

**GLOBAL BATTERY METALS**

# NW LEINSTER LITHIUM PEGMATITE PROJECT TECHNICAL UPDATE

Prepared by Vaughan Williams

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TSX.V: GBML | OTCQB: REZZF | FSE: REZ

February 2023

# NW LEINSTER LITHIUM PEGMATITE PROJECT

The NW Leinster Project is located in County Wicklow and South County Carlow, Ireland.



## Northern Block Licensing

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15 prospecting licenses

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Five primary targets identified; each with spodumene pegmatite float

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Ongoing field work

## Southern Block Licensing

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One prospecting licence (PLA 1597)

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Location of Spodumene pegmatite dyke in trench (1976-77)

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Localized Pionjar/Cobra deep overburden sampling at Knockeen target

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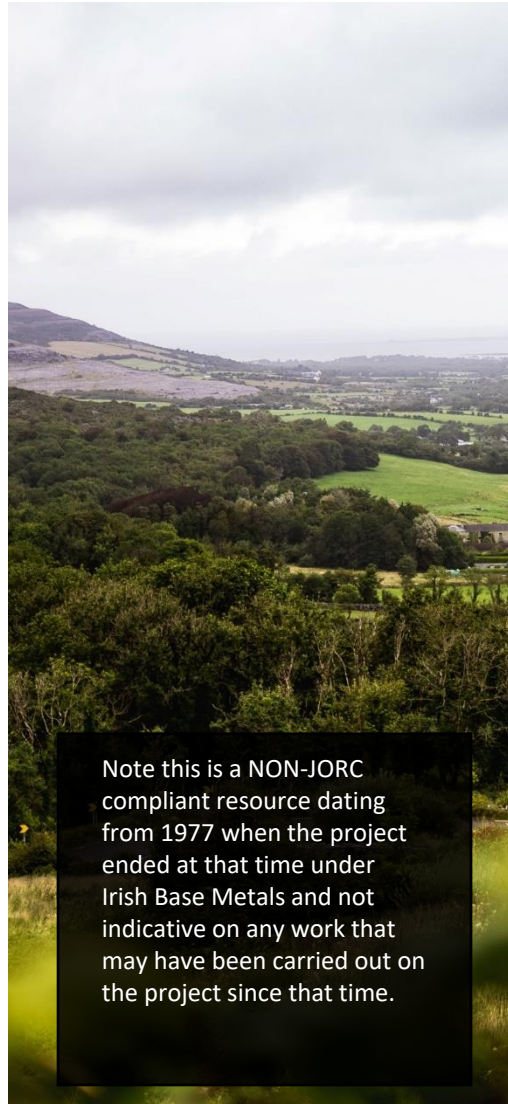
Localized prospecting and mapping at Knockeen and Carriglead targets

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Supportive landowners

# A DEVELOPING PEGMATITE STORY

The NW Leinster Project is focused on the exploration for lithium mineralization (spodumene pegmatites) in Ireland.

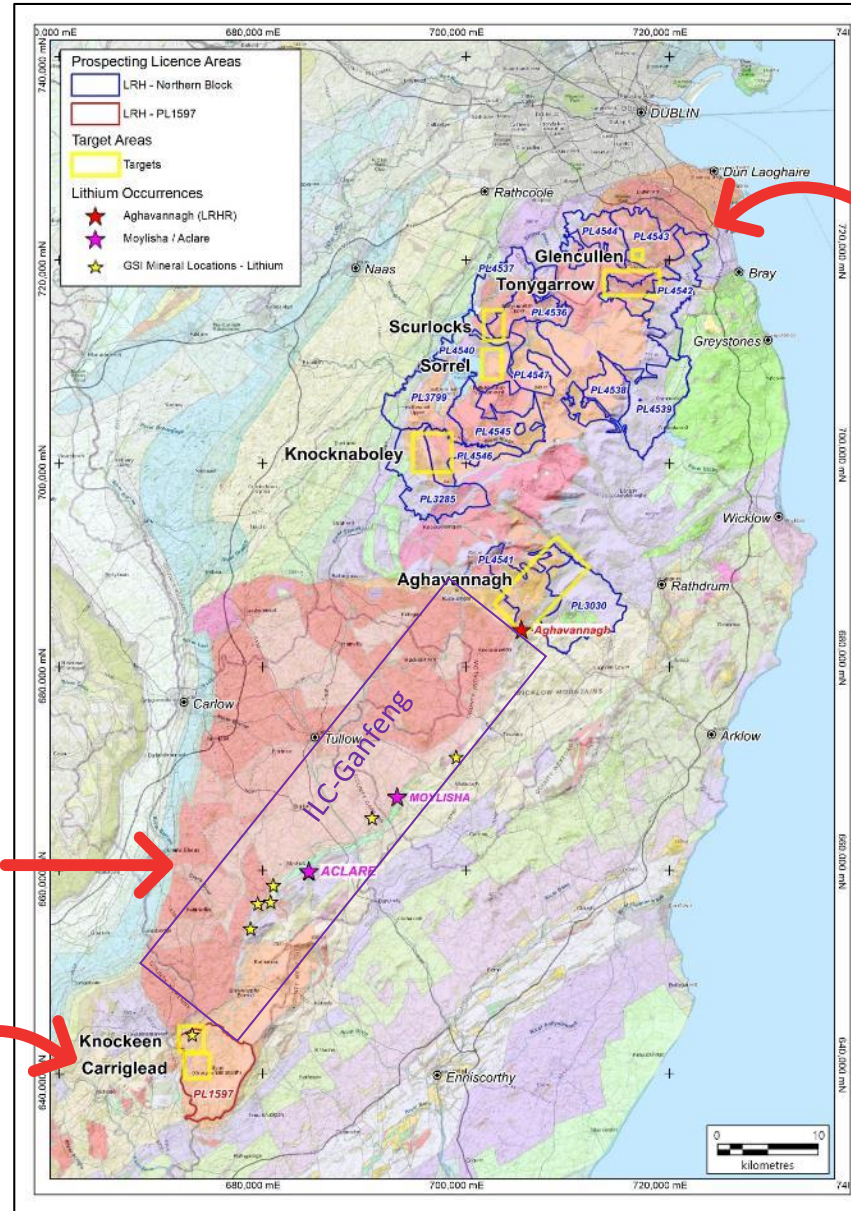


The Blackstairs Project, owned by Ganfeng Lithium Corporation, lies nearby in the Central Belt between the Northern and Southern Belts.

The Blackstairs Project is centered primarily on the Aclare and Moylisha pegmatite occurrences discovered during mid 1970s near the contact of the Tullow Lowlands granite pluton with the Lower Paleozoic metasediments which are considered genetically as well as spatially related to the East Coast Diatom Zone (ECDZ).

The Aclare Deposit (part of International Lithium Corp – Ganfeng Lithium Co. Ltd JV's Avalonia Project) which reportedly comprises a 20m wide spodumene pegmatite zone with a non-compliant historical resource estimate of 570,000 tonnes grading 1.5% Li<sub>2</sub>O; strike length of primary target zone is approx. 550m with best intersections of 2.23% Li<sub>2</sub>O over 23.3m including 3.43% Li<sub>2</sub>O over 6m.

# PRIMARY TARGETS



NW Leinster Northern block issued October 2018

Blackstairs Li / Ganfeng Central Belt

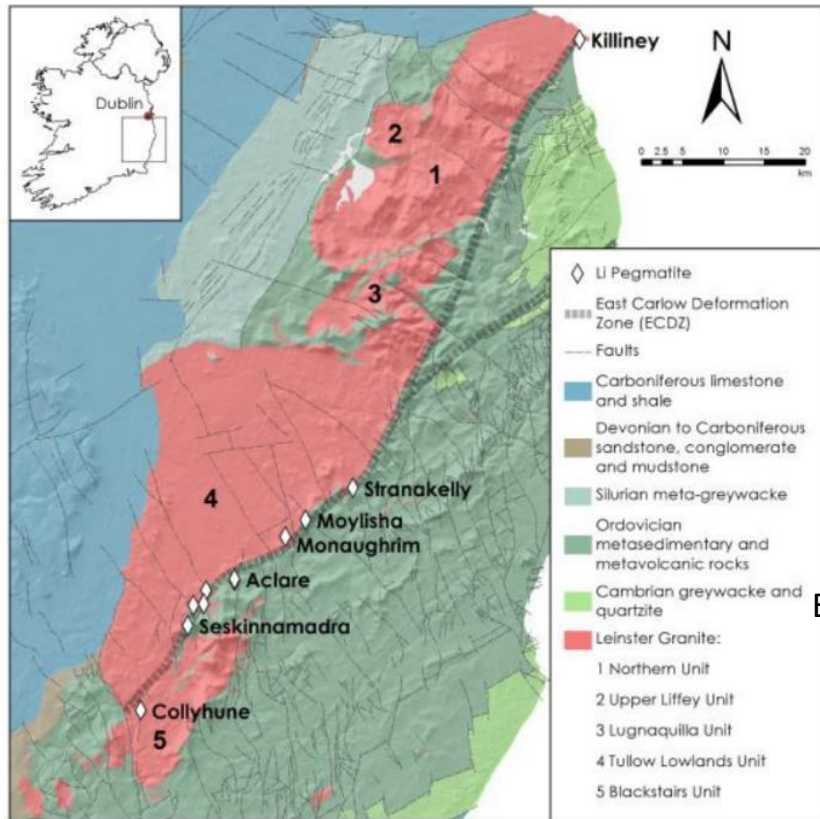
NW Leinster Southern block issued March 2022

