

Mesabi Iron Range in Minnesota, USA

Sentinel-2 MSI acquired on **14 July 2017** at 17:08:49 UTC
Sentinel-2 MSI acquired on **12 September 2017** at 17:09:49 UTC
Sentinel-1 CSAR IW acquired on **24 March 2018** at 00:05:50 UTC
Sentinel-1 CSAR IW acquired on **30 March 2018** at 23:57:47 UTC

Author(s): Sentinel Vision team, VisioTerra, France - svp@visioterra.fr

Keyword(s): Land, open pit mine, pollution, United States of America.

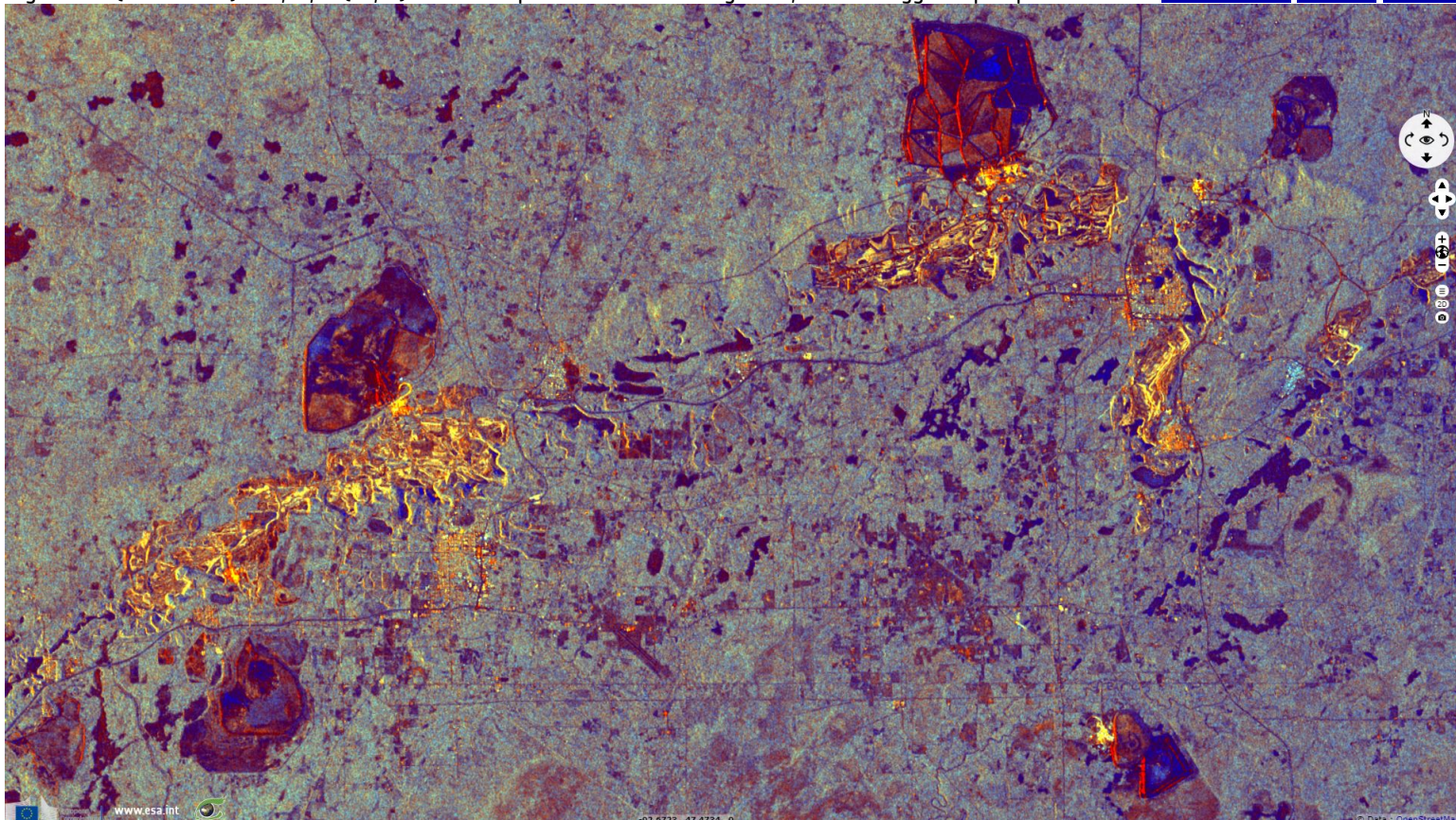


[3D Layerstack](#)

Fig. 1 - S2 (12.09.2017) - 4,3,2 natural colour - Active & closed mines and their tailing ponds surround Virginia, NE Minnesota. [2D animation](#) [2D view](#)



Fig. 2 - S1 (30.03.2018) - vv,vh,ndi(vh,vv) colour composite - SW is Hibbing mine, World's biggest open pit iron mine. [3D animation](#) [3D view](#) [2D view](#)



Hull Rust open pit mine is 8km long, 3.2km wide & 180m deep. Around 1.2 billion tons of material have been removed since 1895, mostly iron ore.

