SW MANITOBA / FORMATION MAP ATLAS

Formation geometry, thickness and edges

38 formation plates plus classified-edge and erosion context

The atlas retains the complete supported numerical framework and adds explicit edge classes. A published zero edge, model-derived thinning contour, erosional surface and support limit are different objects.

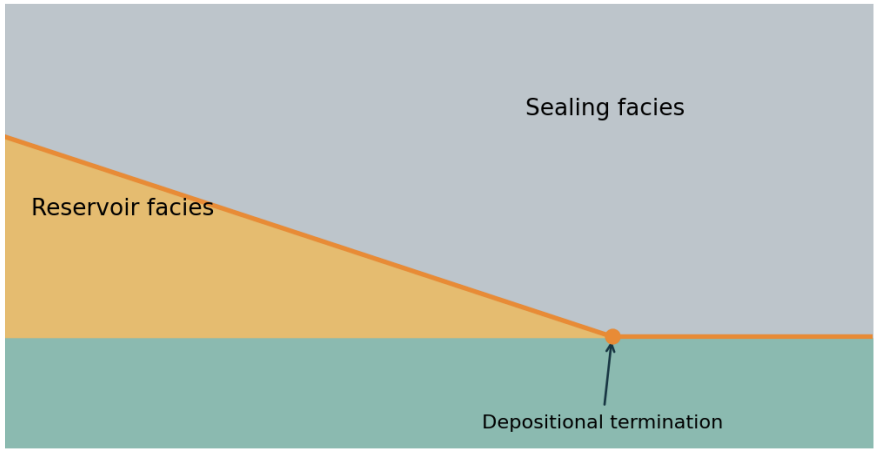
Coordinates	Grid	Study domain
NAD83 / UTM zone 14N	2 km regional display grid	Southwestern Manitoba; clipped to province

Every structure panel retains the source vertical datum. Gross thickness uses the stated supported top/base pair; it is not net reservoir or pay. Blank values remain unknown. A 5 m modeled thickness contour is not a zero edge or proof of depositional pinch-out.

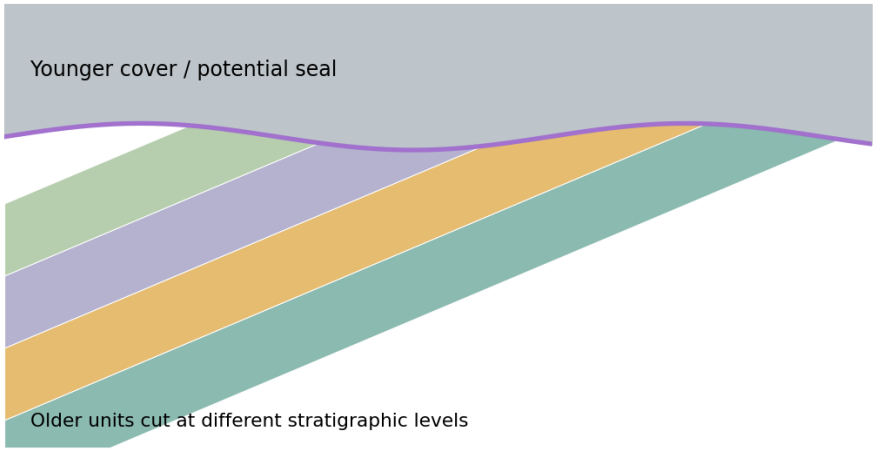
No independently digitized deep zero-edge or confirmed depositional-pinch-out vectors are claimed for Manitoba in this release. Published P-1 and M-2 maps remain the source subcrop references. The separately reconstructed unconformity surface uses bounded historical picks. It does not replace the published formation tops. Sources and limits are documented in the companion full study and edge-evidence register.

Four edges that must remain different in maps and 3D

A Depositional pinch-out



B Erosional truncation and subcrop



C Facies or porosity limit

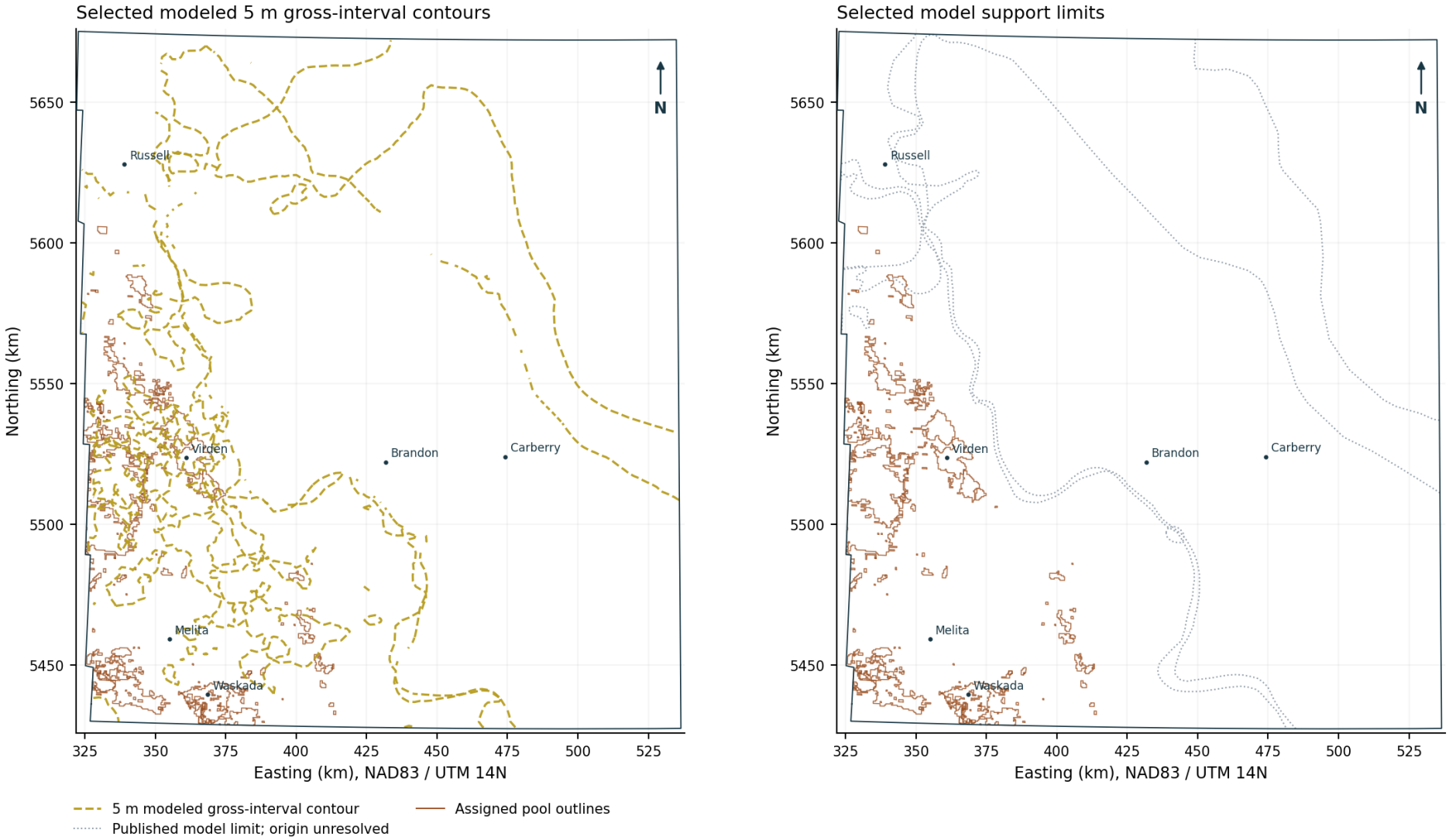


D Source or model support boundary



CONCEPTUAL - NOT TO SCALE. A published zero edge identifies a limit of preserved occurrence; its origin requires additional evidence.
Only A is a depositional pinch-out. B records removal. C is a reservoir-property change. D records an evidence limit.

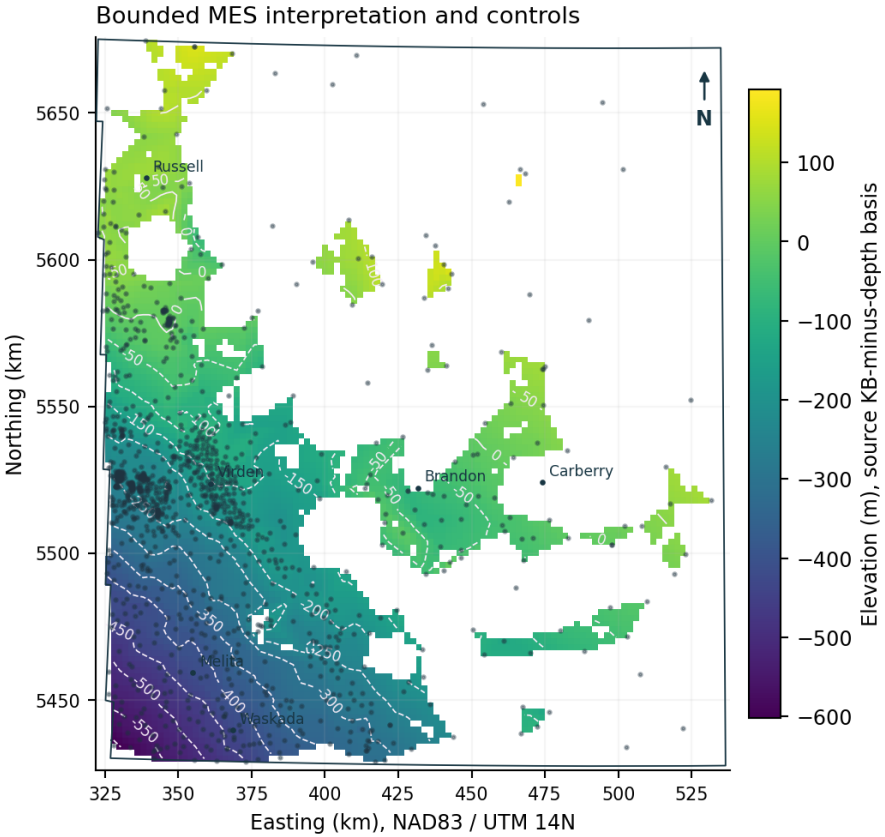
Southwest Manitoba: thinning and data support are different evidence

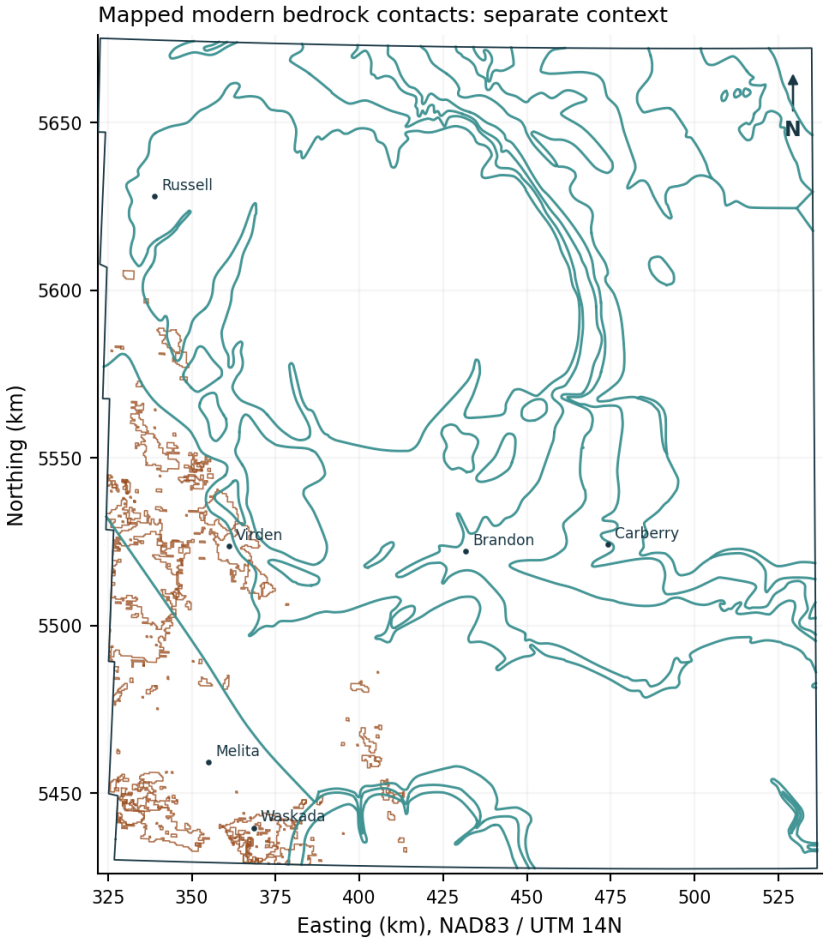


Selected intervals: Bakken, Lodgepole, Lower Amaranth, Reston and Upper Melita markers. Lines are derived from the existing 2 km model. They do not establish zero thickness, an original shoreline, a reservoir seal or a precise erosional-subcrop position.

Two different surfaces: buried sub-Mesozoic and modern bedrock

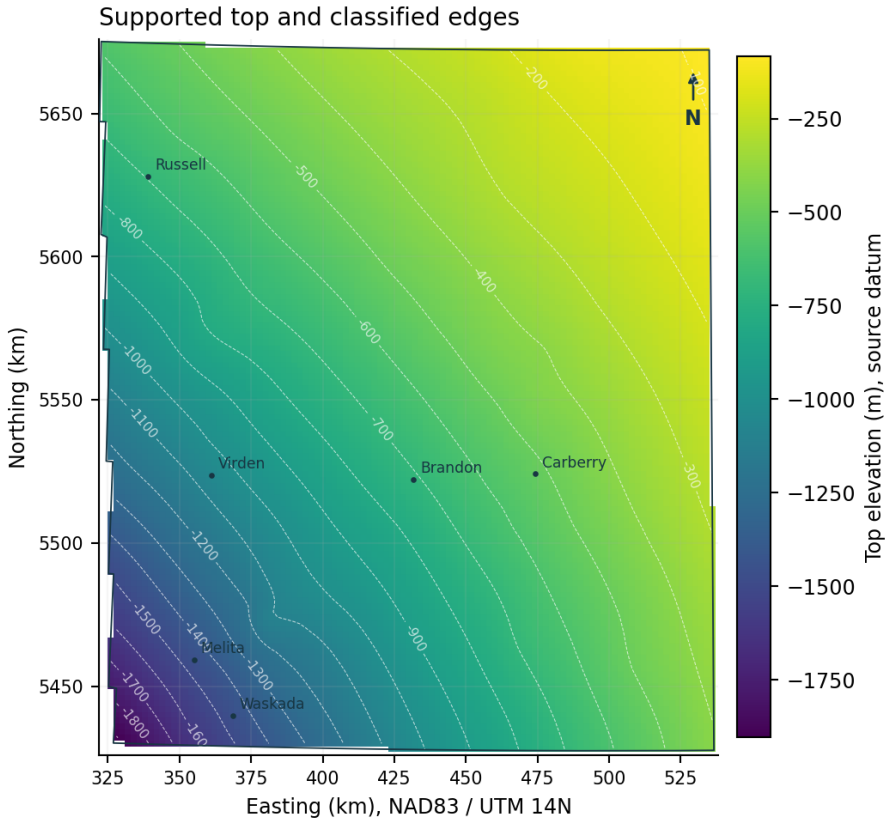
Do not interpret a modern contact as a deep subcrop or an original depositional shoreline.

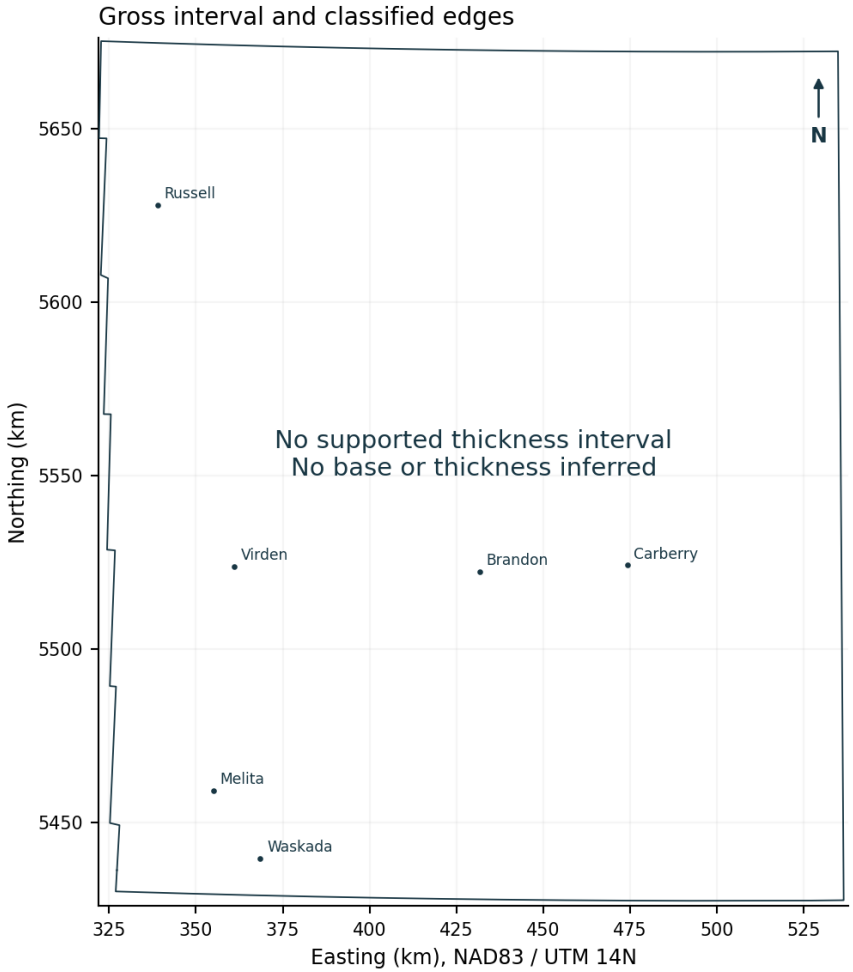




MES: 1,173 accepted vertical-classified records; 1,163 unique locations; 4,202 supported 2 km nodes. 50 m contours.
No extrapolation: within control hull, 7.5 km of a control, maximum 20 km triangle edge. Five-fold holdout MAE 5.965 m; RMSE 10.002 m.
38 conflicting display nodes masked; source picks retained. Holdout is not independent pick validation; full surveys/datum conversion unverified.
Sources: MGS TGI historical MES records; Manitoba mapped bedrock contacts; existing pool inventory. Erosional relief is not a mapped trap.

