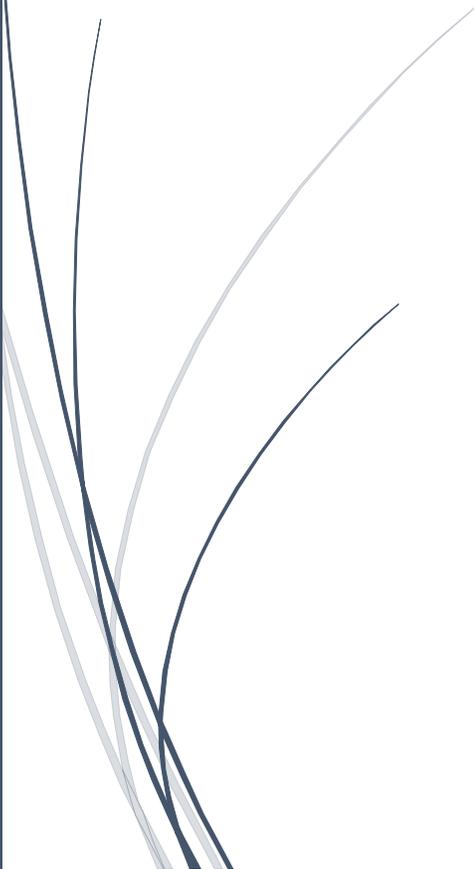




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Quantifying Development in the Silver Lake Watershed

Parcel changes from 2001 to 2021



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Introduction

Silver Lake is a shallow, warm water lake in Southwest Washington located between the towns of Castle Rock and Toutle. The Silver Lake watershed encompasses approximately 26,000 acres with the topography of a depression, characterized by the lake, surrounded by rolling hills. Elevation ranges from 486.5 feet at the crest of the containment structure to 2500 feet at the watershed divide in Hemlock Creek. Eighty percent of the watershed lies to the south of the lake. Streams feeding the lake include Hemlock Creek (38% of the watershed), Sucker Creek (14% of the watershed), and numerous unnamed tributaries (Moore, 1990). This paper aims to help answer the question, “What has changed in the watershed in the last twenty years?”

The common perception of the Silver Lake area is that it is a thriving tourist destination for families and retirees, and that it is experiencing a moderate rate of development. The lake itself is experiencing accelerated eutrophication, most likely due to increasing human influence. In order to characterize the development within the watershed, a survey of parcel classifications was completed comparing the number of parcel categories in 2001 to those in 2021. Figure 1 below that shows the outline of the watershed in purple, and the individual parcels in blue:

