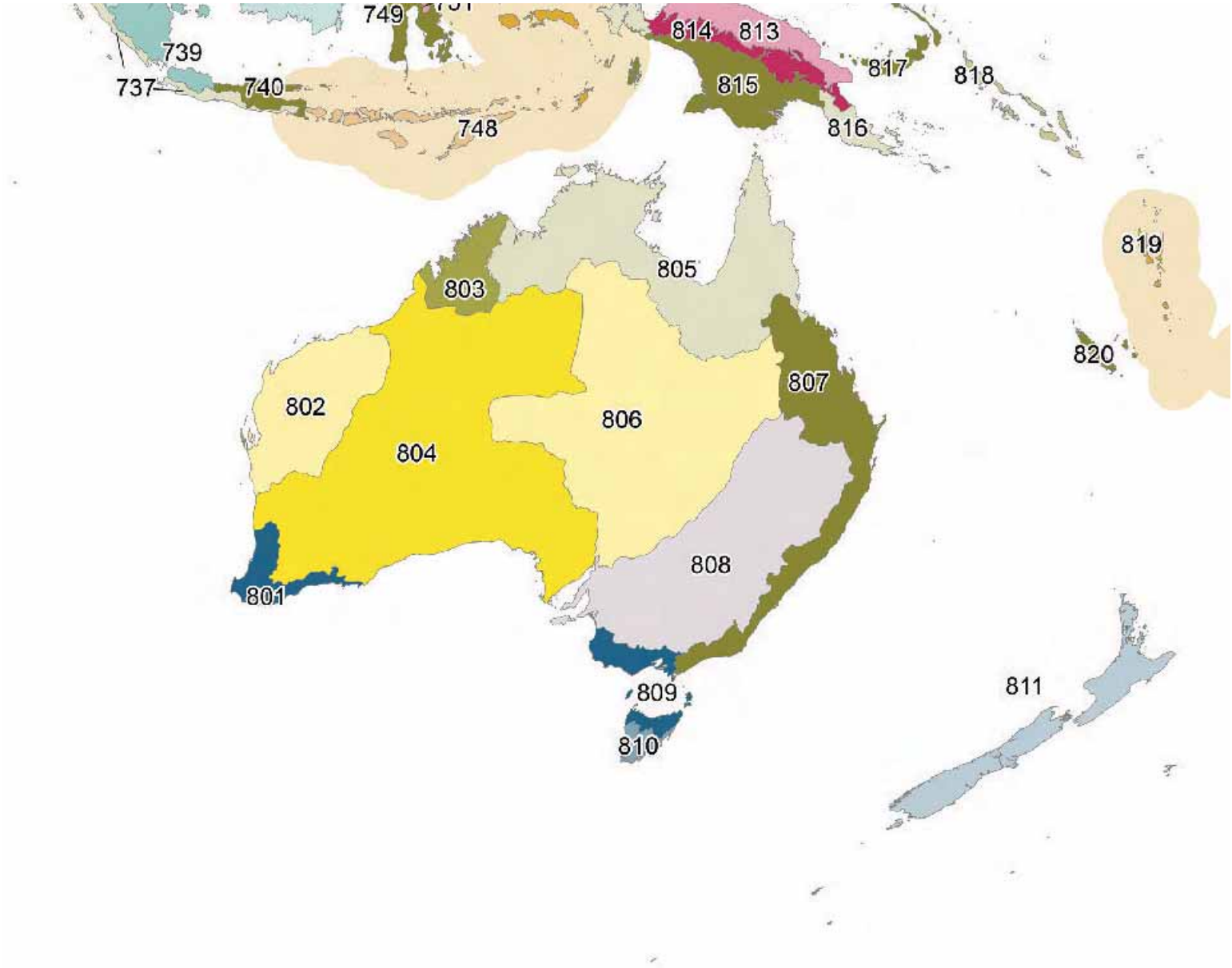
336 Central Andean Pacific Slopes
337 Titicaca
338 Atacama
339 Mar Chiquita - Salinas Grandes
340 Cuyan - Desaguadero
341 South Andean Pacific Slopes
342 Chaco
343 Paraguay
344 Upper Parana
345 Lower Parana
346 Iguassu
347 Bonaerensean Drainages
348 Patagonia
349 Valdivian Lakes
350 Galapagos Islands
351 Juan Fernandez Island
352 Fluminense

