

Chlorides

Chlorides are salts resulting from the combination of the gas chlorine with a metal. Some common chlorides include sodium chloride (NaCl) and magnesium chloride (MgCl₂). Chlorine alone as Cl₂ is highly toxic and it is often used as a disinfectant. In combination with a metal such as sodium it becomes essential for life. Small amounts of chlorides are required for normal cell functions in plant and animal life.

Effects on environment and human health:

Chlorides are not usually harmful to people; however, the sodium part of table salt has been linked to heart and kidney disease. Sodium chloride may impart a salty taste at 250 mg/L; however, calcium or magnesium chlorides are not usually detected by taste until levels of 1000 mg/L are reached.

Chlorides may get into surface water from several sources including: 1) rocks containing chlorides; 2) agricultural runoff; 3) wastewater from industries; and 4) effluent wastewater from wastewater treatment plants.

Chlorides can corrode metals and affect the taste of food products. Therefore, water that is used in industry or processed for any use has a recommended maximum chloride level. Chlorides can contaminate fresh water streams and lakes. Fish and aquatic communities cannot survive in high levels of chlorides.

Remedial measures

Chlorides can be removed from water by reverse osmosis. Deionization (demineralization) or distillation will also remove chlorides from water, but these methods are less suitable for household use than reverse osmosis.

