Comprehensive
STATE WATER PLAN

Henrys Fork Basin

Idaho Water Resource Board
1992

COMPREHENSIVE STATE WATER PLAN: HENRYS FORK BASIN

IDAHO WATER RESOURCE BOARD

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Buffalo Springs on the Buffalo River, Henrys Fork Basin.

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Executive Summary

This component of the Comprehensive State Water Plan is prepared by the Idaho Water Resource Board in keeping with their constitutional and legislative charge to formulate and implement a state water plan. This portion of the water plan is prepared for the entire part of the Henrys Fork basin in Idaho including the Falls River and Teton River drainage basins. The basin extends from the Idaho border to the Henrys Fork junction with the South Fork Snake River north of Idaho Falls.

In 1988 the Idaho Legislature directed that the main stem Henrys Fork be studied from its origin at Henrys Lake to Ashton Reservoir. The study was expanded to include the tributary streams and lower river area because of the requirement to adopt a comprehensive water plan for the state and the provision for that plan to be based on geographic areas.

Each river or basin plan, which is a component of the state water plan, may identify rivers which are designated as state protected rivers. This plan has no direct impact on existing irrigation rights and uses, timber harvest, stockwater use, or other vested rights. In river reaches designated for protection, the purpose of the plan is to protect the streambed from disturbances that are not in the public interest. It is not intended that this plan be used to justify federal wild, scenic or recreational river designations of any of the Henrys Fork basin waterways.

This plan is the result of much thought, study, research and public input. The local advisory group was of great value in developing the plan. It was a team effort with many participants.

The Henrys Fork plan describes and evaluates the water resources and related economic, cultural, and natural resources of the basin. The planning process is outlined and constraints identified. The goals and recommendations of the Water Resource Board are presented relative to improving, developing and conserving the water resource uses of the Henrys Fork basin. Each resource element has been addressed in the plan. The goals of the plan seek to ensure future water resource use that will complement and supplement State goals directed toward maintaining Idaho's high "quality of life."

The Henrys Fork is a major tributary of the Snake River draining about 2,700 square miles in Idaho plus 500 square miles of Wyoming. Over 50 percent of the basin is public land. The average estimated amount of water entering the basin each year as precipitation is nearly 4,100,000 acre-feet. The amount leaving the basin as the annual flow for the Henrys Fork is 1,400,000 acre-feet. An additional 700,000 acre-feet leave the basin as ground-water outflow. 500,000 acre-feet of surface water and 200,000 acre-feet of ground water are consumptively used within the basin. The remaining 1,300,000 acre-feet is consumed through natural evapotranspiration. These averages are adequate to meet current beneficial uses, and to support some economic growth. There, however, are problems with the great annual variability of the water supply.

General water quality of both ground and surface sources within the basin is good. Further efforts to improve water quality will likely be directed at lower basin irrigation return flow and control of recreation subdivision effluent.

The basin population is 38,050 (14 per square mile) with 56 percent located in incorporated areas. The major industries are agriculture and government. Tourism related sales approach 20 percent of total sales for Fremont and Teton Counties. Tourism plays a much smaller role in Madison County. Personal income in the basin although increasing in real dollars is declining relative to the nation. This is also true for the state as a whole. The amount of underemployed is very high with from 50 to 62 percent of the families in each basin county under the near-poverty level (defined as two times the poverty level for a family of four, in 1990, 2 times $13,359 or $26,718).

The recreation resources in the upper basin are outstanding with not only national recognition but international recognition given to portions of the fishing resources. The geographic proximity to Yellowstone National Park, Grand Teton National Park and the Madison River area of Montana creates an area-wide recreation complex. Second home construction is prominent in Teton and Fremont Counties.

There is considerable hydropower development potential in the basin. There are state and federal constraints on hydropower development in the basin, particularly on the Henrys Fork River. The impact of hydropower development on other basin values needs to be considered on a case-by-case or river reach basis.

No protected river designation and associated prohibitions has any impact on vested rights. It is not the Board's intent to impact timber harvest, existing livestock watering practices, or the delivery of water to satisfy existing rights.

Recreational designations generally are conditioned to allow alterations of the streambed for existing utilities, roadways, diversion works, fishery enhancement facilities and public access facilities. Also allowed are new public agency fishery enhancement facilities and public, river-access facilities.

The Water Resource Board has weighed the conflicting uses for the streams in the basin, particularly where hydropower development is possible. Three proposed hydropower projects, at Island Park Dam, Ponds Lodge, and the Upper Teton project, are allowed in the plan. No other projects are recommended at this time. As is evident on the accompanying map, some potential hydropower sites in the basin are impacted by the Board's protected river designations. However, circumstances may change, and as project studies and proposed plans are completed they can be considered on a case-by-case basis. In addition, basin plans are reviewed every five years.

River Reach Designations

Approximately 200 miles of the basin's 3,000 miles of streams have been given state recreational or natural river protection. The reach designations are summarized below:

1. Targhee Creek, including West and East Forks: from source to National Forest boundary (12.5 miles) - Natural

2. Henrys Fork: Big Springs to Island Park Reservoir (11 miles) and the lower 2 miles of Henrys Lake Outlet - Recreational

3. Henrys Fork: Island Park Dam to Riverside Campground (16 miles) - Recreational

4. Golden Lake, Silver Lake and Thurman Creek from Golden Lake to mouth (4 miles) - Recreational

5. Henrys Fork: Riverside Campground to Hatchery Ford (4 miles) - Natural

6. Henrys Fork: 100 feet upstream of the Hatchery Ford boat ramp to a point 300 feet downstream of the ramp (approximately 400 feet) - Recreational

