

## Regional-scale riparian vegetation changes:

A contributor to Hood Canal DO Issues?

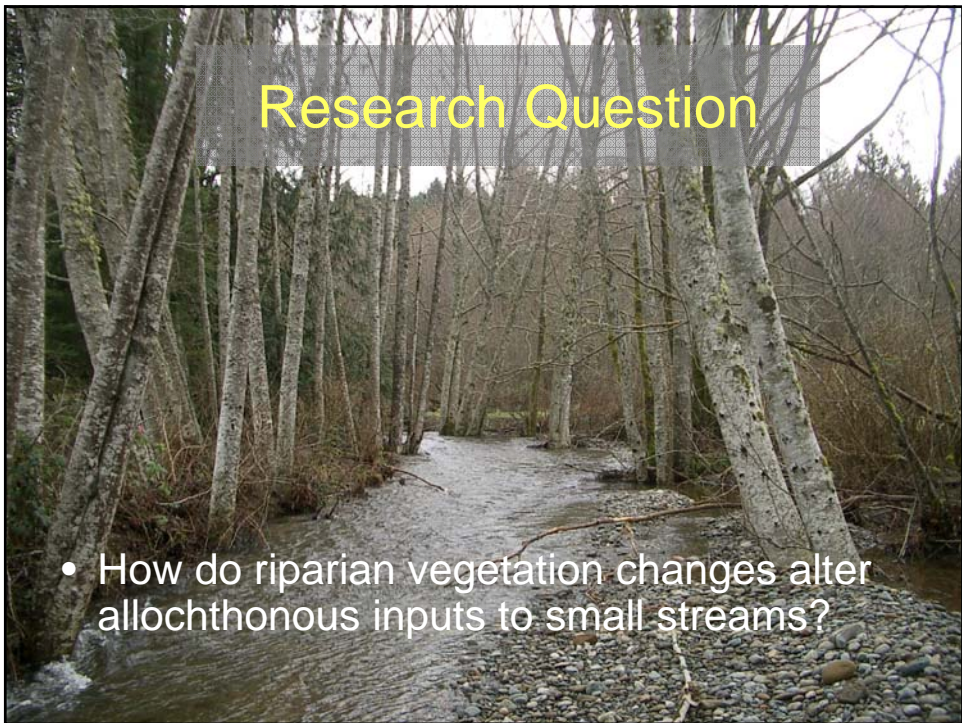
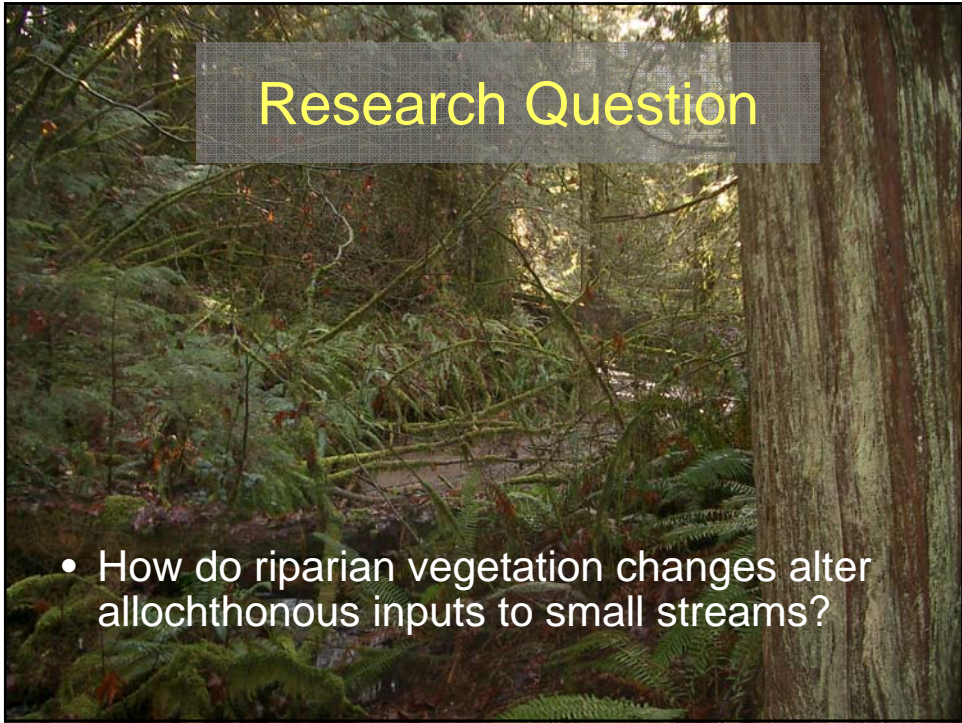
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## Outline of Presentation

