

Appendix 1-A

Delineation of Elk River Waterbodies

The delineation of the Elk River into these distinct waterbodies was based upon predominance of land use, location of sediment sources, and extent of beneficial use impairment. The analysis resulted in the following waterbody delineations:

- Upper Little South Fork Elk River;
- Upper Elk River; and
- Lower Elk River, (which includes Lower Mainstem Elk River and Martin Slough).

The delineation of the Elk River watershed into these three waterbodies is presented in Figure 3.

Upper Little South Fork Elk River Waterbody

As part of the TMDL development process, the Upper Little South Fork Elk River portion of the watershed was selected as a reference waterbody due to the unmanaged old-growth redwood forest characteristic present throughout much of the subbasin (Headwaters Forest Reserve). Staff assumes that the past, present and reasonably foreseeable sediment loads and instream conditions are representative of natural conditions. The TMDL analysis indicates that onsite beneficial uses of water are not impaired, water quality objectives for sediment are achieved in the subbasin, and that the existing sediment discharge rate from this subbasin does not contribute to the impairment of beneficial uses lower in the watershed. As a result of this analysis Regional Water Board staff has propose that the Upper Little South Fork be removed from the 303(d) list of impaired waterbodies.

Upper Elk River Waterbody

The Upper Elk River portion of the watershed is predominately forested and has been historically managed for industrial timber harvest production. Some agricultural land use and light density rural residential uses are also present within this portion of the watershed. The Upper Elk River includes areas with documented sediment discharge sites associated with industrial timber harvest operations and reaches of impaired beneficial uses of water, including but not limited to, adverse impacts to domestic and agricultural water supplies and cold water fisheries habitat, and the existence of nuisance conditions caused by increased frequency and magnitude of overbank flood events. The Regional Water Board has focused significant regulatory and non-regulatory efforts within the Upper Elk River to control the sediment discharges and address beneficial use impairment and nuisance flooding. The Upper Elk River was delineated to include all areas within the upper 17 subbasins (Figure 2, areas 4 to 17) where industrial timber harvesting

is the dominant land use. The downstream boundary of Upper Elk River waterbody was defined to include:

- Portions of the Lower Elk River subbasin that are zoned for industrial timber harvest production
- Parcels which rely on Elk River for agricultural and/or domestic water supplies; and
- Parcels, other than those zoned exclusively for agriculture that are within the 100-year floodplain (FEMA, 1987).

The downstream boundary of the Upper Elk River waterbody was established because the area upstream of that location includes the industrial timberlands from which the discharge of sediment has been document and cleanup activities are underway measures to the most impacted reaches of Elk River, the middle reach where flooding is most well documented to impact neighborhoods, and including those properties dependent on the river for domestic supply.

The TMDL analysis indicated that the sediment sources from the Upper Elk River have and continue to play a significant role in the impairment of the Elk River and as such staff focused efforts to develop a TMDL for this upper portion of the watershed.

Lower Elk River

Land use in the Lower Elk River portion of watershed is comprised of areas dominated by rural and urban residential use as well as areas predominantly in agricultural use. Water supplies are generally served by the Humboldt Community Services District or individual off-river systems. Fisheries habitat and utilization and general water quality conditions relative to sediment loading are not well documented in Lower Elk River. Unlike in Upper Elk River, Regional Water Board staff has not documented changes in the frequency and magnitude of overbank flooding as a result of sediment discharge. The Humboldt County General Plan Update Draft¹ (March 19, 2012) projects that urban residential development is projected to increase in the Martin Slough and western portion of the Lower Elk River in the near future. Changing land uses can significantly affect the quantity of municipal and industrial stormwater discharges which in turn affect sediment discharge. Regional Water Board staff anticipates that within the next year these rapidly urbanizing portions of the Elk River watershed, as appropriate, will be incorporated into the state-wide general stormwater permit being developed by the State Water Board. More information on the State Water Board's Municipal Phase 2 Stormwater Program is available at:

http://www.waterboards.ca.gov/water_issues/programs/stormwater/municipal.shtml

The dominant agricultural uses in the Lower Elk River include livestock grazing and dairy operations. The Regional Water Board staff anticipates the State Water Board will take the lead in development a state-wide livestock grazing program within the

¹ <http://gis.co.humboldt.ca.us/Freeance/Client/PublicAccess1/index.html?appconfig=podgis4> (accessed February 13, 2013).

