IVANHOE MINES
NEW HORIZONS

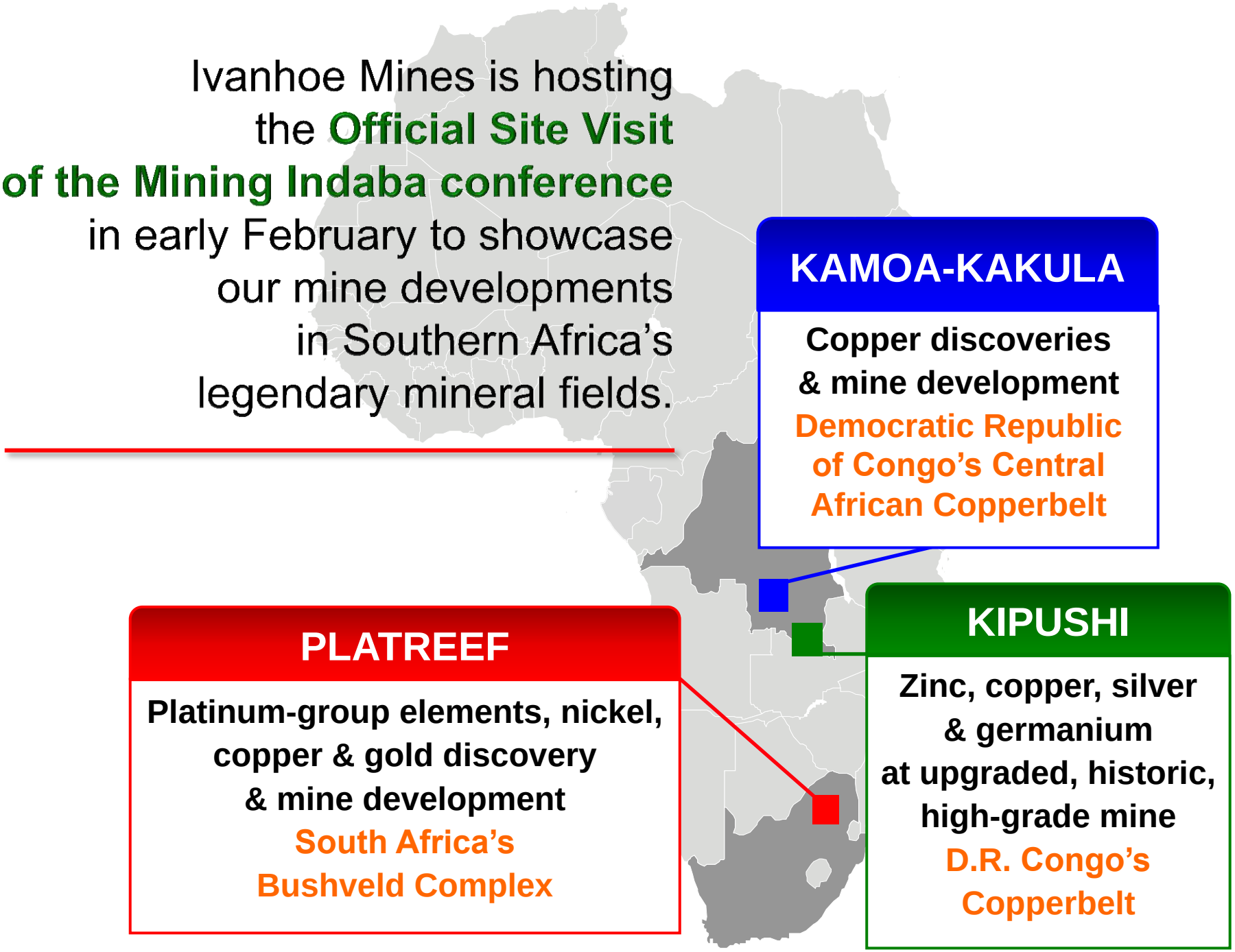
PROGRESS GALLERY
Advancing our projects

January 2018

Historic Kipushi Mine (zinc-copper-silver-germanium) closer to new era of production

December 13, 2017: **Ivanhoe issued an independent redevelopment plan to bring Kipushi's Big Zinc Zone into production in less than two years, with life-of-mine average annual production rate of 225,000 tonnes of zinc and cash costs of US$0.48 per pound of zinc.**

Ivanhoe Mines is hosting
the **Official Site Visit**
of the Mining Indaba conference
in early February to showcase
our mine developments
in Southern Africa's
legendary mineral fields.



KAMOA-KAKULA

Copper discoveries
& mine development
Democratic Republic of Congo's Central African Copperbelt

KIPUSHI

Zinc, copper, silver
& germanium
at upgraded, historic, high-grade mine
D.R. Congo's Copperbelt

PLATREEF

Platinum-group elements, nickel, copper & gold discovery
& mine development
South Africa's Bushveld Complex

Kamoa-Kakula, DRC – Kakula Mine

Ventilation system being installed in the mine-access declines at the Kakula box cut by members of the Kakula Mine development team.

