

**GUIDE TO JACK PINE FAMILY TEST
PLANTATIONS IN MANITOBA AND
SASKATCHEWAN**

**A.M. NANKA
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**Forestry Canada
104-180 Main Street
WINNIPEG, Manitoba
R3C 1A6**

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PREFACE

The jack pine breeding program for Manitoba and Saskatchewan includes 11 family-test plantations in three separate breeding districts distributed across these two provinces. There are frequent occasions when information regarding location, access maps, plantation layout, origin of test material or other aspect of documentation about these test plantations is required. This guide was prepared in order to provide that information in a convenient format. Vital information has been assembled here into one reference guide from all three establishment reports which are available on separate breeding districts. Contained are a list of family test plantation locations, (geographic co-ordinates), plot sequence and tree position with blocks, access maps, layout diagrams, origin of family seedlots and distribution of seed source stands.

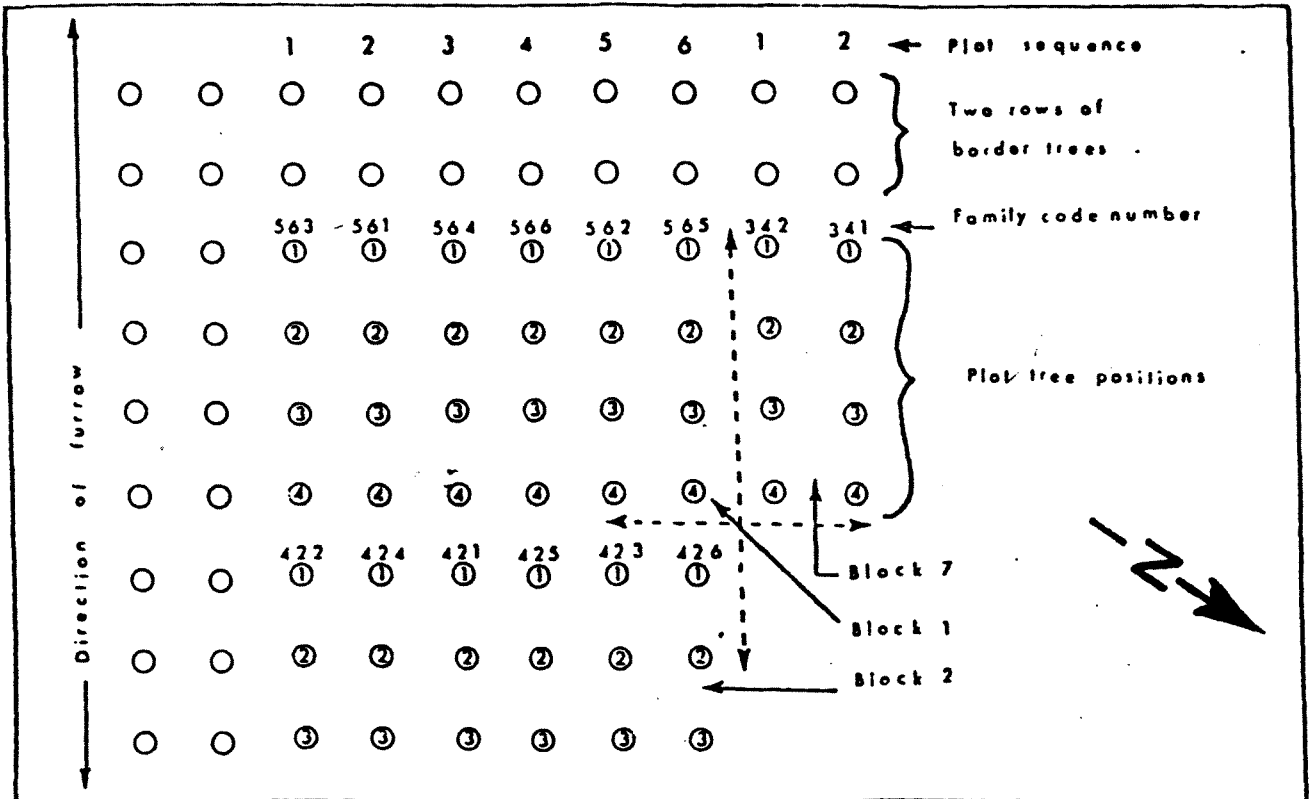
An establishment report was prepared and distribution for each breeding district. These reports contain information similar to that presented here with the addition of narrative descriptions of establishment procedures and soil profile descriptions for sites of the Central and Western districts. Some of the information in this guide has been photocopied without revision from establishment reports. Presentation problems and errors noticed in the establishment reports were corrected for this report. Information contained only in an establishment report may be available on request from the Canadian Forestry Service, Northern Forestry Centre. For more comprehensive information on this program regarding reports available, please refer to the List of Reports presented in this guide on page 56.

Location of Family Test Plantation Sites

District	Site	Place Name	Page ¹	Rep. Group Set	Legal Description Sec - Twp - Rge - Mer	N. Lat.	W. Long.
Eastern							
	1	Lonesand South	5	2	SW $\frac{1}{4}$ 16 - 3 - 9 - E1	49°13'	96°20'
	2	Lonesand North	5	1	NE $\frac{1}{4}$ 17 - 3 - 9 - E1	49°13'	96°20'
	3	Marchand	8	3	SW $\frac{1}{4}$ 14 - 6 - 10 - E1	40°28'	96°08'
	4	Stead	10	4,5	SW $\frac{1}{4}$ 27 - 17 - 8 - E1	50°28'	96°25'
Central							
	1	Rice River	26	11	30 - 52 - 3 - W2	53°31'	102°26'
	2	Twin Moose Creek	28	10	34 - 38 - 1 - W2	52°18'	102°05'
	3	Birch River			Destroyed by Fire in 1980		
	4	Shallow Lake	32	13	6 - 30 - 25 - W1	51°33'	100°58'
Western							
	1	White Gull Creek South	43	9	NW $\frac{1}{4}$ 16 - 56 - 18 - W2	53°52'	104°38'
	2	White Gull Creek North	43	7	NW $\frac{1}{4}$ 21 - 56 - 18 - W2	53°52'	104°37'
	3	Turtle Lake Road	46	6	SW $\frac{1}{4}$ 7 - 54 - 16 - W3	53°38'	108°19'
	4	Alcott Creek	46	8	SW $\frac{1}{4}$ 25 - 55 - 17 - W3	53°47'	108°24'

¹ For Access Map

Plot Sequence and Tree Position within Blocks for Jack Pine Breeding Program



Plot sequence and tree position within blocks, illustrated for replicate 11-1, block 1. Plot 1 would be to the right for an observer looking toward block 2 from block 1.

Eastern Breeding District Family Test Plantations
Locations, Access Maps, and Plot Layout Diagrams

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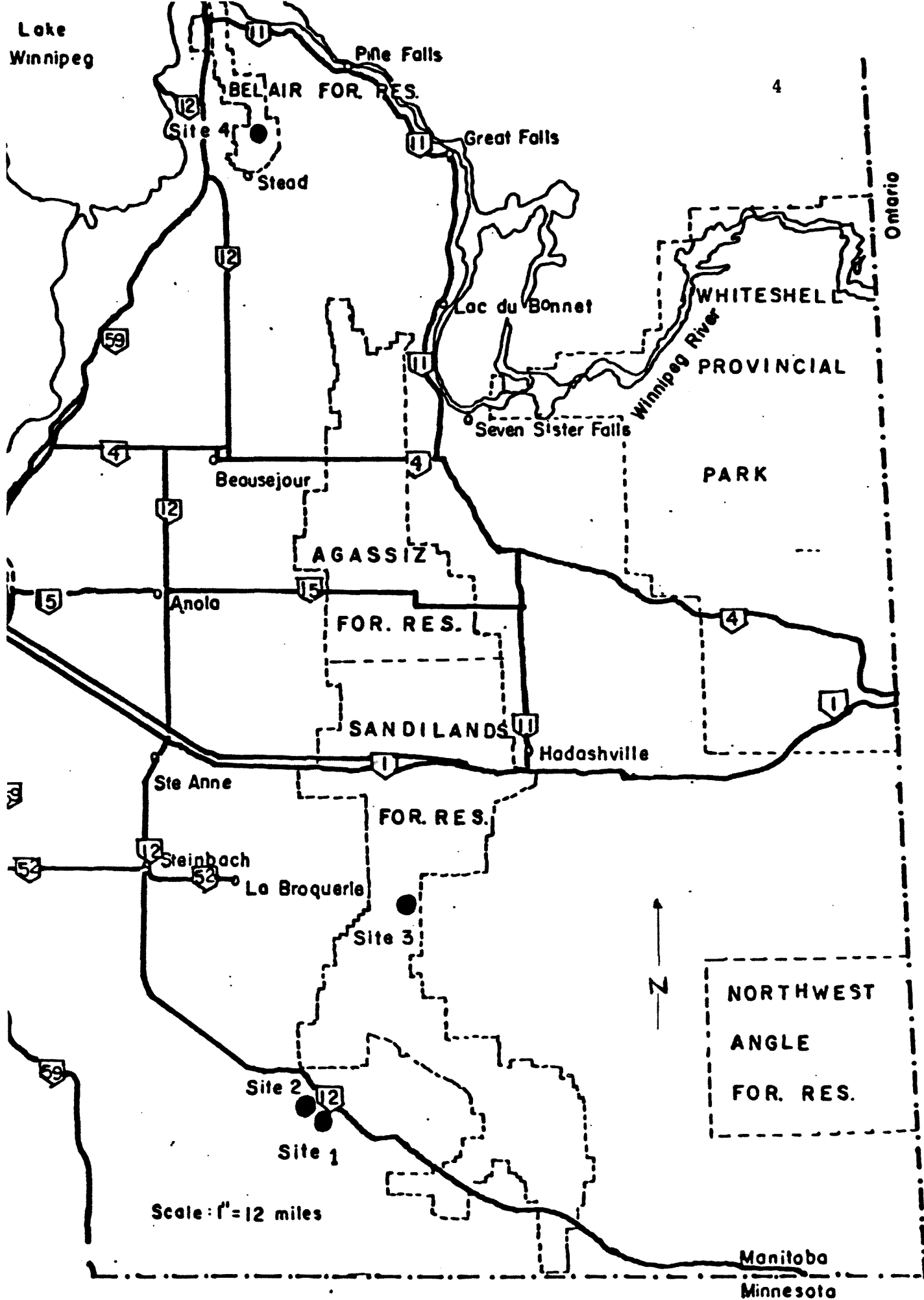


Figure 1. Southeastern Manitoba, showing four planting sites

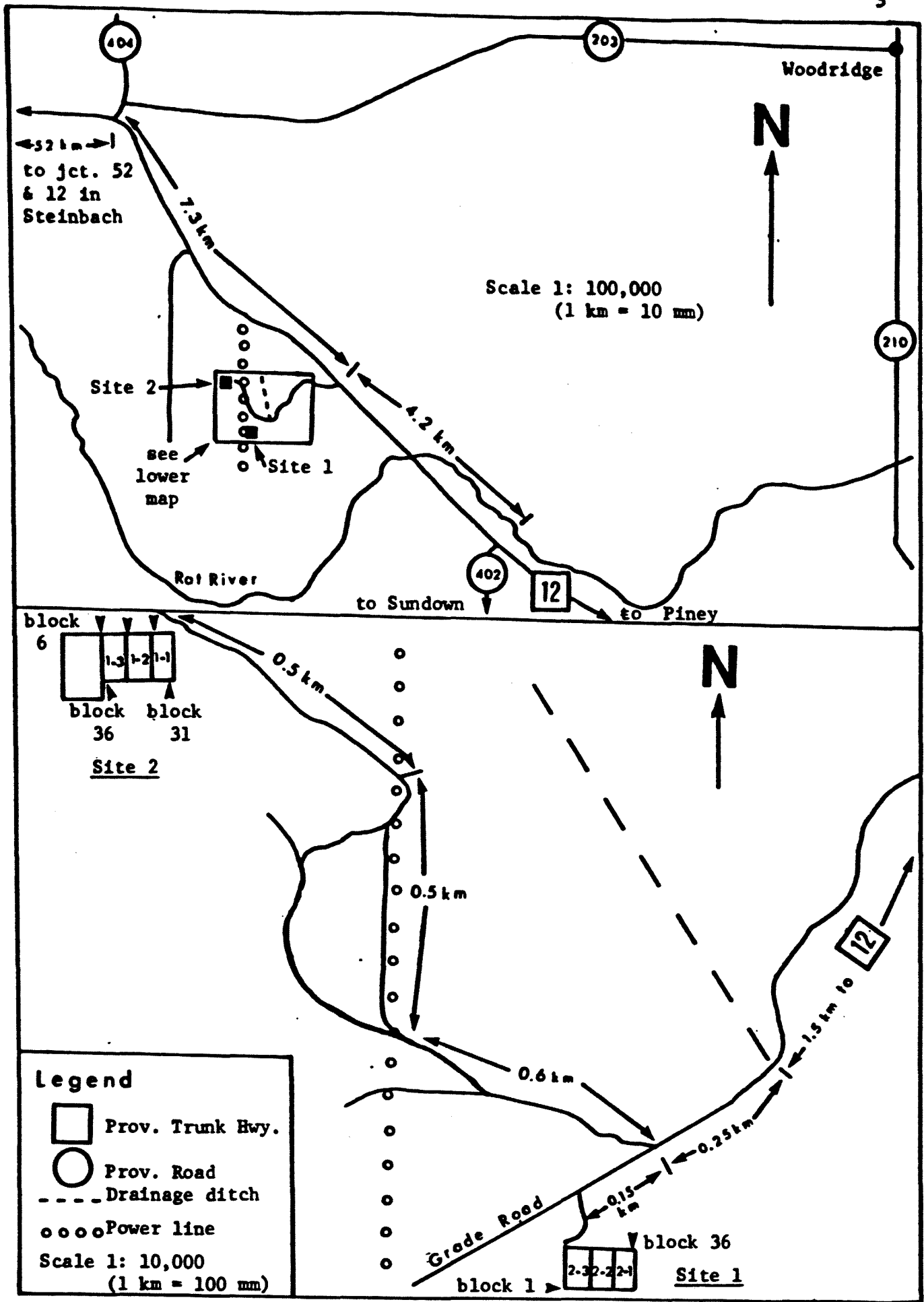


Figure 2. Eastern Breeding District, Access map, Site 1 and 2, Lonesand

Block 36 162 362 262 562 662 462	Block 30 423 123 323 623 523 223	Block 24 442 542 142 642 342 242	Block 18 554 254 154 354 654 454	Block 12 621 421 521 321 221 121	Block 6 215 415 515 615 315 115
Block 35 265 165 665 365 565 465	Block 29 514 114 614 214 314 414	Block 23 355 655 155 455 555 255	Block 17 444 344 544 644 144 244	Block 11 266 666 366 566 166 466	Block 5 226 426 526 626 326 126
Block 34 532 432 632 332 132 232	Block 28 234 634 334 434 534 134	Block 22 631 231 331 431 531 131	Block 16 416 216 116 516 616 316	Block 10 651 551 451 151 251 351	Block 4 512 212 612 412 312 112
Block 33 343 243 643 443 143 243	Block 27 663 263 363 463 563 163	Block 21 641 441 241 341 541 141	Block 15 525 425 625 325 125 225	Block 9 335 635 135 435 535 235	Block 3 361 161 261 661 461 561
Block 32 511 111 611 411 311 211	Block 26 264 364 464 664 564	Block 20 622 122 222 422 522 322	Block 14 413 213 513 313 113 613	Block 8 524 224 124 624 424 324	Block 2 436 136 536 636 336 236
Block 31 546 646 346 446 146 246	Block 25 152 552 452 252 352 652	Block 19 445 645 345 445 245 545 145	Block 13 253 453 153 553 353 653	Block 7 156 356 556 656 456 256	Block 1 533 633 133 433 333 233

REPLICATE 1-2

Block 36 365 315 345 335 355 325	Block 30 165 125 145 155 135 115	Block 24 451 421 431 441 411 461	Block 18 253 223 243 233 263 213	Block 12 543 513 553 523 563 533	Block 6 346 336 316 326 356 366
Block 35 151 121 131 141 111 161	Block 29 352 322 332 362 312 342	Block 23 444 414 454 424 434 464	Block 17 916 966 946 956 926 936	Block 11 552 562 542 512 532 522	Block 5 261 241 251 231 221 211
Block 34 226 216 256 266 246 236	Block 28 652 632 622 642 662 612	Block 22 443 433 463 413 423 453	Block 16 415 425 445 455 435 465	Block 10 235 265 225 245 255 215	Block 4 664 644 654 624 634 614
Block 33 536 566 526 546 516 556	Block 27 565 555 515 535 545 525	Block 21 551 561 541 531 511 521	Block 15 913 953 923 933 943 963	Block 9 234 244 214 254 224 264	Block 3 931 621 651 661 641 611
Block 32 134 164 144 154 124 114	Block 26 462 412 432 422 452 442	Block 20 142 152 132 162 112 122	Block 14 321 351 341 361 331 311	Block 8 544 534 564 554 514 524	Block 2 466 426 456 446 436 416
Block 31 334 344 354 324 364 314	Block 25 156 116 136 126 146 166	Block 19 313 343 353 363 333 323	Block 13 153 113 143 133 123 163	Block 7 615 635 625 655 645 665	Block 1 222 232 212 212 262 252 242

REPLICATE 1-1

Block 36 642 646 641 644 645 643	Block 30 512 514 511 513 516 515	Block 24 361 362 363 366 365 364	Block 18 325 324 323 322 326 321	Block 12 566 562 564 561 565 563	Block 6 546 545 544 541 542 543
Block 35 241 246 245 244 242 243	Block 29 635 634 631 636 633 632	Block 23 331 336 333 332 335 334	Block 17 433 431 432 436 434 435	Block 11 665 664 662 666 661 663	Block 5 153 154 152 151 156 155
Block 34 133 135 132 134 131 136	Block 28 213 216 212 215 214 211	Block 22 446 445 443 444 441 442	Block 16 262 261 266 264 265 263	Block 10 462 465 466 461 463 464	Block 4 556 552 554 551 553 555
Block 33 651 652 653 656 655 654	Block 27 615 613 616 614 612 611	Block 21 343 341 345 342 344 346	Block 15 314 313 312 315 316 311	Block 9 621 622 626 623 625 624	Block 3 355 353 356 352 354 351
Block 32 252 256 253 255 251 254	Block 26 532 533 531 534 535 536	Block 20 521 526 524 525 523 522	Block 14 233 232 231 235 236 234	Block 8 142 141 143 146 144 145	Block 2 112 114 111 113 115 111 116
Block 31 165 164 162 161 166 163	Block 25 423 425 426 427 428 421	Block 19 456 455 454 452 453 453	Block 13 125 126 121 127 128 122	Block 7 411 412 413 414 417 416 415	Block 1 224 223 222 221 226 225 221

Figure 3. Family Test Plantation Layout Diagram Site 2, Lonesand North



REPLICATE 2-1						REPLICATE 2-2						REPLICATE 2-3						
Block 36 213 215 216 214 212 211	Block 30 644 643 641 646 642 645	Block 24 631 635 633 632 636 634	Block 18 665 661 664 663 666 662	Block 12 115 113 114 111 116 112	Block 6 331 332 334 336 335 333	Block 36 666 616 656 636 646 626	Block 30 563 533 523 513 543 553	Block 24 321 361 351 331 311 341	Block 18 451 421 411 461 441 431	Block 12 462 432 452 422 412 442	Block 6 566 516 536 526 546 556	Block 36 666 616 656 636 646 626	Block 30 563 533 523 513 543 553	Block 24 321 361 351 331 311 341	Block 18 451 421 411 461 441 431	Block 12 462 432 452 422 412 442	Block 6 566 516 536 526 546 556	
Block 35 612 615 611 613 616 614	Block 29 413 412 411 415 414 416	Block 23 352 353 354 351 355 356	Block 17 322 324 326 323 321 325	Block 11 424 425 421 423 422 426	Block 5 514 511 515 513 512 516	Block 35 624 622 625 623 621 626	Block 29 455 451 453 456 454 452	Block 23 345 343 341 342 346 344	Block 17 366 365 362 361 363 364	Block 11 221 226 225 224 223 222	Block 5 525 526 525 524 523 522	Block 35 624 622 625 623 621 626	Block 29 455 451 453 456 454 452	Block 23 345 343 341 342 346 344	Block 17 366 365 362 361 363 364	Block 11 221 226 225 224 223 222	Block 5 525 526 525 524 523 522	
Block 34 653 656 654 652 651	Block 28 256 252 254 253 251 255	Block 22 534 535 536 531 532 533	Block 16 366 365 362 361 363 364	Block 10 221 226 225 224 223 222	Block 4 143 163 163 163 163 143	Block 34 624 622 625 623 621 626	Block 28 236 231 235 233 232 234	Block 22 345 343 341 342 346 344	Block 16 564 563 561 562 566 565	Block 10 122 121 125 124 123 126	Block 4 463 465 465 463 463 465	Block 34 624 622 625 623 621 626	Block 28 236 231 235 233 232 234	Block 22 345 343 341 342 346 344	Block 16 564 563 561 562 566 565	Block 10 122 121 125 124 123 126	Block 4 463 465 465 463 463 465	
Block 33 562 162 262 462 362 662	Block 27 434 334 634 534 134 234	Block 21 645 145 545 245 445 345	Block 15 164 264 364 564 664 464	Block 9 656 556 156 356 256 456	Block 3 441 641 341 141 541 241	Block 33 442 142 242 642 642 542	Block 27 434 334 634 534 134 234	Block 21 645 145 545 245 445 345	Block 15 164 264 364 564 664 464	Block 9 656 556 156 356 256 456	Block 3 441 641 341 141 541 241	Block 33 442 142 242 642 642 542	Block 27 434 334 634 534 134 234	Block 21 645 145 545 245 445 345	Block 15 164 264 364 564 664 464	Block 9 656 556 156 356 256 456	Block 3 441 641 341 141 541 241	Block 3 441 641 341 141 541 241
Block 32 514 114 414 614 314 214	Block 26 332 132 532 232 632 432	Block 20 213 413 613 313 113 513	Block 14 611 111 511 211 411 311	Block 8 531 431 331 231 131 631	Block 2 224 124 624 524 424 324	Block 32 442 142 242 642 642 542	Block 26 332 132 532 232 632 432	Block 20 213 413 613 313 113 513	Block 14 611 111 511 211 411 311	Block 8 531 431 331 231 131 631	Block 2 224 124 624 524 424 324	Block 32 442 142 242 642 642 542	Block 26 332 132 532 232 632 432	Block 20 213 413 613 313 113 513	Block 14 611 111 511 211 411 311	Block 8 531 431 331 231 131 631	Block 2 224 124 624 524 424 324	Block 2 224 124 624 524 424 324
Block 31 154 354 554 254 454 654	Block 25 694 544 344 144 444 244	Block 19 255 555 155 355 455 655	Block 13 261 461 661 161 561 361	Block 7 626 126 226 426 326 526	Block 1 616 116 416 516 116 316	Block 31 164 165 162 163 166 161	Block 25 152 155 154 151 156 153	Block 19 444 445 441 446 442 443	Block 13 461 465 466 464 462 463	Block 7 552 553 551 554 556 555	Block 1 546 543 542 545 541 544	Block 31 164 165 162 163 166 161	Block 25 152 155 154 151 156 153	Block 19 444 445 441 446 442 443	Block 13 461 465 466 464 462 463	Block 7 552 553 551 554 556 555	Block 1 546 543 542 545 541 544	Block 1 546 543 542 545 541 544

