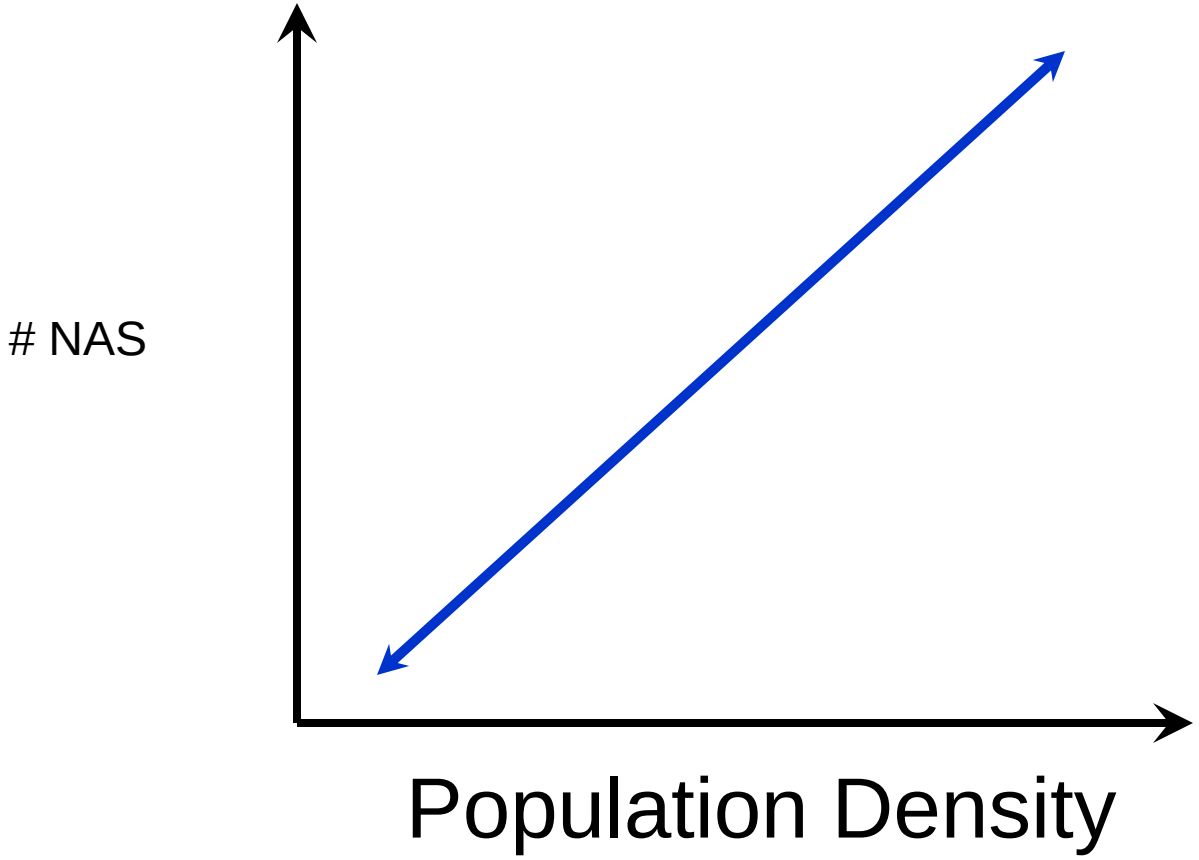
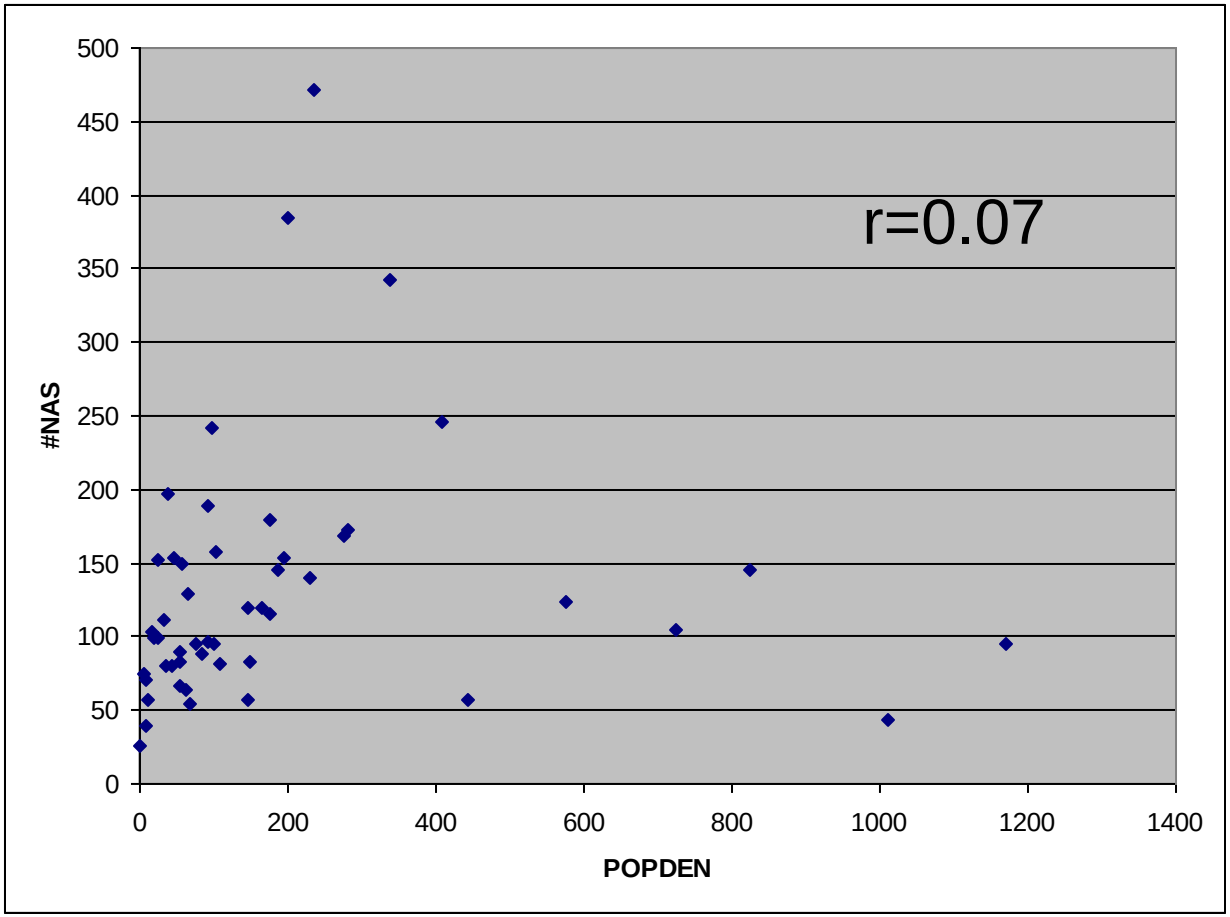
Does Human Disturbance,affect the number of nonindegenous aquatic species?



