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WISSENSCHAFTLICHER BEIRAT DER BUNDESREGIERUNG
GLOBALE UMWELTVERÄNDERUNGEN

materialien

**Martin Cassel-Gintz:
Karten zur Bodendegradation und
Versalzung. GIS-II**

**Externe Expertise für das WBGU-Hauptgutachten
"Welt im Wandel: Sicherheitsrisiko Klimawandel"**

Berlin 2007

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Alle WBGU-Gutachten können von der Internetwebsite <http://www.wbgu.de> in deutscher und englischer Sprache herunter geladen werden.

Inhaltsverzeichnis CD-ROM "Auswahl und Beschaffung von Daten sowie Erstellung von Karten – Bodendegradation, Versalzung, Klimagefahren in Küstenregionen"

Die CD-ROM enthält 3 Unterverzeichnisse mit Karten und Informationen zu den 3 Themen:

1. Boden-Global

Globale Daten und Karten zur globalen Bodendegradation. Alle Dateien sind im Format PDF vorhanden, teils auch als EPS.

anthland	anthropic landscapes; anthropogen beeinflusste Landschaften; US Department of Agriculture
bd_extent1	Globale Bodendegradation – Prozentsatz der betroffenen Fläche; Kartengrundlage: GLASSOD (Global Assessment of Human Induced Soil Degradation)
bd_grund1	Globale Bodendegradation – Primärer Degradationsgrund; Kartengrundlage: GLASSOD
bd_stärke_rate1	Globale Bodendegradation – Stärke und Rate des Fortschreitens der Bodendegradation; Kartengrundlage: GLASSOD
bodendeg_stärke1	Globale Bodendegradation – Stärke der Bodendegradation; Kartengrundlage: GLASSOD
desertification fact sheet Literature	CCD References "Fact Sheet Desertification"
desertification_map;	Karte: Desertification Vulnerability; US Department of Agriculture
desertification_vulnerability_map	
desertification_risk_map	Karte: Risk of Human Induced Desertification; US Department of Agriculture
global fact sheet	CCD "Global Fact Sheet Desertification"
land_quality_map	Karte: Inherent Land Quality Assessment; US Department of Agriculture
major_stresses_map	Karte: Major land Resource Stresses; US Department of Agriculture
phosphorus_map	Karte: Phosphorus Retention Potential; US Department of Agriculture
population_density_map_1994	Karte: Population Density 1994; US Department of Agriculture Neuere Daten für 2003 sind bestellt und werden in den nächsten Tagen nachgeliefert!
soil_moisture_map	Karte: Soil Moisture Regimes; US Department of Agriculture
soil_temperature_map	Karte: Soil Temperature Regimes; US Department of Agriculture
versalzung1	Globale Bodendegradation – Versalzung; Kartengrundlage: GLASSOD
water_erosion_map	Karte: Water Erosion Vulnerability; US Department

	of Agriculture
water_erosion_risk_map	Karte: Risk of Human Induced Water Erosion; US Department of Agriculture
wind_erosion_map	Karte: Wind Erosion Vulnerability; US Department of Agriculture
wind_erosion_risk_map	Karte: Risk of Human Induced Wind Erosion; US Department of Agriculture

2. Boden-Regional

Regionale neuere Studien zur Bodendegradation und Versalzung:

a. Africa:

Acidification for African Soils	Karte: Acidification for African Soils; FAO - LADA (Land Degradation Assessment in Drylands; http://lada.virtualcentre.org/)
africa fact sheet	CCD Fact Sheet Desertification Africa
Chemical Deterioration of African Soils	Karte: Chemical Deterioration of African Soils; FAO - LADA (http://lada.virtualcentre.org/)
Degradation of African Soils	Karte: Degradation of African Soils; FAO - LADA (http://lada.virtualcentre.org/)
Desertification Vulnerability Africa	Karte: Desertification Vulnerability of African Soils; FAO - LADA (http://lada.virtualcentre.org/)
Nutrient Loss in African Soils	Karte: Nutrient Loss in African Soils; FAO - LADA (http://lada.virtualcentre.org/)
Physical Deterioration of African Soils	Karte: Physical Deterioration of African Soils; FAO - LADA (http://lada.virtualcentre.org/)
Predicted Water Erosion South Africa	Karte: Predicted Water Erosion South Africa; FAO - LADA (http://lada.virtualcentre.org/)
Salinization of African Soils	Karte: Salinization of African Soils; FAO - LADA (http://lada.virtualcentre.org/)
Soil Erosion South Africa	Karte: Soil Erosion Susceptibility Map of South Africa (http://www.agis.agric.za/agisweb/\$WEB_HOME?Mlval=soils.html)
Soil Salinity Nile Delta	Karte: Egypt, Present Status and Risk of Soil Salinity; FAO - LADA (http://lada.virtualcentre.org/)
Water Erosion Africa	Karte: Water Erosion Severity for Africa; FAO - LADA (http://lada.virtualcentre.org/)
Wind Erosion Severity of African Soils	Karte: Wind Erosion Severity of African Soils; FAO - LADA (http://lada.virtualcentre.org/)

b. Asia:

asia fact sheet	CCD Fact Sheet Desertification Asia
ASSOD Dominant Degradation Type1	Karte: Status of Human-Induced Soil Degradation in South and Southeast Asia: Dominant Degradation type; FAO ISRIC; ASSOD (The ASSESSMENT of the STATUS of HUMAN-INDUCED SOIL DEGRADATION in SOUTH and SOUTHEAST ASIA); LADA (http://lada.virtualcentre.org/)
ASSOD Eastern Asia	Karte: Status of Human-Induced Soil Degradation in Eastern Asia: Dominant Degradation type; FAO ISRIC; ASSOD (The ASSESSMENT of the STATUS of HUMAN-INDUCED SOIL DEGRADATION in SOUTH and SOUTHEAST ASIA); LADA (http://lada.virtualcentre.org/)
ASSOD Extent & Impact of	Karte: Status of Human-Induced Soil Degradation in Eastern Asia: Extent and Impact of Degradation; FAO

Degradation1	ISRIC; ASSOD (The ASSESSMENT of the STATUS of HUMAN-INDUCED SOIL DEGRADATION in SOUTH and SOUTHEAST ASIA); LADA (http://lada.virtualcentre.org/)
assod_salinisation1	Karte: Status of Human-Induced Soil Degradation in Eastern Asia: Degree of Salinisation; FAO ISRIC; ASSOD (The ASSESSMENT of the STATUS of HUMAN-INDUCED SOIL DEGRADATION in SOUTH and SOUTHEAST ASIA); LADA (http://lada.virtualcentre.org/)
malaysia	Dokument: SALT-AFFECTED SOILS OF MALAYSIA
malysiamaps	PowerPoint: Verschiedene Karten zu obigen Dokument
Soil Degradation in Central Asia	Karte: Soil Degradation in Central Asia; Atlas of the USSR 1985; FAO - LADA (http://lada.virtualcentre.org/)

c. Europe:

saveur_cause1	Karte: Assessment of Soil Degradation in Central and Eastern Europe SAVEUR: Primary Cause for Soil Degradation; FAO, ISRIC
saveur_degree1	Karte: Assessment of Soil Degradation in Central and Eastern Europe SAVEUR: Degree of Soil Degradation; FAO, ISRIC
saveur_salinity1	Karte: Assessment of Soil Degradation in Central and Eastern Europe SAVEUR: Primary Type of Soil Degradation; FAO, ISRIC
saveur_type1	Karte: Assessment of Soil Degradation in Central and Eastern Europe SAVEUR: Inland Salinisation; FAO, ISRIC
Soil Degradation JRC	Karte: GLOBAL ASSESSMENT OF HUMAN INDUCED SOIL DEGRADATION (GLASOD) -1990; Joint Research Centre European Commission
Soil Degradation JRC	PowerPoint: Verschiedene Karten zur Bodendegradation in Europa; Joint Research Centre European Commission
Soil Vulnerabilities Central & Eastern Europe	Karten: Verschiedene Karten zur Bodendegradation in Europa; Joint Research Centre European Commission

d. Latin America:

