



Date: / /  Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

### Karst Sample Unit (KSU)/ Opening Information

License #: \_\_\_\_\_ CP#: \_\_\_\_\_ Block: \_\_\_\_\_

Evaluator name(s): \_\_\_\_\_ Pasture ID: \_\_\_\_\_

Year of harvest \_\_\_\_\_ BEC zone: \_\_\_\_\_ Site series: \_\_\_\_\_ UTM zone \_\_\_\_\_

Is karst inventory information available for this karst area? ☐ Yes ☐ No ☐ Don't know

Karst inventory date: / /

Have there been multiple timber extractions or salvage in KSU? ☐ Yes ☐ No ☐ Not sure

☐ 1st pass ☐ 2nd pass ☐ 3rd pass ☐ salvage ☐ other

Is there patch retention in KSU? ☐ Yes ☐ No If Yes: ☐ Interior ☐ Edge ☐ Both

Is there dispersed retention in KSU? ☐ Yes ☐ No

Area occupied by roads in KSU: \_\_\_\_\_ ha

Does this karst area appear on LRDW karst potential maps? ☐ Yes ☐ No

Predominant Karst Vulnerability Class of KSU:<sup>1</sup>

☐ Low ☐ Moderate ☐ High ☐ Very High ☐ Don't know

Does KSU form part of a larger contiguous karst unit? ☐ Yes ☐ No ☐ Not sure

Approx size of KSU: Inside block: \_\_\_\_\_ ha Outside block: \_\_\_\_\_ ha Total: \_\_\_\_\_ ha

Location of KSU relative to block: ☐ Internal ☐ Edge ☐ Internal and edge  
☐ Along access road(s) leading to block

Position of KSU relative to block: ☐ Downslope ☐ Upslope ☐ Lateral

Elevation of KSU in m: min \_\_\_\_\_ max \_\_\_\_\_ average \_\_\_\_\_

% slope of KSU: min \_\_\_\_\_ max \_\_\_\_\_ average \_\_\_\_\_

Predominant aspect of KSU: \_\_\_\_\_

\*attach a map showing the KSU, and the traverse route or GPS track for KSU (compulsory)

Approx length of traverse in KSU: \_\_\_\_\_ m Estimated karst area covered in KSU: \_\_\_\_\_ ha

<sup>1</sup> Record only if available from a KISVAP Karst Field Assessment or as determined by a qualified person.

| Karst Feature Category                 |                                         | No. of known features in KSU [A] | No. of previously unidentified features [B] | No. of features sampled [C] | Sample size (%) = C/(A+B) * 100 |
|----------------------------------------|-----------------------------------------|----------------------------------|---------------------------------------------|-----------------------------|---------------------------------|
| <b>Caves (Cave infiltration areas)</b> |                                         |                                  |                                             |                             |                                 |
| Surface karst features                 | Cave entrances                          |                                  |                                             |                             |                                 |
|                                        | Sinking streams or sinking watercourses |                                  |                                             |                             |                                 |
|                                        | Sinkholes                               |                                  |                                             |                             |                                 |
|                                        | Epikarst exposures                      |                                  |                                             |                             |                                 |
|                                        | Karst springs                           |                                  |                                             |                             |                                 |
|                                        | Other surface karst features            |                                  |                                             |                             |                                 |
| Totals                                 |                                         |                                  |                                             |                             |                                 |

#### INSTRUCTIONS FOR COMPLETING FIELD FORMS

|        |                                                                                                                                                                                                                                                                                                                              |
|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| STEP 1 | Complete Karst Sample Unit (KSU) / Opening Information on FORM - Sample Unit on page 1                                                                                                                                                                                                                                       |
| STEP 2 | Complete Field Data for every Karst Feature sampled in the KSU and record Causal Factors linked to any "No" answers (FORM CA, FORM CE, FORM SS/SW, FORM SH, FORM EE, FORM KS, and FORM OT - on pages 2 to 21). Provide sketches of the features sampled and retention areas on FORM - Sketches. Use as many forms as needed. |
| STEP 3 | Complete Field Data for Inter-feature Karst Terrain in the KSU and record Causal Factors linked to any "No" answers on FORM - IFKT - pages 25-26                                                                                                                                                                             |
| STEP 4 | Complete Summary of Results for KSU on FORM - Summary - pages 27-28                                                                                                                                                                                                                                                          |