# REGIONAL GEOLOGY



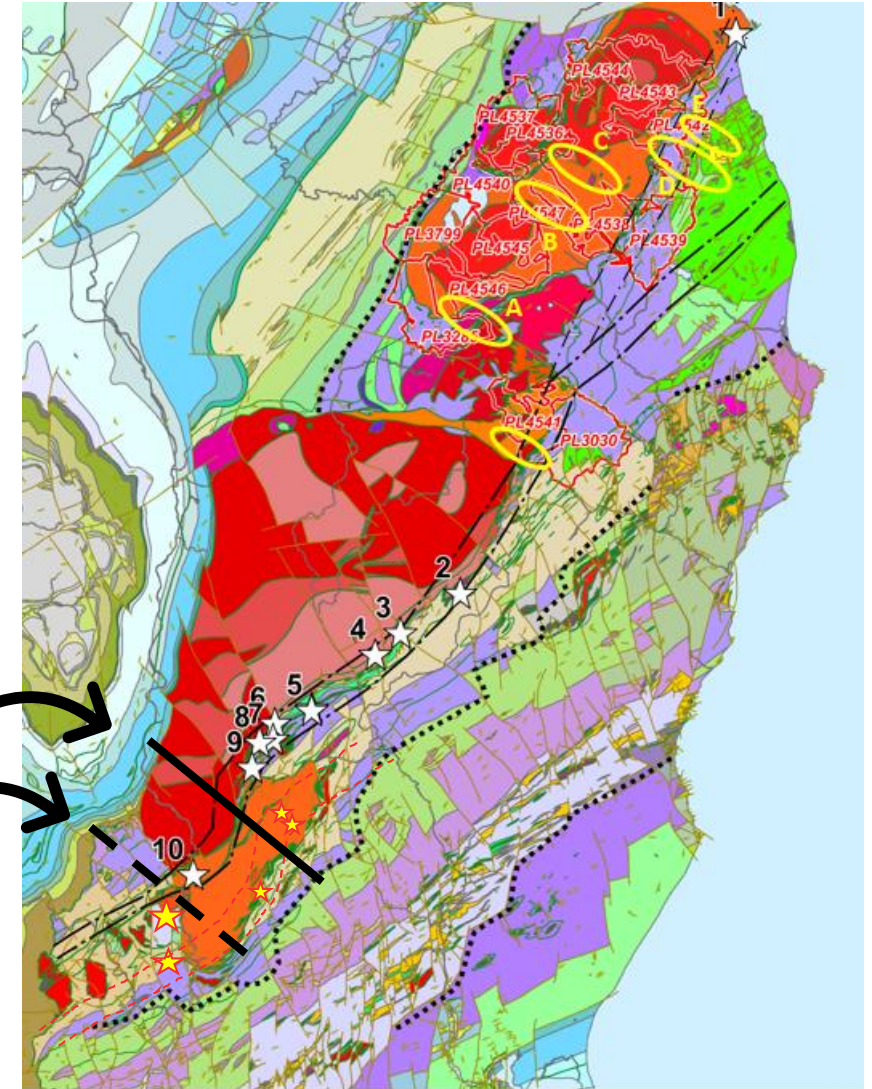
# RARE-ELEMENT MINERALIZATION AND METASOMATISM IN LCT PEGMATITES

David Kaeter<sup>1</sup> and Julian F. Menuge<sup>1,2</sup>



Section

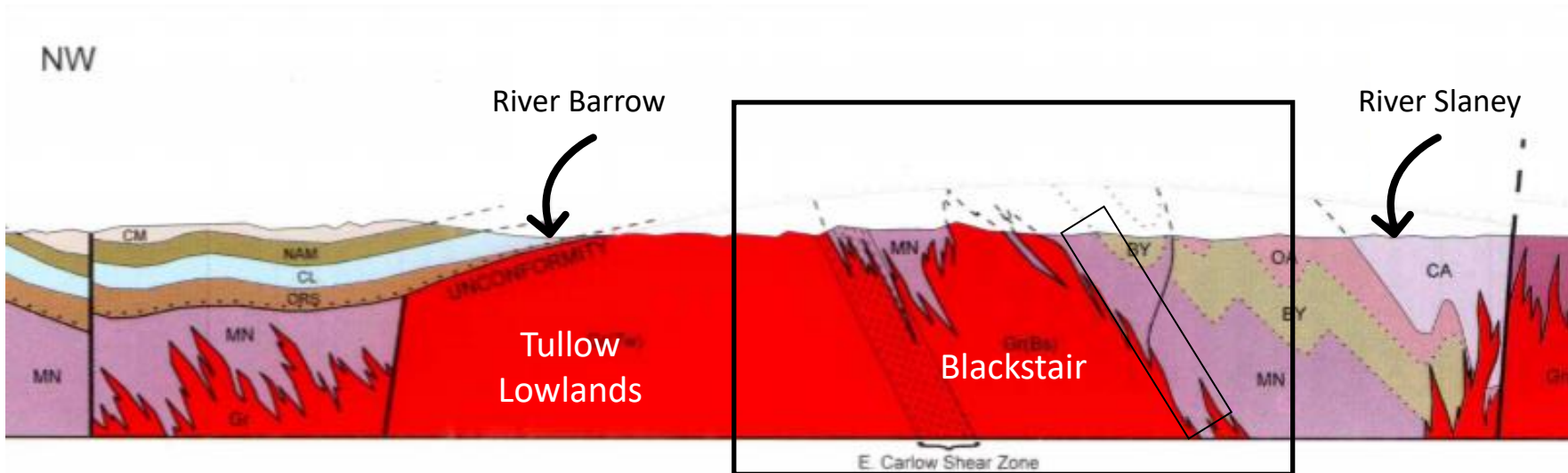
Extrapolated Section



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<sup>2</sup> Earth Institute, University College Dublin, Belfield, Dublin D04 N2E5, Ireland

# SECTION (FROM PREVIOUS SLIDE)



## Duncannon Group

CA

## Cahore Group

NN

## Ribband Group

OA

BY

MN

BH

## U. Palaeozoic Rocks

CM (Westphalian Coal Measures)

NAM (Namurian)

CL (Carboniferous Limestone)

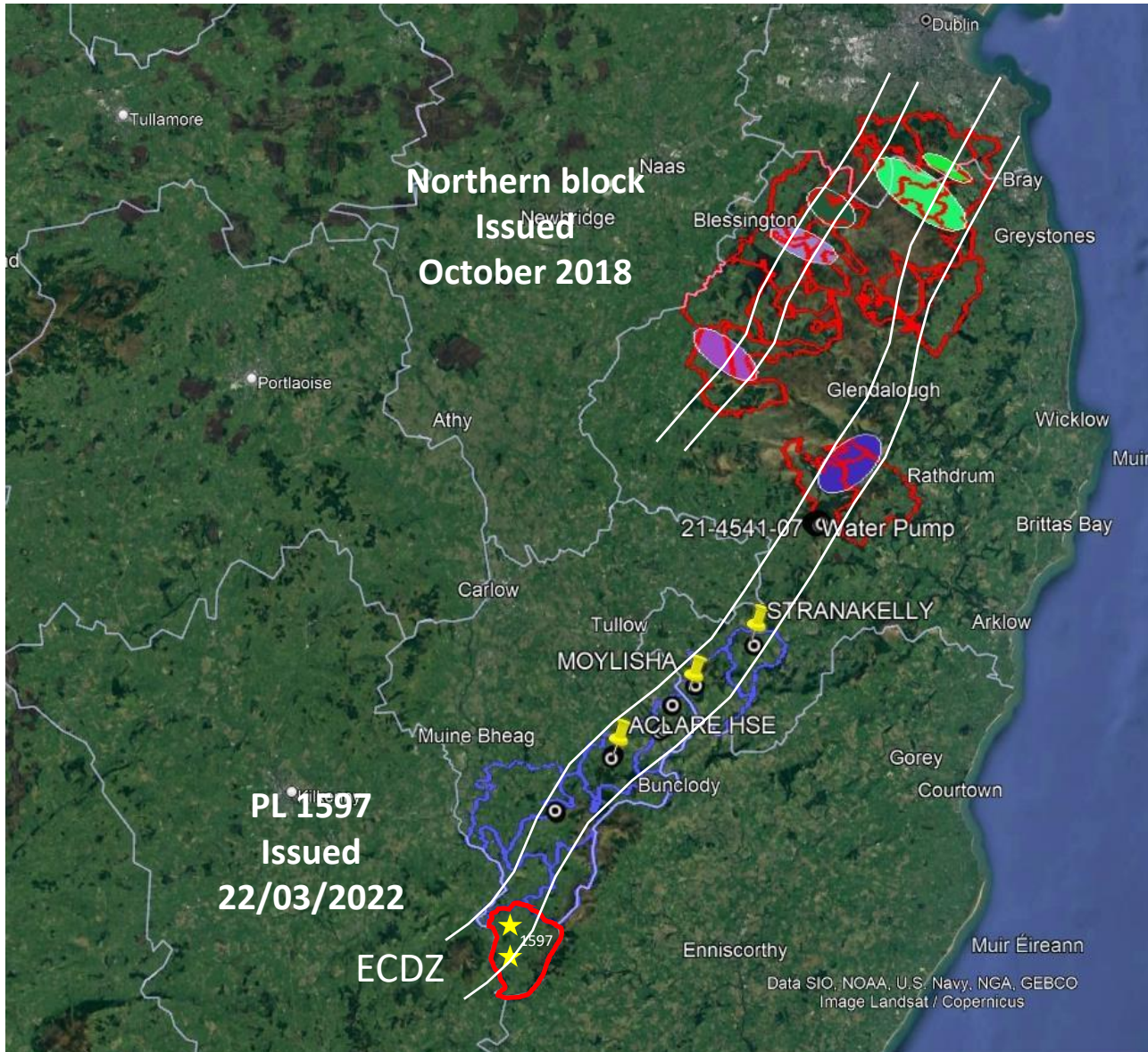
ORS (Old Red Sandstone)

## Granites

Gr(Tw) (Tullow Granite)

Gr(Bs) (Blackstairs Granite)

Gr(Bm) (Ballynamuddagh Granite)



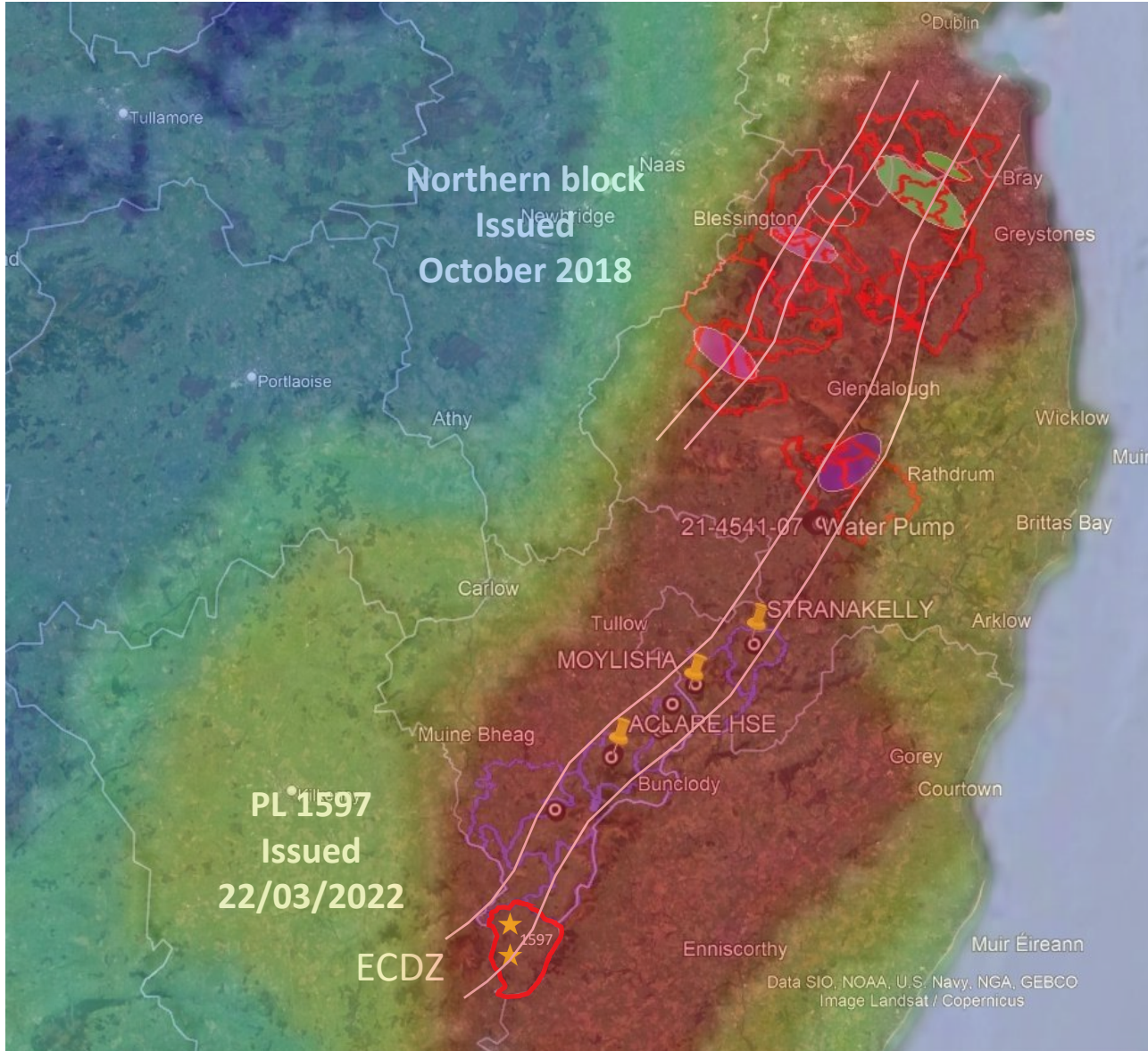
## A SPODUMENE PEGMATITE BELT IN LEINSTER HAS BEEN KNOWN SINCE 1960s.

It is virtually unexposed, but numerous concentrations of boulders have led to repeated mineral exploration interest.