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next five years. In 2011, the Regional Water Board adopted a region-wide dairy program to address and prevent discharges of waste from permitted dairies (Order Nos. R1-2012-0001, R1-2012-0002, R1-2012-0003). More information on the Regional Water Board's dairy program is available at:

http://www.waterboards.ca.gov/northcoast/water_issues/programs/dairies/.

In addition to the different land uses and impairments within the Lower Elk River, the topography and the geologic formations vary from the Upper Little South Fork Elk River and Upper Elk River waterbodies. The lower most three subbasins encompass the valleys along mainstem Elk River and Martin Slough. The Lower Elk River portion of the watershed includes the majority (76%) of lands with less than five percent hillslope gradient and a little less than half (42%) of the streams with less than one percent gradient. The geologic formations in this waterbody are relative recent, unconsolidated deposits compared to the formations present in the upper portions of the watershed leading Regional Water Board staff to assume these formations will likely exhibit different patterns of erosion than the generalized rates developed for use in the Upper Elk River and Upper Little South Fork Elk River waterbodies.

These considerations led staff to propose the use of alternative regulatory tools to address the discharge of sediment from this portion of the watershed. By providing adequate justification and assurance to USEPA that existing regulatory programs are expected to result in the attainment of water quality standard within a specified time frame, the development of the technical components of a TMDL can be avoided. This approach will allow staff and stakeholder resources to be focused on the development/revision of regulatory programs needed to meet that assurance.

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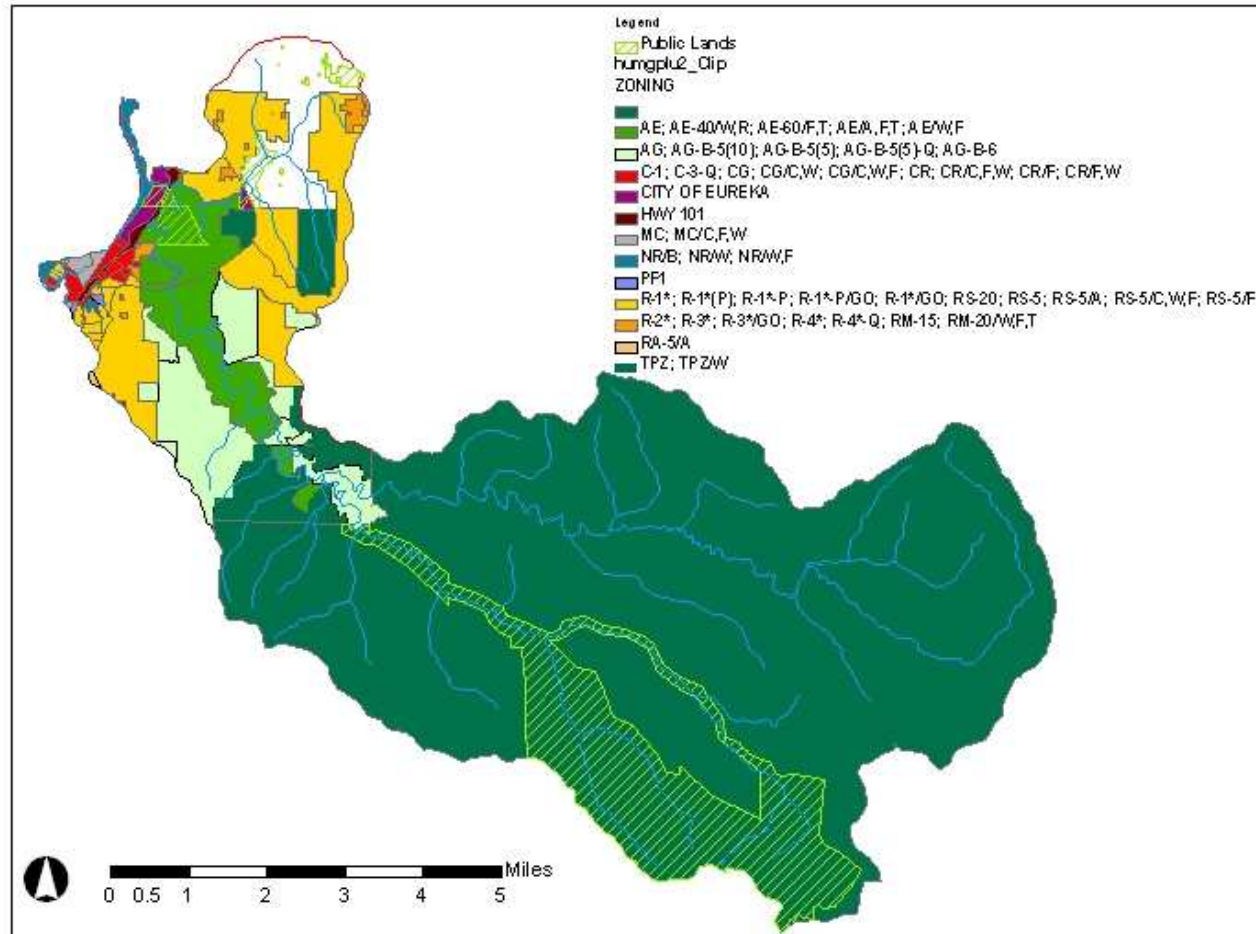