Desertification South America	Karte: Desertification in the Southern Part of Latin-America; FAO - LADA (http://lada.virtualcentre.org/)
latin america fact sheet	CCD Fact Sheet Desertification Latin America
Vulnerability to Water & Wind Erosion Latin America	Falsche Karte, richtige wird nachgeliefert.

e. Mediterranean:

Sensitivity to desertification in the Mediterranean1	Karte: Sensitivity to desertification and drought in the Mediterranean Basin. European Environment Agency EEA (http://dataservice.eea.eu.int/atlas/viewdata/viewpub.asp?id=494)
Sensitivity to desertification in the Mediterranean2	Karte: Sensitivity to desertification and drought in the Northern Mediterranean Basin; EEA (http://dataservice.eea.eu.int/atlas/viewdata/viewpub.asp?id=494)
Soil Sensitivity in the Mediterranean1	Karte: Soil Sensitivity in the Mediterranean Basin; EEA (http://dataservice.eea.eu.int/atlas/viewdata/viewpub.asp?id=494)
Vegetation Sensitivity in the Mediterranean1	Karte: Vegetation Sensitivity in the Mediterranean Basin; EEA (http://dataservice.eea.eu.int/atlas/viewdata/viewpub.asp?id=494)

3. Sea level rise

Daten und Karten einer Studie des Department of Geosciences, Environmental Studies Laboratory, der University of Arizona zum Überschwemmungspotential durch Meeresspiegelanstieg. Die Regionalkarten zeigen Szenarien der Überschwemmungsgebiete für verschiedene Regionen in 1-Meter Abständen bis 6 m Meeresspiegelanstieg. Die Regionalkarten liegen einzeln im Format GIF und als Serie im Format PDF vor.

Sobald die von der MünchnerRück angefragten Daten eingetroffen sind, werden ähnliche Karten der möglichen Gefährdung von Küstenregionen durch Natural Hazards erzeugt.

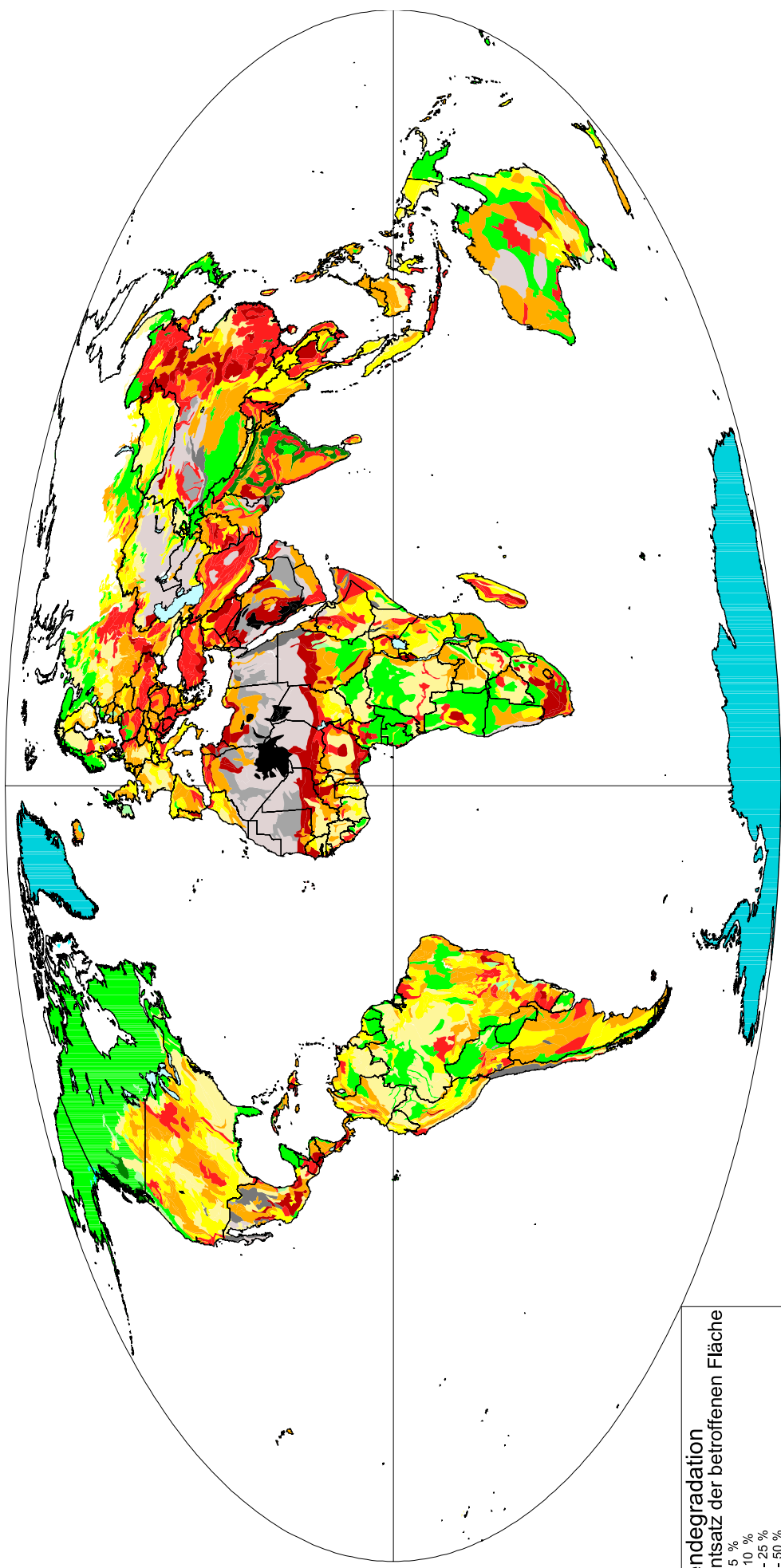
Allgemeine Dateien:

[sea_level_rise_technical.htm/](#) Beschreibung der Vorgehensweise der Studie zum
[sea_level_rise_old.htm](#) Überschwemmungspotential durch Meeresspiegelanstieg

Regionalkarten:

- a. Africa
- b. Asia
- c. California
- d. Florida
- e. Louisiana
- f. Mediterranean
- g. North America
- h. Puerto Rico
- i. South America
- j. Western Pacific