Precambrian basement

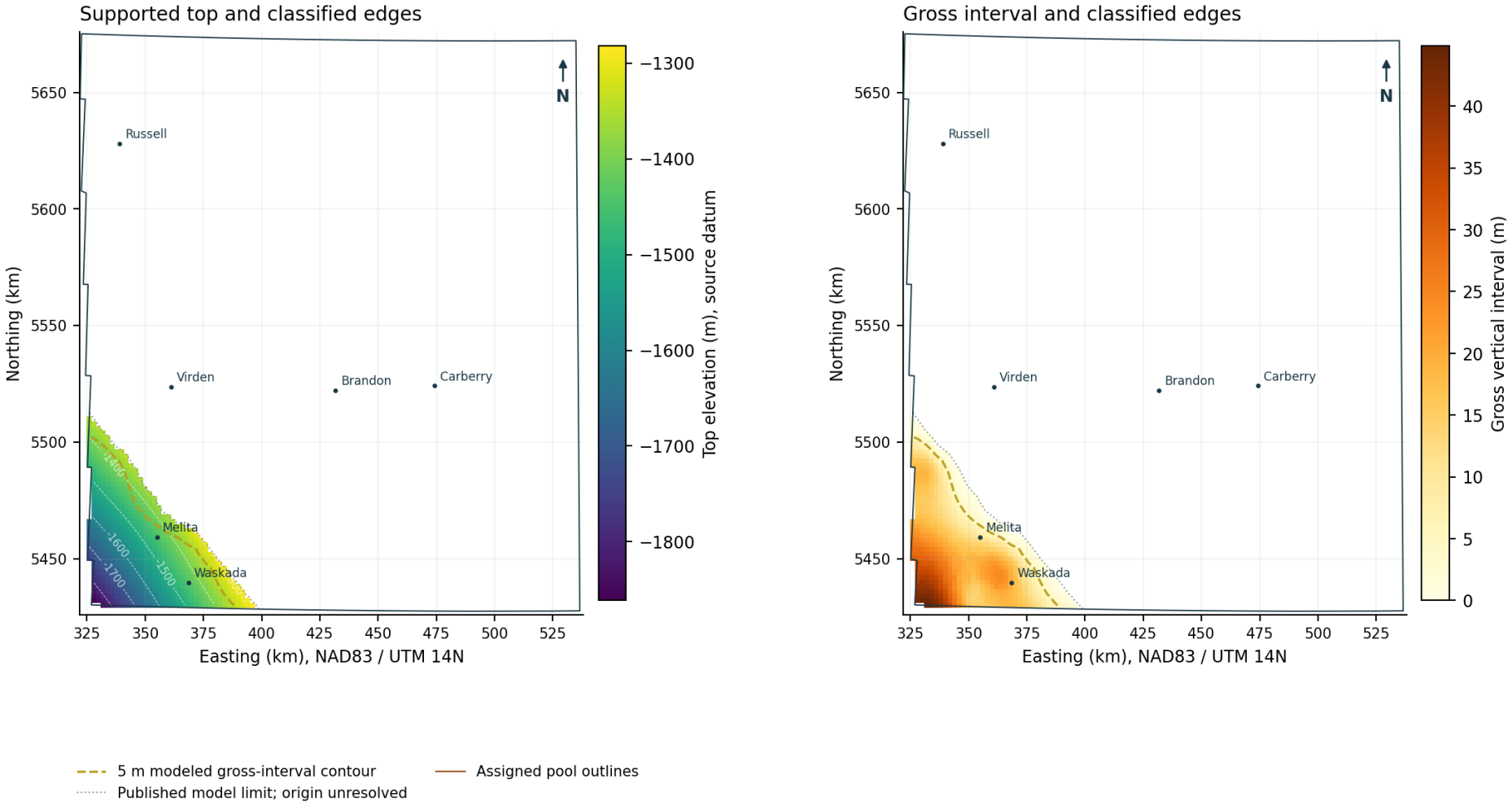




Assigned pool outlines

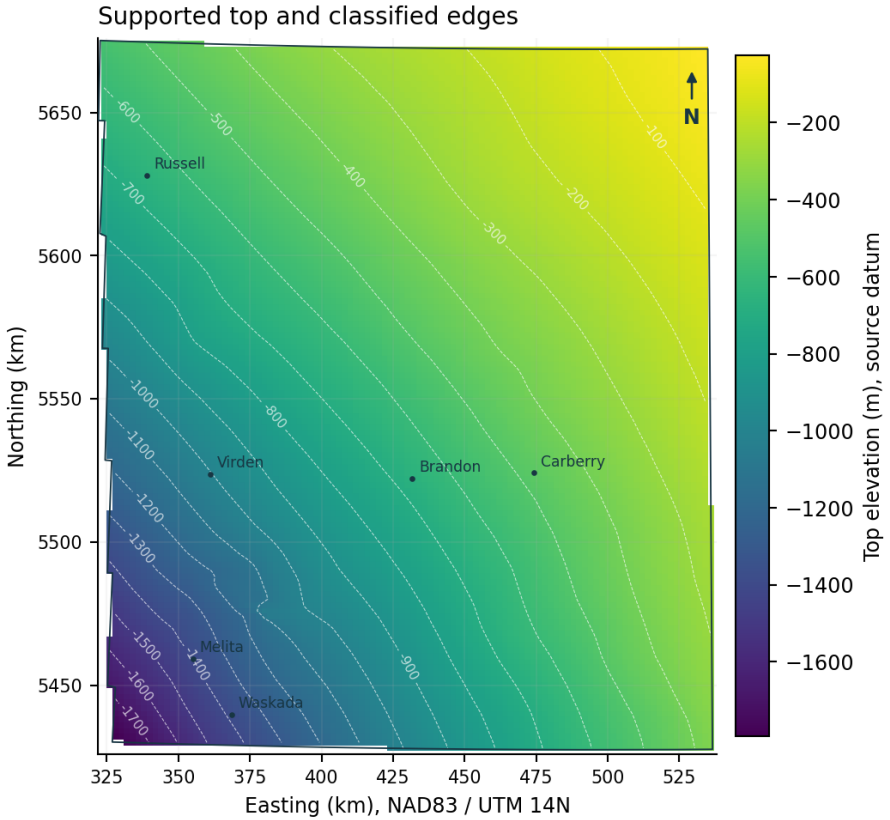
2 km regional grid. Blank values are unknown, not zero. Top surface only; no thickness definition.
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

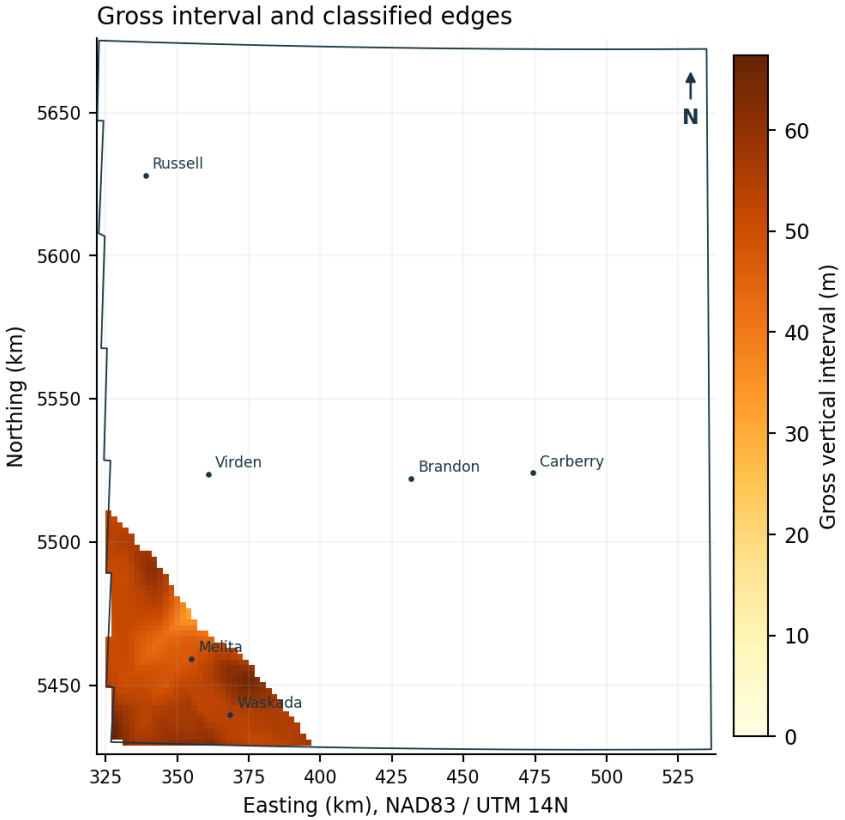
Deadwood



2 km regional grid. Blank values are unknown, not zero. Deadwood top to Precambrian basement top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

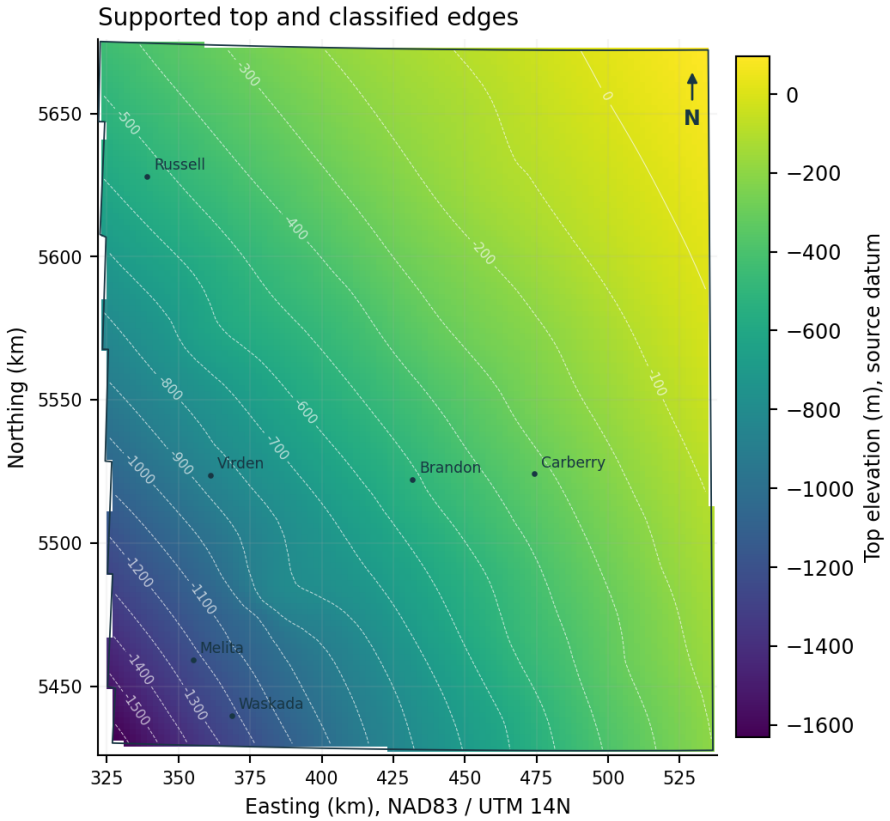
Winnipeg

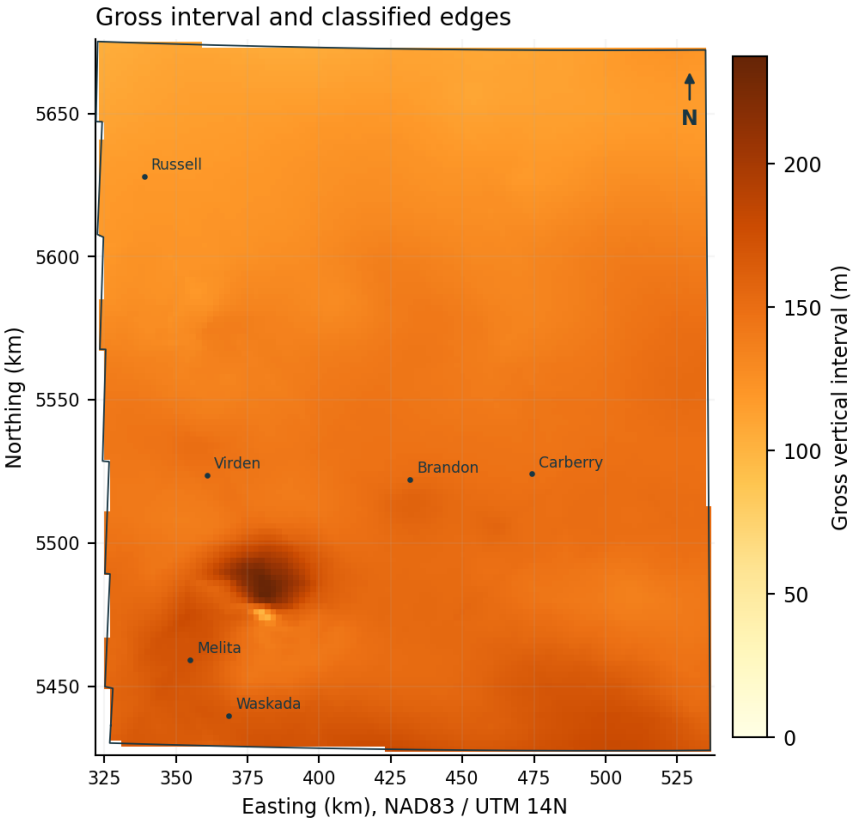




2 km regional grid. Blank values are unknown, not zero. Winnipeg top to Deadwood top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Red River

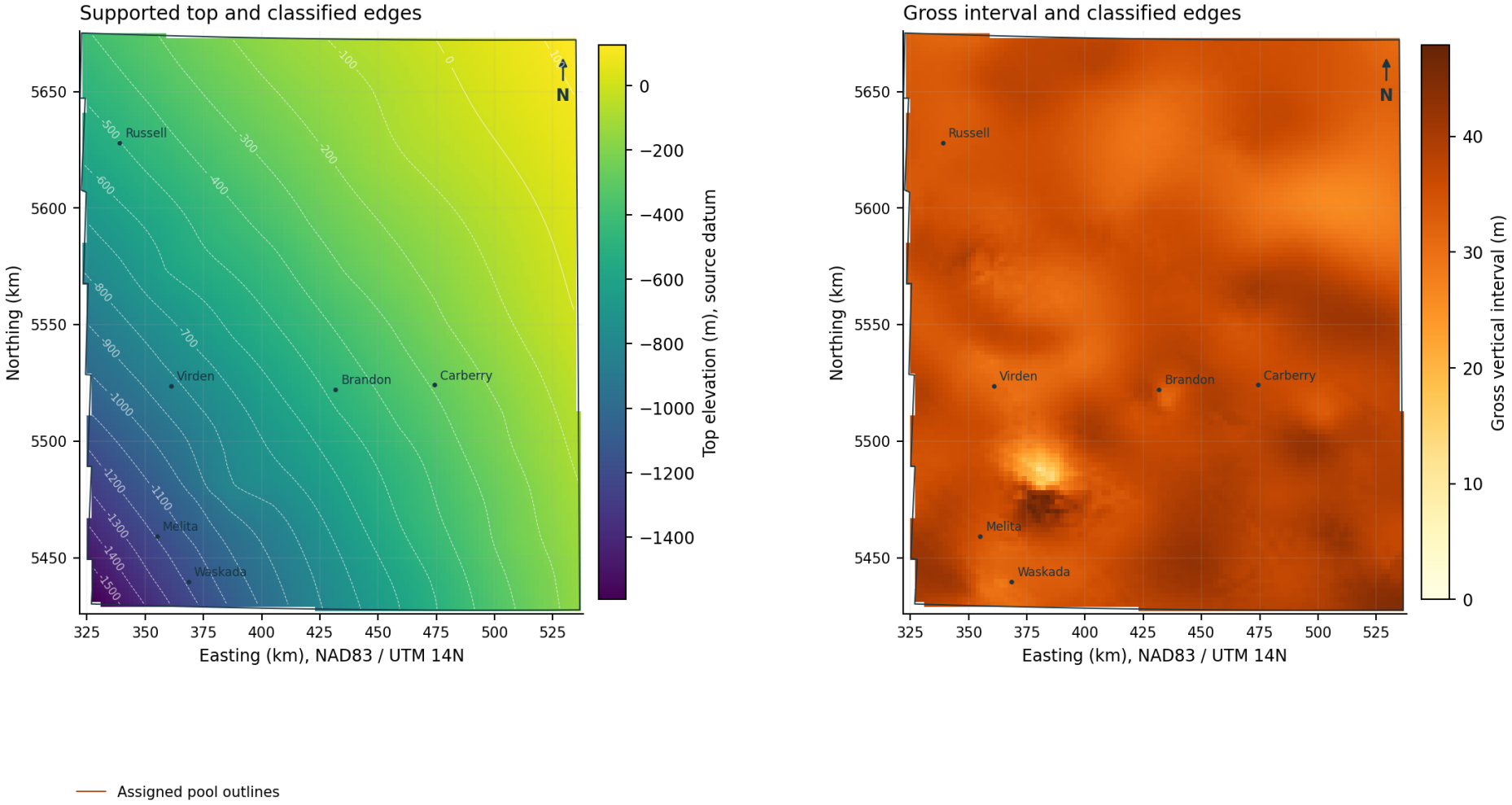




Assigned pool outlines

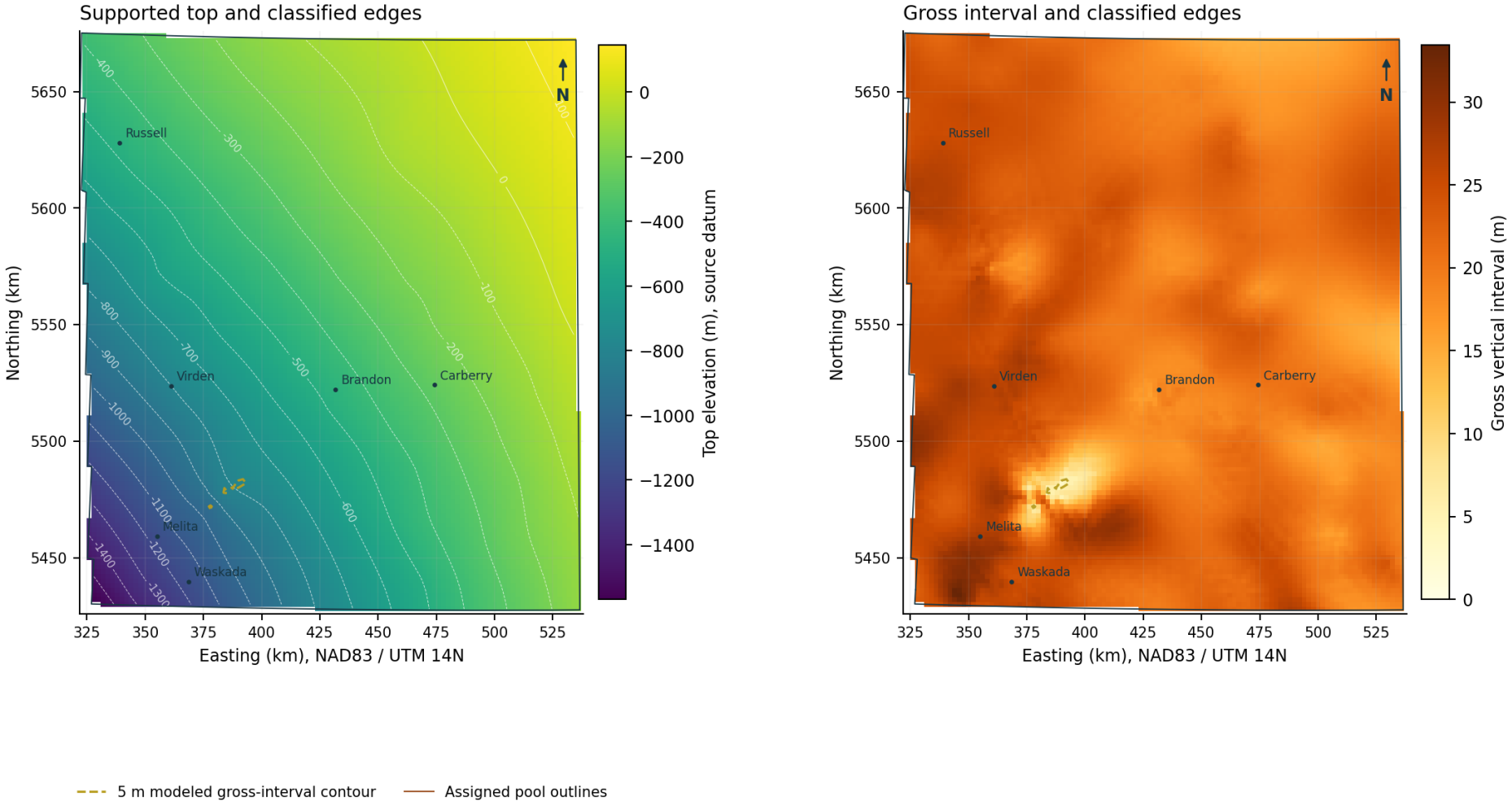
2 km regional grid. Blank values are unknown, not zero. Red River top to Winnipeg top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Stony Mountain



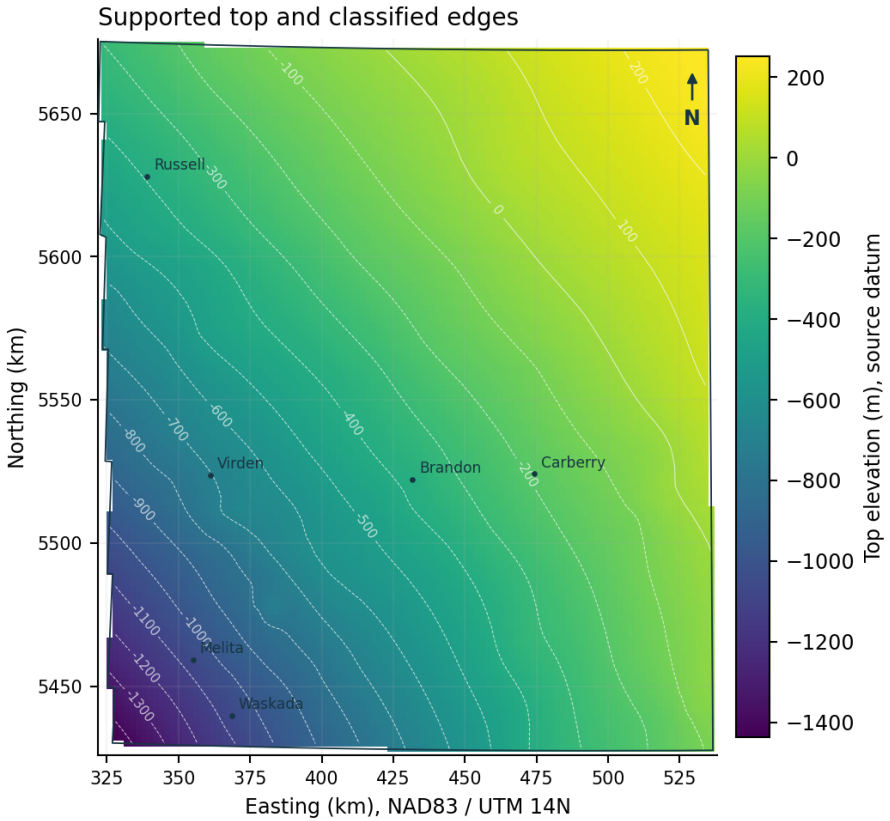
2 km regional grid. Blank values are unknown, not zero. Stony Mountain top to Red River top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

