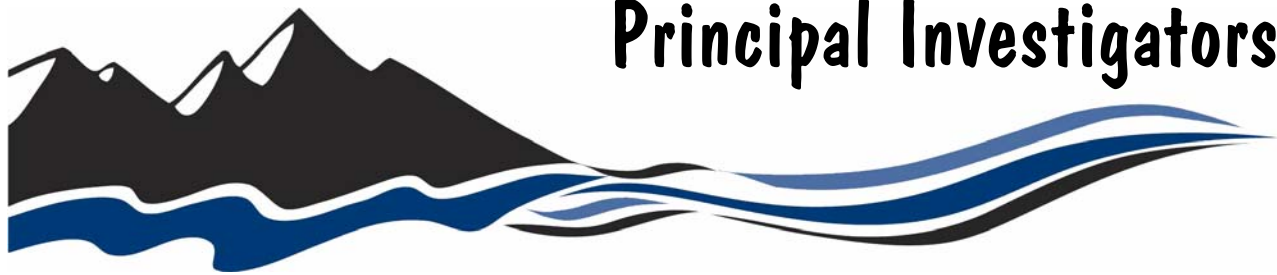


July 2009

Completion Report

Procedural and Editorial Guidelines for Principal Investigators



CWI

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EDITORIAL GUIDELINES

Introduction

Completion reports are the Institute's primary means of information transfer. Because the reports reflect the credibility of CWI, its cooperators, and its clients, it is important that every report be of the highest technical and editorial quality. These reports are read by a wide audience, including researchers, water resources professionals and technicians, and the general public. Therefore, the CWI requires that scientific jargon be explained and that the report summary be clear and concise.

CWI Requirements

Because CWI will print and distribute the report, the editorial guidelines should be followed for each completion report.

Each report must contain:

❖ Title Page (Figure 1)

The title page must contain a descriptive title, nature of report (completion report, information series, special report, technical report), names, and departments and institutions of all authors. The title page must be page i.

❖ Acknowledgements and Disclaimer (Figure 2)

Include **all** funding sources and the disclaimer as shown in Figure 2. The acknowledgements and disclaimer page must be page ii.

❖ Abstract and Keywords (Figure 3)

An informative abstract and keywords (**minimum 5, maximum 10**) suitable for indexing the project should be a total of **500 words or less**. The abstract and keywords page must be page iii. The following page (page iv) must be left blank.

❖ Table of Contents

Please include a list of figures and/or tables. The table of contents page must start on page v.

❖ Justification of Work Performed

Clearly state project objectives, which should reflect those included in the proposal. Provide detailed statements indicating the degree to which project objectives were achieved.

❖ Review of Methods Used

❖ Discussion of Results and their Significance

❖ Principal Findings, Conclusions, and Recommendations

Please provide final principal findings, conclusions and recommendations related to your study and any recommendations for additional research.

❖ Summary

❖ References

Figure 1. Title Page Example

IMPACTS OF STREAM VARIABILITY ON THE COLORADO RIVER SYSTEM
OPERATION

By

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Colorado River Water Conservation District

COMPLETION REPORT

Figure 2. Acknowledgements and Disclaimer Example

Acknowledgements:

The authors would like to thank the Colorado River Water Conservation District and the Colorado Water Institute for their financial support through the project “Hydrologic Analysis and Simulation of the Upper Colorado River System”. Additional support was provided by the U.S. Bureau of Reclamation (Lower Colorado Region) through the project entitled “Development of Stochastic Hydrology for the Colorado River System”. We also appreciate the technical input received from many people at the Colorado River Water Conservation District and the Bureau of Reclamation. The various ideas and comments received from everyone during the various project meetings helped very much improving the methods and results obtained in the study. Furthermore, we appreciate the efforts by Nan Yoder of BOR at Boulder City, Nevada.

Disclaimer:

This report was financed in part by the U.S. Department of the Interior, Geological Survey, through the Colorado Water Institute. The views and conclusions contained in this document are those of the authors and should not be interpreted as necessarily representing the official policies, either expressed or implied, of the U.S. Government.