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### Field Data - Caves (Cave Infiltration Areas)

| CA-1: BASIC INFORMATION TO COLLECT FOR EACH SAMPLE (only complete if cave infiltration area map available) [net of previous harvest(s)] |                       | Samples                                                                                     |      |      |      |      |
|-----------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------------------------------|------|------|------|------|
|                                                                                                                                         |                       | CA#1                                                                                        | CA#2 | CA#3 | CA#4 | CA#5 |
|                                                                                                                                         |                       | Enter values, or Yes (Y), No (N), Not Applicable (NA), or Don't Know (D) responses in cells |      |      |      |      |
| Cave ID                                                                                                                                 |                       |                                                                                             |      |      |      |      |
| Location of cave infiltration area sampled relative to block: <sup>1</sup>                                                              |                       |                                                                                             |      |      |      |      |
| Is area sampled a Type 1 or 2 cave infiltration area? <sup>2</sup> (enter Type no. in cells)                                            |                       |                                                                                             |      |      |      |      |
| Size of sample area in ha:                                                                                                              |                       |                                                                                             |      |      |      |      |
| Harvesting                                                                                                                              | Estimated level as %: |                                                                                             |      |      |      |      |
|                                                                                                                                         | Distribution:         |                                                                                             |      |      |      |      |
| New windthrow                                                                                                                           | Estimated level as %: |                                                                                             |      |      |      |      |
|                                                                                                                                         | Distribution:         |                                                                                             |      |      |      |      |

<sup>1</sup> Refer to REFERENCE CARD 1.

<sup>2</sup> A Type 1 cave infiltration area is the land above cave passages or chambers <3x the greatest dimension of the cave passage/chamber or <10 m below the surface. A Type 2 cave infiltration area is the land above cave passages or chambers >3x the greatest dimension of the cave passage/chamber or >10 m below the surface that are known to contain exceptional features. Note: this information can only be reliably obtained if a cave survey or inventory has been completed.

Sketch sample cave infiltration area in plan view using FORM - Sketches

| CA-2: INDICATOR DATA TO COLLECT FOR EACH SAMPLE [net of previous harvest(s)] |                                                    | Method | Target value | Samples                                                                                                                            |                          |                          |                          |                          |                          |                          |
|------------------------------------------------------------------------------|----------------------------------------------------|--------|--------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                                                                              |                                                    |        |              | CA#1                                                                                                                               | CA#2                     | CA#3                     | CA#4                     | CA#5                     |                          |                          |
|                                                                              |                                                    |        |              | Enter value ____, then check Yes (Y), No (N), Not Applicable (NA), or Don't Know (D) responses in the box <input type="checkbox"/> |                          |                          |                          |                          |                          |                          |
| <b>INTRODUCED MATERIALS</b>                                                  |                                                    |        |              |                                                                                                                                    |                          |                          |                          |                          |                          |                          |
| 1                                                                            | <b>Concentrations of logging slash<sup>1</sup></b> | P/A    | A            | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>BURNING</b>                                                               |                                                    |        |              |                                                                                                                                    |                          |                          |                          |                          |                          |                          |
| 2                                                                            | <b>Evidence of burning</b>                         | P/A    | A            | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>OTHER</b>                                                                 |                                                    |        |              |                                                                                                                                    |                          |                          |                          |                          |                          |                          |
| 3                                                                            | <b>Roads or other access structures</b>            | P/A    | A            | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

