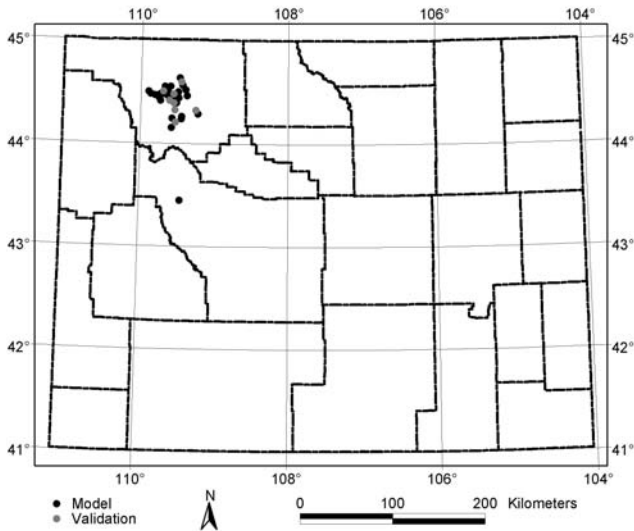


# Penstemon absarokensis Evert

## Known Distribution in Wyoming



## Numbers of Points for Modeling

	Model	Validation	Total
Known Present	27	8	35
Known Absent	957	211	1168
Total	984	219	1203

## Data Source (Points)

Rocky Mountain Herbarium (5)  
Wyoming Heritage Program (30)

## Modeling Notes

Independent variables: ELEV, RELIEF, PT01, PT04, PT07, PT10, NWD, RT01, RT07, TA01, TA04, TA07, TA10, TX07, NFD, GDD, BEDGEOL, LANDCOV, SOIL, SURFGEOL

Minimum number of observations before split: 3

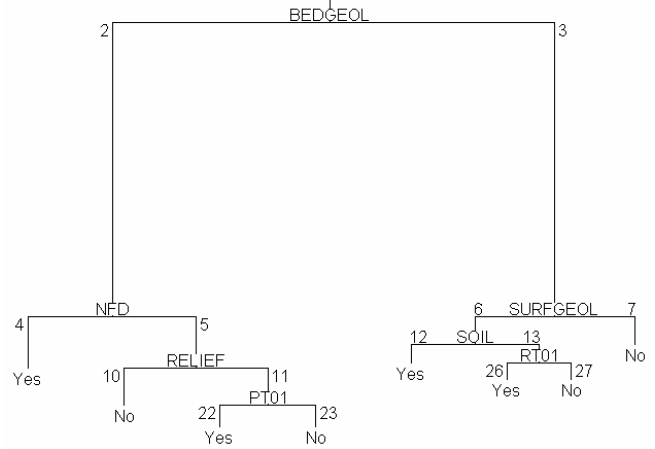
Minimum node size: 6

Minimum node deviance: 0.01

Minimum percent for pruning: 0.4

Biomes used for validation: ALP, FOOT, IDGRS, RMF

## Classification Tree Used in Model Building



## Classification Tree Output

Node\_Num) Node\_Def Node\_Size (Num\_No,Num\_Yes)  
(Pct\_No,Pct\_Yes) Node\_Type