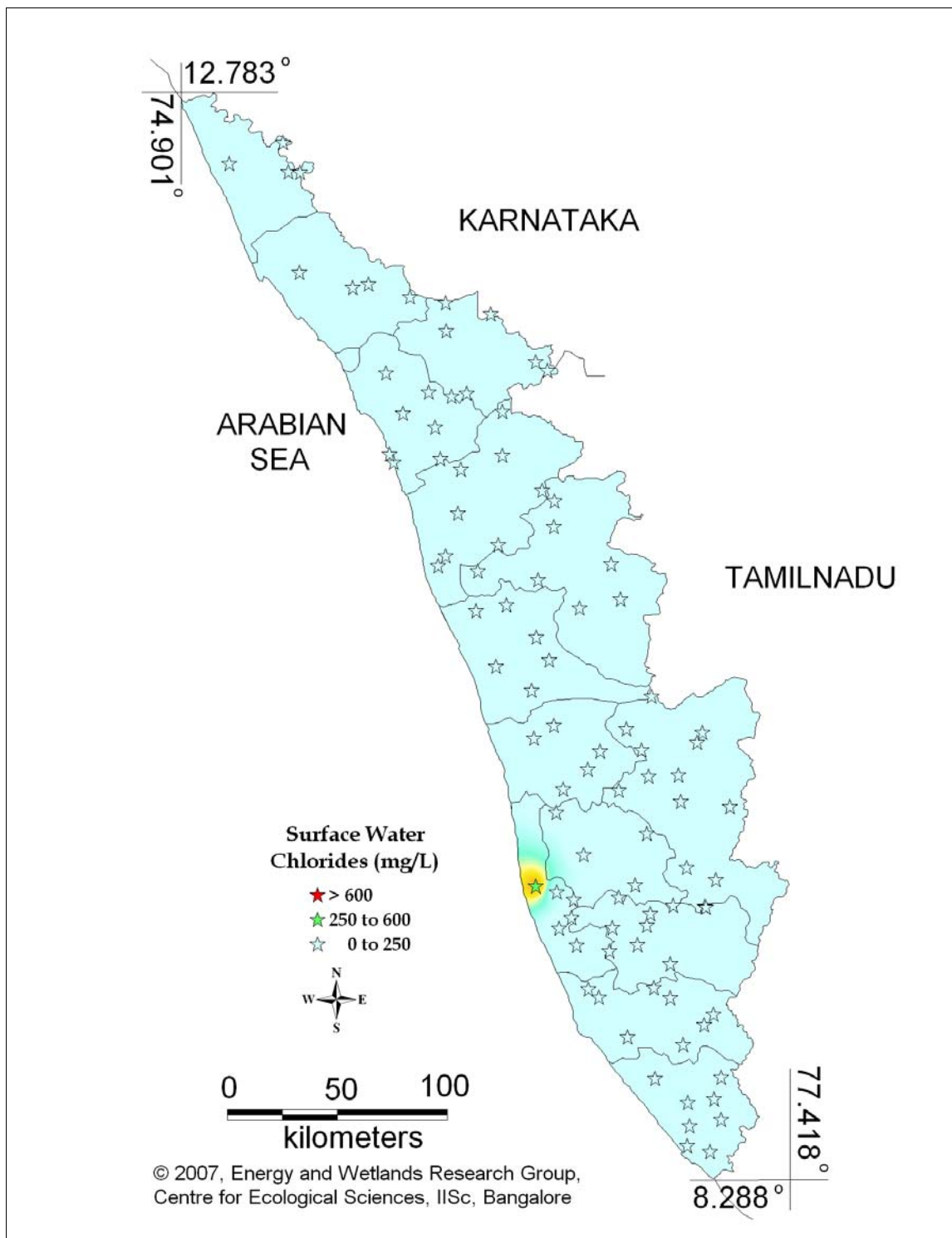


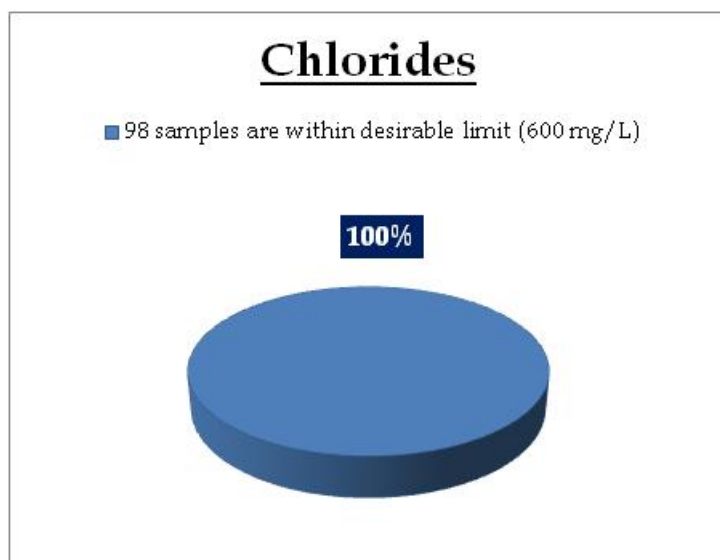
Figure 12.1: Spatial variation of Chlorides in surface water

Surface water - Chlorides

Tolerance limit for inland surface waters subject to pollution

Desirable Limit: 250 mg/L

Permissible Limit: 1000 mg/L



Remarks

All the 98 surface water samples collected from rivers, streams and lakes spread over in Kerala are under the inland surface water standard.

