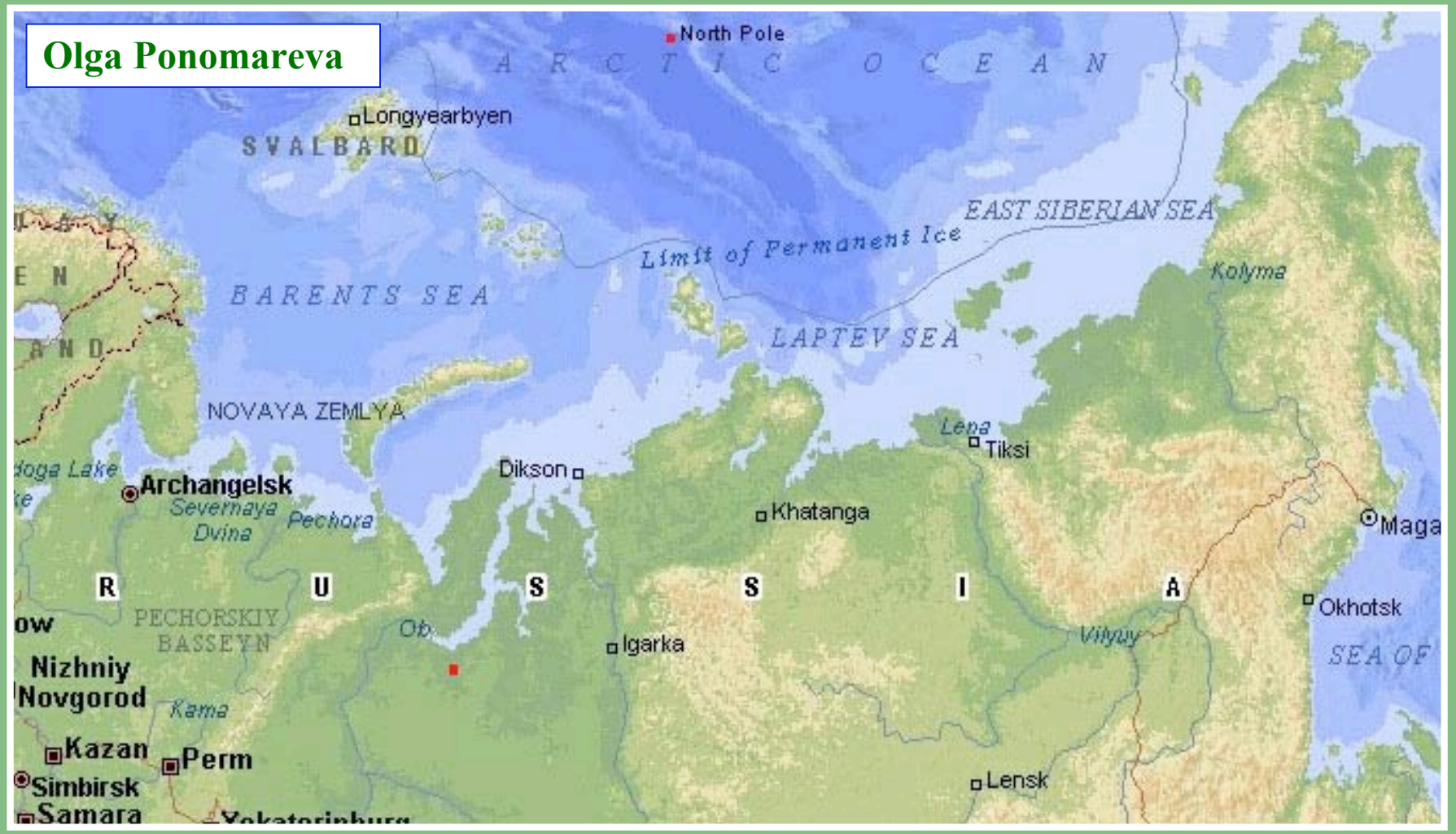
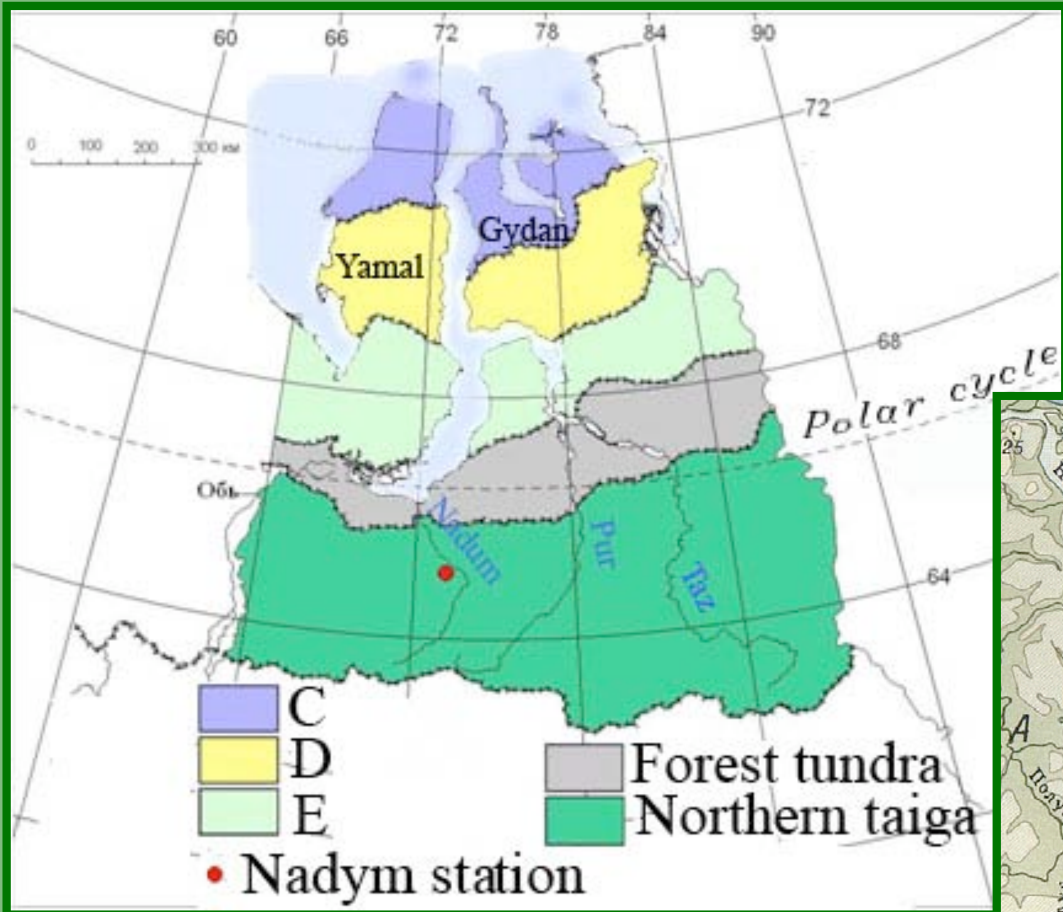
Overview of Nadym Region: Climate, zonation, physiography, geology, permafrost