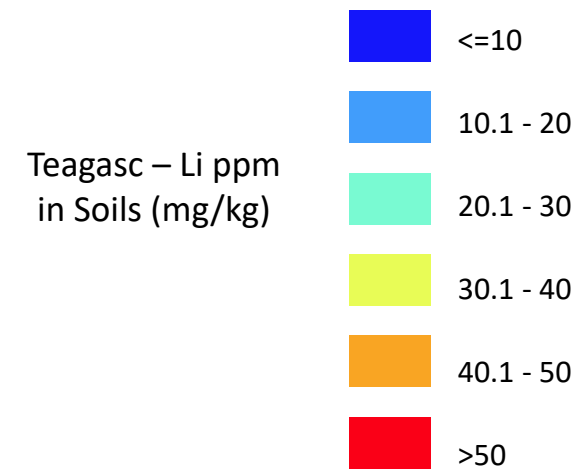
Since 1970, exploration drilling has demonstrated several spodumene pegmatites in the belt, with their main bodies located along the eastern margin of the Blackstairs Li / Ganfeng Central Belt (in blue).

Mainly ~400–420 Ma S-type Leinster Batholith.

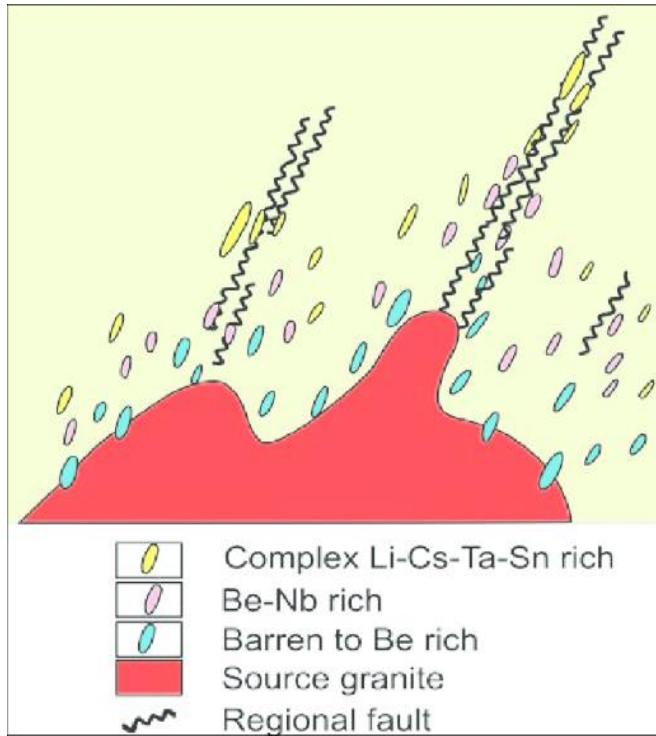




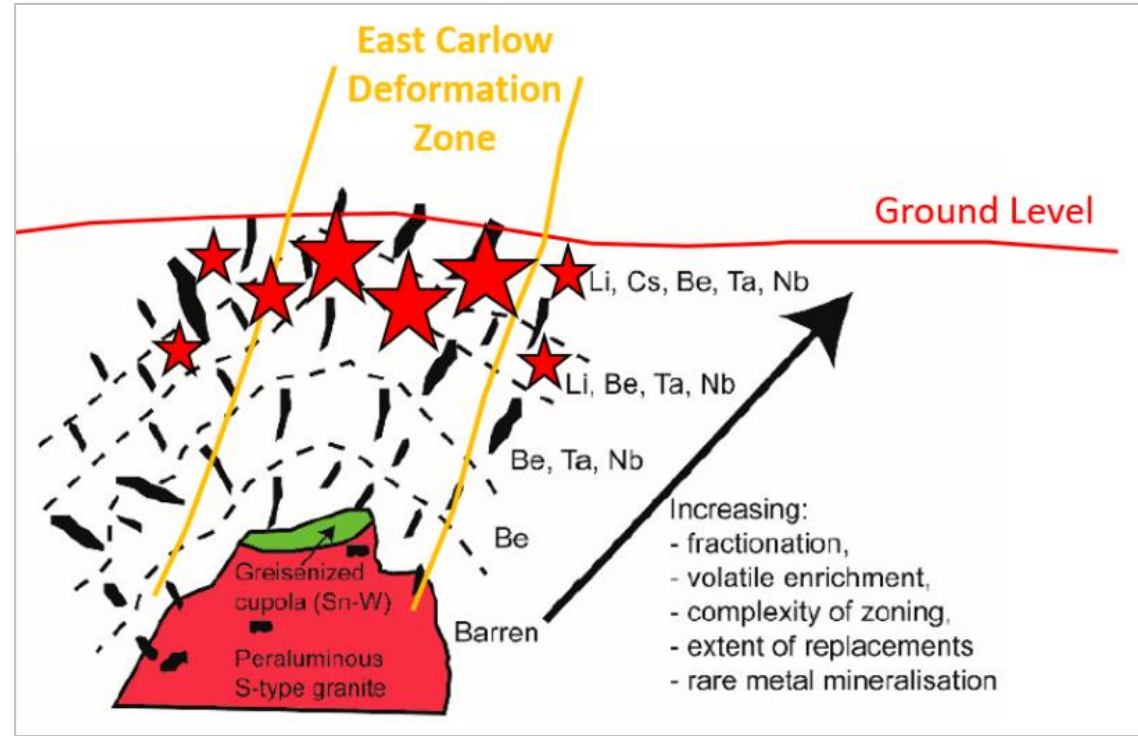
## SOIL GEOCHEMICAL ATLAS



# PEGMATITE MODEL

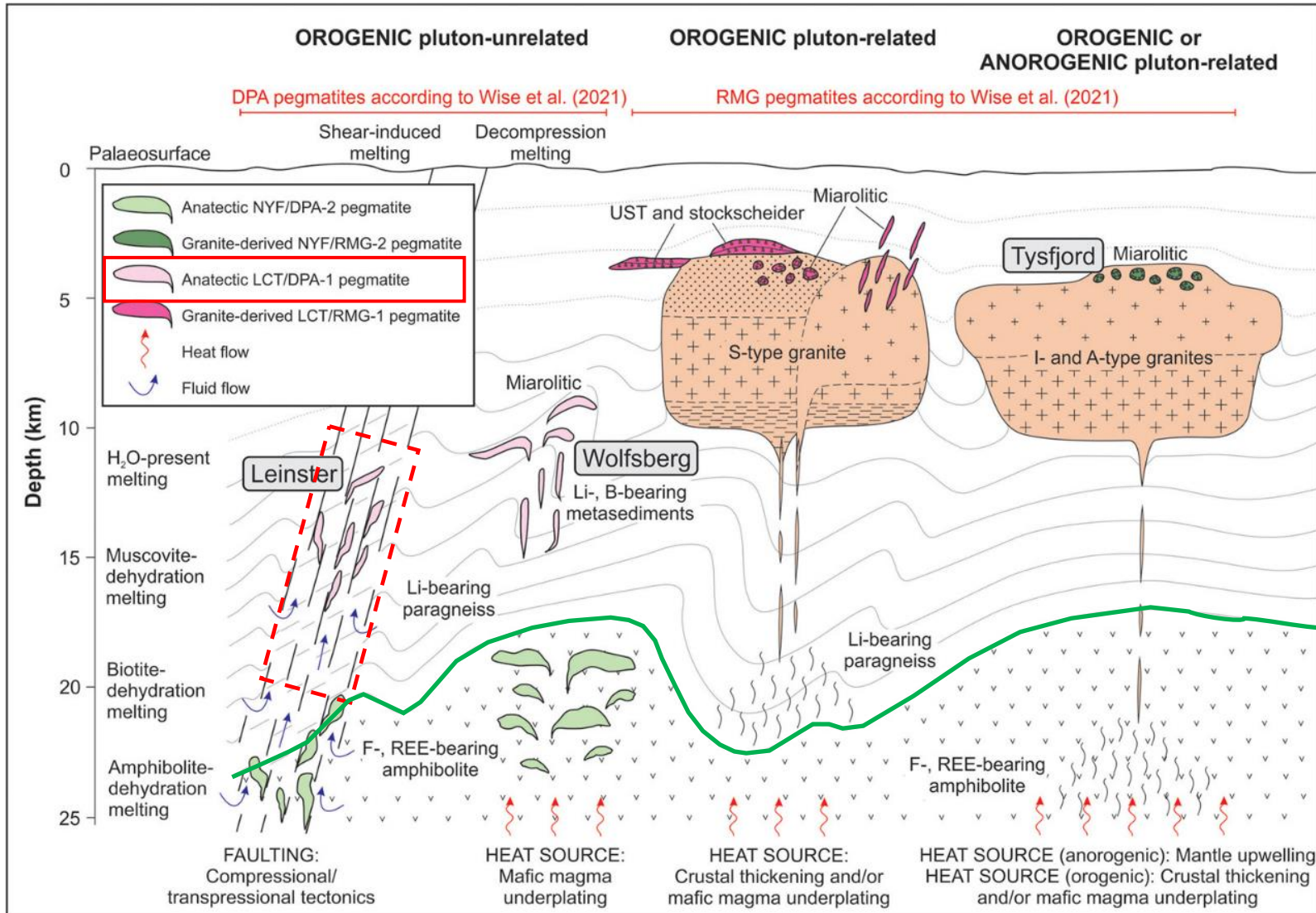


Model: Combination of the “roof of pluton” emplacement model and the “anatexis model”



Optimum zone for emplacement of pegmatites in roof of granite within the schists. Within the ECDZ.

# PEGMATITE MODEL



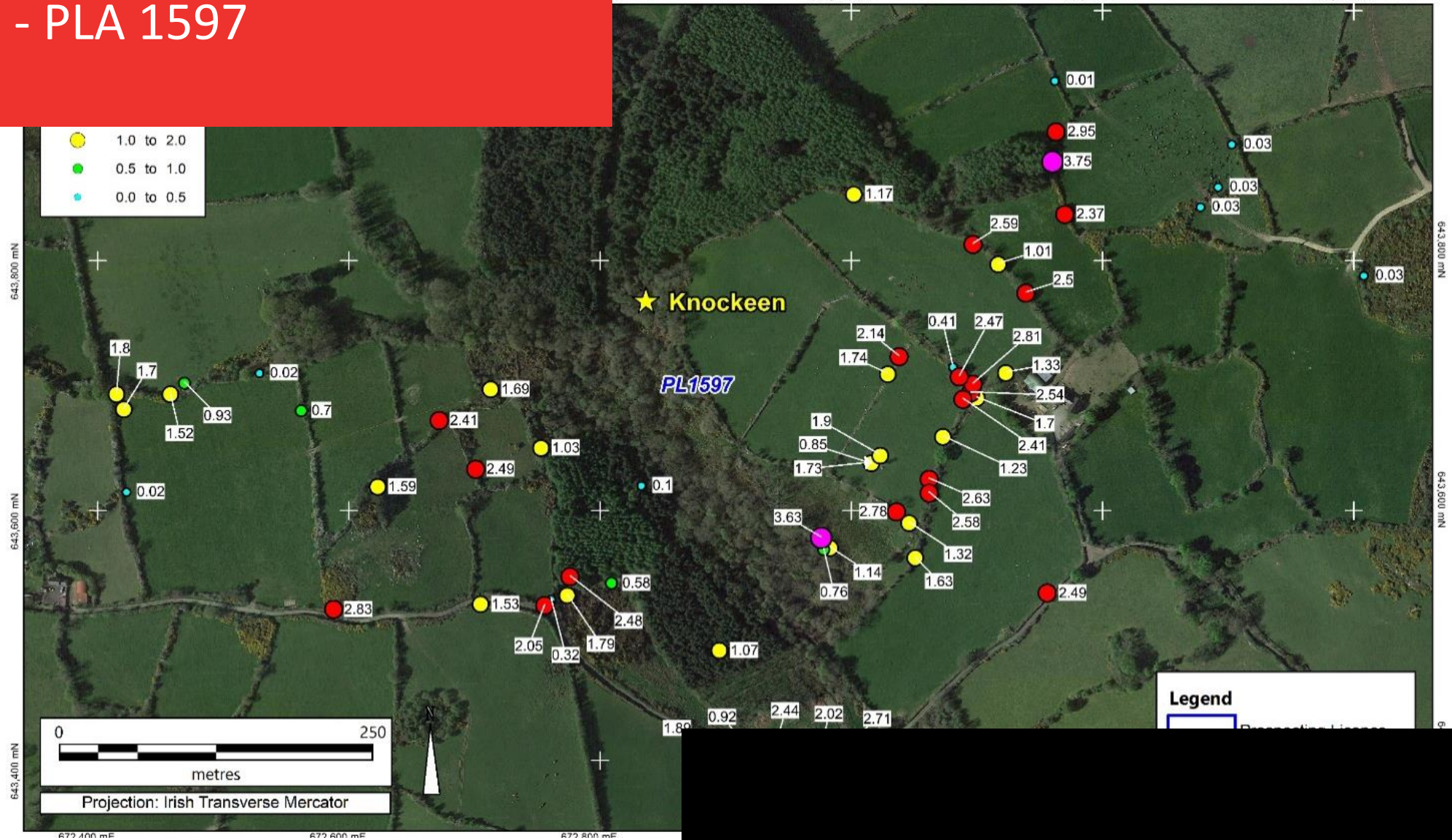
AGE OF PEG  
412 Ma

AGE OF HOST  
417-405 Ma

HOST  
Tullow Lowlands Granite

STRUCTURE  
Trans tensional Regime  
East Carlow Deformation Zone

# FOCUS - PLA 1597



## PLA 1597 INITIAL TARGETING

There are already two known historical spodumene boulder trains reported and validated by the company on PL 1597 (Knockeen and Carriglead).

