5.14 HISTORIC PROPERTIES

Historic properties, as defined by the National Historic Preservation Act, include historic and prehistoric archaeological sites, historic architectural and engineering features and structures, and resources of significance to Native Americans and other social or cultural groups. Historic properties located within the lakes and immediately adjacent zones are subject to the effects of impounded water, as described in the Historic Properties technical report (Corps, 1994q). Nearly all water-related effects on historic properties are a direct or indirect function of lake level, which determines if a given site is inundated or subject to shoreline erosion.

The long-term potential for erosion at each known site was evaluated based on the monthly water level in each of the three upstream lakes and Lake Sharpe. The index values derived for comparative purposes are inversely related to the number of months the known sites are potentially subject to shoreline erosion forces. The assumption for potential erosive action was that the site had to be within 3 feet above and 5 feet below the water surface of the lake to be affected by the erosive forces. The historic properties index values presented and discussed in this section are, therefore, like other values computed for other resources and economic uses: the higher the value, the less adverse the effect on *known* historic properties on the upper four lakes.

It should be kept in mind that when shoreline erosion forces are diverted to lower elevations in a lake, areas that may not have been intensively surveyed for historic properties prior to lake filling are affected. Undiscovered sites within the lake have already been damaged to some extent by inundation; however, inundated sites are somewhat protected from the adverse effects of shoreline erosion and looting. Lake levels during periods of drought decline further under the CWCP than the other alternatives and thereby protect known sites from shoreline erosion. Alternatives that limit the drawdown of the upper three lakes with additional drought conservation will limit the erosive impact on the *unknown* sites. This is, no doubt, a benefit; however, because only the effect to known historic sites is considered in the historic properties index, these alternatives have a lower historic properties index than the CWCP. Overall, it is difficult to say which alternative is the best plan to follow for the total set of historic properties within the Mainstem Reservoir System.

Water elevations in the two remaining downstream lakes vary little among the alternatives, and no significant change from current conditions is anticipated. Although there are a significant number of historic properties on Lake Sharpe, the adverse effects on historic properties do not vary among the alternatives because of the relatively stable water elevations. Data concerning historic properties along open river reaches are inadequate for general analysis, but unlikely to measurably influence the index values established for the upstream lakes.

Table 5.14-1 presents the average annual total index values for the three upstream lakes and Lake Sharpe. It also includes the average annual values for each of these lakes. The average annual total index value for the CWCP is 5,015. This total is distributed among Fort Peck Lake (2.8 percent), Lake Sakakawea (53.0 percent), Lake Oahe (40.1 percent), and Lake Sharpe (4.1 percent). Figure 5.14-1 shows that the alternatives are grouped between 4,637 and 5,183, a difference of 546 units.

Figure 5.14-1 also shows that the alternatives fall into four clusters. The MLDDA alternative has the highest value, which is 168 units greater than the CWCP value. The next cluster of alternatives are the MRBA, MODC, FWS30, and BIOP alternatives, which have values ranging from 138 to 223 units lower than the CWCP. Finally, the ARNRC alternative has the lowest historic properties index value at 155 units lower than the BIOP alternative, the alternative with the lowest index value of the cluster of alternatives above it in value.

The primary difference between the CWCP and MLDDA alternatives is that the MLDDA alternative decreases the base flood control by 2 MAF. This change results in higher index values for historic properties in the upper three lakes than the CWCP. The ARNRC alternative, with its unbalanced intrasystem regulation, increased conservation during droughts, and a split navigation season, results in a higher historic properties index for Fort Peck Lake and lower index values for Lake Sakakawea and Lake Oahe than the CWCP. The MLDDA alternative results in an overall 3.3 percent increase in the index value for historic properties while the ARNRC alternative results in a 7.5 percent decrease in the index value. This is primarily due to the respective change in index values for Lake Sakakawea and Lake Oahe, which have the most identified sites.