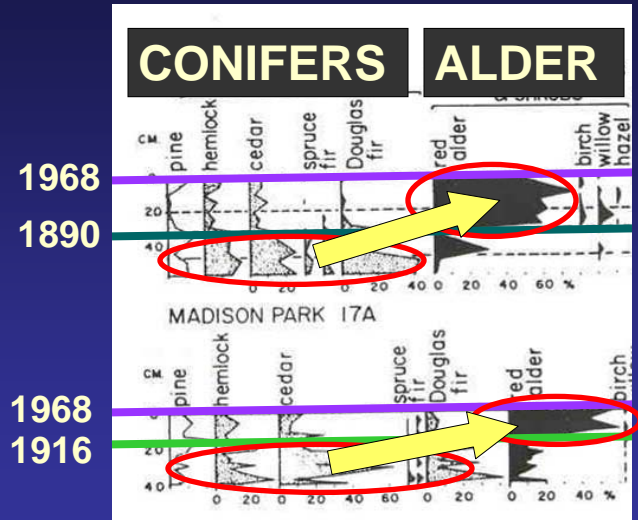
- Historical evidence of shift
- Brief methods
- Initial litterfall results
- Relevance and potential implications (Hood Canal)







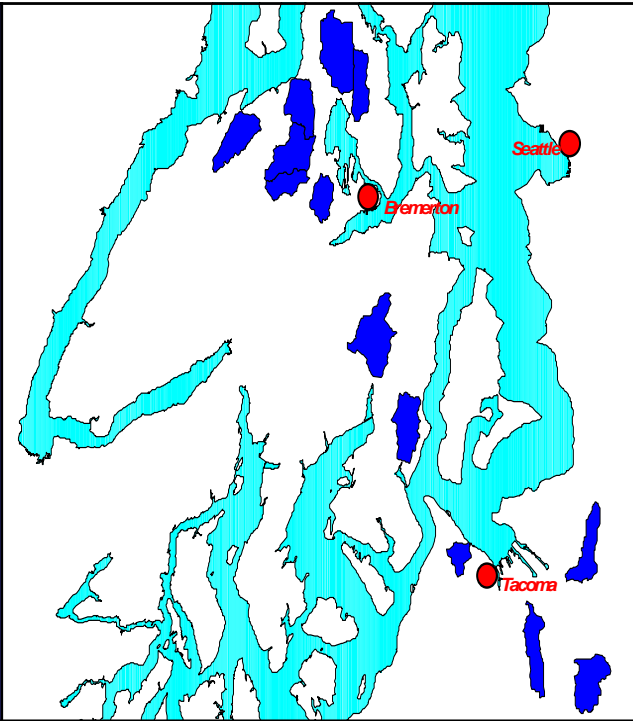
## Evidence from Pollen in Lake Washington



Source: Bryan Davis (1973)