The Knockeen occurrence is further confirmed by a trench excavated in 1976, which intersected a 6' wide (1.82m) spodumene pegmatite dyke.

No grades are reported from this time, but today we find general spodumene float near the trench, as well as material we think came from the trench.

The four samples listed were collected across the Knockeen Target area on the first visit.

A few things are still unclear about the location: the bedrock's depth, whether or not this is the only dyke, and if not, whether it's the best among a swarm of others.

This is the reason we are completing the deep overburden sampling, to ascertain where best to site a drill rig.



# COLLYHUNE (KNOCKEEN) TARGET

A. 649

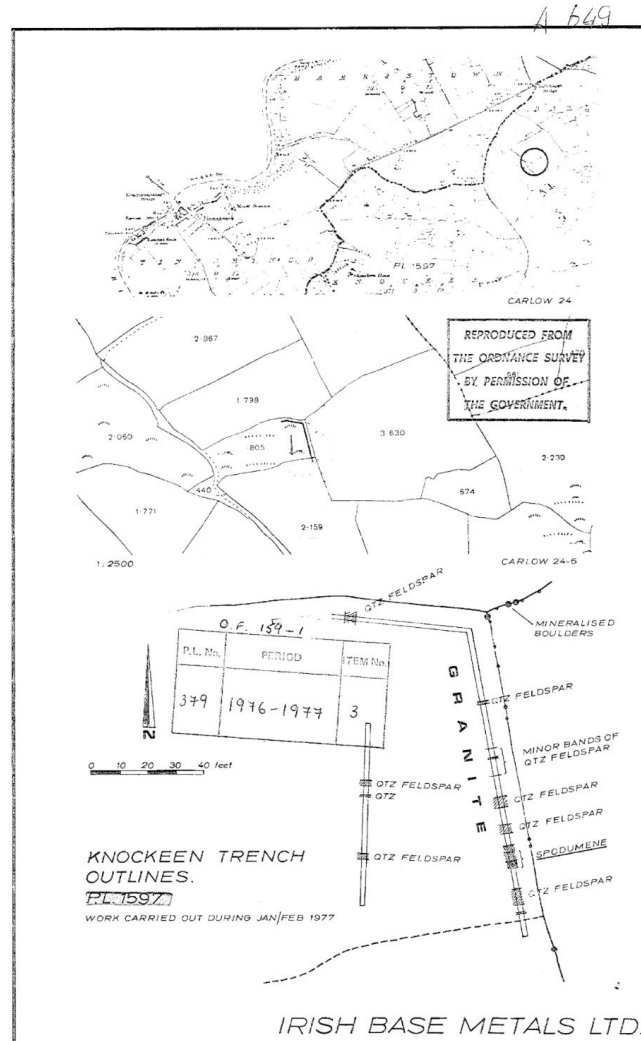
IRISH BASE METALS LIMITED  
EXPLORATION DEPARTMENT

REPORT  
ON  
P.L. AREAS 1596-1599  
FOR THE YEAR ENDING JANUARY 2, 1977

by  
R. Steiger

O.F. 159-1

P.L. No.	PERIOD	STEM No.
379	1976-1977	1

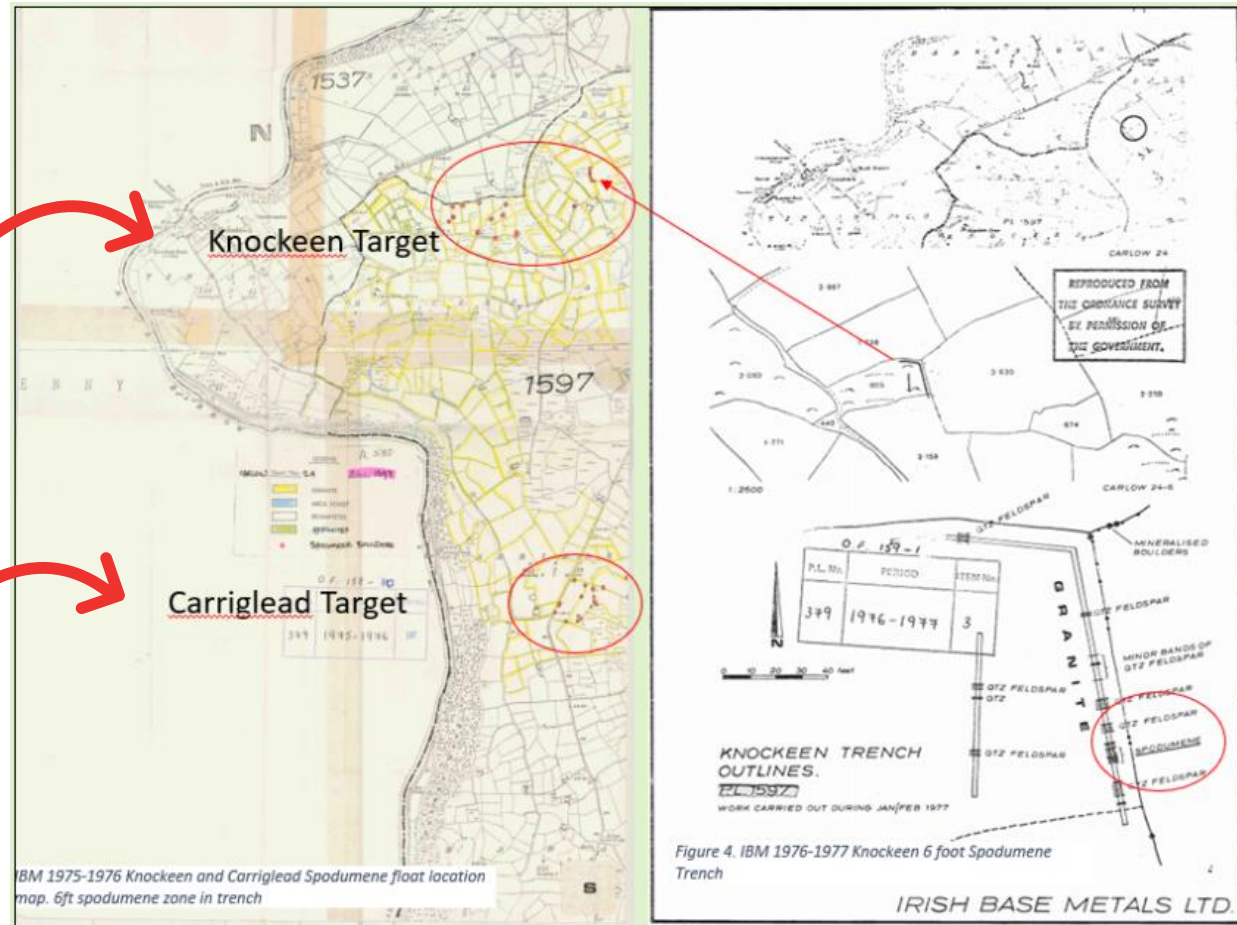


### KNOCKEEN

- ~900m long float train, with many historical boulders noted by IBM
- Historical Trench discovered a 1.82m zone of spodumene
- 1% = 10000ppm,  $\text{Li}_2\text{O} \% = \text{Li} \% \times 2.153$   
 210724CL02  $\text{Li}_2\text{O} = 0.7\% \text{ Li}_2\text{O}$   
 210724CL03  $\text{Li}_2\text{O} = 2.41\% \text{ Li}_2\text{O}$   
 210724CL04  $\text{Li}_2\text{O} = 2.37\% \text{ Li}_2\text{O}$   
 210724CL05  $\text{Li}_2\text{O} = 2.95\% \text{ Li}_2\text{O}$

### CARRIGLEAD

- ~400m long float train, >17 historical boulders noted here on IBM maps
- Grades up to 1.61%  $\text{Li}_2\text{O}$  achieved within a few hours spent prospecting



# JULY 2022 RECONNAISSANCE



Colm Long, Geologist





# SPODUMENE PEGMATITE SAMPLES FROM KNOCKEEN AND CARRIGLEAD

- A, B.** Spodumene pegmatite field samples  
Knockeen
- C.** Spodumene pegmatite Knockeen Sample  
210724CL05 (2.95% Li<sub>2</sub>O)
- D.** Spodumene pegmatite Carriglead Sample  
AES61138 (1.61% Li<sub>2</sub>O)





### SOUTHERN BLOCK: PLA 1597-CARRIGLEAD

- ~400m long float train, >17 historical boulders noted here on IBM maps
- Recon sampling 2x Spodumene boulder grades up to 0.76-1.61% Li<sub>2</sub>O achieved within a few hours spent prospecting

