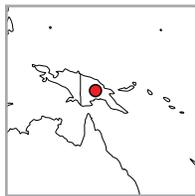


## FLY RIVER SYSTEM, PAPUA NEW GUINEA



WASTE ROCK from the Porgera gold mine erodes and drains into the local river system and tailings are dumped into the Porgera River, which joins the Ok Om, Strickland, and Fly

rivers flowing to the Gulf of Papua in the Coral Sea. The mine, owned by Canada's Barrick Gold, dumped more than 6 million tonnes of tailings and more than 12 million tonnes of sediment eroded from the waste rock dumps into the river in 2008.<sup>84</sup> The tailings contain high concentrations of toxins including cyanide and the waste rock has demonstrated acid rock drainage problems.<sup>85</sup>

The dumping has contributed to increased sedimentation, changes in flow and depth in the rivers and contaminated them with large quantities of arsenic, lead, mercury, and other toxic chemicals.<sup>86</sup> Fish populations downstream of the mine are less plentiful than before and people in the area fear the mine is causing contamination of fish and livestock.<sup>87</sup> The tailings appear to be responsible for inputs of mercury into southern Lake Murray.<sup>88</sup> The Norwegian Pension Fund has excluded Barrick Gold from its investment portfolio because of the use of river dumping at Porgera.<sup>89</sup> The mine has also been implicated in severe human rights violations, including alleged assaults and rapes by mine security, forced evictions, and the burning of houses.<sup>90</sup>

The Ok Tedi copper-gold mine started in 1984 and dumps tailings in the Ok Tedi River, a tributary of the Fly River. The mine has dumped on average more than 20 million tonnes of tailings per year.<sup>91</sup> The mine also dumps approximately 30 million tonnes of waste rock down steep eroding slopes every year.<sup>92</sup> The dumping, and the effect on the riverbed in particular, reduced fish populations by 60 to 80 percent along 300 kilometers of the Ok Tedi and the Fly Rivers. The fish remaining in the rivers, especially closer to the mine site, are

heavily contaminated with cadmium and lead.<sup>93</sup> The dumping has led to contamination of the Gulf of Guinea as well, with high concentrations of copper and cadmium occurring near the Fly River delta.<sup>94</sup> Tailings are producing acid rock drainage and even after mining stops, impacts on the rivers are expected to continue for several hundred years.<sup>95</sup> Dumping has destroyed over 1,600 square kilometers of forest and is expected to destroy a total of 3,000 to 4,200 square kilometers that will likely not recover as forest.<sup>96</sup>

In 1994, opponents of the dumping at Ok Tedi filed a lawsuit against then-owner Broken Hill Proprietary (BHP) and settled out of court in 1996 for an estimated US\$ 500 million in compensation and commitments to contain the tailings.<sup>97</sup> BHP opted to dredge some of the tailings but did not contain them. In 2002, the company withdrew from the project to limit liability rather than altering the dumping scheme.<sup>98</sup>

In May 2011, a pipeline on land broke in several areas and contaminated the environment with pyrite waste that spread to streams at least 2 km downstream.<sup>99</sup> The Western province governor called for strong fines against the mine for the spill and the mine operations were suspended for weeks.<sup>100</sup> Operations resumed after the company agreed to build containment dams for waste.<sup>101</sup>

**BELOW:** Tailings from the Ok Tedi copper-gold mine in Papua New Guinea pollute the Ok Tedi river into which they are dumped.



PHOTO: DETE SIEGERT