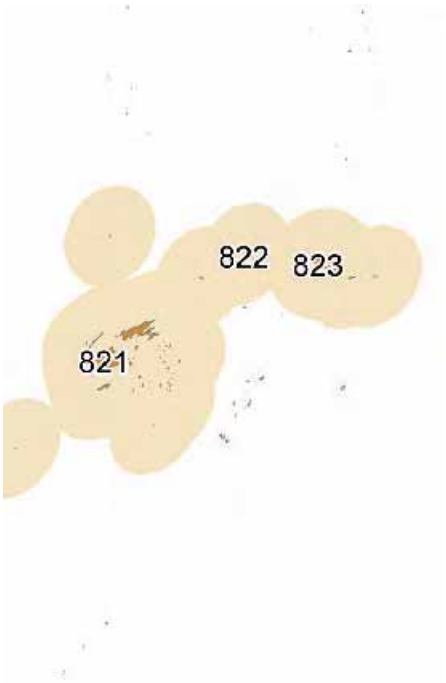
Europe & Middle East

427 Don
428 Kuban
429 Western Anatolia
430 Northern Anatolia
431 Central Anatolia
432 Southern Anatolia
433 Western Transcaucasia
434 Kura - South Caspian Drainages
435 Sinai
436 Coastal Levant
437 Orontes
438 Jordan River
439 Southwestern Arabian Coast
440 Arabian Interior
441 Lower Tigris & Euphrates
442 Upper Tigris & Euphrates
443 Oman Mountains
444 Lake Van

517 Bight Drainages
518 Northern Gulf of Guinea
519 Western Equatorial Crate
520 Lake Chad
521 Lake Victoria Basin
522 Upper Nile
523 Lower Nile
524 Nile Delta
525 Ethiopian Highlands
526 Lake Tana
527 Western Red Sea Drainag
528 Northern Eastern Rift
529 Horn of Africa
530 Lake Turkana
531 Shebelle - Juba
532 Ogooue - Nyanga - Kouil
533 Southern Gulf of Guinea
534 Sangha



	562	Mulanje	618	Argun	718	Sri Lanka Wet Zone
Drainages - Bioko	563	Eastern Zimbabwe Highlands	619	Shilka (Amur)	719	Chin Hills - Arakan Coast
r Lakes	564	Coastal East Africa	620	Songhua Jiang	720	Sitang - Irawaddy
	565	Lake Rukwa	621	Inner Mongolia Endorheic Basins	721	Upper Salween
	566	Southern Eastern Rift	622	Western Mongolia	722	Lower & Middle Salween
	567	Tana, Athi & Coastal Drainages	623	Dzungaria	723	Inle Lake
	568	Pangani	624	Balkash - Alakul	724	Upper Lancang (Mekong)
	569	Okavango	625	Tarim	725	Er Hai
	570	Kalahari	626	Lower & Middle Syr Darya	726	Lower Lancang (Mekong)
	571	Southern Kalahari	627	Lake Issyk Kul - Upper Chu	727	Khorat Plateau (Mekong)
ges	572	Western Orange	628	Northern Central Asian Highlands	728	Kratie - Stung Treng (Mekong)
	573	Karoo	629	Aral Sea Drainages	729	Mekong Delta
	574	Drakensberg - Maloti Highlands	630	Middle Amu Darya	730	Southern Annam
	575	Southern Temperate Highveld	631	Upper Amu Darya	731	Eastern Gulf of Thailand Draina
	576	Zambezian Lowveld	632	Qaidan	732	Chao Phraya
ou - Niari	577	Amatolo - Winterberg Highlands	633	Upper Huang He	733	Mae Khlong
Drainages	578	Cape Fold	634	Upper Huang He Corridor	734	Malay Peninsula Eastern Slope
	579	Western Madagascar	635	Huang He Great Bend	735	Northern Central Sumatra - We



763 Xi Jiang
764 Upper Yangtze
765 Middle Yangtze
766 Lower Yangtze
767 Coastal Fujian - Zeijang
768 Andaman Islands
769 Nicobar Islands