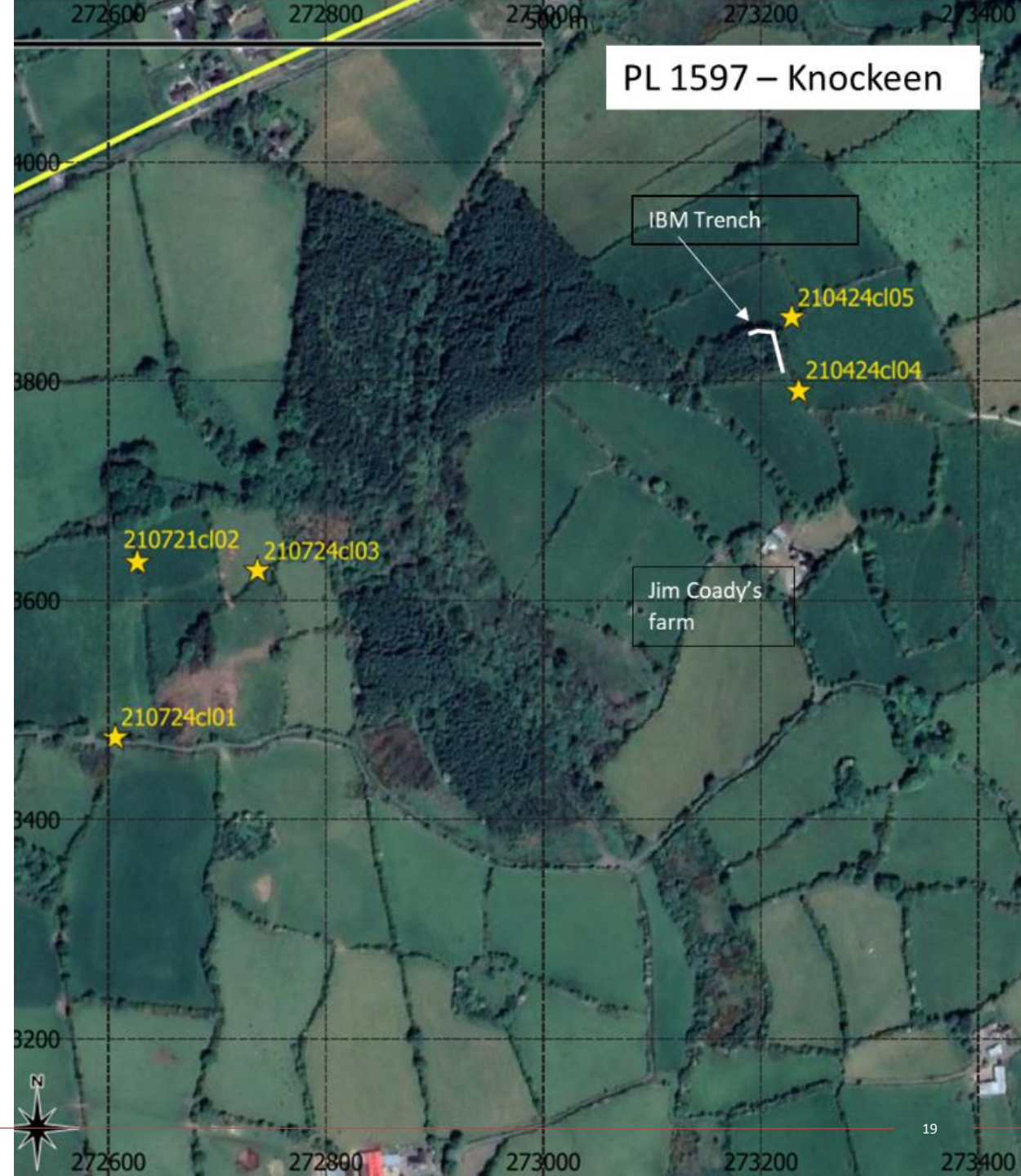
### SOUTHERN BLOCK: PLA 1597-KNOCKEEN

- ~1000m long float train, with many historical boulders noted by IBM
- Historical Trench discovered a 1.82m zone of spodumene pegmatite
- Position of the historical trench has been located
- Recon sampling confirmed 4x high grade lithium spodumene pegmatite in float at Knockeen & Carriglead
- Assays 0.7 – 2.95% Li<sub>2</sub>O

Sample	Li (ppm)	Li <sub>2</sub> O eq (%)*
210724CL02	3,240	0.70%
210724CL03	11,200	2.41%
210724CL04	11,000	2.37%
210724CL05	13,700	2.95%

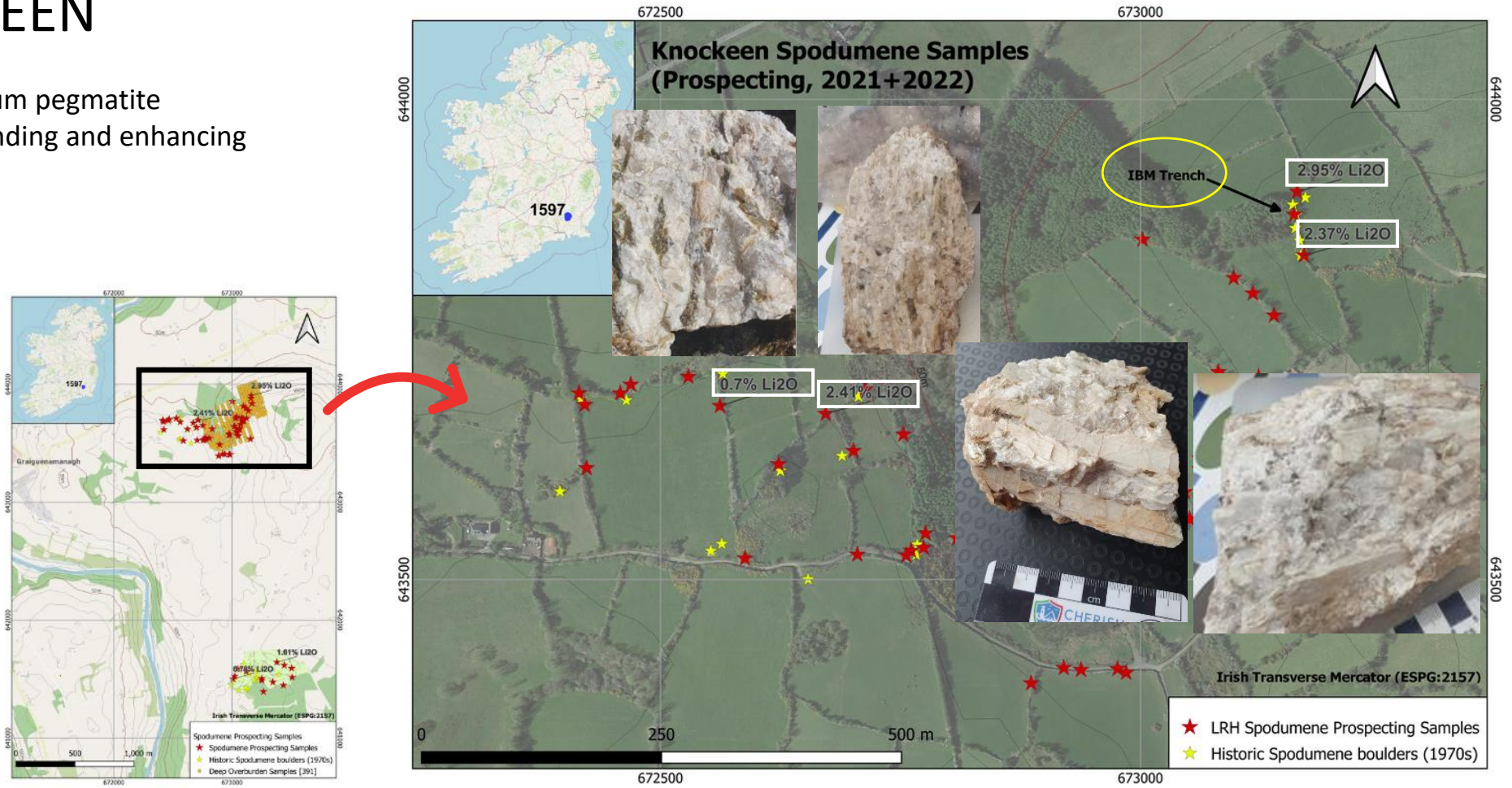
# PROSPECTING SOUTHERN BLOCK

Sample ID	Licence	Prospect	Li ppm	Li2O %*
210724CL02	PL 1597	Knockeen	3240	0.70
210724CL03	PL 1597	Knockeen	11200	2.41
210724CL04	PL 1597	Knockeen	11000	2.37
210724CL05	PL 1597	Knockeen	13700	2.95
AES61137	PL 1597	Carriglead	3550	0.76
AES61138	PL 1597	Carriglead	7470	1.61



# PROSPECTING SOUTHERN BLOCK, KNOCKEEN

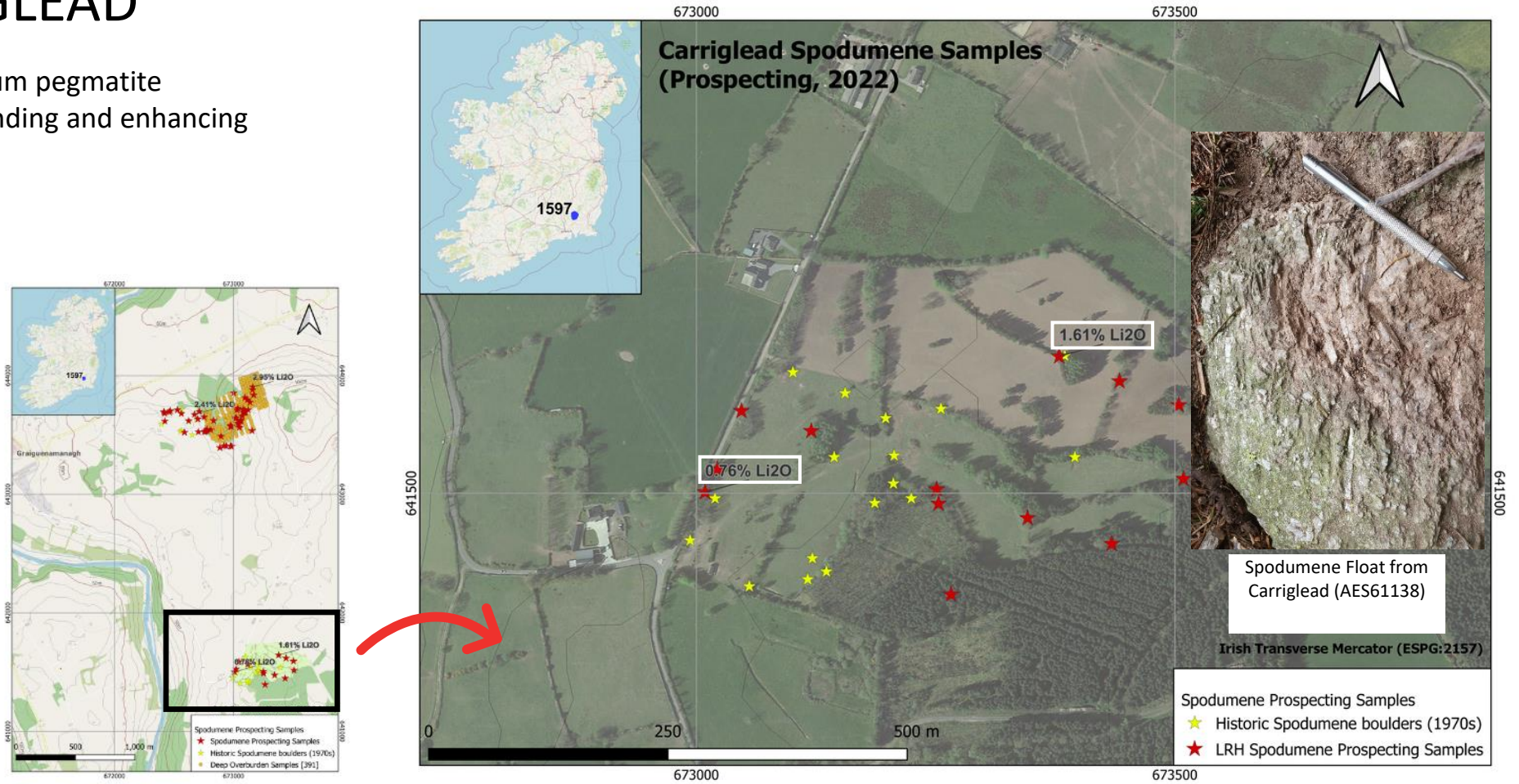
Prospecting discovery of lithium pegmatite “Spodumene” boulders. Extending and enhancing previous work.



White boxed assays from Initial reconnaissance sampling WSR\CL 2021

# PROSPECTING SOUTHERN BLOCK, CARRIGLEAD

Prospecting discovery of lithium pegmatite “Spodumene” boulders. Extending and enhancing previous work.