Entire US



http://nas.er.usgs.gov/queries/StateSearch.asp

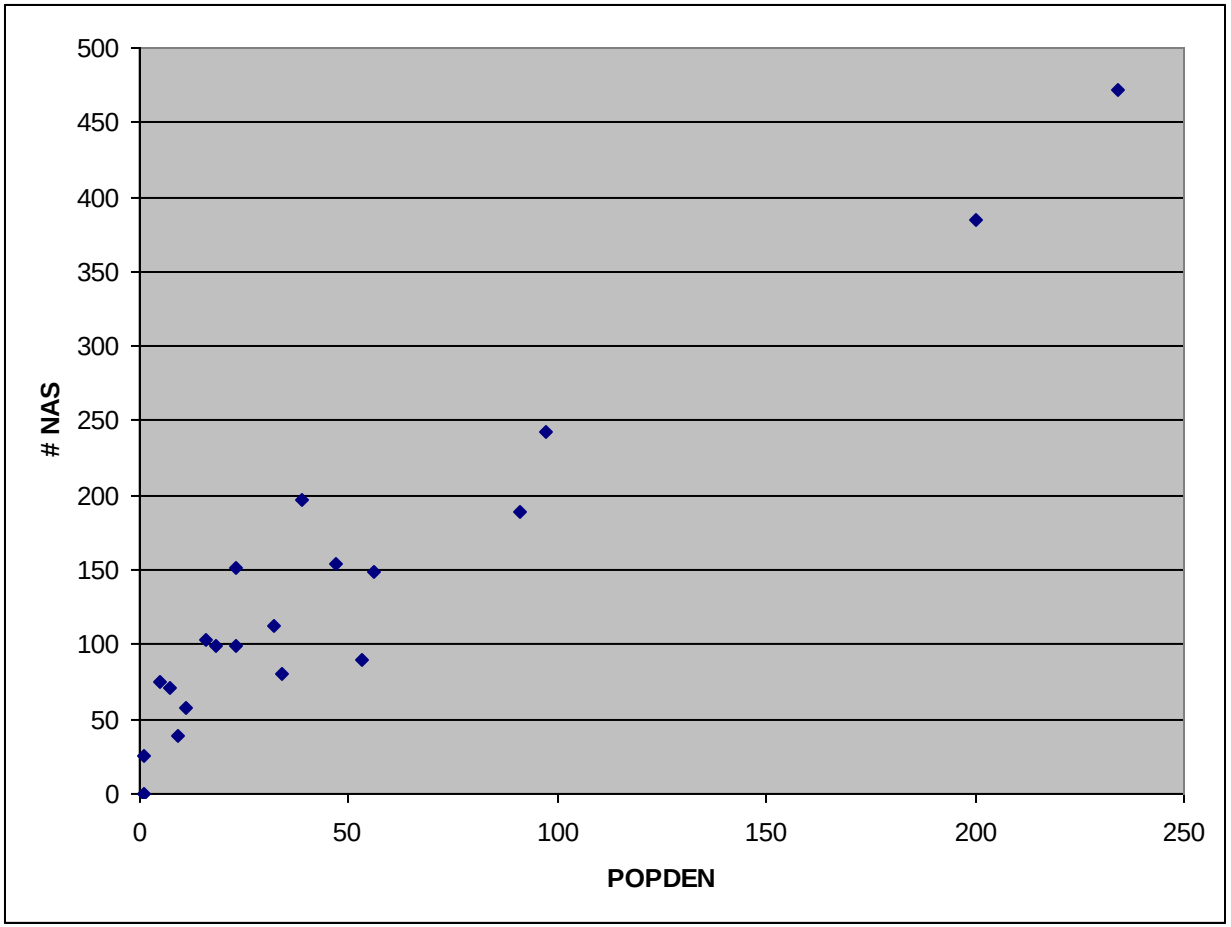
http://en.wikipedia.org/wiki/List_of_U.S._states_by_population_density