Globale Bodendegradation



Bodendegradation
Prozentsatz der betroffenen Fläche

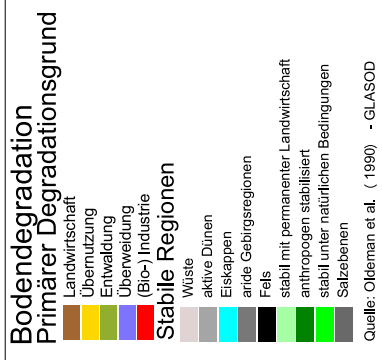
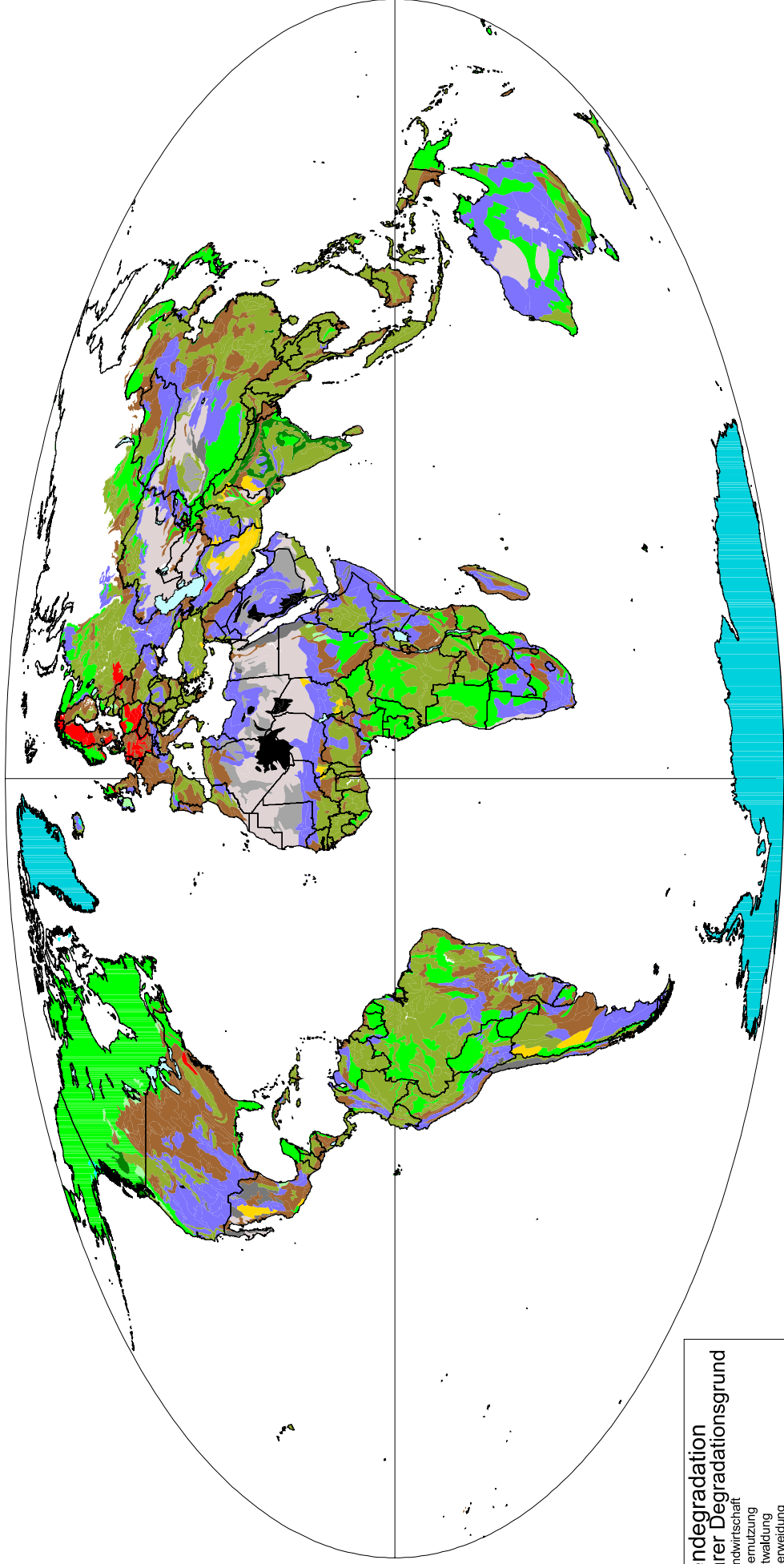
0 - 5 %
6 - 10 %
11 - 25 %
26 - 50 %
> 50 %

Stabile Regionen

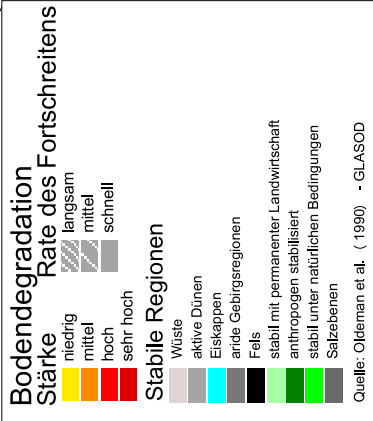
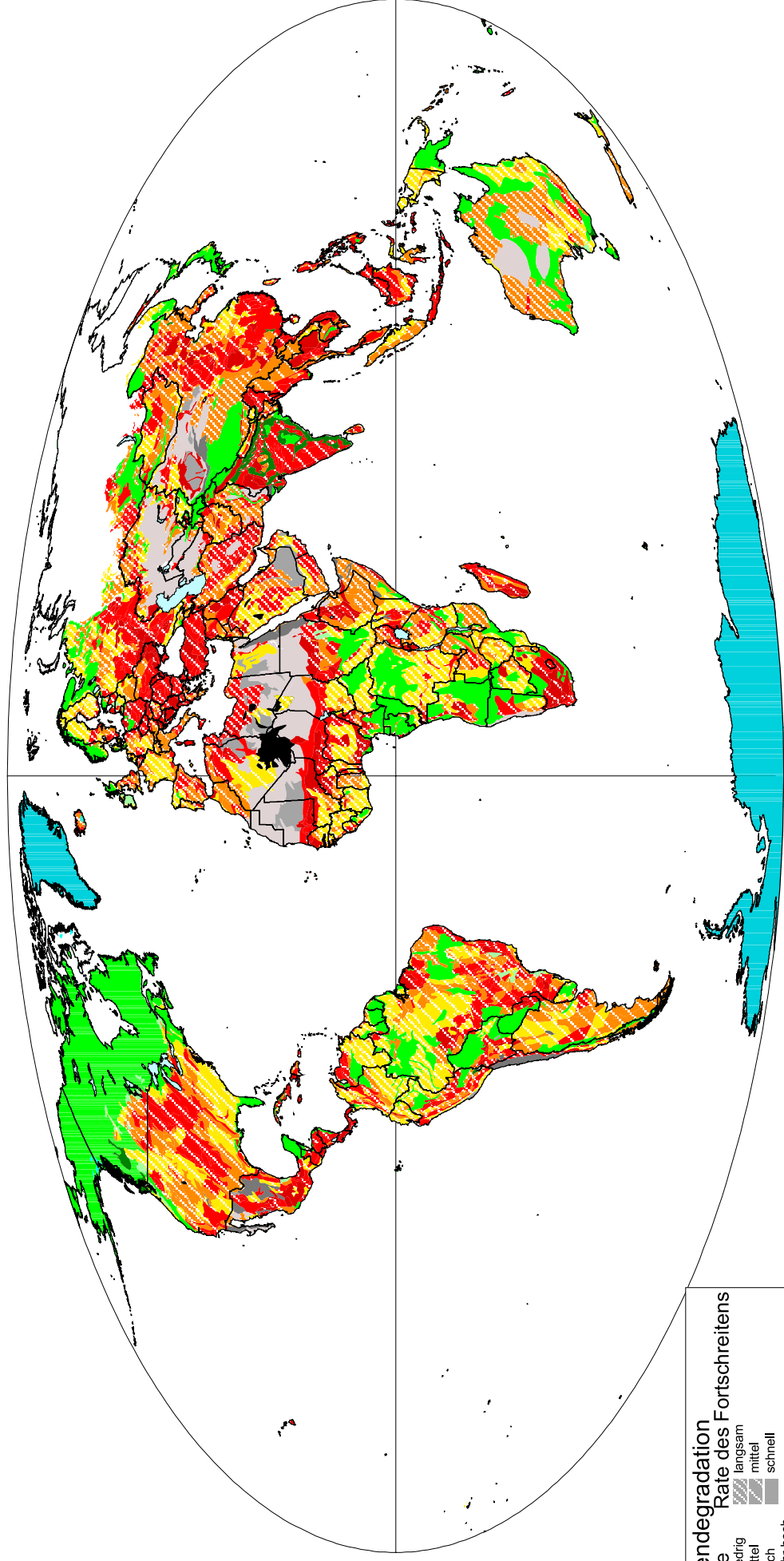
Wüste
aktive Dünen
Eiskappen
aride Gebietsregionen
Fels
stabil mit permanenter Landwirtschaft
anthropogen stabilisiert
stabil unter natürlichen Bedingungen
Salzbenen