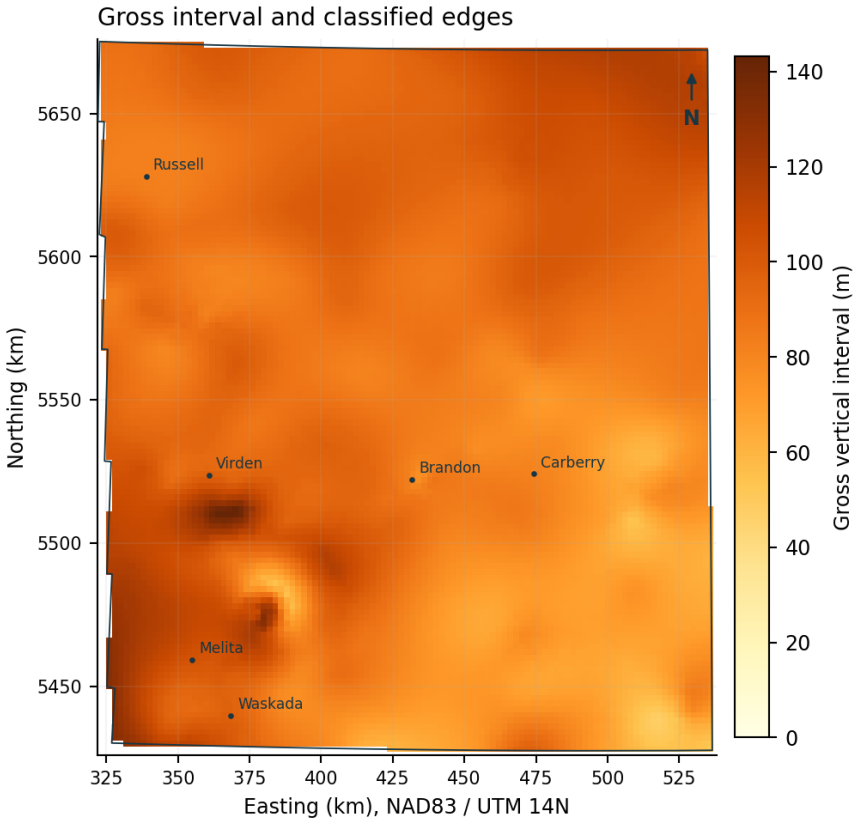
Stonewall



2 km regional grid. Blank values are unknown, not zero. Stonewall top to Stony Mountain top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

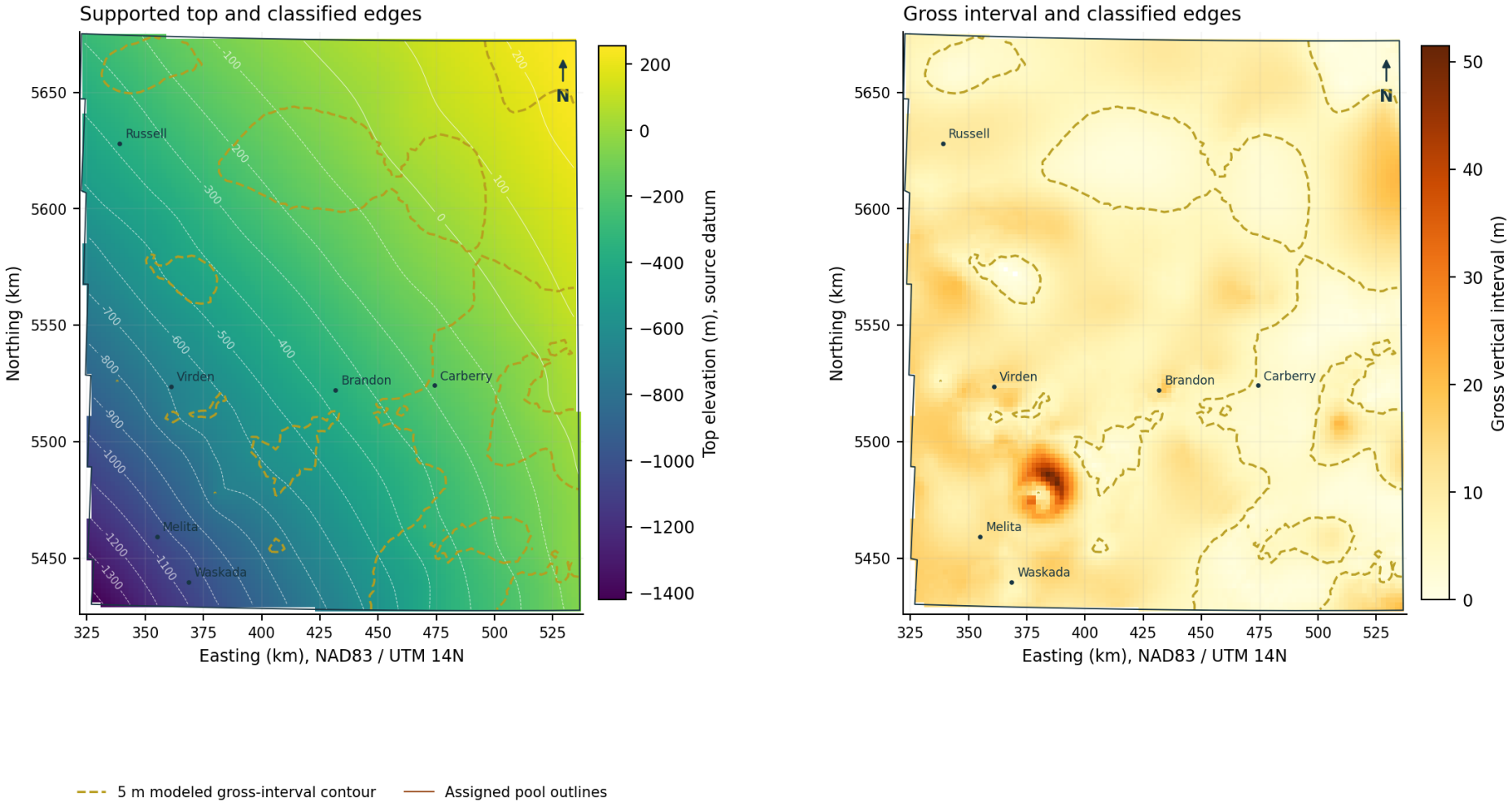
Interlake





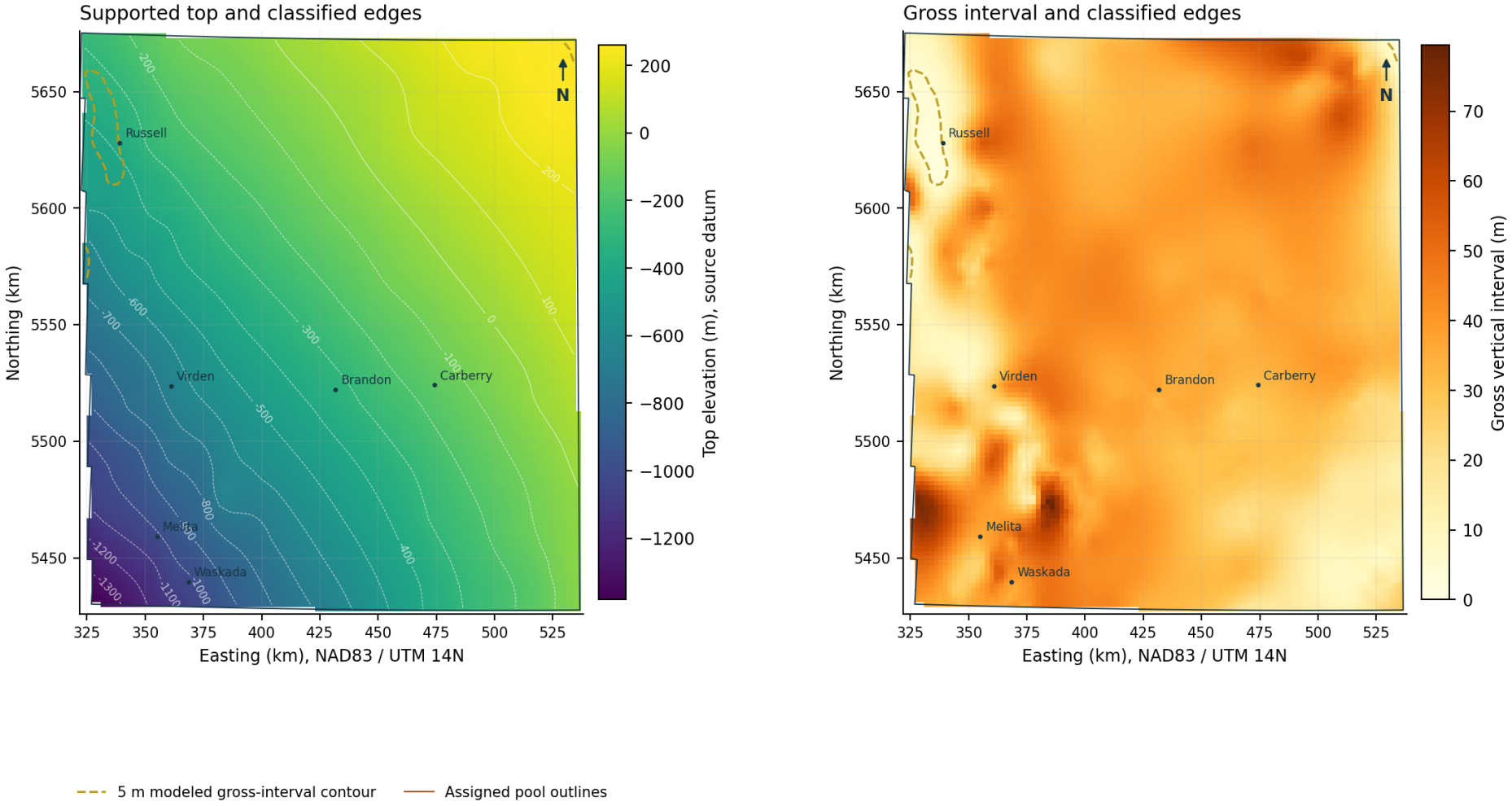
2 km regional grid. Blank values are unknown, not zero. Interlake top to Stonewall top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Ashern



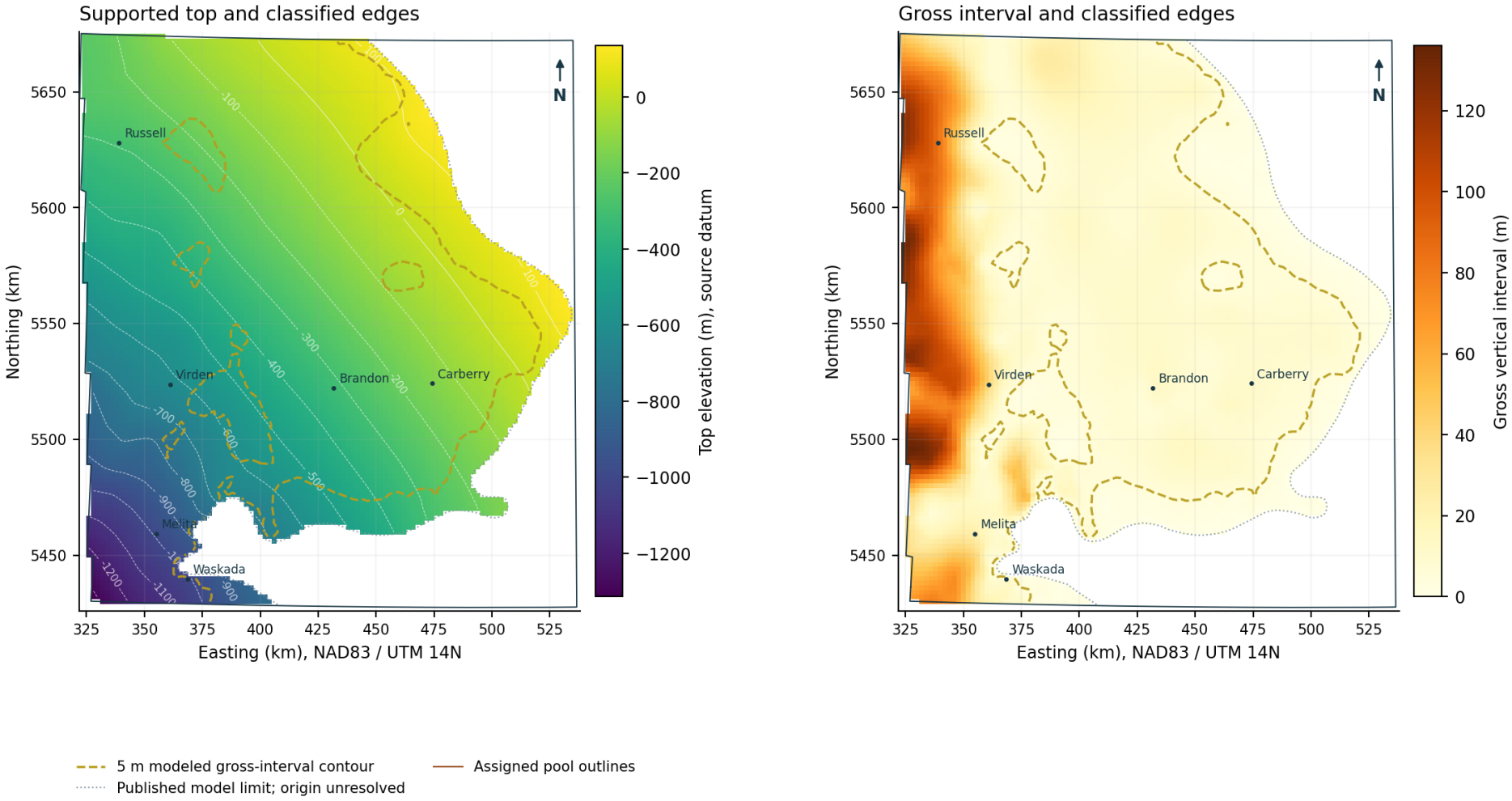
2 km regional grid. Blank values are unknown, not zero. Ashern top to Interlake top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Winnipegosis



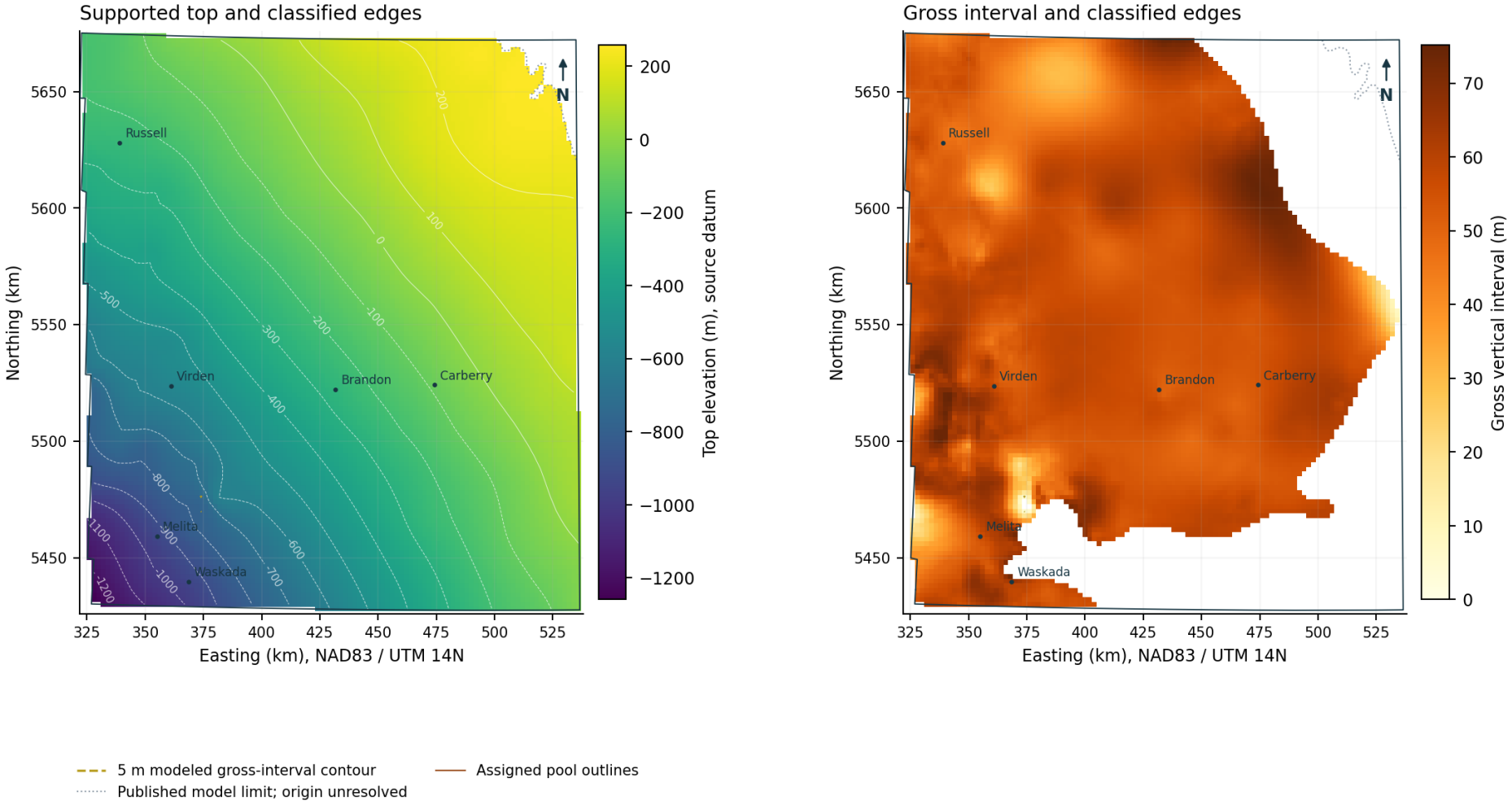
2 km regional grid. Blank values are unknown, not zero. Winnipegosis top to Ashern top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Prairie Evaporite



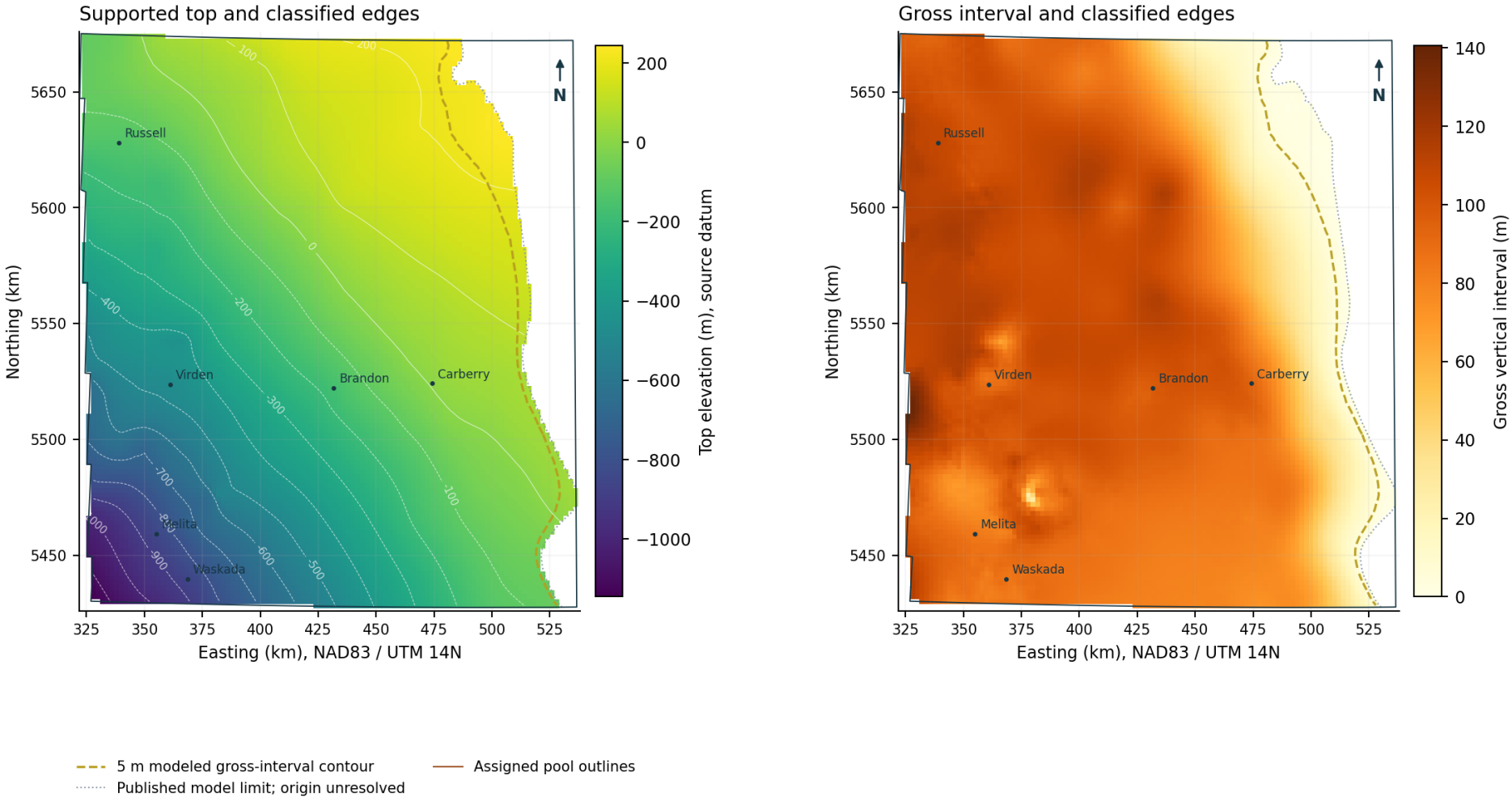
2 km regional grid. Blank values are unknown, not zero. Prairie Evaporite top to Winnipegosis top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Dawson Bay