Thanks to C. DeGasperi

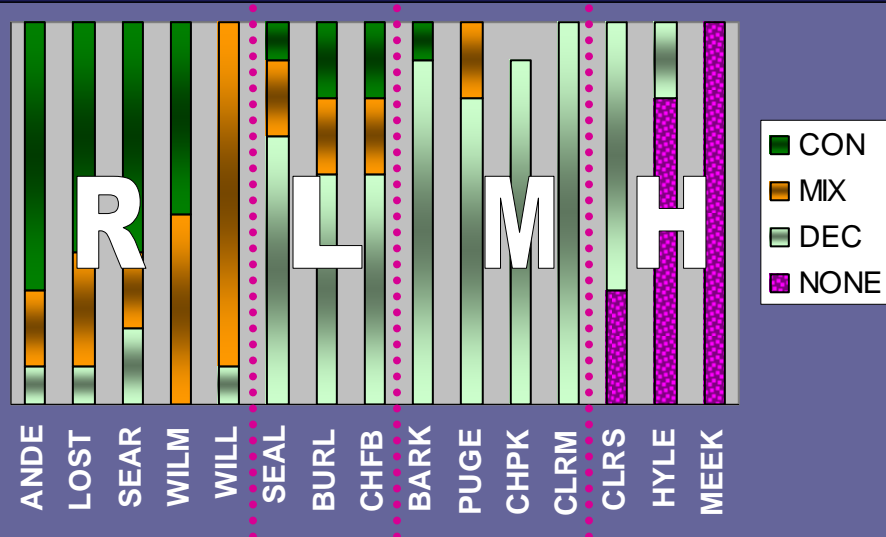
## Study Area



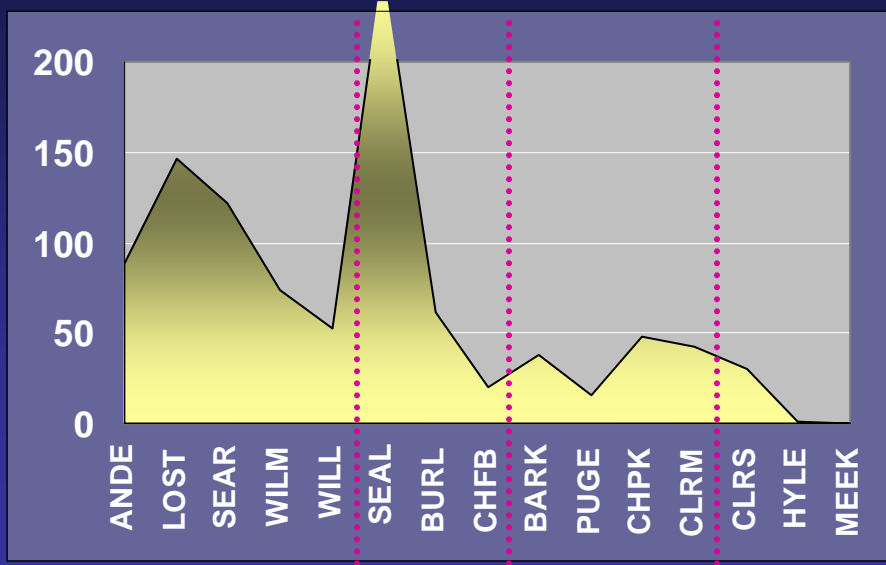