Figure 1. Land use Zoning in the Elk River watershed (This map to be replaced with an update).

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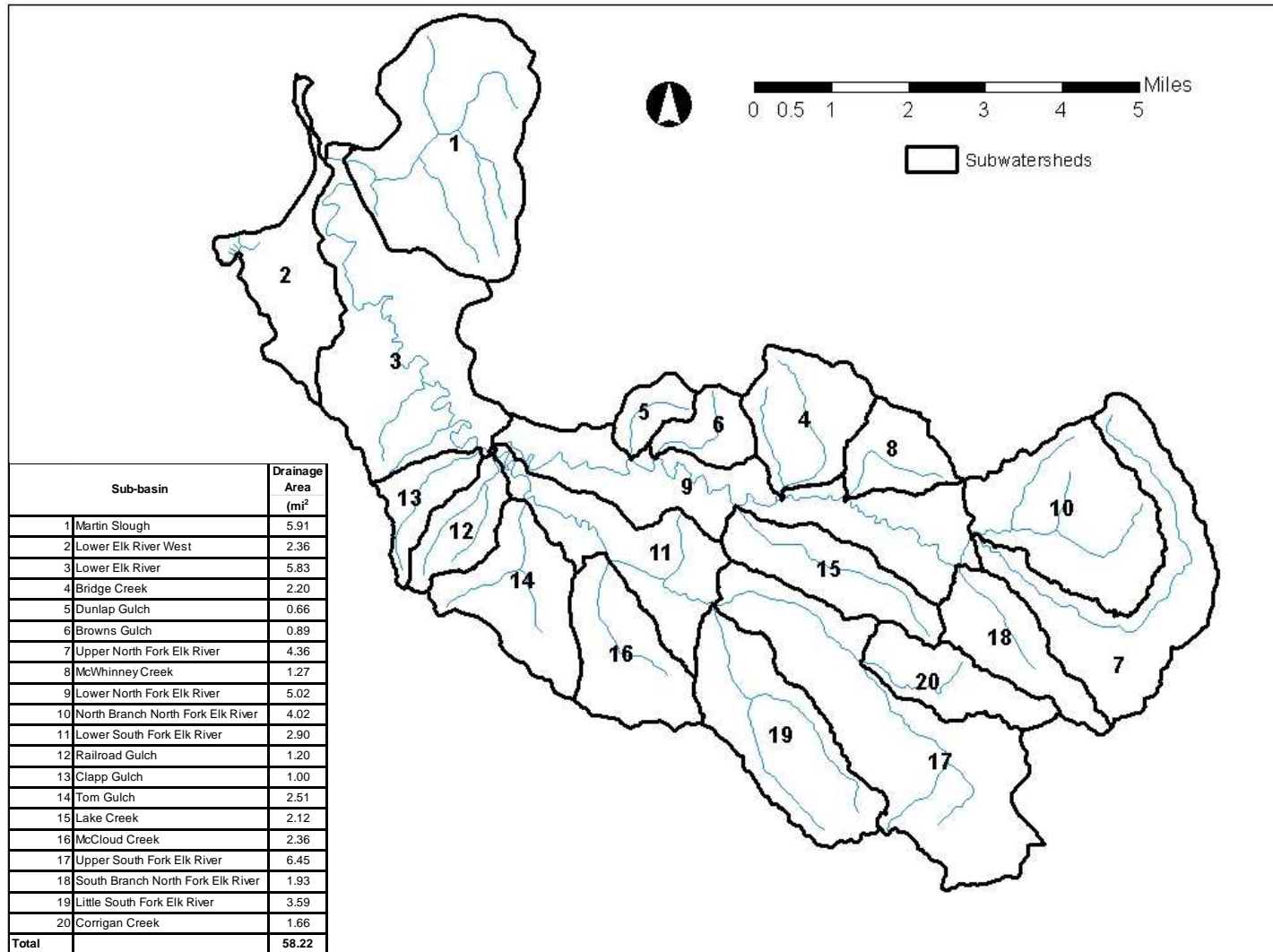


Figure 2. Subbasins in the Elk River Watershed.