18 Western States

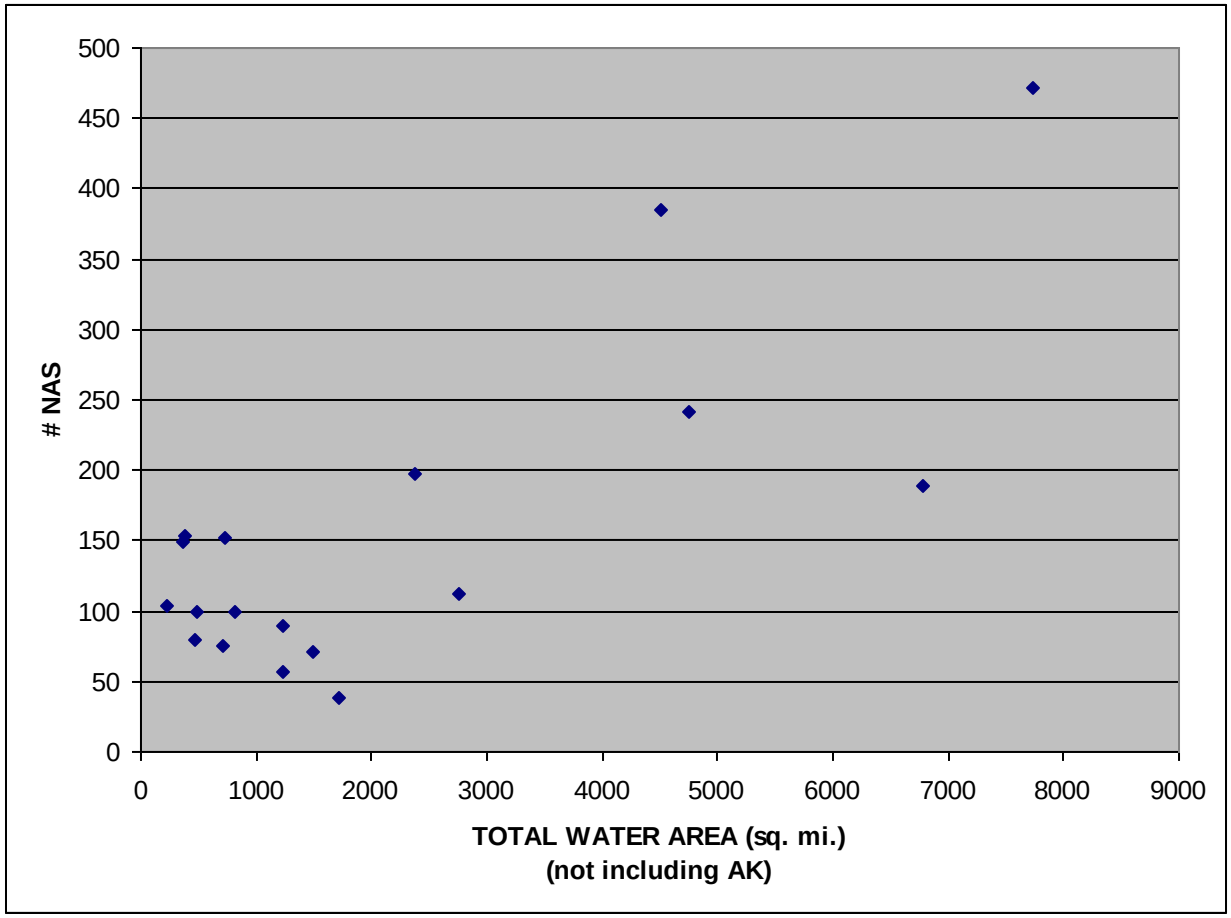
$y = 1.72 x + 56.77$

$R^2 = 0.92$

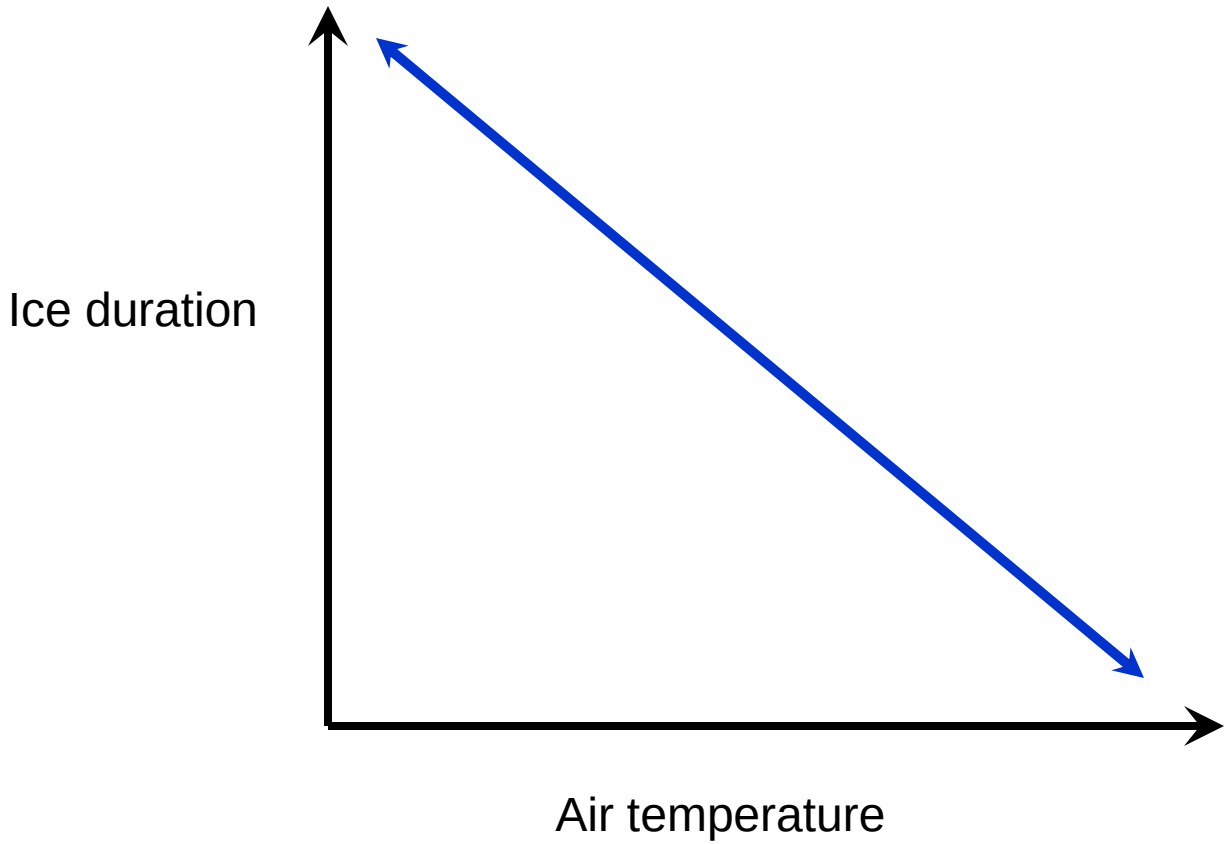
…but is this variable simply related to something else?



r= 0.77


500
450
400
350
300
250
200
150
100
50
0
NAS
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
TOTAL WATER AREA (sq. mi.)
(not including AK)

Has an increase in air temperature caused a decrease in ice duration?

