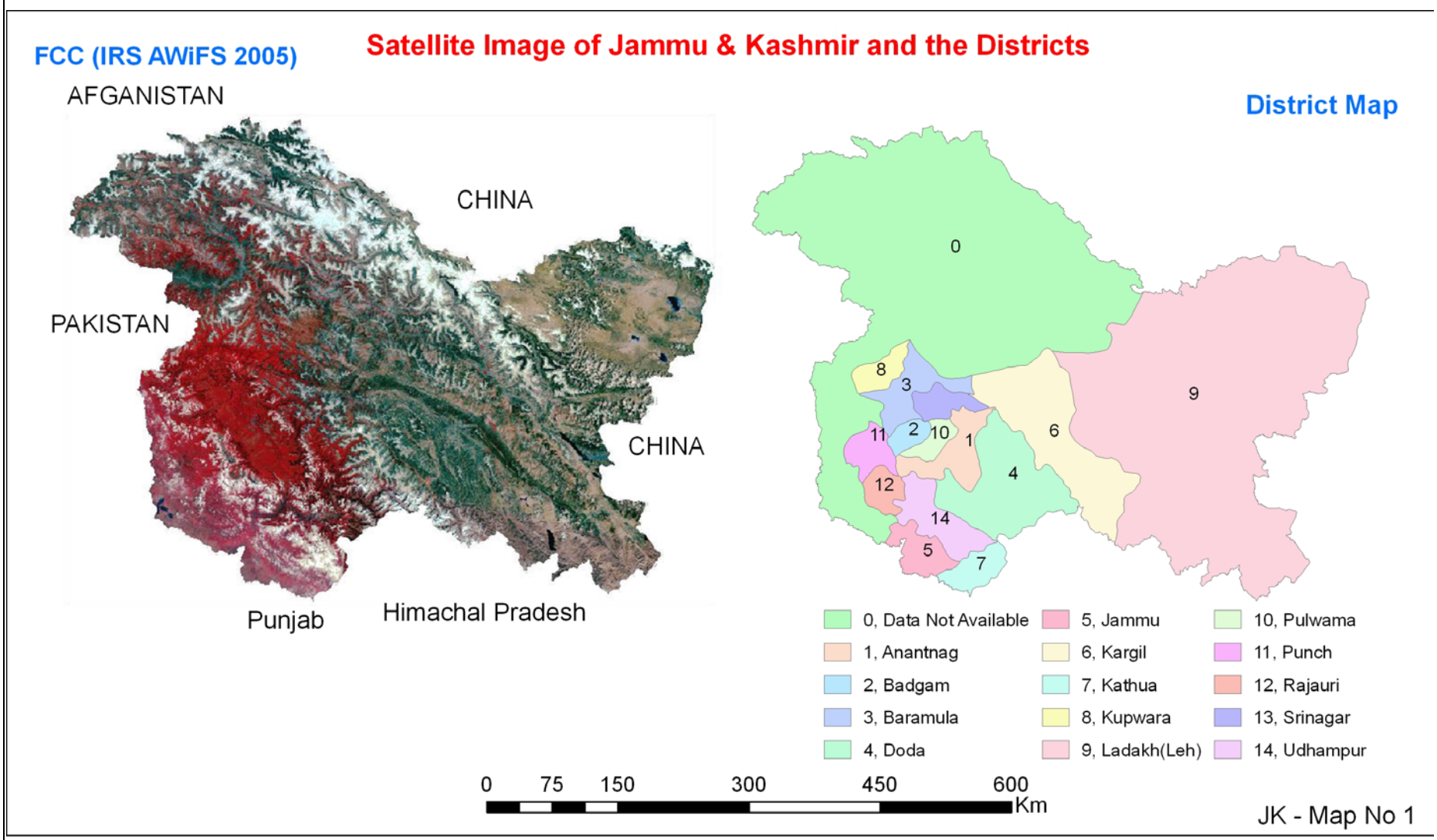
JAMMU & KASHMIR

INTRODUCTION

Location and Administrative Setup: Jammu and Kashmir is the northernmost state of the Union of India. It lies within the latitudes of 32°11.5' and 37°02.5' north and longitudes of 72°29.5' and 80°19' east. It has a total geographical area of 22223.600 Th ha (222236 sq. km) spreading over 14 administrative districts which also includes 12084.900 Th ha disputed area (Map 1). The state shares international border with China and Afghanistan in the north, Tibet in the east and Pakistan in the west. The states of Punjab and Himachal Pradesh form its southern border. Major parts of the Jammu & Kashmir state represent high and rugged mountainous terrain.
As per 2001 census, total population of the state is 10069917, out of which 5300768 are male. Decadal growth of population is 29.04%. Its population density is 99 persons per sq. km. The sex ratio recorded in this census is 897 females per 1000 males. Over the decades there has been an upward trend in literacy from 30.64% (1981) to 54.46% (2001).