60
66
72
78
84
90
72
68
64
0 100 200 300 км
Yamal
Gydan
Polar cycle
Обь
Nadum
Pur
Taz
C
D
E
Forest tundra
Northern taiga
Nadym station

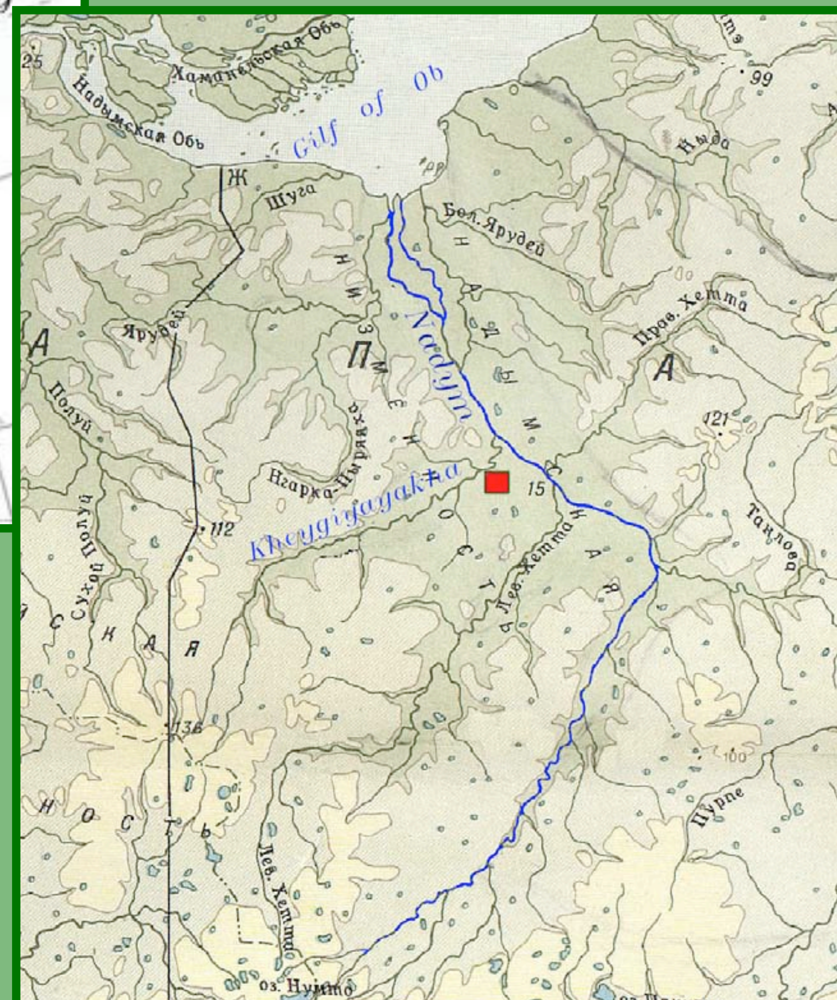
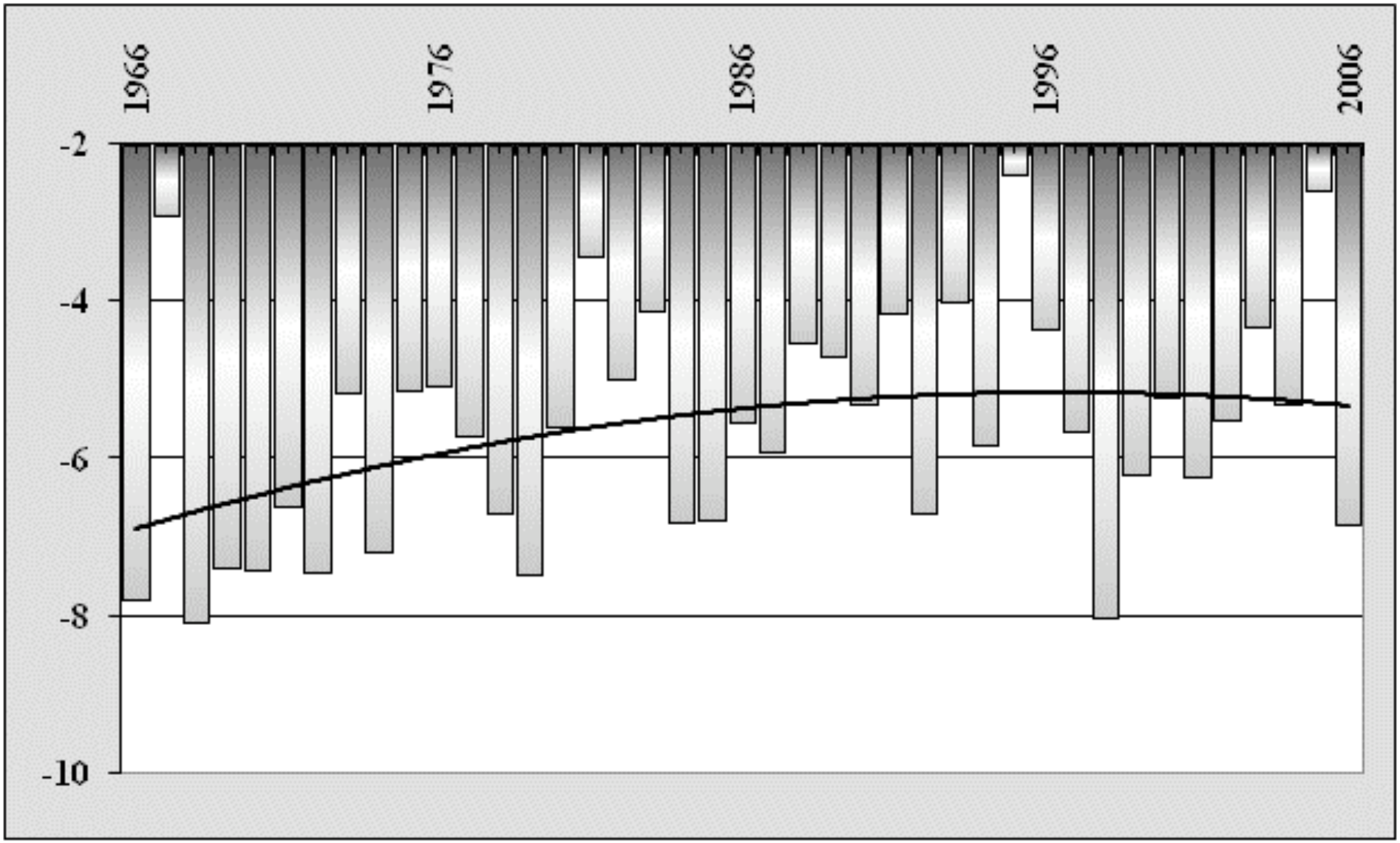
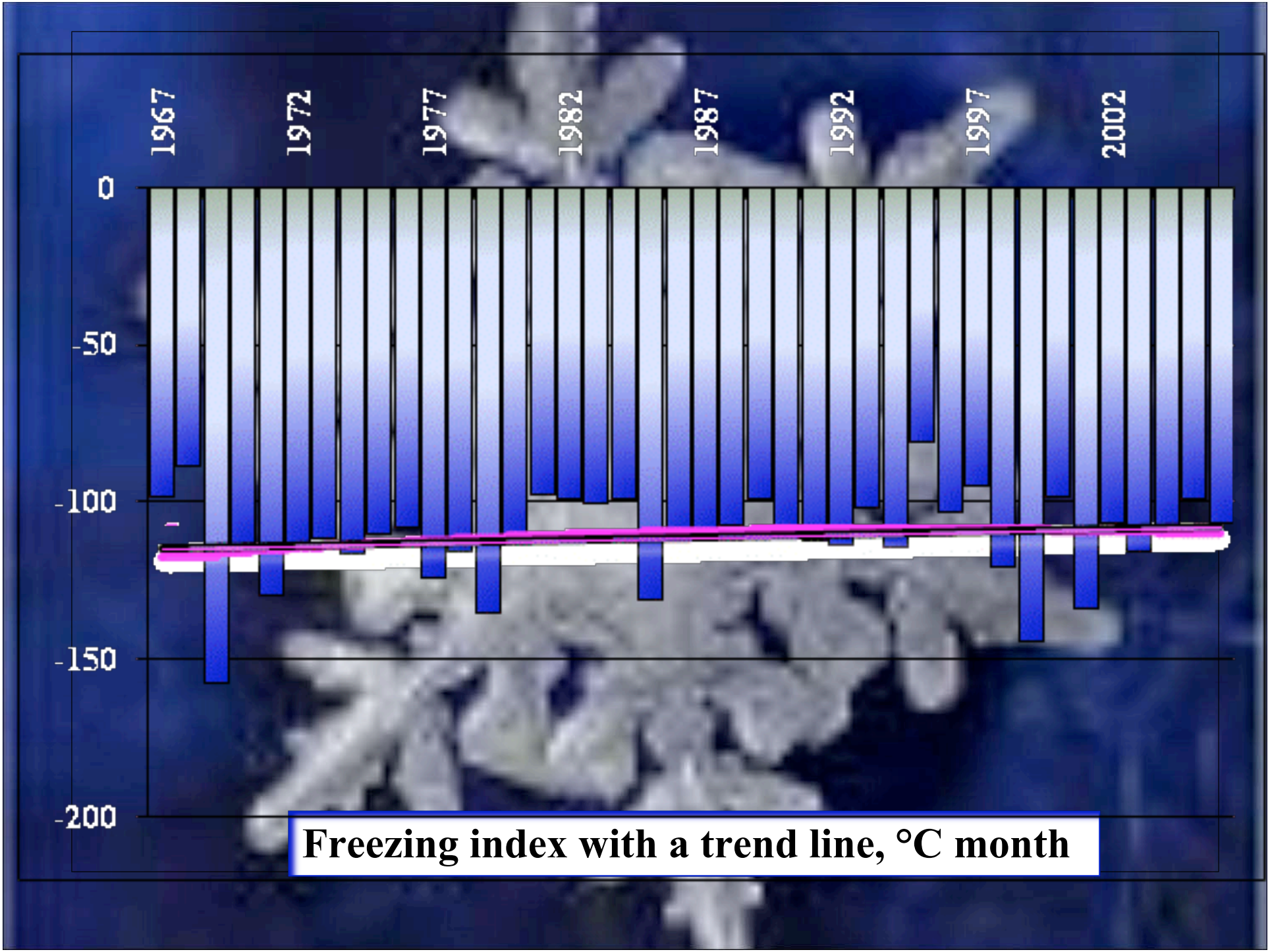