## Methods

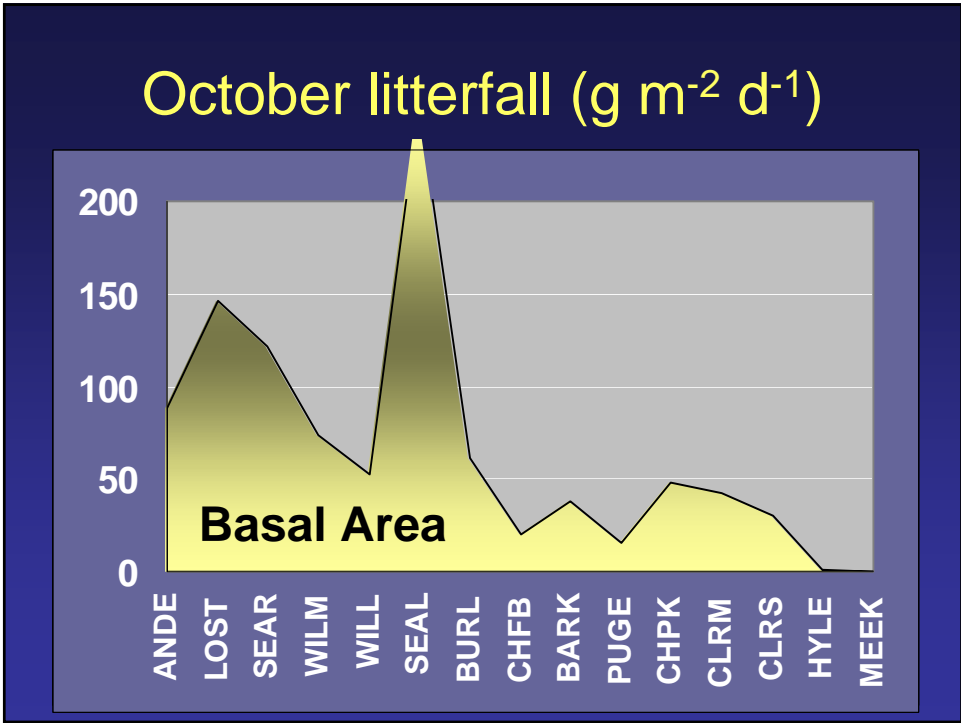
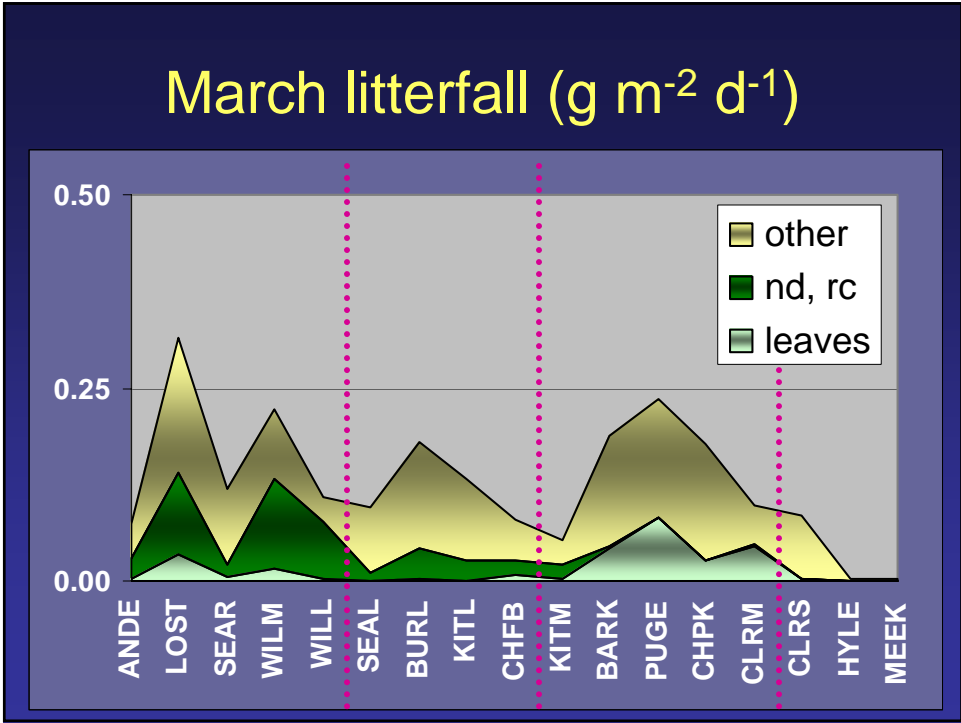