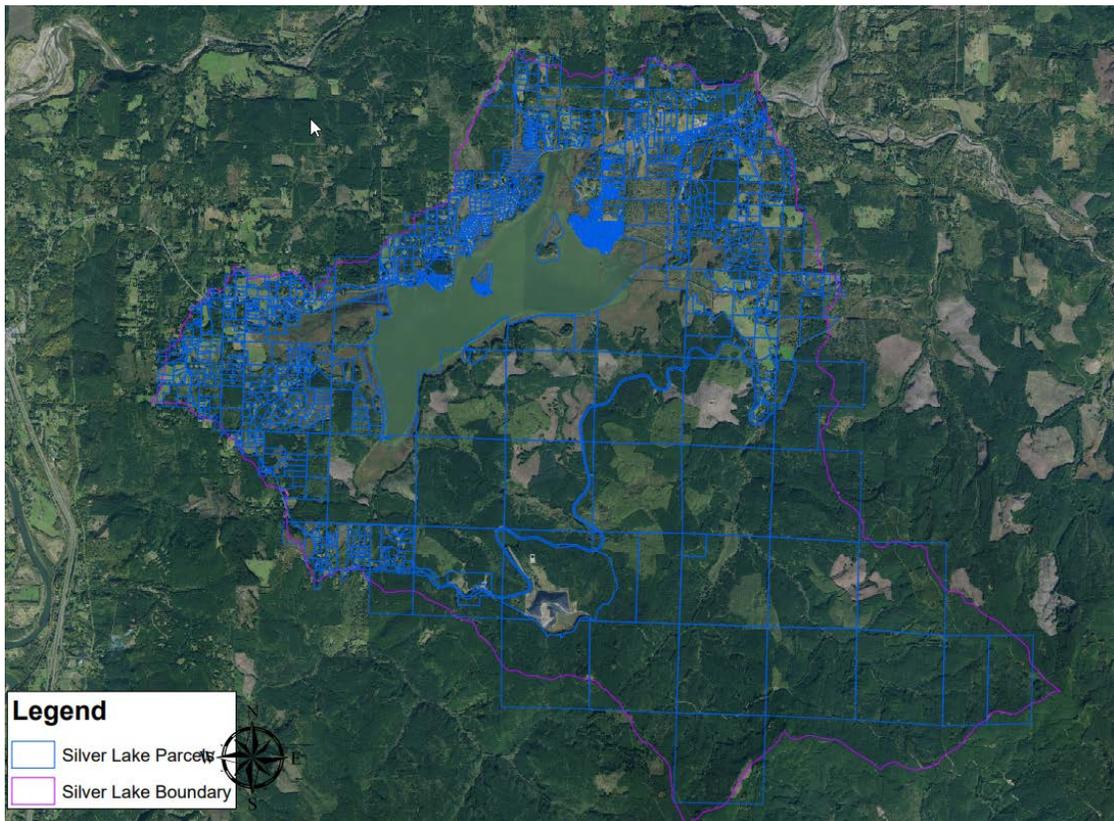


Figure 1 – Silver Lake watershed outlined. Parcel query was done using these boundaries.

Parcel Data

Table 1 contains six different parcel categories defined by use. When this data is examined and compared, one can see that the number of single family residences grew from 508 to 779, as 53% increase in the span of twenty years. The number of mobile homes show a more modest 15% increase; from 224 to 258. Parcels with outbuildings only, presumably used for RV or camping recreation, grew from 40 to 55, representing a 38% increase, while vacation parcels with cabins decreased. Forestry influence was and remains significant. Entire timber parcels essentially remain unchanged from 109 designated forest land parcels in 2001, to 110 parcels in 2021. PTN or portion of forested parcels grew from 45 to 56, a 24% increase.

Parcel Description	2001	2021	Change	% Growth
Single Family residence	508	779	271	53%
mobile homes (total)	224	258	34	15%
Vacation home cabin	34	21	-13	-38%
Outbldg only	40	55	15	38%
Entire timber	109	110	1	1%
Partial timber	45	56	11	24%

While the residential and timber categories shows increases, commercial categories showed no growth. Restaurants and food marts both decreased from 2 to 1, educational services increased from 2 to 3, and hotel/motels held steady at 2.

Table 2 below contains parcels categorized by size, with nearly alternating growth and decline between categories, and little growth among that categorized as Ag (open space):

Parcel Description	2001	2021	Change	% Growth
0-1 acres	114	145	31	27.19%
1-3 acres	112	89	-23	-20.54%
3-5 acres	45	67	22	48.89%
5-10 acres	55	68	13	23.64%
10-20 acres	38	24	-14	-36.84%
20-50 acres	7	11	4	57.14%
50+	10	7	-3	-30.00%
Ag. (open space)	16	17	1	6.25%

Conclusion

According to tax parcels comparisons between the 2001 and 2021, increased development in the Silver Lake watershed is mostly residential in nature. These developmental trends suggest that educational efforts regarding the protection and remediation of lake water quality should remain focused on the development and use of residential property. Erosion control, septic system maintenance, water quality protection from household sources such as chemicals, pet waste, leaves and yard debris should be emphasized. The attached database should be used for the mailing of educational materials, as this is an improvement from the original mailing database that was used with the criteria of 1 mile radius of the lake.

If forestry “portion parcels” are assumed to be associated with private citizens, then the parcel comparison shows an increase in citizen forestry. A targeted educational campaign could be launched to these specific parcels regarding best forestry practices.

Lastly, it would be helpful for SLWAC to find a Weyerhaeuser community liaison to provide an understanding of the rate of change that commercial forestry is experiencing within the watershed, as well as best practices being utilized.

References:

Moore, B.C., Funk, W.H. 1990 *Silver Lake Restoration Phase I: Diagnostic/Feasibility Study*. State of Washington Water Research Center. Report No. 73. Pullman, WA.

Addendums:

2001 Cowlitz County watershed database

2021 Cowlitz County watershed database