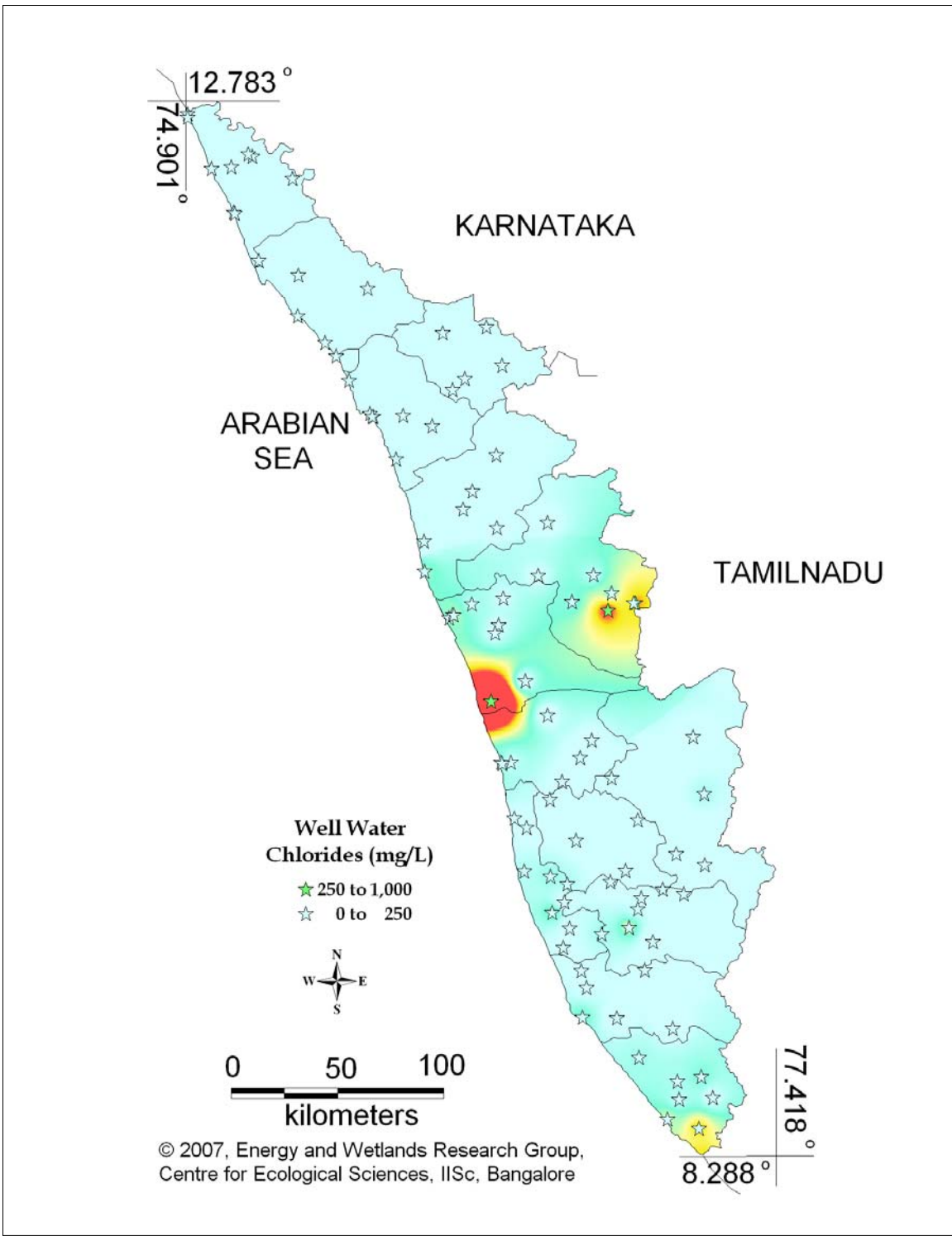


Figure 12.2: Spatial variation of chlorides in well water

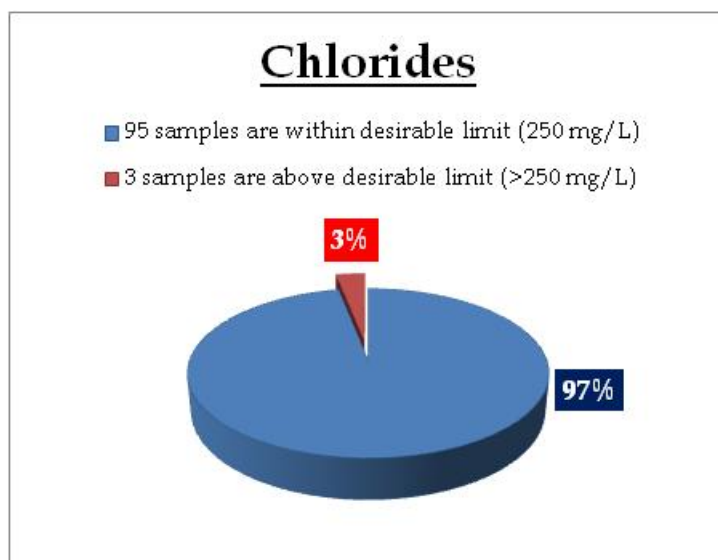
Well water- Chlorides

Standard for Drinking Water (BIS 105000)

Desirable Limit: 250 mg/L

Permissible limit in the absence of an alternative source: 1000mg/L

Beyond this limit taste, corrosion and palatability are affected.



Remarks

Sampling sites above desirable limit are listed in Table 13

Table 13: Sampling locations of well water containing chlorides above desirable limit

Location	Value	District
Kollengode	268.29	Palakkad
Placimada	314.35	Palakkad
Koodungalur	921.01	Thrissur