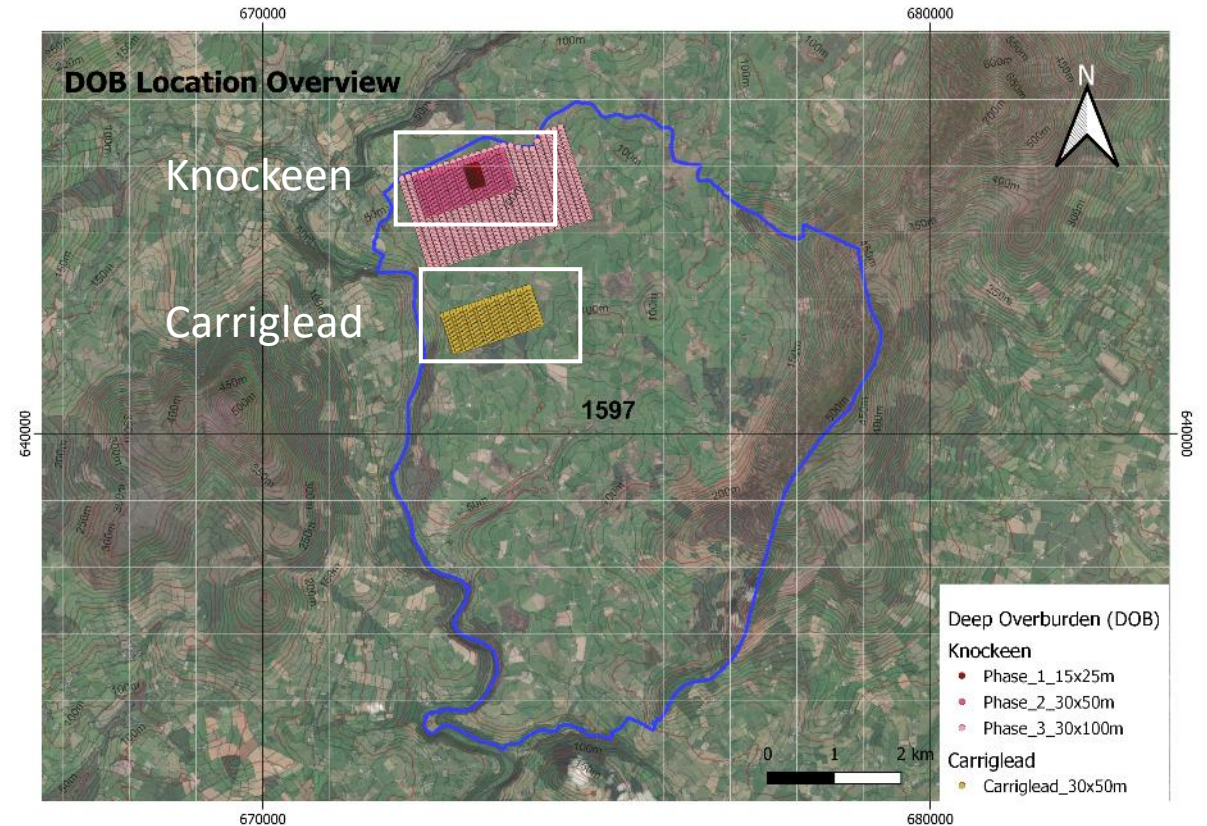


# DECEMBER 2022 RESULTS

## PROSPECTING SOUTHERN BLOCK

- Completed October/November 2022
- Covered the Knockeen East and West target areas as well as the Carriglead target to the south
- Both located significant extent of lithium bearing spodumene pegmatite
- All samples sent to ALS Laboratories for analysis

Global Battery Metals Reports High Grade Lithium Assays Returned; Surface Samples Up to 3.75% Li<sub>2</sub>O From NW Leinster Lithium Project

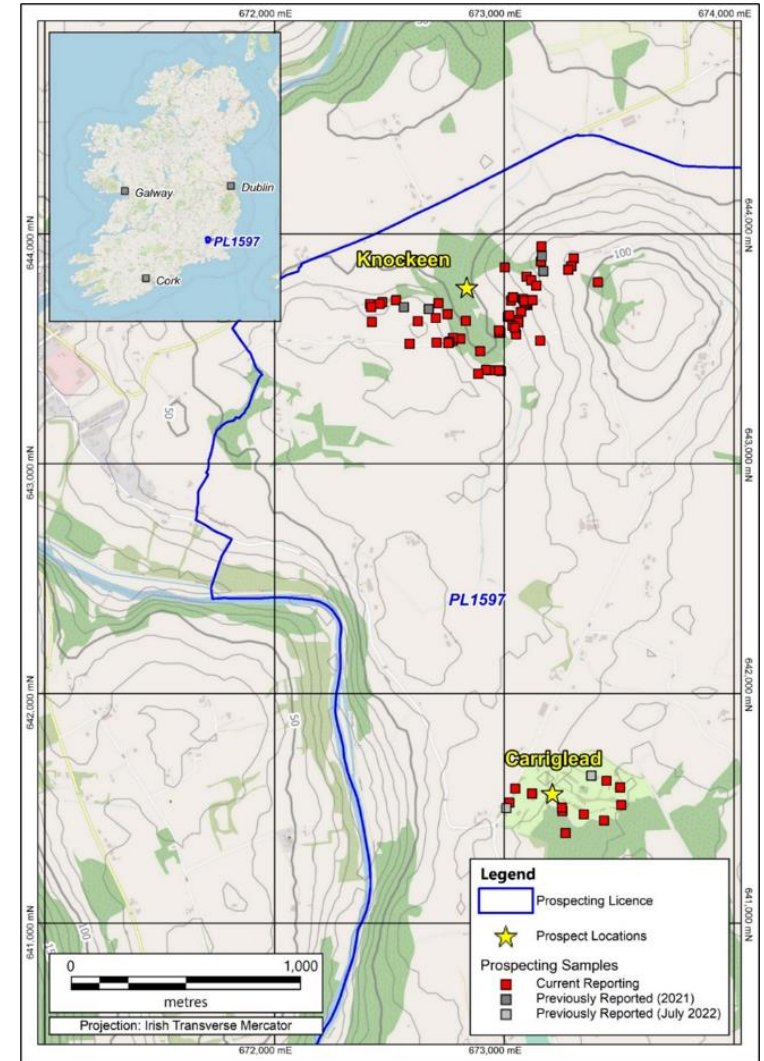


V. Williams

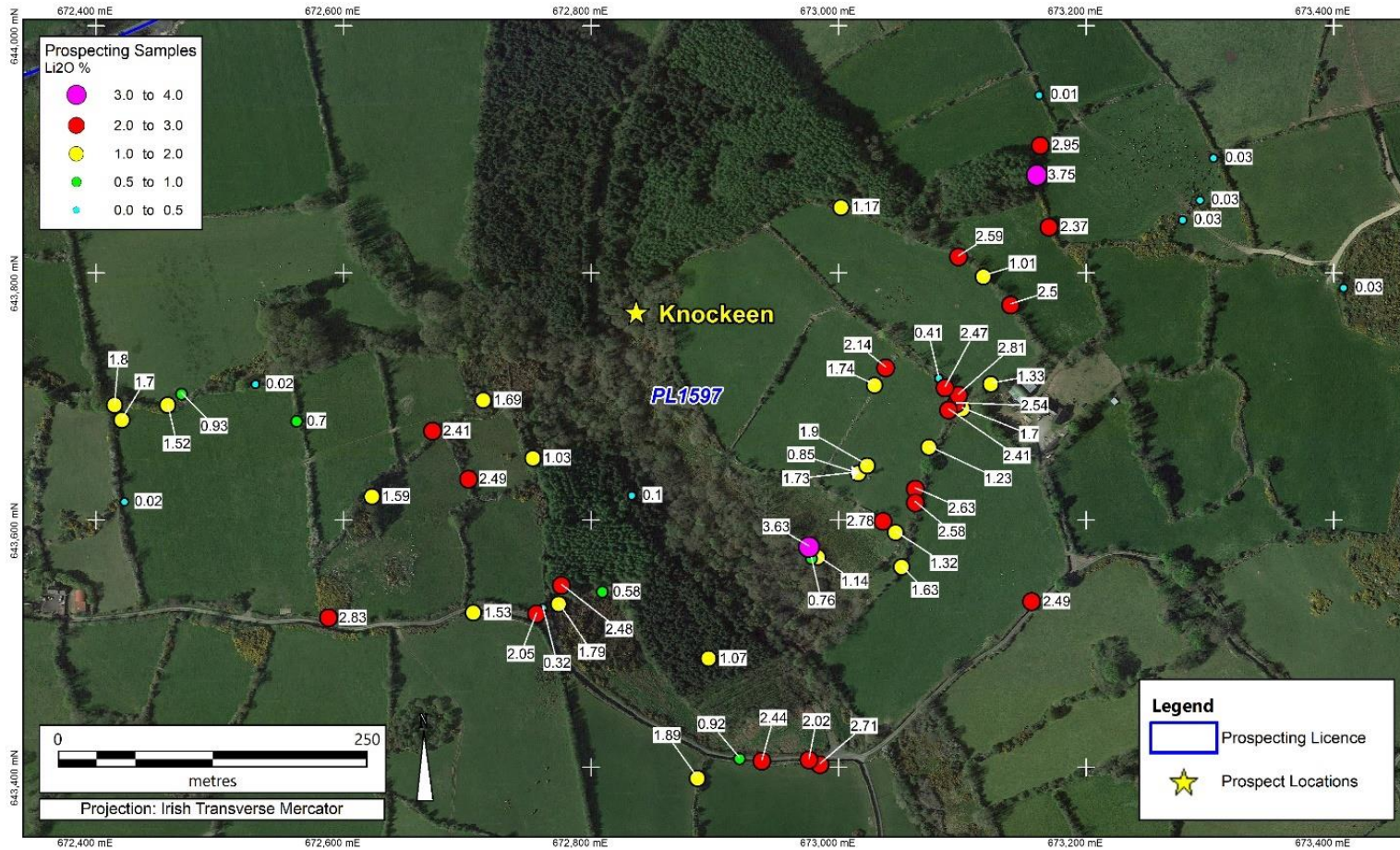


Colm Long

Prospect	Program	No
Carriglead	Recon Sampling July 2022	2
Knockeen	Recon Sampling July 2022	4
Prospect	DD Sampling July 2022	No
Carriglead	Follow Up Sampling Dec 2022	10
Knockeen	Follow Up Sampling Dec 2022	56
Prospect	Program	No
Carriglead	Total	12
Knockeen	Total	60



# MAPPING AND PROSPECTING SOUTHERN BLOCK



Sample_ID	Li_ppm	Li <sub>2</sub> O%*
AES63003	17,410	3.75
AES63033	16,860	3.63
AES63519	13,160	2.83
AES63015	13,050	2.81
AES63029	12,920	2.78
AES63042	12,580	2.71
AES63014	12,200	2.63
AES63021	12,040	2.59
AES63018	11,980	2.58
AES63011	11,820	2.54
AES63023	11,620	2.50
AES63028	11,580	2.49
AES63041	11,570	2.49
AES63037	11,510	2.48
AES63016	11,460	2.47
AES63044	11,340	2.44
AES63012	11,180	2.41
AES63008	9,920	2.14
AES63048	9,520	2.05
AES63043	9,360	2.02

