Resampling pixel values
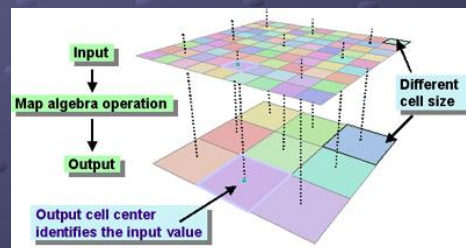
Presented by Joey Roberts

Resampling pixel values

deriving pixel values for a new
image from an existing image

input raster will be a
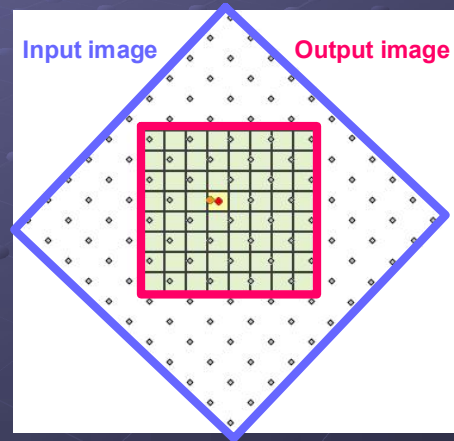finer resolution

output raster will be a
coarser resolution

Nearest neighbor

Output image pixel value is calculated from the
nearest pixel of the input image

Pixel values for output image
resemble those of the input image

Recommended for use with
discrete (categorical) data
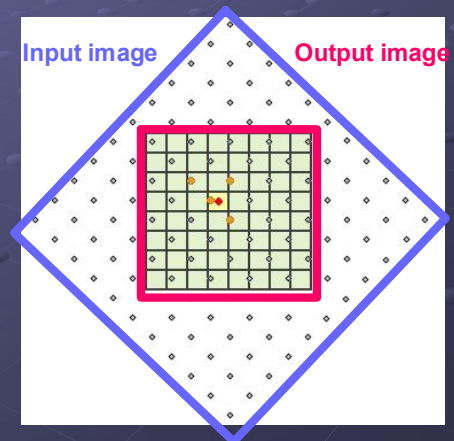
Produces blocky results

Bilinear interpolation

distance weighted average of nearest four pixels

Smoother appearance when
compared to nearest neighbor
resampling

Recommended for use with
continuous data

Produces sharper results
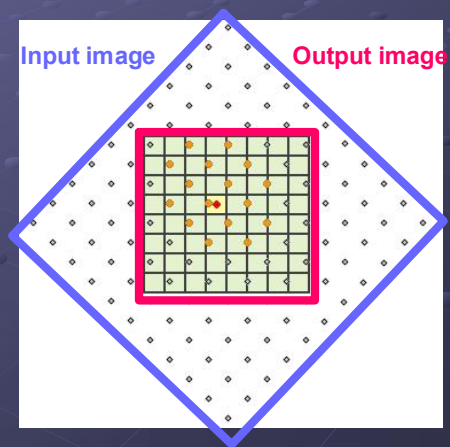
Cubic convolution

distance weighted average of nearest sixteen pixels

Similar to bilinear interpolation except for more pixels from input image

Recommended for use with continuous data

Longer processing time

Produces sharpest results

Input image   **Output image**

References

ESRI'S ArcGIS 9.3 Desktop help
- http://webhelp.esri.com/arcgisdesktop/9.3/index.cfm

Questions

1) When resampling pixel values the input image has a finer resolution while the _____ image has a coarser resolution.

2) Which resampling method calculates pixel value from the nearest pixel of the input image?

   a. Nearest neighbor b. Bilinear interpolation c. Cubic convolution

3) Which resampling method calculates pixel value from the distance weighted average of nearest four pixels of the input image?

   a. Nearest neighbor b. Bilinear interpolation c. Cubic convolution

4) Which resampling method calculates pixel value from the distance weighted average of nearest sixteen pixels of the input image?

   a. Nearest neighbor b. Bilinear interpolation c. Cubic convolution