Gilf of Ob
Надымская Обь
Шуга
Бол. Ярудей
Прав. Хетта
Ярудей
Полуй
Сухой Полуй
Нгарка-Пыряха
Nadym
Лев. Хетта
Танлова
Пурпе
99
121
112
136
15

Table the Climatic characteristic of area Nadym

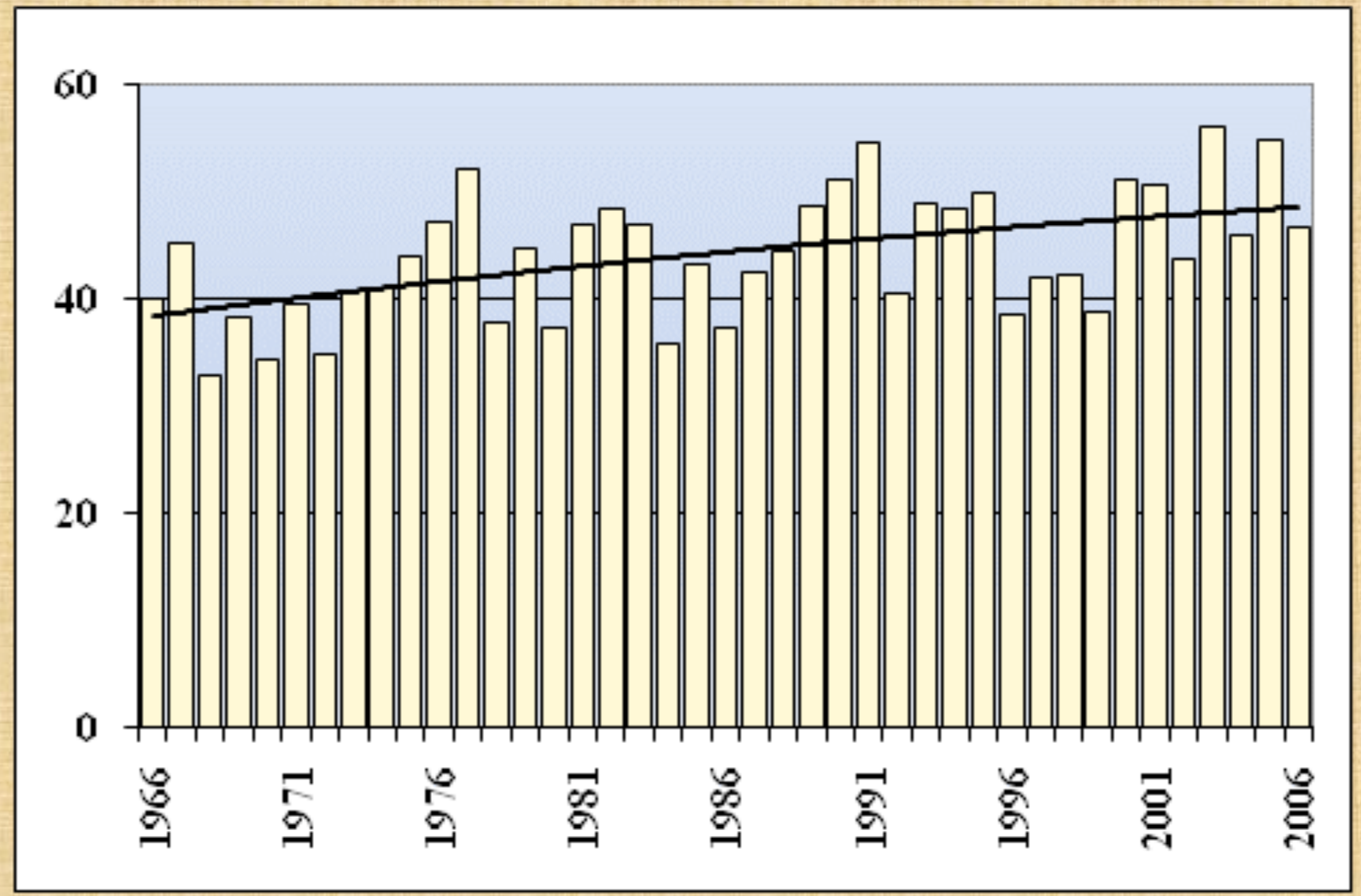
Parameters	**Values**
Average annual temperature of air, °C	-5,6 (-2,4:-8,0)
Average temperature of air of the coldest month, ° C	-23,6 (-30,3:-13,8)
Average temperature of air of the warmest month, ° C	+15,6 (+10,1: + 18,1)
Amplitude of average temperatures of air, ° C	**39,2**
Annual amount of atmospheric precipitation, mm	**478,0 (358,7:642,7)**
Monthly amount of atmospheric precipitation , mm	39,8
Summer amount of atmospheric precipitation , mm	251,8
Winter amount of atmospheric precipitation , mm	226,3
Duration of a snow cover, days	222-240
Mid-annual temperature грунтов, °C	+1...-3



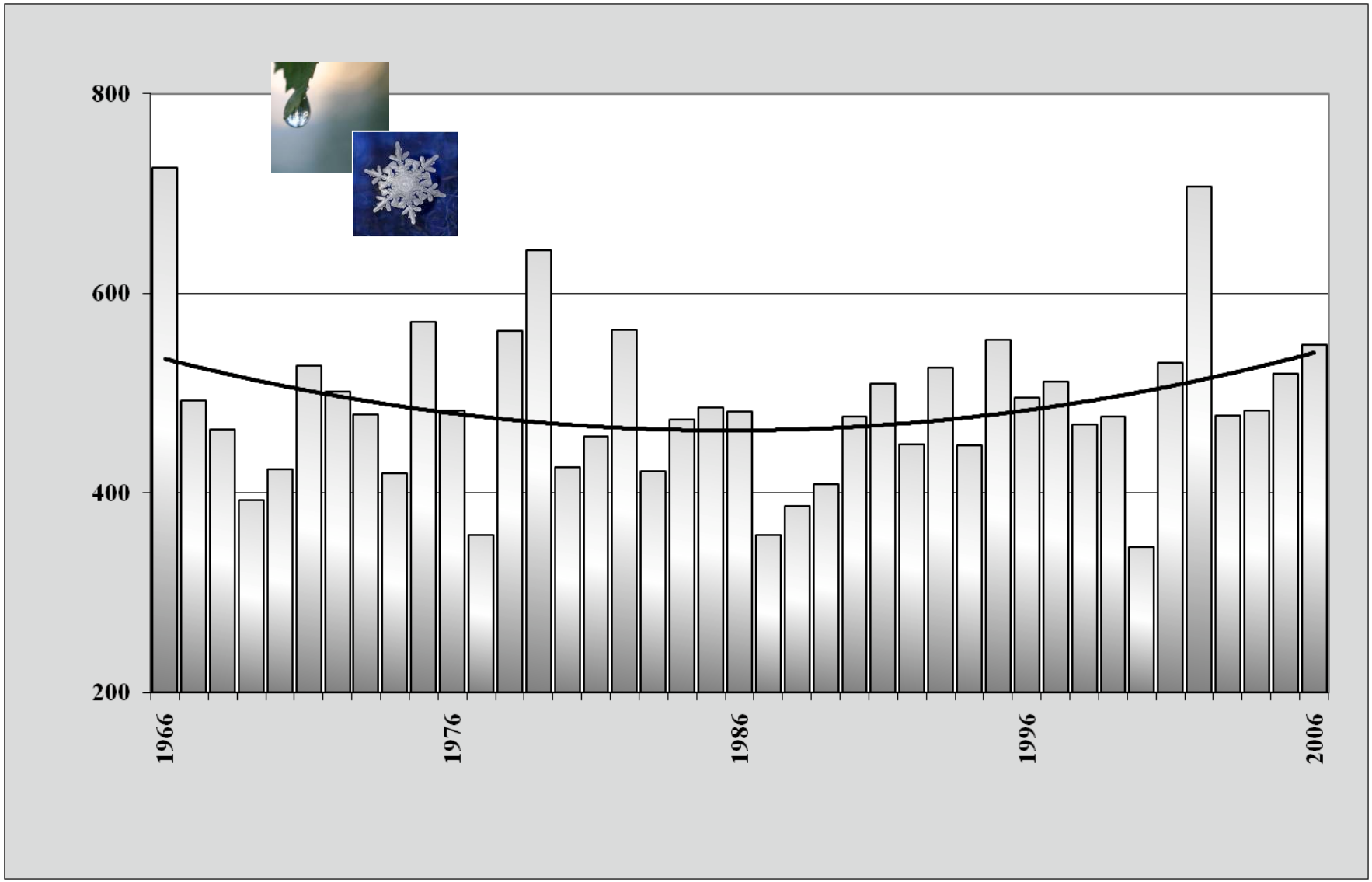
Mean-annual temperatures with a trend line, °C