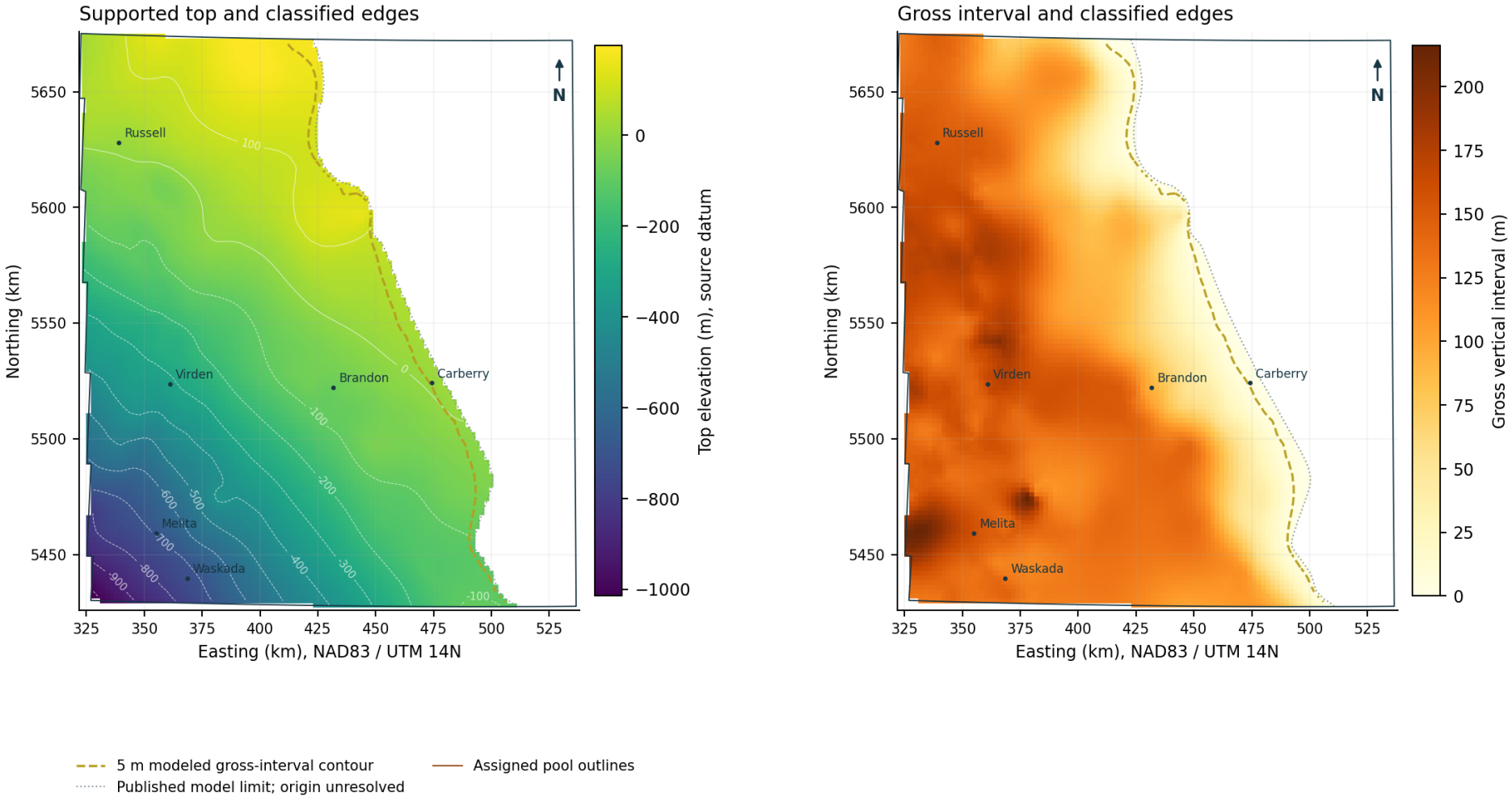
2 km regional grid. Blank values are unknown, not zero. Dawson Bay top to Prairie Evaporite top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Souris River



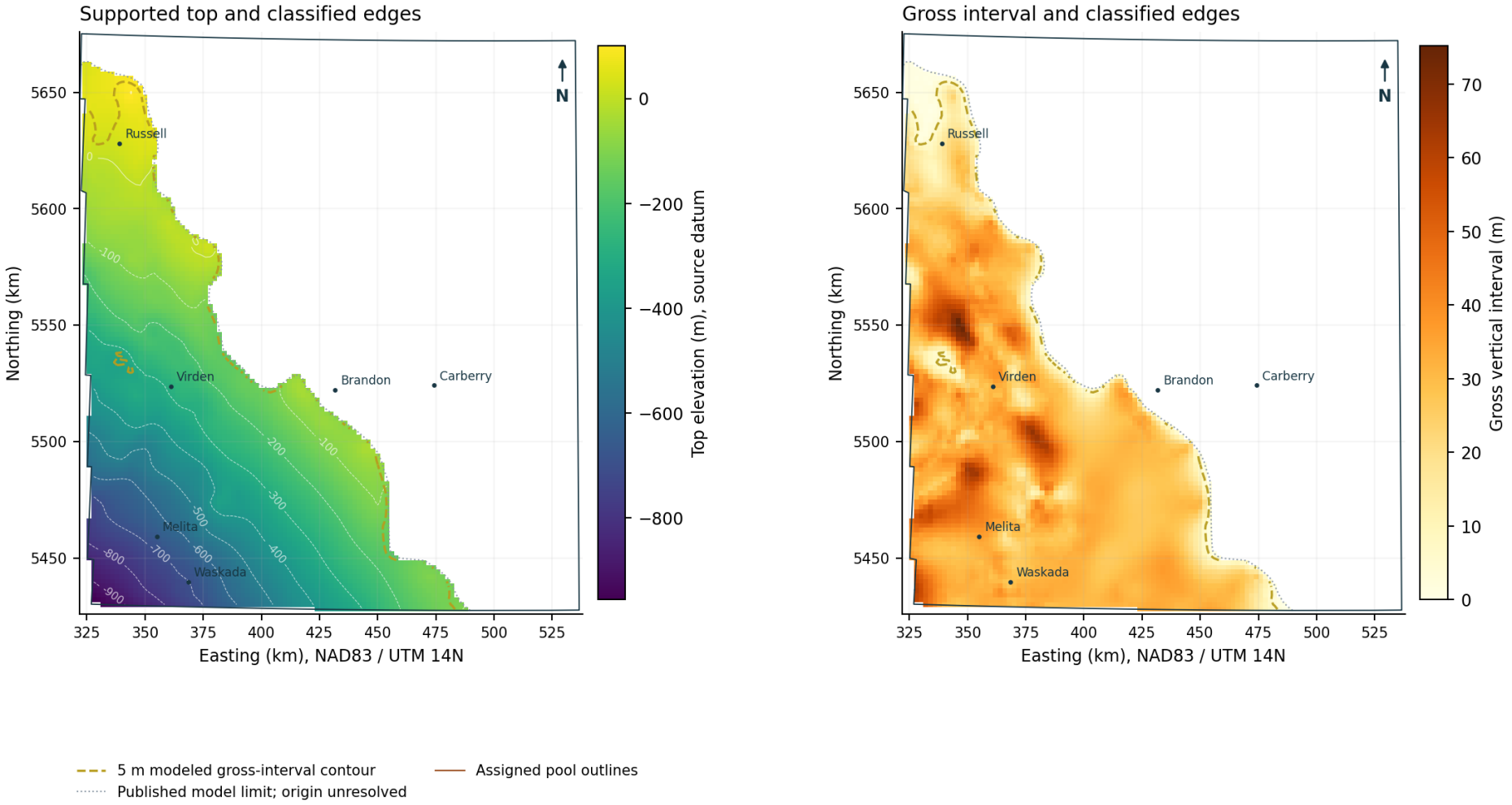
2 km regional grid. Blank values are unknown, not zero. Souris River top to Dawson Bay top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Duperow



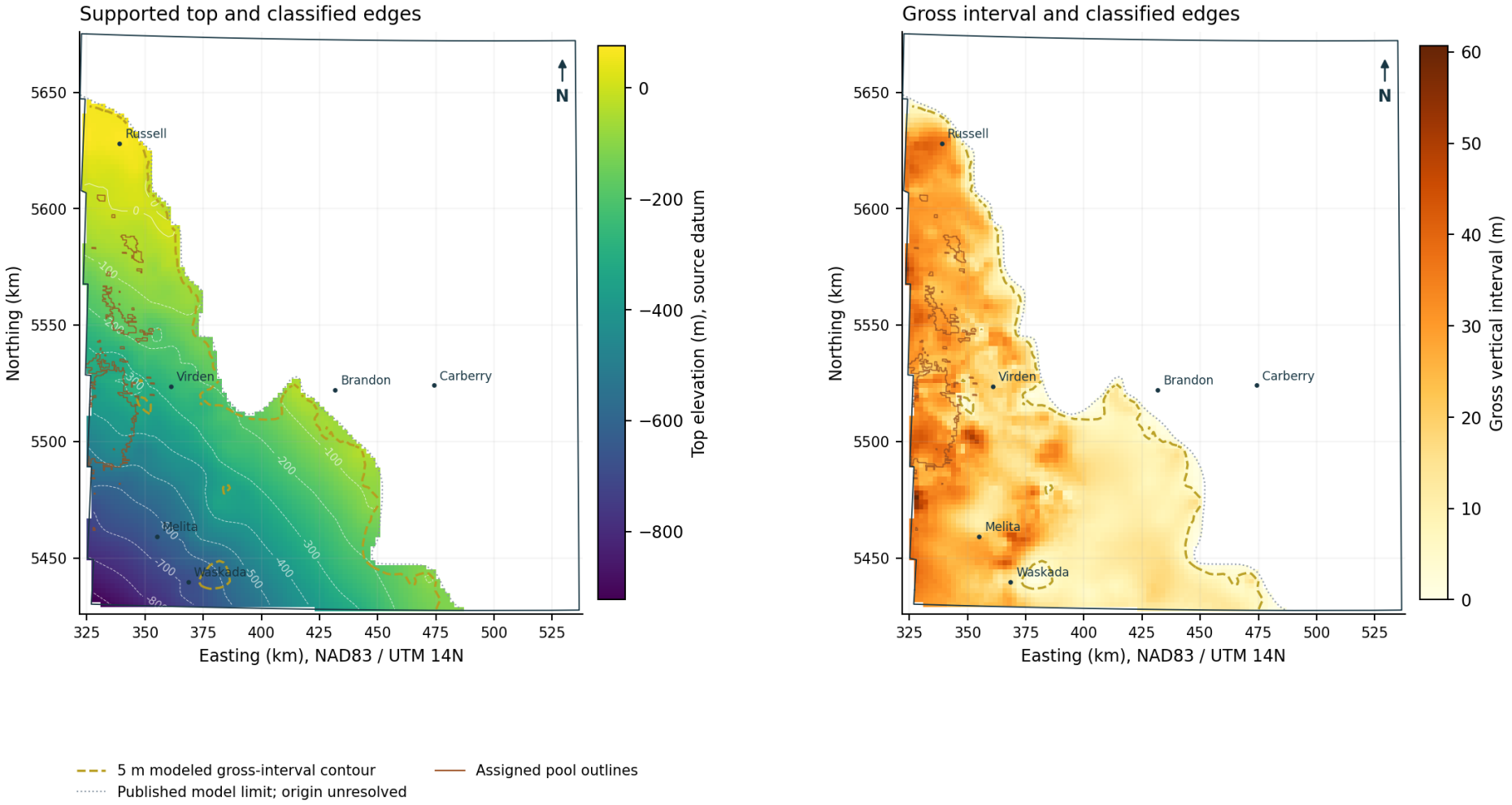
2 km regional grid. Blank values are unknown, not zero. Duperow top to Souris River top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Birdbear



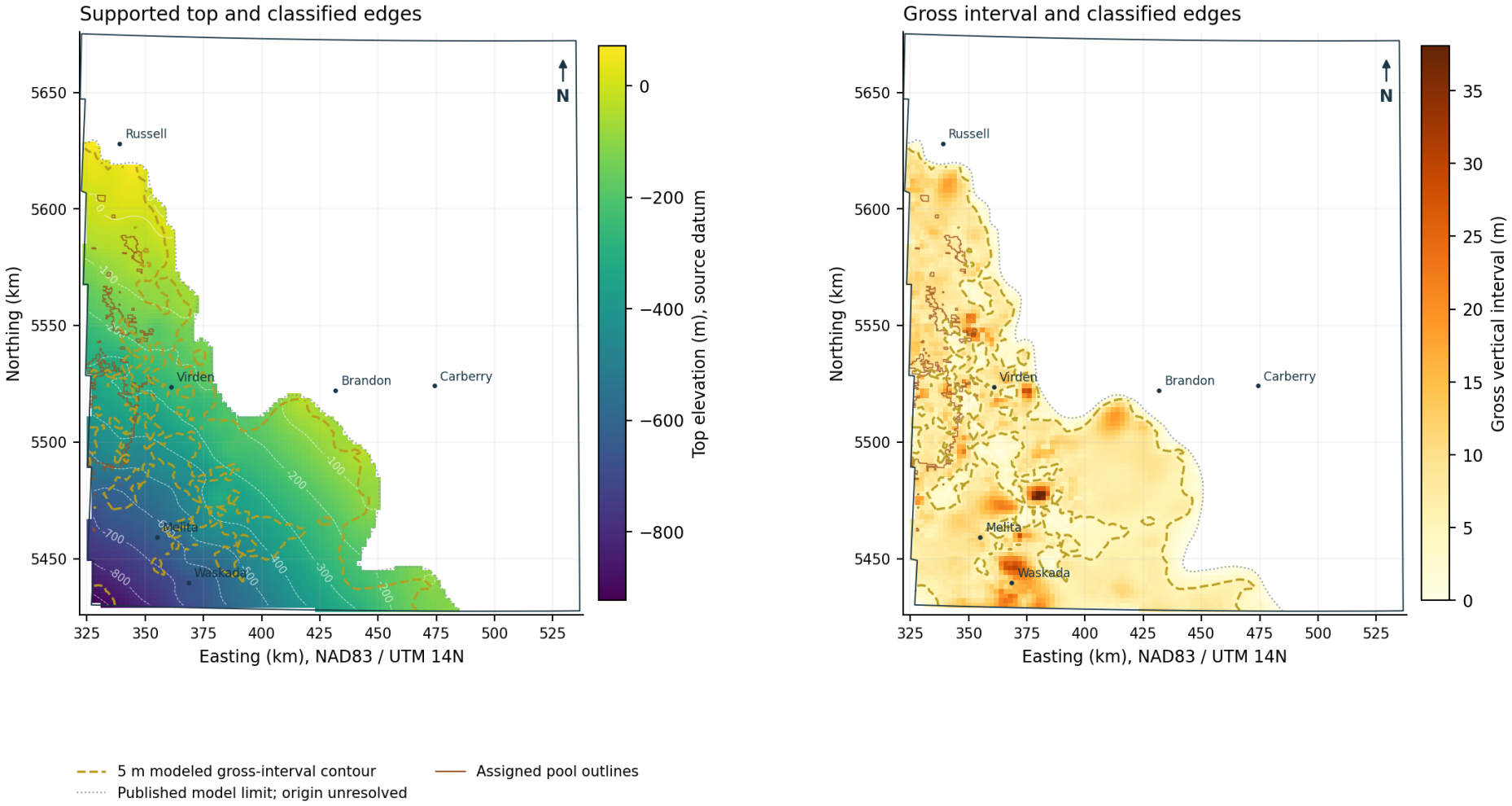
2 km regional grid. Blank values are unknown, not zero. Birdbear top to Duperow top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Torquay / Three Forks



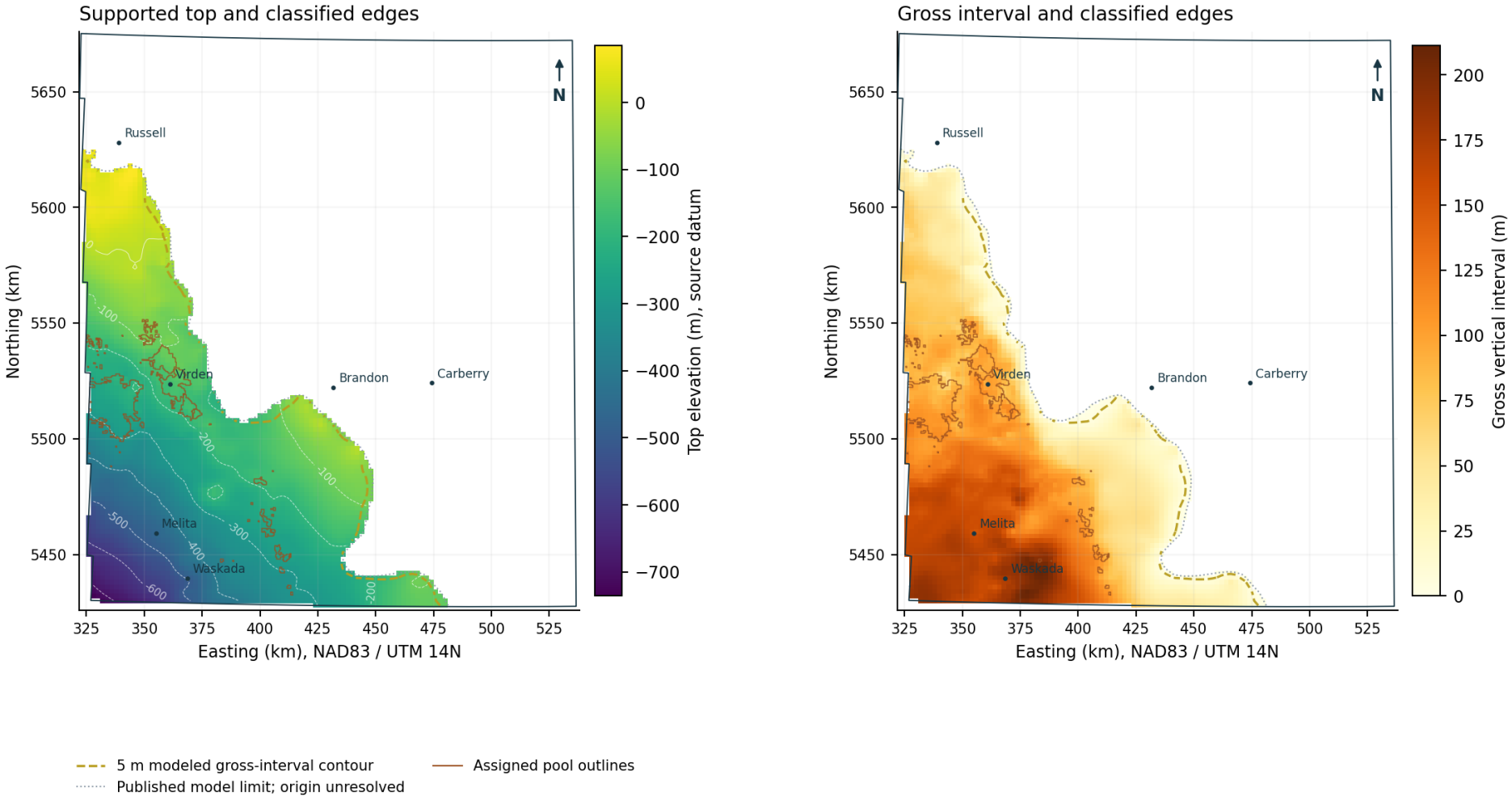
2 km regional grid. Blank values are unknown, not zero. Torquay / Three Forks top to Birdbear top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Bakken