Australia & Pacific

801 Southwestern Australia
802 Pilbara
803 Kimberley
804 Paleo
805 Arafura - Carpentaria
806 Lake Eyre Basin
807 Eastern Coastal Australia
808 Murray - Darling
809 Bass Strait Drainages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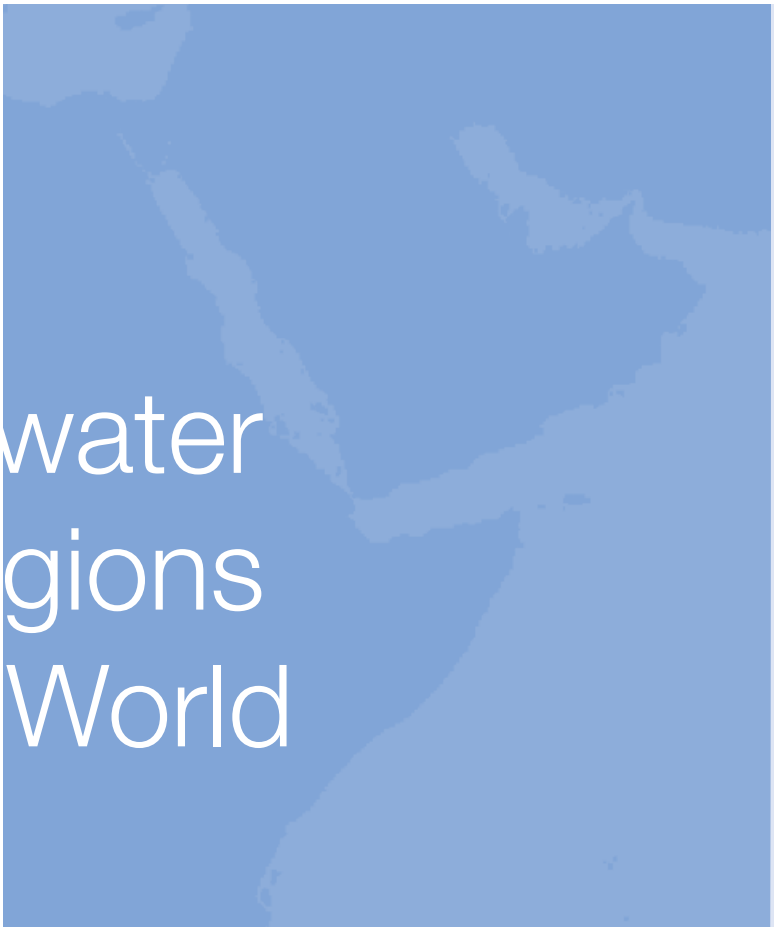

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- provide a global knowledge base for increa
  freshwater biogeographic literacy

FEOW is the result of the combined expertise
200 leading scientists. Covering 426 freshwater
it provides analyses of major threats to freshwat
as well as distribution data for more than

- 13,400 freshwater fish species
- 4,000 amphibian species
- 300 turtle species
- 20 crocodilian species

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118 Northeast US & Southeast Canada Atlantic Drainages
119 Scotia - Fundy
120 Columbia Glaciated
121 Columbia Unglaciated
122 Upper Snake
123 Oregon & Northern California Coastal
124 Oregon Lakes
125 Sacramento - San Joaquin
126 Lahontan
127 Bonneville
128 Death Valley
129 Vegas - Virgin
130 Colorado
131 Gila
132 Upper Rio Grande - Bravo
133 Pecos
134 Rio Conchos
135 Lower Rio Grande - Bravo
136 Cuatro Cienegas
137 Rio Salado
138 Rio San Juan (Mexico)
139 West Texas Gulf
140 East Texas Gulf
141 Sabine - Galveston
142 Upper Missouri
143 Middle Missouri

162 Sinaloa
163 Mayran - Viesca
164 Rio Santiago
165 Lerma - Chapala
166 Llanos El Salado
167 Panuco
168 Ameca - Manantlan
169 Rio Balsas
170 Sierra Madre del Sur
171 Papaloapan
172 Coatzacoalcos
173 Grijalva - Usumacinta
174 Upper Usumacinta
175 Yucatan
176 Bermuda

Central America

201 Chiapas - Fonseca
202 Quintana Roo - Motagua
203 Mosquitia
204 Estero Real - Tempisque
205 San Juan (Nicaragua/Costa Rica)
206 Chiriqui
207 Isthmus Caribbean
208 Santa Maria
209 Chagres
210 Rio Tuira

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317 Ucayali - Urubamba
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320 Tapajos - Juruena
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324 Tocantins - Araguai
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327 S. Francisco
328 Northeastern Mata
329 Paraiba do Sul
330 Ribeira de Iguape
331 Southeastern Mata
332 Lower Uruguay
333 Upper Uruguay
334 Laguna dos Patos
335 Tramandai - Mampi