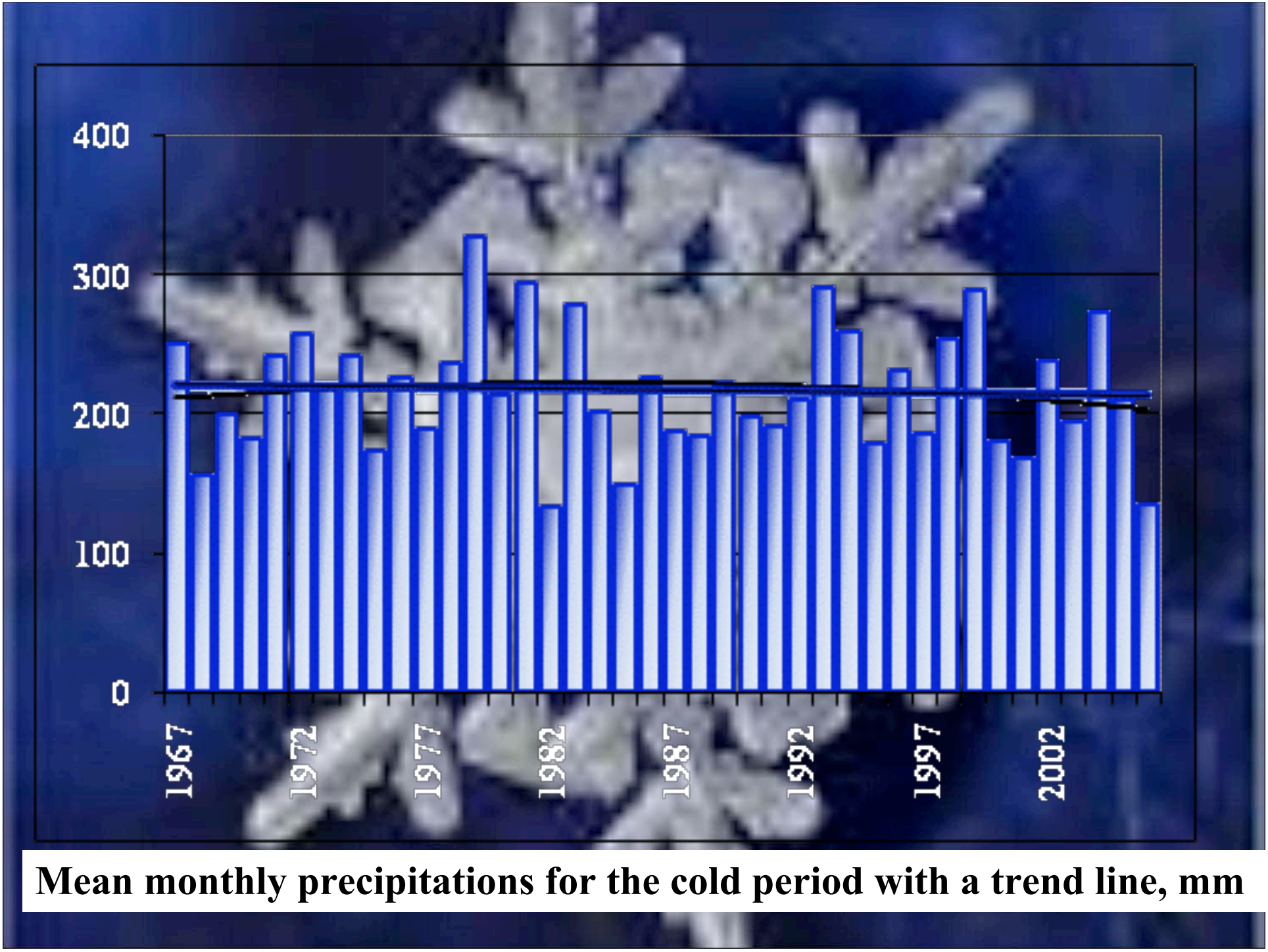
Freezing index with a trend line, °C month