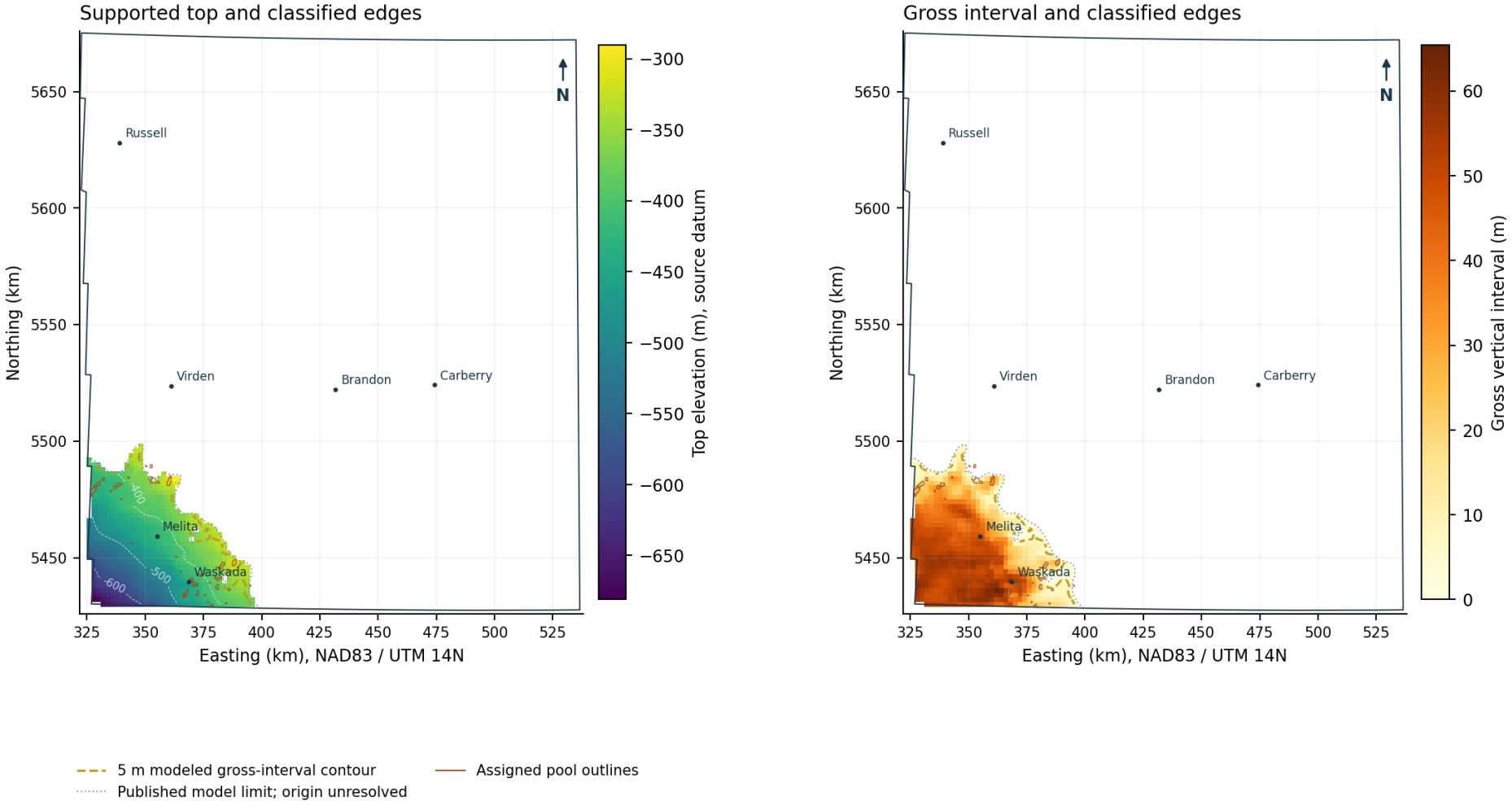
2 km regional grid. Blank values are unknown, not zero. Bakken top to Torquay / Three Forks top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Lodgepole



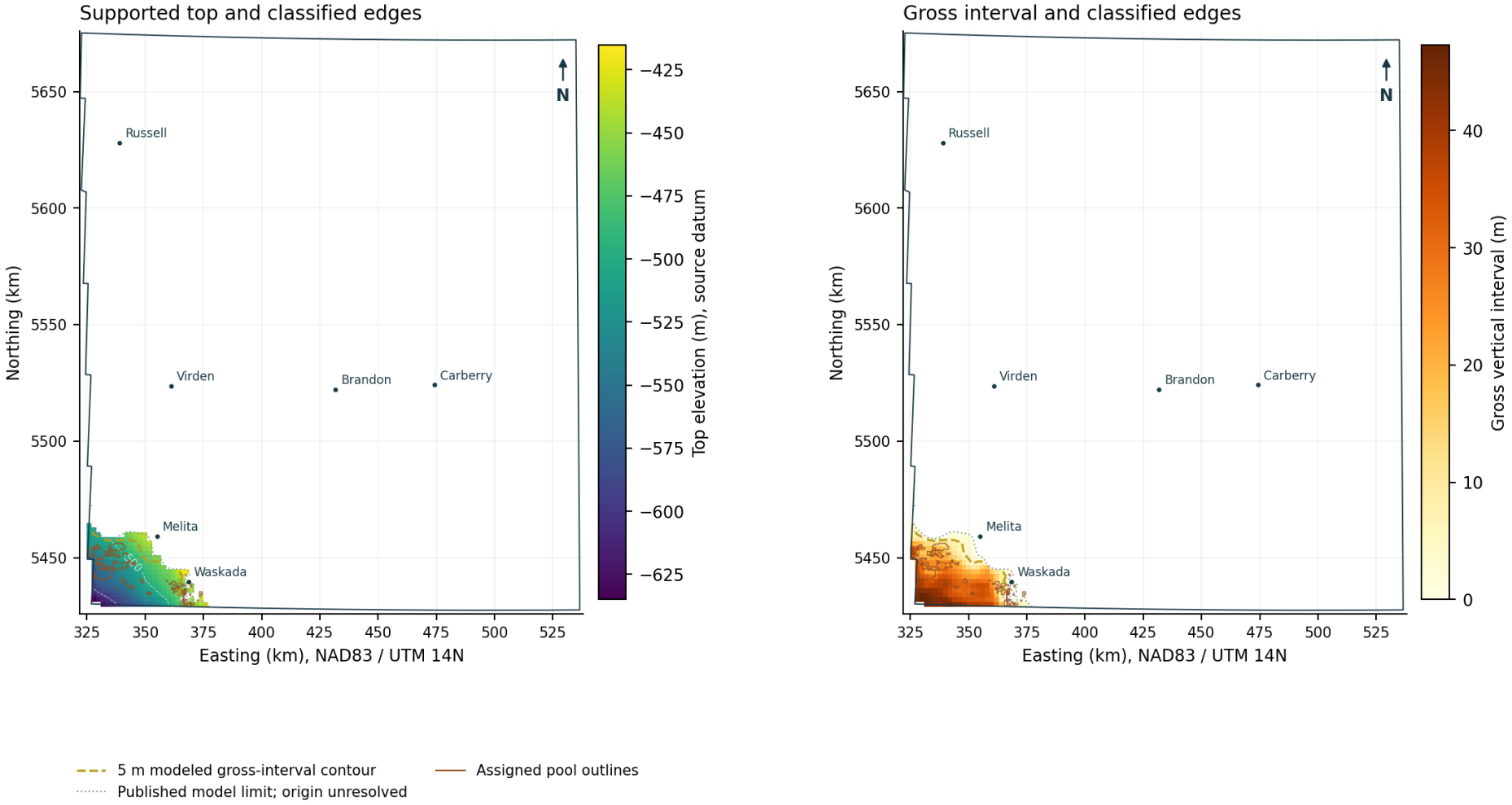
2 km regional grid. Blank values are unknown, not zero. Lodgepole top to Bakken top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Tilston / Mission Canyon 1–2



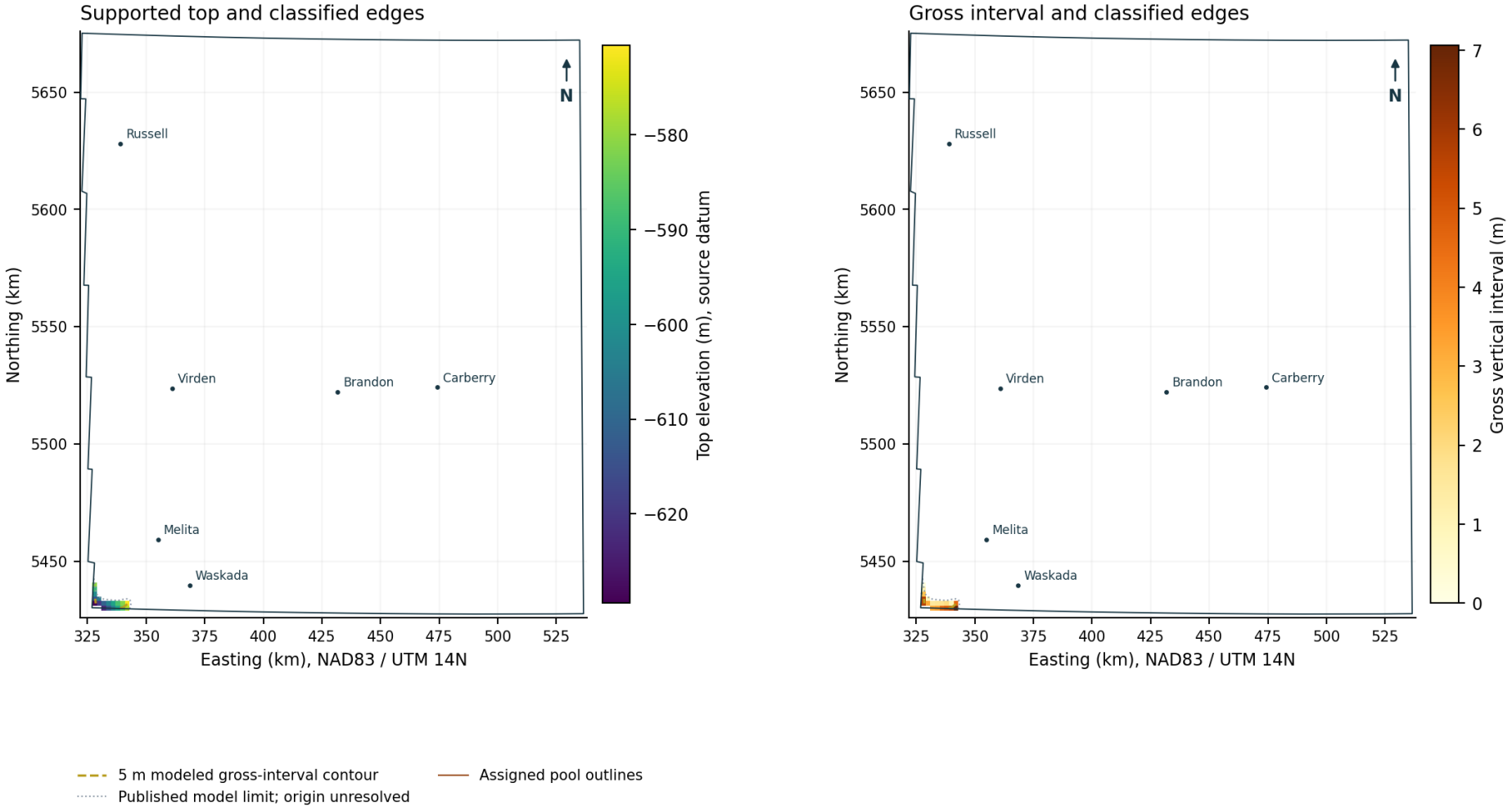
2 km regional grid. Blank values are unknown, not zero. Tilston / Mission Canyon 1–2 top to Lodgepole top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Alida / Mission Canyon 3



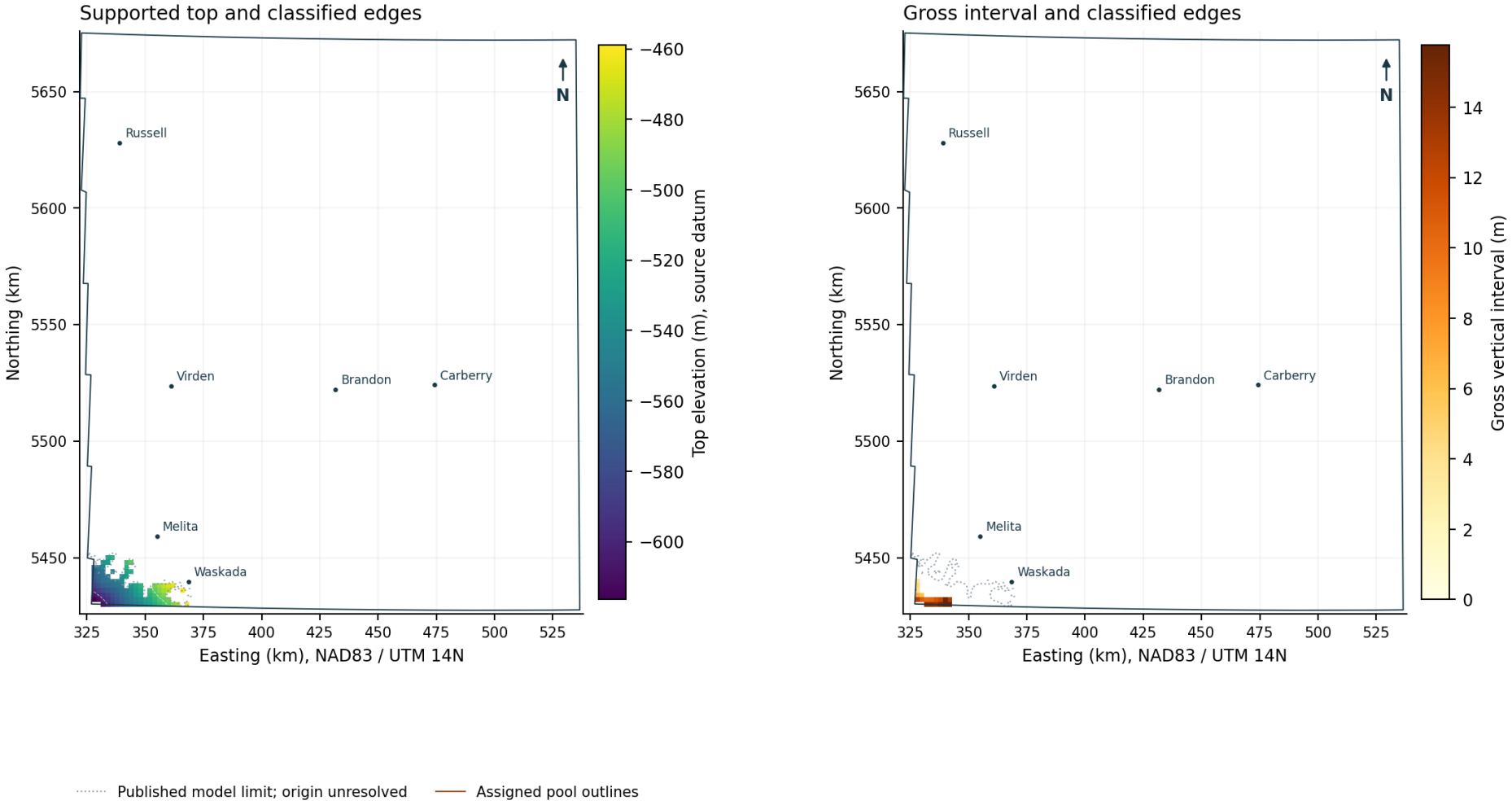
2 km regional grid. Blank values are unknown, not zero. Alida / Mission Canyon 3 top to Tilston / Mission Canyon 1–2 top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Kisbey interval



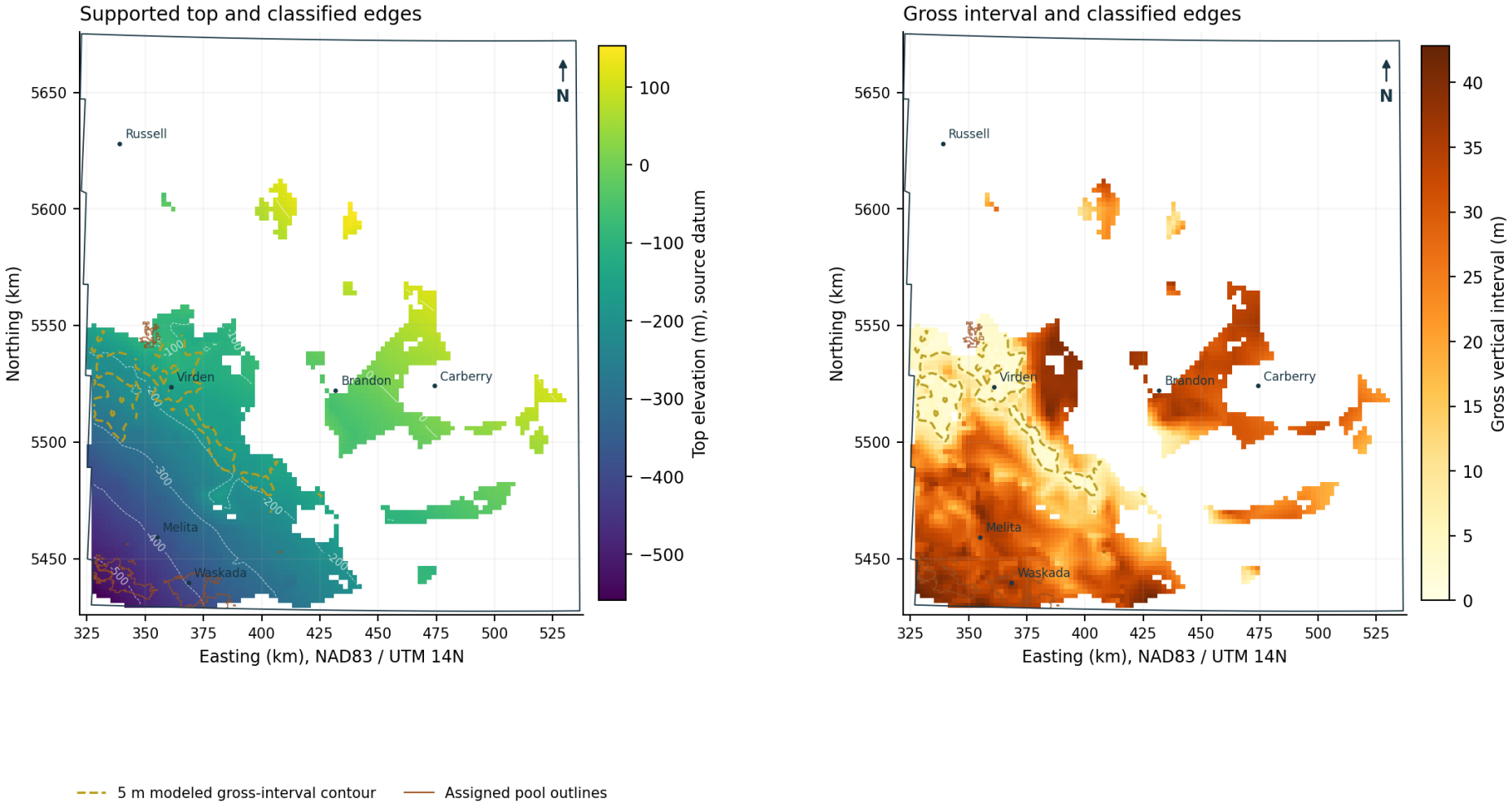
2 km regional grid. Blank values are unknown, not zero. Kisbey interval top to Alida / Mission Canyon 3 top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Frobisher / Manitoba Charles



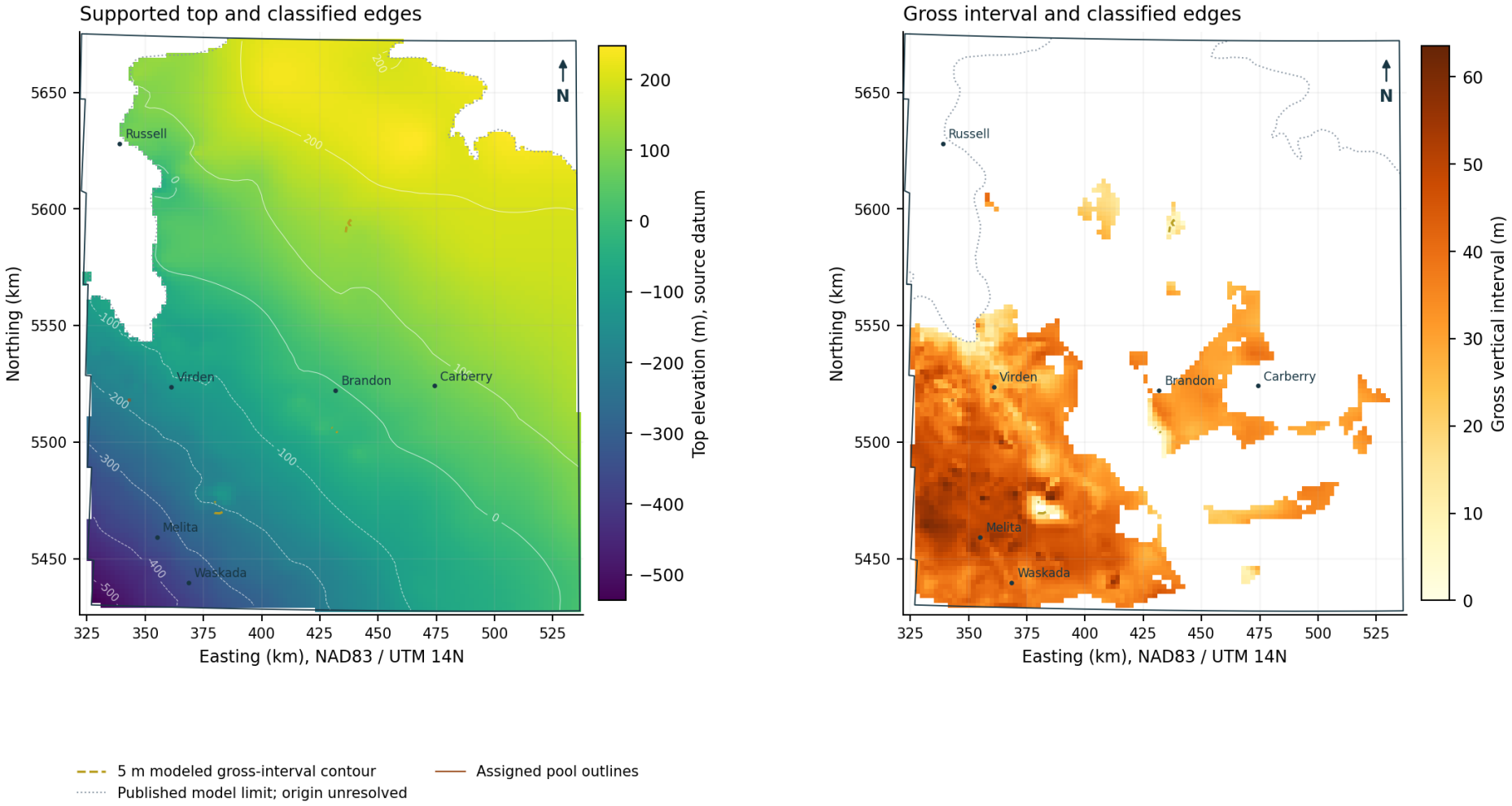
2 km regional grid. Blank values are unknown, not zero. Frobisher / Manitoba Charles top to Kisbey interval top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Lower Amaranth (bounded well-control interpretation)



