Lough Leane and Kerry Lakes – The Deep Past

Killarney - Killarney Plaza Hotel

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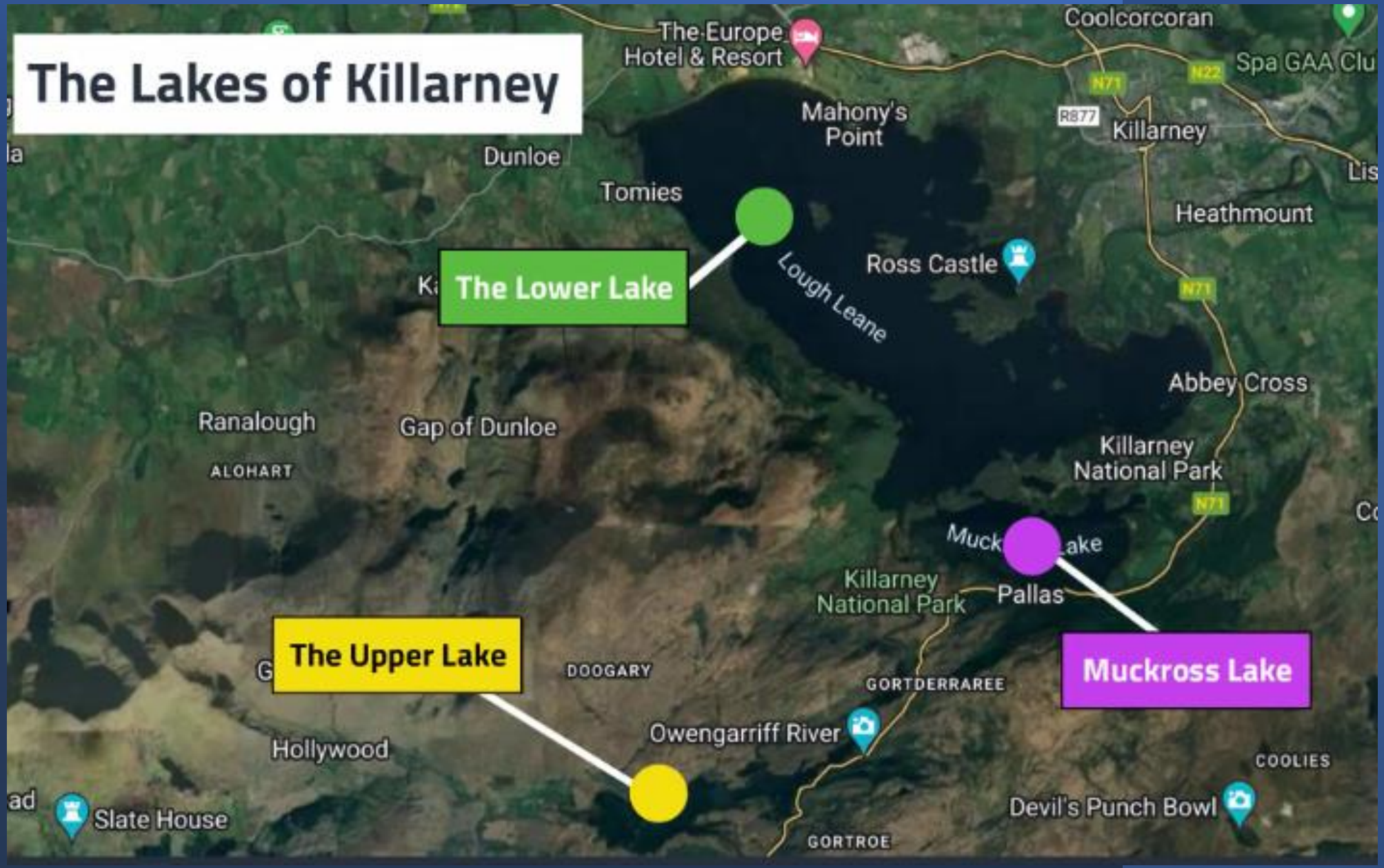
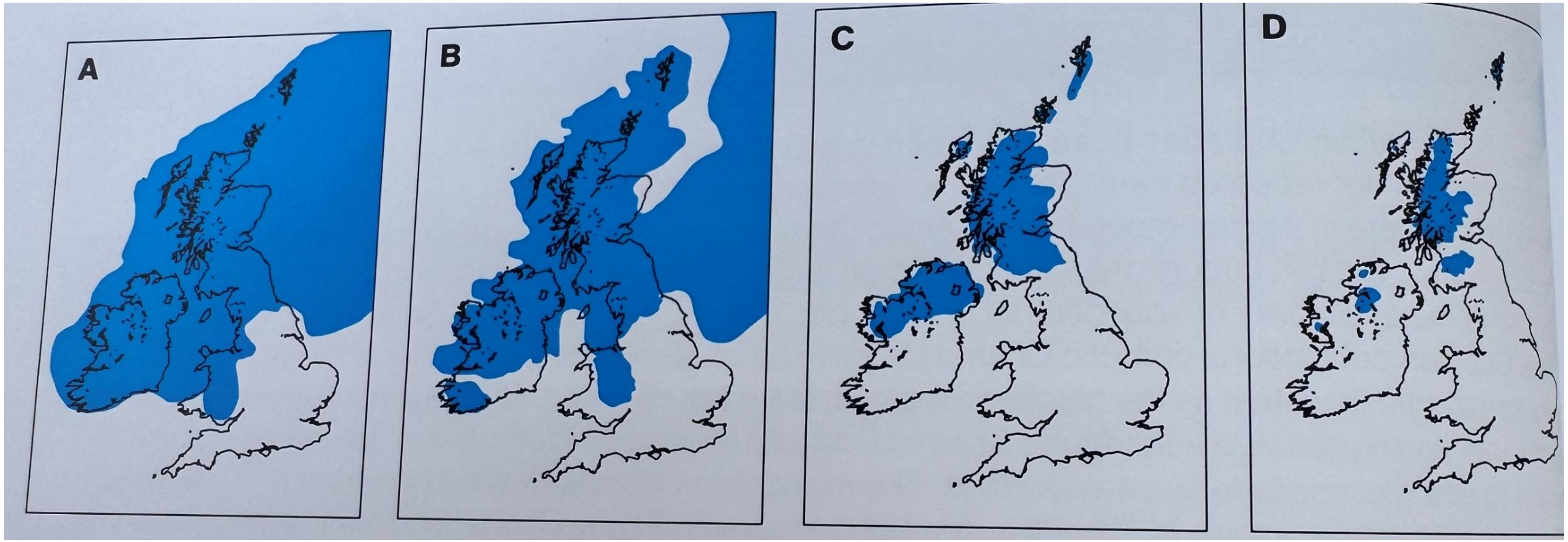