Thawing index with a trend line, °C month

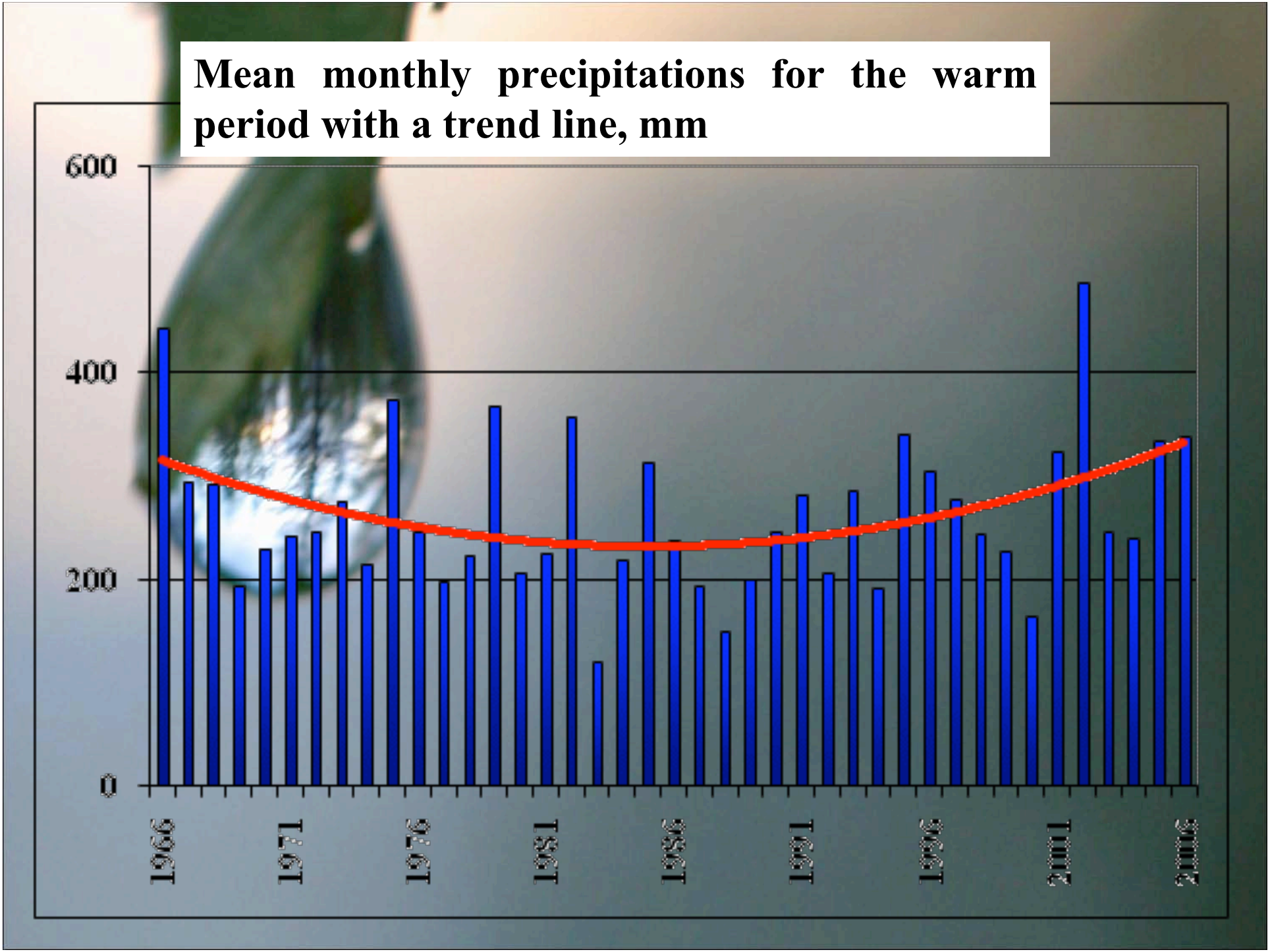


Yearly precipitations with a trend line, mm

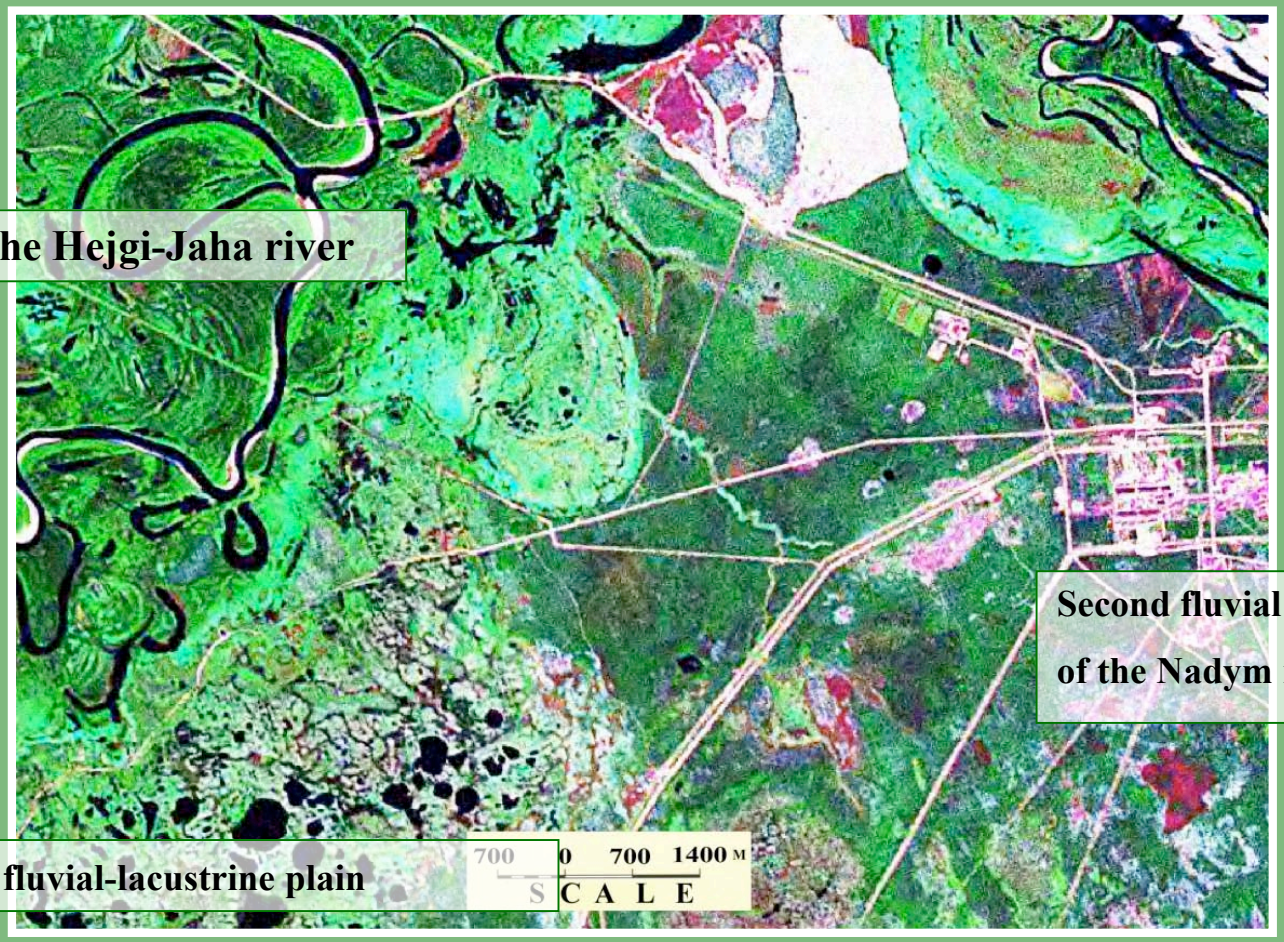


Mean monthly precipitations for the cold period with a trend line, mm

