

## Model Refinement Needs

A model developed by Peters and Marmorek (2003) will be used to generate predictions for comparison with observed variations in kokanee production. As with most models, there are limitations. Most notable here are assumptions respecting density-dependent in-lake carrying capacity. Our phosphorus to fish biomass estimates are based on lakes where the major limnetic fish are juvenile sockeye (Hyatt & Rankin 1999) whereas in Skaha L. there are kokanee and *Mysis relicta* populations and both are pelagic feeders. To overcome this limitation the model uses ‘0+ equivalents’ for other than 0+ age classes of kokanee and for *M. relicta* (Peters & Marmorek 2003). The concern is whether these really are equivalents. For instance do sockeye out-compete kokanee, or do kokanee out-compete sockeye and are mysids primarily an energy sink or primarily a source of food? More information is needed as to interactions between these taxa and their food sources.

As an added complication, there are two whitefish species (Lake Whitefish - *Coregonus clupeaformis* and Mountain Whitefish – *Prosopium williamsoni*), which are also limnetic in Skaha L. and which utilize the same general food source to some degree as the three animals identified above.

To improve our understanding of the various species interactions, an analysis similar to that provided by the ‘Wisconsin’ bioenergetics model by Stockwell and Johnson (1997) and developed by Fisheries and Oceans Canada for another British Columbia lake will be conducted (Hyatt et al. 2004). It is expected that at the end of the 12- year experimental period, our knowledge of these interactions will be much improved and will enable us in a future project to develop a refined model to evaluate reintroduction of sockeye into Okanagan L.

## 6 References

During the Quality Control/Quality Assurance phase of document review, several references were found to be improperly cited or improperly used (i.e., secondary references or missing information). Thus, an exhaustive review of the subbasin plan and the following reference section will turn up a small number of missing citations. These are available upon request from the subbasin coordinators, but have not been reconciled for accuracy.

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[Although this draft document states that it should not be cited or quoted, some of the material in the report is an important improvement to Lazorchak et al. (1998). By not citing the document, it may give the appearance that this document improves some of the methods outlined in the Lazorchak et al. report. To avoid this, PNAMP believes it is necessary to offer credit where credit is due.]

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During the Quality Control/Quality Assurance phase of document review, several references were found to be improperly cited or improperly used (i.e., secondary references or missing information). Thus, an exhaustive review of the subbasin plan and the following reference section will turn up a small number of missing citations. These are available upon request from the subbasin coordinators, but have not been reconciled for accuracy.