Quelle: Oldeman et al. (1990) - GLASOD

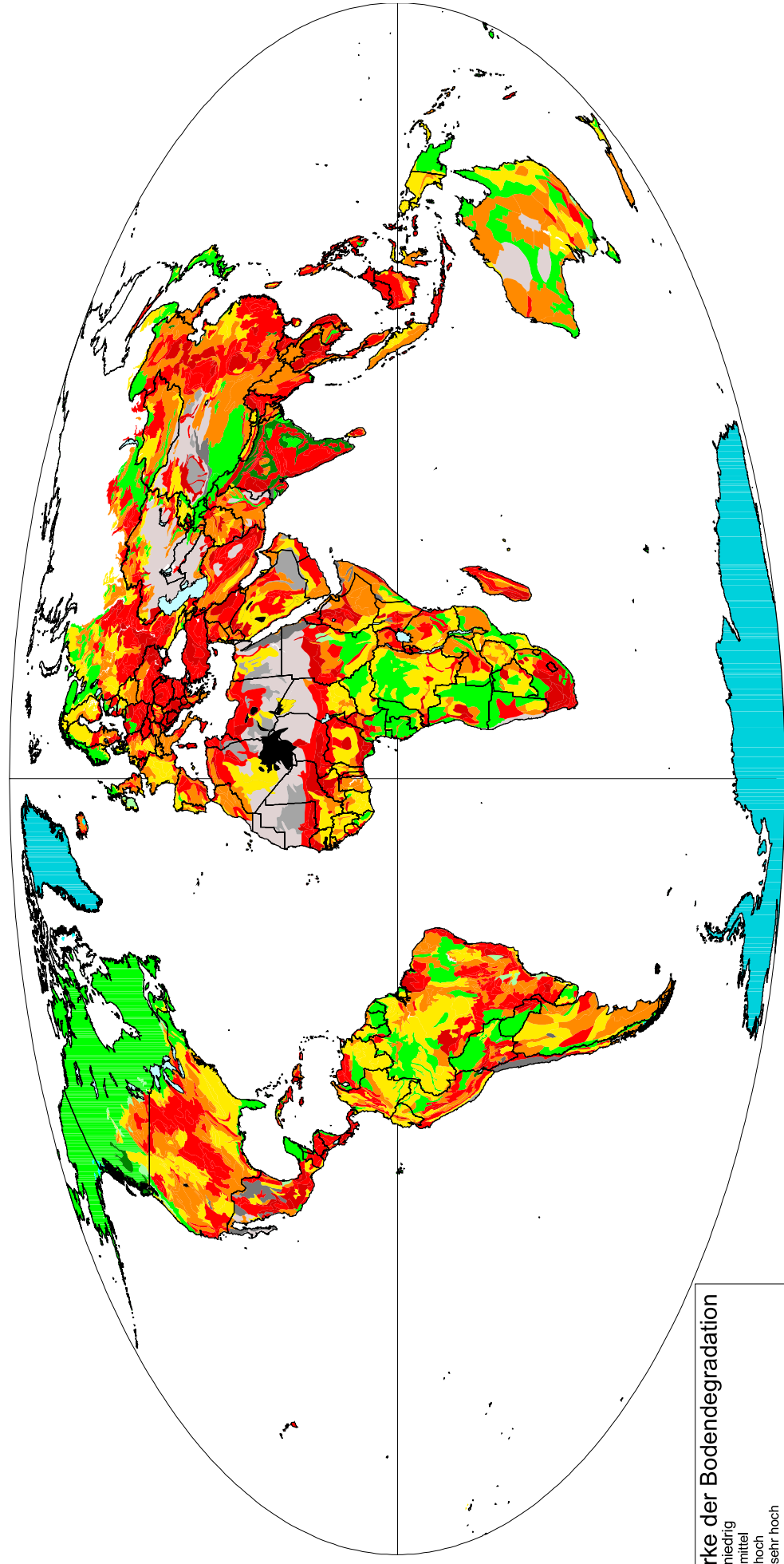
Globale Bodendegradation



Globale Bodendegradation



Globale Bodendegradation



Stärke der Bodendegradation

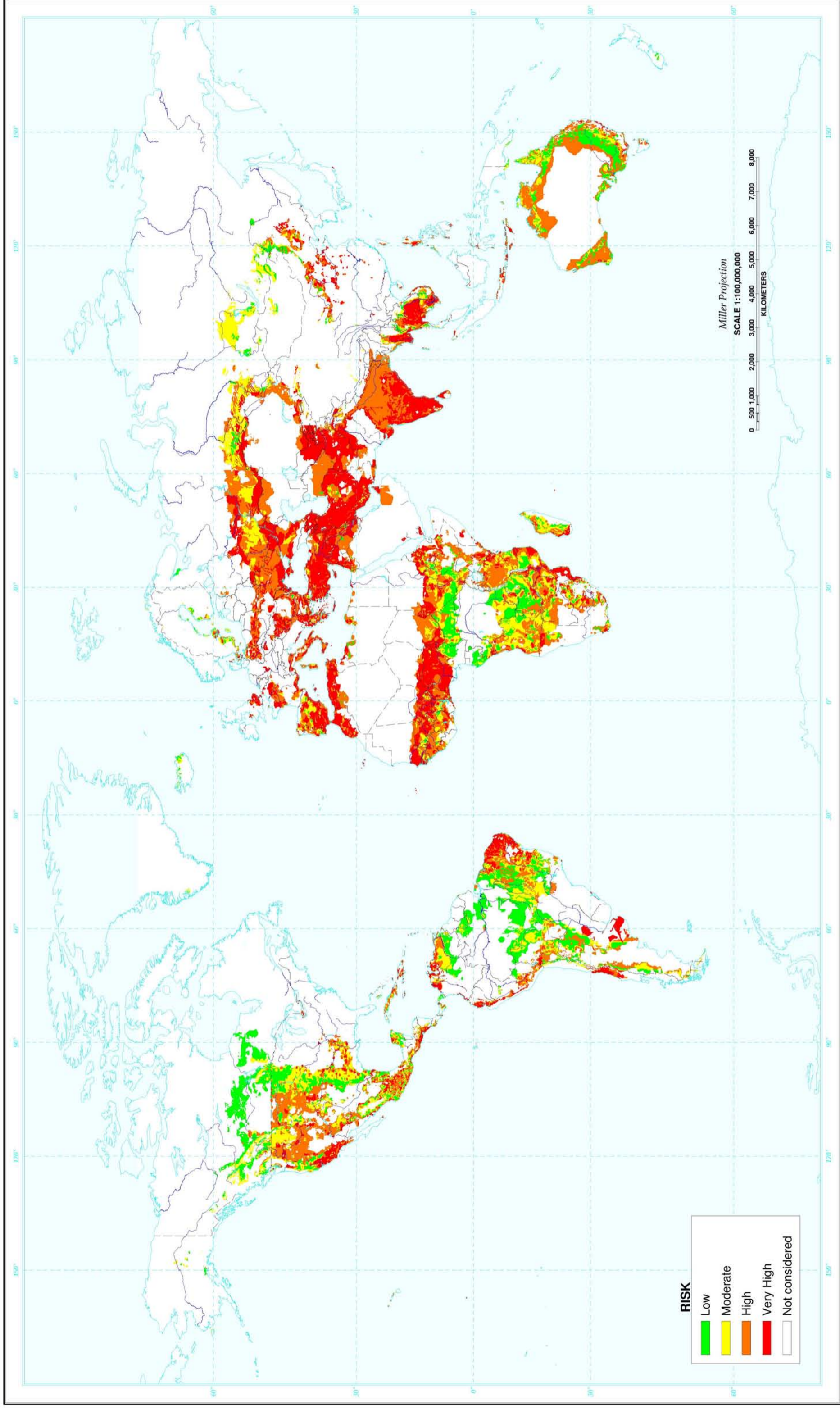
- niedrig
- mittel
- hoch