Mean monthly precipitations for the warm period with a trend line, mm



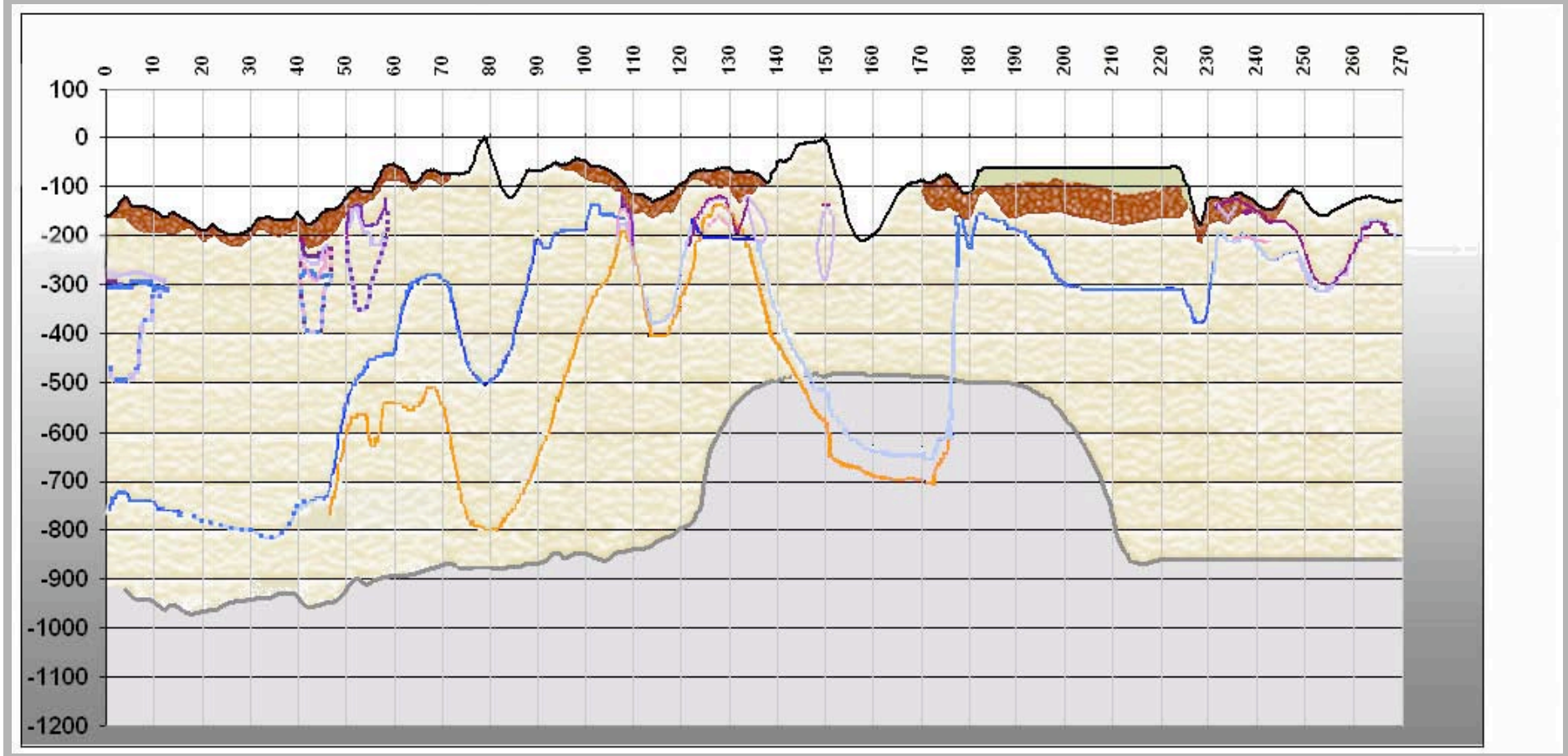
Observation site



A relief of research area poorly dissected (altitude 15-30 m), that has caused its wide distribution of lakes and mires.