An unbalanced intrasystem regulation and an increase in conservation in the upper three lakes, as

Table 5.14-1. Average annual historic property values for the upper three mainstem lakes and Lake Sharpe (relative index).

	1898 to 1997				
Alternative	**Total**	**Fort Peck Lake**	**Lake Sakakawea**	**Lake Oahe**	**Lake Sharpe**
CWCP	**5,015**	143	2,658	2,011	204
MLDDA	**5,183**	151	2,777	2,051	204
ARNRC	**4,637**	153	2,366	1,914	204
MRBA	**4,877**	139	2,563	1,972	204
MODC	**4,858**	146	2,546	1,962	204
BIOP	**4,792**	152	2,499	1,937	204
FWS30	**4,795**	152	2,508	1,932	204

with the MRBA alternative, results in an overall decrease in the historic property index compared to the CWCP. Lake Sakakawea experiences the greatest decrease (95 units, or 3.6 percent) while Fort Peck Lake experiences the least (4 units, or 2.8 percent). While the CWCP and MRBA alternatives maintain a flat release from Gavins Point Dam during the summer, the MODC alternative extends lower flows on the Lower River into September of many years. This results in an increase in the historic property index for Fort Peck Lake (2.1 percent) and a decrease in the historic property index for Lake Sakakawea and Lake Oahe (4.2 and 2.4 percent, respectively).

The BIOP and FWS30 alternatives would have a similar effect on historic properties in the upper three lakes: there would be higher index values for Fort Peck Lake and lower index values for the two remaining lakes. When compared to the CWCP, both of these alternatives result in the greatest impact on Lake Sakakawea, where there would be a 6.0 and 5.6 percent decrease in the historic properties index values, respectively. The flow modification on the Lower River to create a spring rise and summer low flow appears to be a factor as these two alternatives have a lower total value than the MRBA and MODC alternatives, which have the same level of conservation of water in the lakes during droughts.

The annual values for total historic properties for the alternatives are shown on Figures 5.14-2 through 5.14-4. Generally, all of the alternatives lie within the 3,500- and 5,000-unit range early in the analysis and then, between 1928 and 1933, there is a steady increase to about 7,500 units, resulting in an overall decrease in adverse erosion impacts on historic properties. All of the alternatives plateau at this level for about 10 years before a decreasing trend back to about 3,500 units. The alternatives fluctuate between 3,500 and 7,000 units until about 1988, when there is a general increase to about 7,000 units. The highest values generally occur during the two major droughts, the 1954 to 1961 and the 1987 to 1993 drought. The increased index values during the three periods occur because these are drought periods and the lakes are lowered below many of the known sites.

Five Tribal Reservations are located along the uppermost lakes of the Mainstem Reservoir System, where water level fluctuations may result in impacts to historic properties. Table 5.14-1 allows comparison of how the different alternatives influence historic properties index values for the affected Reservations during the 100-year period of analysis. Changes in historic properties index values are discussed for each Reservation, starting with the Fort Berthold Reservation in North Dakota and proceeding downstream. Further, the analysis does not attempt to address impacts to unknown sites and/or inundated sites.

It should be noted that impacts to Reservations may not necessarily coincide with impacts to the associated Tribes. Historically, the various Tribes used lands in many different locations, not limited by the extent of their current Reservations. Thus, historic sites within the bounds of a particular Reservation may be important to Tribes on other Reservations.

On Fort Berthold Reservation, the least impact to historic properties occurs under the MLDDA alternative, which has the highest historic property index values at Lake Sakakawea (Table 5.14-1). Compared to the CWCP, the MLDDA alternative results in a 4.5 percent increase in the index value at Lake Sakakawea. The other five alternatives all have lower index values, ranging from 3.6 percent (MRBA) to 11.0 percent (ARNRC) below the CWCP.