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Figure 3. Abstract and Keywords Example

Abstract:

The water supply provided by the Colorado River system is critical to millions of residents in the arid and semiarid western United States. Understanding the response of the system to possible hydrologic occurrences is important to water planners and managers for short, medium, and long term planning and operation of the system. A long sequence of historical streamflow records is available for the river system; however, this sequence is not sufficient to capture the complex temporal and spatial variability of the river system. The overall objective of the study is to determine the effect of alternative possible future hydrologic scenarios on water supply availability throughout the entire river system. Another objective is to estimate the sustainable yield of the Upper Colorado River basin. The hydrologic scenarios are derived from a 98-year historical streamflow record and a 514-year reconstructed tree-ring derived streamflow record. Synthetic streamflows are determined based on stochastic models and modeling strategies using the software SAMS developed at Colorado State University. Additional streamflow scenarios are developed using the index sequential method (ISM).

The response of the river system to the different streamflow scenarios is evaluated using the Bureau of Reclamation's Colorado River Simulation System (CRSS) model implemented in RiverWare software, a river basin modeling program developed by CADSWES. The model outputs are analyzed in order to determine the occurrence probabilities of critical river system conditions (e.g. reservoir outflows and reservoir levels) within a specified planning horizon. The stochastic simulated streamflow resulted in occurrence probabilities that demonstrated an underlying random nature mirroring the inherent randomness of hydrologic processes. On the other hand, the occurrence probabilities resulting from streamflow simulated by ISM (with a comparable number of model runs) always followed a smoother line because the method is not random. The probabilities of reaching certain critical levels in Lakes Powell and Mead are similar across the simulation scenarios. However, the Upper Basin minimum objective release deficit probabilities are greater for the stochastic scenario than for the ISM scenarios. This release deficit is an important indicator of river system conditions, and its understanding is critical to river operators and policy makers. The stochastic scenario gives a more comprehensive understanding of release deficit probabilities because it is a random simulation method and not limited by the streamflows of the past. Furthermore, the Upper Basin sustainable yield determined using ISM is restricted by the critical period observed in the past. However, it is known that an even more critical period could occur in the future. This study demonstrates that the traditional definition of the Upper Basin's sustainable yield must be reevaluated in order to determine any sort of sustainable yield volume under stochastic simulation.

Keywords: Colorado River, streamflow, water supply, water planning, river systems, river basin modeling, hydrologic processes, Colorado River Basin, sustainable yield, streamflow scenarios, streamflow record

References

A reference list must contain all sources cited in the text of the report. References must be complete and accurate. Generally, entries are arranged alphabetically and are not numbered. PIs can use other reference styles as long as they use them consistently throughout the report. Below are examples for recommended reference entries. Citations in brackets come from *The Chicago Manual of Style*, 15th edition.

❖ Citation Format for CWI reports







Pritchett, J. and J. Thorvaldson. 2006. *Economic Impact Analysis of Reduced Irrigated Acreage in Four River Basins in Colorado*. Colorado Water Institute, Completion Report No. 207, Colorado State University, Fort Collins, CO.

Format

Format and type are key to the publication's professional appearance. Please use the following guidelines:

- ❖ Provide an original, clean, camera-ready hard copy with high-quality graphics that will reproduce well. This must be printed on recycled paper.
- ❖ Provide an original, clean digital copy as well.
- ❖ Use 12-point Times New Roman typeface (font).
- ❖ Lines should be single-spaced.
- ❖ Single space the references, disclaimer, footnotes, endnotes, and figure legends.

Tables and Figures

-  Tables and figures should appear in the text immediately following the paragraph in which they are referred. Unless the table or figure requires an entire page, text should continue immediately following the table or figure.
-  The table or figure should be bordered with a single thin line.
-  Identify tables by Arabic numerals above the tables. Use this form:
TABLE 1. Increases in Salt Load with Time
Within the text, use this form:
The salt load in the water increased with time (Table 1).
-  Identify each drawing, chart, or graph by Arabic numeral beneath the illustration. Use this form, left justified under the figure:
FIGURE 1. Major River Basins in Colorado
Within the text, use this form:
There are four major river basins in Colorado (Figure 1)
-  Prepare an illustration so it will reproduce clearly, even if it must be reduced. Reduce illustrations, photographs, and tables proportionately.
-  If a figure or a table is reduced, do not reduce the title and figure or table number. Make sure the contents of the figure or table are readable.