The Lakes of Killarney
The Europe Hotel & Resort
Coolcorcoran
Spa GAA Clu
N71
N22
R877
Killarney
Mahony's Point
Dunloe
Tomies
Heathmount
The Lower Lake
Ross Castle
Lough Leane
N71
Abbey Cross
Ranalough
Gap of Dunloe
ALOHART
Killarney National Park
N71
Muck Lake
Killarney National Park
Pallas
The Upper Lake
DOOGARY
GORTDERRARAEE
Muckross Lake
Owengarriff River
Hollywood
COOLIES
Slate House
Devil's Punch Bowl
GORTROE



27k BP - 23k BP - Last Glacial Maximum
19k BP - Melting of some Ice
16k BP - South of Ireland free of Ice
15k BP - The invasion begins!
11k BP – full access - Paleoflows

Ice Changes Everything –
Cold, Clean, Water !

- Post Glacial invasion – unique fauna and flora spreads across the valley over thousands of years.
- The Killarney Valley watershed drains a large area: 647.5 km² / 160k acres.
- Lough Leane - 19 km² (4,700 acres)
- Complex Geology : Old Red Sandstone to calcium rich lower lakes
- The upper and middle lakes are regarded as oligotrophic and Lough Leane as a transitional or mesotrophic lake type - heading for eutrophic conditions.
- Some very special fish species – Killarney shad / arctic char / genetically unique, ferox trout

Pressures Mount – 1920’s onwards

- Killarney - key tourist centre 1800’s onwards
- 1966/67 - Minister, Local Government commissions appraisal of Killarney Valley tourism potential
- Key finding – grave concerns over discharge of raw sewage into Ross Bay
- Two surveys required: state of the existing pollution by domestic sewage - its consequences
- A hydrographical investigation to assess the potential of the lakes for water-based recreation.

The Killarney Valley Lake Survey – 1971 to 1975

Killarney Valley Lake Survey – Results and Conclusions

Killarney Valley Lake Survey – Results and Conclusions

- ROI Population – 1961= 2.8m / 1970 = 3.3m/ 2025 = 5.5m
- EEC - 1973 – CAP Common Agricultural Policy
- 1st Major / comprehensive / limnological study of an Irish lough
- Guidance: Profs WT Edmonds / Brian Wood
- Severe “Cultural Eutrophication” of Lough Leane
- Major enrichment -Dundag Bay, Middle Lake
- Clear and quantifiable biological impacts
- Tertiary Treatment required ASAP and solution for Dundag discharge

Subsequent events and Future Challenges

- **1985** – Tertiary treatment / Reed Bed System
- Killarney Study – foundation for other intensive studies, as “cultural eutrophication” became prevalent across Ireland – L Sheelin, L Derg, L Ramor etc
- Legacy issues now arising in rich Irish Limestone lakes - Ca3(PO4)2
- Climate mediated changes and invasive species - e.g. bream and rudd
- Impacts on high status conservation species: Killarney shad / arctic char / Atlantic salmon
- Changes occurring and fast! - Flora and sediments - Ecosystem Approach

Thank You