<sup>1</sup> Refer to REFERENCE CARD 1; pieces must be 7.5 cm in diameter or greater

VE = Visual Estimate  
P/A = Presence/Absence

Date: / /  Opening ID:  District:  KSU no.: **Field Data - Caves (Cave Infiltration Areas) (Cont'd)****NOTE: ADD THE FOLLOWING IF SAMPLE CAVE INFILTRATION AREA IS TYPE 1:****RETENTION**

|          |                                                                        |    |     |                      |                      |                      |                      |                      |
|----------|------------------------------------------------------------------------|----|-----|----------------------|----------------------|----------------------|----------------------|----------------------|
|          | Number of standing trees                                               |    |     |                      |                      |                      |                      |                      |
|          | Number of cut trees                                                    |    |     |                      |                      |                      |                      |                      |
| <b>4</b> | <b>% Retention of dominant and co-dominant trees (&gt;12.5 cm DBH)</b> | VE | 100 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |

**WINDTHROW (ANSWER 5 IF RETENTION INITIALLY PRESENT)**

|          |                                          |    |   |                      |                      |                      |                      |                      |
|----------|------------------------------------------|----|---|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>5</b> | <b>% New windthrow (&gt;12.5 cm DBH)</b> | VE | 0 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|----------|------------------------------------------|----|---|----------------------|----------------------|----------------------|----------------------|----------------------|

**NOTE: ADD THE FOLLOWING IF SAMPLE CAVE INFILTRATION AREA IS TYPE 2:****RETENTION**

|          |                                                       |    |   |                      |                      |                      |                      |                      |
|----------|-------------------------------------------------------|----|---|----------------------|----------------------|----------------------|----------------------|----------------------|
| <b>6</b> | <b>% Retention of windfirm non-merchantable trees</b> | VE | 0 | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|----------|-------------------------------------------------------|----|---|----------------------|----------------------|----------------------|----------------------|----------------------|

**RESULTS FOR CAVES  
(Cave Infiltration Areas)****Samples****Total for  
KSU**

|                         | CA#1 | CA#2 | CA#3 | CA#4 | CA#5 |  |
|-------------------------|------|------|------|------|------|--|
| Total number of "Yes's" |      |      |      |      |      |  |
| Total number of "No's"  |      |      |      |      |      |  |
| Total number of "NA's"  |      |      |      |      |      |  |
| Total number of "D's"   |      |      |      |      |      |  |

**CAUSAL FACTORS FOR DISTURBANCES**

Check boxes and indicate related indicator statement by number for human-caused factors

|              | FACTOR                                                                    | HARVEST  | SAMPLES              |                      |                      |                      |                      |
|--------------|---------------------------------------------------------------------------|----------|----------------------|----------------------|----------------------|----------------------|----------------------|
| Human-caused | Logging                                                                   | Current  | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              |                                                                           | Previous | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              | Road construction and related activities                                  | Current  | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              |                                                                           | Previous | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              | Introduced materials (i.e., logging slash or road construction materials) | Current  | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              |                                                                           | Previous | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              | Burning                                                                   | Current  | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              |                                                                           | Previous | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              | Other                                                                     | Current  | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              |                                                                           | Previous | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              | Recreation impacts                                                        |          | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |
|              | Other human-caused factors or influences                                  |          | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |



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### CAUSAL FACTORS FOR DISTURBANCES

Check boxes and indicate related indicator statement by number for human-caused factors

|         |  | FACTOR                                               | HARVEST | SAMPLES                  |                          |                          |                          |                          |
|---------|--|------------------------------------------------------|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Natural |  | Wind                                                 |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Fire                                                 |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Geomorphic (e.g., natural landslides)                |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Insects and pathogens                                |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Animal impacts (e.g., grazing, browsing, or pugging) |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Other natural disturbances                           |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Majority of forestry activity-related disturbances caused by: Previous harvest ☐ Most recent harvest ☐