Fig. 3 - S2 (14.07.2017 & 12.09.2017) - 11,8,2 composite - Grand Rapids & Babbitt also lie in the bolt-shaped Mesabi Iron Range. [3D view](#) [2D view](#)

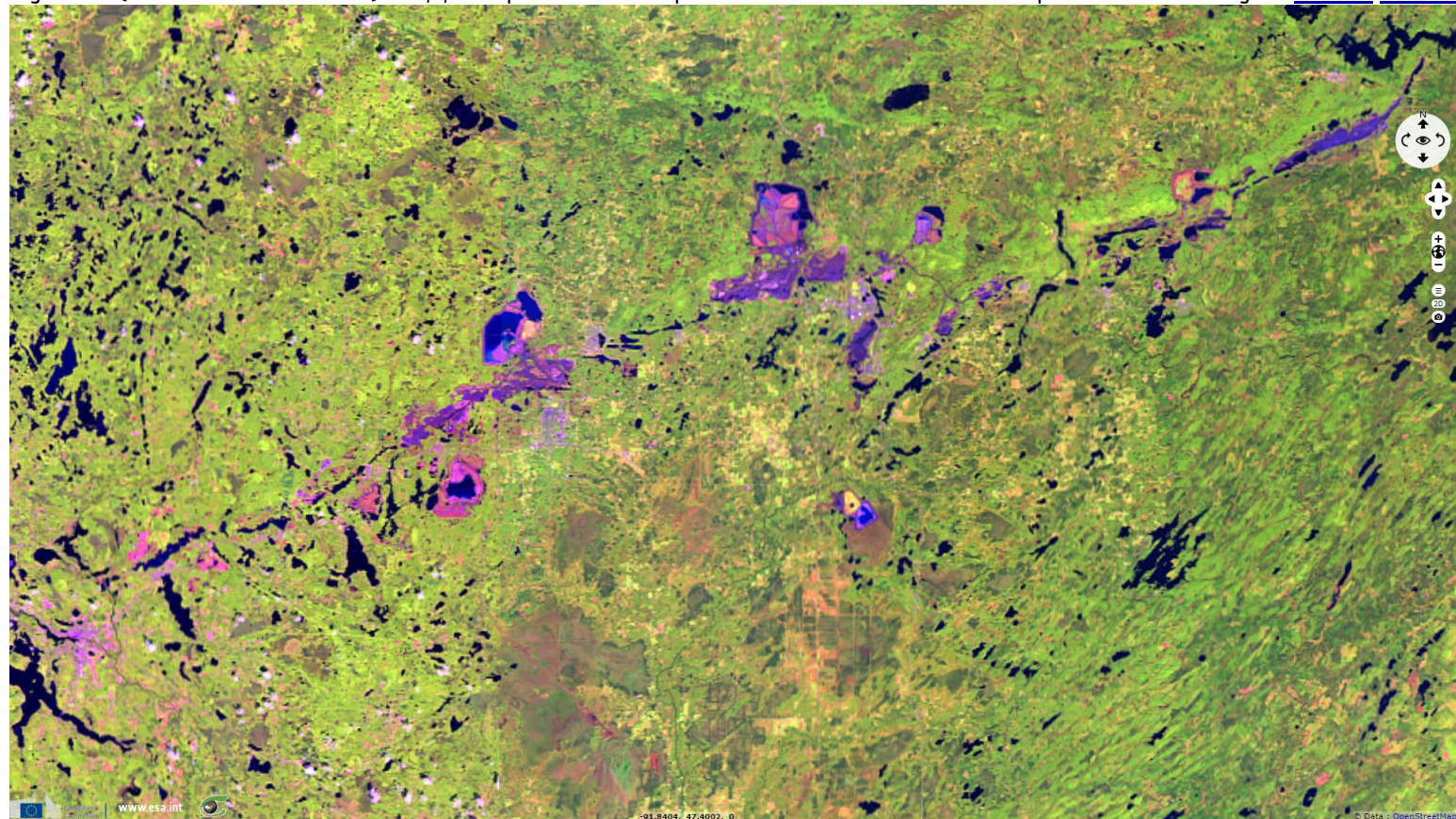
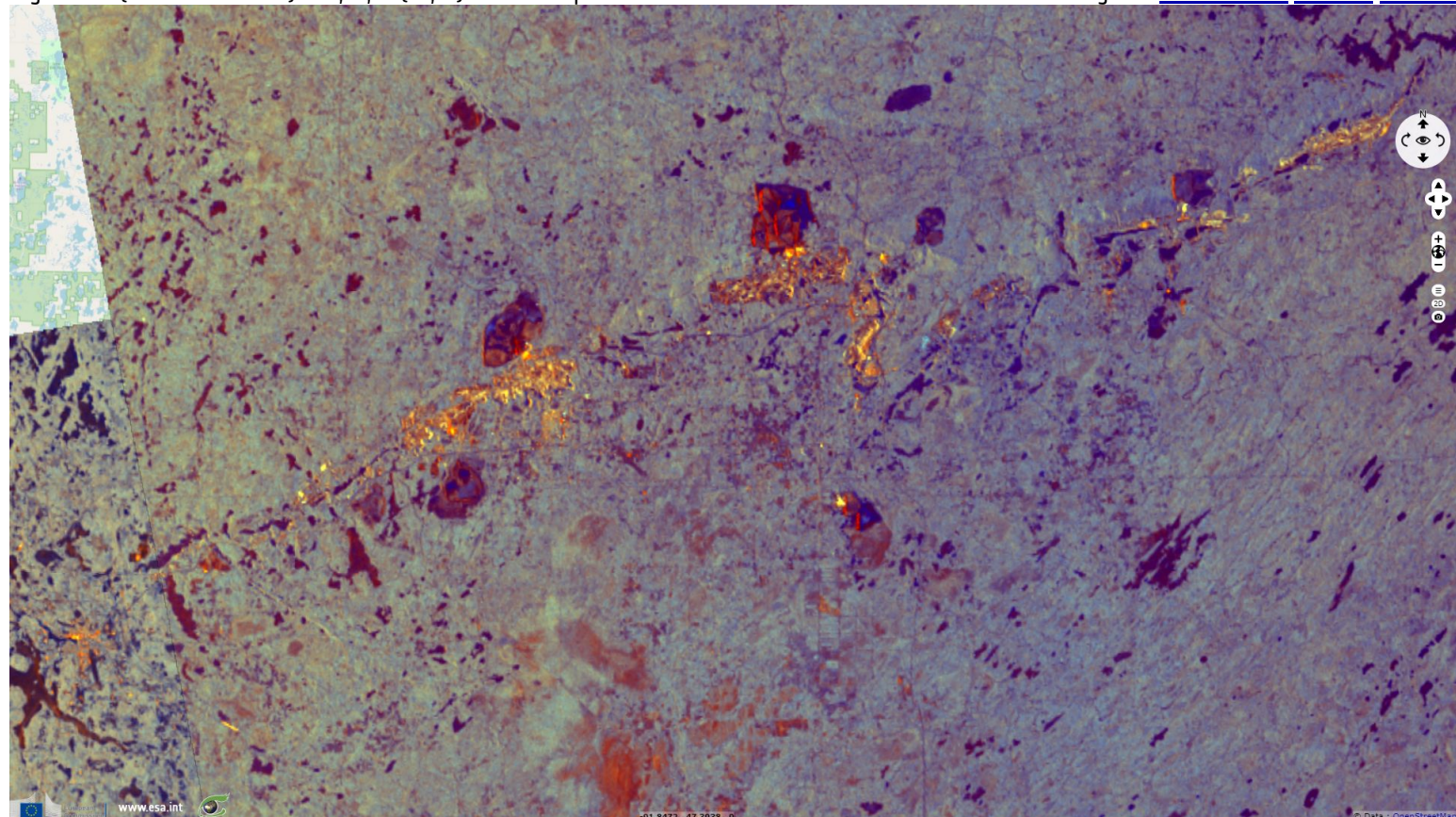


Fig. 4 - S1 (24 & 30.03.2018) - vv,vh,ndi(vh,vv) colour composite - 7 iron ore mines are still active in Mesabi Range. [3D animation](#) [3D view](#) [2D view](#)



The views expressed herein can in no way be taken to reflect the official opinion of the European Space Agency or the European Union.

More on European Commission space:						
More on ESA:				S-1 website	S-2 website	S-3 website
More on Copernicus program:				SciHub portal	Cophub portal	Inthub portal Colhub portal
More on VisioTerra:				Sentinel Vision Portal	Envisat+ERS portal	Swarm+GOCE portal CryoSat portal Proba-V portal