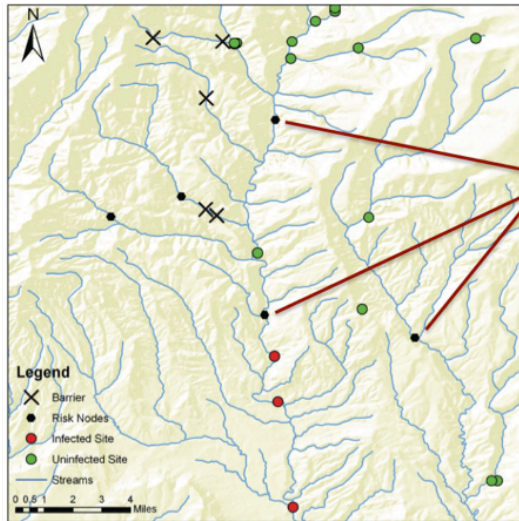


P.64 An ecological risk assessment of the impact of whirling disease on populations of Rio Grande cutthroat trout in the southwestern United States. *Wayne G. Landis, \* Laurel A. Kaminski, Peter T. Bryant, Institute of Environmental Toxicology, Western Washington University and Colleen A. Caldwell, U.S. Geological Survey, New Mexico State University.*

### Illustration of a Risk Node for Rio Grande cutthroat trout



Risk nodes represent streams and the surrounding information on infection and barriers. The streams with the risk nodes are part of the range of the Rio Grande Cutthroat Trout.

The creation of risk nodes allowed us to calculate risks for particular streams known to have Rio Grande Cutthroat trout and to incorporate information from the landscape. Risk was calculated for each of the nodes within the New Mexico and Colorado ranges of the fish.

### Equation for calculating relative risk.

$$Risk_{region.i} = \left( \sum_1^7 VR_j * \prod transportfilters \right) * \prod establishmentfactors$$

Where Risk is the risk to region i, VR is the vector rank (there are currently 7 vectors in the model), transport filters are 0 to 1 factors representing potential mitigating factors, and establishment factors are numbers (0 to 1.0) representing the infection potential of various habitats. In the instance described in the poster only one pathway was used to estimate risk.

### References

- Colnar, AM and Landis WG.2007. Conceptual model development for invasive species and a regional risk assessment case study: the European Green Crab, *Carcinus maenas*, at Cherry Point, Washington USA, *Human and Ecological Risk Assessment*. 13:120-155.
- Landis W. G., Wiegiers, J. K. 2005. Chapter 2: Introduction to the regional risk assessment using the relative risk model. In W. G. Landis editor *Regional Scale Ecological Risk Assessment Using the Relative Risk Model*. CRC Press Boca Raton pp 11-36
- Landis, W. G. and J. K. Wiegiers. 1997. Design considerations and a suggested approach for regional and comparative ecological risk assessment. *Human and Ecological Risk Assessment*. 3:287-297.

Poster and Handout can be downloaded as PDF files from  
<http://www.wvu.edu/toxicology/downloadstoxicology.shtml>