STAFF REPORT

Meeting Type:	Watershed Committee/Board of Directors
Title:	Watershed Biodiversity, Fire, and Fuels Integrated Plan Landbird Study
From:	Shaun Horne, Director of Watershed Resources
Through:	Ben Horenstein, General Manager
Meeting Date:	June 12, 2025

TYPE OF ITEM: Approve X Review and Comment

RECOMMENDATION: Review and comment on the presentation from Point Blue Conservation Science on landbird monitoring report

SUMMARY: In October of 2019, the District adopted the Biodiversity, Fire, and Fuels Integrated Plan (BFFIP), which describes the actions the District will implement to reduce wildfire hazards and to maintain and enhance ecosystem functions on District watershed lands. To better understand BFFIP vegetation treatments and response of local landbirds, the District contracted with Point Blue Conservation Science in 2024 to evaluate short-term landscape-scale bird community changes attributable to nearby BFFIP vegetation treatments. The Watershed Committee will receive a presentation from Point Blue Conservation Science on the results of their 2025 'Bird response to vegetation management actions of Marin Water's Biodiversity, Fire and Fuels Integrated Plan', which will help inform BFFIP actions on the Mt. Tamalpais Watershed.

DISCUSSION: The landscape of Marin County has changed over the past 150 years due to factors like disease (e.g., Sudden Oak Death), the spread of invasive species, and a reduction in the frequency and acreage of fire. These altered habitats can increase the risk of larger and more severe fires. Marin Water's Biodiversity, Fire, and Fuels Integrated Plan (BFFIP) aims to minimize risks from wildfire, preserve and enhance significant biological resources, and provide an adaptive framework for periodic review and revision. The vegetation management actions outlined in the BFFIP have the potential to influence biodiversity on Marin Water lands, and long-term monitoring helps the District understand the response of flora and fauna to stewardship actions.

In the 'Bird response to vegetation management actions of Marin Water's Biodiversity, Fire and Fuels Integrated Plan' (BBFIP Response) report, Point Blue evaluated short-term landscape-scale changes in the breeding landbird community on Marin Water lands. Point Blue used point count data from their ongoing long-term landbird monitoring program to analyze metrics of the bird community (overall bird abundance, species richness, and individual species abundance for 27 focal species within 50 m of each bird survey point), before BFFIP establishment (2019) and after (2022) in control areas with no vegetation management, as compared to areas with one of 4 major vegetation treatment categories:

1) Non-native Understory Removal, 2) General Understory Removal, 3) Douglas Fir Thinning, and 4) Mixed Layer Fuels Reduction. Because the treated proportion of the area within 50 m of each bird survey point was less than 100%, the results of this analysis represent evidence for a significant difference in the bird community in response to the mean treatment extent, which varied by treatment (range of means 19-72%). Point Blue analyzed data in a Bayesian framework, which allowed them to evaluate the probability of a positive or negative effect and distinguish a lack of effect from an uncertain response.

Point Blue found no evidence of significant negative effects of any of the 4 treatment categories on the local bird community abundance or species richness between 2019 and 2022, and no evidence of a widespread negative response across the study area since BFFIP was implemented. Instead, results suggest neutral or possible positive responses of the overall bird community abundance and species richness to the treatment categories analyzed. Specifically, Point Blue found possible positive responses of community abundance and species richness to Douglas Fir Thinning, and of species richness to Mixed Layer Fuels Reduction, but no large effect of the Non-native and General Understory Removal treatments on community metrics, despite having sufficient precision to detect a large effect.

The responses of individual species were complex and varied among treatments and habitat guilds. Point Blue detected more positive individual species responses to Douglas Fir Thinning than negative responses, a relatively even split of positive and negative responses across species for the Non-native Understory Removal and Mixed Layer Fuels treatment categories, and more negative than positive responses to the General Understory Removal treatment category. By habitat guild, Point Blue detected more positive responses for species affiliated with conifer/mixed hardwood habitat and species affiliated with multiple forest types, and more negative responses to treatments for species associated with oak woodland or scrub/chaparral habitats. However, due to limited sample sizes, Point Blue's results were uncertain for many individual species' response to each treatment, and of the 13 species for which they were able to estimate a response to more than one treatment category, 7 (54%) had opposing responses to different treatments.

Although short-term, these results provide the first insights into BFFIP treatments and response of the local breeding landbird community, which provides important insights into the effects of forest stewardship treatments on birds in Marin County. As efforts continue across California to reduce fuels and the risk of catastrophic wildfires, it is important to evaluate how species respond to different treatments. This type of data supports the District's adaptive management approach associated with scaling up and increasing the pace of BFFIP stewardship work. The initial results from this study will be used to inform future BFFIP vegetation management planning efforts.

ENVIRONMENTAL REVIEW: Not Applicable.

FISCAL IMPACT: None

ATTACHMENT(S): None.