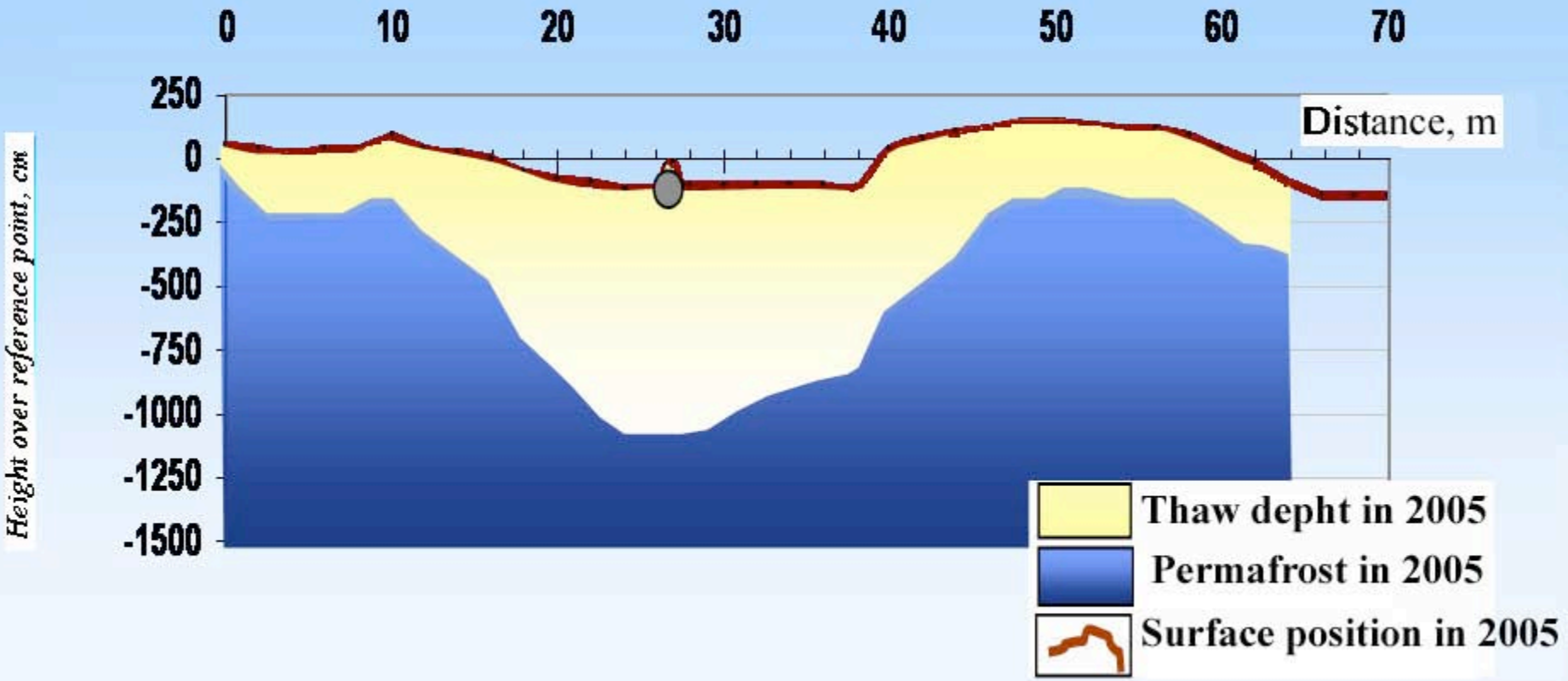
Borehole №12 15.06.1975

#	Base	Thickness, m	Geological age, genesis	Core	Cryogenic structure
1	0,3	0.3	h Q_4		
2	5,75	5.45	la Q^2_3		
3	10,5	4.75	m Q^2_2		

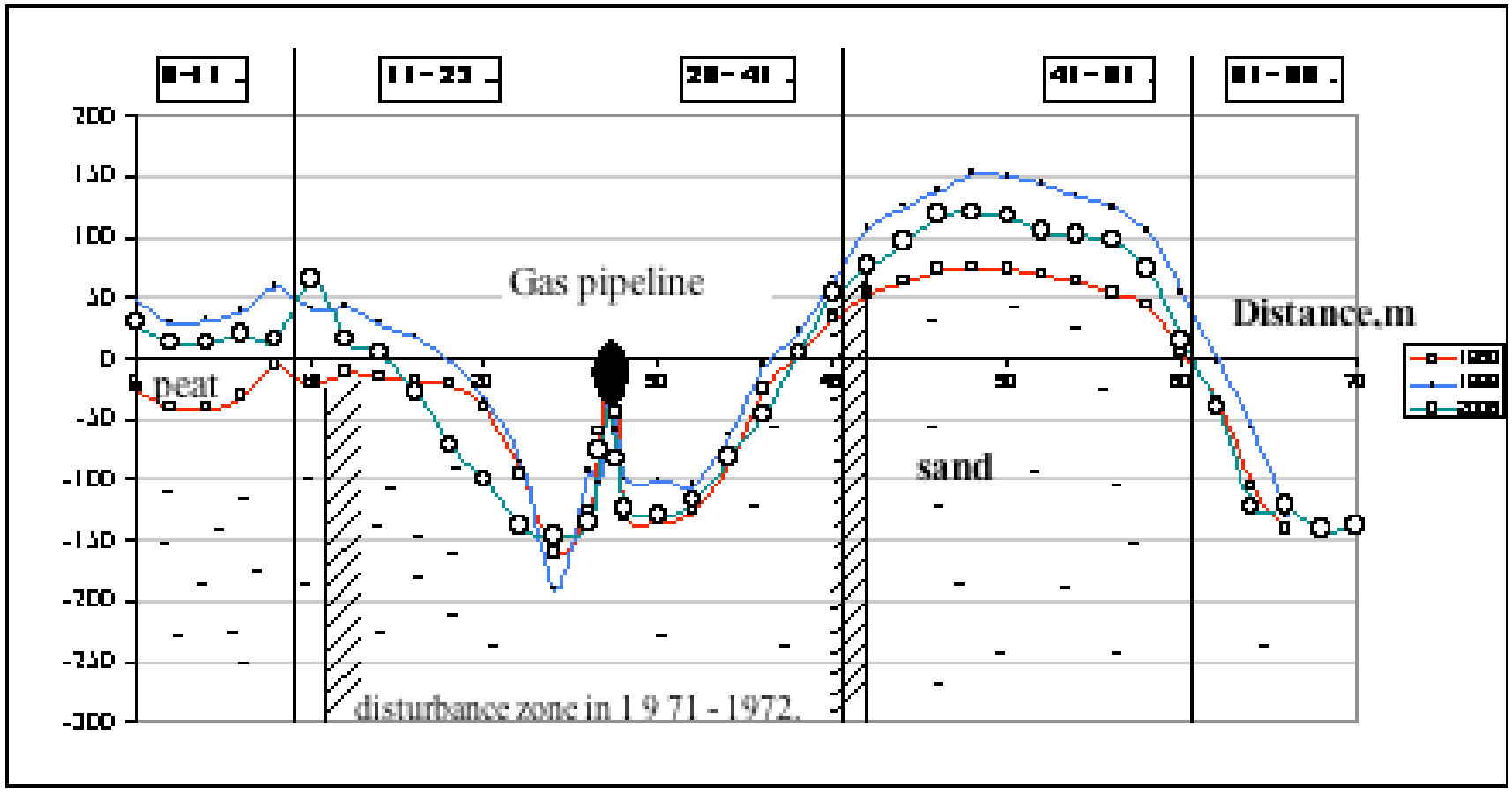

0
10
20
30
40
50
60
70
80
90
100
110
120
130
140
150
160
170
180
190
200
210
220
230
240
250
260
270
100
0
-100
-200
-300
-400
-500
-600
-700
-800
-900
-1000
-1100
-1200


1973
1975
1977
1979
1981
1983
1985
1987
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
Temperature, ° C
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
Years

Permafrost table position on profile I-I on the geophysical data



Dynamics of long-term frost heave.



1. Frost mounds develop now, are not relic forms, and rise of their surface may be as high as 30-60 cm in 30 years; the maximal rise occurred in the coldest winters.

2. Three stages of peat frost mounds development within the period of technogenic impact are subdivided: thaw settlement, stabilization, and frost heave which are changing into each other in the process of vegetation recovery.

3. Thermokarst outside the man-affected zone in modern climatic conditions is not active. Thaw settlement up to 100 cm develops actively within the first 2 years after the human impact.

4. In natural conditions increase in the area of the mires, making 1 - 9 % for 15 years occur mainly due to increase in amount of summer atmospheric precipitation. At man-caused conditions bogging much more intensively also occurs both due to increase in amount of summer precipitation, and due to distrubance of a superficial drain and flooding as a result of a lining of a gas pipeline.

Man-caused conditions bogging