Follow up mapping and sampling December 2022

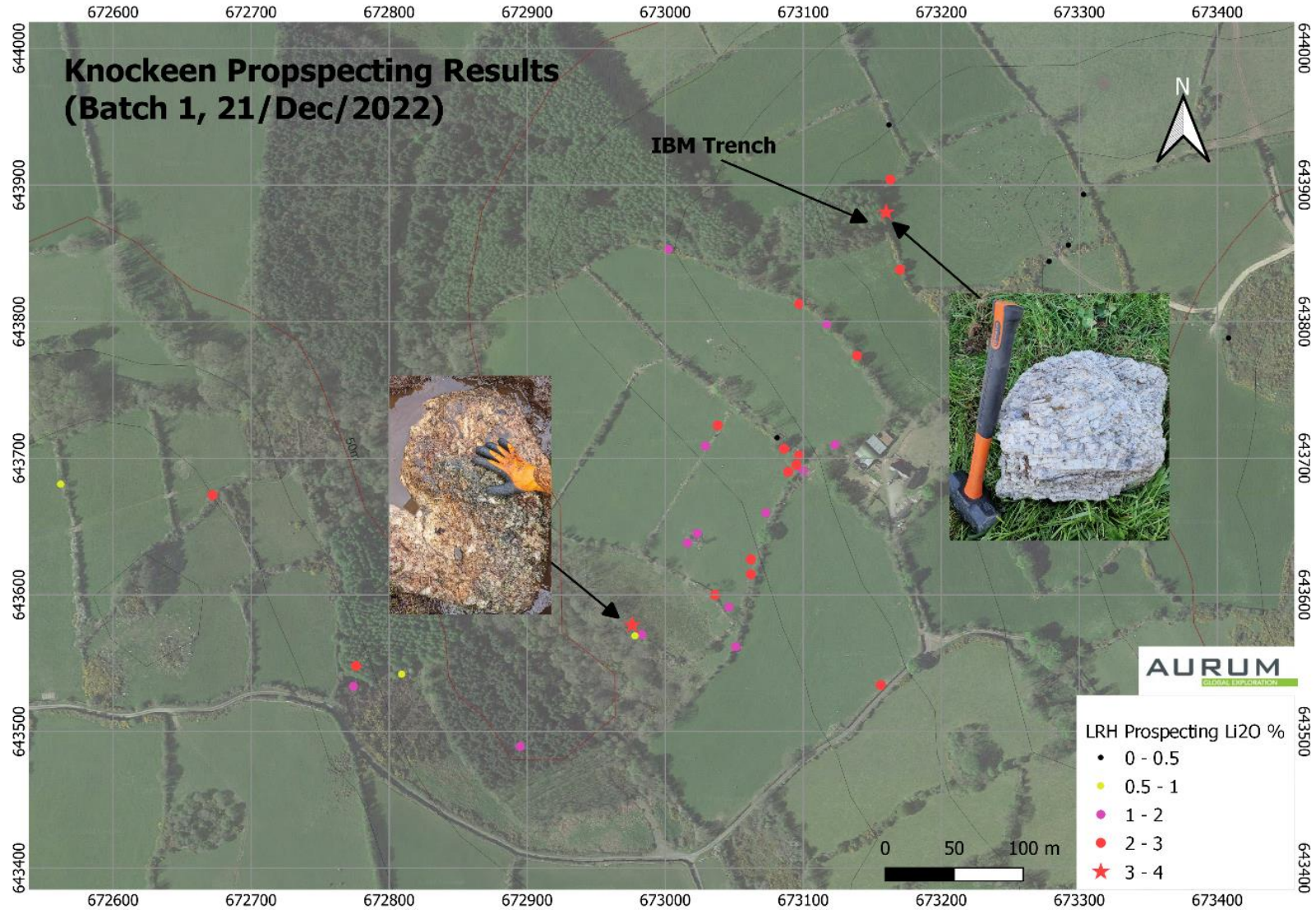


# HIGHLIGHT RESULTS FROM THE PROSPECTING PROGRAM

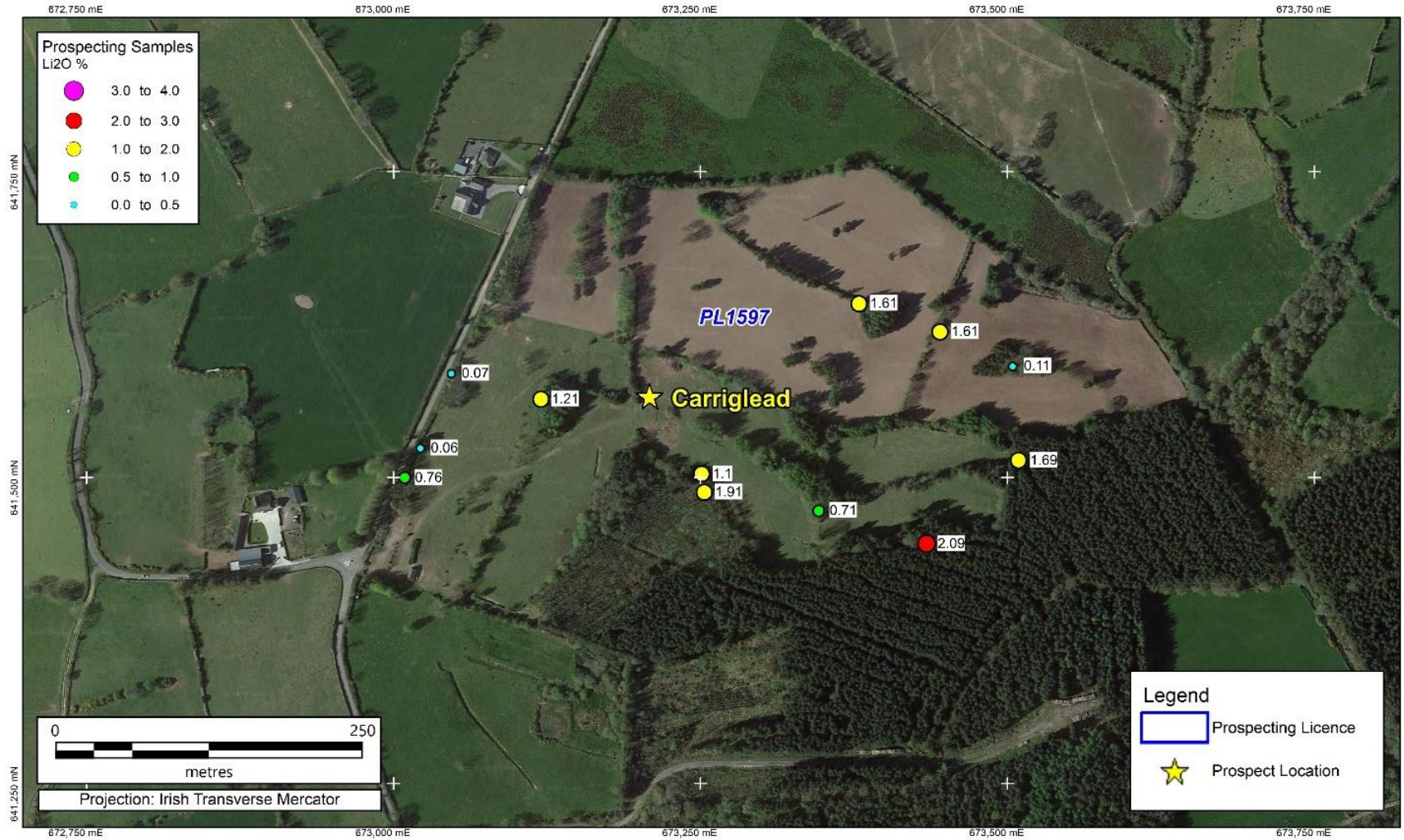
Sample ID	Program	Li_ppm	Li2O%
AES63003	Follow Up Sampling Dec 2022	17,410	<b>3.75</b>
AES63033	Follow Up Sampling Dec 2022	16,860	<b>3.63</b>
AES63519	Follow Up Sampling Dec 2022	13,160	<b>2.83</b>
AES63015	Follow Up Sampling Dec 2022	13,050	<b>2.81</b>
AES63029	Follow Up Sampling Dec 2022	12,920	<b>2.78</b>
AES63042	Follow Up Sampling Dec 2022	12,580	<b>2.71</b>
AES63014	Follow Up Sampling Dec 2022	12,200	<b>2.63</b>
AES63021	Follow Up Sampling Dec 2022	12,040	<b>2.59</b>
AES63018	Follow Up Sampling Dec 2022	11,980	<b>2.58</b>
AES63011	Follow Up Sampling Dec 2022	11,820	<b>2.54</b>

\* Li2O % = Li% (x 2.153)

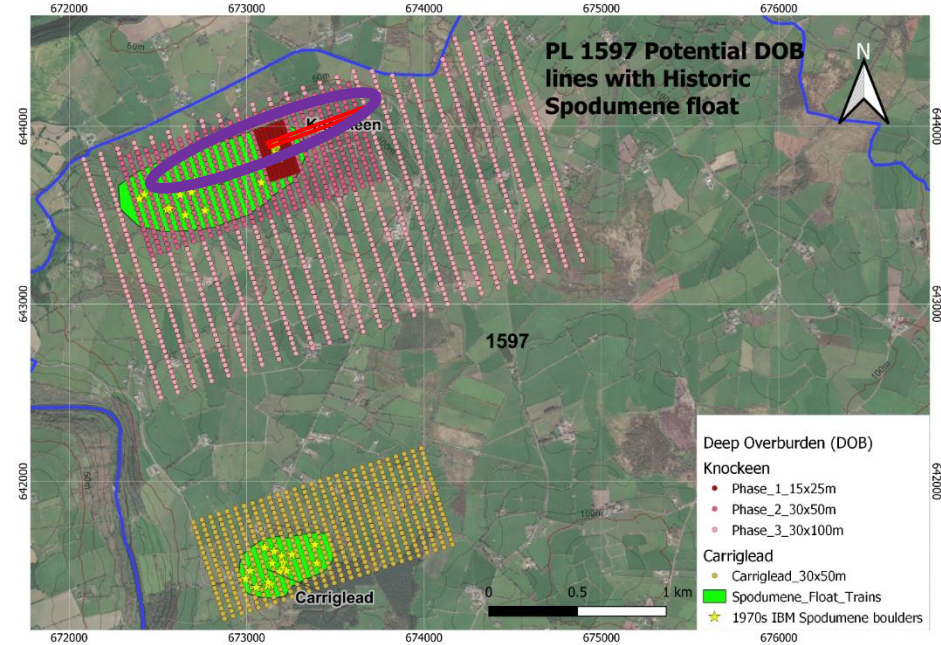
# KNOCKEEN PROSPECTING RESULTS



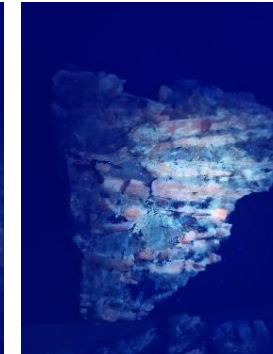
# CARRIGLEAD PROSPECTING RESULTS



# SUMMARY



Spodumene in DOB chips



Spodumene under UV light

# PROSPECTING LITHOGEOCHEMISTRY SAMPLING

- 75% of the results are in from ALS Laboratories.
- Sample results (listed on next slide) are from across the Knockeen target.
- Excellent results from all across the target area.
- Results in column “Li<sub>2</sub>O%” are converted from Li% off the assay cert by multiplying by a factor of x2.153.
- It should be noted that all of the samples are collected from material that would have been cleared from the fields and moved to the margins, so are not in place. But it is thought that they are close to source.
- Initial results show very high values for Li<sub>2</sub>O in many of the samples collected to date.
- It should also be noted that many of the boulders sampled were of a significant size, indicating a closer proximity to source.
- Some samples were analyzed for different reasons, with those at the bottom not sampled for lithium. Instead, other sulphides were found present in these schist samples.



