

Supplementary for:

**Quantifying the long-term evolution of glacial lakes and the impact of the
2024 Thame, Nepal outburst flood event using remote sensing**

Table 1. Yearly lake surface area table

Year\Lake	GL1 area (km²)	GL2 area (km²)	GL3 area (km²)	GL4 area (km²)	GL5 area (km²)
1989/11/09	0.0001	0.049	0.046	0.023	0
1995/10/25	0.0001	0.04	0.04	0.02	0
2000/11/07	0.0001	0.04	0.05	0.03	0
2005/11/05	0.0001	0.05	0.05	0.03	0
2008/11/29	0.0001	0.05	0.047	0.03	0.008
2009/11/04	0.0003	0.0436	0.0475	0.0358	0.0079
2010/10/25	0.00035	0.0437	0.049	0.0373	0.0134
2012/10/23	0.00016	0.0451	0.049	0.0405	0.0195
2015/10/27	0.003	0.0486	0.0484	0.045	0.0259
2016/11/03	0.006	0.043	0.046	0.0415	0.0359
2017/10/06	0.032	0.046	0.045	0.043	0.0373
2018/09/18	0.0407	0.0447	0.0474	0.0437	0.035
2019/10/14	0.0413	0.0453	0.0453	0.0457	0.0418
2020/10/07	0.0468	0.0468	0.0492	0.0481	0.0607
2021/10/12	0.0486	0.0464	0.05	0.0478	0.0665
2022/10/23	0.0548	0.046	0.0457	0.0491	0.0871
2023/10/15	0.0467	0.0452	0.04523	0.0492	0.1
2024/08/30	0.05577	0.0451	0.0441	0.0168	0.087
2025/09/03	0.05	0.045	0.046	0.016	0.0925

Table 2. Absolute percentage difference table of Satellite and World Wayback derived area

	GL2 area (km ²)		GL3 area (km ²)		GL4 area (km ²)	
	Satellite	World Wayback	Satellite	World Wayback	Satellite	World Wayback
2008	0.051	0.046	0.047	0.049	0.031	0.033
<i>Diff %</i>		<i>10.30%</i>		<i>4.16%</i>		<i>6.25%</i>
2016			0.046	0.047	0.041	0.042
<i>Diff %</i>				<i>2.15%</i>		<i>2.40%</i>
2020	0.046	0.047	0.049	0.050	0.048	0.048
<i>Diff %</i>		<i>2.15%</i>		<i>2.02%</i>		<i>0.00%</i>