Figure 4. Family Test Plantation Layout Diagram Site 1, Lonesard South



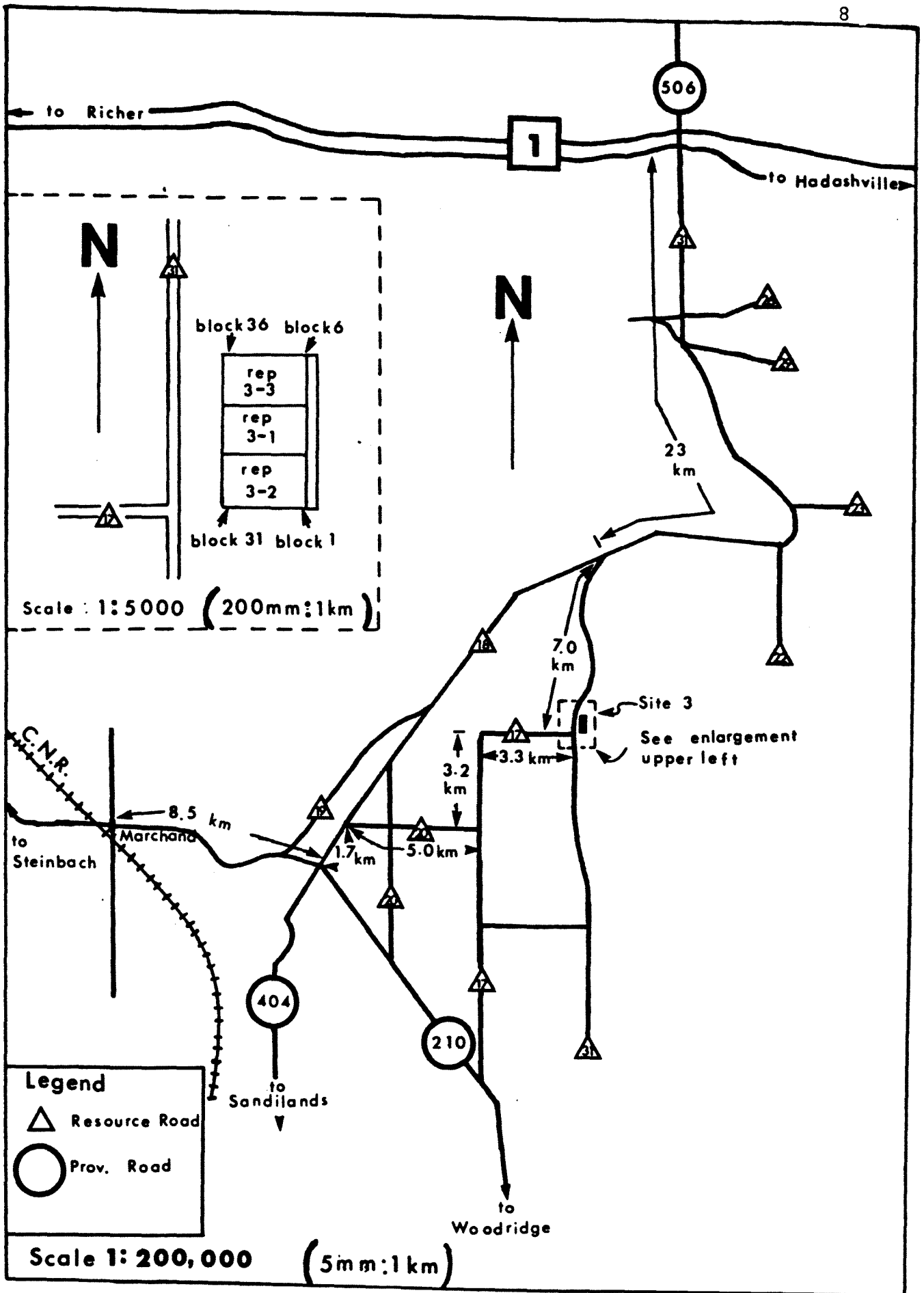


Figure 5. Eastern Breeding District, Access map, Site 3, Marchand

Block 36 642 542 542 242 142 442	Block 30 515 315 115 215 415	Block 24 612 212 412 312 512 112	Block 18 326 426 226 626 126 526	Block 12 266 566 466 666 166 366	Block 6 222 122 522 322 622 422
Block 35 231 531 331 431 631 131	Block 29 635 535 135 235 335 435	Block 23 166 466 266 366 566 666	Block 17 611 311 511 411 211 111	Block 11 243 543 443 343 643 143	Block 5 451 651 151 551 351 551
Block 34 423 323 523 223 123	Block 28 652 552 352 152 252 452	Block 22 461 261 661 561 161 361	Block 16 462 662 262 362 562 162	Block 10 516 216 416 616 116 316	Block 4 465 165 565 365 665
Block 33 656 356 456 256 556	Block 27 236 636 336 136 536 436	Block 21 641 541 441 341 141 241	Block 15 533 333 133 433 233 633	Block 9 513 613 313 413 113 213	Block 3 254 154 454 654 354
Block 32 534 234 334 634 434 134	Block 26 653 453 553 153 353 253	Block 20 646 346 246 546 446 146	Block 14 221 521 321 621 421 121	Block 8 524 424 624 224 324 124	Block 2 445 245 645 345 545 145
Block 31 425 225 125 525 625 325	Block 25 155 555 355 655 255 455	Block 19 132 232 632 532 432 332	Block 13 363 563 263 463 663 163	Block 7 144 344 244 644 444 544	Block 1 414 314 614 514 114 214

REPLICATE 2-1

Block 36 122 125 125 123 124 121	Block 30 412 415 413 411 414 416	Block 24 461 462 463 463 466 464	Block 18 223 226 221 222 225 224	Block 12 323 321 322 324 326 325	Block 6 561 563 565 562 566 564
Block 35 261 265 266 264 263 262	Block 29 444 441 443 442 446 445	Block 23 523 526 525 522 524 521	Block 17 665 662 663 661 664 666	Block 11 534 535 531 536 533 532	Block 5 163 162 164 166 161 165
Block 34 454 456 455 451 452 453	Block 28 355 354 356 353 352 351	Block 22 113 114 115 112 116 111	Block 16 621 622 623 625 624 626	Block 10 634 631 633 632 635 636	Block 4 655 653 652 654 656 651
Block 33 335 332 336 333 334 331	Block 27 136 131 132 133 135 134	Block 21 365 364 361 366 362 363	Block 15 156 154 151 153 152 155	Block 9 251 254 256 253 255 252	Block 3 426 424 425 423 422 421
Block 32 213 212 216 215 214 211	Block 26 554 556 552 555 553 551	Block 20 145 141 143 146 142 144	Block 14 235 233 234 236 231 232	Block 8 241 245 244 242 246 243	Block 2 616 612 614 615 611 613
Block 31 514 513 511 515 512 516	Block 25 543 546 545 541 544 542	Block 19 644 646 641 642 645 643	Block 13 343 342 344 345 346 341	Block 7 311 313 316 312 314 315	Block 1 436 431 435 433 432 434

REPLICATE 2-2

Block 36 526 666 646 636 656 616	Block 30 465 415 445 425 435 455	Block 24 431 461 411 451 421 441	Block 18 553 543 563 533 523 513	Block 12 653 643 633 663 613 623	Block 6 424 454 444 414 464 434
Block 35 314 344 334 354 364 324	Block 29 351 331 321 311 361 341	Block 23 462 422 412 442 432 452	Block 17 641 661 621 631 611 651	Block 11 154 124 144 134 114 164	Block 5 132 162 152 142 112 122
Block 34 251 241 221 211 231 261	Block 28 443 433 423 463 453 413	Block 22 133 163 143 113 153 123	Block 16 243 263 223 233 253 213	Block 10 416 456 466 446 436 426	Block 4 262 252 222 232 242 212
Block 33 532 432 512 552 562 522	Block 27 225 255 235 245 215 265	Block 21 264 244 254 214 234 224	Block 15 642 662 612 652 632 622	Block 9 342 352 362 332 322 312	Block 3 325 335 355 315 345 365
Block 32 141 121 161 111 131 151	Block 26 566 526 536 546 516 556	Block 20 246 266 256 216 236 226	Block 14 125 115 165 145 135 155	Block 8 323 353 313 343 363 333	Block 2 535 565 555 525 545 515
Block 31 531 561 551 511 541 521	Block 25 544 514 534 524 564 554	Block 19 336 326 356 346 316 366	Block 13 116 136 166 156 146 126	Block 7 625 615 655 635 645 665	Block 1 664 644 624 634 654 614

Figure 6. Family Test Plantation Layout Diagram Site 3, Marchand

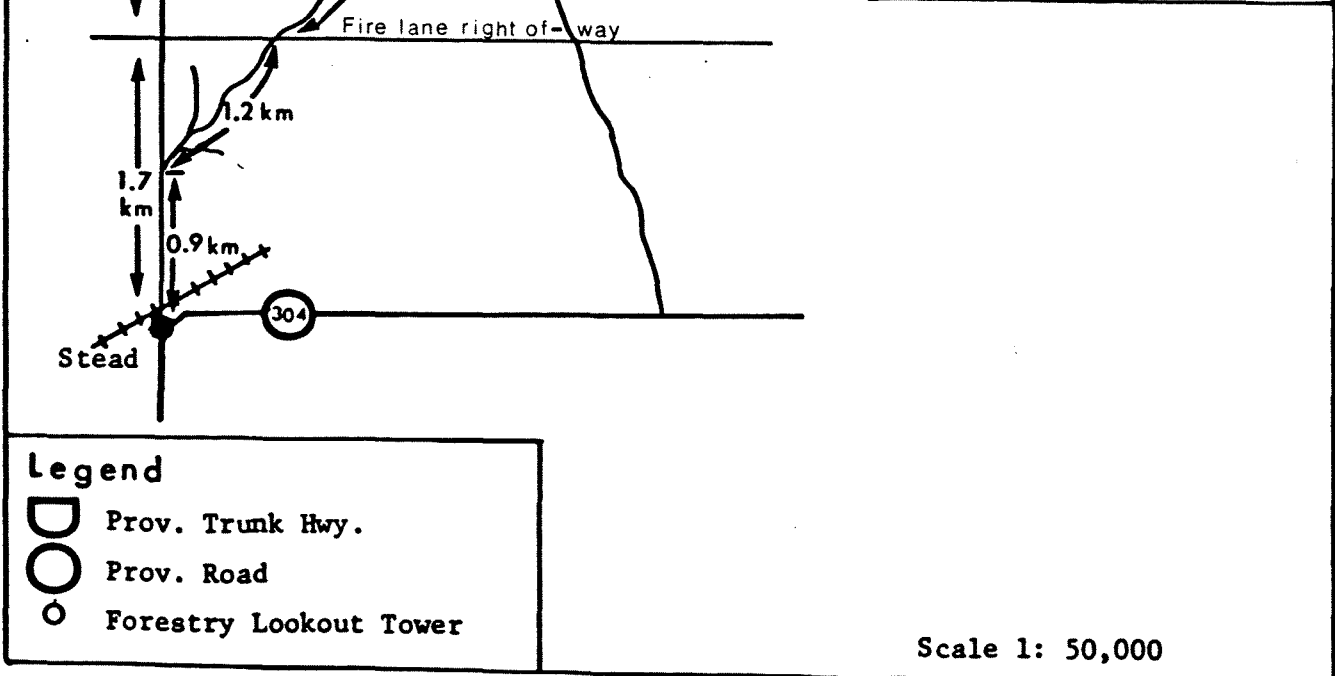
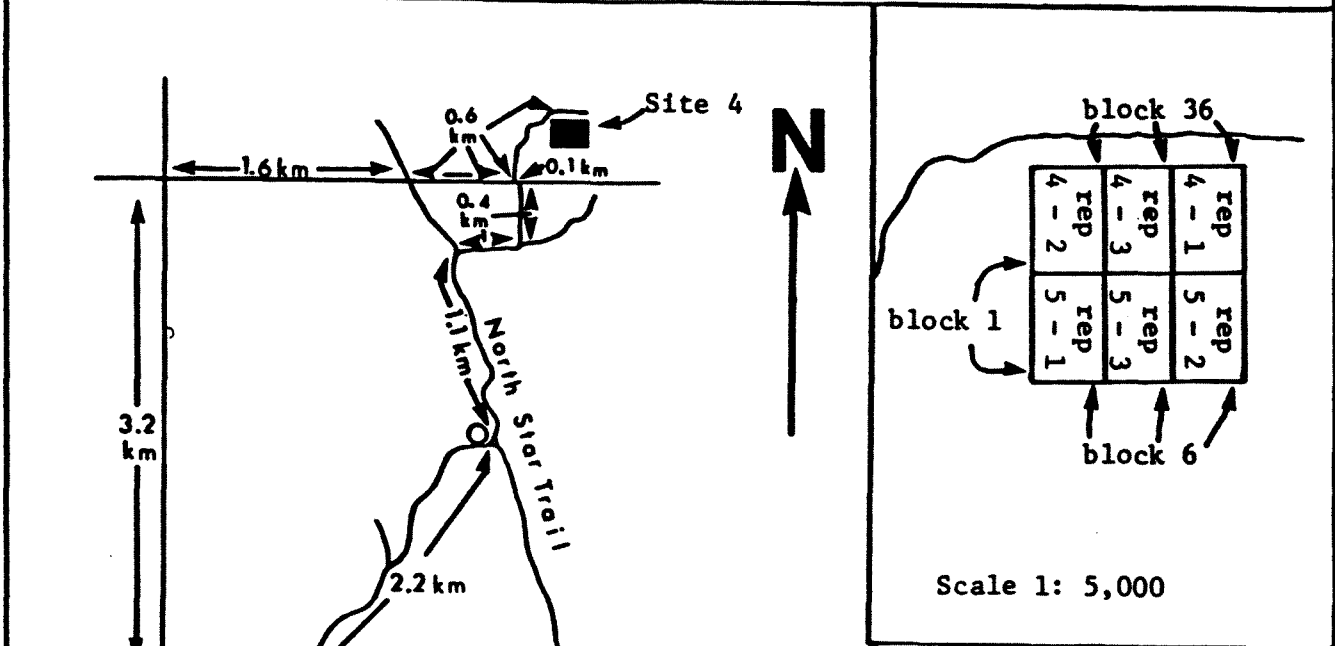
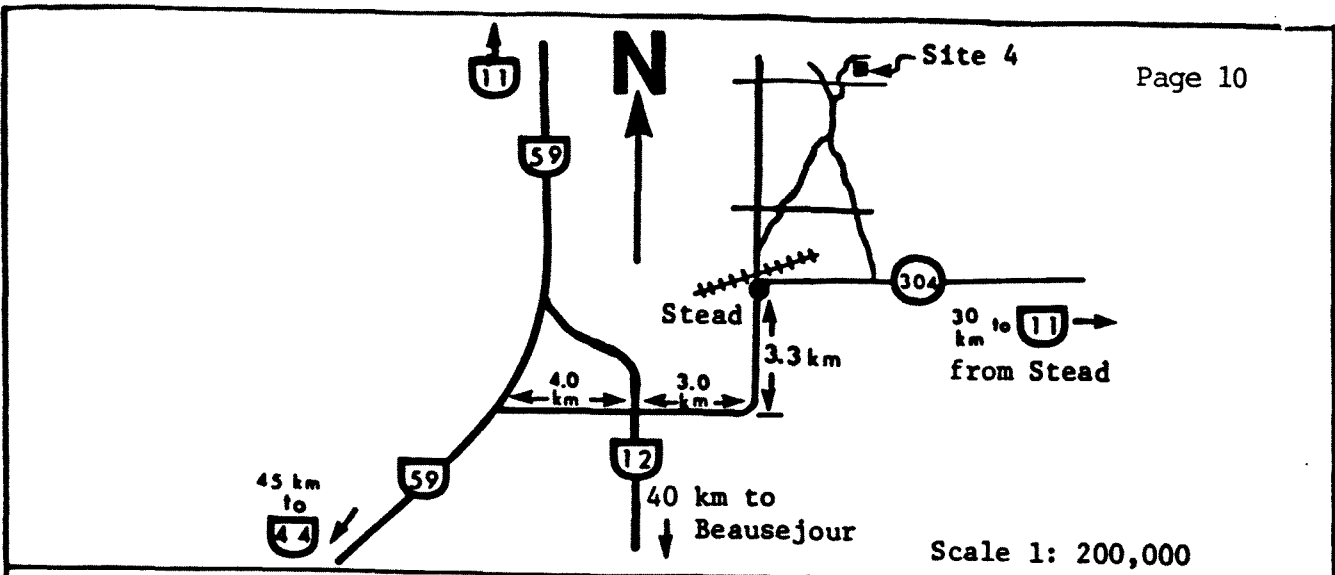


Figure 7. Eastern Breeding District, Access map, Site 4, Stead

Block 36 631 633 635 632 636 634	Block 30 111 113 115 114 112 116	Block 24 366 361 362 365 364 363	Block 18 211 216 213 214 212 215	Block 12 442 443 445 441 444 446	Block 6 153 154 156 155 151 152
Block 35 412 413 416 411 414 415	Block 29 463 465 466 462 464 461	Block 23 265 266 264 263 262 261	Block 17 343 344 342 341 346 345	Block 11 315 314 312 316 311 311	Block 5 516 515 513 514 511 512
Block 34 122 123 121 126 125 124	Block 28 654 656 655 652 651 653	Block 22 552 556 551 554 555 553	Block 16 236 234 235 232 233 231	Block 10 351 352 355 353 355 354	Block 4 666 661 663 665 662 664
Block 33 243 245 242 246 244 241	Block 27 333 335 336 334 332 331	Block 21 324 325 321 323 322 326	Block 15 163 162 164 161 165 166	Block 9 624 623 625 622 626 621	Block 3 132 136 134 133 135 131
Block 32 644 646 641 643 645 642	Block 26 431 435 432 433 436 434	Block 20 435 421 426 423 422 424	Block 14 561 562 565 566 564 563	Block 8 252 256 254 253 255 251	Block 2 546 543 544 542 545 541
Block 31 522 521 523 525 524 526	Block 25 531 535 536 533 534 532	Block 19 144 141 146 145 143 142	Block 13 616 612 614 613 615 611	Block 7 221 224 222 226 223 225	Block 1 453 451 456 452 455 454

REPLICATE 4-3

Block 36 246 946 546 346 446 146	Block 30 662 562 162 362 462 262	Block 24 224 424 524 324 624 124 424	Block 18 242 342 642 142 442 542	Block 12 321 421 221 221 621 521 121	Block 6 523 323 123 223 623 223 423
Block 35 314 614 114 414 514 214	Block 29 452 352 252 552 652 152	Block 23 236 536 136 436 636 336	Block 17 131 631 431 231 331 531	Block 11 125 225 625 525 325 425	Block 5 564 364 164 264 664 264 464
Block 34 634 434 134 534 234 334	Block 28 166 566 266 466 666 366	Block 22 561 461 161 361 261 661	Block 16 513 113 313 413 613 213	Block 10 232 332 632 132 432 532	Block 4 151 651 551 451 351 251
Block 33 626 126 526 326 426 226	Block 27 256 556 456 656 356 156	Block 21 153 353 253 553 653 453	Block 15 311 111 411 611 211 511	Block 9 133 233 533 333 433 633	Block 3 315 115 515 615 415 215
Block 32 444 144 644 544 244 344	Block 26 516 316 216 116 416 616	Block 20 512 612 312 212 112 412	Block 14 245 145 345 445 545 645	Block 8 441 541 341 641 141 241	Block 2 663 163 263 463 363 563
Block 31 435 535 635 135 635 235	Block 25 265 665 165 465 365 565	Block 19 522 222 122 322 622 422	Block 13 554 354 254 154 654 454	Block 7 443 243 543 343 643 143	Block 1 155 565 355 655 455 255

REPLICATE 4-2

Block 36 133 163 153 123 113 143	Block 30 145 135 115 155 165 125	Block 24 343 323 363 313 333 353	Block 18 144 164 154 114 124 134	Block 12 126 156 116 166 146 136	Block 6 131 151 141 111 121 161
Block 35 321 361 351 341 311 331	Block 29 551 521 531 541 511 561	Block 23 443 453 463 423 433 413	Block 17 216 226 246 256 266 236	Block 11 244 224 214 234 254 264	Block 5 434 414 464 424 444 454
Block 34 322 342 352 362 332 312	Block 28 364 334 324 344 354 314	Block 22 625 615 635 665 645 655	Block 16 455 425 415 435 445 465	Block 10 565 525 515 535 545 555	Block 4 611 651 661 621 631 641
Block 33 365 355 315 345 335 325	Block 27 152 142 162 132 122 112	Block 21 524 554 544 564 534 514	Block 15 616 656 636 626 666 646	Block 9 542 512 532 552 562 522	Block 3 622 652 612 642 632 662
Block 32 613 653 643 623 633 663	Block 26 533 563 523 543 553 513	Block 20 241 261 251 231 221 211	Block 14 411 451 421 441 431 461	Block 8 422 452 432 412 442 462	Block 2 222 242 212 232 262 252
Block 31 654 644 624 664 634 614	Block 25 446 416 456 466 436 426	Block 19 253 223 233 263 243 213	Block 13 566 556 516 546 536 526	Block 7 356 316 326 336 346 366	Block 1 215 265 225 235 245 255

