

Contents

Table of contents	i
List of figures	ii
List of tables	ii
Acknowledgements.....	ii
Introduction	1
A numerical model	2
Scope of the model	2
Modeling versus time monitoring of stream flow	4
Modeling the groundwater surface water interaction in the Deschutes basin	9
Description of the numerical model.....	18
Mitigation (Credits)	19
Groundwater withdrawals (Debits)	19
Groundwater rights with the 7J condition	20
Assumptions of the model	20
Short comings of the model	21
References	22
Appendix A – Conceptual and numerical models for mitigation credits	23
Appendix B – Conceptual and numerical models for groundwater withdrawals	??

Figures

Figure 1. Deschutes Basin locations where the impacts of mitigation activities are to be evaluated.	5
Figure 2. General zone of impact.	11
Figure 3. Crooked River zone of impact.	12
Figure 4. Metolius River zone of impact.	13
Figure 5. Squaw Creek zone of impact.	14
Figure 6. Middle Deschutes River zone of impact	15
Figure 7. Upper Deschutes River zone of impact	16
Figure 8. Little Deschutes River zone of impact	17

Tables

Table 1. Deschutes Basin locations where the impacts of mitigation activities are to be evaluated	4
Table 2. Deschutes Basin locations where the impacts of mitigation activities are to be evaluated	6
Table 3. Percent of days the in-stream requirement is met by month in the Deschutes River below Pelton Dam (Gaging Station 14092500) - for the period, water years 1966 to 1995	7
Table 4. Percent of days the in-stream requirement is met annually in the Deschutes River below Pelton Dam (Gaging Station 14092500)	8

Acknowledgments

Many thanks are due Ken Stahr for creating the maps used in this report.