二十、其它典型类型地质灾害

在青藏铁路沿线，沿部分断裂破碎带形成较大规模的断层谷地和平直的断层坡面，在一定的外动力环境产生砂害和滑塌。如错那湖东岸沿近东西走向的断层谷地，发育风成沙丘，2003-2004 年冬季的风成砂土堆积厚达 1.5-1.8m，掩埋了新建青藏铁路路基；沿唐古拉山北活动断裂和宁中盆东边界活动断裂的断坡，曾发育较大规模的热融滑塌。在青藏铁路南北两侧，由于地势较陡，在不存在活动断裂的情况下，也能够形成滑坡和泥石流；如沿羊八井峡谷 2001 年 7 月 13 日发生小型泥石流，阻断青藏公路的交通运输达近 1 小时；在羊八井东南，沿峡谷西南坡发育较大规模的古滑坡。青藏高原的牦牛长期与人类和谐相处，不知避让车辆；牦牛、野驴横穿青藏铁路，对高速行驶的列车安全构成严重威胁，产生新的灾害隐患。

PART 20 OTHER TYPES OF GEOLOGICAL HAZARDS

The larger-scale valley and gentle-dipping slopes formed along some faults, resulting in thickening sand deposition and landslide in favorable geological and climatic conditions. In east coast of Cuonahu Lake, sand deposits of 1.5-1.8m thick formed in fault valley from winter of 2003 to spring of 2004 and seriously covered the railway. Thawing creep and flow of permafrost along active fault slope formed landslides in north Tanggula Mts. and east boundary of Ningzhong basin respectively. In gradient valley as Yangbajain Gouge, landslides, rockslides, mass wasting and mudflows formed widely and threatened the safety of local farmers and transportation. For example, a small-scale mudflow occurred on July 13, 2001 in rainy day stopped highway transportation for more than an hour. Yaks and wild donkeys walking across railway also threaten moving train, leading to animal hazard to the Golmud-Lhasa railway.



图 244 唐古拉山北的断坡滑塌

（镜头向南，摄于 2001 年 3 月）

Fig.244 View southward in March of 2001 at landslide from thawing of permafrost along fault slope in north of Tanggula Mts.



图 245 宁中盆东的断坡滑塌

（镜头向南，摄于 2001 年 7 月）

Fig.245 View southward in July of 2001 at landslides along east boundary fault slope of Ningzhong basin



图 246 错那湖东岸沿近东西向断层谷地发育风成沙丘

（镜头向东，摄于 2004 年 7 月）

Fig.246 View eastward in July of 2004 at sand deposits of 1.5-1.8m thick along E-W trending fault valley in east bank of Cuonahu Lake



图 247 错那湖东岸 2004 年 3 月见冬季风成沙堆积掩埋新建铁路路基

（镜头向南）

Fig.247 View southward in March of 2004 at sand deposit covering Golmud-Lhasa Railway road just constructed several months ago in east coast of Cuonahu Lake



图 248 错那湖东岸 2004 年 7 月青藏铁路的治沙现场

（镜头向西）

Fig.248 View westward in July of 2004 at removing of sands in east coast of Cuonahu Lake



图 249 羊八井东南 2001 年 7 月 13 日泥石流阻断青藏公路

（镜头向南东）

Fig.249 View eastward at mudflow occurred in Yangbajain Gouge on July 13, 2001 stopping highway transportation for an hour



图 250 羊八井东南沿峡谷西南坡发育的古滑坡

（镜头向南，摄于 2003 年 7 月）

Fig.250 View southward in July of 2003 at paleo-landslide in southwest slope of Yangbajain Gouge



图 251 牦牛穿越青藏公路车辆避让牦牛

（镜头向南，2005 年 3 月摄于宁中）

Fig.251 View southward at yaks in Ninzhong where moving car evades for yaks walking across the highway



图 252 牦牛成群结队穿越青藏铁路将对高速行驶的列车安全构成威胁

（镜头向北西，2005 年 3 月摄于当雄南）

Fig.251 View northwestward at yaks walking across the Golmud-Lhasa righway in south of Damxung in March of 2005 and large animals like yak and donkey walking across railway will lead to potential hazard to moving train.