- sehr hoch

Stabile Regionen

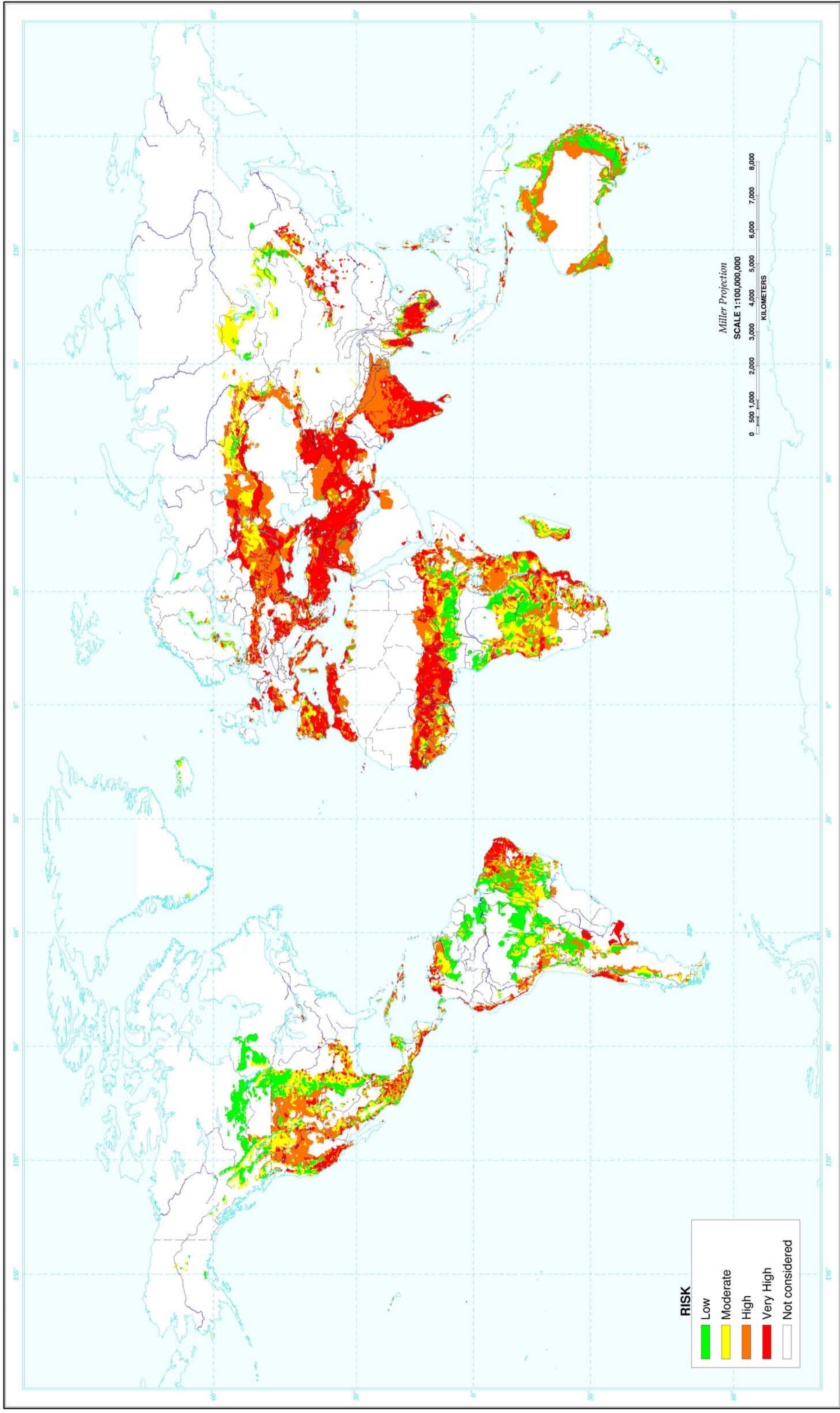
- Wüste
- aktive Dünen
- Eiskappen
- aride Gebirgsregionen
- Fels
- stabil mit permanenter Landwirtschaft
- anthropogen stabilisiert
- stabil unter natürlichen Bedingungen
- Salzebenen