Figure 8. Family Test Plantation Layout Diagram Site 4, Stead



REPLICATE 5-2												REPLICATE 5-1												REPLICATE 5-3																																																																																																																																																																																																																																																																																																																																																																																																																																			
245	Block 36	612	Block 30	413	Block 24	336	Block 18	426	Block 12	313	Block 6	321	Block 31	654	Block 25	136	Block 19	363	Block 13	124	Block 7	111	Block 1	525	Block 36	314	Block 30	261	Block 24	443	Block 18	556	Block 12	216	Block 6	263	Block 31	335	Block 25	624	Block 19	542	Block 13	166	Block 7	465	Block 1	212	Block 32	312	Block 26	135	Block 20	635	Block 14	221	Block 8	121	Block 2	626	Block 33	162	Block 27	164	Block 21	133	Block 15	244	Block 9	551	Block 3	661	Block 34	462	Block 28	555	Block 22	533	Block 16	554	Block 10	341	Block 4	441	Block 35	536	Block 29	226	Block 23	613	Block 17	494	Block 11	354	Block 5	245	Block 36	612	Block 30	413	Block 24	336	Block 18	426	Block 12	313	Block 6	265	Block 35	642	Block 29	463	Block 23	356	Block 17	416	Block 11	333	Block 5	225	Block 36	652	Block 30	453	Block 24	316	Block 18	456	Block 12	352	Block 6	235	Block 35	662	Block 29	443	Block 23	326	Block 17	444	Block 11	332	Block 5	243	Block 34	662	Block 28	535	Block 22	663	Block 16	444	Block 10	333	Block 4	253	Block 33	611	Block 27	515	Block 21	633	Block 15	446	Block 9	334	Block 3	243	Block 31	345	Block 25	664	Block 19	562	Block 13	161	Block 7	435	Block 1	213	Block 32	262	Block 26	125	Block 20	645	Block 14	251	Block 8	151	Block 2	636	Block 33	152	Block 27	114	Block 21	153	Block 15	244	Block 9	551	Block 3	656	Block 33	142	Block 27	114	Block 21	143	Block 15	224	Block 9	521	Block 3	666	Block 33	132	Block 27	124	Block 21	163	Block 15	264	Block 9	534	Block 3	616	Block 33	112	Block 27	134	Block 21	615	Block 14	214	Block 8	514	Block 3	646	Block 33	122	Block 27	154	Block 21	553	Block 16	153	Block 9	514	Block 3	631	Block 34	462	Block 28	565	Block 22	563	Block 16	554	Block 10	341	Block 4	631	Block 34	442	Block 28	545	Block 22	523	Block 16	564	Block 10	351	Block 4	611	Block 34	412	Block 28	535	Block 22	543	Block 16	544	Block 10	331	Block 4	461	Block 34	452	Block 28	515	Block 22	513	Block 16	534	Block 10	311	Block 4	451	Block 34	556	Block 29	216	Block 23	653	Block 17	414	Block 11	364	Block 5	536	Block 35	546	Block 29	613	Block 23	643	Block 17	424	Block 11	324	Block 5	546	Block 35	526	Block 29	643	Block 23	623	Block 17	444	Block 11	344	Block 5	526	Block 35	524	Block 29	256	Block 23	623	Block 17	444	Block 11	325	Block 5	523	Block 35	523	Block 29	254	Block 23	636	Block 16	444	Block 10	323	Block 5	414	Block 36	412	Block 30	123	Block 24	351	Block 18	131	Block 12	656	Block 6	412	Block 36	416	Block 30	126	Block 24	352	Block 18	135	Block 12	654	Block 6	415	Block 36	415	Block 30	122	Block 24	353	Block 18	132	Block 12	652	Block 6	411	Block 36	411	Block 30	124	Block 24	354	Block 18	133	Block 12	655	Block 6	413	Block 36	413	Block 30	125	Block 24	355	Block 18	134	Block 12	651	Block 6	534	Block 36	534	Block 30	413	Block 24	356	Block 18	136	Block 12	653	Block 6	534	Block 36	534	Block 30	413	Block 24	356	Block 18	136	Block 12	653	Block 6

Figure 9. Family Test Plantation Layout Diagram Site 4, Stead

EASTERN BREEDING DISTRICT
Table 1. Origin of Family Test Seedlots

Family no.		Location			Source stand	
code	NOR ¹	N. lat.	W. long.	elev.ft(m.)	stocking	remarks
111	1153	49°25'	96°17'	1200(370)	full	mature
112	1201	49°17'	96°02'	1200(370)	light	mature, straight, some spruce
113	1120	50°37'	96°32'	800(240)	full	immature, selection for size and cone crop
114	1103	50°12'	96°07'	900(270)	light	mature to overmature
115	1111	50°14'	96°13'	900(270)	light	immature to mature
116	1069	49°34'	95°38'	1100(340)	medium	young-mature
121	1024	49°09'	96°02'	1200(370)		
122	1108	50°15'	96°14'	900(270)	medium	variable age, tree overmature
123	1140	49°36'	96°08'	1050(320)	medium	overmature, not decadent
124	1226	50°36'	95°25'	1000(300)	medium	rock outcrop, tree dominant, 48' ht., 9" diam., 49 yrs.
125	1169	49°20'	96°10'	1300(400)	light	immature
126	1025	49°08'	96°03'	1200(370)		
131	1004	49°01'	95°52'	1100(340)	medium	overmature
132	1183	49°38'	95°57'	1000(300)	light	mature
133	1175	49°35'	95°53'	1000(300)	full	immature
134	1081	50°03'	95°29'	1100(340)	light	rock outcrop, poor stem quality
135	1208	50°48'	96°13'	800(240)	medium	rock outcrop, tree 36' ht., 6" diam., 74 yrs.
136	1180	49°37'	95°55'	1000(300)	light	mature
141	1185	49°34'	96°12'	1050(320)	full	immature
142	1179	49°37'	95°55'	1000(300)	light	mature

¹ Northern Region permanent accession number.

Family no.		Location			Source stand	
code	NOR	N. Lat.	W. long	elev.ft(m.)	stocking	remarks
143	1109	50°14'	96°13'	900(270)	light	immature to mature
144	1203	49°15'	95°55'	1200(370)	full	young-mature
145	1019	49°08'	95°55'	1200(370)		
146	1039	49°18'	95°54'	1150(350)		mixed-wood
151	1054	49°17'	95°36'	1150(350)	full	mature, good timber
152	1202	49°15'	95°55'	1200(370)	full	young-mature
153	1145	49°31'	96°11'	1100(340)	full	mature, budworm damage
154	1615	54°15'	109°00'	1550(470)	medium	fairly straight, tree codominant, 54' ht., 11" diam., 72 yrs.
155	1144	49°37'	96°01'	1050(320)	full	overmature
156	1138	49°38'	96°14'	1000(300)	medium	young-mature, poor stem quality
161	1154	49°22'	96°19'	1150(350)	full	mature
162	1176	49°35'	95°53'	1000(300)	full	immature
163	1070	49°33'	95°38'	1100(340)	full	young-mature
164	1075	49°54'	95°31'	1050(320)	medium	mature, mixed-wood, rocky slope
165	1166	49°24'	96°12'	1200(370)	full	young-mature
166	1011	49°01'	95°52'	1100(340)		young-mature, mixed-wood
211	1040	49°17'	95°46'	1150(350)		poor stem quality, some aspen
212	1091	50°03'	96°15'	900(270)	full	age variable, generally immature, poor stem quality some dead tops
213	1080	50°03'	95°29'	1100(340)	light	rock outcrop, poor stem quality
214	1197	49°20'	96°12'	1250(380)	light	immature
215	1050	49°17'	95°38'	1150(350)	full	mature, good timber

Family no.		Location			Source stand	
code	NOR	N. lat.	W. long.	elev.ft(m.)	stocking	remarks
216	1603	55°06'	111°59'	2100(640)	full	straight, tree dominant, 70' ht., 13" diam., 76 yrs.
221	1101	50°11'	96°12'	900(270)	medium	mature
222	1031	49°05'	96°03'	1100(340)	medium	mature
223	1132	49°53'	96°12'	900(270)	light	mature
224	1161	49°12'	95°58'	1200(370)	medium to full	young-mature
225	1156	49°22'	96°19'	1150(350)	full	mature
226	1058	49°14'	95°17'	1100(340)	medium	variable age
231	1115	50°34'	96°32'	800(240)	medium	mature, dwarfmistletoe, tree free of attack
232	1008	49°03'	95°52'	1150(350)	full	mature
233	1086	50°26'	96°27'	900(270)	light	variable age
234	1112	50°16'	96°16'	850(260)	medium	mature
235	1217	51°01'	95°27'	1000(300)	full	good timber, tree 55' ht., 10" diam., 79 yrs.
236	1224	50°36'	95°25'	1000(300)	medium	rock outcrop, tree dominant 45' ht., 7" diam., 51 yrs.
241	1121	50°33'	96°30'	850(260)	full	mature, medium stem quality
242	1137	49°38'	96°14'	1000(300)	medium	young-mature, poor stem quality
243	1012	49°01'	95°52'	1100(340)		young-mature, mixed-wood
244	1214	50°54'	95°20'	1000(300)	medium	rock outcrop, tree dominant, 48' ht., 8" diam., 44 yrs.
245	1199	49°17'	96°02'	1200(370)	light	mature, straight, some spruce
246	1089	50°28'	96°27'	900(270)	light	variable age
251	1157	49°16'	96°04'	1200(370)	light	immature
252	1649	55°07'	107°50'	1400(430)	full	fairly straight, tree dominant, 57' ht., 10"diam., 70 yrs.

Family no.		Location			Source stand	
code	NOR	N. lat.	W. long.	elev.,ft.(m.)	stocking	remarks
253	1191	49°16'	96°18'	1100(340)	full	immature, budworm damage
254	1047	49°17'	95°40'	1150(350)	full	mature, good timber
255	1219	51°02'	95°36'	900(270)	medium	group of trees on slope, 42' ht., 8" diam. 31 yrs.
256	1022	49°09'	96°02'	1200(370)		
261	1158	49°16'	96°04'	1200(370)	light	immature
262	1216	51°01'	95°27'	1000(300)	full	good timber, tree 56' ht., 8" diam., 77 yrs.
263	1078	49°56'	95°31'	1050(320)		variable age
264	1074	49°54'	95°31'	1050(320)	medium	mature, mixed-wood, rocky slope
265	1117	50°34'	96°32'	800(240)	medium	mature, dwarf mistletoe, tree free of attack
266	1167	49°24'	96°12'	1200(370)	full	young-mature, many broken tops
311	1036	49°08'	95°50'	1200(370)	medium	variable age
312	1029	49°07'	96°05'	1200(370)		
313	1116	50°34'	96°32'	800(240)	medium	mature, dwarf mistletoe, tree free of attack
314	1190	49°16'	96°18'	1100(340)	full	immature, budworm damage
315	1087	50°26'	96°27'	900(270)	light	variable age
316	1067	49°34'	95°38'	1100(340)	medium	young-mature
321	1128	49°53'	96°07'	950(290)	light	mature
322	1077	49°56'	95°31'	1050(320)		variable age
323	1187	49°35'	96°12'	1050(320)	full	mature
324	1093	50°03'	96°15'	900(270)	full	age variable, generally immature, poor stem quality, some dead tops
325	1016	49°06'	95°52'	1200(370)	full	mature

Family no.		Location			Source stand	
code	NOR	N. lat.	W. long.	elev.,ft.(m.)	stocking	remarks
326	1053	49°17'	95°36'	1150(350)	full	mature, good timber
331	1002	49°04'	95°53'	1200(370)	full	young-mature
332	1134	49°43'	96°05'	1000(300)	full	mature
333	1719	53°15'	106°02'	1500(460)	light	fairly straight, tree codominant, 63' ht., 12" diam., 76 yrs.
334	1065	49°20'	95°20'	1150(350)	medium	line of trees at bog margin
335	1225	50°36'	95°25'	1000(300)	medium	rock outcrop, tree dominant 52' ht., 9" diam., 54 yrs.
336	1098	50°08'	96°16'	900(270)	full	young-mature
341	1131	49°53'	96°12'	900(270)	light	mature
342	1152	49°25'	96°17'	1200(370)	full	mature
343	1228	50°28'	95°27'	1000(300)	medium	rock outcrop, tree 45' ht., 9" diam., 71 yrs.
344	1193	49°17'	96°20'	1100(340)	light	decadent
345	1044	49°22'	95°39'	1100(340)	full	overmature
346	1178	49°37'	95°55'	1000(300)	light	mature
351	1064	49°20'	95°20'	1150(350)	medium	line of trees at bog margin
352	1017	49°06'	95°52'	1200(370)	full	mature
353	1052	49°17'	95°36'	1150(350)	full	mature, good timber
354	1099	50°08'	96°16'	900(270)	full	young-mature
355	1049	49°17'	95°38'	1150(350)	full	mature, good timer
356	1148	49°27'	96°15'	1100(340)	light	mature
361	1212	51°00'	96°14'	750(230)	medium	rock outcrop, tree 25' ht., 5" diam., 29 yrs.
362	1027	49°08'	96°03'	1200(370)		
363	1010	49°01'	95°52'	1100(340)		young-mature, mixed-wood
364	1038	49°18'	95°54'	1150(350)		mixed-wood

Family No.		Location			Source stand	
code	NOR	N. lat.	W. long.	elev.,ft.(m.)	stocking	remarks
365	1096	50°01'	96°13'	900(270)	full	mature, small stand
366	1119	50°37'	96°32'	800(240)	full	immature, selection for size and cone crop
411	1066	49°20'	95°20'	1150(350)	medium	line of trees at bog margin
412	1139	49°36'	96°08'	1050(320)	medium	overmature, not decadent
413	1084	50°04'	95°33'	1000(300)	full	mature, poor stem quality
414	1035	49°08'	95°50'	1200(370)	medium	variable age
415	1005	49°01'	95°52'	1100(340)	medium	overmature
416	1030	49°07'	96°05'	1200(370)		
421	1223	51°08'	96°10'	800(240)	full	mature, good timber, tree 68' ht., 9" diam., 57 yrs.
422	1104	50°12'	96°07'	900(270)	light	mature to overmature
423	1207	49°12'	95°53'	1200(370)	light	mature
424	1015	49°02'	95°54'	1100(340)	full	small stand
425	1126	50°06'	96°13'	900(270)	light	mature
426	1076	49°56'	95°31'	1050(320)		variable age
431	1159	49°16'	96°04'	1200(370)	light	immature
432	1083	50°04'	95°33'	1000(300)	medium	mature, poor stem quality
433	1135	49°43'	96°05'	1000(300)	full	mature
434	1046	49°17'	95°40'	1150(350)	full	mature, good timber
435	1001	49°04'	95°53'	1200(370)	full	young-mature
436	1095	50°01'	96°13'	900(270)	full	mature, small stand
441	1051	49°17'	95°38'	1150(350)	full	mature, good timber
442	1192	49°16'	96°18'	1100(340)	full	immature, budworn damage
443	1056	49°11'	95°19'	1100(340)		mixed-wood
444	1028	49°07'	96°05'	1200(370)		

Family no.		Location			Source stand	
code	NOR	N. lat.	W. long.	elev.,ft.(m.)	stocking	remarks
445	1150	49°27'	96°15'	1100(340)	light	mature
446	1020	49°08'	95°55'	1200(370)		
451	1162	49°12'	95°58'	1200(370)	medium to full	young-mature
452	1136	49°38'	96°14'	1000(300)	medium	young-mature, poor stem quality
453	1189	49°35'	96°12'	1050(320)	full	mature
454	1127	49°53'	96°07'	950(290)	light	mature
455	1151	49°25'	96°17'	1200(370)	full	mature
456	1079	50°03'	95°29'	1100(340)	light	rock outcrop, poor stem quality
461	1227	50°28'	95°27'	1000(300)	medium	rock outcrop, tree dominant, 45' ht., 8" diam., 76 yrs.
462	1146	49°31'	96°11'	1100(340)	full	mature, budworm damage
463	1155	49°22'	96°19'	1150(350)	full	mature
464	1014	49°02'	95°54'	1100(340)	full	small stand
465	1181	49°38'	95°57'	1000(300)	light	mature
466	1218	51°01'	95°27'	1000(300)	full	good timber, tree 55 ht., 7" diam., 77 yrs.
511	1114	50°16'	96°16'	850(260)	medium	mature
512	1094	50°01'	96°13'	900(270)	full	mature, small stand
513	1205	49°12'	95°53'	1200(370)	light	mature
514	1026	49°08'	96°03'	1200(370)		
515	1250 1251	49°to50°	96°			provincial seed stock, collected Sandilands Provincial Forest
516	1082	50°04'	95°33'	1000(300)	full	mature, poor stem quality
521	1100	50°11'	96°12'	900(270)	medium	mature
522	1088	50°28'	96°27'	900(270)	light	variable age
523	1107	50°15'	96°14'	900(270)	medium	variable age, tree over- mature

Family no.		Location			Source stand	
code	NOR	N. lat.	W. long.	elev.ft.,(m)	stocking	remarks
524	1211	51°00'	96°14'	750(230)	medium	rock outcrop, tree 70' ht., 16" diam., 64 yrs.
525	1097	50°08'	96°16'	900(270)	full	young-mature
526	1061	49°16'	95°14'	1150(350)	full	mature, good timber
531	1130	49°53'	96°12'	900(270)	light	mature
532	1105	50°12'	96°07'	900(270)	light	mature to overmature
533	1123	50°33'	96°30'	850(260)	full	mature, fair stem quality
534	1118	50°37'	96°32'	800(240)	full	immature, selection for size and cone crop
535	1057	49°11'	95°19'	1100(340)		mixed-wood
536	1045	49°22'	95°39'	1100(340)	full	overmature
541	1092	50°03'	96°15'	900(270)	full	age variable, generally immature, poor stem quality, some dead tops
542	1186	49°34'	96°12'	1050(320)	full	immature
543	1062	49°16'	95°14'	1150(350)	full	mature, good timber
544	1133	49°43'	96°05'	1000(300)	full	mature
545	1229	50°28'	95°27'	1000(300)	medium	rock outcrop, tree 50' ht., 7" diam., 77 yrs.
546	1060	49°14'	95°17'	1100(340)	medium	variable age
551	1170	49°20'	96°10'	1300(400)	light	immature
552	1037	49°18'	95°54'	1150(350)		mixed-wood
553	1072	49°33'	95°38'	1100(340)	full	young-mature
554	1222	51°08'	96°10'	800(240)	full	good timber, tree 68' ht., 9" diam., 57 yrs.
555	1195	49°17'	96°20'	1100(340)	light	decadent
556	1221	51°03'	95°51'	800(240)	medium	mixed-wood, small stand, tree 55' ht., 9" diam., 66 yrs.

Family no.		Location			Source stand	
code	NOR	N. lat.	W. long.	elev.,ft.(m)	stocking	remarks
561	1073	49°54'	95°31'	1050(320)	medium	mature, mixed-wood, rocky slope
562	1721	53°45'	105°07'	1700(520)	light	straight, tree codominant, 51' ht., 10" diam., 84 yrs.
563	1106	50°15'	96°14'	900(270)	medium	variable age, tree over-mature
564	1196	49°20'	96°12'	1250(380)	light	immature
565	1184	49°34'	96°12'	1050(320)	full	immature
566	1129	49°53'	96°07'	950(290)	light	mature
611	1204	49°15'	95°55'	1200(370)	full	young-mature
612	1188	49°35'	96°12'	1050(320)	full	mature
613	1171	49°20'	96°10'	1300(400)	light	immature
614	1210	50°48'	96°13'	800(240)	medium	rock outcrop, tree 64' ht., 10" diam., 73 yrs.
615	1209	50°48'	96°13'	800(240)	medium	rock outcrop, tree 62' ht., 9" diam., 72 yrs.
616	1198	49°20'	96°12'	1250(380)	light	immature
621	1033	49°05'	96°03'	1100(340)	medium	mature
622	1160	49°12'	95°58'	1200(370)	medium to full	young-mature
623	1085	50°26'	96°27'	900(270)	light	variable age
624	1110	50°14'	96°13'	900(270)	light	immature to mature
625	1048	49°17'	95°40'	1150(350)	full	mature, good timber
626	1018	49°06'	95°52'	1200(370)	full	mature
631	1034	49°08'	95°50'	1200(370)	medium	variable age
632	1740	53°55'	104°38'	1700(520)	full	fairly straight, tree codominant, 60' ht., 11" diam., 84 yrs.
633	1213	50°54'	95°20'	1000(300)	medium	rock outcrop, tree codominant, 50' ht., 8" diam., 49 yrs.