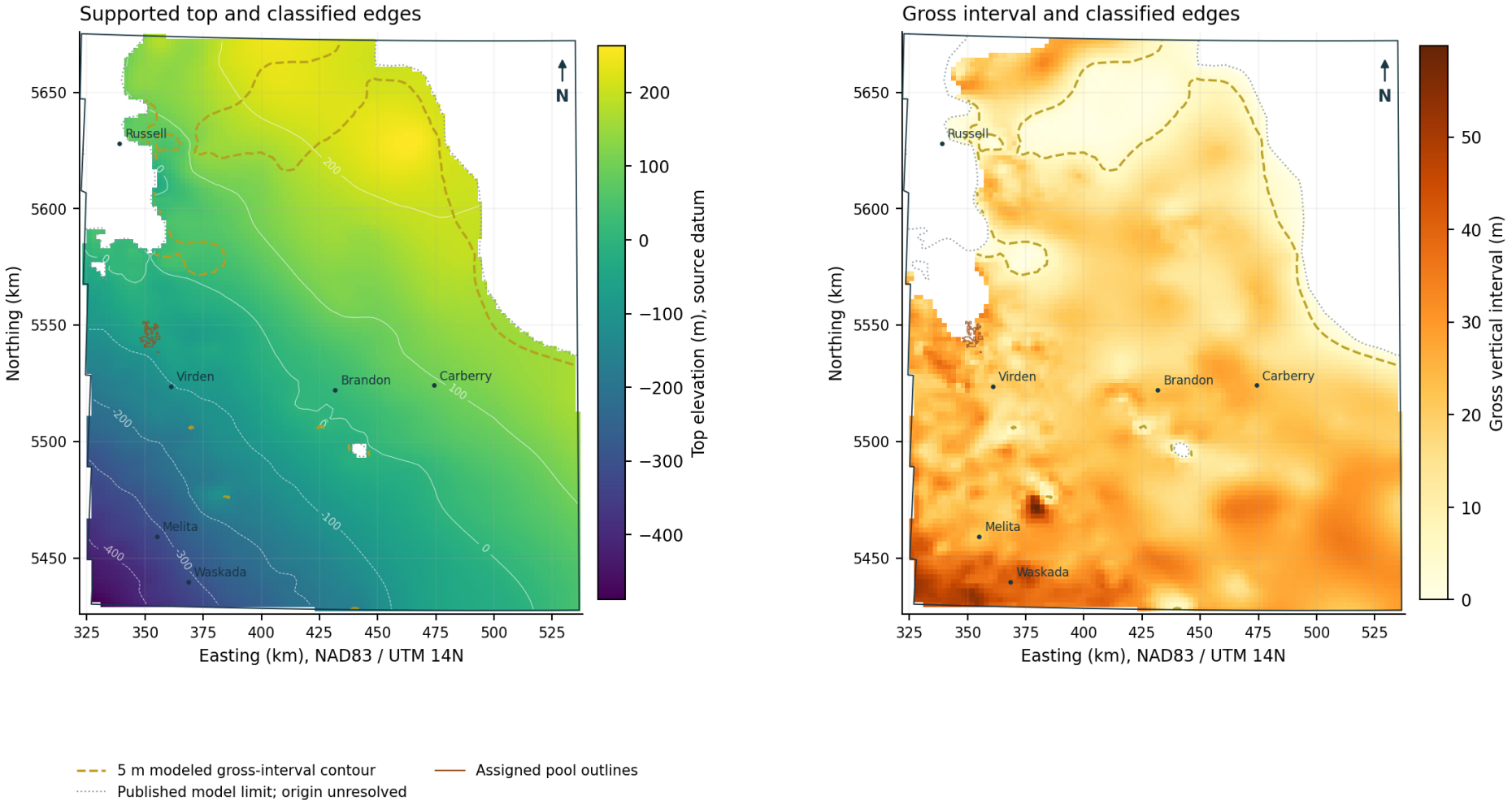
2 km regional grid. Blank values are unknown, not zero. Published Lower Amaranth ISO control thickness interpolated within supported triangles
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Watrous / Amaranth regional top



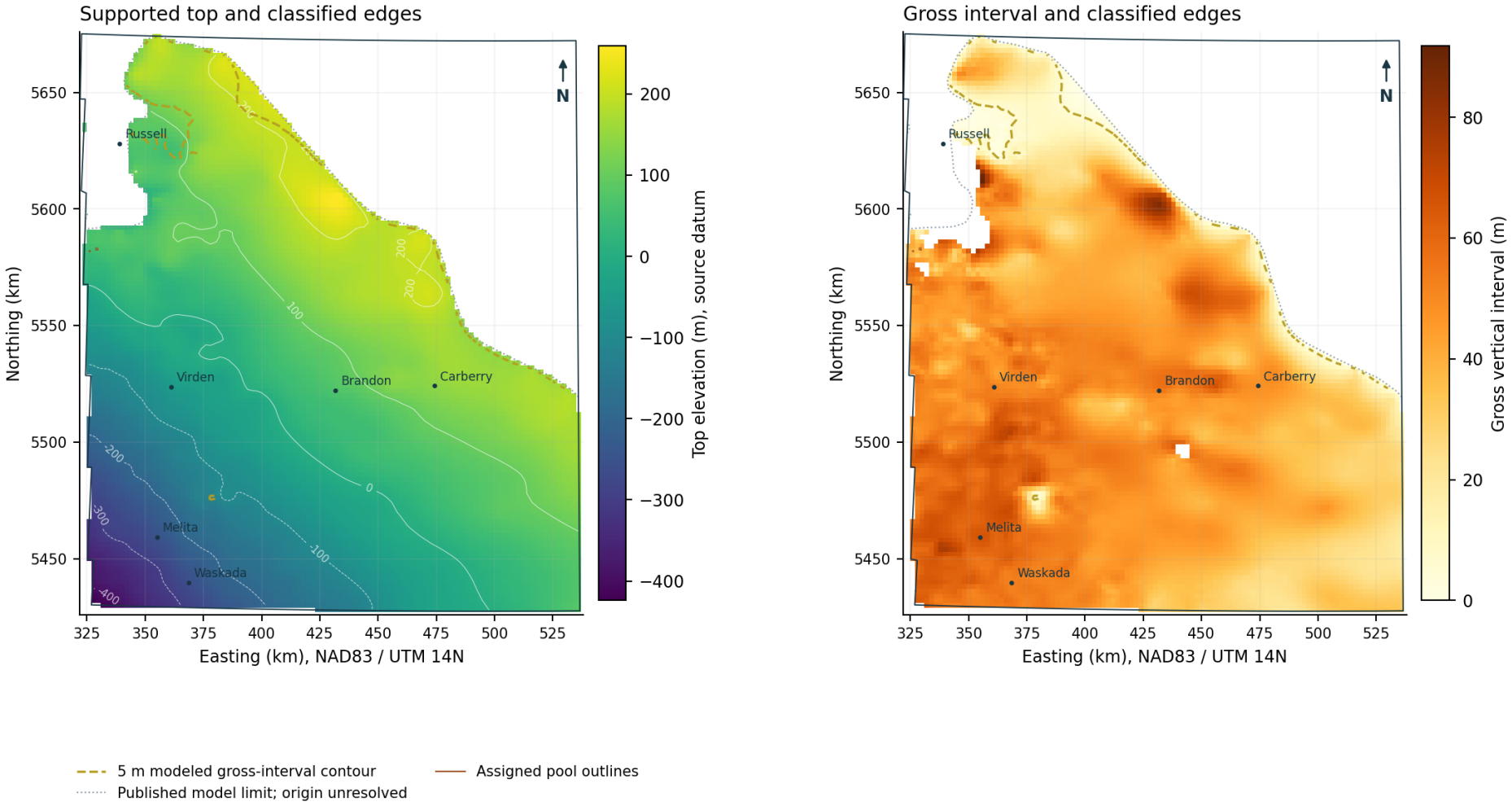
2 km regional grid. Blank values are unknown, not zero. Upper Amaranth interval: published regional Amaranth top minus bounded Lower Amaranth top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Gravelbourg / Reston



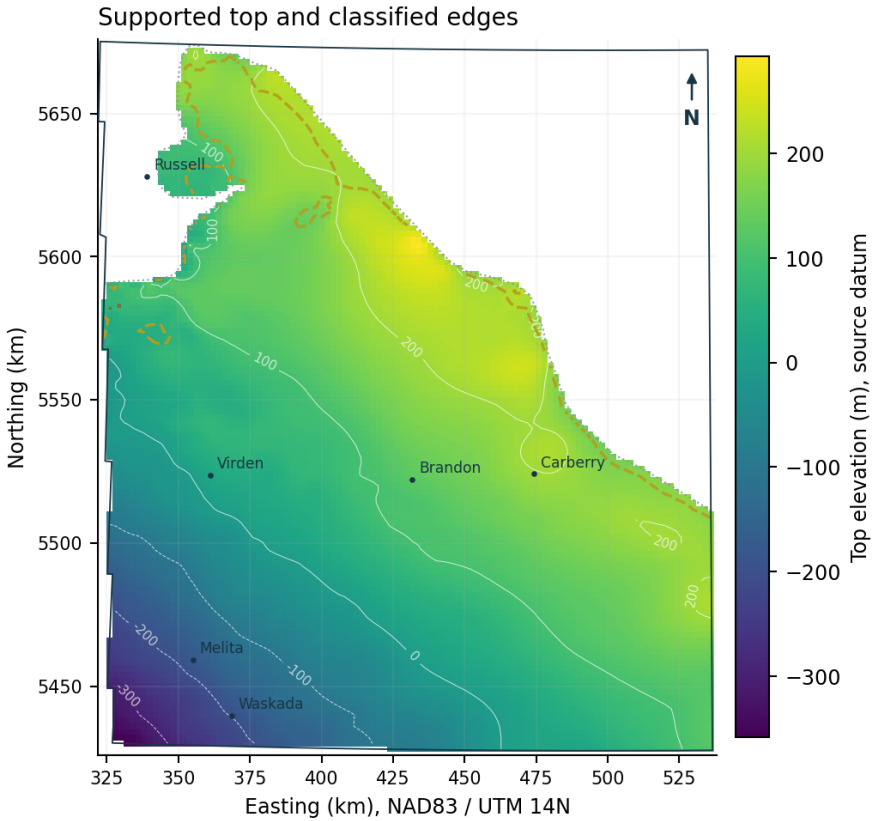
2 km regional grid. Blank values are unknown, not zero. Gravelbourg / Reston top to Watrous / Amaranth regional top top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

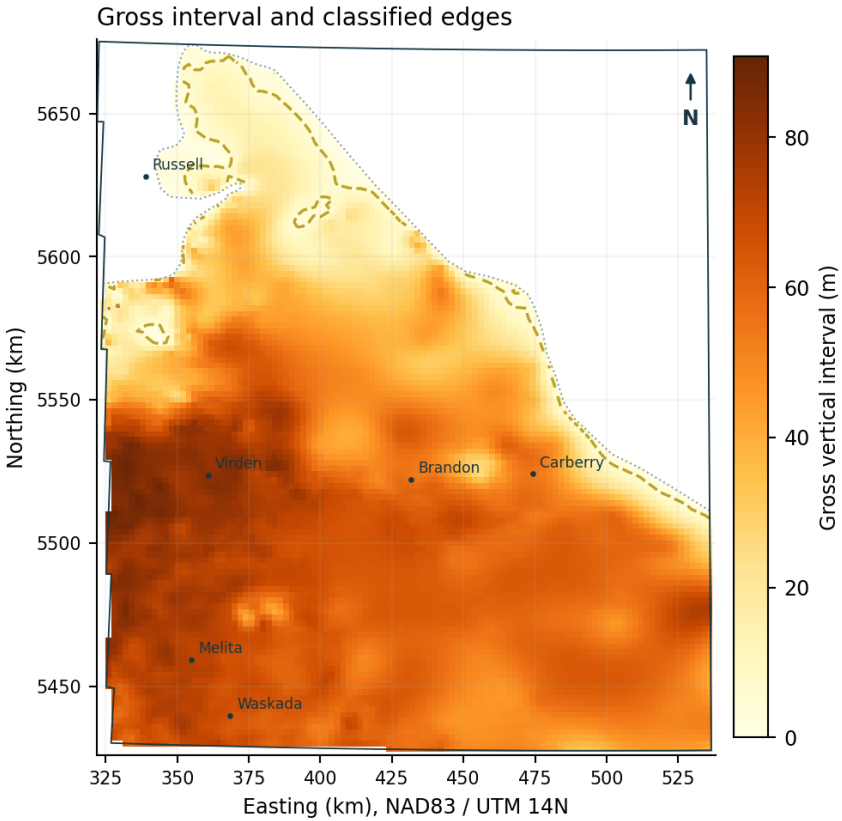
Shaunavon / Lower Melita



2 km regional grid. Blank values are unknown, not zero. Shaunavon / Lower Melita top to Gravelbourg / Reston top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Rierdon / Upper Melita

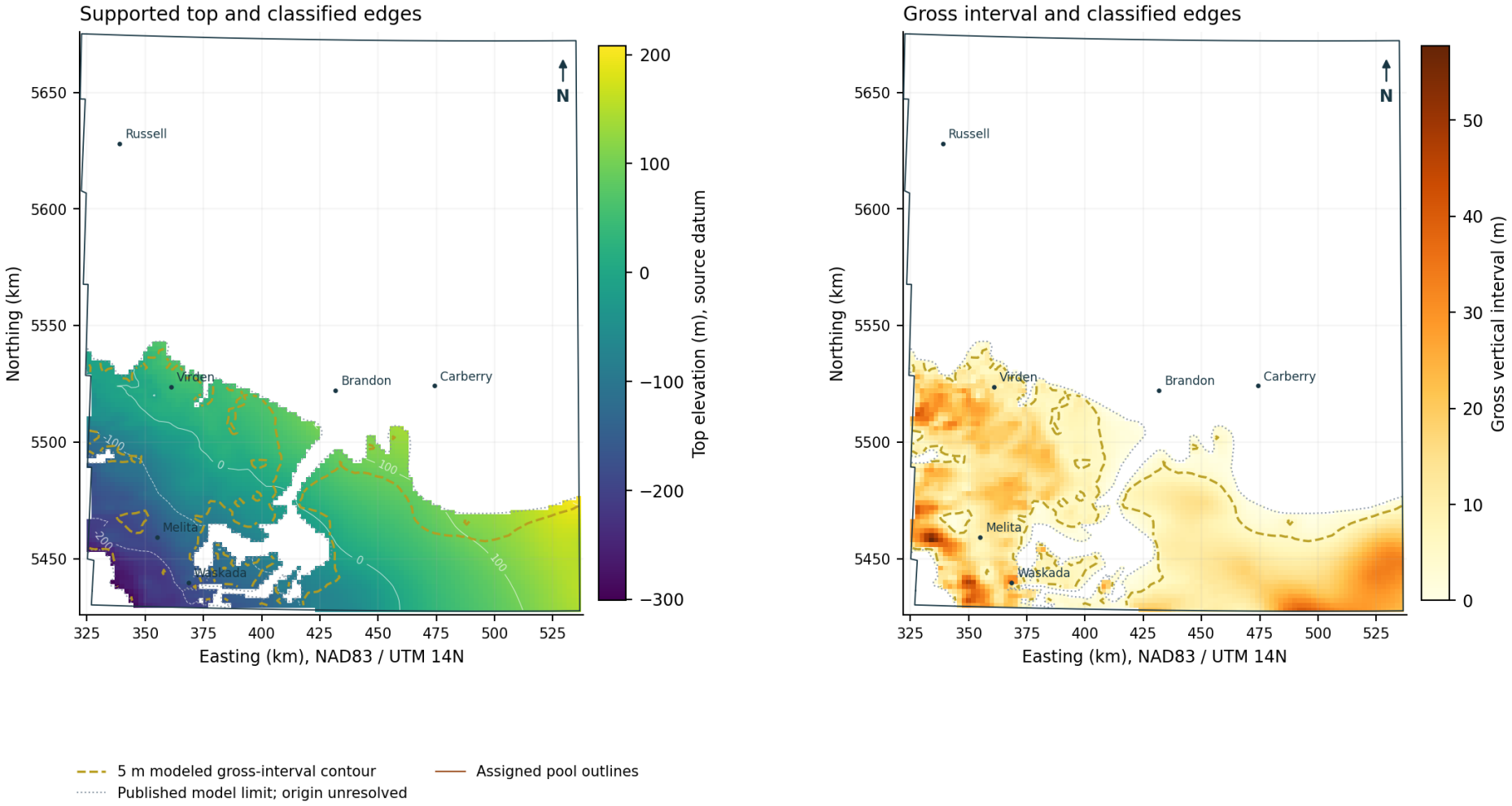




5 m modeled gross-interval contour
Published model limit; origin unresolved
Assigned pool outlines

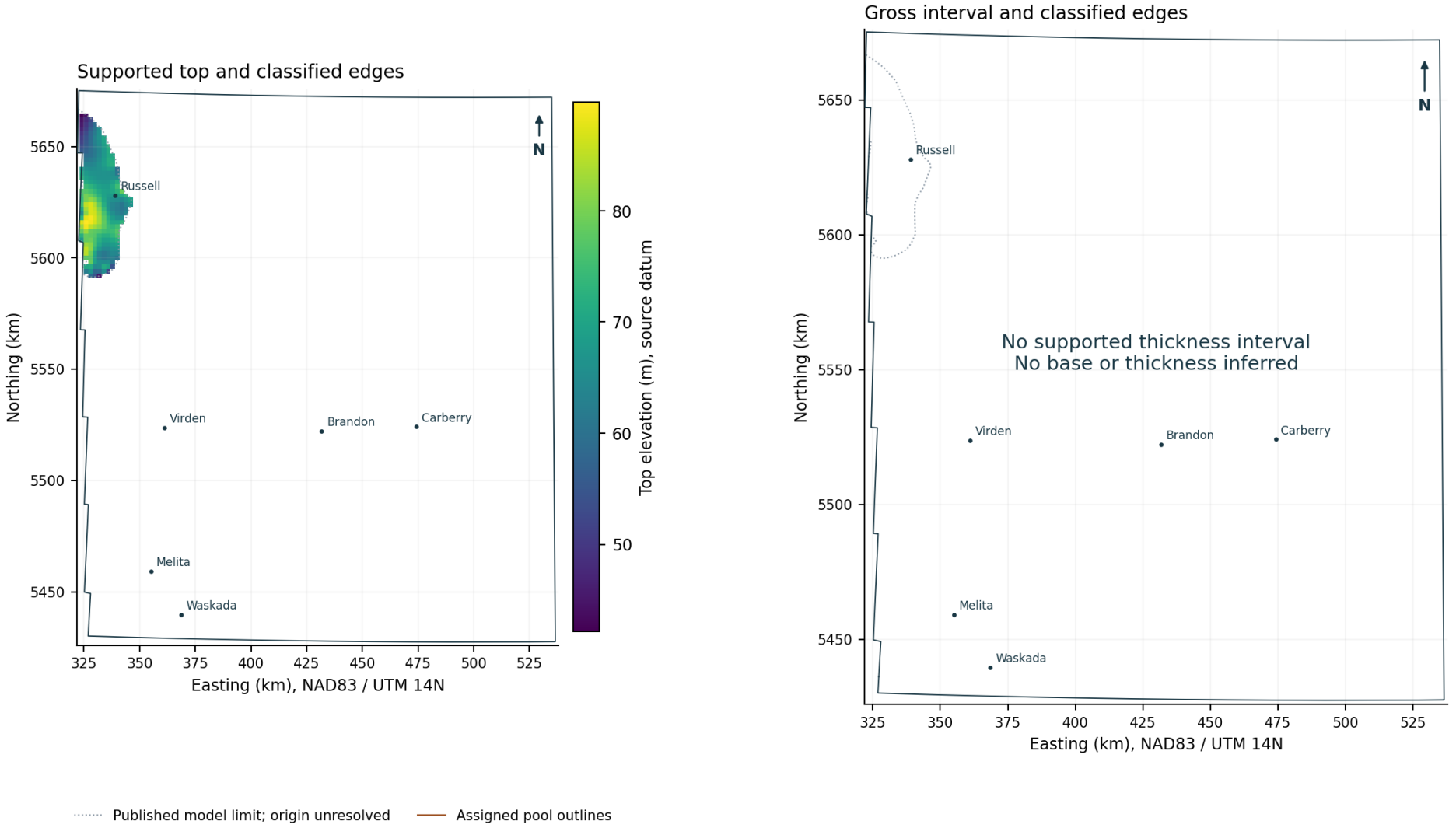
2 km regional grid. Blank values are unknown, not zero. Rierdon / Upper Melita top to Shaunavon / Lower Melita top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Masefield / Waskada Formation



