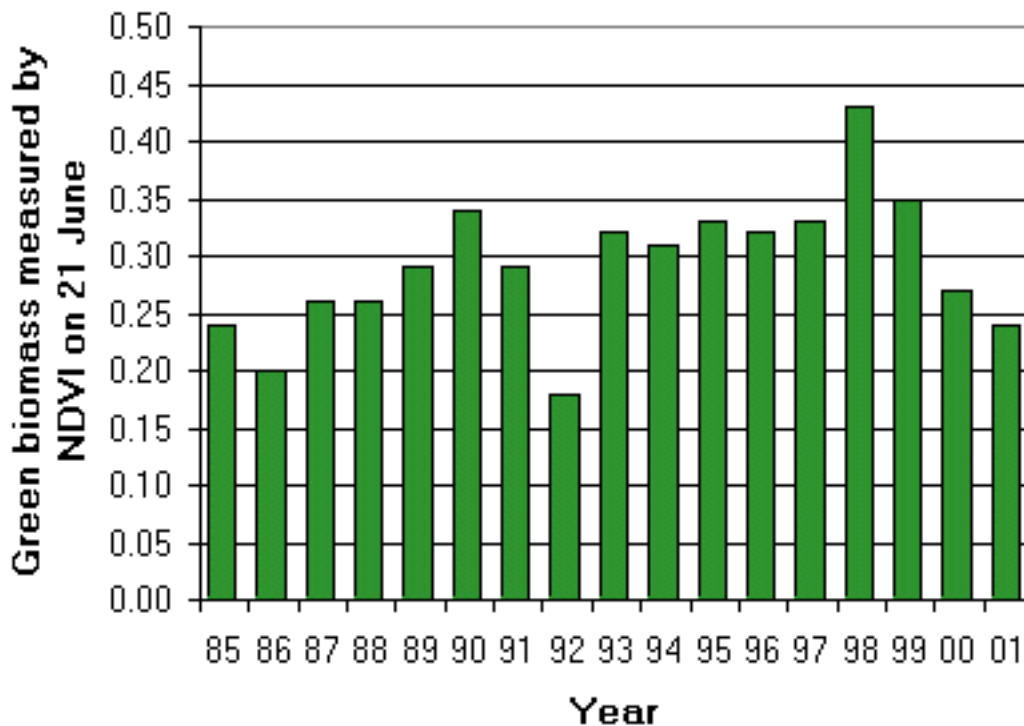


## Early Summer Green Vegetation in Caribou Calving Areas



Data source: U.S. Fish and Wildlife Service and Biological Resources Division, U.S.G.S.

### What is happening?

- This graph shows the relative amount of green plant material measured by NDVI (see technical notes below) within the calving grounds of the PCH on June 21 for the years 1985 - 2001.
- The low biomass level measured in 1992 is probably a response to the cool conditions in the Arctic that year that have been linked to the eruption of the Pinatubo volcano in the Philippines. The very high measurement in 1998 may reflect the influence of El Nino that was present in winter of 1997-98.

### Why is it happening?

- Timing and speed of snowmelt and early plant growth on the arctic slope is related to snow depth, warming degrees days and the location and duration of coastal fog banks.
- Climate change predictions for the area point to a 2-3 week earlier snowmelt period, and 1-3 degrees summer warming. Warming that occurs on the North Slope may cause earlier green-up and change current patterns of plant growth.

### Why is it important?

- New growth of plants means better food for caribou right after calving, a time of highest energy requirements for cows that have to produce milk for their calves. If we can monitor calving locations in relation to zones of high plant growth we can assess both the effects of climate change or the possible effects of displacement from the best calving areas should oil development proceed on the Alaskan coastal plain.
- Researchers have found that areas of high plant growth support much higher densities of calving cows than surrounding areas. Calves born in these concentrated calving areas have been found to have higher survival during the first month of life.

### Technical Notes

- NDVI values are determined from weather satellites that cover the globe on a daily basis. Sensors on board the satellites are related to the amount of vegetation on the ground (Normalized Difference Vegetation Index). Thus NDVI measurements may be used as an index of the amount of green plant biomass present at a given time.

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