Climate: The climate of the state ranges from the scorching heat of the plains of (Jammu Division) to the snow-capped heights of Gulmarg (Kashmir) and the mud peak of Mount Godwin Austin (Ladakh) 21,265 feet above sea level. Broadly, the state of Jammu and Kashmir comprises of three distinct climatic regions: cold arid desert areas of Ladakh, temperate Kashmir Valley, and the humid sub-tropical region of Jammu. The mean annual rainfall in cold arid zone (Ladakh region) varies from 100 mm to 300 mm received by western disturbance. The annual rainfall in temperate region (Kashmir valley & Pir Panjal) varies from 600 – 900 mm and added with snowfall. Leh is the coldest (–28°C average) and Jammu is the hottest area. Mean monthly temperature is lowest in January and highest in July except in Jammu where highest temperature is experienced in June. Mean monthly temperature in January varies from –17°C at Drass to 14°C at Jammu. January 15 to March 15 is icecold season when temperature in most of the areas in Kashmir is below 0°C. It snows during winter.

Land use: Land use statistics for the 2003–'04 is given in Table 1.

Table 1: Major Land Use (Th ha)

PARTICULARS	2003-'04
Forest	657.803
Not Available for Cultivation	
A-Land put to Non Agriculture Uses	292.735
B-Barren and Uncultivable Land	289.467
Other Uncultivable Land Excluding Fallow Land	
A-Permanent Pastures & Grazing land	125.373
B-Land under Misc. Tree Crops & Groves	71.534
C-Cultivable Wastelands	141.673
Fallow Land	
A-Current Fallow	78.211
B-Old Fallow	12.058
Cropped Area	
A-Net Area Sown	746.947
B-Area Sown More Then Once	355.194
Gross Cropped Area	1102.141
Cropping Intensity (%)	147.50

(Source: www.indiastat.com)

Satellite Data: IRS P6 LISS III data of two different seasons namely, pre monsoon (April-May, 2005) and post monsoon (November-December, 2004) were used for delineation of waterlogged and salt affected areas of various commands of Jammu & Kashmir.

WATER RESOURCES AND COMMAND AREAS

Water Resources: State of Jammu and Kashmir is home to several Himalayan glaciers. Jhelum, Indus, Tawi, Ravi and Chenab are major rivers flowing through the state. Annual replenishable ground water resources are 2.70 BCM and stage of ground water development is 14%.

Command Areas: There are 13 irrigation commands in Jammu & Kashmir, and all are of medium category (Map 2).