## Vegetation Composition

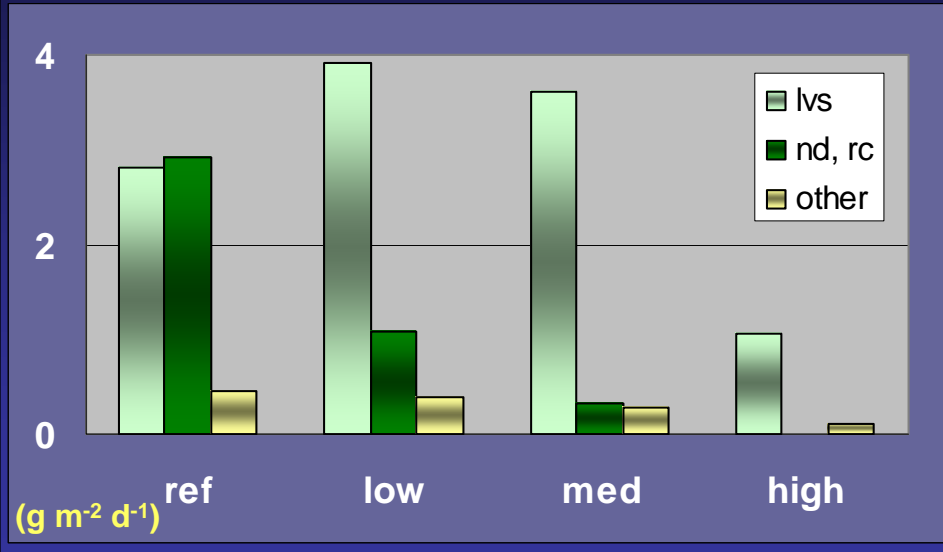


## Basal Area (m<sup>2</sup>/ha)

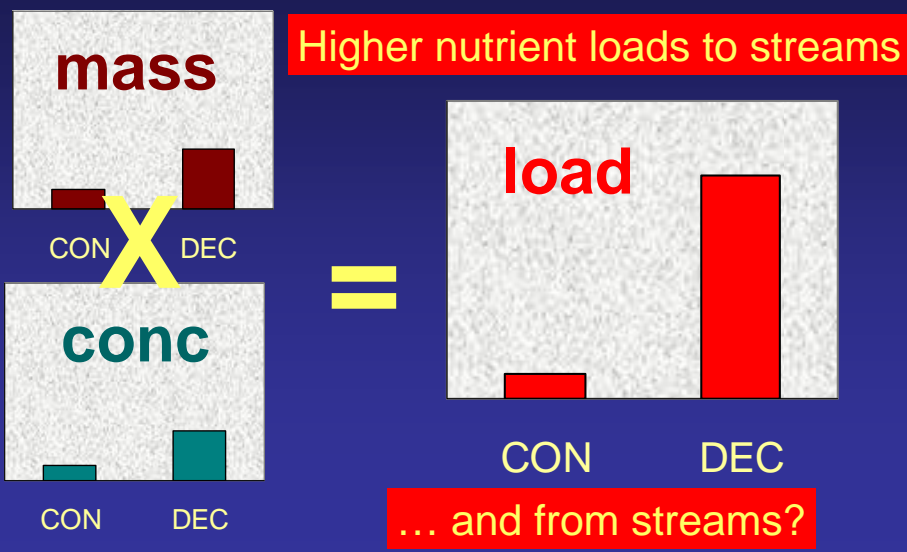




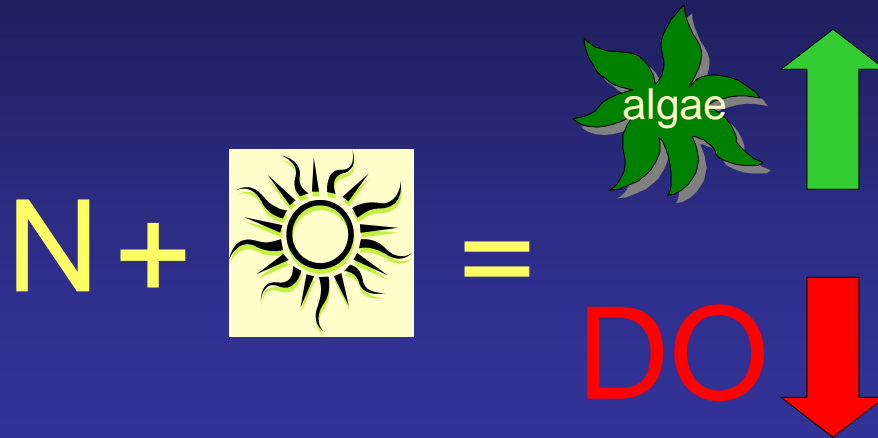
## October litterfall by disturbance level



## Possible effects



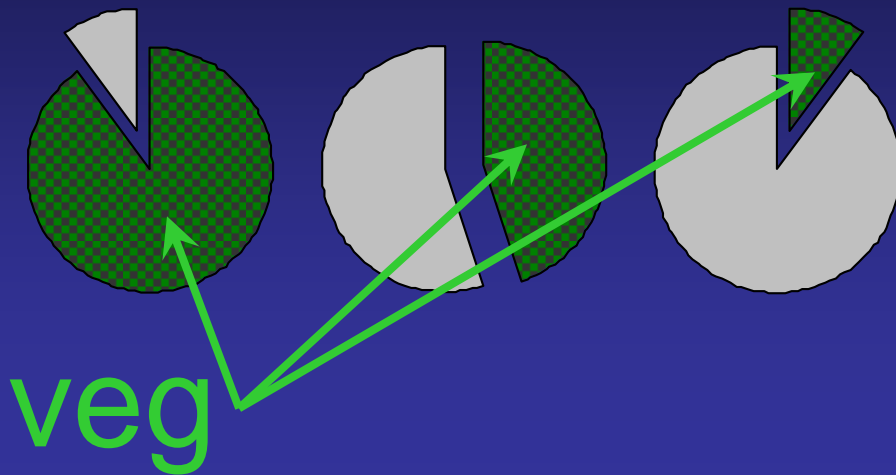
## Marine Implications



## Hood Canal

- Riparian vegetation changes the main culprit?
  - Probably not
- Can we discount the effect of vegetation?
  - Probably not
- Is the change significant?
  - Hood Canal DO Project (UW, HCSEG, et al.)