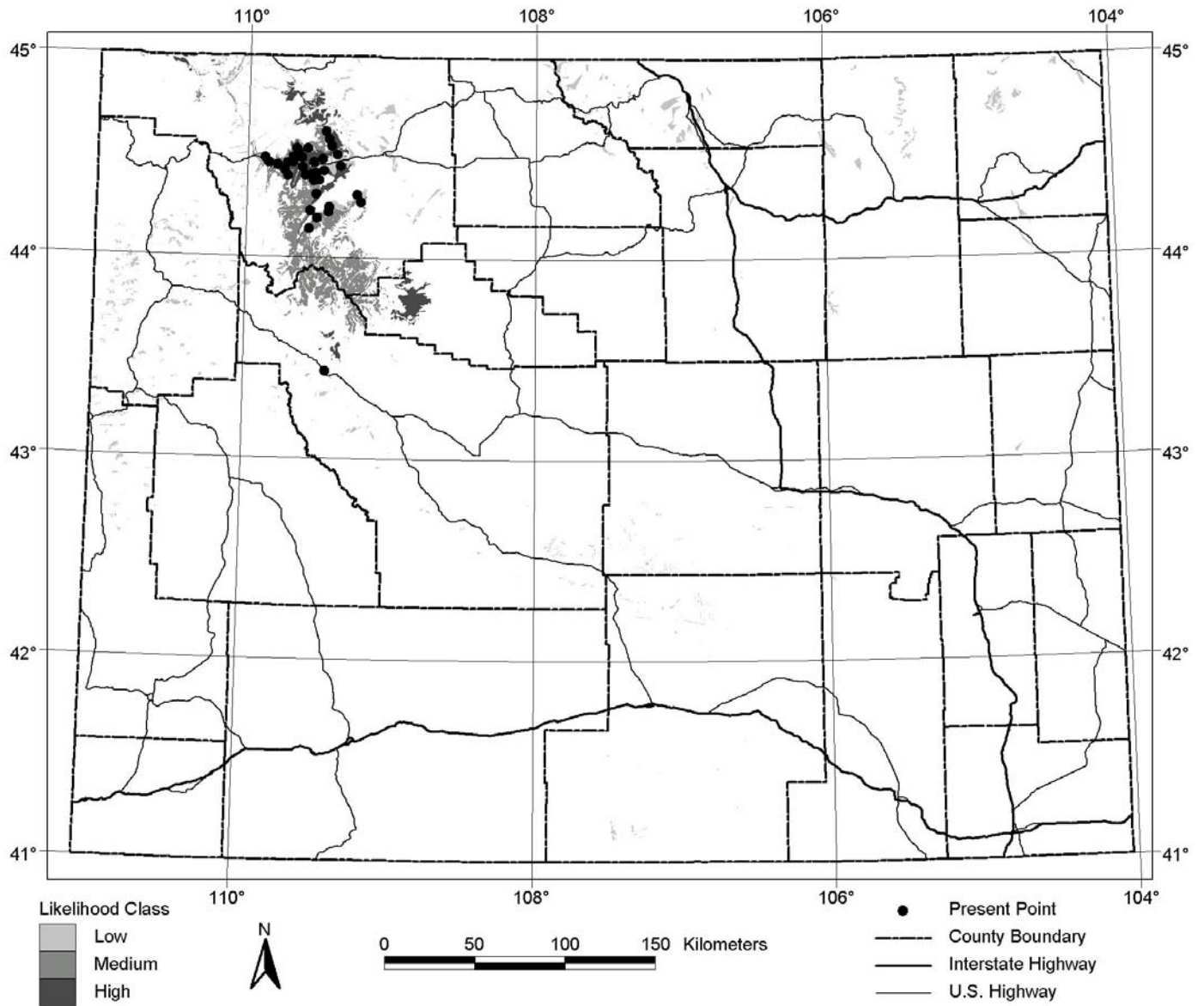
- 1) root 984 (957,27) (100,100) Yes
- 2) BEDGEOL:Eex 52 (28,24) (2.9,88.9) Yes
- 4) NFD<242.35 16 (1,15) (0.1,55.6) **Yes \***
- 5) NFD>242.35 36 (27,9) (2.8,33.3) Yes
- 10) RELIEF<416 19 (19,0) (2,0) No \*
- 11) RELIEF>416 17 (8,9) (0.8,33.3) Yes
- 22) PT01<7.135 12 (3,9) (0.3,33.3) **Yes \***
- 23) PT01>7.135 5 (5,0) (0.5,0) No \*
- 3) BEDGEOL:Ein,Eoe,Eol,H2O,Kmix,Ksh,Kss,MiPl,Olg,PCf,PCm,PTJ,Pal,Pze,Qal,Qlc,Qls,Qs,Qt,Qvf,TQc,Tlvf 932 (929,3) (97.1,11.1) No
- 6) SURFGEOL:fi,li,ti 108 (105,3) (11,11.1) Yes
- 12) SOIL:WY08C,WY16C 6 (4,2) (0.4,7.4) **Yes \***
- 13) SOIL:WY06C,WY07C,WY14,WY15,WY20,WY27,WY34,WY35,WY38C,WY40C,WY42,WY44 102 (101,1) (10.6,3.7) No
- 26) RT01<5.61 3 (2,1) (0.2,3.7) **Yes \***
- 27) RT01>5.61 99 (99,0) (10.3,0) No \*
- 7) SURFGEOL:LAKE,Mi,Ri,Ti,aR,ai,bdi,bi,ei,fdi,gi,ki,mi,oai,pea,ri,sci,tdi,tre,ui 824 (824,0) (86.1,0) No \*

## Path Composition and Likelihood

Yes Path	Node List	% of Present Points	Likelihood Class
a	4, 2	55.6	High
b	22, 11, 5, 2	33.3	Medium
c	12, 6, 3	7.4	Low
d	26, 13, 6, 3	3.7	Low

# ABSAROKA RANGE BEARDTONGUE

## Predicted Distribution in Wyoming



### Classification Rates

#### Model-Building Points

	Model Present	Model Absent		
Known Present	27 / 27	0 / 27	Total	974 / 984
	100.0%	0.0%	Correct	99.0%
Known Absent	10 / 957	947 / 957	Total	10 / 984
	1.0%	99.0%	Incorrect	1.0%

#### Validation Points

	Model Present	Model Absent		
Known Present	6 / 8	2 / 8	Total	211 / 219
	75.0%	25.0%	Correct	96.3%
Known Absent	6 / 211	205 / 211	Total	8 / 219
	2.8%	97.2%	Incorrect	3.7%

**Area of Predicted Distribution:** 4,569 km<sup>2</sup> (1.8% of WY)