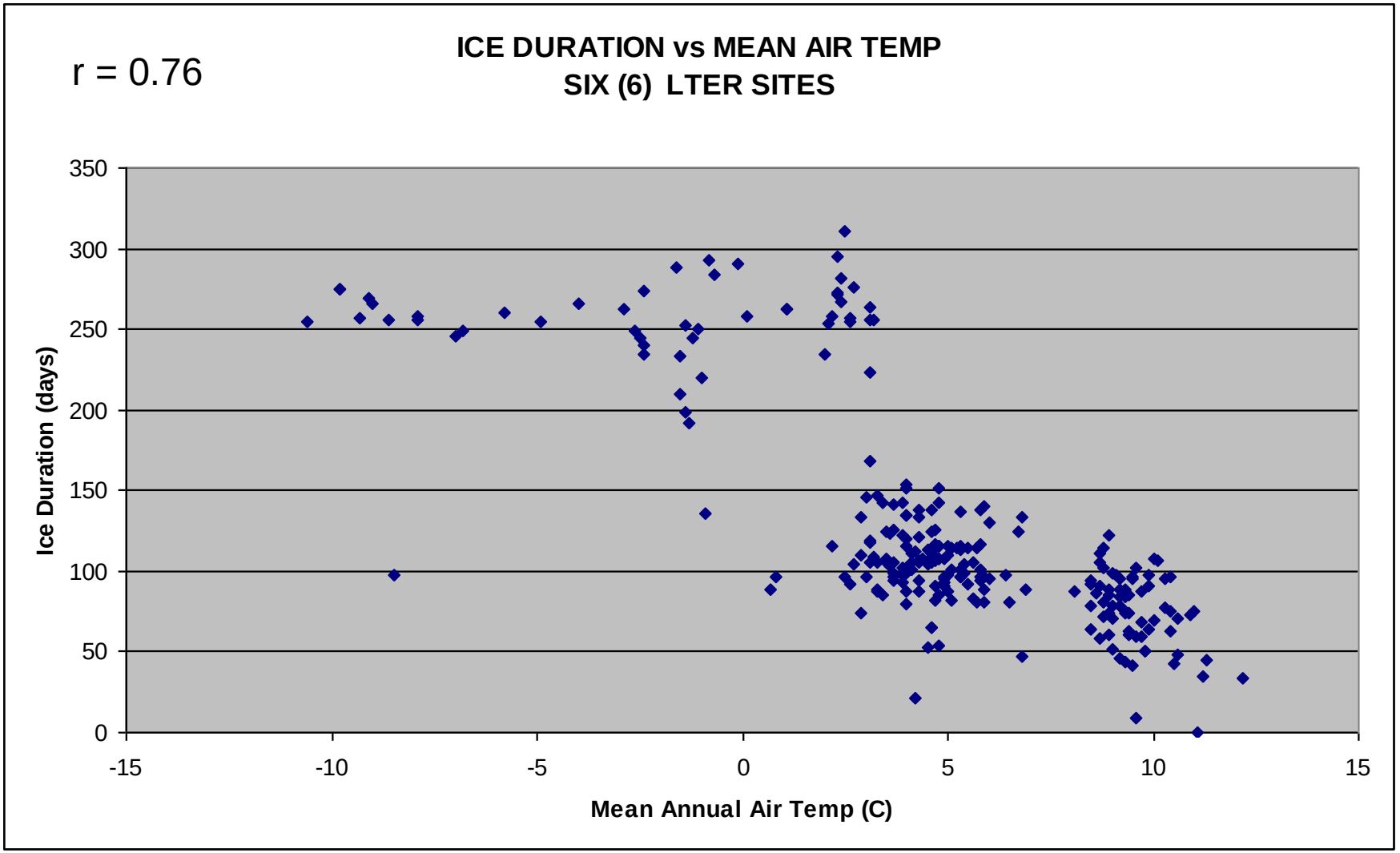


Ecotrends data

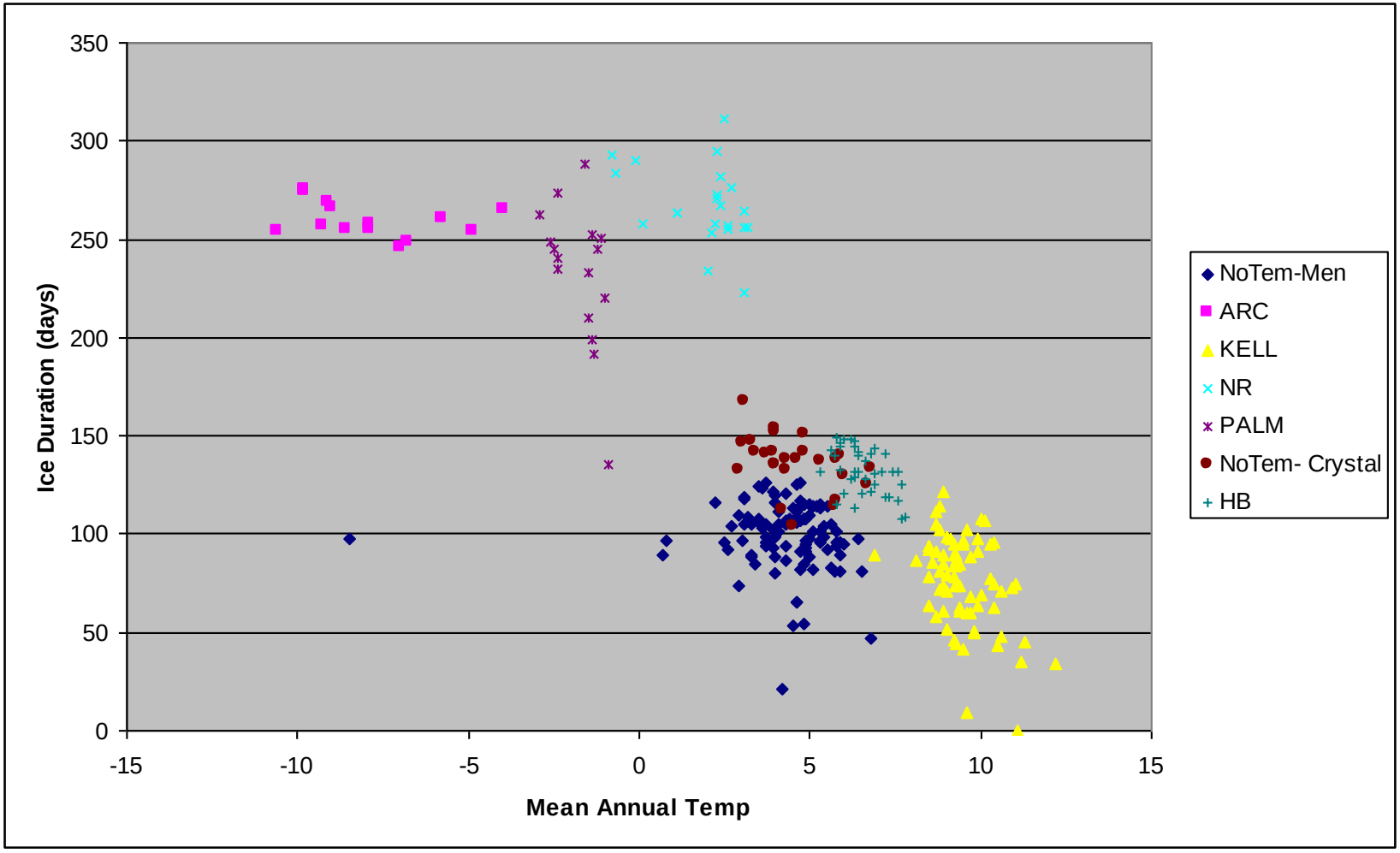
- LTER sites:
  - Arctic(AK)
  - Hubbard Brook (NH)
  - Kellogg (MI)
  - Niwot Ridge (CO)
  - North Temperate Lakes (WI)
  - Palmer Station (ANT)

- Mean Air temperature
  - •Annual
  - •Monthly
  - -Mean minimum
  - --Mean Maximum

r = 0.76


ICE DURATION vs MEAN AIR TEMP
SIX (6) LTER SITES
Ice Duration (days)
350
300
250
200
150
100
50
0
-15
-10
-5
0
5
10
15
Mean Annual Air Temp (C)