Natural or human caused geomorphic disturbance originated in an adjacent or upland area ☐



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| Field Data - Cave Entrances                                                              |                                           |               |                                                                                            |      |      |      |      |
|------------------------------------------------------------------------------------------|-------------------------------------------|---------------|--------------------------------------------------------------------------------------------|------|------|------|------|
| CE-1: BASIC INFORMATION<br>TO COLLECT FOR EACH<br>SAMPLE<br>[net of previous harvest(s)] |                                           |               | Samples                                                                                    |      |      |      |      |
|                                                                                          |                                           |               | CE#1                                                                                       | CE#2 | CE#3 | CE#4 | CE#5 |
|                                                                                          |                                           |               | Enter values, or Yes (Y), No (N), Not Applicable (NA) or Don't Know (D) responses in cells |      |      |      |      |
| Karst Feature ID:                                                                        |                                           |               |                                                                                            |      |      |      |      |
| Location of cave entrance relative to block:                                             |                                           |               |                                                                                            |      |      |      |      |
| UTM                                                                                      | Easting:                                  |               |                                                                                            |      |      |      |      |
|                                                                                          | Northing:                                 |               |                                                                                            |      |      |      |      |
| Elevation of entrance in m:                                                              |                                           |               |                                                                                            |      |      |      |      |
| Cross-sectional area of entrance mouth or threshold in m <sup>2</sup> :                  |                                           |               |                                                                                            |      |      |      |      |
| Is entrance enclosed by a sinkhole?                                                      |                                           |               |                                                                                            |      |      |      |      |
| Enclosing Sinkhole                                                                       | Mean length in m:                         |               |                                                                                            |      |      |      |      |
|                                                                                          | Mean width in m:                          |               |                                                                                            |      |      |      |      |
|                                                                                          | Mean depth in m:                          |               |                                                                                            |      |      |      |      |
| Is entrance part of a feature complex (not including an enclosing sinkhole)?             |                                           |               |                                                                                            |      |      |      |      |
| Is entrance part of a feature cluster?                                                   |                                           |               |                                                                                            |      |      |      |      |
| Distance to closest other karst feature (any category) in m:                             |                                           |               |                                                                                            |      |      |      |      |
| Does a retention area surround entrance from edge of entrance outward?                   |                                           |               |                                                                                            |      |      |      |      |
| If retention area (RA) present                                                           | Width of RA to North in m:                |               |                                                                                            |      |      |      |      |
|                                                                                          | Width of RA to East in m:                 |               |                                                                                            |      |      |      |      |
|                                                                                          | Width of RA to South in m:                |               |                                                                                            |      |      |      |      |
|                                                                                          | Width of RA to West in m:                 |               |                                                                                            |      |      |      |      |
|                                                                                          | % Level of harvesting in RA up to 80 m    | To North:     |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To East:      |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To South:     |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To West:      |                                                                                            |      |      |      |      |
|                                                                                          |                                           | Distribution: |                                                                                            |      |      |      |      |
|                                                                                          | % Level of new windthrow in RA up to 80 m | To North:     |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To East:      |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To South:     |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To West:      |                                                                                            |      |      |      |      |
|                                                                                          |                                           | Distribution: |                                                                                            |      |      |      |      |
| Windthrow treatment for RA:                                                              |                                           |               |                                                                                            |      |      |      |      |
| Did you take a representative photo of entrance? Enter photo file names.                 |                                           |               |                                                                                            |      |      |      |      |



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## Field Data - Cave Entrances (Cont'd)