Standing Rock and Cheyenne River Reservations, located on Lake Oahe, face the lowest risk to historic

properties under the MLDDA alternative (Table 5.14-1). The CWCP, at 2,011, has the second-highest historic property index value of all the submitted alternatives. Values under the remaining five alternatives range from 1.9 percent (MRBA) to 4.8 percent (ARNRC) below those of the CWCP

Lower Brule and Crow Creek Reservations, which are located on Lake Sharpe, show no change in the historic properties index under any of the submitted alternatives (Table 5.14-1). This is likely because none of the submitted alternatives has a significant effect on water level fluctuations in Lake Sharpe, compared to the CWCP.

Fort Berthold Reservation is located on Lake Sakakawea. The CWCP has an historic property index of 2,658 at Lake Sakakawea, the highest of the alternatives considered in detail. The MCP results in a decrease of 3.8 percent from this value, while the GP options result in even greater drops. The greatest decrease from the CWCP (and thus the greatest increase in risk to historic properties) occurs under the GP2028 option (8.5 percent), while the smallest decrease among the GP options occurs under GP1521 (7.6 percent).

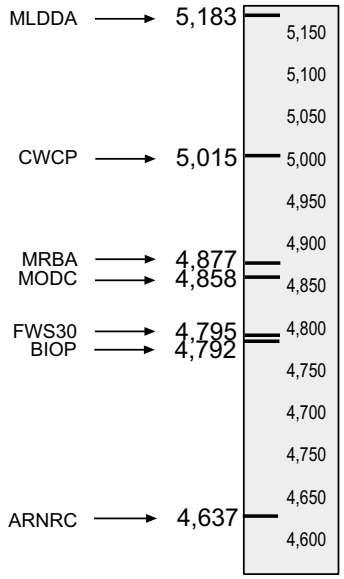

Figure 5.14-1. Average annual historic properties values for Fort Peck Lake, Lake Sakakawea, Lake Oahe, and Lake Sharpe for the submitted alternatives.

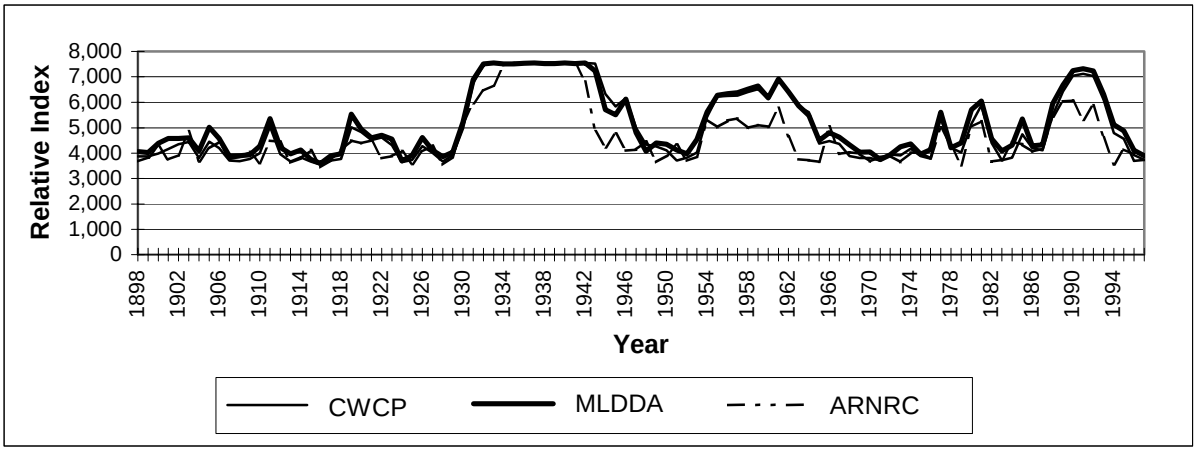

Figure 5.14-2. Average annual values for historic properties for alternatives CWCP, MLDDA, and ARNRC.