Family no.		Location			Source stand	
code	NOR	N. lat.	W. long.	elev.,ft.(m)	stocking	remarks
634	1102	50°11'	96°12'	900(270)	medium	mature
635	1032	49°05'	96°03'	1100(340)	medium	mature
636	1041	49°17'	95°46'	1150(350)		poor stem quality, some aspen
641	1113	50°16'	96°16'	850(260)	medium	mature
642	1124	50°06'	96°13'	900(270)	light	mature
643	1042	49°17'	95°46'	1150(350)		poor stem quality, some aspen
644	1122	50°33'	96°30'	850(260)	full	mature, medium stem quality
645	1142	49°37'	96°01'	1050(320)	full	overmature
646	1174	49°33'	95°47'	1050(320)	light to medium	mature
651	1147	49°31'	96°11'	1100(340)	full	mature, budworm damage
652	1043	49°22'	95°39'	1100(340)	full	overmature
653	1059	49°14'	95°17'	1100(340)	medium	variable age
654	1055	49°11'	95°19'	1100(340)		mixed-wood
655	1125	50°06'	96°13'	900(270)	light	mature
656	1143	49°37'	96°01'	1050(320)	full	overmature
661	1141	49°36'	96°08'	1050(320)	medium	overmature, not decadent
662	1063	49°16'	95°14'	1150(350)	full	mature, good timber
663	1021	49°08'	95°55'	1200(370)		
664	1023	49°09'	96°02'	1200(370)		
665	1194	49°17'	96°20'	1100(340)	light	decadent
666	1172	49°33'	95°47'	1050(320)	light to medium	mature

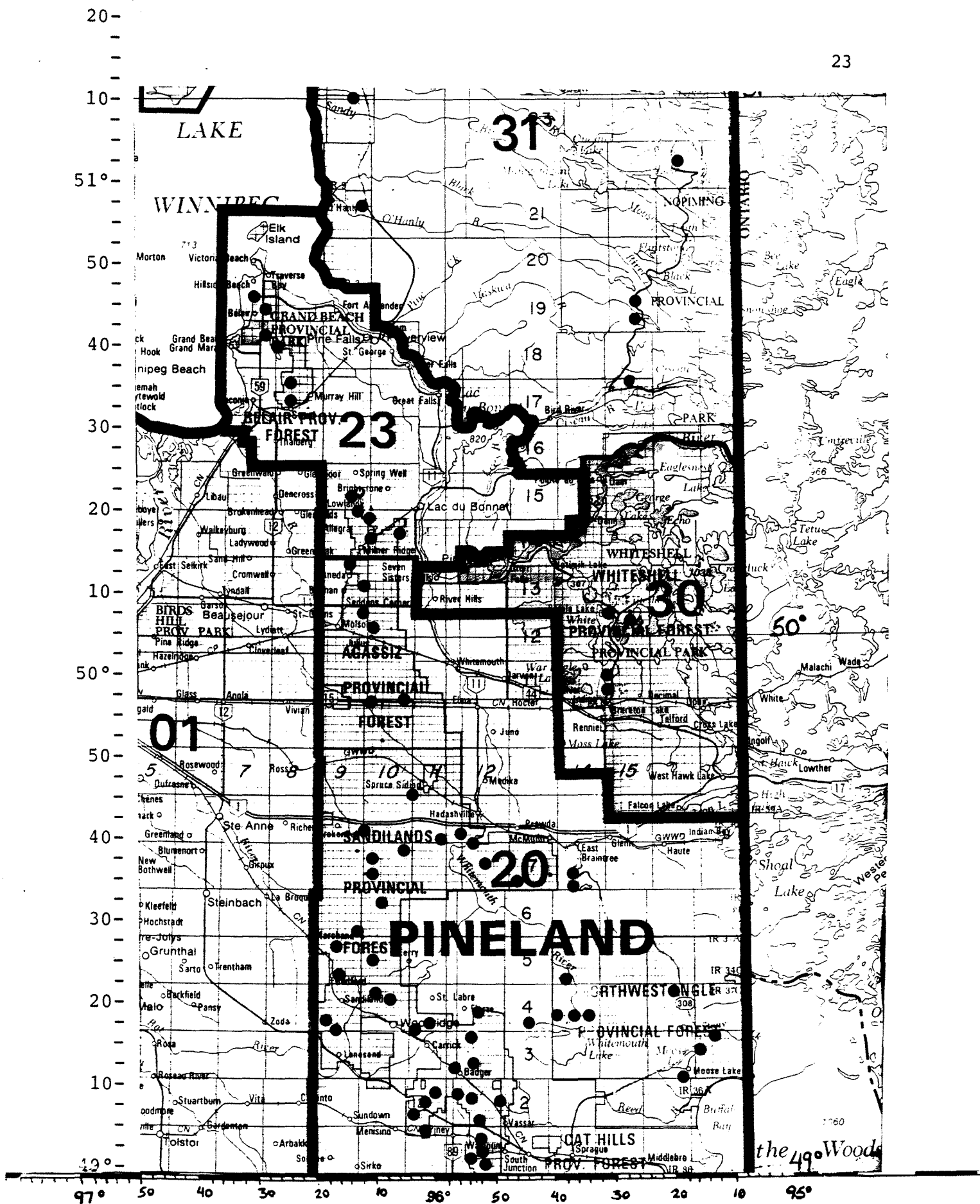


Figure 10. Distribution of source stands for Eastern Breeding District

Central Breeding District
Family Test Plantations Locations, Access Maps
and Plot Layout Diagrams

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*Site 3 completely destroyed by fire in June 1980

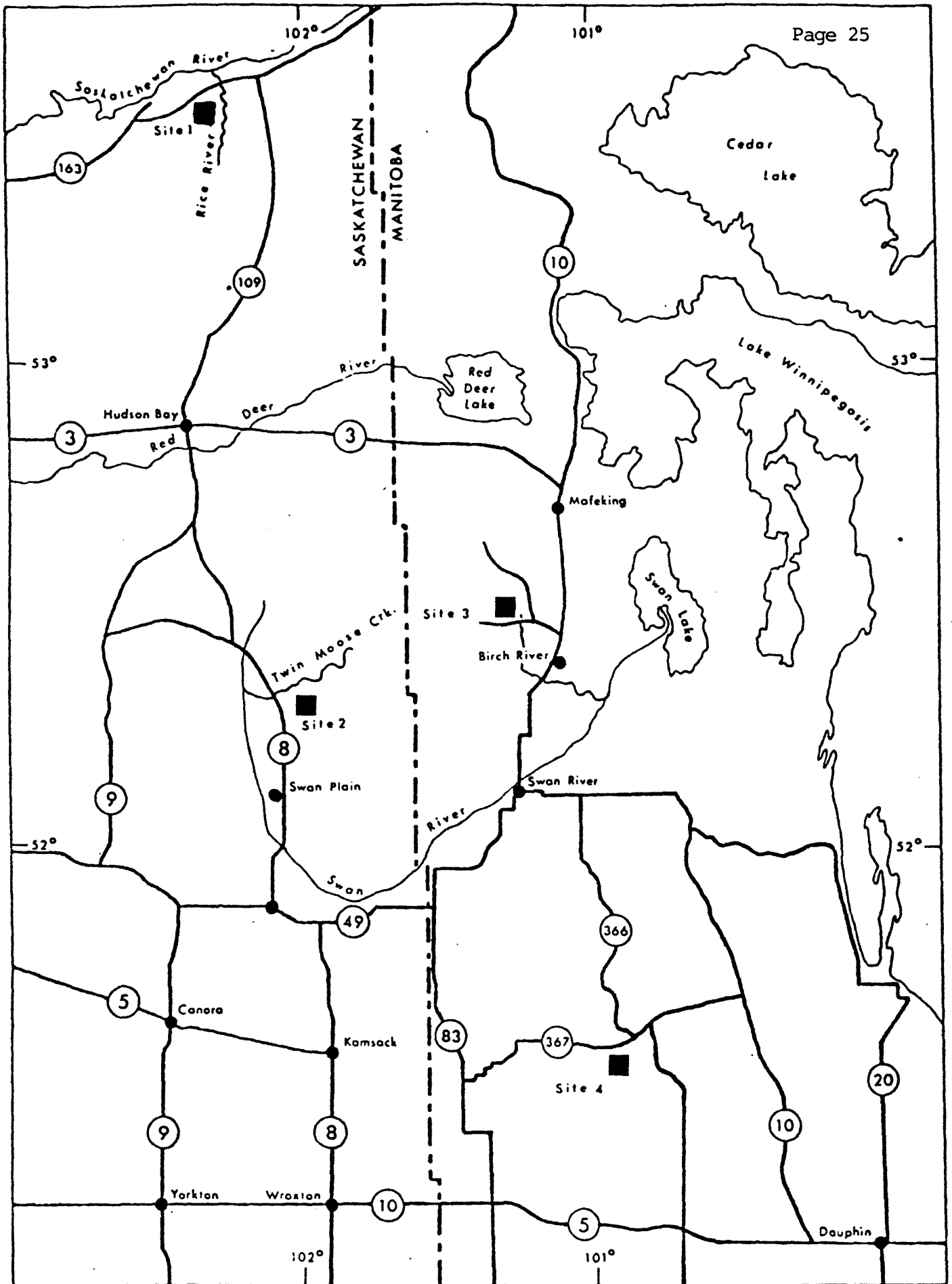


Figure 1. Location of Central Breeding District Family Test Plantations

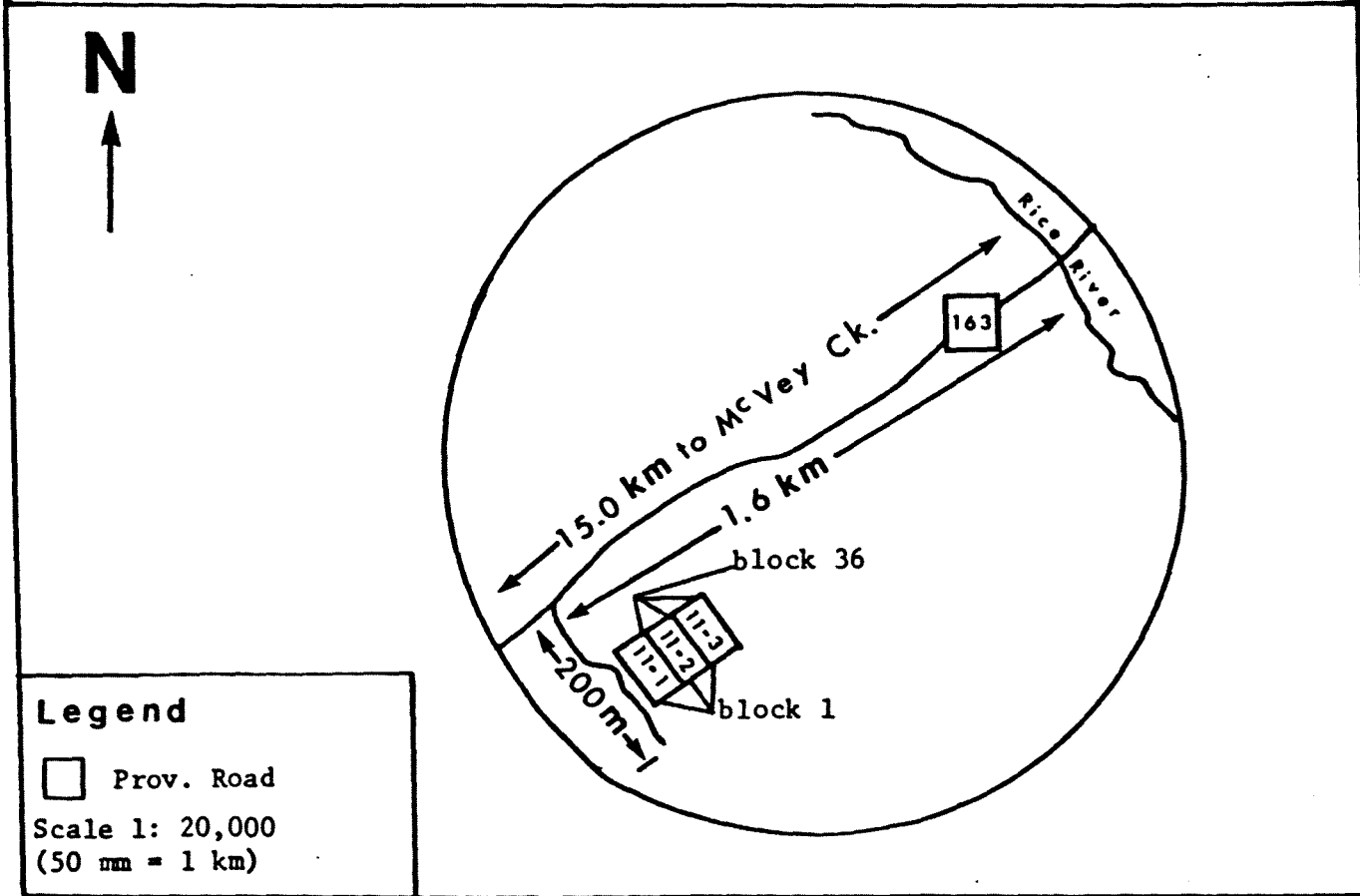
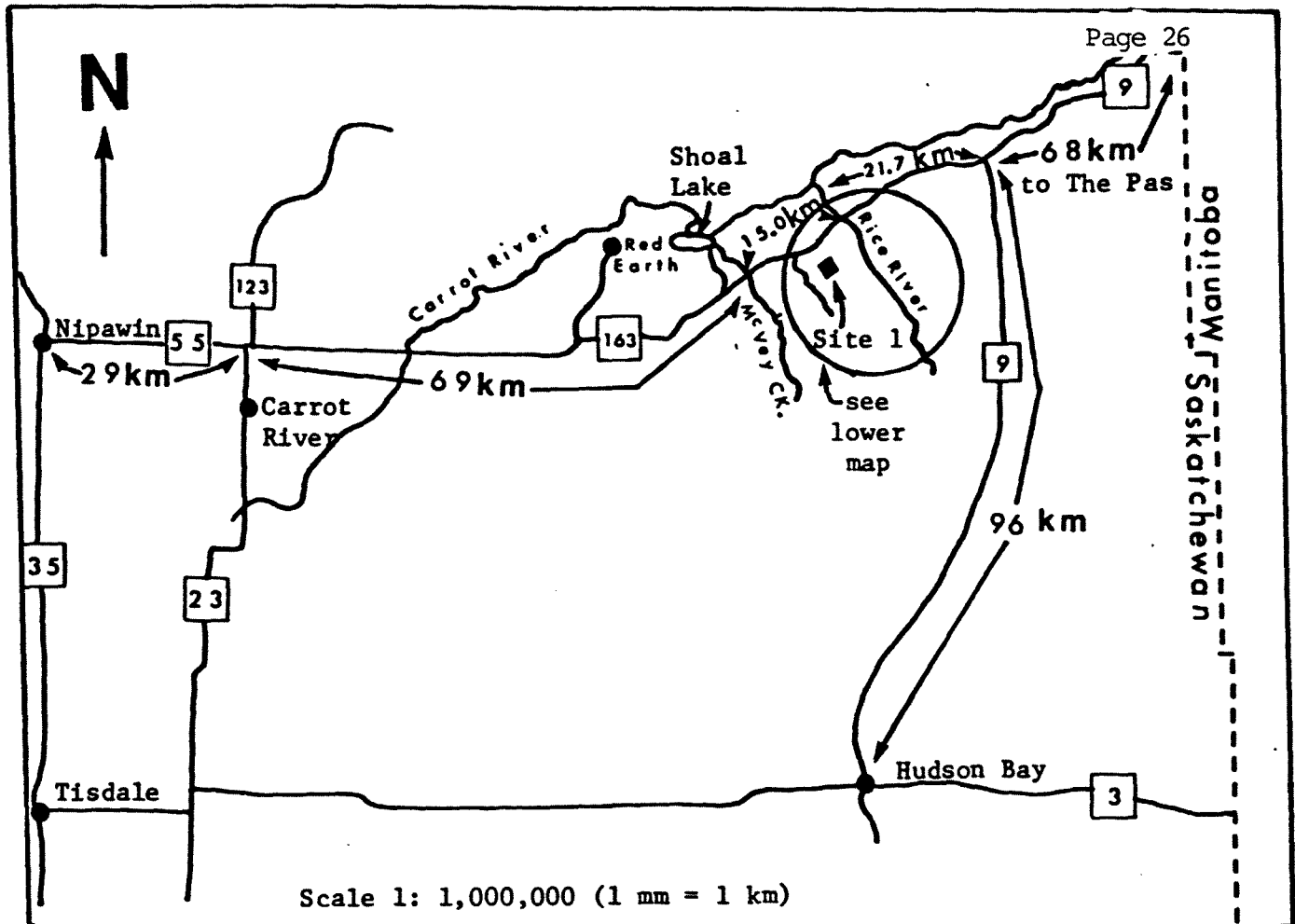


Figure 2. Central Breeding District, Access map, Site 1, Rice River

Block 36 152 552 452 252 352 652	Block 30 263 463 563 663 163 363	Block 24 433 333 233 133 533 633	Block 18 116 616 416 216 516 316	Block 12 211 111 311 511 611 411	Block 6 253 153 553 653 134 453
Block 35 566 366 166 466 266	Block 29 621 321 121 521 421 221	Block 23 114 614 314 514 214 414	Block 17 131 431 231 331 631 531	Block 11 143 343 543 443 243 643	Block 5 334 634 534 134 434 234
Block 34 132 232 632 532 432 332	Block 28 354 154 554 654 454 254	Block 22 464 264 564 664 164 364	Block 16 143 435 235 335 635 535	Block 10 322 122 522 622 422 222	Block 4 546 246 646 446 146 346
Block 33 312 612 112 412 212 512	Block 27 142 442 342 542 642 242	Block 21 261 461 561 661 361 161	Block 9 536 236 136 636 436 336	Block 3 324 524 624 424 224 124	Block 3 324 524 624 424 224 124
Block 32 241 341 541 641 141 441	Block 26 462 562 262 162 362 662	Block 20 655 155 355 555 455 255	Block 8 256 656 156 456 356 556	Block 2 426 226 126 626 426 226	Block 2 426 226 126 626 426 226
Block 31 125 425 625 225 325 525	Block 25 215 515 615 415 115 315	Block 19 144 244 544 344 644 444	Block 7 451 151 651 251 351 551	Block 1 513 213 413 613 113 313	Block 1 513 213 413 613 113 313

REPLICATE 11-2

Block 36 261 231 211 241 221 251	Block 30 143 113 133 153 163 123	Block 24 124 154 144 164 114 134	Block 18 615 665 655 625 635 645	Block 12 323 353 343 313 333 363	Block 6 636 646 626 666 656 616
Block 35 345 355 315 365 335 325	Block 29 155 115 145 165 125 135	Block 23 352 332 322 312 342 362	Block 17 513 553 533 543 563 523	Block 11 441 411 451 461 431 421	Block 5 321 311 331 361 351 341
Block 34 212 252 242 262 222 232	Block 28 224 244 254 234 264 214	Block 22 246 256 236 226 216 266	Block 16 423 443 433 413 453 463	Block 10 162 132 112 122 152 142	Block 4 445 455 415 425 435 465
Block 33 324 344 314 334 354 364	Block 27 662 612 642 622 652 632	Block 21 663 623 643 653 633 613	Block 15 542 562 532 512 512 522	Block 9 464 414 434 424 454 444	Block 3 432 412 452 442 462 422
Block 32 146 116 126 156 166 136	Block 26 225 235 245 255 265 215	Block 20 661 641 621 631 611 651	Block 14 534 554 564 544 524 514	Block 8 545 525 565 535 515 555	Block 2 356 326 336 366 346 316
Block 31 654 614 634 624 644 664	Block 25 446 466 436 456 416 426	Block 19 546 556 566 526 536 516	Block 13 223 263 233 253 243 213	Block 7 561 511 531 541 551 521	Block 1 161 141 121 151 131 111

REPLICATE 11-1

Block 36 246 244 243 245 242 241	Block 30 466 463 465 462 464 461	Block 24 551 552 556 554 555 553	Block 18 636 632 634 635 631 633	Block 12 122 124 125 121 126 123	Block 6 236 232 231 234 235 233
Block 35 446 443 442 441 444 445	Block 29 514 513 515 511 512 516	Block 23 151 152 155 156 154 153	Block 17 665 661 662 666 663 664	Block 11 523 524 521 525 522 526	Block 5 641 642 643 646 645 644
Block 34 255 251 253 254 252 256	Block 28 326 323 324 325 322 321	Block 22 436 435 433 432 431 434	Block 16 614 612 616 611 613 615	Block 10 456 451 453 452 455 454	Block 4 135 133 134 132 131 136
Block 33 532 533 535 534 536 531	Block 27 222 221 226 223 224 225	Block 21 652 654 655 656 651 653	Block 15 363 366 362 361 365 364	Block 9 354 355 352 351 356 353	Block 3 214 216 212 215 213 211
Block 32 161 165 164 166 163 162	Block 26 335 332 331 334 333 336	Block 20 625 623 624 626 621 622	Block 14 311 315 313 314 316 312	Block 8 413 411 416 415 414 412	Block 2 426 423 425 421 424 422
Block 31 261 262 265 263 266 264	Block 25 141 144 146 143 142 145	Block 19 113 114 112 116 115 111	Block 13 541 543 542 544 545 546	Block 7 345 344 349 343 341 342	Block 1 565 562 566 564 561 563