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401 Iceland - Jan Mayen
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403 Cantabric Coast - Languedoc
404 Central & Western Europe
405 Norwegian Sea Drainages
406 Northern Baltic Drainages
407 Barents Sea Drainages
408 Southern Baltic Lowlands
409 Lake Onega - Lake Ladoga
410 Volga - Ural
411 Western Caspian Drainages
412 Western Iberia
413 Southern Iberia
414 Eastern Iberia
415 Gulf of Venice Drainages
416 Italian Peninsula & Islands
417 Upper Danube
418 Dniester - Lower Danube
419 Dalmatia
420 Southeastern Adriatic Drainages
421 Ionian Drainages
422 Vardar
423 Thrace
424 Aegean Drainages
425 Dnieper - South Bug
426 Crimea Peninsula
445 Orumiyeh
446 Caspian Highlands
447 Namak
448 Kavir & Lut Deserts
449 Esfahan
450 Turan Plain
451 Northern Hormuz Drainages
452 Caspian Marine
453 Volga Delta - Northern Caspian Drainages

Africa & Madagascar

501 Atlantic Northwest Africa
502 Mediterranean Northwest Africa
503 Sahara
504 Dry Sahel
505 Lower Niger - Benue
506 Niger Delta
507 Upper Niger
508 Inner Niger Delta
509 Senegal - Gambia
510 Fouta - Djalon
511 Northern Upper Guinea
512 Southern Upper Guinea
513 Mount Nimba
514 Eburneo
515 Ashanti
516 Volta
535 Sudanic Congo - Oubang
536 Uele
537 Cuvette Centrale
538 Tumba
539 Upper Congo Rapids
540 Upper Congo
541 Albertine Highlands
542 Lake Tanganyika
543 Malagarasi - Moyowosi
544 Bangweulu - Mweru
545 Upper Lualaba
546 Kasai
547 Mai Ndombe
548 Malebo Pool
549 Lower Congo Rapids
550 Lower Congo
551 Cuanza
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553 Etosha
554 Karstveld Sink Holes
555 Zambezian Headwaters
556 Upper Zambezi Floodplai
557 Kafue
558 Middle Zambezi - Luangw
559 Lake Malawi
560 Zambezian Highveld
561 Lower Zambezi

580 Northwestern Madagascar
581 Madagascar Eastern Highlands
582 Southern Madagascar
583 Madagascar Eastern Lowlands
584 Comoros - Mayotte
585 Seychelles
586 Mascarenes
587 S. Tome & Principe - Annobon

Northern Asia

601 Irgurgai
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603 Upper Irtysh
604 Chuya
605 Yenisei
606 Lake Baikal
607 Taimyr
608 Lena
609 Kolyma
610 Anadyr
611 East Chukotka
612 Koryakia
613 Kamchatka & Northern Kurils
614 Okhotsk Coast
615 Coastal Amur
616 Lower Amur
617 Middle Amur

636 Lower Huang He
637 Liao He
638 Eastern Yellow Sea Drainages
639 Southeastern Korean Peninsula
640 Hamgyong - Sanmaek
641 Sakhalin, Hokkaido, & Sikhote - Alin Coast
642 Honshu - Shikoku - Kyushu
643 Biwa Ko

Southern Asia

701 Baluchistan
702 Helmand - Sistan
703 Lower & Middle Indus
704 Yaghistan
705 Indus Himalayan Foothills
706 Upper Indus
707 Tibetan Plateau Endorheic Drainages
708 Namuda - Tapi
709 Ganges Delta & Plain
710 Ganges Himalayan Foothills
711 Upper Brahmaputra
712 Middle Brahmaputra
713 Northern Deccan Plateau
714 Southern Deccan Plateau
715 Western Ghats
716 Southeastern Ghats
717 Sri Lanka Dry Zone

Malaysia
736 Aceh
737 Indian Ocean Slope of Sumatra
738 Southern Central Sumatra
739 Southern Sumatra - Western Ja
740 Central & Eastern Java
741 Kapuas
742 Northwestern Borneo
743 Borneo Highlands
744 Northeastern Borneo
745 Eastern Borneo
746 Southeastern Borneo
747 Malukku
748 Lesser Sunda Islands
749 Sulawesi
750 Malili Lakes
751 Lake Poso
752 Mindanao
753 Lake Lanao
755 Northern Philippine Islands
756 Palawan - Busuanga - Mindoro
757 Western Taiwan
758 Eastern Taiwan
759 Hainan
760 Northern Annam
761 Song Hong
762 Yunnan Lakes

810	Southern Tasmania
811	New Zealand
812	Vogelkop - Bomberai
813	New Guinea North Coast
814	New Guinea Central Mountains
815	Southwest New Guinea - Trans-Fly Lowland
816	Papuan Peninsula
817	Bismarck Archipelago
818	Solomon Islands
819	Vanuatu
820	New Caledonia
821	Fiji
822	Wallis - Futuna
823	Samoas
824	Society Islands
825	Tubuai Islands
826	Marquesas Islands
827	Rapa
828	Hawaiian Islands
829	East Caroline Islands
830	West Caroline Islands