Relationship showing effect of latitude and elevation

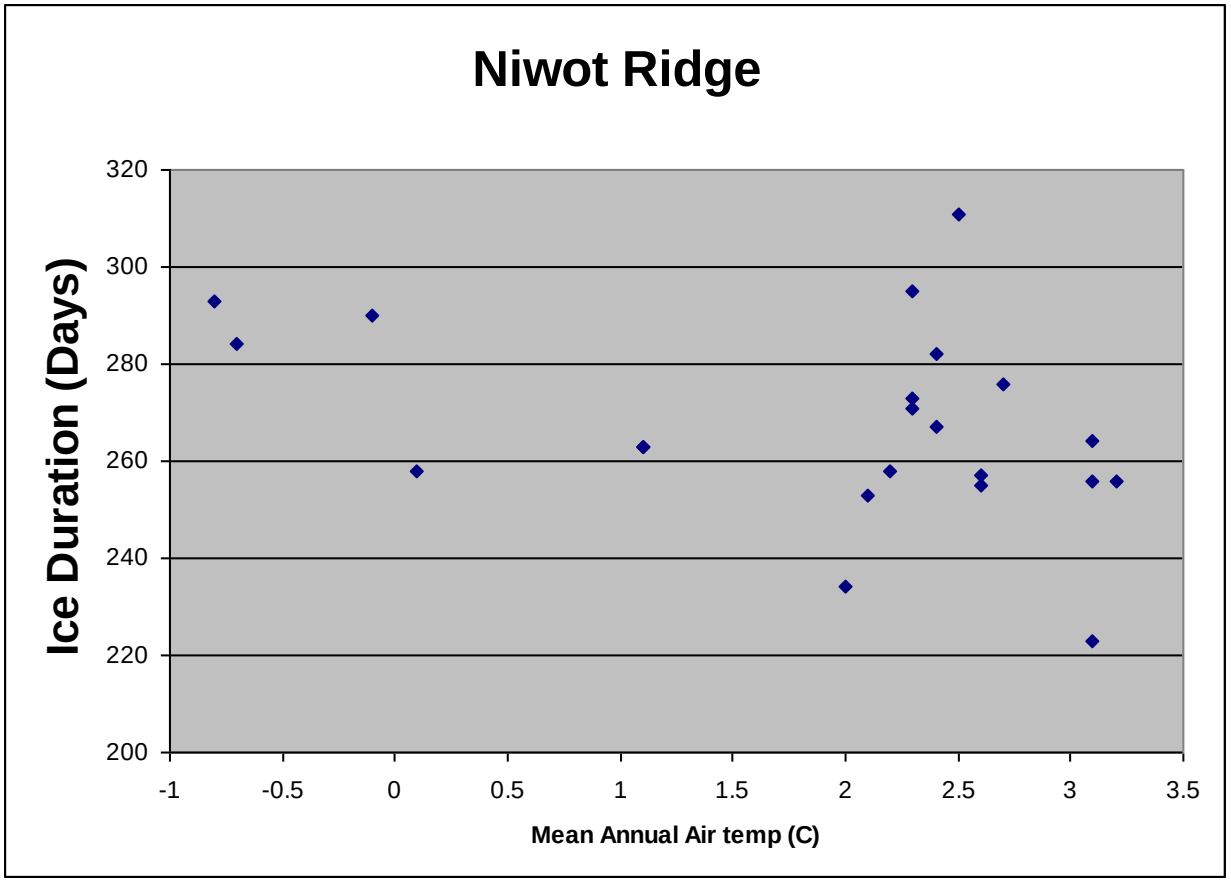


What temp data to use?
- mean annual air temp
- mean winter temp (how to define winter)
- fall and early spring temp