Figure 3. Family Test Plantation Layout Diagram Site 1, Rice River



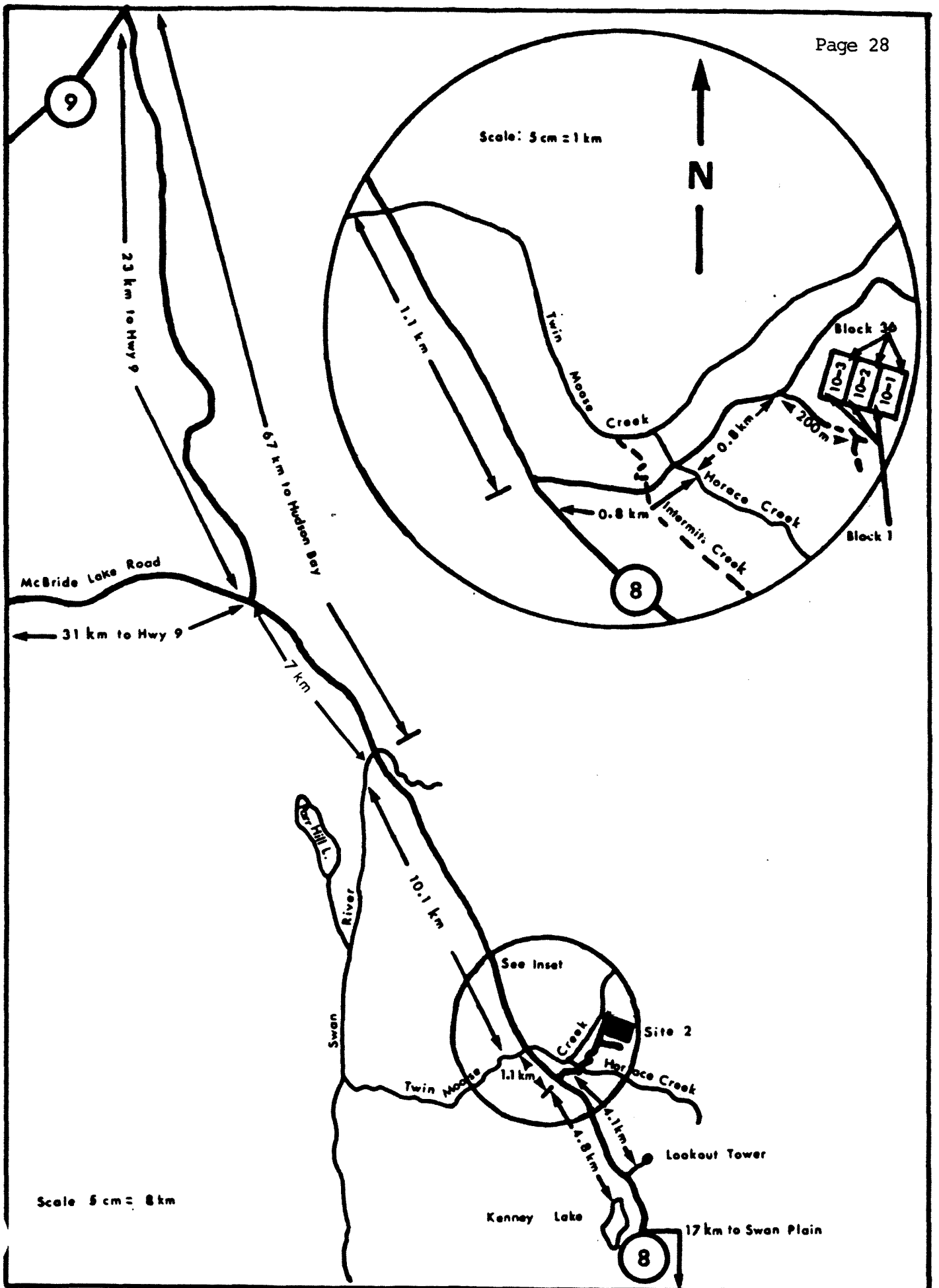


Figure 4. Central Breeding District, Access map Site 2, Twin Moose Creek

REPLICATE 10-1											
Block 36 123 125 126 122 121 124	Block 30 415 412 411 414 413 416	Block 24 512 513 516 514 515 511	Block 18 132 133 131 136 134 135	Block 12 366 365 363 362 364 361	Block 6 212 216 215 214 213 211	Block 35 616 614 615 611 613 612	Block 29 532 534 536 533 535 531	Block 23 232 231 233 235 234 236	Block 17 641 645 644 643 642 646	Block 11 144 141 142 143 146 145	Block 5 313 314 316 315 311 312
Block 34 564 563 562 566 565 561	Block 28 456 452 455 451 453 454	Block 22 241 245 242 244 243 246	Block 16 263 264 266 262 261 265	Block 10 321 322 324 323 326 325	Block 4 356 351 354 355 353 352	Block 33 431 432 434 436 435 433	Block 27 655 651 653 652 656 654	Block 21 344 346 341 342 341 343	Block 15 553 555 556 552 554 551	Block 9 625 623 624 621 622 626	Block 3 113 112 114 115 111 116
Block 32 163 164 166 161 162 165	Block 26 664 663 666 662 665 661	Block 20 254 255 251 252 253 256	Block 14 334 332 335 336 331 333	Block 8 442 426 423 421 425 424	Block 2 151 152 156 153 155 154	Block 32 431 432 434 436 435 433	Block 26 664 663 666 662 665 661	Block 20 344 346 341 342 341 343	Block 14 553 555 556 552 554 551	Block 8 625 623 624 621 622 626	Block 2 113 112 114 115 111 116
Block 31 522 521 524 523 525 526	Block 25 444 446 445 441 442 443	Block 19 466 461 464 463 462 465	Block 13 543 544 541 545 542 546	Block 7 225 226 224 222 221 223	Block 1 635 633 632 631 634 634	Block 31 522 521 524 523 525 526	Block 25 444 446 445 441 442 443	Block 19 466 461 464 463 462 465	Block 13 543 544 541 545 542 546	Block 7 225 226 224 222 221 223	Block 1 635 633 632 631 634 634
Block 36 146 136 116 166 156 126	Block 30 236 246 256 226 216 266	Block 24 632 662 652 612 642 622	Block 18 531 511 551 541 561 521	Block 12 442 422 462 432 412 452	Block 6 233 223 243 213 263 253	Block 36 146 136 116 166 156 126	Block 30 236 246 256 226 216 266	Block 24 632 662 652 612 642 622	Block 18 531 511 551 541 561 521	Block 12 442 422 462 432 412 452	Block 6 233 223 243 213 263 253
Block 35 234 214 264 244 254 224	Block 29 334 354 364 324 314 344	Block 23 631 651 611 661 621 641	Block 17 362 322 342 352 312 332	Block 11 112 152 142 122 162 132	Block 5 343 323 333 313 353 363	Block 35 234 214 264 244 254 224	Block 29 334 354 364 324 314 344	Block 23 631 651 611 661 621 641	Block 17 362 322 342 352 312 332	Block 11 112 152 142 122 162 132	Block 5 343 323 333 313 353 363
Block 34 365 315 335 345 355 325	Block 28 441 411 461 451 421 431	Block 22 522 512 552 562 532 542	Block 16 536 526 556 566 546 516	Block 10 454 434 444 414 464 424	Block 4 361 321 351 331 341 311	Block 34 365 315 335 345 355 325	Block 28 441 411 461 451 421 431	Block 22 522 512 552 562 532 542	Block 16 536 526 556 566 546 516	Block 10 454 434 444 414 464 424	Block 4 361 321 351 331 341 311
Block 33 222 262 232 242 212 252	Block 27 416 426 456 466 446 436	Block 21 646 626 666 616 636 656	Block 15 133 153 143 113 163 123	Block 9 415 465 445 435 455 425	Block 3 413 433 463 423 453 443	Block 33 222 262 232 242 212 252	Block 27 416 426 456 466 446 436	Block 21 646 626 666 616 636 656	Block 15 133 153 143 113 163 123	Block 9 415 465 445 435 455 425	Block 3 413 433 463 423 453 443
Block 32 215 245 255 225 235 265	Block 26 346 336 356 316 326 366	Block 20 164 114 144 124 134 154	Block 14 665 615 635 655 625 645	Block 8 564 524 534 544 554 514	Block 2 644 654 614 624 634 664	Block 32 215 245 255 225 235 265	Block 26 346 336 356 316 326 366	Block 20 164 114 144 124 134 154	Block 14 665 615 635 655 625 645	Block 8 564 524 534 544 554 514	Block 2 644 654 614 624 634 664
Block 31 151 121 161 141 111 131	Block 25 563 543 553 513 533 523	Block 19 115 135 165 155 145 125	Block 13 221 261 231 251 211 241	Block 7 643 623 633 663 613 653	Block 1 565 555 545 535 515 525	Block 31 151 121 161 141 111 131	Block 25 563 543 553 513 533 523	Block 19 115 135 165 155 145 125	Block 13 221 261 231 251 211 241	Block 7 643 623 633 663 613 653	Block 1 565 555 545 535 515 525
Block 36 265 565 365 665 465 165	Block 30 314 614 114 514 414 214	Block 24 241 341 541 441 141 641	Block 18 644 344 444 544 144 244	Block 12 533 333 233 633 133 433	Block 6 362 662 162 262 562 462	Block 36 265 565 365 665 465 165	Block 30 314 614 114 514 414 214	Block 24 241 341 541 441 141 641	Block 18 644 344 444 544 144 244	Block 12 533 333 233 633 133 433	Block 6 362 662 162 262 562 462
Block 35 132 632 532 432 332 232	Block 29 323 523 423 623 223 123	Block 23 616 116 416 516 316 216	Block 17 664 564 364 464 264 164	Block 11 443 543 343 643 143 243	Block 5 235 635 435 335 535 135	Block 35 132 632 532 432 332 232	Block 29 323 523 423 623 223 123	Block 23 616 116 416 516 316 216	Block 17 664 564 364 464 264 164	Block 11 443 543 343 643 143 243	Block 5 235 635 435 335 535 135
Block 34 152 452 552 252 652 352	Block 28 461 561 161 261 361 661	Block 22 346 546 446 246 646 146	Block 16 663 263 563 363 463 163	Block 10 155 355 555 655 455 255	Block 4 522 322 422 122 222 622	Block 34 152 452 552 252 652 352	Block 28 461 561 161 261 361 661	Block 22 346 546 446 246 646 146	Block 16 663 263 563 363 463 163	Block 10 155 355 555 655 455 255	Block 4 522 322 422 122 222 622
Block 33 631 131 331 431 531 231	Block 27 113 613 213 513 313 413	Block 21 153 653 253 553 353 453	Block 15 421 521 621 121 221 321	Block 9 625 525 325 525 425 225	Block 3 215 115 615 415 515 315	Block 33 631 131 331 431 531 231	Block 27 113 613 213 513 313 413	Block 21 153 653 253 553 353 453	Block 15 421 521 621 121 221 321	Block 9 625 525 325 525 425 225	Block 3 215 115 615 415 515 315
Block 32 236 436 636 336 536 136	Block 26 656 156 256 456 556 356	Block 20 545 145 345 445 245 645	Block 14 412 312 212 612 112 512	Block 8 351 651 151 251 451 551	Block 2 134 234 334 634 434 534	Block 32 236 436 636 336 536 136	Block 26 656 156 256 456 556 356	Block 20 545 145 345 445 245 645	Block 14 412 312 212 612 112 512	Block 8 351 651 151 251 451 551	Block 2 134 234 334 634 434 534
Block 31 326 626 426 226 526 126	Block 25 666 466 266 366 566 166	Block 19 211 311 611 111 411 511	Block 13 542 242 142 642 342 442	Block 7 254 654 154 354 454 554	Block 1 624 524 324 424 524 124 424	Block 31 326 626 426 226 526 126	Block 25 666 466 266 366 566 166	Block 19 211 311 611 111 411 511	Block 13 542 242 142 642 342 442	Block 7 254 654 154 354 454 554	Block 1 624 524 324 424 524 124 424

Figure 5. Family Test Plantation Layout Diagram Site 2, Twin Moose Creek



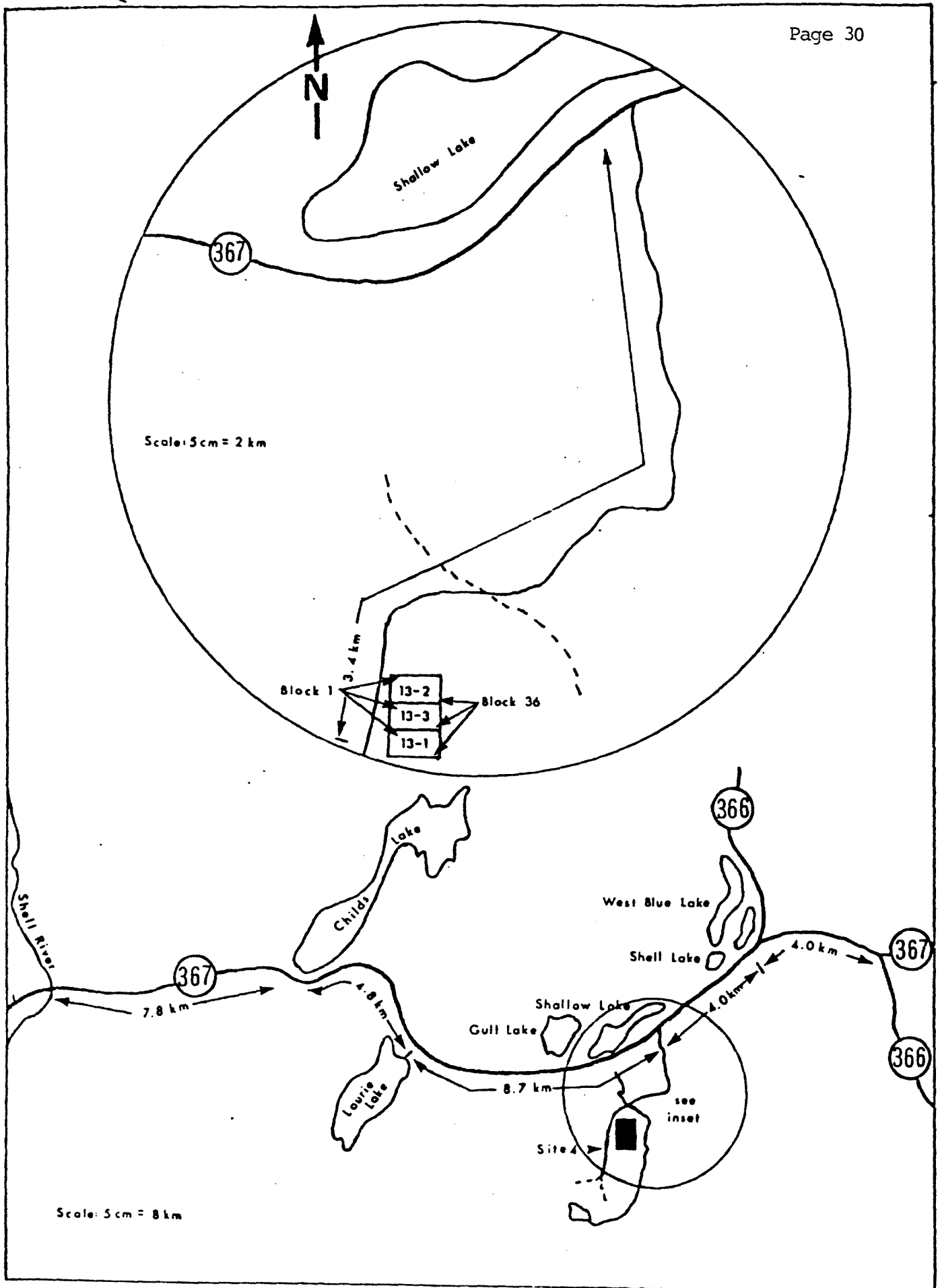


Figure 6. Central Breeding District, Access map, Site 4, Shallow Lake

REPLICATE 13-1										REPLICATE 13-2																																						
Block 36	132	131	134	133	135	136	Block 30	326	325	324	323	322	321	Block 24	526	522	524	523	521	525	Block 18	651	655	652	653	656	654	Block 12	566	562	564	563	565	561	Block 6	243	242	241	244	246	245							
Block 35	635	636	632	633	631	634	Block 29	351	352	354	353	356	355	Block 23	536	532	535	534	533	531	Block 17	363	366	362	364	365	361	Block 11	253	256	254	251	255	252	Block 5	112	114	116	111	115	113							
Block 34	125	121	122	126	123	124	Block 28	646	644	642	641	645	643	Block 22	665	664	662	661	663	666	Block 16	451	456	454	452	455	453	Block 10	544	542	546	541	543	545	Block 4	516	514	515	511	513	512							
Block 33	221	225	226	224	222	223	Block 27	345	341	344	342	343	346	Block 21	413	411	416	415	414	412	Block 15	164	165	163	161	166	162	Block 9	336	331	332	333	335	334	Block 3	154	156	153	155	152	151							
Block 32	144	141	142	143	145	146	Block 26	445	441	444	443	442	446	Block 20	462	464	466	463	461	465	Block 14	554	555	553	551	552	556	Block 8	261	262	266	264	263	265	Block 2	232	236	235	231	233	234							
Block 31	211	213	212	214	216	215	Block 25	426	421	425	424	423	422	Block 19	616	615	614	613	611	612	Block 13	431	433	435	434	432	436	Block 7	315	311	312	314	313	316	Block 1	621	626	625	623	624	622							
Block 30	222	122	422	622	322	522	Block 24	164	664	564	264	364	464	Block 18	656	662	562	162	362	262	Block 12	454	354	554	654	154	254	Block 6	242	642	342	142	442	542														
Block 35	566	366	266	666	466	166	Block 29	452	552	152	252	652	352	Block 23	512	212	412	612	112	312	Block 17	433	333	133	633	233	533	Block 11	221	621	421	121	521	321	Block 5	224	424	524	324	624	124							
Block 34	463	663	563	263	163	363	Block 28	531	131	631	231	331	431	Block 22	123	523	323	223	623	423	Block 16	525	325	125	225	625	425	Block 10	326	426	226	626	126	526	Block 4	432	532	332	132	632	232							
Block 33	446	346	246	546	646	146	Block 27	335	135	535	635	435	235	Block 21	251	451	351	151	551	651	Block 15	155	455	555	355	255	655	Block 9	561	161	361	261	661	461	Block 3	141	341	641	541	441	241							
Block 32	314	614	114	414	214	514	Block 26	265	365	465	665	565	165	Block 20	244	144	344	644	544	444	Block 14	215	615	415	115	315	515	Block 8	416	216	116	516	316	616	Block 2	513	613	113	313	413	213							
Block 31	211	411	611	511	311	111	Block 25	453	353	653	153	253	553	Block 19	336	136	636	236	436	536	Block 13	434	134	534	334	234	634	Block 7	145	345	445	245	645	545	Block 1	143	343	443	243	543	643							
Block 36	652	612	622	662	642	632	Block 30	625	635	615	655	665	645	Block 24	115	165	145	135	125	155	Block 18	611	661	651	621	641	631	Block 12	345	355	315	325	365	335	Block 6	511	551	541	561	521	531							
Block 35	426	446	456	436	466	416	Block 29	234	264	244	224	254	214	Block 23	555	565	535	525	515	545	Block 17	223	253	233	243	263	213	Block 11	261	221	211	231	251	241	Block 5	326	366	346	336	356	316							
Block 34	536	556	516	546	566	526	Block 28	242	252	212	262	222	232	Block 22	543	533	513	523	553	563	Block 16	564	524	554	544	514	534	Block 10	146	136	156	116	126	166	Block 4	636	656	666	616	626	646							
Block 33	462	422	432	452	442	412	Block 27	122	152	132	112	142	162	Block 21	313	343	353	363	323	333	Block 15	411	451	431	441	461	421	Block 9	154	134	114	124	164	144	Block 3	623	663	653	613	633	643							
Block 32	311	321	331	351	361	341	Block 26	464	424	444	414	434	454	Block 20	332	322	342	362	312	352	Block 14	542	532	512	522	562	542	Block 8	415	465	435	445	455	415	Block 2	664	614	624	634	654	644							
Block 31	443	423	453	433	463	413	Block 25	111	141	121	131	161	151	Block 19	225	235	255	265	215	245	Block 13	334	324	364	354	314	344	Block 7	236	216	246	256	266	226	Block 1	123	163	143	133	153	113							

Figure 7. Family Test Plantation Layout Diagram Site 4, Shallow Lake

CENTRAL BREEDING DISTRICT
Table 2. Origin of Family Test Seedlots

Code	Nor ¹	N Lat.	W. Long.	Elev. m	Source Stand Stocking	Age yr.	Ht. m	Dia. cm	Stern ² Class	Crown ³ Class
111	1425	52°54'	102°31'	420	moderate	46	17	17	1	d
112	1372	52°32'	101°13'	670	full	46	17	19	1	d
113	1455	53°26'	103°24'	350	moderate	34	12	14	1	c
114	1461	53°17'	103°30'	360	full	25	11	13	1	d
115	1458	53°18'	103°30'	360	moderate	28	11	14	1	d
116	1439	53°29'	102°32'	350	full	25	9	11	1	d
121	1422	53°02'	102°39'	540	full	51	16	17	1	d
122	1361	52°37'	101°22'	730	full	81	18	20	1	d
123	1398	54°36'	101°22'	300	open-grown	37	11	21	2	d
124	1387	53°25'	101°20'	300	open-grown	27	9	18	2	d
125	1518	51°52'	101°08'	640	moderate	73	17	17	1	d
126	1400	54°35'	101°23'	300	moderate	39	19	19	1	c
131	1409	50°40'	99°48'	650	irregular	16	6	14	2	d
132	1517	51°52'	101°08'	640	moderate	76	17	18	1	d
133	1462	53°17'	103°30'	360	full	24	11	13	1	d
134	1448	53°33'	102°24'	320	open-grown	32	10	15	1	d
135	1397	54°36'	101°22'	300	moderate	36	6	11	1	c
136	1486	52°39'	101°47'	760	moderate	105	19	19	1	d
141	1399	54°36'	101°22'	300	moderate	35	10	17	1	c
142	1500	52°14'	102°02'	560	full	28	14	14	2	d
143	1315	51°35'	101°00'	700	full	78	24	25	1	d
144	1341	51°52'	100°56'	700	full	78	20	21	1	d
145	1509	52°25'	102°20'	560	moderate	120	26	46	1	d
146	1516	52°49'	102°21'	360	moderate	68	16	22	1	d
151	1542	52°42'	101°24'	760	full	67	16	24	1	d
152	1465	52°35'	103°30'	480	irregular	27	9	14	1	d
153	1318	51°35'	101°00'	700	full	77	20	23	1	d
154	1540	51°35'	101°28'	570	irregular	68	14	28	2	d
155	1521	51°52'	101°08'	640	moderate	78	15	22	1	d
156	1432	53°09'	102°12'	390	full	25	7	11	2	d
161	1488	52°22'	101°41'	640	full	75	17	18	1	c
162	1325	51°49'	100°43'	540	full	74	21	24	1	d
163	1355	53°23'	101°15'	670	full	48	8	15	2	c
164	1508	52°25'	102°20'	560	moderate	120	21	30	1	d
165	1378	52°17'	101°30'	610	irregular	24	7	16	2	d
166	1302	51°28'	100°43'	730	moderate	77	18	25	1	d

- ¹ Northern Region permanent number
² 1 - Straight, 2 - Fairly, 3 - Crooked
³ d = dominant, c - codominant

