

## Information Item

### **Report on Long-Term Operations Biological Opinions Annual Reviews**

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**Summary:** Staff will brief the Council on how annual independent science panel reviews have been used to inform changes to the way that actions to protect several fish species in the Delta required by the Long-term Operations Biological Opinions (LOBO) are implemented. This briefing will also include a panel of knowledgeable agency experts who will provide specific examples of how implementation of required actions have been adjusted based on the science reviews.

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### **Background**

During the December 2015 Council meeting, Dr. Cliff Dahm briefly described the 2015 LOBO annual review as part of his Lead Scientist's Report, prompting the Council to request more information on how these reviews have been used to affect changes to how agencies implement these regulatory requirements. Today's presentation explores how best available science can be used on an ongoing basis to inform and change management actions. To illustrate this, panelists will provide specific examples where a LOBO required action was modified based on a recommendation or comment from the independent science review panel.

The Council's Delta Science Program has convened the LOBO annual review each year since 2010. These reviews are called for in the National Marine Fisheries Service's (NMFS) biological opinion regarding operation of the State and federal water projects to protect salmon, steelhead, and sturgeon but were expanded to consider implementation of the U.S. Fish and Wildlife Service (USFWS) biological opinion for Delta Smelt.

The intent is to inform NMFS and USFWS about the efficacy of the prior year's water operations and regulatory actions prescribed by their respective LOBO Reasonable and Prudent Alternatives (RPA), with the goal of incorporating new science and making appropriate and scientifically justified adjustments to future implementation of the RPAs. The RPA is the heart of the Biological Opinion (BO) containing the regulatory requirements for the project. For example, restrictions on when and how often Delta Cross Channel gates can be open are a requirement of the NMFS BO to protect juvenile salmon. The independent science panels' reports, posted on the Council's website, respond to general and specific questions about implementation of LOBO RPA required actions.

The LOBO requirements, including the annual independent scientific review, are for compliance with the Endangered Species Act. As such, they are intended to protect federally listed species that are threatened or endangered. These include Winter Run Chinook Salmon, Spring Run Chinook Salmon, Central Valley Steelhead, Green Sturgeon, and Delta Smelt. Since the subject BOs affect operations of the State Water Project and the federal Central Valley Project, the LOBO annual review has also had an effect on management of the State's water supply.

Changes to LOBO requirements are proposed by the agencies for review by the independent scientific review panel or have come from the panel itself. Starting in 2012, the scope of the annual review was narrowed to focus on issues that arose during the water year, rather than request a review of the entire operations of the Central Valley Project/State Water Project. This change re-centered the focus of the annual review on the most pressing and adaptive issues confronting the agencies' implementation of the RPAs. Input from the independent review panel has been important in supporting agency decisions about adaptively implementing required actions.

The required LOBO actions span nearly the entire Bay-Delta system and its watersheds. RPA actions assessed as part of the LOBO review extend from above Lake Shasta to the southern Delta pumps and address a wide variety of water and ecosystem issues. The independent review panel has weighed-in on topics ranging from temperature management in Clear Creek near Redding, California to Delta Smelt mortality in the southern Delta. A few examples of specific independent scientific review panel recommendations and how those recommendations have changed implementation of the RPA actions will be presented.

### **Today's Briefing**

Representatives of the key agencies overseeing implementation of the LOBO requirements will provide information about how these expert reviews have been instrumental in making scientifically supported changes to the RPA actions. The agency representatives will provide examples of how independent science panel comments and recommendations provided the basis for management changes. These are also examples of how similar regulations can be flexibly implemented, allowing for changes based on new scientific information. The BOs incorporate the basic elements of adaptive management including requirements for implementation of specific restoration actions, monitoring and research, evaluation of the results (including the LOBO annual review), and the ability to respond through adjustments to implementation of RPA required actions.

The panel will include representatives of NOAA Fisheries and the U.S. Fish and Wildlife Service.

### **Fiscal Information**

Not applicable.

### **List of Attachments**

No attachments.

### **Contact**

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