United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
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WYFO/Depletions

Memorandum

To: Deputy Field Supervisor, U.S. Fish and Wildlife Service, Wyoming Ecological Services Field Office, Cheyenne, Wyoming

From: Section 7 Coordinator, U.S. Fish and Wildlife Service, Wyoming Ecological Services Field Office, Cheyenne, Wyoming

Subject: Calculating Annual Depletion Amounts for Colorado River and Platte River Water Depletion Consultations

This memo describes the process used by the Wyoming Ecological Services Field Office to calculate depletion amounts (in acre-feet per year) for Colorado River and Platte River consultations involving water depletions. The process described herein is retroactive to October 1, 2013, for Colorado River depletion consultations and January 1, 2014, for Platte River depletion consultations.

When the Colorado River and Platte River Recovery Programs were established, the process for interagency consultation under the Endangered Species Act of 1973, as amended (ESA) 16 U.S.C. 1531 *et seq.*, was primarily intended for large irrigation projects, where the annual water depletions were hundreds to thousands of acre-feet per year and the amount remained fairly consistent through time. Likewise, depletions for other project types such as municipal uses and some mining operations are long term and relatively consistent through time. For projects with a consistent water use year after year, our section 7 consultations assume the depletions continue indefinitely.

Over time, we applied this same approach to projects of limited duration, such as oil and gas field developments, and we started using "life of the project" to calculate water depletions. Historically, the build-out of these projects extended over many years, and the amount of water used year to year was often anticipated to be relatively constant. In these cases, we calculated the average annual depletion by dividing the total water use by the number of years the project would be in operation (i.e., the life of the project). Even though the amount of water used on an annual basis might vary between years, this process allowed us to average the impact of

depletions from numerous projects occurring through time. In addition, the amount of annual variation, particularly for smaller projects, was swamped by the natural variation in flows.

In recent years, the pace of development and the use of water have become more skewed towards the beginning of projects, instead of spread over many years. For example, advances in technology allow oil and gas wells to be drilled at a faster rate and allow production from those wells to extend over a longer timeframe; therefore, the majority of water use occurs during the first few years of the project. Other examples include wind projects and transmission lines, where the majority of water use occurs during the first few years of the project during construction rather than occurring over the 30 or 50 years that the infrastructure is in operation. In these cases, effects to listed species and their critical habitat no longer occur over the long-term but instead occur during the shortened interval in which the water is used.

Therefore, for both Colorado River and Platte River depletion consultations, we will **calculate the amount of water depletion based on the time when the water is actually used**. In some cases, this means we will consult on the peak amount in a given year if the water use varies substantially from year to year (Table 1). By emphasizing the period of time in which the water is actually used, we can more accurately evaluate effects to listed species over a wider range of development scenarios. One consequence of this new approach is that the depletion amounts will increase for most projects; however, based on a review of recent consultations, we do not anticipate an increase in the number of depletions exceeding 100 acre-feet per year. In addition, this new approach will not affect programmatic biological opinions, because the depletions will only count against the thresholds or caps during the actual time of use.

If you have questions or concerns regarding the calculation of annual depletion amounts, contact Nathan Darnall at the letterhead address or phone (307) 772-2374, ext. 246.

Table 1. Examples of how to calculate an annual depletion amount (acre-feet, AF) under a variety of scenarios.

Project Example	Life of Project	Water Use	Time of Use	Annual Depletion	Basis of Calculation
Irrigation	Indefinite	1000 AF (per year)	Indefinite	1000 AF	Yearly
Stock Pond	Indefinite	30 AF (per year)	Indefinite	30 AF	Yearly
Mining	50 years	10 AF (per year)	50 years	10 AF	Yearly
Transmission	50 years	300 AF (in total)	3 years	100 AF	Average Annual
Oil and Gas Field	30 years	100 AF (in total)	10 years	10 AF	Average Annual
Oil and Gas Field	30 years	5, 50, 5 AF (per year)	3 years	50 AF	Peak Use