Table 2.-Continued

Code	Nor ¹	N Lat.	W. Long.	Elev. in	Source Stand Stocking	Age yr.	Ht. m	Dia. cm	Stern ² Class	Crown ³ Class
211	1349	52°29'	101°26'	760	full	73	18	22	1	d
212	1514	52°49'	102°21'	360	moderate	61	14	17	1	d
213	1496	52°22'	102°08'	530	open-grown	43	13	14	3	d
214	1507	52°25'	102°20'	560	irregular	120	27	36	1	d
215	1406	53°31'	101°24'	300	moderate	76	16	13	2	d
216	1393	54°32'	101°03'	300	full	122	18	19	1	d
221	1498	52°22'	102°08'	530	open-grown	45	12	15	3	d
222	1505	52°25'	102°20'	560	open-grown	142	23	36	1	d
223	1324	51°39'	100°37'	480	moderate	70	20	21	1	d
224	1342	51°52'	100°56'	700	full	74	20	22	1	d
225	1426	52°54'	102°16'	420	moderate	50	16	18	1	d
226	1404	53°31'	101°24'	300	irregular	78	17	18	2	d
231	1490	52°22'	101°41'	640	full	82	18	18	1	d
232	1449	53°33'	102°24'	320	open-grown	29	12	13	1	d
233	1472	52°51'	102°43'	440	full	38	16	14	1	d
234	1323	51°39'	100°37'	480	full	73	21	32	1	d
235	1322	51°39'	100°37'	480	full	71	20	22	1	d
236	1376	52°17'	101°30'	610	open-grown	27	8	17	1	d
241	1345	51°55'	100°58'	670	full	80	18	21	1	d
242	1405	53°31'	101°24'	300	open-grown	82	17	16	2	d
243	1530	51°36'	101°21'	670	irregular	28	9	13	1	d
244	1527	51°37'	101°16'	570	open-grown	-	12	36	3	d
245	1437	53°25'	102°03'	420	full	80	17	16	1	d
246	1468	52°35'	103°30'	480	full	32	12	14	1	c
251	1380	52°43'	101°09'	360	irregular	46	9	18	2	c
252	1365	52°37'	101°22'	730	full	80	18	17	1	d
253	1457	53°18'	103°30'	360	moderate	30	10	13	1	d
254	1374	52°20'	101°33'	640	irregular	24	8	18	2	c
255	1501	52°14'	102°02'	560	full	29	14	12	2	d
256	1436	53°25'	102°03'	420	full	80	17	20	1	d
261	1495	52°22'	102°08'	530	full	46	16	20	3	d
262	1313	51°35'	101°00'	700	full	76	22	19	1	d
263	1303	51°30'	100°43'	730	full	75	21	27	1	d
264	1420	49°50'	99°35'	360	full(pltn) ⁴	27	17	16	2	d
265	1539	51°35'	101°28'	570	irregular	68	14	20	3	d
266	1311	52°05'	100°40'	360	full	77	17	8	1	d
311	1483	52°34'	101°47'	730	full	77	19	20	1	d
312	1478	52°25'	101°41'	640	full	29	10	13	1	d
313	1446	53°33'	102°24'	320	open-grown	38	14	19	1	d
314	1493	52°22'	102°08'	530	full	46	13	23	3	d
315	1421	53°02'	102°39'	540	full	51	16	18	1	d

¹ Northern Region permanent number

² 1 - Straight, 2 - Fairly, 3 - Crooked

³ d = dominant, c - codominant

⁴ (pltn) = plantation

Table 2 Continued

Code	Nor ¹	N Lat.	W. Long.	Elev. m	Source Stand Storking	Age yr.	Ht. m	Dia. cm	Stem ² Class	Crown ³ Class
316	1428	53°05'	102°16'	390	moderate	23	10	14	2	d
321	1497	52°22'	102°08'	530	open-grown	43	13	18	3	d
322	1536	51°35'	101°28'	570	open-grown	66	17	36	3	d
323	1367	52°32'	101°13'	670	full	46	18	20	1	d
324	1441	53°29'	102°32'	350	full	27	9	12	1	d
325	1438	53°25'	102°03'	420	full	79	16	17	1	d
326	1332	51°40'	100°55'	700	full	78	20	21	2	d
331	1532	51°36'	101°21'	670	moderate	29	12	14	1	d
332	1450	53°33'	102°24'	320	open-grown	29	9	12	1	d
333	1477	52°25'	101°41'	640	full	29	10	13	1	d
334	1309	52°05'	100°40'	360	full	77	22	28	1	d
335	1470	52°53'	102°43'	440	irregular	28	10	14	2	d
336	1351	52°29'	101°26'	760	full	73	18	20	1	d
341	1456	53°26'	103°24'	350	moderate	34	12	14	1	c
342	2042	51°50'	100°54'	765	moderate	stand collection			1	d
343	1520	51°52'	101°08'	640	moderate	78	18	22	1	d
344	1435	53°14'	102°07'	410	full	38	17	15	2	d
345	1535	51°35'	101°28'	570	open-grown	38	9	17	3	d
346	1434	53°14'	102°07'	410	full	40	16	17	2	d
351	1447	53°33'	102°24'	320	open-grown	28	8	11	1	d
352	1522	51°52'	101°08'	640	moderate	77	16	18	1	d
353	1467	52°35'	103°30'	480	full	27	13	14	1	d
354	1466	52°35'	103°30'	480	full	36	14	14	1	d
355	1396	54°32'	101°03'	300	full	125	17	22	1	d
356	1480	52°25'	101°41'	640	full	28	10	16	1	d
361	1348	51°55'	100°58'	670	full	79	18	25	1	d
362	1375	52°20'	101°33'	640	open-grown	28	8	15	2	c
363	1335	51°40'	100°55'	700	full	79	21	20	1	d
364	1402	54°35'	101°23'	300	moderate	36	15	19	1	d
365	1321	51°38'	100°38'	570	moderate	68	21	29	1	d
366	1506	52°25'	102°20'	560	open-grown	121	28	46	1	d
411	1416	49°50'	99°35'	360	full	27	14	15	2	d
412	1481	52°34'	101°47'	730	full	76	18	14	1	d
413	1388	53°25'	101°20'	300	open-grown	27	9	16	2	c
414	1452	53°26'	103°24'	350	full	26	10	15	1	d
415	1331	51°40'	100°55'	700	full	73	20	23	1	d
416	1543	52°42'	101°24'	760	full	77	17	32	1	d
421	1528	51°37'	101°16'	570	open-grown	-	12	36	3	d
422	1512	52°49'	102°21'	360	moderate	67	14	20	1	d
423	1359	52°23'	101°15'	670	full	45	9	16	1	d
424	1306	51°30'	100°42'	710	open-grown	72	18	19	1	d

¹ Northern Region permanent number

² 1 - Straight, 2 - Fairly, 3 - Crooked

³ d = dominant, c - codominant

⁴ (pltn) = plantation

Table 2. Continued

Code	Nor ¹	N Lat.	W. Long.	Elev. m	Source Stand Storking	Age yr.	Ht. m	Dia. cm	Stem ² Class	Crown ³ Class
425	1350	52°29'	101°26'	760	full	74	20	20	1	d
426	1368	52°32'	101°13'	670	full	49	17	20	1	d
431	1460	53°17'	103°30'	360	full	25	11	13	1	c
432	1476	52°25'	101°41'	640	full	27	10	11	1	d
433	1403	53°31'	101°24'	300	open-grown	78	16	16	2	d
434	1360	52°23'	101°15'	670	full	48	13	18	1	d
435	1401	54°35'	101°23'	300	open-grown	38	19	16	1	d
436	1366	52°37'	101°22'	730	full	82	20	21	1	d
441	1333	51°40'	100°55'	700	full	77	21	27	1	d
442	1479	52°25'	101°41'	640	full	30	10	14	1	d
443	1485	52°39'	101°47'	760	moderate	105	19	17	1	d
444	1464	52°35'	103°30'	480	moderate	27	10	13	1	d
445	1473	52°51'	102°43'	440	full	45	17	18	1	d
446	1382	52°43'	101°09'	360	open	46	10	13	2	d
451	1534	51°36'	101°21'	670	moderate	29	14	18	2	d
452	1338	51°52'	100°56'	700	full	79	22	26	1	d
453	1531	51°36'	101°21'	670	moderate	29	12	14	2	d
454	1394	54°32'	101°03'	300	full	121	16	22	1	d
455	1459	53°18'	103°30'	360	moderate	28	10	17	1	d
456	1529	51°36'	101°21'	670	moderate	37	13	18	2	d
461	1339	51°52'	100°56'	700	full	78	18	22	1	d
462	1444	53°29'	102°32'	350	full	30	8	13	1	d
463	1413	50°40'	99°48'	650	open-grown	22	6	13	2	d
464	1440	53°29'	102°32'	350	full	28	10	14	1	d
465	1347	51°55'	100°58'	670	full	76	21	11	1	d
466	1502	52°14'	102°02'	560	moderate	27	14	28	1	d
511	1385	53°25'	101°20'	300	open-grown	28	10	19	2	d
512	1525	51°37'	101°16'	570	open-grown	-	8	36	3	d
513	1489	52°22'	101°41'	640	full	75	18	16	1	c
514	1312	52°05'	100°40'	360	full	78	19	20	1	d
515	1395	54°32'	101°03'	300	full	119	16	17	1	d
516	1430	53°09'	102°12'	390	full	24	9	13	2	d
521	1424	52°54'	102°31'	420	moderate	43	16	19	2	d
522	1319	51°38'	100°38'	570	moderate	68	17	19	1	d
523	1377	52°17'	101°30'	610	moderate	25	9	16	2	d
524	1304	51°30'	100°43'	730	full	74	20	20	2	d
525	1357	52°23'	101°15'	670	full	46	9	16	1	d
526	1330	51°49'	100°43'	540	full	75	19	21	1	d
531	1484	52°39'	101°47'	760	moderate	103	19	18	1	d
532	1445	53°33'	102°24'	320	open-grown	27	8	14	1	d
533	1526	51°49'	100°43'	540	full	74	20	23	1	d

- ¹ Northern Region permanent number
² 1 - Straight, 2 - Fairly, 3 - Crooked
³ d = dominant, c - codominant
⁴ (pltn) = plantation

Table 2. Continued

Code	Nor ¹	N Lat.	W. Long.	Elev. m	Source Stand Stocking	Age yr.	Ht. m	Dia. cm	Stem ² Class	Crown ³ Class
534	1386	53°25'	101°20'	300	open-grown	29	9	18	2	d
535	1417	49°50'	99°35'	360	full(pltn) ⁴	27	14	16	2	d
536	1370	52°32'	101°13'	670	full	46	18	19	1	d
541	1316	51°35'	101°00'	700	full	77	22	21	1	d
542	1431	53°09'	102°12'	390	full	25	9	11	2	d
543	1369	52°32'	101°13'	670	full	48	18	18	1	d
544	1383	52°43'	101°09'	360	open-grown	47	7	20	2	d
545	1419	49°50'	99°35'	360	full(pltn) ⁴	26	14	17	2	d
546	1343	51°55'	100°58'	670	full	78	20	26	1	d
551	1515	52°49'	102°21'	360	moderate	61	14	18	1	d
552	1451	53°26'	103°24'	350	full	34	11	18	1	d
553	1491	52°22'	101°41'	640	full	75	18	18	1	c
554	1469	52°53'	102°43'	440	open-grown	27	10	17	2	d
555	1427	53°05'	102°16'	390	moderate	24	8	13	2	d
556	1373	52°20'	101°33'	640	open-grown	32	11	18	2	d
561	1537	51°35'	101°28'	570	open-grown	40	14	23	3	d
562	1305	51°30'	100°42'	710	open-grown	75	21	23	2	d
563	1327	51°49'	100°43'	540	full	74	21	21	1	d
564	1362	52°37'	101°22'	730	full	82	18	20	1	d
565	1336	51°40'	100°55'	700	full	82	20	20	1	d
566	1352	52°29'	101°26'	760	full	73	18	20	1	d
611	1453	53°26'	103°24'	350	full	26	11	17	1	d
612	1317	51°35'	101°00'	700	full	76	20	24	1	d
613	1301	51°26'	100°43'	700	moderate	76	18	20	2	d
614	1423	53°02'	102°39'	540	full	51	16	17	1	d
615	1503	52°14'	102°02'	560	moderate	28	15	18	1	d
616	1429	53°05'	102°16'	390	moderate	23	10	14	2	d
621	1442	53°29'	102°32'	350	full	25	11	13	2	d
622	1414	50°40'	99°48'	650	open-grown	17	6	15	2	d
623	2040	52°22'	101°41'	640	full	stand collection			1	d-c
624	1353	52°29'	101°26'	760	full	74	19	22	1	d
625	1492	52°22'	101°41'	640	full	74	18	23	1	d
626	1433	53°14'	102°07'	410	full	38	10	17	2	d
631	1344	51°55'	100°58'	670	full	77	18	20	1	d
632	1463	52°35'	103°30'	480	moderate	24	8	10	1	d
633	1412	50°40'	99°48'	650	open-grown	17	7	11	2	d
634	1379	52°43'	101°09'	360	open-grown	40	10	19	2	d
635	1475	52°25'	101°41'	640	full	29	10	14	1	d
636	1307	52°05'	100°40'	360	full	80	21	25	1	d
641	1524	51°37'	101°16'	570	open-grown	-	13	41	3	d
642	1494	52°22'	102°08'	530	full	46	16	18	3	d
643	1504	52°14'	102°02'	560	moderate	39	16	17	1	d

- ¹ Northern Region permanent number
² 1 - Straight, 2 - Fairly, 3 - Crooked
³ d = dominant, c - codominant
⁴ (pltn) = plantation

Table 2. Continued

Code	Nor ¹	N Lat.	W. Long.	Elev. m	Source Stand Stocking	Age yr.	Ht. m	Dia. cm	Stem ² Class	Crown ³ Class
644	1526	51°37'	101°16'	570	open-grown	-	20	24	3	d
645	1513	52°49'	102°21'	360	moderate	39	12	15	1	d
646	1410	50°40'	99°48'	650	open-grown	21	6	13	2	d
651	1418	49°50'	99°35'	360	moderate (pltn) ⁴	27	16	19	1	d
652	1482	52°34'	101°47'	730	full	74	18	16	1	d
653	1381	52°43'	101°09'	360	open-grown	39	12	17	2	d
654	1329	51°49'	100°43'	540	full	75	20	23	1	d
655	1358	52°23'	101°15'	670	full	47	11	19	1	d
656	1363	52°37'	101°22'	730	full	82	18	20	1	d
661	1337	51°52'	100°56'	700	full	79	21	24	1	d
662	1474	52°51'	102°43'	440	full	37	19	20	1	d
663	1471	52°53'	102°43'	440	open-grown	29	10	15	2	d
664	1541	52°42'	101°24'	760	full	83	20	25	1	d
665	1308	52°05'	100°40'	360	full	75	18	20	1	d
666	1320	51°38'	100°38'	570	moderate	66	20	28	2	d

¹ Northern Region permanent number

² 1 - Straight, 2 - Fairly, 3 - Crooked

³ d = dominant, c - codominant

⁴ (pltn) = plantation

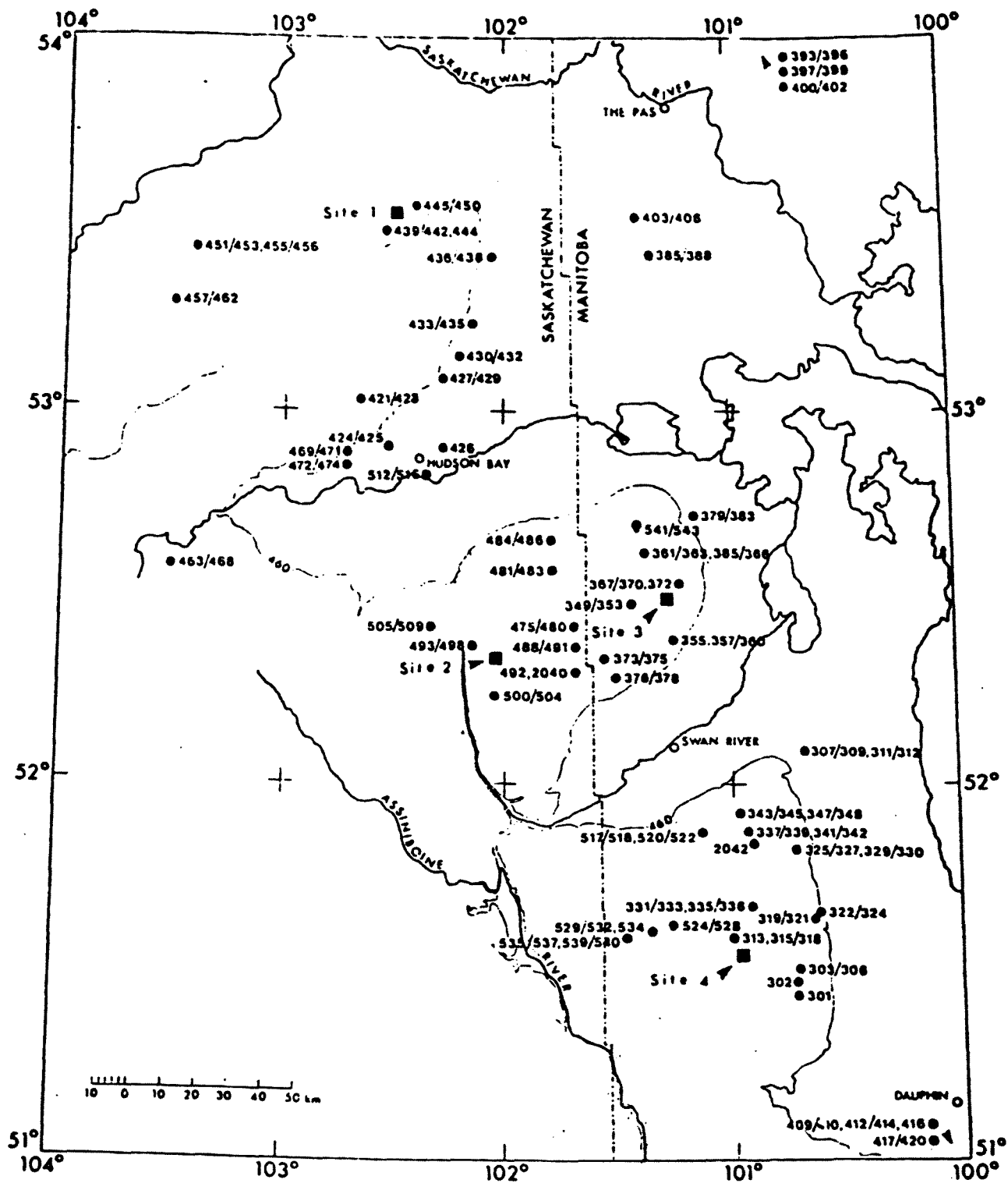
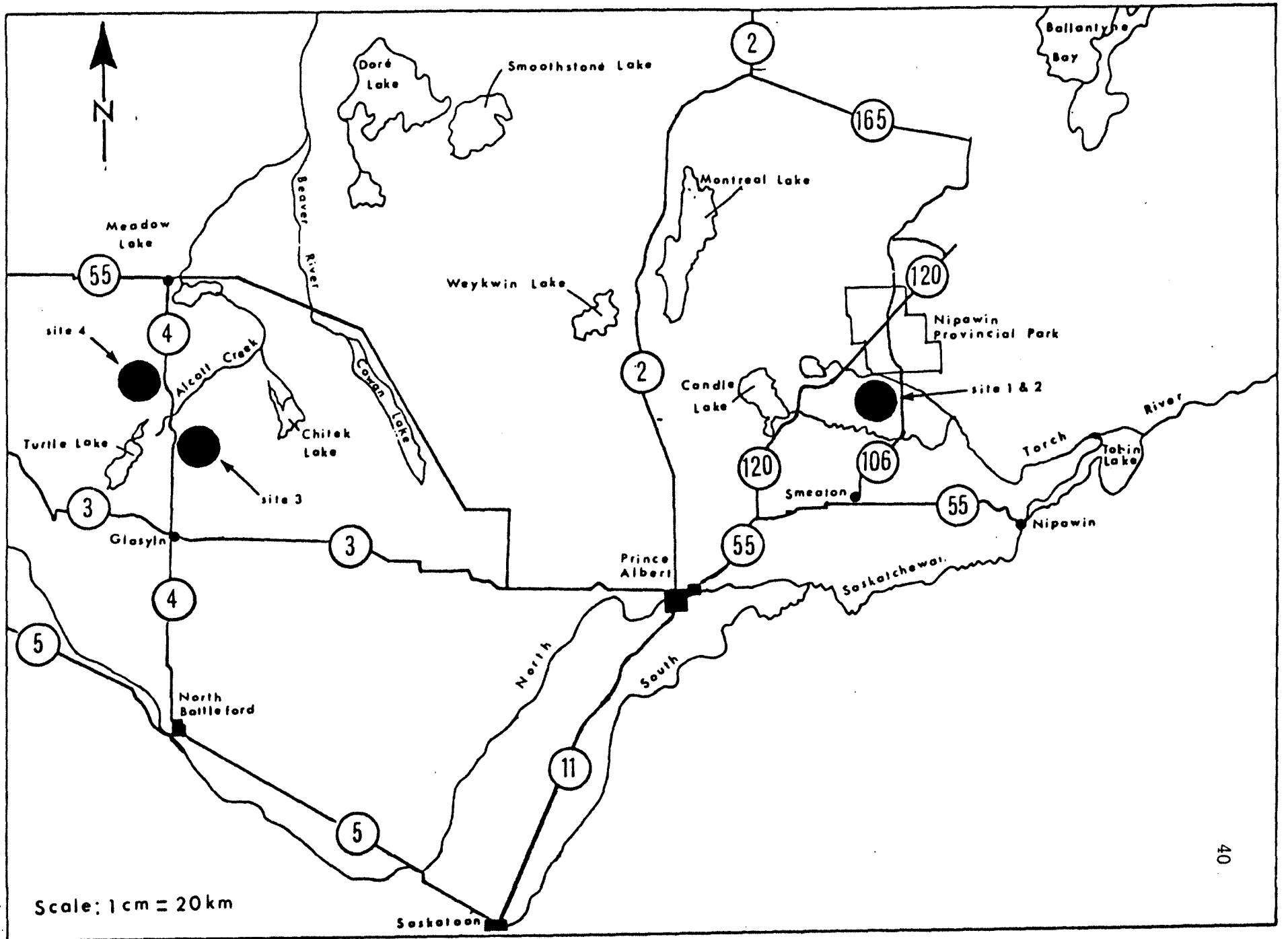


Figure 8. Distribution of source stands for Central Breeding District. Numbers referring to dots are family accession numbers, with the common leading digit 1 omitted, or stand progeny accession numbers.