Quelle: Oldeman et al. (1990) - GLASOD

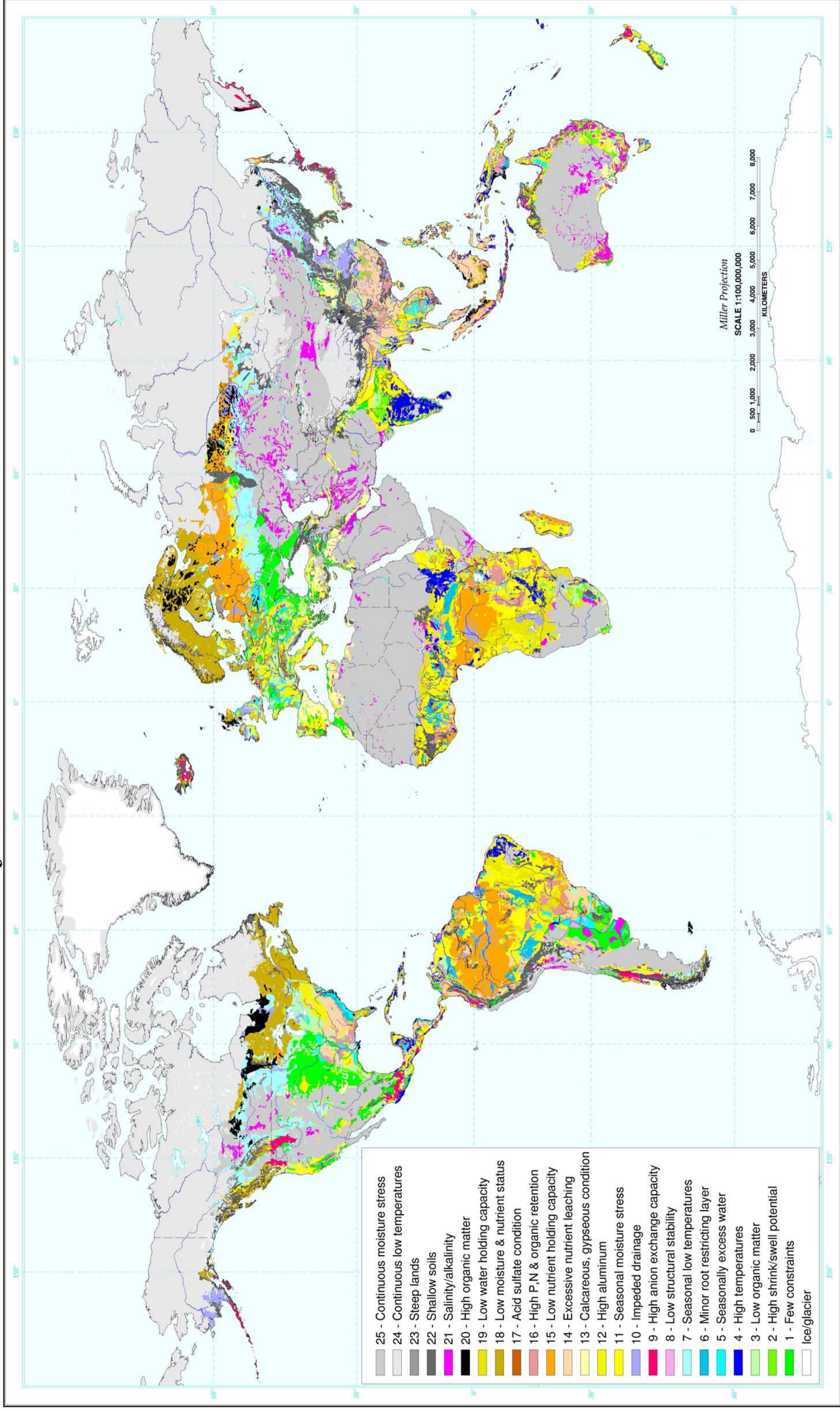
Risk of Human Induced Desertification



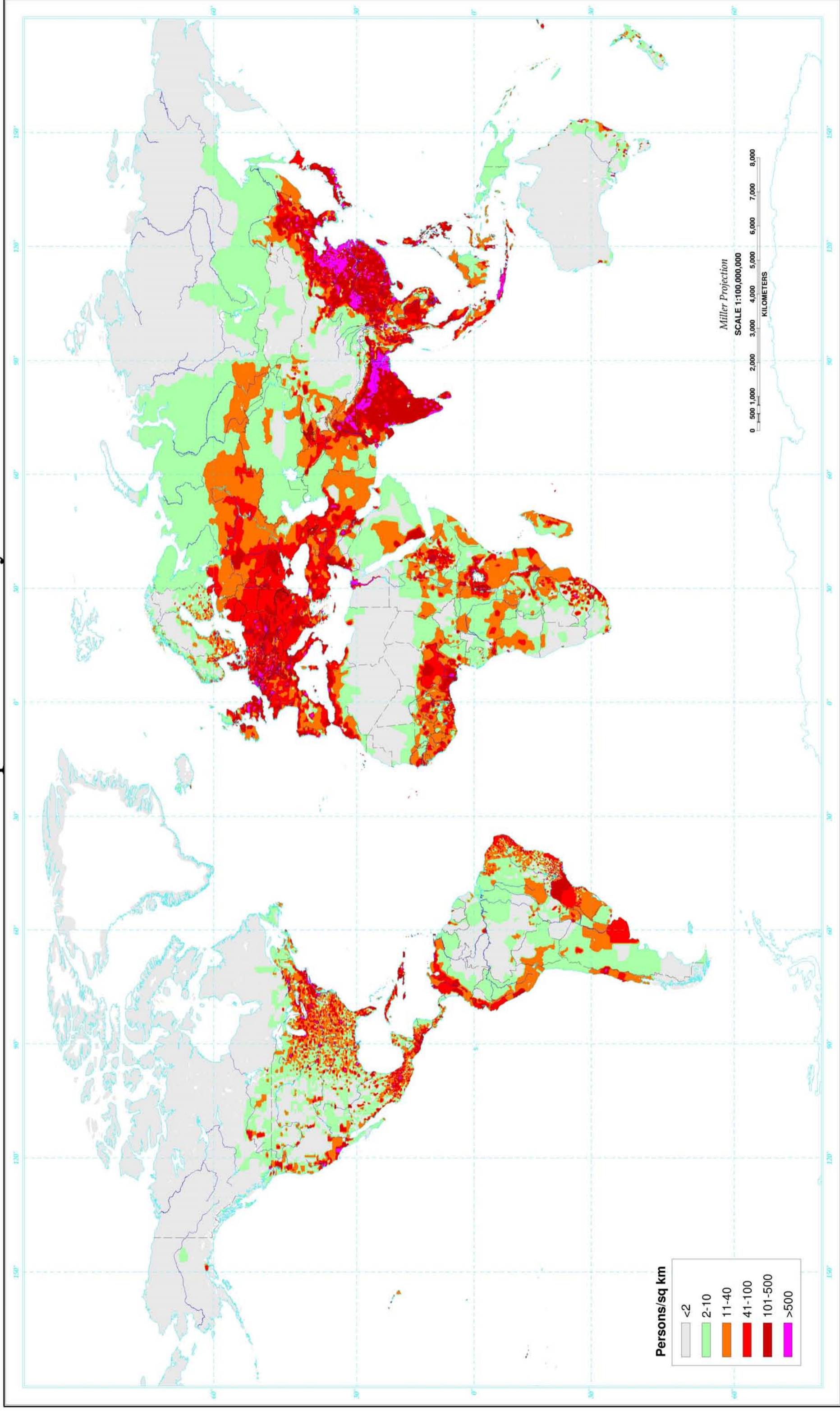
Risk of Human Induced Desertification



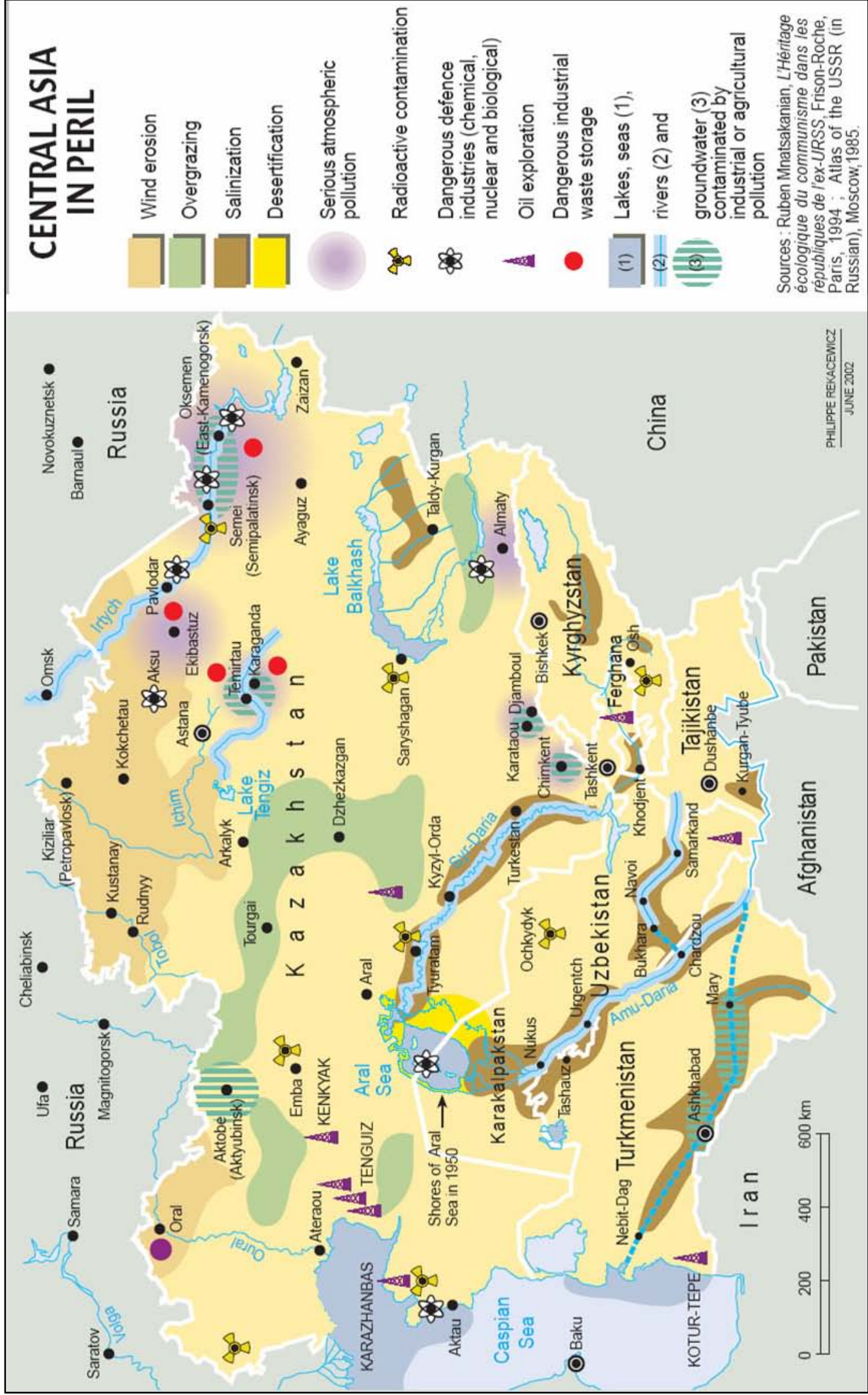
Major Land Resource Stresses



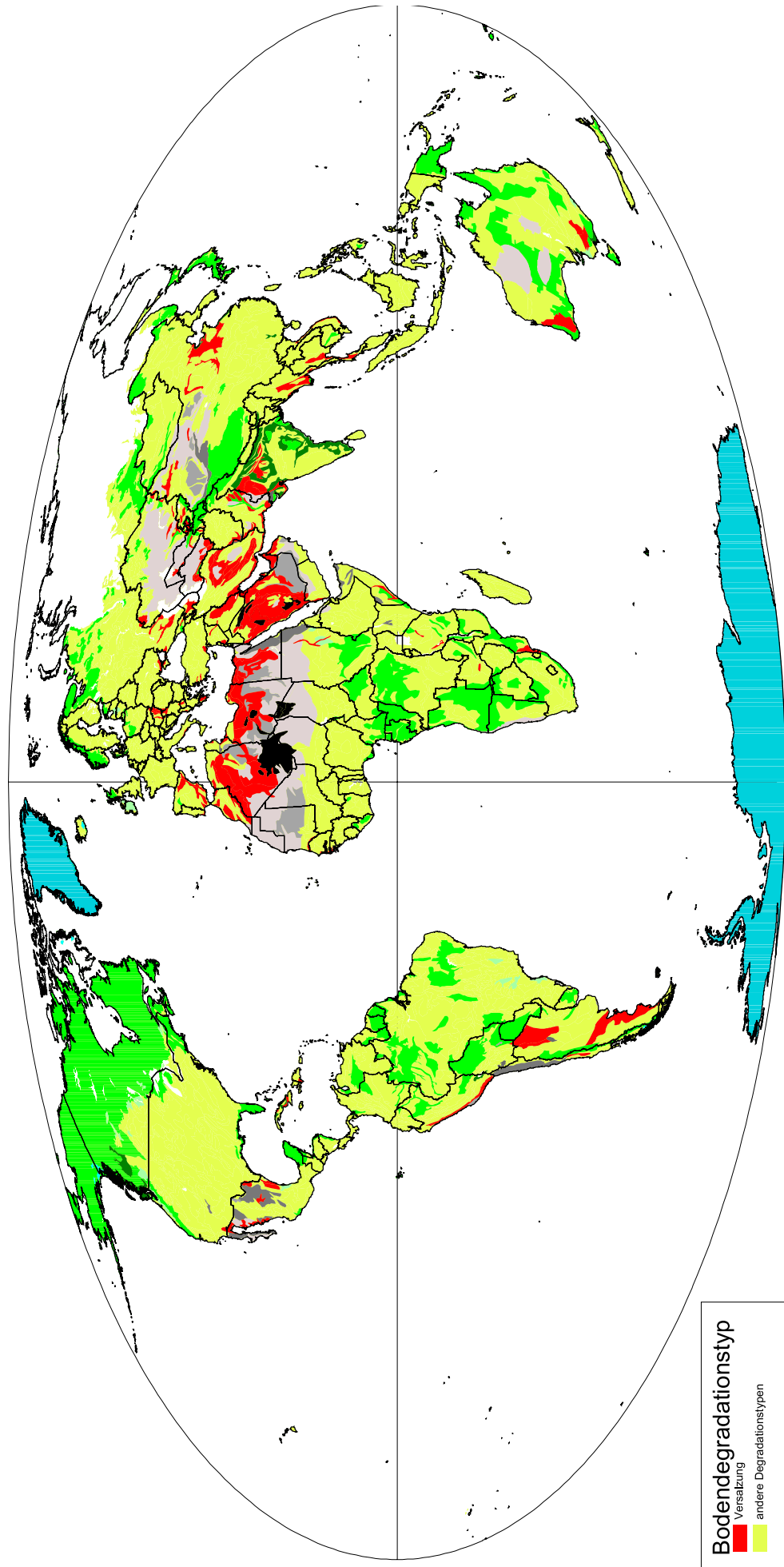
Historical Population Density - 1994



Soil Degradation in Central Asia



Globale Bodenversalzung



Bodendegradationstyp

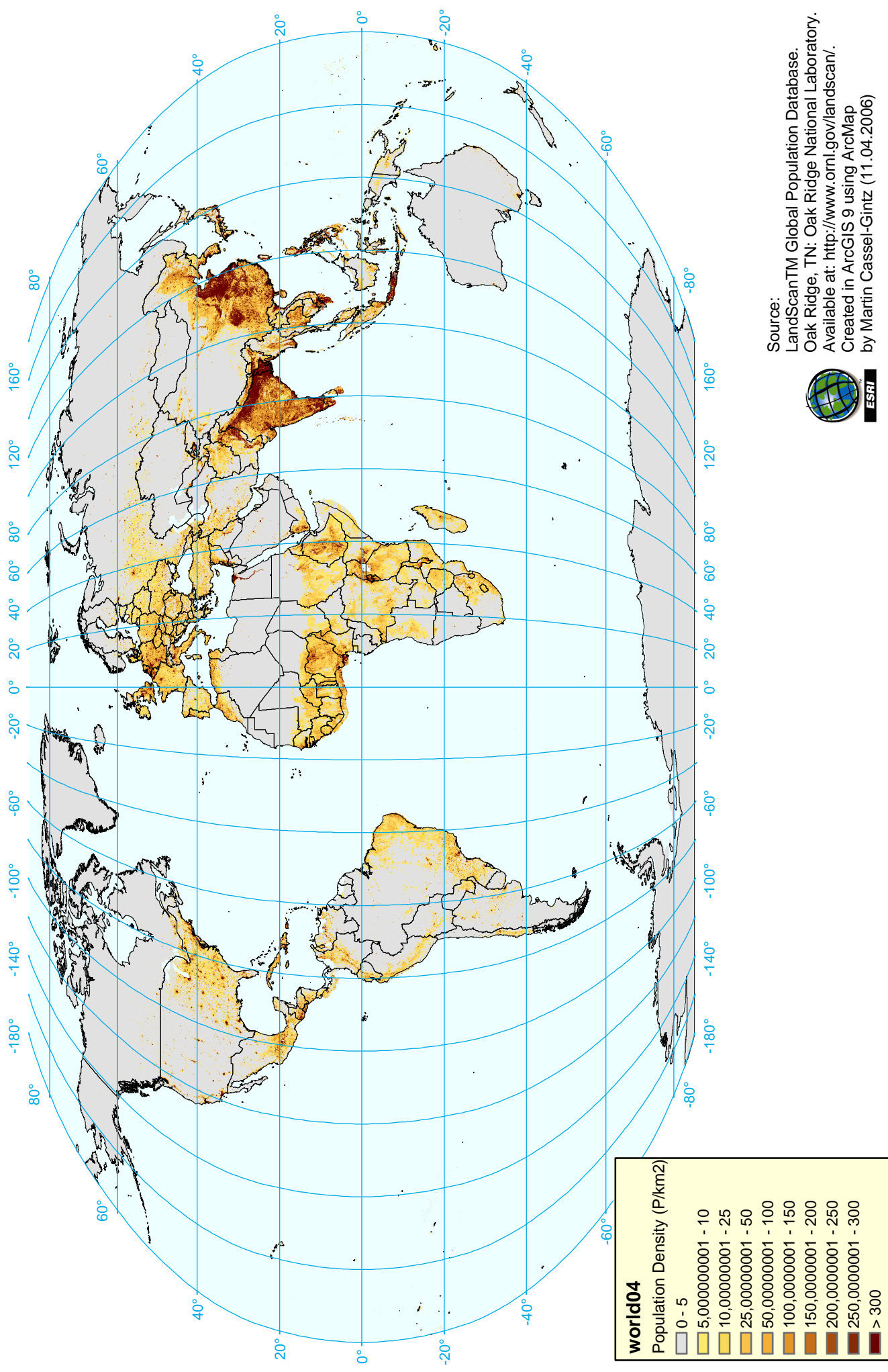
- Versalzung