7. Henrys Fork: Hatchery Ford boat ramp to National Forest Boundary near Warm River (13 miles) - Natural

8. Henrys Fork: Forest Boundary near Warm River to Ashton Reservoir (8 miles) - Recreational

9. Henrys Fork: Ashton Dam to Falls River (6 miles) - Recreational

10. Buffalo River - (8) miles and Elk Creek (1 mile) - Recreational

11. Warm River: Partridge Creek to the Forest Route 153 bridge (approximately 1/4 mile) - Natural

12. Warm River: Forest Route 153 bridge area (approximately 200 feet) - Recreational

13. Warm River: Forest Route 153 bridge to Forest Route 154 bridge (7 miles) - Natural

14. Warm River: Forest Route 154 bridge area (approximately 200 feet) - Recreational

15. Warm River: Forest Route 154 bridge to Warm River Campground (7 miles) - Natural

16. Robinson Creek: from Yellowstone Park boundary to Forest Route 241 bridge (10 miles) - Natural

17. Robinson Creek: Forest Route 241 bridge to mouth (4 miles) - Recreational

18. Rock Creek: from Yellowstone Park boundary to mouth (9 miles) - Recreational

19. Falls River: Idaho border to a point 100 feet upstream of the Yellowstone Diversion Dam (7 miles) - Natural

20. Falls River: from 100 feet upstream of the Yellowstone Diversion Dam to Kirkham Bridge (11 miles) - Recreational

21. Boone Creek: Idaho border to mouth (4 miles) - Natural

22. Conant Creek: Idaho border to National Forest boundary (6 miles) - Natural

23. Conant Creek: National Forest boundary to Conant Creek diversion structure (3 miles) - Recreational

24. Teton River: Trail Creek to Highway 33 (14 miles) - Recreational

25. Teton River: Highway 33 to Felt Dam (11 miles) - Recreational

26. Teton Creek: from the springs near Highway 33 to mouth (3 miles) - Recreational

27. Fox Creek: from the springs to mouth (2.5 miles) - Recreational

28. Badger Creek: from the springs to mouth (3 miles) - Recreational

29. Bitch Creek: Idaho Border to the railroad trestle (5 miles) - Natural

30. Bitch Creek: Railroad trestle to Highway 32 (2 miles) - Recreational

31. Bitch Creek: Highway 32 to mouth (7.5 miles) - Natural

Recommendations

1. Encourage water resource-related economic development funding for private, city, county, state and federal projects.
2. Provide minimum stream flows where necessary to protect existing uses and values.
3. All regulatory agencies should seek to protect riparian areas.
4. Encourage the screening of irrigation diversion structures to protect fishery values,where necessary or appropriate.
5. The development of new irrigation is kept as a goal and shall be encouraged through state actions where environmental values can be retained.
6. Develop programs or incentives to make water conservation more attractive to water users.
7. Cooperative basin planning is encouraged, particularly where management entities have overlapping interests.
8. Having adopted a plan for the Henrys Fork Basin, the State will oppose actions by other entities which do not recognize and are not compatible with the State's plan.
9. Having identified river reaches where the state wants the construction of hydropower projects prohibited, the state recommends modification of the Northwest Power Planning Council's protected areas designations to coincide with the river reaches identified in the basin plan.
10. Flood control studies are needed on several river reaches.
11. Encourage water conservation and the use of water bank water, in lieu of new impoundments, as a source of additional water.
12. Study the availability of the ground-water resource in the plateau areas east of St. Anthony and in the Canyon Creek area.
13. Water yield, water quality, and water development opportunities should be a planning consideration by the U.S. Forest Service and U.S. Bureau of Land Management.
14. The state should seek to insure sufficient flow in the tributaries to Henrys Lake and the tributaries to the Teton River to provide spawning habitat for the resident fishery.
15. Support the efforts of the Division of Environmental Quality, Fremont County, the Yellowstone Soil Conservation District, Idhao Department of Fish and Game, and the Henrys Lake Foundation to improve the water quality in Henrys Lake and its tributaries.
16. The state should reexamine the role of artificial recharge within the basin. Earlier studies in the Egin Bench area can provide direction to the study effort.
17. The following waterways have recreational values that deserve special recognition and stringent application of existing regulatory authorities whenever new stream-altering activities are proposed:
    Henrys Fork: confluence with Falls River to mouth

Falls River: Kirkham Bridge to mouth
Teton river: Bitch Creek to North Branch (Fork) - South Branch (Fork) at point of division
Teton River: North Branch (Fork)
Teton River: South Branch (Fork)

Water Budget - Henrys Fork Basin

Drainage Area	3,220 square miles	
Average Precipitation	24.1 inches	4,139,000 ac-ft
Average River Outflow	2,100 cfs	1,407,000 ac-ft
Surface Diversions:		
Madison and Fremont Co.- Watermaster Records		1,100,000 ac-ft
Irrigation Consumption	300,000 ac-ft	
Return Flow	100,000 ac-ft	(100,000 ac-ft)
Ground-water Recharge	700,000 ac-ft	
Other Madison and Fremont Co. Consumption		100,000 ac-ft
Teton County Consumption		100,000 ac-ft
Ground-water Consumption (all counties)		200,000 ac-ft
Natural and Dry-farm Evapotranspiration plus Ground-water Recharge		1,300,000 ac-ft

Annual Flows (Adjusted to 1985 Development Levels)

(1000 acre-feet)

	1934	1977	Average	1984
Henrys Fork near Lake	33	37	39	82
Henrys Fork below Island Park	290	460	429	785
Falls River near Squirrel	357	385	564	831
Henrys Fork near Ashton	722	1087	1068	1714
Teton River above damsite	289	338	561	921
Teton River near St. Anthony	320	356	575	931
Henrys Fork near Rexburg	436	1019	1407	3001