Western Breeding District
Family Test Plantations, Locations, Access Maps
and Plot Layout Diagrams

Figure	Description	Page
1	Location of western breeding district family test plantations.....	40
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3	Family Test Plantation layout, site 1 replicate group 9.....	42
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6	Family Test Plantation layout, site 3 replicate group 6.....	45
7	Family Test Plantation layout, site 4 replicate group 8.....	46
8	Distribution of source stands for Western Breeding District.....	55

Figure 1. Location of Western Breeding District Family Test Plantations



Block 36	224 223 226 221 225 222	Block 30	542 544 541 543 546 545	Block 24	232 231 234 236 235 233	Block 18	114 115 116 112 111 113	Block 12	342 345 344 341 343 346	Block 6	634 632 636 633 631 635
Block 35	646 643 642 645 641 644	Block 29	246 244 245 241 243 242	Block 23	551 555 556 553 554 552	Block 17	124 123 122 121 126 125	Block 11	523 521 522 525 524 526	Block 5	256 251 254 255 253 252
Block 34	564 562 565 563 566 561	Block 28	516 514 513 515 511 512	Block 22	445 442 441 443 444 446	Block 16	465 464 462 461 463 466	Block 10	216 215 211 212 214 213	Block 4	133 132 135 134 136 131
Block 33	455 451 454 456 453 452	Block 27	263 264 261 266 262 265	Block 21	324 332 326 321 325 323	Block 15	315 314 312 316 313 311	Block 9	151 153 155 152 154 156	Block 3	331 336 334 332 333 335
Block 32	411 414 412 415 413 416	Block 26	142 144 143 145 141 146	Block 20	363 366 364 365 361 362	Block 14	163 165 166 161 162 164	Block 8	625 624 622 623 621 626	Block 2	654 651 652 656 655 653
Block 31	613 611 612 614 616 615	Block 25	535 531 533 532 536 534	Block 19	423 425 424 426 422 421	Block 13	351 352 353 354 356 355	Block 7	435 436 432 434 431 433	Block 1	622 665 661 663 666 664

REPLICATE 9-3

Block 36	555 255 355 155 455 655	Block 30	353 253 653 153 453 553	Block 24	416 116 216 516 616 316	Block 18	564 364 264 664 164 464	Block 12	213 313 113 513 413 613	Block 6	342 642 242 542 142 442
Block 35	143 243 543 643 343 443	Block 29	535 335 435 635 235 135	Block 23	545 245 345 645 145 445	Block 17	525 325 225 125 625 425	Block 11	551 251 351 651 451 151	Block 5	232 132 332 432 532 632
Block 34	411 311 211 511 111 611	Block 28	236 636 436 336 136 536	Block 22	234 534 334 434 134 634	Block 16	641 141 241 441 341 541	Block 10	354 454 654 154 254 554	Block 4	521 621 321 221 121 421
Block 33	566 166 366 266 466 666	Block 27	333 533 433 233 133 633	Block 21	662 462 264 562 362 162	Block 15	531 331 131 231 431 631	Block 9	352 152 452 552 252 652	Block 3	465 165 365 265 565 665
Block 32	226 526 626 426 126 326	Block 26	163 563 663 463 363 263	Block 20	324 624 524 124 224 424	Block 14	515 615 315 215 415 115	Block 8	112 212 312 512 412 612	Block 2	514 114 614 214 314 414
Block 31	223 123 423 323 523 623	Block 25	244 444 344 144 544 644	Block 19	646 246 346 146 546 446	Block 13	522 322 122 222 422 622	Block 7	561 461 661 161 361 261	Block 1	156 656 356 556 456 256

REPLICATE 9-2

Block 36	532 512 542 552 562 522	Block 30	534 524 554 544 564 514	Block 24	336 366 356 326 316 346	Block 18	536 526 556 546 566 516	Block 12	656 666 636 616 646 626	Block 6	344 334 354 324 314 364
Block 35	222 252 212 262 242 232	Block 29	634 624 664 654 614 644	Block 23	363 313 343 333 323 353	Block 17	156 116 146 136 166 126	Block 11	525 565 535 555 515 545	Block 5	416 436 466 446 426 456
Block 34	255 245 215 235 265 225	Block 28	113 153 133 143 123 163	Block 22	224 234 214 264 244 254	Block 16	655 645 635 615 665 625	Block 10	421 411 431 451 461 441	Block 4	312 332 352 322 362 342
Block 33	145 165 135 115 125 155	Block 27	531 521 561 551 511 541	Block 21	465 445 455 435 425 415	Block 15	154 114 144 124 134 164	Block 9	246 266 256 236 226 216	Block 3	462 412 432 452 442 422
Block 32	365 325 335 315 355 345	Block 26	261 211 241 221 231 251	Block 20	253 223 233 243 263 213	Block 14	464 424 454 434 414 444	Block 8	423 433 443 413 463 453	Block 2	621 611 641 631 661 651
Block 31	653 643 613 663 623 633	Block 25	652 662 642 632 612 642	Block 19	151 121 131 111 161 141	Block 13	152 142 132 122 162 112	Block 7	341 361 351 311 331 321	Block 1	533 553 523 543 563 513



Figure 3. Family Test Plantation Layout Diagram Site 1, White Gull Creek

Block 36 164 154 114 144 134 124	Block 35 535 515 545 525 565 555	Block 34 211 231 251 241 261 221	Block 33 556 516 546 566 536 526	Block 32 425 415 445 455 435 465	Block 31 614 624 654 644 664 634	Block 30 441 411 461 451 421 431	Block 29 522 562 512 542 532 552	Block 28 112 142 122 162 132 152	Block 27 165 125 135 141 121 111 145 155	Block 26 131 151 141 121 111 161	Block 25 653 643 663 613 623 633	Block 24 666 636 656 616 626 646	Block 23 215 255 245 265 235 225	Block 22 632 622 662 652 642 612	Block 21 416 426 446 456 436 466	Block 20 452 462 422 432 412 442	Block 19 334 364 344 314 354 324	Block 18 232 262 222 212 242 252	Block 17 443 453 423 463 413 433	Block 16 356 336 326 366 346 316	Block 15 234 264 224 214 244 254	Block 14 341 331 311 321 361 351	Block 13 352 362 342 312 322 332	Block 12 363 323 343 313 333 353	Block 11 414 454 434 444 424 464	Block 10 163 123 143 133 113 153	Block 9 645 665 655 635 625 615	Block 8 564 524 554 534 514 544	Block 7 521 541 531 551 561 511	Block 6 325 365 345 335 355 315	Block 5 563 553 523 513 533 543	Block 4 233 243 235 213 263	Block 3 226 246 236 256 216 266	Block 2 661 621 651 611 641 631	Block 1 146 166 136 156 116 126
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REPLICATE 7-1

Block 36 423 421 426 425 424 422	Block 35 143 144 141 145 142 146	Block 34 636 634 631 632 633 635	Block 33 242 245 243 244 241 246	Block 32 414 412 413 411 415 416	Block 31 341 342 344 355 352 346	Block 30 433 435 434 432 431 436	Block 29 614 616 612 611 615 613	Block 28 232 231 235 233 234 236	Block 27 442 445 446 443 444 441	Block 26 263 265 264 266 262 261	Block 25 536 535 531 533 532 534	Block 24 363 362 364 365 361 366	Block 23 553 555 554 552 551 556	Block 22 625 621 623 624 622 626	Block 21 546 542 545 543 544 541	Block 20 154 151 155 156 152 153	Block 19 353 354 355 356 351 352	Block 18 455 451 453 456 454 452	Block 17 136 134 132 133 131 135	Block 16 333 332 331 335 336 334	Block 15 215 214 211 216 213 212	Block 14 641 644 642 645 646 643	Block 13 463 466 462 464 461 465	Block 12 653 652 654 651 655 656	Block 11 226 223 224 222 225 221	Block 10 326 324 325 323 321 322	Block 9 664 662 661 665 663 666	Block 8 561 563 565 564 566 562	Block 7 525 522 523 526 521 524	Block 6 514 516 515 511 513 512	Block 5 311 315 314 313 312 316	Block 4 163 162 164 166 161 165	Block 3 124 125 126 123 121 122	Block 2 112 113 111 114 115 116	Block 1 254 252 256 255 253 251
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REPLICATE 7-3

Block 36 525 425 325 625 225 125	Block 35 236 636 436 536 136 336	Block 34 662 462 362 562 262 162	Block 33 641 141 441 241 341 541	Block 32 133 433 333 533 633 533	Block 31 341 342 344 345 343 346	Block 30 516 216 616 116 316 416	Block 29 666 566 266 166 366 466	Block 28 121 521 321 421 221 621	Block 27 224 124 624 424 524 324	Block 26 431 131 331 231 531 631	Block 25 311 111 211 511 411 611	Block 24 554 254 354 154 654 454	Block 23 422 522 122 622 222 322	Block 22 265 665 565 465 365 165	Block 21 352 152 652 452 552 252	Block 20 626 326 426 126 526 226	Block 19 556 656 156 456 356 256	Block 18 554 254 354 154 654 454	Block 17 422 522 122 622 222 322	Block 16 265 665 565 465 365 165	Block 15 352 152 652 452 552 252	Block 14 626 326 426 126 526 226	Block 13 536 535 531 533 532 534	Block 12 516 216 616 116 316 416	Block 11 666 566 266 166 366 466	Block 10 121 521 321 421 221 621	Block 9 224 124 624 424 524 324	Block 8 431 131 331 231 531 631	Block 7 311 111 211 511 411 611	Block 6 525 425 325 625 225 125	Block 5 236 636 436 536 136 336	Block 4 662 462 362 562 262 162	Block 3 641 141 441 241 341 541	Block 2 133 433 333 533 633 533	Block 1 341 342 344 345 343 346	Block 6 446 646 146 246 546 346	Block 5 661 461 361 261 561 161	Block 4 435 235 535 135 635 335	Block 3 355 555 455 255 655 155	Block 2 551 651 451 151 351 251	Block 1 563 663 163 263 363 463
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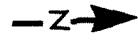


Figure 4. Family Test Plantation Layout Diagram Site 2, White Gull Creek

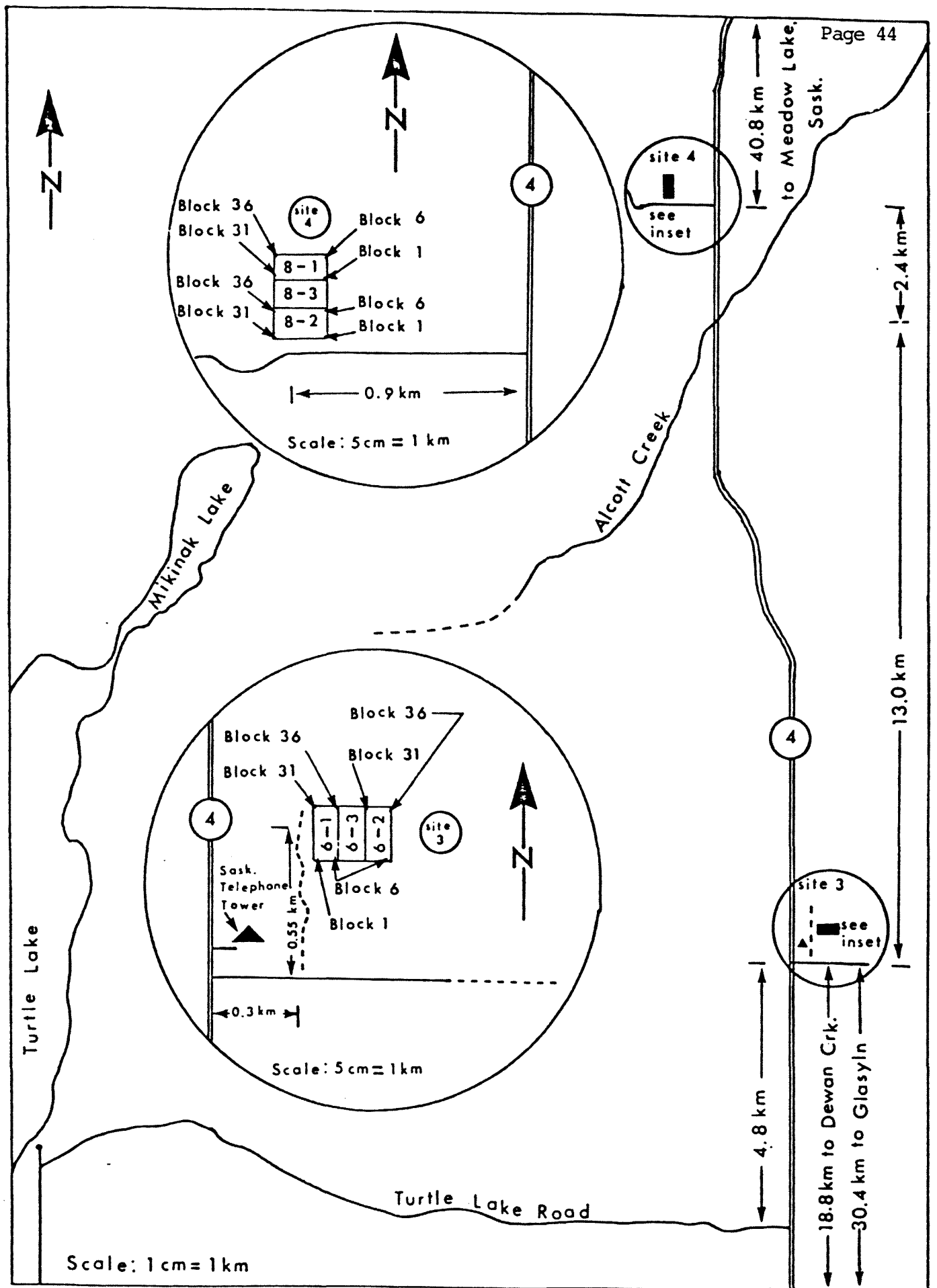


Figure 5. Western Breeding District, Access map, Sites 3 and 4, Alcott Creek

Block 36	123 143 113 133 163 153	Block 29	552 522 542 512 532 562	Block 30	421 451 461 431 411 441	Block 24	412 432 422 462 452 442	Block 18	533 553 543 563 513 523	Block 12	354 344 364 314 324 334	Block 6	434 444 424 414 464 454
Block 35	326 336 346 316 356 366	Block 28	131 151 161 111 141 121	Block 23	126 146 156 166 136 116	Block 17	233 263 253 243 223 213	Block 11	436 456 416 466 446 426	Block 5	236 226 266 256 216 246	Block 1	661 641 621 631 611 651
Block 34	135 125 115 145 165 155	Block 27	321 351 331 311 361 341	Block 22	312 362 332 322 352 342	Block 16	215 255 265 225 235 245	Block 10	144 114 124 134 164 154	Block 4	565 525 545 555 515 535	Block 2	666 656 626 646 616 636
Block 33	262 252 222 232 242 212	Block 26	623 653 633 663 643 613	Block 21	335 325 345 365 355 315	Block 15	465 445 455 425 435 415	Block 9	514 554 544 534 524 564	Block 3	413 443 463 453 423 433	Block 7	615 635 645 655 665 625
Block 32	244 224 214 234 264 254	Block 25	664 614 634 654 644 624	Block 20	551 561 521 531 541 511	Block 14	343 323 333 353 363 313	Block 8	152 162 122 132 112 142	Block 2	666 656 626 646 616 636	Block 1	661 641 621 631 611 651

REPLICATE 6-3

Block 36	251 151 351 451 551 651	Block 30	634 234 534 434 334 134	Block 24	135 435 635 235 535 335	Block 18	526 226 326 526 426 126	Block 12	264 564 364 464 164 664	Block 6	154 454 554 654 354 254
Block 35	143 343 543 643 243 443	Block 29	331 631 531 231 431 131	Block 23	166 666 566 366 466 266	Block 17	521 421 221 621 321 121	Block 11	313 113 613 413 513 213	Block 5	563 163 663 263 363 463
Block 34	361 261 461 661 161 561	Block 28	214 414 314 514 114 614	Block 22	415 615 515 315 115 215	Block 16	323 523 423 123 223 623	Block 10	145 445 545 245 645 345	Block 4	644 244 344 444 544 144
Block 33	122 222 322 522 422 622	Block 27	462 362 262 662 562	Block 21	246 146 346 646 446 546	Block 15	642 442 542 242 142 342	Block 9	155 255 455 555 655 355	Block 3	441 541 341 641 141 241
Block 32	412 612 312 112 212 512	Block 26	324 524 124 424 624 224	Block 20	516 316 216 416 116 616	Block 14	532 632 332 132 232 432	Block 8	233 333 133 433 633 533	Block 2	265 165 665 565 365 465
Block 31	656 356 556 456 256 156	Block 25	152 652 252 352 552 452	Block 19	211 111 411 511 311 611	Block 13	235 153 453 553 653 353	Block 7	336 536 236 436 136 636	Block 1	225 325 425 125 525 625

REPLICATE 6-1

Block 36	566 563 562 564 565 561	Block 30	423 422 424 421 425 426	Block 24	461 463 464 462 465 466	Block 18	221 225 222 224 226 223	Block 12	143 142 141 145 144 146	Block 6	353 351 354 356 352 355
Block 35	121 126 124 125 123 122	Block 29	162 164 165 166 161 163	Block 23	631 634 636 635 633 632	Block 17	515 512 514 511 516 513	Block 11	441 445 442 446 444 443	Block 5	623 621 626 625 624 622
Block 34	523 524 526 525 521 522	Block 28	331 333 336 334 332 335	Block 22	555 551 553 556 552 554	Block 16	651 656 655 652 654 653	Block 10	451 453 455 454 456 452	Block 4	245 246 244 243 242 241
Block 33	342 341 344 343 346 345	Block 27	254 255 252 256 251 253	Block 21	662 666 665 663 661 664	Block 15	414 415 412 413 411 416	Block 9	231 236 234 235 232 233	Block 3	312 314 315 311 313 316
Block 32	264 262 266 261 263 265	Block 26	151 154 155 152 153 156	Block 20	431 432 435 433 436 434	Block 14	211 213 215 212 214 216	Block 8	323 322 321 326 323 324	Block 2	641 642 643 646 645 644
Block 31	135 131 136 133 134 132	Block 25	546 541 543 542 544 545	Block 19	611 612 615 616 614 613	Block 13	531 536 534 533 535 532	Block 7	361 364 363 362 366 365	Block 1	114 115 112 116 113 111

Figure 6. Family Test Plantation Layout Diagram Site 3, Turtle Lake



WESTERN BREEDING DISTRICT
Table 3. Origin of Family Test Seedlots

Family no.		Location			Elev. m	Source stand stocking	Parent tree				
Code	NOR ¹	N. lat.	W. long.	Age yrs.			Ht. m	Diam. cm	Stem Class ²	Crown Class ³	
111	1627	53° 34'	108° 22'	720	moderate	55	14	30	1	d	
112	1782	53° 58'	105° 55'	550	irregular	75	15	25	2	c	
113	1814	54° 04'	104° 38'	550	full	72	16	23	3	c	
114	1710	53° 54'	107° 37'	560	full	66	15	23	1	c	
115	1656	55° 58'	108° 35'	430	open-grown	96	18	35	3	d	
116	1691	54° 53'	107° 49'	430	open-grown	98	20	33	1	d	
121	1693	54° 53'	107° 49'	430	open-grown	93	18	33	1	c	
122	1821	54° 34'	104° 13'	430	open-grown	46	12	20	2	c	
123	1778	53° 52'	105° 56'	580	moderate	43	15	20	-	c	
124	1767	53° 20'	105° 00'	460	open-grown	52	17	30	2	c	
125	1616	54° 26'	109° 00'	500	moderate	76	17	30	3	c	
126	1747	53° 32'	103° 48'	340	open-grown	74	15	20	1	c	
131	1752	53° 05'	106° 05'	460	open-grown	46	15	20	2	c	
132	1787	54° 16'	105° 33'	510	open-grown	43	14	28	2	d	
133	1699	54° 31'	107° 52'	490	open-grown	46	14	28	1	c	
134	1835	54° 51'	102° 08'	370	moderate	45	11	10	2	d	
135	1683	55° 08'	107° 43'	430	full	124	18	33	3	c	
136	1660	55° 56'	108° 33'	430	open-grown	91	16	25	3	c	
141	1706	53° 45'	107° 30'	460	open-grown	78	18	33	1	c	
142	1769	53° 20'	104° 56'	460	moderate	44	16	30	2	c	
143	1663	55° 42'	108° 17'	430	moderate	50	15	28	1	c	
144	1744	53° 36'	103° 44'	340	open-grown	67	18	28	2	c	
145	1608	54° 27'	111° 24'	690	full	37	14	25	1	c	
146	1680	55° 06'	107° 47'	460	open-grown	71	15	28	1	d	

¹ Northern Region permanent accession number

² 1--straight, 2--fairly straight, 3--crooked

³ d = dominant, c = codominant

Table 3 (continued)