Is the change significant?

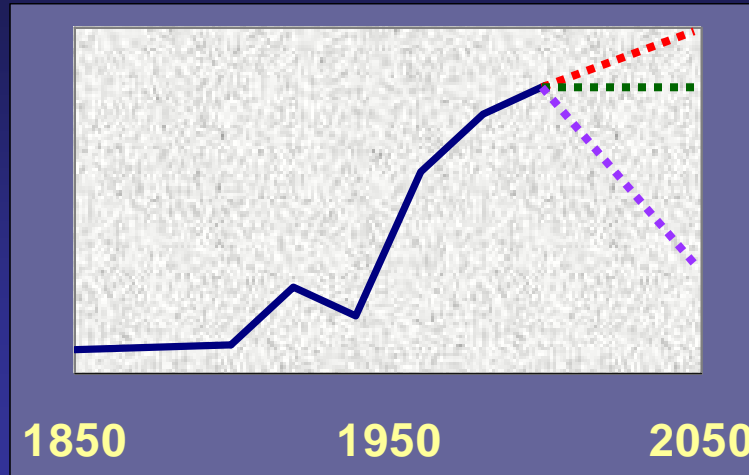


## Conclusions and Directions

- Litterfall quantity and quality changing
  - Historical conifer and mixed forests
  - Recent red alder forests
  - Future?
- Short-term benefits
- Long-term goals

## A look at the future?

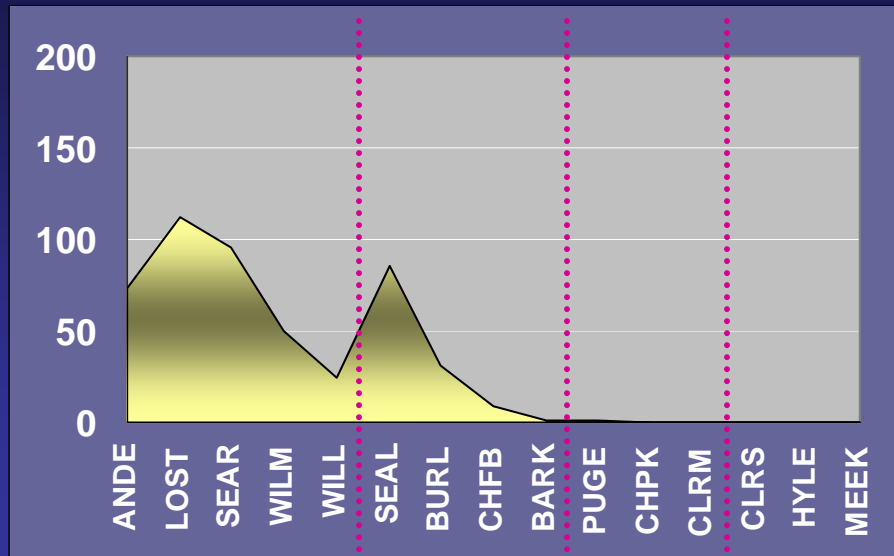
RA dominance  
N load



## Acknowledgements

- **Funding**
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- **Committee**
  - Derek Booth, Bob Bilby, Mike Brett, Paul Johnson
- **Volunteers**
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  - Special thanks to UW Tacoma's Environmental Science program
- **Exchanging Ideas**
  - Ted Labbe, Carol Volk, Jeff Richey, Curtis DeGasperi

## Conifer Basal Area



## References

- Bryan Davis, M. 1973. Pollen evidence of changing land use around the shores of Lake Washington. *Northwest Science* 47(3):133-148.
- Volk, C.J., P.M. Kiffney, and R.L. Edmonds. 2003. Role of riparian red alder (*Alnus rubra*) in the nutrient dynamics of coastal streams of the Olympic Peninsula, WA.U.S.A. *Nutrients in salmon ecosystems: sustaining production and biodiversity*. J.G. Stockner, ed.