Fish

page 3.2-27 (pdf 152)

> Special-status species were targeted based on records obtained from the CNDDB, CNPS, and USFWS, and by verbal communication with CDFW personnel. Special-status surveys targeted species that were identified as having the potential to occur, that have been recorded within a 5-mile radius, or that are known from specific habitat types on the project site. The original Biological Resources Assessment (WRA, Inc., 2007a) is included in Appendix M. Queries were updated in July 2013 and are included in Appendix I. The target species summary list is shown in Table 4.2-3. Species that do not have suitable habitat onsite were dismissed from consideration. Locations of special-status species mapped within the project site are provided in Figure 4.2-3.
>
> Two federally listed critical habitats – critical habitat for Central Valley spring-run chinook and critical habitat for the Central Valley fall/late fall-run chinook – were also dismissed from the list, as they do not occur onsite. Drainages on the project site do not provide habitat for listed fish species such as steelhead and Chinook salmon, therefore focused surveys for fish were not conducted. Capell Creek drains north to Lake Berryessa. Milliken Creek flows southeast and into Milliken Reservoir, a water source for the City of Napa. The dams for Lake Berryessa and Milliken Reservoir present barriers to upstream migration of anadromous fish.

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> Impact 4.2-15: Development of the Proposed Project would have the potential to affect special status aquatic species. This is a potentially significant impact. However, after implementation of mitigation measures to protect other aquatic resources and animals, impacts will be less than significant.
>
> Fish are known to occur in Capell Creek and in Milliken Creek both upstream and downstream of Milliken Reservoir. Although the intermittent and ephemeral streams present on the project site do not provide suitable habitat for special status fish, they do provide habitat for other aquatic species. Other than the small stretches of stream that would be modified for stream crossings, which is mitigated in Mitigation Measure 4.2-4, the Proposed Project would not modify the physical conditions of any streams on the project site.

Runoff

Over the last 10 years, environmental organizations[1] in Napa County have repeatedly demonstrated, to Napa County in comments on previous vineyard conversions projects, and in comments to the San Francisco Bay Area Regional Water Quality Control Board on the

[1]The Sierra Club and Earth Defense for the Environment Now ("EDEN").

Napa River Sediment TMDL, that implementing projects in compliance with the Conservation Regulations may cause significant, adverse sediment impacts on the Napa river watershed. The principal mechanism causing this harm is the installation of engineered drainage facilities to reduce surface erosion. These facilities have the unintended consequence of routing rainfall off the site more efficiently, thereby increasing the amount of downstream runoff. The increased runoff, in turn, causes downcutting of the stream beds (also known as channel incision) which both directly moves more sediment downstream, and causes stream banks to collapse and add their sediments to the stream flow as well.

These organizations retained the services of experts in the field, including Dr. Robert Curry,[2] to comment on a number of vineyard conversion projects in the Napa River watershed and the Erosion Control Plans ("ECPs") prepared by vineyard owners pursuant to the Napa County Conservation Regulations.[3] These experts consistently found that the ECPs do not accurately evaluate or adequately mitigate impacts associated with increases in runoff from the changes in land use attendant to vineyard conversions. Again, the problem is that the focus of the ECPs used in the Napa County program is to reduce surface erosion, and the methods used to do so, including cross-slope ditches, drop inlets and underground pipes, concentrate and rout rainfall off of the property as quickly as possible before it can erode the surface.[4] The result is to *increase* the rate of runoff and peak discharge to tributary streams, causing channel incision, which causes destabilization of stream and river banks which then collapse and contribute additional sediment to the streams system. This in turn lowers stream and river beds, separating the channels from their natural flood plain, which has many diverse and well-documented negative impacts on the riparian environment. (Exhibit 4, pp 9-10 [AR 710-711.)

As explained by Dr. Curry in his review of the Conservation Regulations in 2000:

> The approach of the Napa County ordinances is fundamentally incorrect and cannot protect either public health and safety or long-term land productivity. The existing ordinances seem to assume that by attempting to capture sediments from upland vineyard conversion areas, downstream cumulative effects are reduced to insignificance. This is not correct. Increased upland sediment yields, while important, are less hazardous to Napa Valley than are the changes in runoff timing, volumes, and rates. Increased runoff does have cumulative downstream effects through changes in rates of runoff and frequency of runoff events of a given magnitude. These changes are likely to be a significant factor in changing sediment loads in the main Napa River

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[2]Dr. Curry's credentials are set forth in Exhibit 3.

[3](See, e.g., AR:8828-9051, 9426-9442.)

[4](See AR:10351-52.)

through changes in stability of its side tributaries.

(Exhibit 1, p. 2 [AR 8930].)

As explained by Dr. Curry in his comments on the Napa River Sediment TMDL, erosion control measures approved by the County and implemented in compliance with its Conservation Regulations have not been able to reduce surface erosion without simultaneously causing peak flow increases that lead to sedimentation caused by channel incision:

> [M]y prior extensive reports and analyses of specific conversion projects in Napa County have all demonstrated that you cannot simultaneously reduce sediment yield with engineering structures and flow routing while maintaining or reducing peak flow runoff. [...] In my opinion, it may be possible to implement the TMDL and meet its goals with local control, but that has not been demonstrated to date and the bulk of the evidence suggests that in the specific case of Napa County, there is an entire land-use engineering industry that has not been able to deal with impacts of peak flow increases associated with land conversions.
> The source-area erosion control technology promoted by the consultant community in Napa County is good and seems to be improving through time. But the engineering solutions for headwater source-area sediment yield reduction and/or local capture of sediments almost invariably result in greater off-site, downstream, concentration of runoff that then leads to bank and streambed erosion to balance sediment load with the increased stream power. It seems that recommendations for more and larger-capacity on-site runoff detention are largely ignored in favor of reduced sediment concentration in that runoff.