- andere Degradationstypen

Stabile Regionen

- Wüste
- aktive Dünen
- Eiskappen
- alte Gebirgsregionen
- Fels
- stabil mit permanenter Landwirtschaft
- anthropogen stabilisiert
- stabil unter natürlichen Bedingungen
- Salzebenen

Quelle: Oldeman et al. (1990) - GLASOD

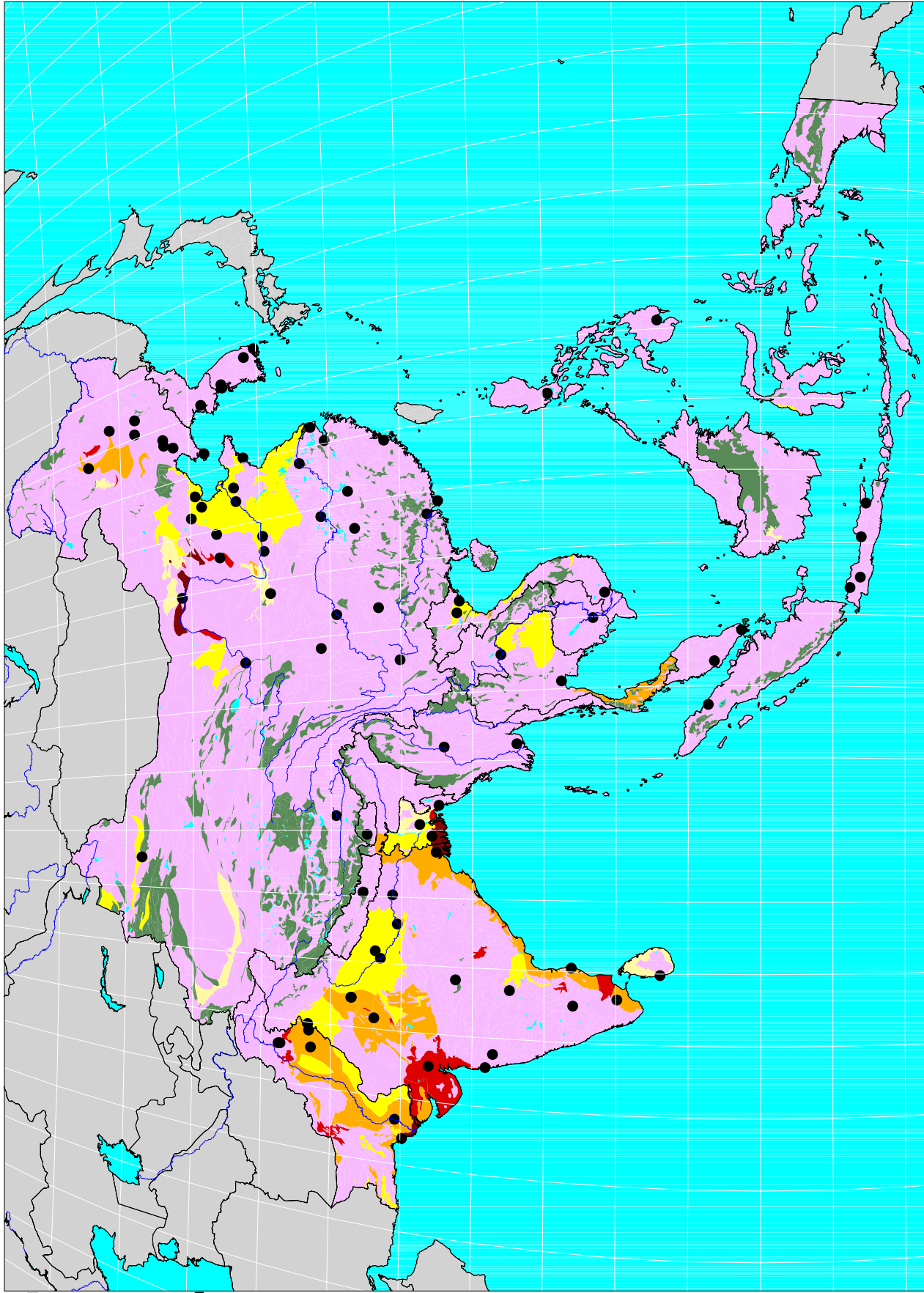
LANDSCAN- 2004 GLOBAL POPULATION DATASET



Source:
LandScan™ Global Population Database.
Oak Ridge, TN: Oak Ridge National Laboratory.
Available at: <http://www.ornl.gov/landscan/>.
Created in ArcGIS 9 using ArcMap
by Martin Cassel-Gintz (11.04.2006)



The ASSESSMENT of the STATUS of HUMAN-INDUCED SOIL DEGRADATION in SOUTH and SOUTHEAST ASIA ASSOD



- Degree of Salinisation**
- very low
 - low
 - medium
 - high
 - very high
 - no ASSOD country
 - other forms of degradation
 - stable
 - No Data
 - water bodies
- rivers
 country boundaries
 major cities



Source:
The ASSESSMENT of the
STATUS of HUMAN-INDUCED
SOIL DEGRADATION in
SOUTH and SOUTHEAST ASIA -
ASSOD