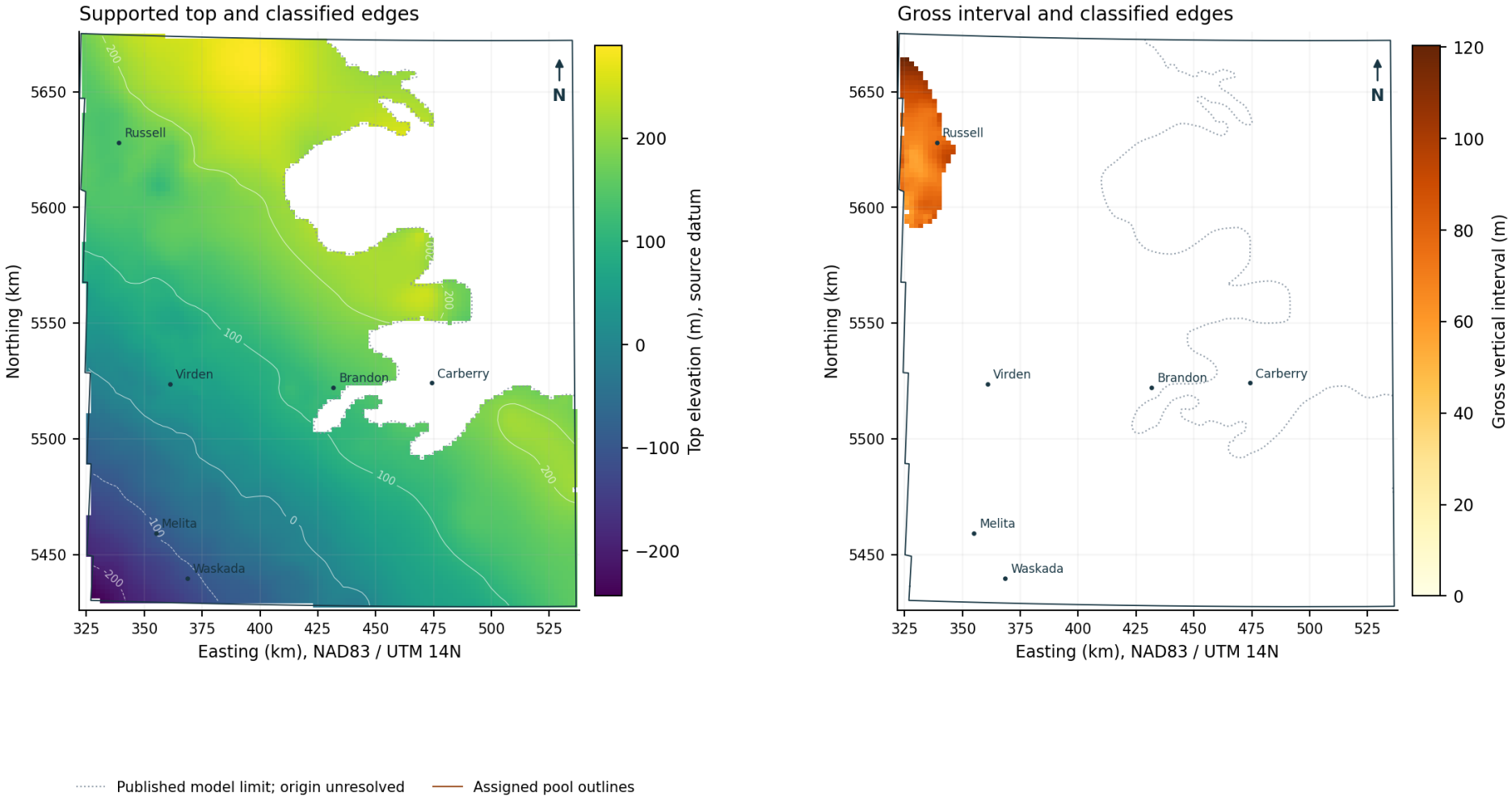
2 km regional grid. Blank values are unknown, not zero. Masefield / Waskada Formation top to Rierdon / Upper Melita top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Success S2



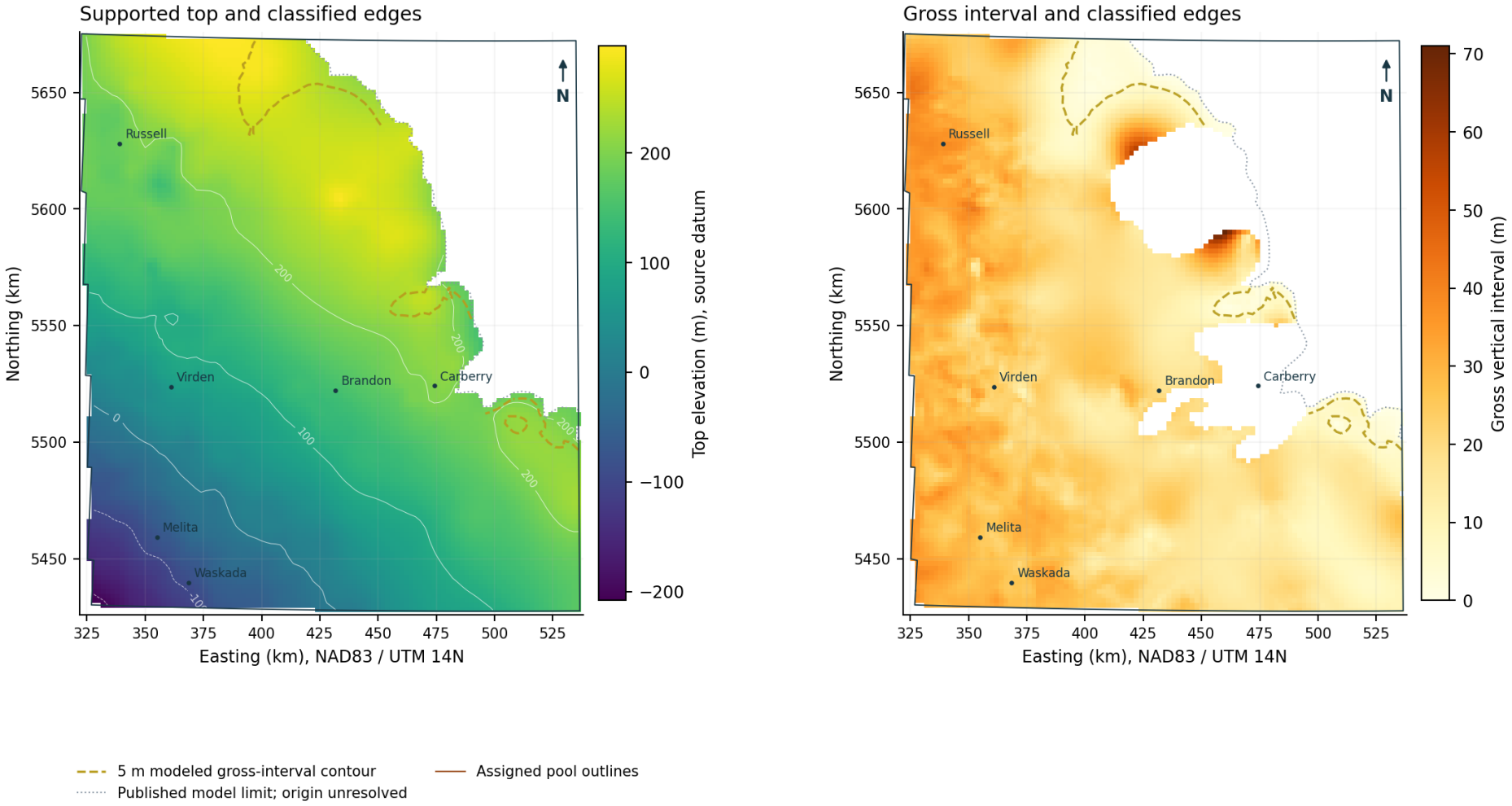
2 km regional grid. Blank values are unknown, not zero. Success S2 top to Masefield / Waskada Formation top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Mannville regional P4 marker



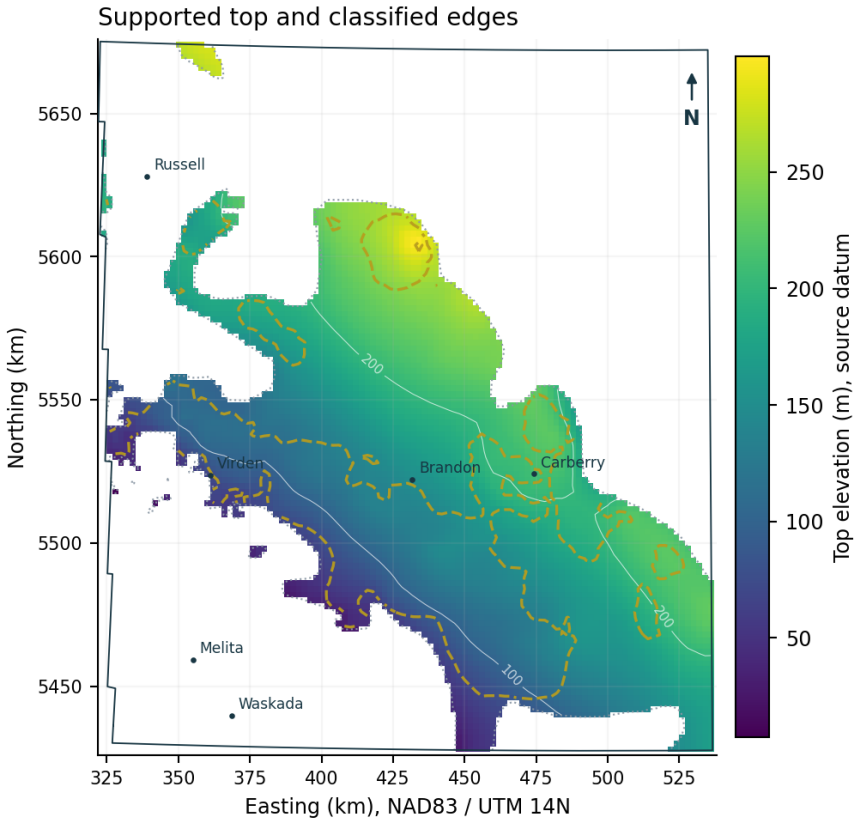
2 km regional grid. Blank values are unknown, not zero. Mannville regional P4 marker top to Success S2 top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

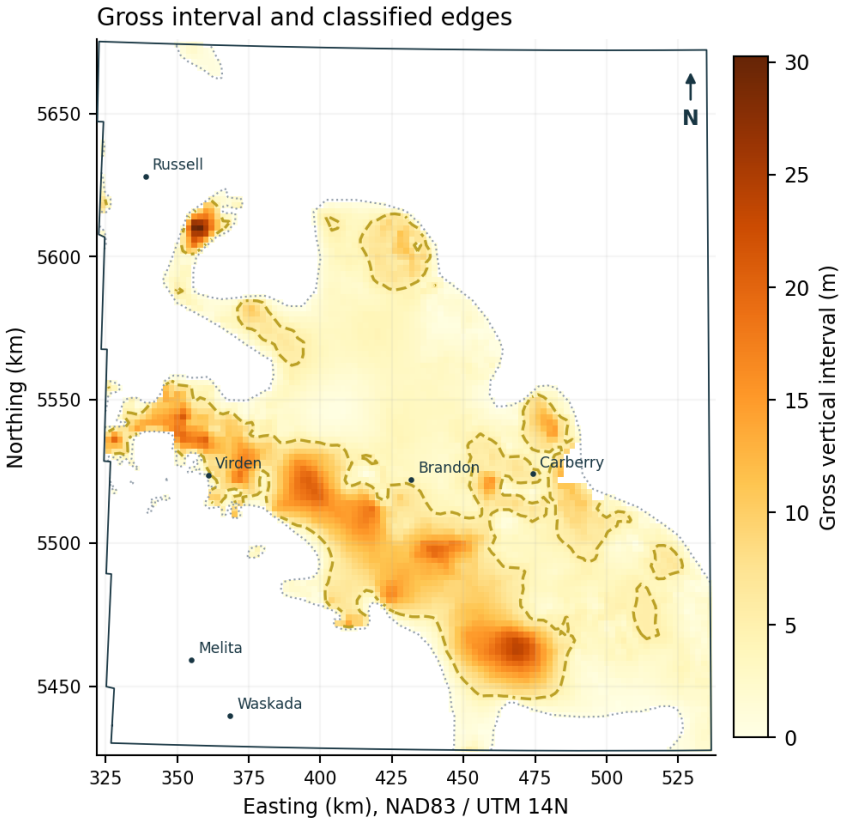
Joli Fou / Skull Creek



2 km regional grid. Blank values are unknown, not zero. Joli Fou / Skull Creek top to Mannville regional P4 marker top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Newcastle

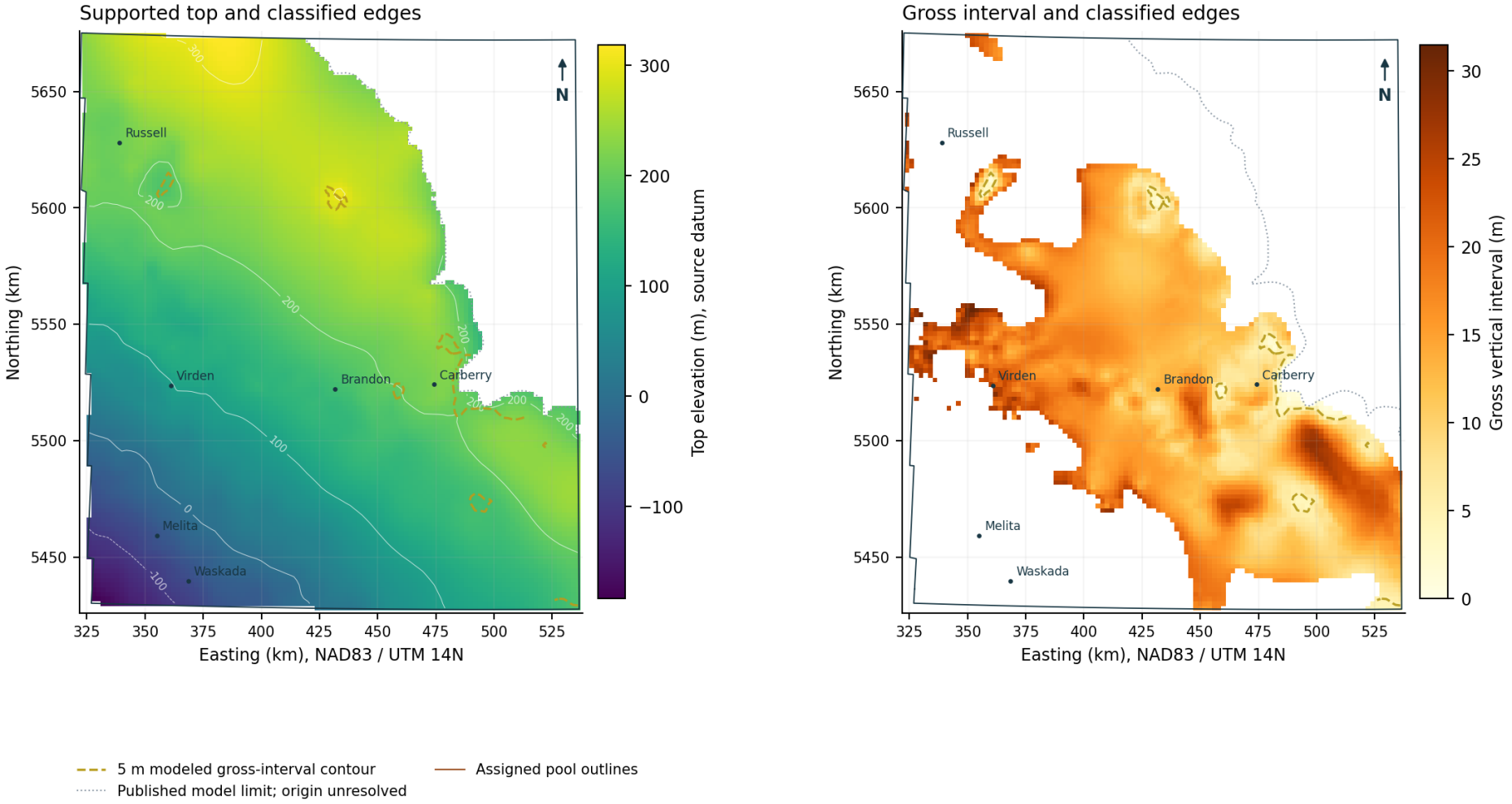




5 m modeled gross-interval contour
Published model limit; origin unresolved
Assigned pool outlines

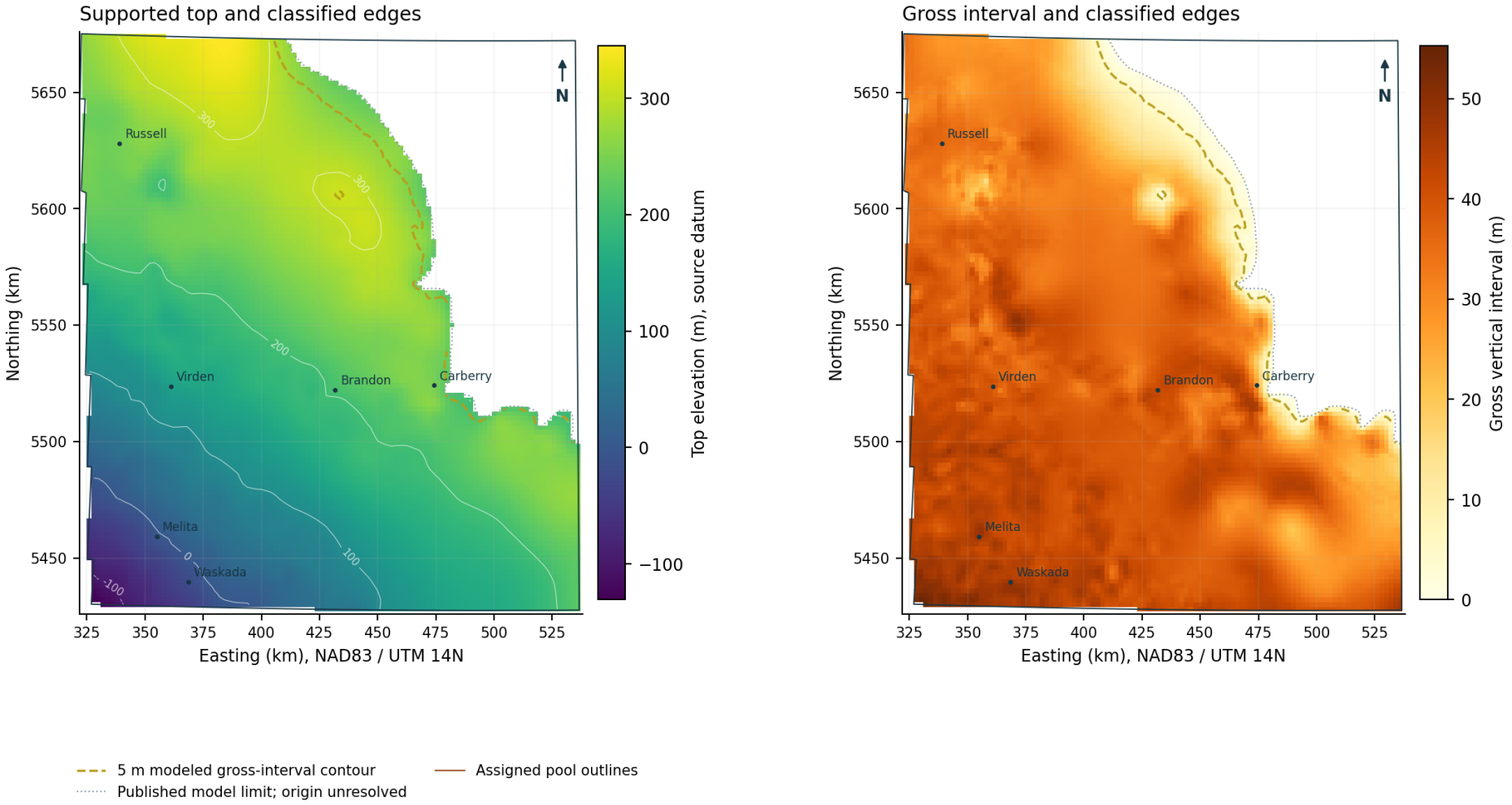
2 km regional grid. Blank values are unknown, not zero. Newcastle top to Joli Fou / Skull Creek top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Westgate