r = -0.36
R^2 = 0.13

y = -5.99 x + 278.7

P-value = 0.094

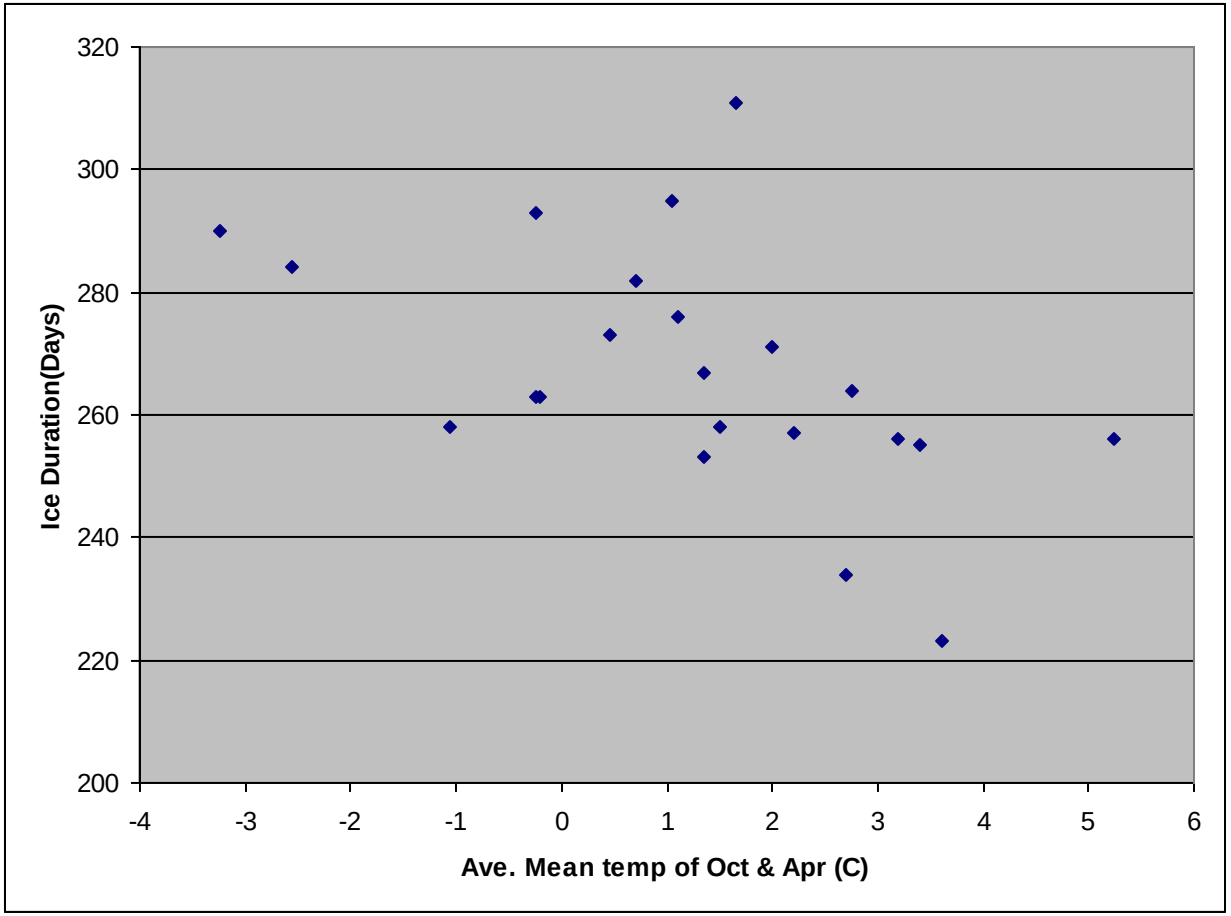


Niwot Ridge, CO

r = 0.51
R^2 = 0.27

y = 273.7 - 5.19 x

P-value = 0.014