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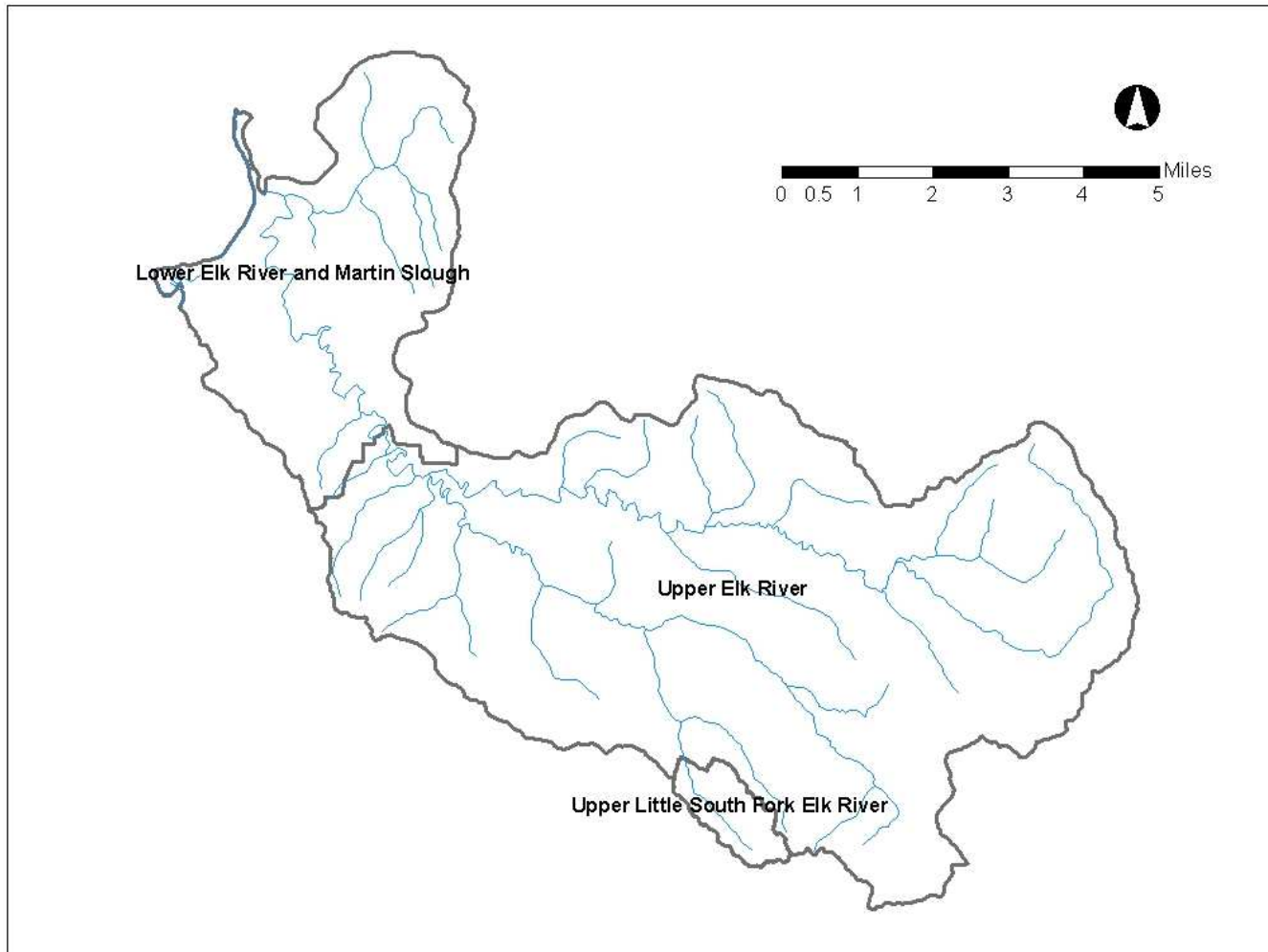


Figure 3. Delineation of waterbodies in the Elk River watershed.