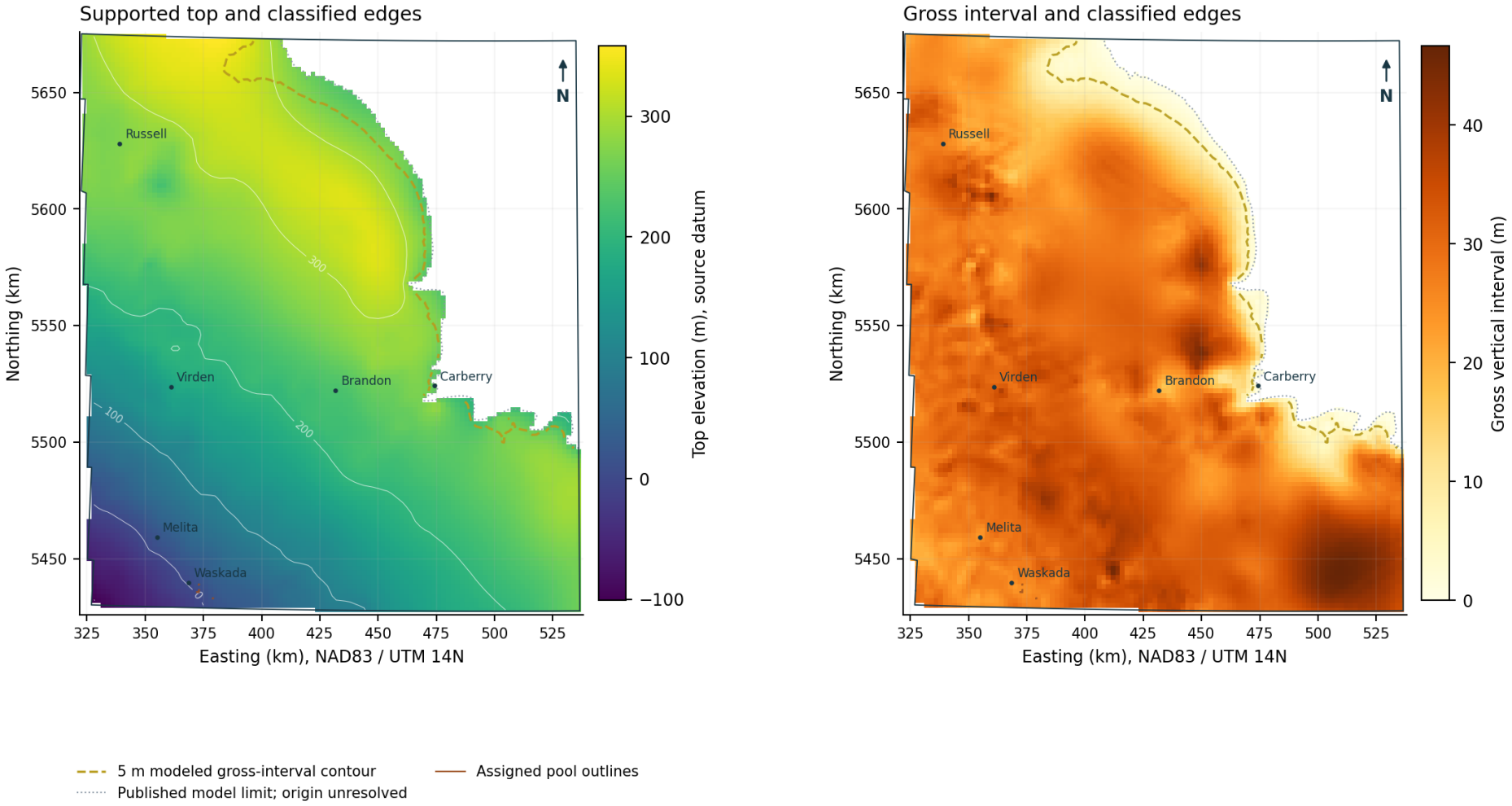
2 km regional grid. Blank values are unknown, not zero. Westgate top to Newcastle top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Belle Fourche



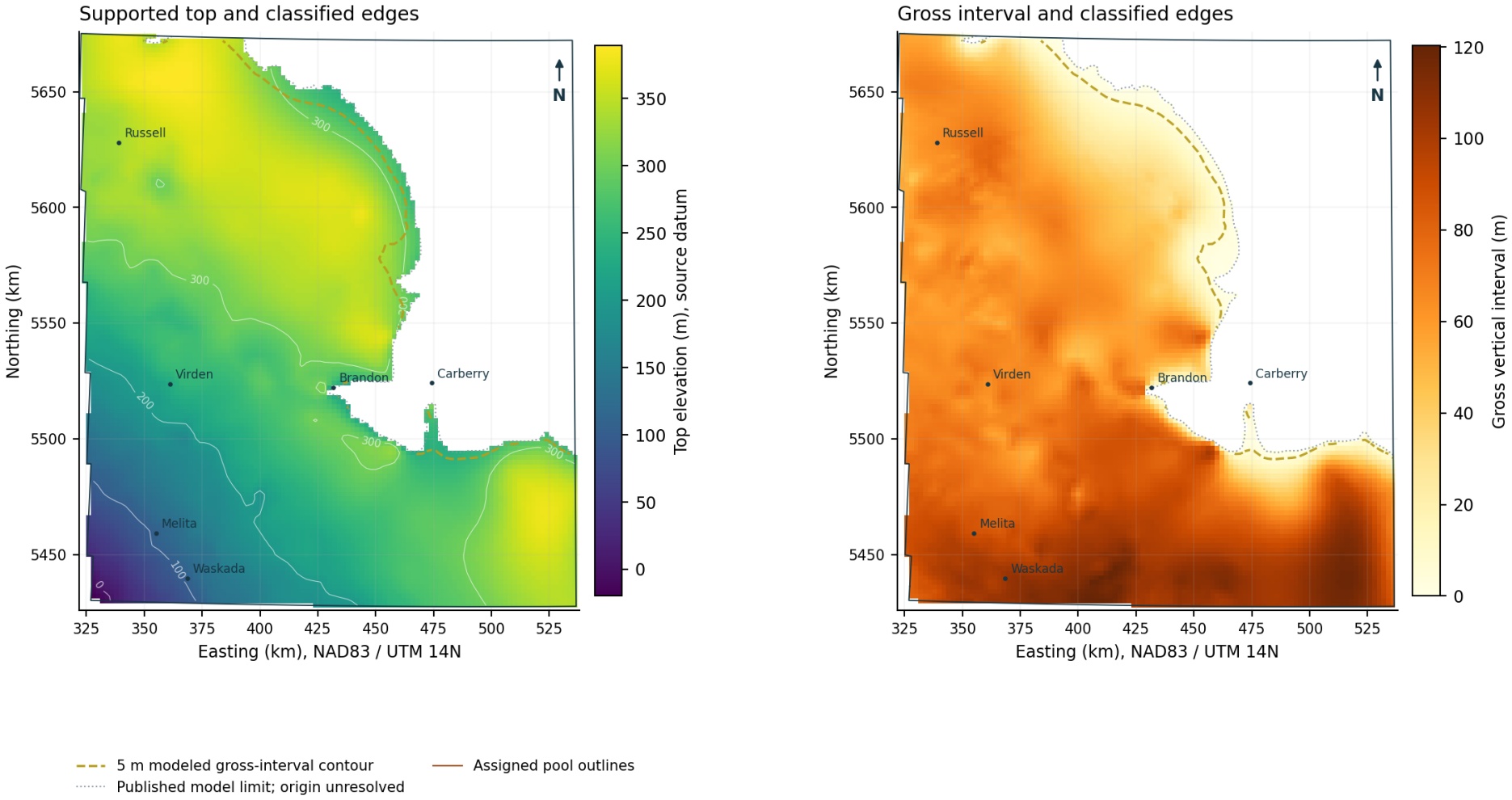
2 km regional grid. Blank values are unknown, not zero. Belle Fourche top to Westgate top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Favel / Second White Specks



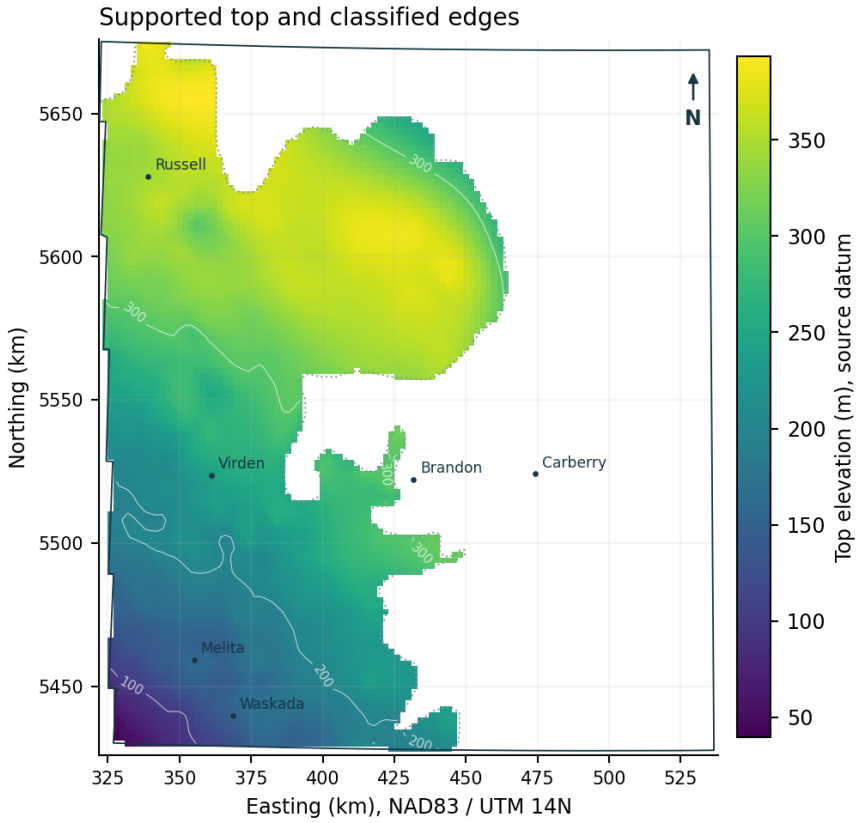
2 km regional grid. Blank values are unknown, not zero. Favel / Second White Specks top to Belle Fourche top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

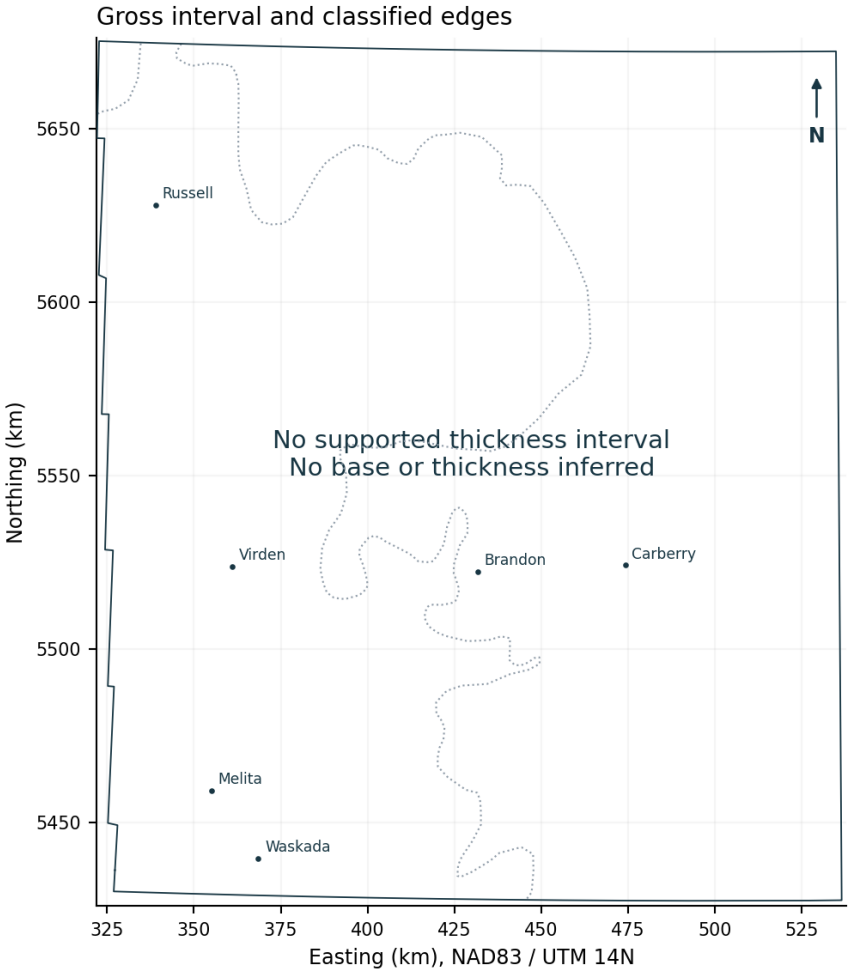
Carlile (Morden–Boyne)



2 km regional grid. Blank values are unknown, not zero. Carlile (Morden–Boyne) top to Favel / Second White Specks top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Milk River / Gammon

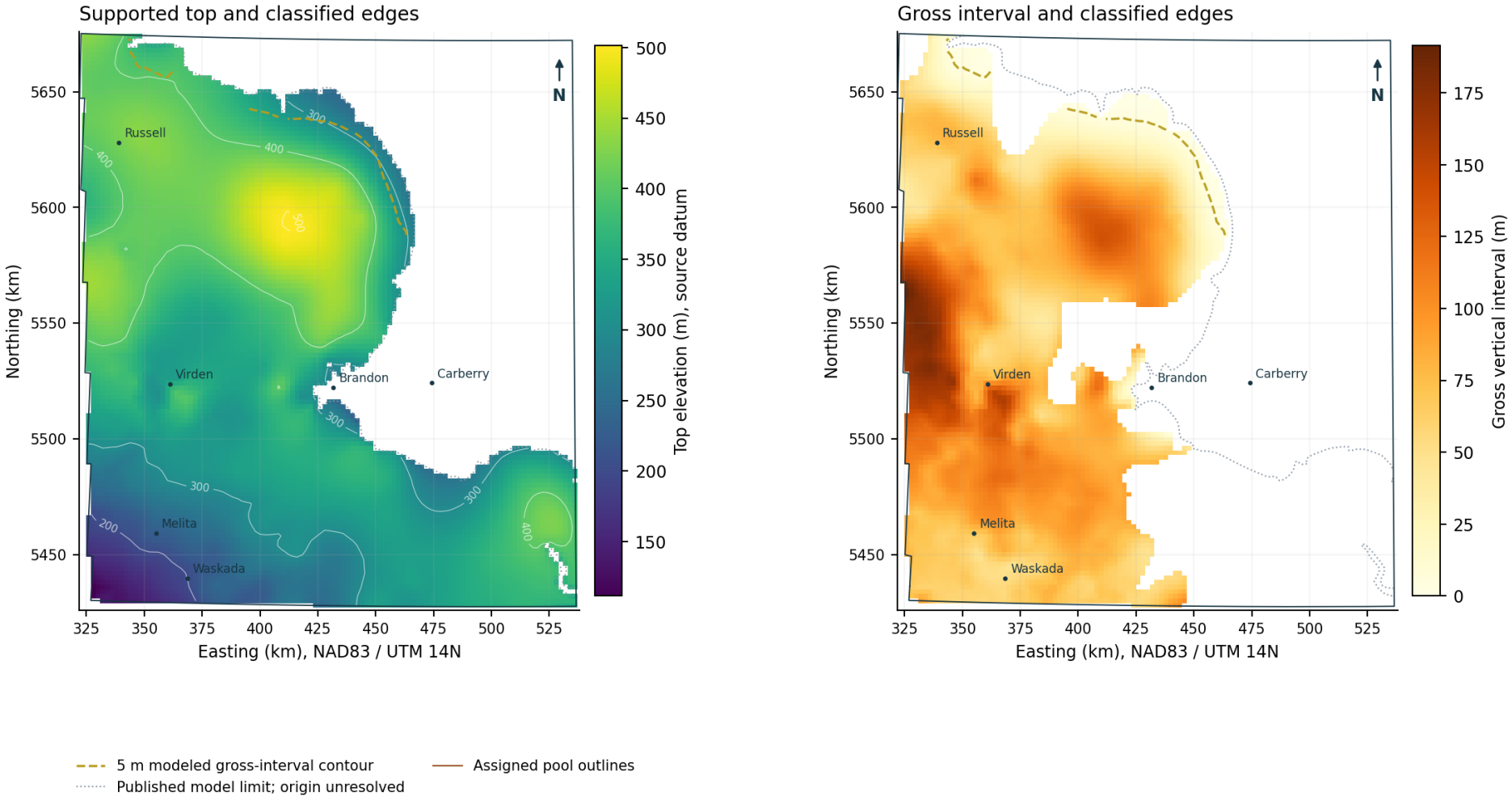




Published model limit; origin unresolved — Assigned pool outlines

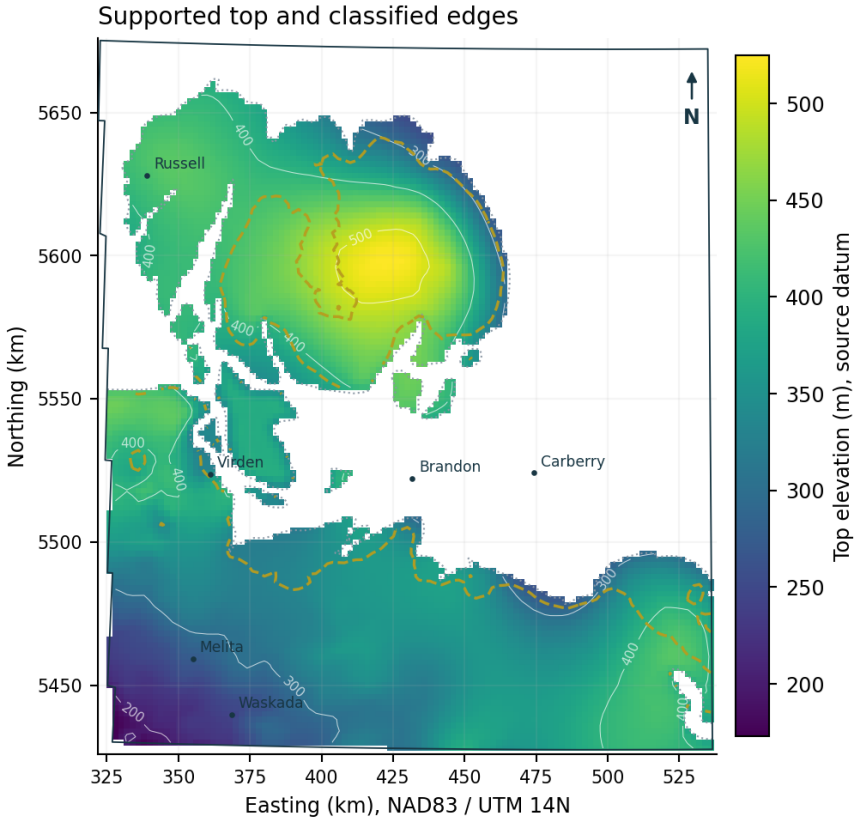
2 km regional grid. Blank values are unknown, not zero. Milk River / Gammon top to Niobrara top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

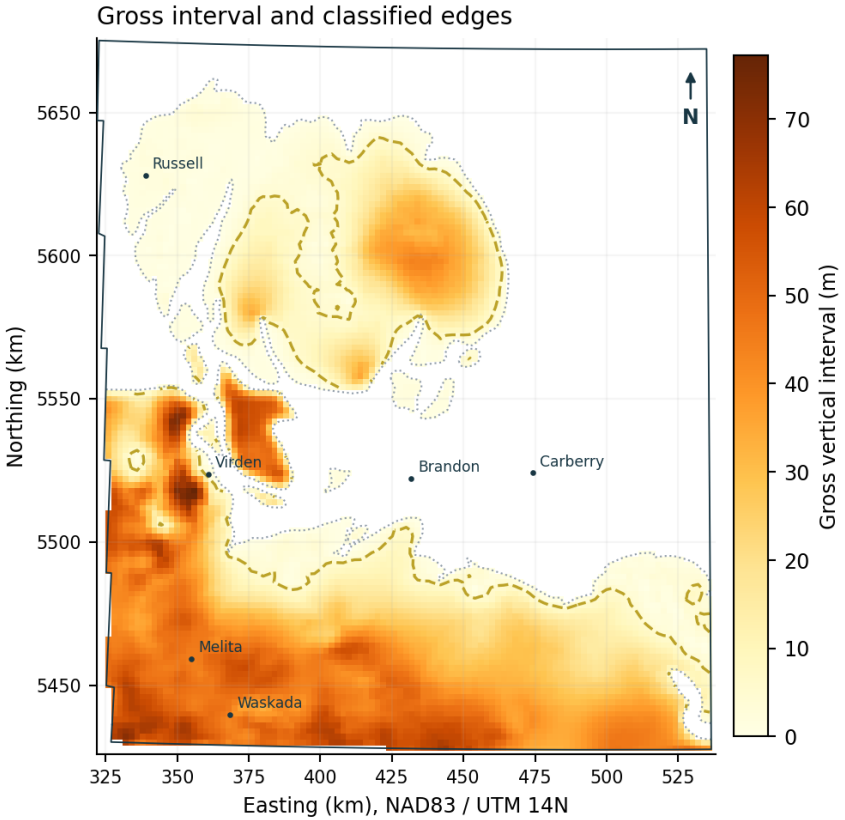
Lea Park / Pembina–Millwood



2 km regional grid. Blank values are unknown, not zero. Lea Park / Pembina–Millwood top to Milk River / Gammon top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.

Belly River / lower Odanah marker





5 m modeled gross-interval contour
Published model limit; origin unresolved
Assigned pool outlines

2 km regional grid. Blank values are unknown, not zero. Belly River / lower Odanah marker top to Lea Park / Pembina–Millwood top
5 m contours indicate modeled thinning only; grey dotted boundaries delimit support. Neither proves a depositional pinch-out.
Source: Manitoba TGI geometry/control compilation and classified edge evidence register. Pool outlines are not fluid contacts or pay boundaries.