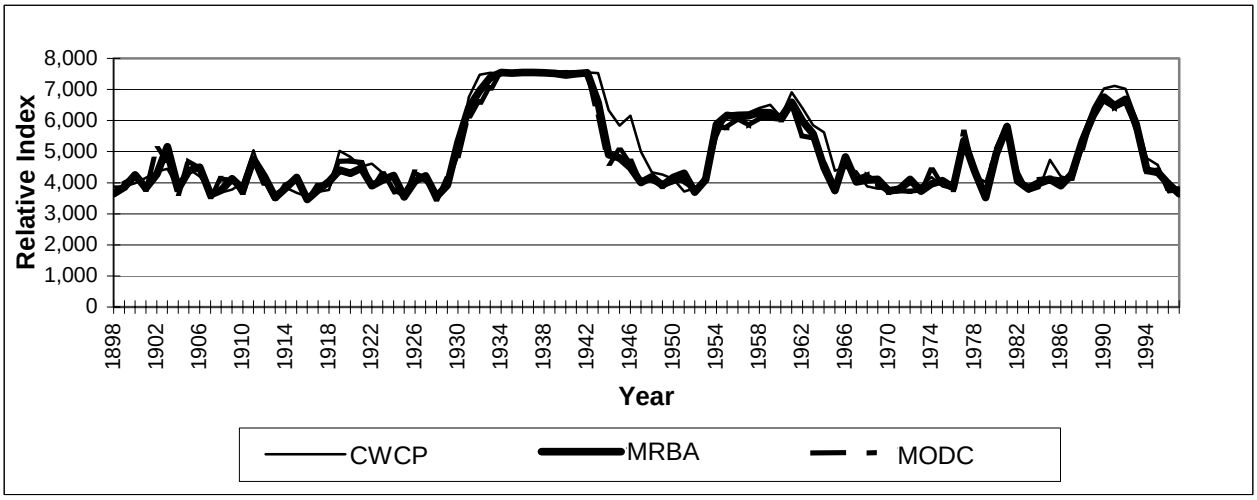

Figure 5.14-3. Average annual values for historic properties for alternatives CWCP, MRBA, and MODC.

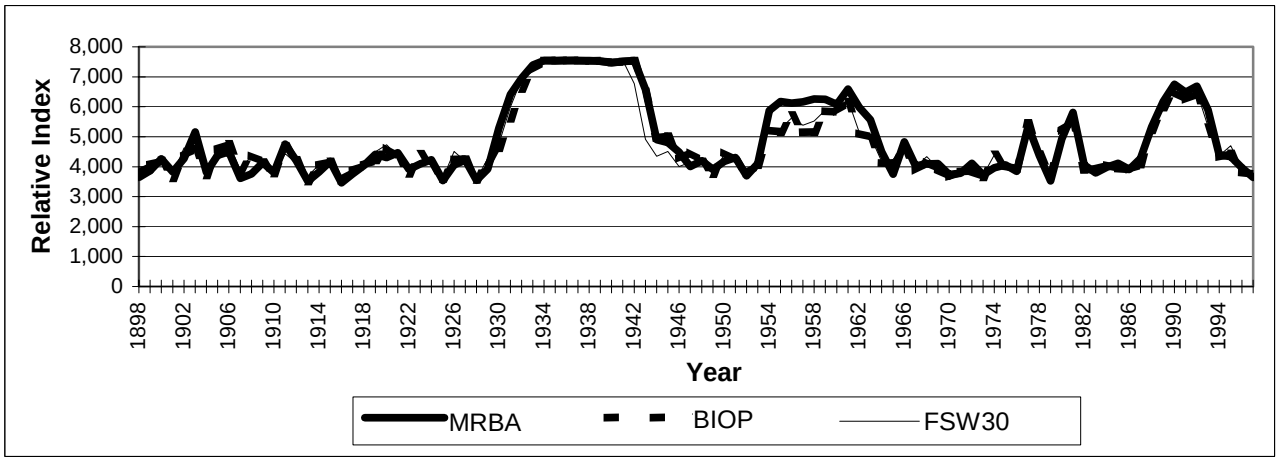

Figure 5.14-4. Average annual values for historic properties for alternatives MRBA, BIOP, and FWS30.