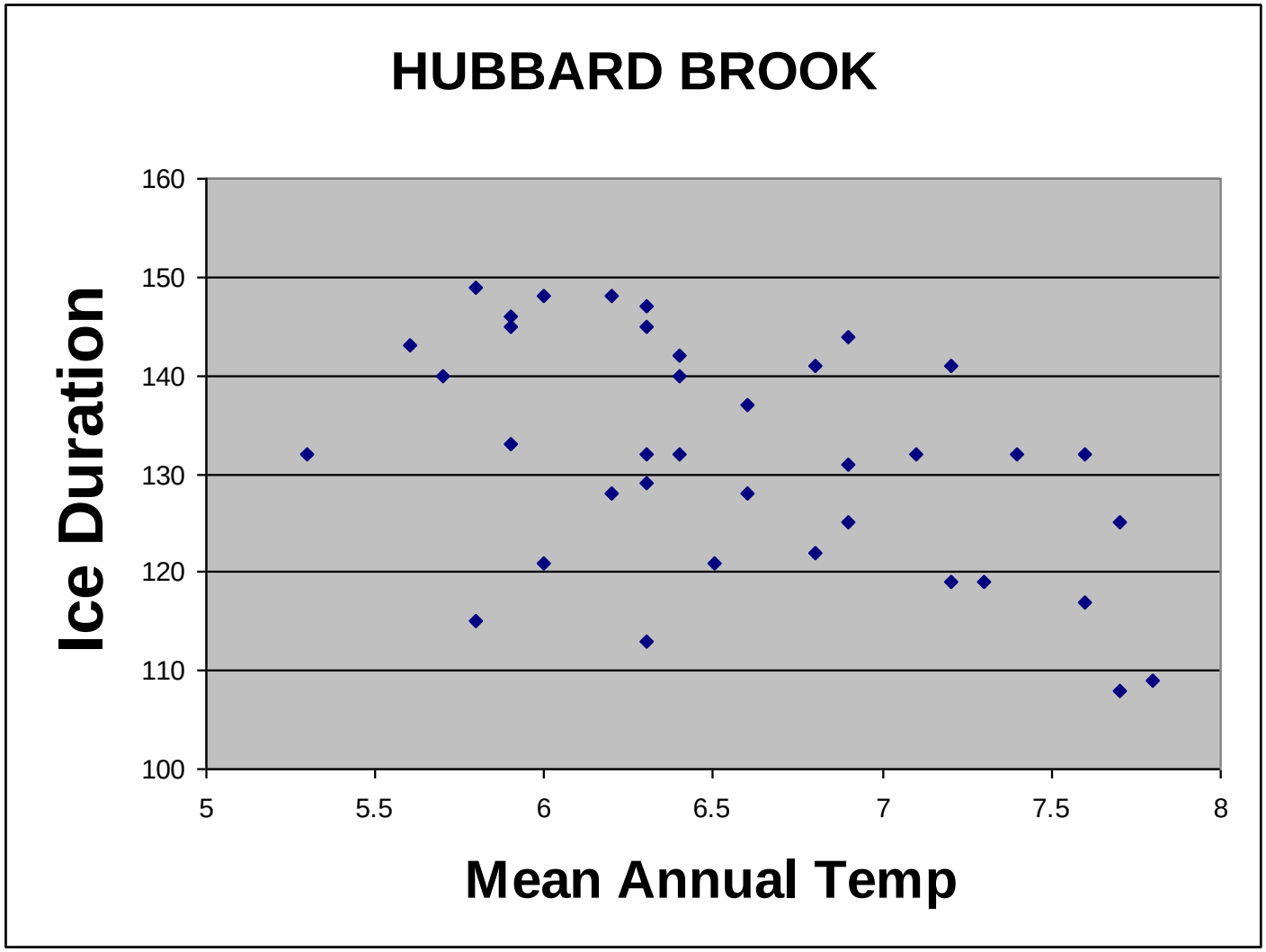


r = 0.48

R^2 = 0.23

y = 187.7 - 8.5 x

P-value = 0.002



$r = 0.59$

$R^2 = 0.35$

$y = 112.7 - 29\,x$

P-value = 0.014

Temperature data only collected since 1989