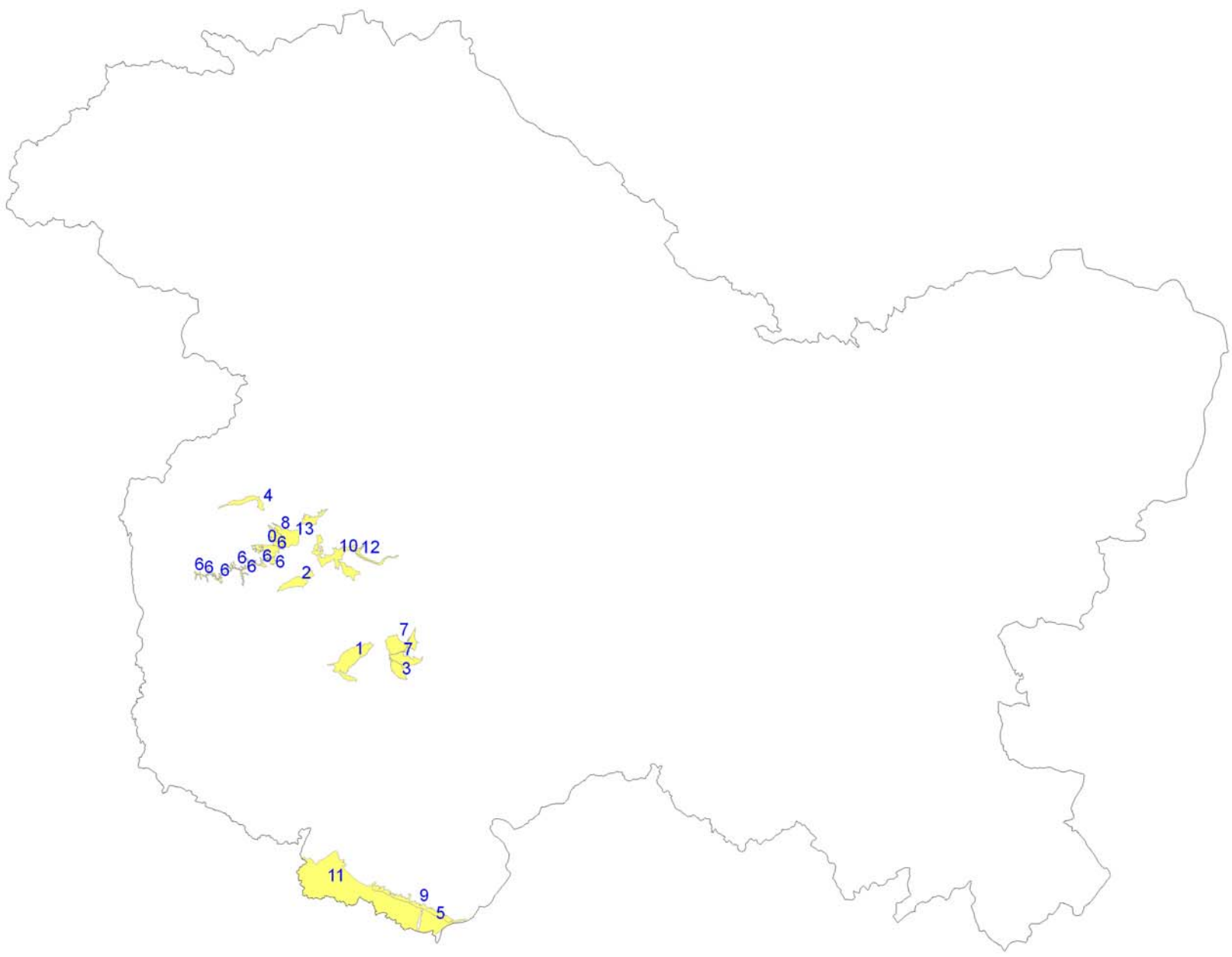
WATER LOGGING AND SALT AFFECTED AREAS IN MAJOR AND MEDIUM IRRIGATION COMMANDS BASED ON SATELLITE REMOTE SENSING

Total waterlogged area in the state is 3.970 Th ha out of which 0.380 Th ha is perennial and 3.590 Th ha is seasonal. Most of the commands have area under waterlogging category with highest seasonal waterlogging in Zaingeer command. Salt affected area covers 0.075 Th ha. Total 32 soil samples were collected to check the salinity / alkalinity in the command. Table 2 and Map 3 show the salt affected area and waterlogged areas in major and medium irrigation commands in Jammu & Kashmir state.

Table 2: Waterlogged and Salt Affected areas in major and medium irrigation commands of state

Code	Command name	Type	Waterlogged area (Th ha)	Salt affected area (Th ha)
1	Aharbal	Medium	0.018	0.000
2	Babul	Medium	0.612	0.008
3	Bringi	Medium	0.010	0.000
4	Dangan Wari	Medium	0.041	0.005
5	Kathua Canal	Medium	0.000	0.000
6	Lower Jhelam	Medium	0.052	Negligible
7	Martand	Medium	0.087	0.000
8	Rafiabad	Medium	0.060	Negligible
9	Ravi Lift Canal	Medium	0.088	0.000
10	Sind Catchment	Medium	0.105	0.000
11	Tawi Canal	Medium	1.122	0.062
12	Waniyarm	Medium	0.000	0.000
13	Zaingeer	Medium	1.780	0.000
	TOTAL		**3.970**	**0.075**