Kamoa-Kakula

Installation of steel sets for roof and wall support in the services decline for the Kakula Mine. The services decline is one of two adjacent ramps that will provide underground access to the high-grade deposit.

Kamoa-Kakula – Kakula Mine

Advancing development of the world's fifth-largest copper deposit.
(Copper price notably is on its longest winning streak since 1989, recently topping US$3.30 per pound.)

A scoop-loader removing excavated rock from the services decline that's continuing to advance toward the high-grade copper resources for the planned Kakula Mine.

Kamoa-Kakula – Kakula Mine

A mine geologist surveying the Kakula conveyor decline to ensure consistent grade and direction.

Kamoa-Kakula

Kamoa-Kakula engineering team members in one of the twin declines being constructed to provide access to Kakula's high-grade copper.

Initial mine development at Kakula is planned to begin in a zone of flat-lying, high-grade mineralization approximately 300 metres below surface. **The mineralization along the deposit's axis in this location is between 7.1 metres and 11.7 metres thick, with copper grades of between 8.24% and 10.35%, at a 3% cut-off.**

Kamoa-Kakula

Delivery of a new crane to be used for construction of the Kakula mine site facilities.

Kamoa-Kakula

Installation of electrical wiring on an emulsion plant that will provide explosives for the decline development underway at the Kakula Mine.

Kamoa-Kakula

Two initiatives of the Kamoa-Kakula Sustainable Livelihoods Project working to build a sustainable, independent economy in nearby communities.

Left: The Kamoa fish-farming program's third, fully-stocked pond being finished with landscaped walls.

Right: Pineapples harvested from the livelihoods garden as part of the program supplying produce to the Kamoa-Kakula camp kitchen.

The project was designed and implemented by Eco-livelihoods in close collaboration with the Ivanhoe Mines/Zijin Mining community relations department.

Kamoa-Kakula

Physical education class for students of the Kaponda Primary School – one of the schools near the Kamoa-Kakula Project that was constructed and furnished by Ivanhoe and Zijin.

Platreef, South Africa

Platreef's Shaft 1, now more than 580 metres below surface, will provide early development access into the Flatreef Deposit and will be utilized to advance production of platinum-group elements, nickel, copper and gold.

Source: Bloomberg

Platreef

Palladium prices recently have surged to a record 17-year high, close to US$1,100 an ounce. Prices for the metal, which is used to curb harmful emissions from gasoline-fuelled vehicle engines, have rallied as robust auto sales added to demand.

This is good news for the Platreef Project, which is projected to produce 476,000 ounces of palladium, platinum, rhodium and gold, plus 21 million pounds of nickel and 13 million pounds of copper, each year in the initial phase of production.

Platreef

The 7.25-metre-diameter Shaft 1, expected to reach the Flatreef mineralization at a depth of approximately 783 metres in the third quarter of this year, will be used for initial access to the Flatreef Deposit and early underground development.

Ongoing Shaft 1 development drilling by members of Platreef's shaft-sinking team.

Platreef

Ivanplats, an Ivanhoe Mines subsidiary, partnered with Red Cross to start a community and employee awareness campaign last November for commemoration of World AIDS Day. On December 1, personnel from Ivanplats and the South African Department of Health tested a total of 76 local residents for high blood pressure, diabetes and HIV in a special event at the Platreef Project.

Platreef

Personnel from Ivanplats and the Department of Health conducting blood-pressure testing – one of the health tests offered on World AIDS Day – at the Ivanplats office in Mokopane, South Africa.

Kipushi, DRC

Members of Kipushi's geological and technical team. With underground upgrading nearing completion, the focus will shift to modernizing and upgrading the mine's surface infrastructure to handle and process the mine's high-grade zinc and copper resources.

Kipushi

Members of Kipushi's maintenance and engineering team installing an overhead crane that was recovered from the earlier plant.

Right: Overhead crane being repaired and tested at the mine's 1,150-metre level.

Kipushi

A new ventilation fan being delivered to the 1,120-metre level by maintenance and engineering staff as part of the upgrading work underway at the Kipushi Mine.

Kipushi

Some members of the skilled and versatile underground development team working to prepare the mine for the restart of commercial production.

Kipushi

Maintenance and engineering team members installing a new platform at the mine's T2 loading area – part of the underground conveyor system.

Kipushi

Rubber lagging being wrapped and glued on a pulley that will help to guide and drive the belt on the ore conveyor at Shaft 5.

Engineering work at the Kipushi Project has focused on the upgrading of Shaft 5 conveyances and infrastructure.

Kipushi

Geologists offloading a machine to cut drill core.

Preparation of metallurgical samples is continuing while the machine is being installed. Core logging and sampling is completed.

Final commissioning of the electrical cooling system for installed motors.

Kipushi

Machining flanges for plumbing installed at 1,240-metre-deep Shaft 5, which now has been upgraded and returned to working condition.

Kipushi

Team members beside a Grifo pump at the mine’s 1,200-metre-level pump station. The planned return to production will establish Kipushi as the world’s highest-grade major zinc mine, according to an independent review.