## FULL SET OF ASSAY RESULTS

Sample ID	Programme	Li_ppm	Li2O%	Prospect
AES63003	Follow Up Sampling Dec 2022	17,410	3.75	Knockeen
AES63033	Follow Up Sampling Dec 2022	16,860	3.63	Knockeen
AES63519	Follow Up Sampling Dec 2022	13,160	2.83	Knockeen
AES63015	Follow Up Sampling Dec 2022	13,050	2.81	Knockeen
AES63029	Follow Up Sampling Dec 2022	12,920	2.78	Knockeen
AES63042	Follow Up Sampling Dec 2022	12,580	2.71	Knockeen
AES63014	Follow Up Sampling Dec 2022	12,200	2.63	Knockeen
AES63021	Follow Up Sampling Dec 2022	12,040	2.59	Knockeen
AES63018	Follow Up Sampling Dec 2022	11,980	2.58	Knockeen
AES63011	Follow Up Sampling Dec 2022	11,820	2.54	Knockeen
AES63023	Follow Up Sampling Dec 2022	11,620	2.50	Knockeen
AES63028	Follow Up Sampling Dec 2022	11,580	2.49	Knockeen
AES63041	Follow Up Sampling Dec 2022	11,570	2.49	Knockeen
AES63037	Follow Up Sampling Dec 2022	11,510	2.48	Knockeen
AES63016	Follow Up Sampling Dec 2022	11,460	2.47	Knockeen
AES63044	Follow Up Sampling Dec 2022	11,340	2.44	Knockeen
AES63012	Follow Up Sampling Dec 2022	11,180	2.41	Knockeen
AES63008	Follow Up Sampling Dec 2022	9,920	2.14	Knockeen
AES63048	Follow Up Sampling Dec 2022	9,520	2.05	Knockeen
AES63043	Follow Up Sampling Dec 2022	9,360	2.02	Knockeen
AES63027	Follow Up Sampling Dec 2022	8,820	1.90	Knockeen
AES63046	Follow Up Sampling Dec 2022	8,790	1.89	Knockeen
AES63516	Follow Up Sampling Dec 2022	8,370	1.80	Knockeen
AES63036	Follow Up Sampling Dec 2022	8,300	1.79	Knockeen
AES63007	Follow Up Sampling Dec 2022	8,090	1.74	Knockeen
AES63026	Follow Up Sampling Dec 2022	8,030	1.73	Knockeen
AES63010	Follow Up Sampling Dec 2022	7,890	1.70	Knockeen
AES63517	Follow Up Sampling Dec 2022	7,910	1.70	Knockeen
AES63512	Follow Up Sampling Dec 2022	7,840	1.69	Knockeen
AES63017	Follow Up Sampling Dec 2022	7,550	1.63	Knockeen
AES63520	Follow Up Sampling Dec 2022	7,370	1.59	Knockeen
AES63049	Follow Up Sampling Dec 2022	7,100	1.53	Knockeen
AES63515	Follow Up Sampling Dec 2022	7,040	1.52	Knockeen
AES63024	Follow Up Sampling Dec 2022	6,190	1.33	Knockeen
AES63031	Follow Up Sampling Dec 2022	6,140	1.32	Knockeen
AES63013	Follow Up Sampling Dec 2022	5,720	1.23	Knockeen
AES63019	Follow Up Sampling Dec 2022	5,420	1.17	Knockeen
AES63030	Follow Up Sampling Dec 2022	5,300	1.14	Knockeen
AES63034	Follow Up Sampling Dec 2022	4,960	1.07	Knockeen
AES63039	Follow Up Sampling Dec 2022	4,790	1.03	Knockeen
AES63022	Follow Up Sampling Dec 2022	4,710	1.01	Knockeen

AES63022	Follow Up Sampling Dec 2022	4,710	>1%	<del>1.01</del>	Knockeen
AES63514	Follow Up Sampling Dec 2022	4,300		0.93	Knockeen
AES63045	Follow Up Sampling Dec 2022	4,290		0.92	Knockeen
AES63025	Follow Up Sampling Dec 2022	3,940		0.85	Knockeen
AES63082	Follow Up Sampling Dec 2022	3,550		0.76	Knockeen
AES63085	Follow Up Sampling Dec 2022	2,680		0.58	Knockeen
AES63009	Follow Up Sampling Dec 2022	1,920		0.41	Knockeen
AES63047	Follow Up Sampling Dec 2022	1,480		0.32	Knockeen
AES63088	Follow Up Sampling Dec 2022	450		0.10	Knockeen
AES63001	Follow Up Sampling Dec 2022	120		0.03	Knockeen
AES63002	Follow Up Sampling Dec 2022	120		0.03	Knockeen
AES63004	Follow Up Sampling Dec 2022	120		0.03	Knockeen
AES63005	Follow Up Sampling Dec 2022	130		0.03	Knockeen
AES63513	Follow Up Sampling Dec 2022	100		0.02	Knockeen
AES63518	Follow Up Sampling Dec 2022	80		0.02	Knockeen
AES63006	Follow Up Sampling Dec 2022	60		0.01	Knockeen

Sample_ID	Programme	Li_ppm	Li2O%	Car
AES63504	Follow Up Sampling Dec 2022	9,720	2.09	Car
AES63503	Follow Up Sampling Dec 2022	8,890	1.91	Car
AES63509	Follow Up Sampling Dec 2022	7,870	1.69	Car
AES63501	Follow Up Sampling Dec 2022	7,460	1.61	Car
AES63507	Follow Up Sampling Dec 2022	5,620	1.21	Car
AES63505	Follow Up Sampling Dec 2022	5,120	1.10	Car
AES63508	Follow Up Sampling Dec 2022	3,280	0.71	Car
AES63511	Follow Up Sampling Dec 2022	500	0.11	Car
AES63506	Follow Up Sampling Dec 2022	330	0.07	Car
AES63502	Follow Up Sampling Dec 2022	290	0.06	Car

# DEEP OVERBURDEN SAMPLING



Pionjar Sampling hammering down



Jacking sample out



Retrieving the sample



Sampling & recording data



Safe transport of equipment

Spodumene (hardness 6.5-7) is a variety of pyroxene that has little resistance to weathering and alteration, with a concomitant loss of lithium. It doesn't break down easily in a mechanical process, but chemically alters with ease.

# NW LEINSTER PROJECT STATUS

## Progressive Value Creation

2021

- ✓ 12.5km ground Mag survey complete.
- ✓ Deep overburden soils with Li/Ta/Cs anomalies along granite/Ordovician sediment contact where a pegmatite dike swarm occurs.
- ✓ 3 holes totaling 625m drilled in 2021
  - No significant spodumene or Li in pegmatite
  - Intersected major dyke swarm
  - Anomalous Li in biotite grains in pegmatite (1500-2638 ppm) indicating possible proximity to Li mineralization
  - Source of spodumene pegmatite not located

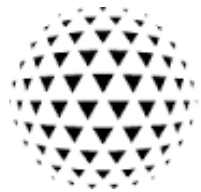
2022

- ✓ Target prospecting at Knockeen & Carriglead completed.
- ✓ 66 total surface samples analyzed, assay results show that 47 returned grades above 1% Li<sub>2</sub>O - with grades as high as 3.75% and 3.63% Li<sub>2</sub>O (source: ALS Laboratories - Loughrea, Ireland).
- ✓ Knockeen: out of a total of 56 samples, 41 samples graded above 1% Li<sub>2</sub>O, of which 20 graded above 2% Li<sub>2</sub>O and of which two graded above 3% Li<sub>2</sub>O (Sample AES 63003 (3.63% Li<sub>2</sub>O) and Sample AES 63033 (3.75% Li<sub>2</sub>O)).
- ✓ Carriglead: out of a total of 10 samples, six samples graded above 1% Li<sub>2</sub>O, of which one sample analyzed above 2% Li<sub>2</sub>O (Sample AES63504 (2.09% Li<sub>2</sub>O)).

2023

- Deep overburden results expected to be returned in February.
- GBML has identified a pegmatite dike which may have been the source of the lithium bearing pegmatite boulders. Work is underway to test this theory.
- Targeting Spring 2023 to begin drilling campaign.





**GLOBAL BATTERY METALS**

# NW LEINSTER LITHIUM PEGMATITE PROJECT TECHNICAL UPDATE



Michael Murphy  
President & CEO



[mm@gbml.ca](mailto:mm@gbml.ca)

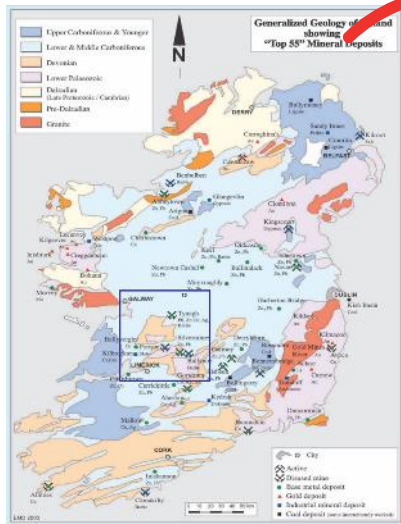
February 2023



GLOBAL  
BATTERY  
METALS

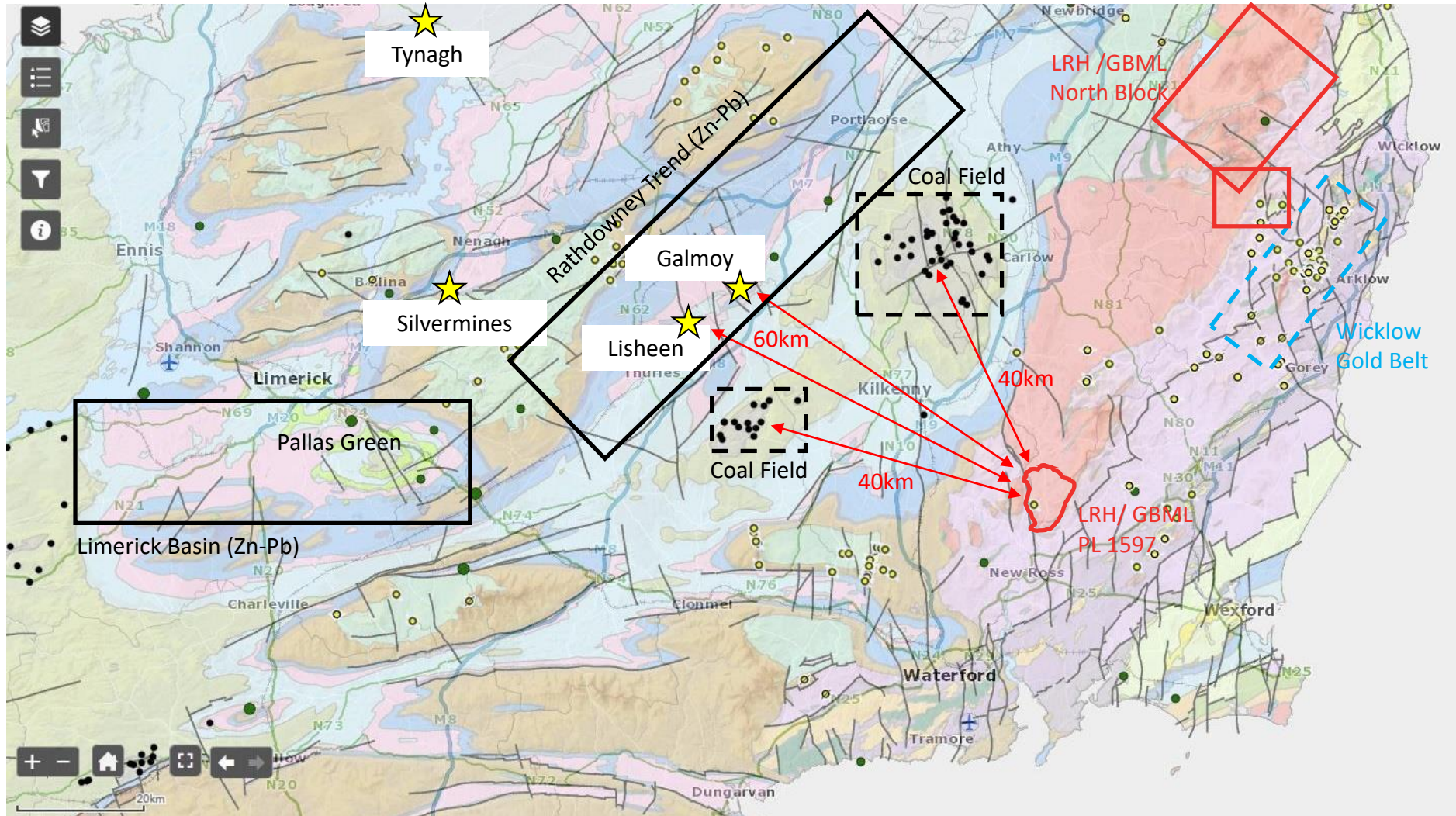
APPENDIX:  
EXPLORATION AND MINING IN IRELAND

# MAJOR METAL MINES IN SOUTHEAST IRELAND



1. **Navan Mine**  
Boliden  
Zn-Pb  
100Mt @ 14.5% Zn+Pb
2. **Lisheen Mine**  
Anglo  
Zn-Pb  
18Mt @ 14.9% Zn+Pb
3. **Galmoy Mine**  
Lundin  
Zn-Pb  
9Mt @ 14.5% Zn+Pb
4. **Silvermines Mine**  
Zn-Pb  
18Mt @ 17.7% Zn+Pb
5. **Tynagh Mine**  
Lundin  
Zn-Pb  
11.8Mt @ 11.5% Zn+Pb

# MINES CLOSE TO LICENCE HOLDINGS



# QUARRIES CLOSE TO LICENCE HOLDINGS