Distribution of Major and Medium Irrigation Commands in Jammu & Kashmir



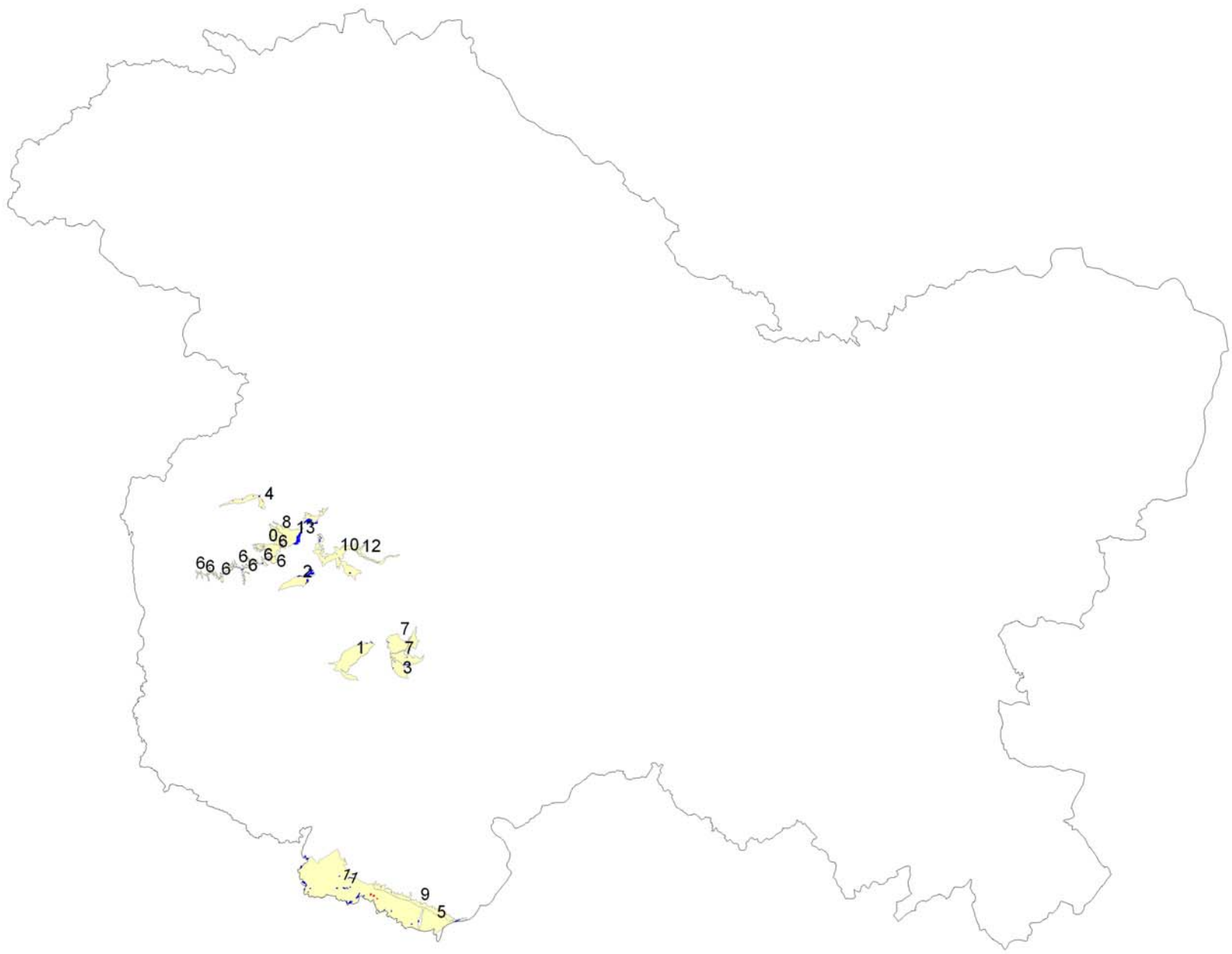
0 20 40 80 120 160 Kms

JK - Map No 2

1 Medium comamnd areas with code

Source: CAD, J & K

Waterlogged and Salt Affected Areas in the Commands of All Major and Medium Irrigation Projects of Jammu & Kashmir Using Satellite Remote Sensing