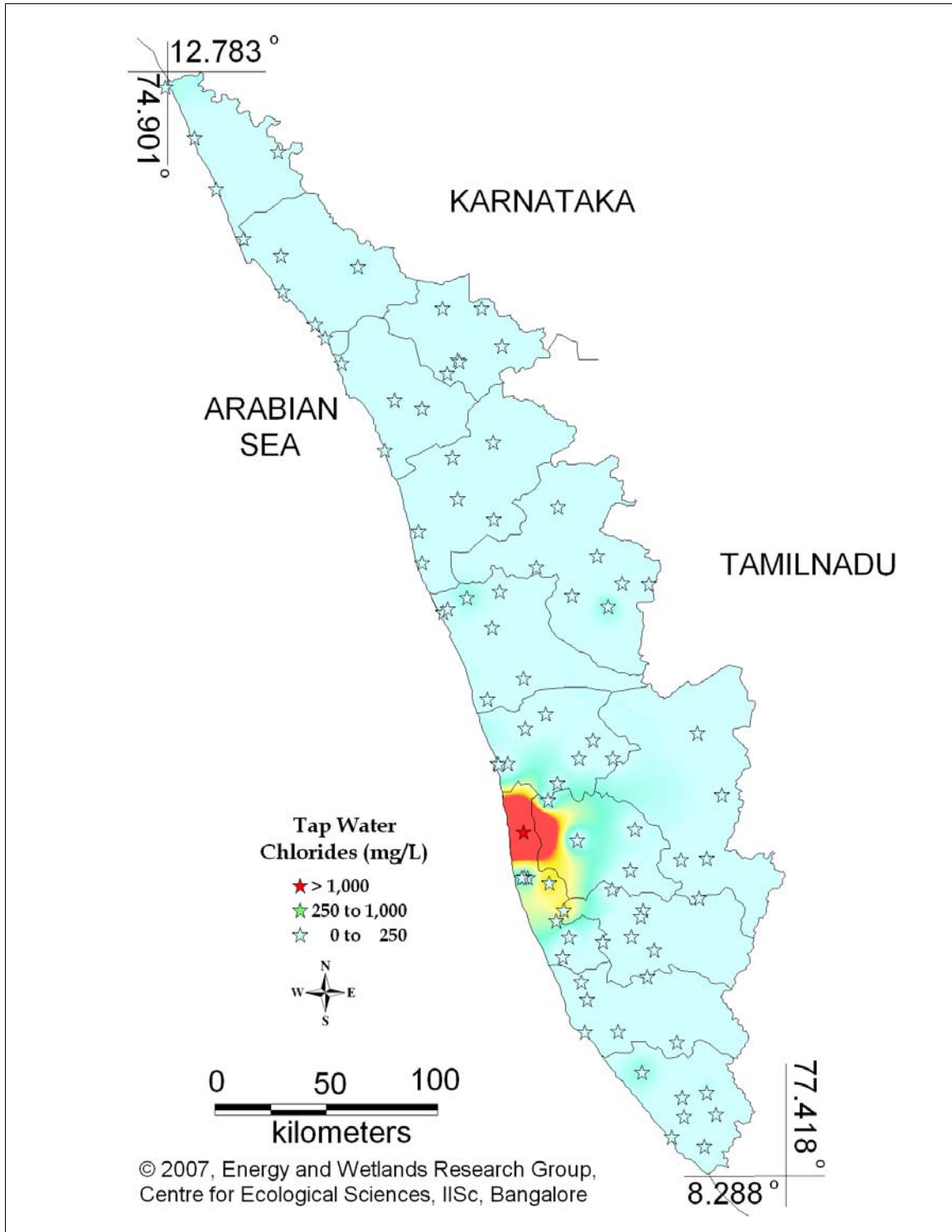


Figure 12.3: Spatial variation of chlorides in tap water

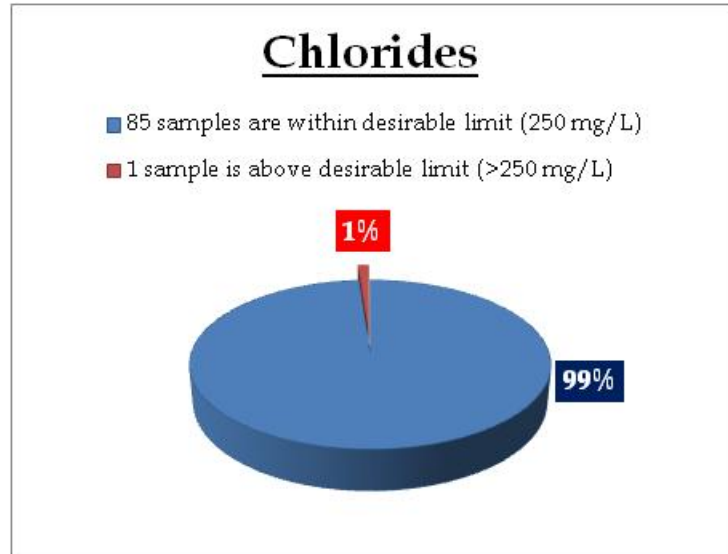
Tap water- Chlorides

Standard for Drinking Water (BIS 105000)

Desirable Limit: 250 mg/L

Permissible limit in the absence of an alternative source: 1000mg/L

Beyond this limit taste, corrosion and palatability are affected.



Remarks

Sampling site above desirable limit is listed in Table 13.2

Table 13.2: Sampling locations of tap water containing chlorides above desirable limit

Location	Value	District
Kalikulam Junction	1751.93	Alappuzha