

MEMORANDUM



TO: Wyoming Water Development Commission
FROM: Edward Harvey and Doug Jeavons
RE: **Task 4. Bear River Basin Water Demand Projections**
Memo 4: Future Recreational Demands
DATE: October 6, 2000

Introduction

This memorandum describes projected growth in recreational demands in the Bear River Basin (Basin). Consistent with the study team's technical memorandum on current recreational use, this memo focuses on water-related categories of outdoor recreational demands, including stream and lake or reservoir fishing, boating and waterfowl hunting.

Overview

Water-based recreational opportunities in the Bear River Basin are essentially non-consumptive in nature, but water supplies bear an important relationship to water-based recreation. First, the quality of water-based recreational experiences can be impacted by either changes in out of stream water diversions, which may affect flow rates, or reservoir levels and available recreational surface acreage. Secondly, increases in the number of recreational participants can potentially lead to crowding and a diminished experience, suggesting the need for expanded water supplies for streams or reservoirs.

In this context, it is useful to consider future recreational demands in a basin planning study for two reasons:

- to identify whether potential water development alternatives to meet out of stream water needs may positively or negatively impact recreational opportunities, and

- to identify whether future recreational demands may exceed the available capacity of existing recreational opportunities in the Basin, potentially implying an economic benefit from recreational features associated with new water developments such as reservoir storage facilities.

Ideally, the assessment of future recreational demands would include three components:

- a quantification of current recreational use, by type and location, for facilities throughout the Basin,
- a projection of future recreational use for the same categories, and
- a comparison of future recreational use, by type, with the available capacity of recreational features throughout the Basin.

The availability of existing data limits the extent to which these three components can currently be addressed in this analysis. In particular, there are currently no data that quantify boating use in the Bear River Basin and there are no definitive estimates of the capacity of Bear River Basin streams and reservoirs for various recreational activities. Consequently, this memorandum focuses on developing quantitative projections of future recreational demands in the Bear River Basin for recreational categories that have defined quantitative estimates of current activity levels. Future study may allow for development of estimates of the capacity of existing recreational features in the Basin, which can then be compared with the future demand projections.

Recreational Demand Projections

The study team developed recreational demand projections for the Bear River Basin by extrapolating current usage estimates in light of projected growth in the number of Basin residents and Basin visitors described in the Task 4, Technical Memorandum Number 2. This approach makes the important assumptions that per capita recreational demands for new Basin residents and visitors will be similar to the per capita demands of existing residents and visitors. The following describes projected recreational demands, for the high and low case economic/demographic planning scenarios, for the major recreational categories and destinations defined in the existing recreational usage technical memorandum.

Boating. There are currently no available data on the number of watercraft using Bear River Basin reservoirs and streams, or the number of boating days in the Basin. Consequently, quantitative estimates of future boating demands could not be

developed. However, based on the projected growth in Basin population and visitors, the study team is able to provide the following ratios which could be applied to estimates of current boating activity levels if such estimates are developed in the future:

- 2030 High Scenario
 - Projected resident boating demand = 2.0 x 2000 level
 - Projected visitor boating demand = 2.5 x 2000 level
- 2030 Low Scenario
 - Projected resident boating demand = 1.0 x 2000 level
 - Projected visitor boating demand = 1.6 x 2000 level

Fishing. Wyoming Game and Fish Department personnel estimate that there are currently 9,400 annual angler days on Bear River Basin streams and 7,400 annual angler days on Bear River Basin reservoirs (Remmick, 2000). Earlier data from a study commissioned for the Game and Fish Department indicates that Basin residents account for approximately 90 percent of Bear River Basin angler days on either streams or reservoirs, with visitors to the Basin accounting for the balance of annual angler days (Fishing Pressure Survey, 1985).

Annual fishing day demand in 2030 is projected as follows under the high and low economic/demographic scenarios:

- 2030 High Scenario
 - Projected stream fishing demand = 19,100 angler days
 - Projected reservoir fishing demand = 15,000 angler days
- 2030 Low Scenario
 - Projected stream fishing demand = 10,100 angler days
 - Projected reservoir fishing demand = 8,000 angler days

Waterfowl Hunting. Estimates from the Wyoming Game and Fish Department indicate there are currently approximately 1,950 annual hunter days in the Basin for duck hunting and approximately 1,150 annual hunter days in the Basin for goose hunting. In the absence of data on the proportion of hunting days accounted for by residents relative to visitors to the Basin, the study team has assumed the same relative proportions used in the fishing analysis (90% resident, 10% visitor).

Annual hunting day demand in 2030 is projected as follows under the high and low economic/demographic scenarios:

- 2030 High Scenario
 - Projected duck hunting demand = 3,960 hunting days
 - Projected goose hunting demand = 2,340 hunting days

- 2030 Low Scenario
 - Projected duck hunting demand = 2,100 hunting days
 - Projected goose hunting demand = 1,240 hunting days

Major water-based recreation destinations. Bear River Basin water-based recreation destinations identified in the technical memorandum on current recreational use include a portion of the Bridger-Teton National Forest, BLM lands in the Basin, Bear River State Park and the BEAR Project, which is still under development. At this time, quantitative visitation estimates are only available for the Bear River State Park, which estimates annual visitation of approximately 100,000 visitor days.

Under the high case economic/demographic projections, visitation at each of these destinations could be expected to slightly more than double by 2030, implying over 200,000 annual visitor days at the Bear River State Park, for example. Under the low case projections, visitation at these sites would increase only slightly, perhaps in the range of ten to twenty percent, by 2030.

Summary

Available data limits the extent to which quantitative projections of Bear River Basin recreational demands can be developed at this time and currently precludes comparison of future demands with available recreation capacity. However, the study team has developed quantitative estimates of certain types of water-based recreation, including stream and reservoir fishing and waterfowl hunting. Under the high economic/demographic growth scenario, demands for such activities would slightly more than double by 2030, while under the low economic/demographic growth scenario, demands would increase by only ten to twenty percent by 2030.

Future study may allow for development of quantitative projections of other types of water-based recreational demands, particularly including estimates of future boating demands. In combination with future development of specific estimates of the capacity of Bear River recreational assets, such demand projections will be useful in assessing the potential for new water development projects to enhance or diminish recreational experiences in the Basin.

References

Bear River Basin Plan Technical Memorandum, Recreational Uses (Forsgren Associates, August 24, 2000).

Bear River Basin Plan Technical Memorandum, Task 4, Number 2 of 3 (BBC Research & Consulting, September 30, 2000).

Fishing in Wyoming: Results of the 1984 Fishing Pressure Survey (Western Aquatics, Inc., May, 1985).

E-mail communication from Ron Remmick, Wyoming Game and Fish Department, April 12, 2000.

Southwest Wyoming Resource Evaluation, Socioeconomic Evaluation, Part 1 - Historical Context (University of Wyoming, et al., May 1997).

Basin Management Plan, Upper Bear River (3BE) (Wyoming Game and Fish Department, 2000).

Basin Management Plan, Lower Bear River (3LB) (Wyoming Game and Fish Department, 2000).

Basin Management Plan, Woodruff Reservoir (3WR) (Wyoming Game and Fish Department, 2000).

Basin Management Plan, Sulfur Creek Reservoir (3SR) (Wyoming Game and Fish Department, 2000).