

## The challenge:

- Even the highest resolution precipitation and temperature models operate at a  $0.1^\circ$  resolution ( $\sim 11$  Km).
- Snow cover displays a high degree of spatial variability, at scales much lower than 11 Km.

## The solution: A K Nearest Neighbor Model

Temperature ( $1^\circ$ )

Precipitation ( $0.25^\circ$ )

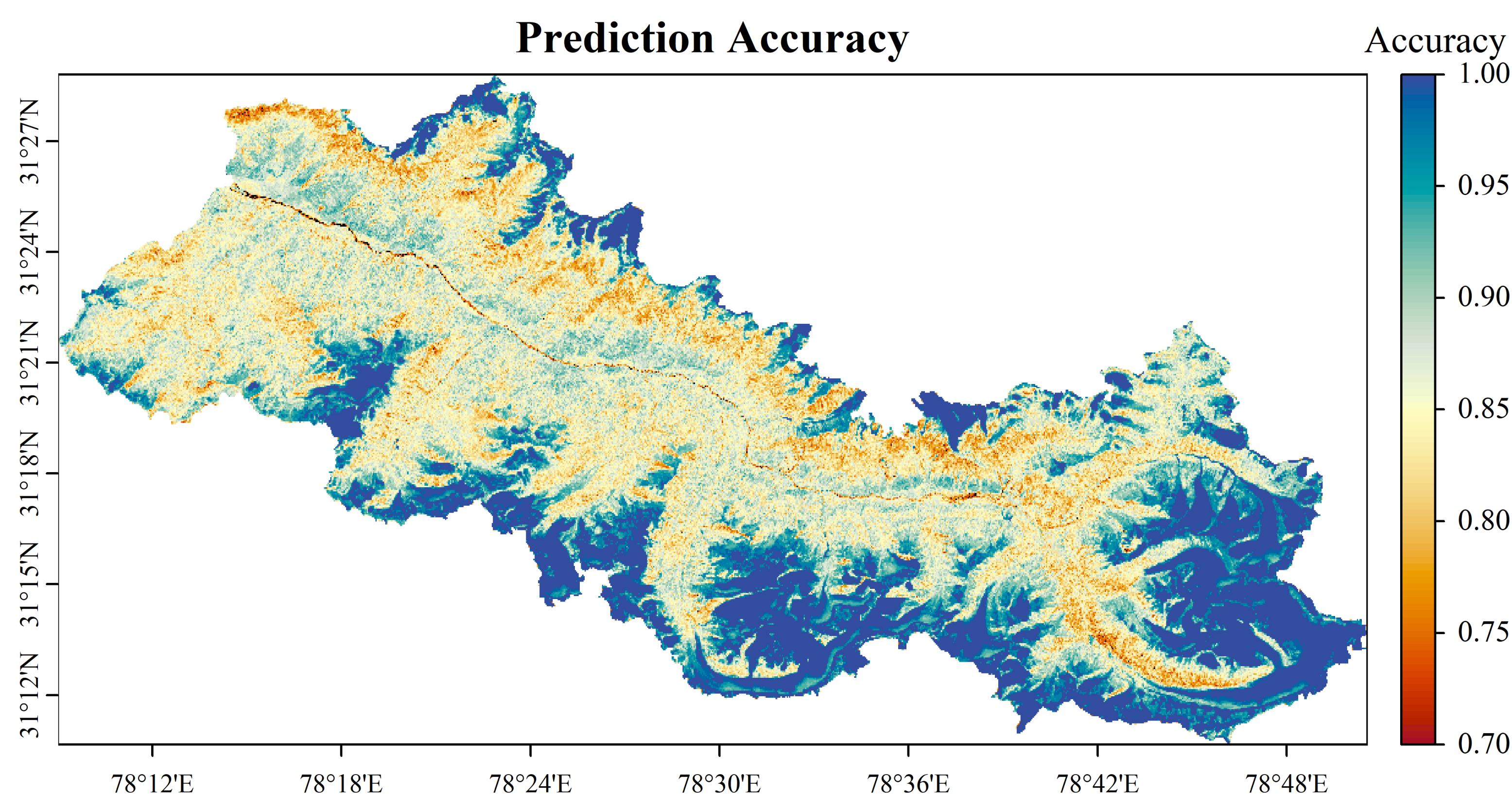
Oceanic Atmospheric variability modes  
(AO, NAO, DMI, PDO, ENSO)

Day of year

KNN  
Model

Snow cover  
(30 m resolution)

## Prediction Accuracy



## Model performance across seasons: a case study