Salt Affected Area
Waterlogged Area
Command Area

0 30 60 120 180 240 Kms

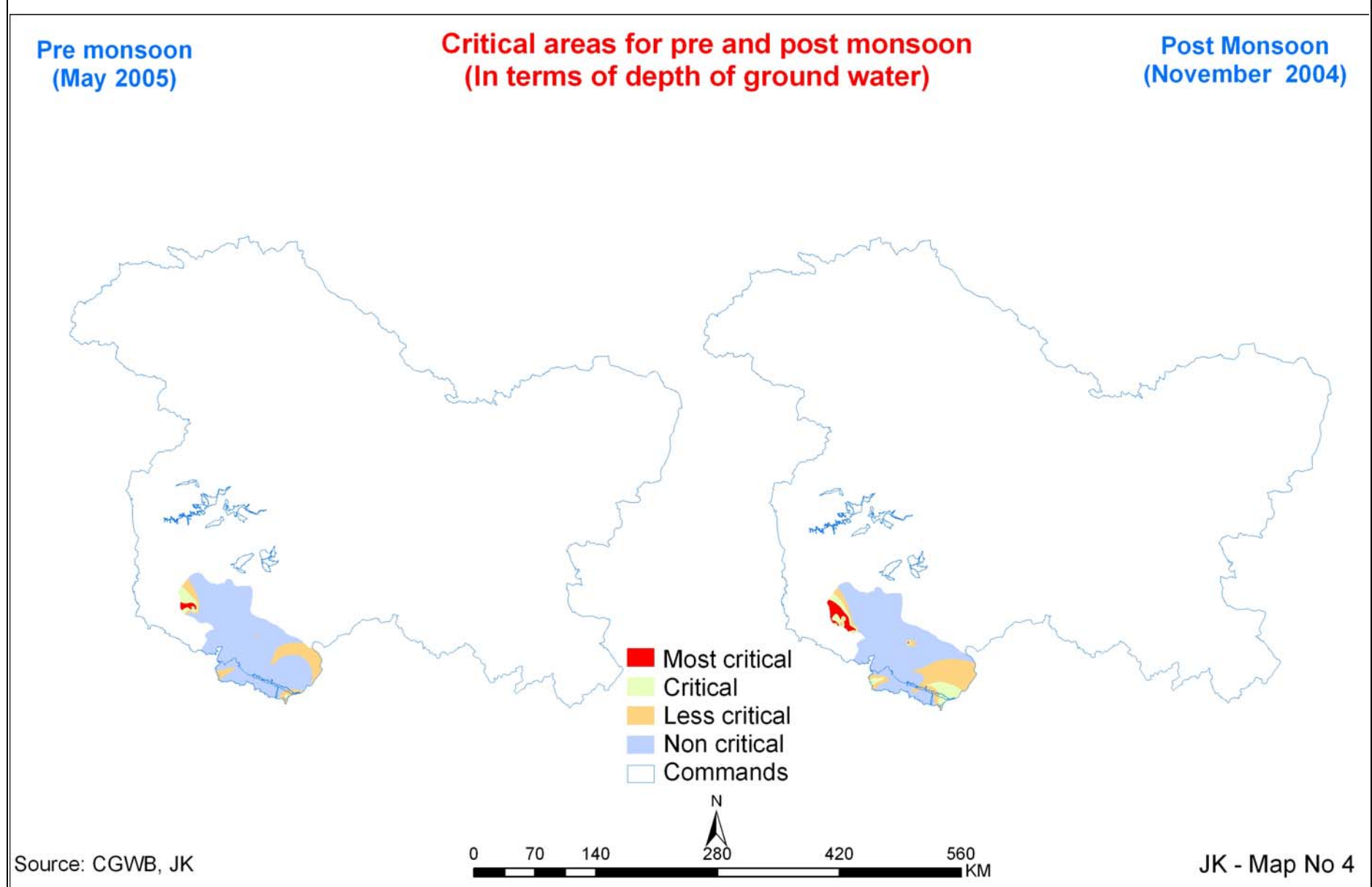
JK - Map No 3

Source: RRSSC/ISRO Jodhpur

For demarcation of critical waterlogged areas due to rise in water table depth, ground water table data of monitoring stations of CGWB were used. Table 3 and Map 4 show the critical area of depth of ground water for pre (May, 2005) and post (November, 2004) monsoon. Data is available for part of the state only.

Table 3: Critical Area of Depth of Ground Water for Pre (May, 2005) and Post (November, 2004) Monsoon

	Most critical (< 1m)		Critical (1 – 2 m)		Less critical (2 – 3 m)		Non-critical (> 3 m)	
	(Th ha)	(%)	(Th ha)	(%)	(Th ha)	(%)	(Th ha)	(%)
Pre Monsoon (May, 2005)	0.000	0.000	1.155	0.43	21.049	7.80	247.596	91.77
Post Monsoon (November, 2004)	0.000	0.000	15.902	5.89	26.792	9.93	227.106	84.18



Source: CGWB, JK

JK - Map No 4

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