(Exhibit 2, p. 1 [AR 9563 [emphasis added].)

As explained by Dr. Curry, the contribution of increased runoff from installation of engineered drainage facilities designed to bring new vineyards into compliance with the Napa County Conservation Regulations is cumulatively significant"

> The recommended structural drainage facilities such as culverts, lined ditches, and drainage facilities such as culverts, lined ditches, and drainage channels as applied over large areas of Napa Valley will reduce sediment input from uplands but will exacerbate off-site channel and stream-bed erosion through increased yield of runoff. The public and the fish in the Napa River are directly impacted by the cumulative downstream impacts of increased frequency and duration of flood flows in the main river and its primary tributaries.

(Exhibit 2, p. 3 [AR 9565].)

The Regional Board concurred with Dr. Curry that increased runoff from vineyard development is causing significant increases in sediment supply to the Napa River, stating:

> We concur that increased runoff from vineyard development is causing significant increases in sediment supply to the mainstem Napa River through enlargement of headwater channels, gully formation, and associated shallow landslides.

(Exhibit 5, p. 55-56 [AR 515-516].)

Indeed a Regional Board staff memorandum Board acknowledges that erosion control measures on hillslope vineyards cause stream channel erosion:

> Where engineered drainage systems are used on hillslope sites to capture sheetflow and discharge it through subsurface drainage pipes, and where these same vineyards are developed on soft sedimentary bedrock and/or were forested prior to development, we often found that storm runoff from vineyards was concentrated in time and/or space, appearing to contribute to active bed and bank erosion in headwaters channels at or near the point(s) of discharge from the vineyard.

(Exhibit 6 [AR 3875] [emphasis added].)

The Regional Water Board final Staff Report for the TMDL also discusses channel incision, stating:

> We hypothesize that the current episode of channel down-cutting (channel incision) is in response to the following disturbances including: a) a suite of direct alterations to the river channel and/or its floodplain (e.g., levee building, channel straightening, filling of side channels, removal of debris jams, historical gravel mining, and dredging); b) construction of four large tributary dams between 1939 and 1959 that capture runoff and coarse sediment delivered from approximately 20 percent of the land area in the watershed; and c) land-cover changes that have increased peak flows in the river (e.g., vineyards, rural residences, commercial buildings, and roads). Each of the above actions may contribute to down-cutting either through increasing the capacity of the river to transport sediment or by decreasing its supply of coarse sediment (e.g., tributary dam construction).

(Exhibit 4, p. 39 [AR 740].)

Similarly, the Regional Board Staff Report identifies historical factors; "watershed development" in general, and direct channel alterations as the causes of channel incision, stating:

> As the watershed was developed, upslope disturbances of vegetation and soil likely increased runoff rates and sediment input to channels. These historical and recent impacts, in combination with direct alterations of channels and adjacent flood basins, have destabilized channels where they traverse alluvial fan and valley deposits. This has led to active and rapid channel down-cutting and accompanying bank erosion that is widespread along Napa River and lower reaches of many of its tributaries today.

(Exhibit 4, p. 17 [AR 1718]

The Regional Board Environmental Document for the Napa River Sediment TMDL further states that

> "[a] suite of management actions have likely caused or contributed to channel incision, including (but not necessarily limited to): levee building, large tributary dams, straightening of some mainstem channel reaches, filling of side channels, historical gravel mining, dredging to reduce flood risk, and intensive removal of large woody debris."[5]

(Exhibit 4, p. 91 [AR 792].)

List of Exhibits

1. Napa Valley Hillside Vineyards: Cumulative Effects of Conversion of Upland Woodlands and Chaparral to Vineyards; Robert Curry Ph.D.; December 24, 2000. [AR 8829-8940; pdf 8946-8957.]

2. Letter dated May 7, 2008 from Dr. Robert Curry Ph.D. to Thomas Lippe re Napa River Watershed Sediment TMDL and Habitat Enhancement Plan. [AR 9563-9565; pdf 9580-9582.]

3. Dr. Robert Curry, Curriculum Vitae. [AR 8871-8874; pdf 8888-8891.]

4. Napa River Sediment TMDL and Habitat Enhancement Plan, Final Staff Report, San Francisco Bay Area Regional Water Quality Control Board, September 16, 2009. [AR 1577-1737; pdf 1594-1754.]

5. Excerpts from Responses to Comments on Napa River Sediment TMDL and Habitat Enhancement Plan, San Francisco Bay Area Regional Water Quality Control Board, , January 16, 2007. [AR 458, 515-516; pdf 476-533.]

6.

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[5] See also Exhibit 4, p 51 [AR 752] ("Almost all incision is found to be anthropogenic based on the very high estimated rate [of incision], and initiation during historical period, which is coincident with a period of intensive levee building and dam construction, filling of flood basins adjacent to channels, navigational dredging, intensive removal of debris jams, and historical gravel mining and channel straightening.").