Family no.		Location			Source stand stocking	Parent tree				
Code	NOR ¹	N. lat.	W. long.	Elev. m		Age yrs.	Ht. m	Diam. cm	Stem Class ²	Crown Class ³
151	1847	54° 20'	109° 37'	560	full	17	7	15	2	c
152	1665	55° 37'	108° 07'	430	open-grown	92	16	28	3	c
153	1727	53° 54'	105° 05'	550	full	80	17	25	2	c
154	2003	54° 10'	108° 00'	560	open-full	stand collection				
155	1824	54° 38'	104° 09'	430	moderate	47	12	18	-	c
156	1625	53° 34'	108° 22'	720	moderate	53	14	28	1	c
161	1783	54° 13'	105° 37'	490	open-grown	28	11	24	-	c
162	1740	53° 52'	104° 37'	520	full	84	18	28	2	c
163	1661	55° 42'	108° 17'	430	moderate	51	15	35	1	c
164	1700	54° 40'	107° 18'	550	full	39	12	20	1	c
165	1639	53° 52'	108° 26'	730	moderate	47	13	15	i	c
166	1725	53° 50'	105° 06'	550	open-grown	81	17	35	1	c
211	1640	54° 52'	108° 21'	520	open-grown	44	13	30	2	c
212	1820	54° 34'	104° 13'	430	open-grown	47	12	19	-	c
213	1622	54° 26'	108° 46'	500	full	90	18	38	2	c
214	1605	55° 01'	111° 59'	580	full	75	16	25	1	d
215	1612	54° 26'	110° 16'	550	full	34	11	20	1	c
216	1694	54° 45'	107° 49'	460	open-grown	37	10	23	1	c
221	1686	55° 03'	107° 46'	460	full	72	16	25	1	c
222	1750	53° 05'	106° 05'	460	moderate	47	14	20	2	c
223	1652	56° 12'	108° 55'	430	full	51	14	25	2	d
224	1797	54° 48'	105° 17'	400	open-grown	37	12	25	1	c
225	1741	53° 43'	103° 16'	310	open-grown	41	14	19	2	c
226	1723	53° 46'	105° 08'	520	open-grown	97	16	30	1	c
231	1807	54° 37'	104° 24'	480	moderate	55	14	15	-	c
232	1761	53° 05'	106° 10'	460	moderate	65	18	28	2	d
233	1748	53° 32'	103° 48'	340	open-grown	74	20	33	2	d
234	1853	54° 17'	108° 51'	520	moderate	16	6	13	1	d

Table 3 (continued)

Family no.		Location			Source stand stocking	Parent tree				
Code	NOR ¹	N. lat.	W. long.	Elev. m		Age yrs.	Ht. m	Diam. cm	Stem Class ²	Crown Class ³
235	1631	53° 45'	108° 27'	710	moderate	71	17	20	1	c
236	1854	54° 17'	108° 51'	520	moderate	68	19	19	1	d
241	1684	55° 08'	107° 43'	430	full	79	17	23	2	c
242	1789	54° 19'	105° 31'	520	open-grown	29	10	15	-	c
243	1669	55° 33'	108° 05'	430	full	94	16	23	2	c
244	1615	54° 15'	109° 00'	470	moderate	72	16	28	2	c
245	1670	55° 29'	108° 03'	430	moderate	97	16	33	2	c
246	1628	53° 37'	108° 21'	730	open-grown	73	18	20	2	d
251	1654	56° 12'	108° 55'	430	full	51	14	23	2	d
252	1679	55° 06'	107° 47'	460	open-grown	74	14	33	2	c
253	1645	54° 44'	108° 30'	490	open-grown	76	19	35	1	d
254	1792	54° 50'	105° 21'	400	full	47	14	18	-	c
255	1796	54° 48'	105° 17'	400	open-grown	46	13	18	1	c
256	1730	53° 54'	105° 02'	560	open-grown	90	18	30	1	d
261	1763	53° 19'	105° 06'	460	open-grown	46	13	18	2	c
262	1726	53° 50'	105° 06'	550	open-grown	79	19	36	1	d
263	1728	53° 54'	105° 05'	550	full	79	18	25	1	d
264	1697	54° 31'	107° 52'	490	open-grown	44	14	23	1	c
265	1846	54° 20'	109° 37'	560	full	27	12	18	2	d
266	1713	53° 51'	107° 35'	560	full	54	15	25	1	d
311	1709	53° 54'	107° 37'	560	full	68	16	30	1	c
312	1703	54° 33'	107° 16'	490	full	37	11	15	1	d
313	1667	55° 33'	108° 05'	430	full	98	17	25	2	d
314	1753	53° 08'	106° 05'	460	open-grown	45	13	19	2	c
315	1724	53° 50'	105° 06'	550	open-grown	82	17	28	1	c
316	1698	54° 31'	107° 52'	490	open-grown	44	13	25	1	c
321	1614	54° 15'	109° 00'	470	moderate	74	17	30	2	c

Table 3 (continued)

Family no.		Location			Source stand stocking	Parent tree				
Code	NOR ¹	N. lat.	W. long.	Elev. m		Age yrs.	Ht. m	Diam. cm	Stem Class ²	Crown Class ³
322	1819	54° 34'	104° 13'	430	open-grown	47	12	23	-	c
323	1756	53° 05'	106° 05'	460	full	69	18	29	3	c
324	1808	54° 37'	104° 24'	480	moderate	50	13	15	-	c
325	1841	54° 50'	102° 41'	340	moderate	40	11	15	-	c
326	1719	53° 15'	106° 03'	460	open-grown	76	19	30	2	c
331	1833	54° 58'	103° 28'	340	full	42	13	15	1	c
332	1623	54° 26'	108° 46'	510	full	73	19	38	2	d
333	1705	54° 33'	107° 16'	490	full	39	11	18	1	d
334	1650	55° 07'	107° 50'	430	full	71	16	20	2	c
335	1662	55° 42'	108° 17'	430	moderate	50	14	25	1	c
336	1688	54° 55'	107° 48'	430	open-grown	66	18	30	1	d
341	1735	53° 54'	104° 56'	560	full	44	12	20	1	c
342	1802	54° 45'	104° 58'	430	full	40	13	24	-	c
343	1613	54° 15'	109° 00'	470	moderate	75	16	28	2	c
344	1777	53° 52'	105° 56'	580	open-grown	45	15	22	-	c
345	1843	54° 20'	109° 37'	560	open-grown	28	10	19	2	d
346	1736	53° 55'	104° 52'	550	open-grown	42	12	20	1	c
351	1610	54° 26'	110° 16'	550	full	37	12	25	1	d
352	1673	55° 16'	107° 49'	460	moderate	56	16	28	1	d
353	1844	54° 20'	109° 37'	560	open-grown	26	11	17	2	c
354	1773	53° 17'	104° 52'	460	moderate	53	14	25	-	c
355	1643	54° 44'	108° 30'	490	open-grown	76	18	25	1	d
356	1611	54° 26'	110° 16'	550	full	35	12	25	1	d
361	1711	53° 54'	107° 37'	560	full	65	15	23	1	c
362	1618	54° 26'	109° 00'	500	moderate	83	19	33	2	c
363	1717	53° 15'	106° 07'	460	open-grown	55	14	28	2	c
364	1721	53° 46'	105° 08'	520	open-grown	84	16	25	2	c
365	1759	53° 05'	106° 10'	460	open-grown	56	18	24	2	c

Table 3 (continued)

Family no.		Location			Source stand stocking	Parent tree				
Code	NOR ¹	N. lat.	W. long.	Elev. m		Age yrs.	Ht. m	Diam. cm	Stem Class ²	Crown Class ³
366	1637	53° 52'	108° 26'	730	moderate	45	12	15	1	c
411	1664	55° 37'	108° 07'	430	open-grown	97	17	28	1	d
412	1674	55° 16'	107° 49'	460	moderate	55	14	20	1	c
413	1832	54° 38'	103° 28'	340	moderate	45	14	22	-	d
414	1827	54° 35'	103° 58'	370	full	45	9	15	-	c
415	1642	54° 52'	108° 21'	520	open-grown	45	13	28	2	c
416	1837	54° 52'	102° 21'	370	moderate	31	11	18	-	c
421	1810	53° 58'	104° 45'	520	moderate	49	11	16	-	c
422	1739	53° 52'	104° 37'	520	full	81	18	23	2	c
423	1657	55° 58'	108° 35'	430	open-grown	89	18	28	3	d
424	1701	54° 40'	107° 18'	550	full	40	11	23	1	c
425	1775	53° 48'	105° 55'	550	full	46	16	23	-	c
426	1771	53° 17'	104° 52'	460	moderate	53	13	19	-	c
431	1671	55° 29'	108° 03'	430	moderate	93	20	25	2	d
432	1692	54° 53'	107° 49'	430	open-grown	91	20	33	2	d
433	1708	53° 45'	107° 30'	460	open-grown	83	21	35	1	d
434	1689	54° 55'	107° 48'	430	open-grown	68	19	30	1	d
435	1749	53° 32'	103° 48'	340	open-grown	67	15	20	2	c
436	1754	53° 08'	106° 05'	460	open-grown	44	13	23	2	c
441	1626	53° 34'	108° 22'	720	moderate	53	14	28	1	d
442	1817	54° 19'	104° 36'	690	moderate	58	14	15	-	c
443	1617	54° 26'	109° 00'	500	moderate	83	18	33	3	c
444	1666	55° 37'	108° 07'	430	open-grown	89	14	28	3	d
445	1648	54° 33'	108° 33'	480	open-grown	49	12	23	3	c
446	1707	53° 45'	107° 30'	460	open-grown	81	21	36	1	c
451	1849	54° 18'	108° 59'	520	open-grown	19	7	13	1	d
452	1644	54° 44'	108° 30'	490	open-grown	73	18	33	1	d
453	1784	54° 13'	105° 37'	490	open-grown	28	10	23	-	c

Table 3 (continued)

Family no.		Location			Elev. m	Source stand stocking	Parent tree				
Code	NOR ¹	N. lat.	W. long.	Age yrs.			Ht. m	Diam. cm	Stem Class ²	Crown Class ³	
454	1712	53° 51'	107° 35'	560	full	55	14	25	1	c	
455	1604	55° 01'	111° 59'	580	full	73	17	28	1	d	
456	1731	53° 54'	105° 02'	560	open-grown	105	19	30	1	c	
461	1704	54° 33'	107° 16'	490	full	37	12	20	1	d	
462	1793	54° 50'	105° 21'	400	full	51	11	15	-	c	
463	1781	53° 58'	105° 55'	550	open-grown	75	14	25	-	c	
464	1609	54° 27'	111° 24'	690	full	38	14	23	1	c	
465	1812	53° 58'	104° 45'	520	moderate	50	12	18	-	d	
466	1805	54° 41'	104° 42'	550	open-grown	40	13	20	-	d	
511	1633	53° 45'	108° 27'	710	moderate	69	16	23	1	c	
512	1675	55° 16'	107° 49'	460	moderate	52	13	18	1	c	
513	1809	54° 37'	104° 24'	480	moderate	85	17	20	-	d	
514	1816	54° 19'	104° 36'	690	moderate	60	14	18	-	c	
515	1685	55° 03'	107° 46'	460	full	65	17	28	1	c	
516	1772	53° 17'	104° 52'	460	moderate	52	14	23	-	c	
521	1788	54° 16'	105° 33'	510	open-grown	43	13	17	-	c	
522	1851	54° 18'	108° 59'	520	open-grown	20	9	14	1	d	
523	1848	54° 20'	109° 37'	560	full	27	10	17	2	d	
524	1825	54° 35'	103° 58'	370	full	45	9	13	-	c	
525	1770	53° 20'	104° 56'	460	moderate	49	16	27	-	c	
526	1746	53° 36'	103° 44'	340	open-grown	62	20	23	2	d	
531	1676	55° 07'	107° 46'	430	open-grown	71	19	36	1	d	
532	1800	54° 47'	105° 10'	460	full	28	13	16	-	c	
533	1794	54° 50'	105° 21'	400	full	50	12	18	-	c	
534	1795	54° 48'	105° 17'	400	open-grown	44	14	19	1	d	
535	1629	53° 37'	108° 21'	720	open-grown	71	18	25	2	d	
536	1655	55° 58'	108° 35'	430	open-grown	92	17	28	3	d	

Table 3 (continued)

Family no.		Location			Source stand stocking	Parent tree				
Code	NOR ¹	N. lat.	W. long.	Elev. m		Age yrs.	Ht. m	Diam. cm	Stem Class ²	Crown Class
541	1755	53° 08'	106° 05'	460	open-grown	46	14	23	2	c
542	1768	53° 20'	104° 56'	460	moderate	49	17	30	-	d
543	1780	53° 58'	105° 55'	550	moderate	74	17	25	-	d
544	1845	54° 20'	109° 37'	560	open-grown	27	10	17	2	d
545	1733	53° 54'	104° 56'	560	full	46	13	23	1	c
546	1718	53° 15'	106° 03'	460	open-grown	70	17	28	2	c
551	1651	55° 07'	107° 50'	430	full	71	17	30	2	c
552	1714	53° 51'	107° 35'	560	full	52	13	28	1	c
553	1738	53° 55'	104° 52'	550	open-grown	55	15	28	1	c
554	1687	55° 03'	107° 46'	460	full	74	16	25	1	c
555	1751	53° 05'	106° 05'	460	moderate	66	18	29	2	d
556	1602	55° 06'	111° 59'	690	full	70	18	25	1	c
561	1839	54° 52'	102° 21'	370	moderate	32	11	15	-	c
562	1828	54° 33'	103° 28'	340	full	45	10	13	-	c
563	1720	53° 15'	106° 03'	460	open-grown	78	15	20	2	c
564	1838	54° 52'	102° 21'	370	moderate	32	12	18	-	d
565	1702	54° 40'	107° 18'	550	full	38	12	20	1	c
566	1715	53° 15'	106° 07'	460	open-grown	56	13	25	3	c
611	1758	53° 05'	106° 05'	460	full	68	18	33	3	c
612	1840	54° 50'	102° 41'	340	moderate	35	13	20	-	d
613	1779	53° 52'	105° 56'	580	moderate	48	17	23	-	d
614	1649	55° 07'	107° 50'	430	full	70	18	25	2	d
615	1762	53° 19'	105° 06'	460	open-grown	55	14	23	2	c
616	1678	55° 07'	107° 46'	430	open-grown	68	18	33	1	c
621	1607	54° 27'	111° 24'	690	full	42	15	28	1	d
622	1742	53° 43'	103° 16'	310	open-grown	39	14	15	3	c
623	1811	53° 58'	104° 45'	520	moderate	49	12	20	-	c
624	1696	54° 45'	107° 49'	460	open-grown	43	12	28	1	d

Table 3 (continued)

Family no.		Location			Source stand stocking	Parent tree				
Code	NOR ¹	N. lat.	W. long.	Elev. m		Age yrs.	Ht. m	Diam. cm	Stem Class ²	Crown Class ³
625	1672	55° 29'	108° 03'	430	moderate	98	20	33	2	d
626	1620	54° 26'	108° 55'	500	full	120	16	33	3	d
631	1632	53° 45'	108° 27'	710	moderate	74	18	20	1	d
632	1818	54° 19'	104° 36'	660	moderate	57	13	20	-	c
633	1682	55° 08'	107° 43'	430	full	130	18	33	2	d
634	1647	54° 33'	108° 33'	480	open-grown	47	12	20	2	c
635	1695	54° 45'	107° 49'	460	open-grown	47	12	25	1	d
636	1732	53° 54'	105° 02'	560	open-grown	100	18	35	1	c
641	1722	53° 46'	105° 08'	520	open-grown	84	16	25	1	c
642	1734	53° 54'	104° 56'	560	full	47	13	25	1	c
643	1668	55° 33'	108° 05'	430	full	97	16	30	-	d
644	1603	55° 06'	111° 59'	690	full	76	21	33	1	d
645	1743	53° 43'	103° 16'	310	open-grown	40	13	20	3	c
646	1785	54° 13'	105° 37'	490	open-grown	28	11	25	-	d
651	1677	55° 07'	107° 46'	430	open-grown	69	18	25	1	c
652	1791	54° 19'	105° 31'	520	open-grown	30	12	15	-	c
653	1804	54° 41'	104° 42'	550	moderate	45	14	18	-	c
654	2004	53° 48'	105° 05'	540	open-grown	stand collection				
655	1852	54° 17'	108° 51'	520	moderate	65	18	28	1	d
656	1766	53° 20'	105° 00'	460	open-grown	40	16	25	-	c
661	1619	54° 26'	108° 55'	500	full	124	19	35	2	d
662	1737	53° 55'	104° 52'	550	open-grown	52	13	25	1	c
663	1606	55° 01'	111° 59'	580	full	80	18	30	1	d
664	1834	54° 51'	102° 08'	370	open-grown	45	10	10	-	c
665	1803	54° 45'	104° 58'	430	full	42	13	20	-	c
666	1638	53° 52'	108° 26'	730	moderate	44	13	15	1	c

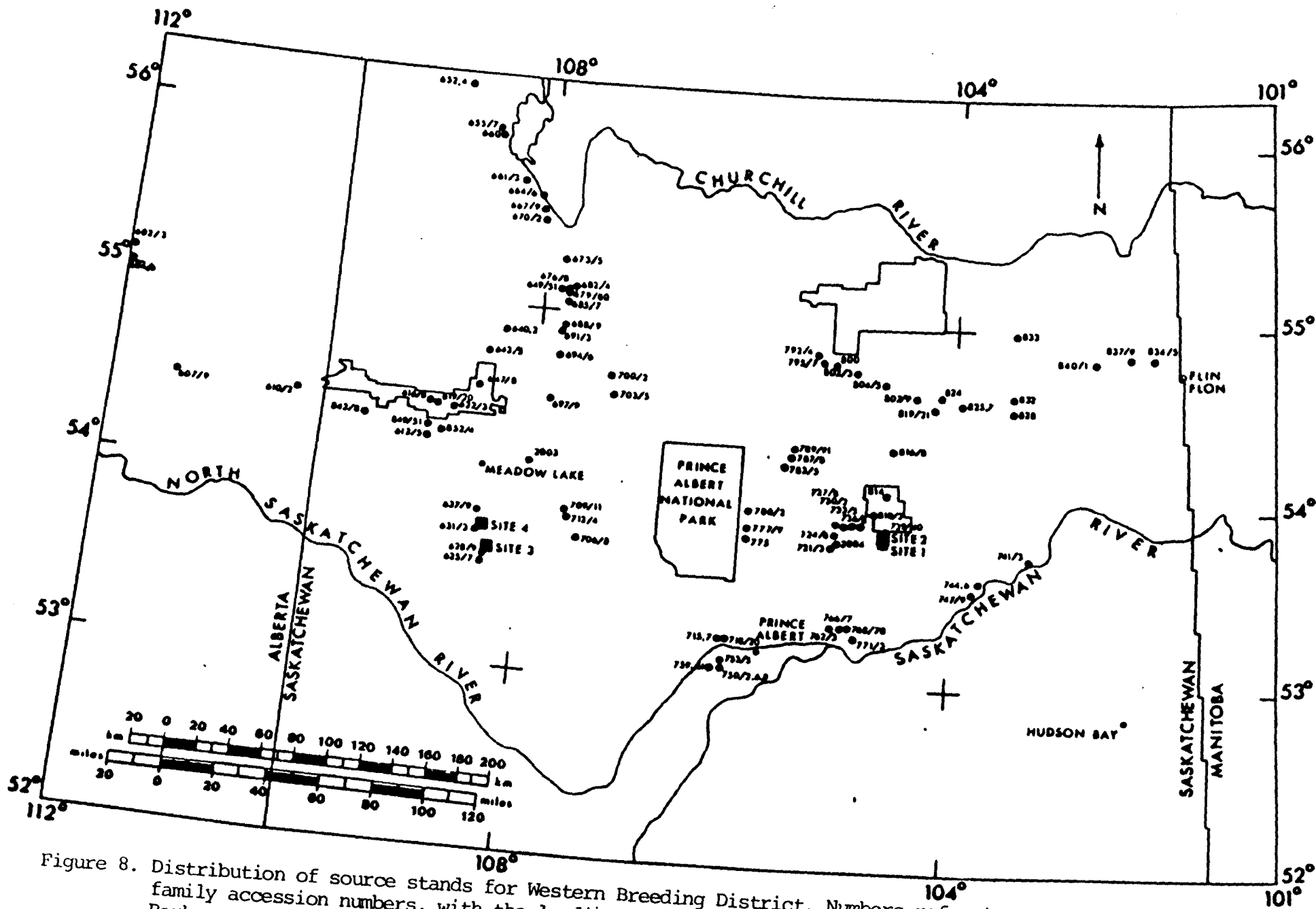


Figure 8. Distribution of source stands for Western Breeding District. Numbers referring to dots are family accession numbers, with the leading digit 1 omitted. Outlined areas are Provincial Parks.

List of Reports on Jack Pine Breeding Program for
Manitoba and Saskatchewan

- Klein, J.I. 1973. Establishment of jack pine family-test plantations in eastern Manitoba, 1973 Environ. Can., Can. For. Serv., North. For. Res. Cent. Edmonton, Alta. Intern. Rep. NOR-17.
- Klein, J.I. 1974. A jack pine seedling seed orchard plantations of unusual design, Pages 55-58 in proc. 21st. Northeast For. Tree Improv. Conf., Fredericton, New Brunswick Aug. 1973.
- Nanka, A.M. and J.I. Klein. 1978. Establishment of jack pine family-test plantations in central and western Saskatchewan, 1974. Fish. and Environ. Can., Can. For. Serv., North. For. Res. Centr. Edmonton, Alta. File Rep. NOR-051.
- Klein, J.I. and A.M. Nanka. 1981. Establishment of jack pine family-test plantations in eastern Saskatchewan and western Manitoba, 1976. Environ. Can., Can. For. Serv., North For. Res. Cent. Edmonton, Alta. File Rep. NOR-12-051.
- Klein, J.I. 1982. Establishment and first results of a jack pine breeding program for Manitoba and Saskatchewan. Environ. Can., Can. For. Serv. North. For. Res. Cent. Edmonton, Alta. Info. Rep. NOR-X-247.
- Klein, J.I. 1982. Genetically improved jack pine for Manitoba and Saskatchewan. Environ. Can., Can. For. Serv. North. For. Res. Cent. Edmonton, Alta. For. Mgt. Note No. 18.
- Klein, J.I. 1983. Selection for eastern Manitoba jack pine seed orchards based on 10-year family-test results. Environ. Can., Can. For. Serv. North. For Res. Cent. Edmonton, Alta. For. Mgt. Note No. 24. Nov.