Sketch entrances and retention areas in plan view using FORM - Sketches

| CE-2: INDICATOR DATA TO COLLECT FOR EACH SAMPLE<br>[net of previous harvest(s)]                                     |                                                                              |     | Method | Target Value | Samples                                                                                                                            |                          |                          |                          |                          |  |  |
|---------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-----|--------|--------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|--|
|                                                                                                                     |                                                                              |     |        |              | CE#1                                                                                                                               | CE#2                     | CE#3                     | CE#4                     | CE#5                     |  |  |
|                                                                                                                     |                                                                              |     |        |              | Enter value ____, then check Yes (Y), No (N), Not Applicable (NA), or Don't Know (D) responses in the box <input type="checkbox"/> |                          |                          |                          |                          |  |  |
| RETENTION                                                                                                           |                                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
| 1                                                                                                                   | % Retention of trees with roots embedded in entrance                         | VE  | 100    |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |
| WINDTHROW                                                                                                           |                                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
| 2                                                                                                                   | New windthrown trees with roots embedded in entrance                         | P/A | A      |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |
| SOIL/GROUND DISTURBANCES                                                                                            |                                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
| 3                                                                                                                   | % Disturbed ground on any slopes leading directly to entrance                | VE  | 0      |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |
| INTRODUCED MATERIALS                                                                                                |                                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
| 4                                                                                                                   | % Blockage of entrance with logging slash                                    | VE  | 0      |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |
| 5                                                                                                                   | % Blockage of entrance with road construction material                       | VE  | 0      |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |
| <b>NOTE: ADD THE FOLLOWING IF ENTRANCE MOUTH OR THRESHOLD IS ENCLOSED BY A SINKHOLE (EVALUATE WITHIN SINKHOLE):</b> |                                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
| RETENTION                                                                                                           |                                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
|                                                                                                                     | Number of standing trees                                                     |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
|                                                                                                                     | Number of cut trees                                                          |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
| 6                                                                                                                   | % Level of retention of dominant and co-dominant trees (>12.5 cm DBH)        | RC2 | 100    |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |
| WINDTHROW (ANSWER 7 IF RETENTION INITIALLY PRESENT)                                                                 |                                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
|                                                                                                                     | Number of standing trees                                                     |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
|                                                                                                                     | Number of old windthrown trees                                               |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
|                                                                                                                     | Number of new windthrown trees                                               |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
|                                                                                                                     | % Old windthrow                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
|                                                                                                                     | % New windthrow                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
| 7                                                                                                                   | % New windthrow (net of natural and/or pre-treatment windthrow)              | RC2 | ≤0     |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |
| 8                                                                                                                   | Windthrown tree material coming in from outside                              | P/A | A      |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |
| SHADE                                                                                                               |                                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
| 9                                                                                                                   | Evidence of change to pre-harvest shade level                                | P/A | A      |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |
| NATIVE LOWER PLANT COMMUNITY                                                                                        |                                                                              |     |        |              |                                                                                                                                    |                          |                          |                          |                          |  |  |
| 10                                                                                                                  | Evidence of change to native lower plant community (e.g., dessicated mosses) | P/A | A      |              | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |  |  |



Date: / /  Opening ID:  District:  KSU no.:

| Field Data - Cave Entrances (Cont'd)                                                    |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------|--------------------------|--------------------------|--------------------------|--------------------------|
| 11                                                                                      | Invasive plants                                                                                      | P/A                                                                       | A        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| INTRODUCED MATERIALS                                                                    |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| 12                                                                                      | Concentrations of logging slash <sup>1</sup>                                                         | P/A                                                                       | A        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 13                                                                                      | Road construction material                                                                           | P/A                                                                       | A        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| NOTE: ADD THE FOLLOWING IF ENCLOSING SINKHOLE HAS A DISTINCT MICROCLIMATE:              |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| RETENTION                                                                               |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| 14                                                                                      | % Retention of dominant and co-dominant trees (>12.5 cm DBH) up to 80 m outward from rim of sinkhole | VE                                                                        | 100%     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| WINDTHROW (ANSWER 5 IF RETENTION INITIALLY PRESENT)                                     |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| 15                                                                                      | % New windthrow up to 80 m outward from rim of sinkhole                                              | VE                                                                        | 0        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <sup>1</sup> Refer to REFERENCE CARD 1                                                  |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| RESULTS FOR CAVE ENTRANCES                                                              |                                                                                                      | Samples                                                                   |          |                          |                          |                          | Total for KSU            |
|                                                                                         |                                                                                                      | CA#1                                                                      | CA#2     | CA#3                     | CA#4                     | CA#5                     |                          |
| Total number of "Yes's"                                                                 |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| Total number of "No's"                                                                  |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| Total number of "NA's"                                                                  |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| Total number of "D's"                                                                   |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| CAUSAL FACTORS FOR DISTURBANCES                                                         |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
| Check boxes and indicate related indicator statement by number for human-caused factors |                                                                                                      |                                                                           |          |                          |                          |                          |                          |
|                                                                                         |                                                                                                      | FACTOR                                                                    | HARVEST  | SAMPLES                  |                          |                          |                          |
| Human-caused                                                                            | Harvest-related                                                                                      | Logging                                                                   | Current  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         |                                                                                                      |                                                                           | Previous | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         |                                                                                                      | Road construction and related activities                                  | Current  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         |                                                                                                      |                                                                           | Previous | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         |                                                                                                      | Introduced materials (i.e., logging slash or road construction materials) | Current  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         |                                                                                                      |                                                                           | Previous | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         |                                                                                                      | Burning                                                                   | Current  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         |                                                                                                      |                                                                           | Previous | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         |                                                                                                      | Other                                                                     | Current  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|                                                                                         |                                                                                                      |                                                                           | Previous | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



Date:    /    /     Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

### CAUSAL FACTORS FOR DISTURBANCES

Check boxes and indicate related indicator statement by number for human-caused factors

|         |  | FACTOR                                               | HARVEST | SAMPLES                  |                          |                          |                          |                          |
|---------|--|------------------------------------------------------|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|         |  | Recreation impacts                                   |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Other human-caused factors or influences             |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Natural |  | Wind                                                 |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Fire                                                 |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Geomorphic (e.g., natural landslides)                |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Insects and pathogens                                |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Animal impacts (e.g., grazing, browsing, or pugging) |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Other natural disturbances                           |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Majority of forestry activity-related disturbances caused by: Previous harvest ☐ Most recent harvest ☐

Natural or human caused geomorphic disturbance originated in an adjacent or upland area ☐



Date: / /  Opening ID:  District:  KSU no.:

## Field Data - Sinking Streams and Sinking Watercourses<sup>1</sup>

| SS/SW-1: BASIC INFORMATION<br>TO COLLECT FOR EACH<br>SAMPLE<br>[net of previous harvest(s)]           |                                                 |                  | Samples (Select SS or SW types)                                                               |                 |                 |                 |                 |
|-------------------------------------------------------------------------------------------------------|-------------------------------------------------|------------------|-----------------------------------------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|
|                                                                                                       |                                                 |                  | SS#1 or<br>SW#1                                                                               | SS#2 or<br>SW#2 | SS#3 or<br>SW#3 | SS#4 or<br>SW#4 | SS#5 or<br>SW#5 |
|                                                                                                       |                                                 |                  | Enter values, or Yes (Y), No (N), Not Applicable (NA)<br>or Don't Know (D) responses in cells |                 |                 |                 |                 |
| Karst Feature ID:                                                                                     |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| Location of SS or SW relative to block:                                                               |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| UTM                                                                                                   | Easting at sinkpoint:                           |                  |                                                                                               |                 |                 |                 |                 |
|                                                                                                       | Northing at sinkpoint:                          |                  |                                                                                               |                 |                 |                 |                 |
| Distance in m from sinkpoint to downstream<br>end of sample segment                                   |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| Elevation at sinkpoint in m:                                                                          |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| Location of sample segment (m along<br>channel from sinkpoint                                         |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| Is sinkpoint atmospherically open?                                                                    |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| Is sinkpoint a cave entrance?                                                                         |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| Is sinkpoint enclosed by a sinkhole?                                                                  |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| If sinkhole<br>present                                                                                | Mean length in m:                               |                  |                                                                                               |                 |                 |                 |                 |
|                                                                                                       | Mean width in m:                                |                  |                                                                                               |                 |                 |                 |                 |
|                                                                                                       | Mean depth in m:                                |                  |                                                                                               |                 |                 |                 |                 |
| Length of sample segment in m:                                                                        |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| Mean width of channel in sample<br>segment if a sinking stream, in m:                                 |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| Is there a riparian reserve along sample segment?                                                     |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| If riparian reserve (RR) present                                                                      | Width of RR from left side in m:                |                  |                                                                                               |                 |                 |                 |                 |
|                                                                                                       | Width of RR from right side in m:               |                  |                                                                                               |                 |                 |                 |                 |
|                                                                                                       | % Level<br>of harvesting in<br>RR up to 20 m    | From left side:  |                                                                                               |                 |                 |                 |                 |
|                                                                                                       |                                                 | From right side: |                                                                                               |                 |                 |                 |                 |
|                                                                                                       |                                                 | Distribution:    |                                                                                               |                 |                 |                 |                 |
|                                                                                                       | % Level<br>of new windthrow<br>in RR up to 20 m | From left side:  |                                                                                               |                 |                 |                 |                 |
|                                                                                                       |                                                 | From right side: |                                                                                               |                 |                 |                 |                 |
|                                                                                                       |                                                 | Distribution:    |                                                                                               |                 |                 |                 |                 |
| Windthrow treatment for RR:                                                                           |                                                 |                  |                                                                                               |                 |                 |                 |                 |
| Did you take a representative photo along sample<br>segment and at sinkpoint? Enter photo file names. |                                                 |                  |                                                                                               |                 |                 |                 |                 |



Date: / /  Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

### Field Data - Sinking Streams and Sinking Watercourses (Cont'd)

<sup>1</sup> A sinking watercourse is a watercourse that sinks into the subsurface at a distinct sink point, and possesses one or more of the following characteristics: poorly or non-defined channels (including flow over an organic bed); exhibits no evidence of scouring or alluvial deposition; or flows on the surface for less than 100 meters. As a minimum threshold, a sinking watercourse follows a confined, linear drainage course with a distinguishable cross sectional low point, accompanied by the presence of hydrophytic vegetation (plants that thrive in saturated soils).

Sketch sampled segments and retention areas in plan view using FORM - Sketches

| SS/SW-2: INDICATOR DATA TO COLLECT FOR EACH SAMPLE<br>[net of previous harvest(s)]                                                 |                                                                                                              |     | Samples |              |                          |                          |                          |                          |                          |
|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----|---------|--------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                                                                                                                                    |                                                                                                              |     | Method  | Target Value | SS#1 or SW#1             | SS#2 or SW#2             | SS#3 or SW#3             | SS#4 or SW#4             | SS#5 or SW#5             |
| Enter value ____, then check Yes (Y), No (N), Not Applicable (NA), or Don't Know (D) responses in the box <input type="checkbox"/> |                                                                                                              |     |         |              |                          |                          |                          |                          |                          |
| <b>RETENTION</b>                                                                                                                   |                                                                                                              |     |         |              |                          |                          |                          |                          |                          |
| 1                                                                                                                                  | Retention of trees with roots embedded in sinking stream bank or sinking watercourse edge                    | P/A | P       |              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2                                                                                                                                  | % Retention of windfirm non-merchantable trees within 5 m of sinking stream bank or sinking watercourse edge | VE  | >50     |              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>WINDTHROW (ANSWER 3 IF RETENTION INITIALLY PRESENT)</b>                                                                         |                                                                                                              |     |         |              |                          |                          |                          |                          |                          |
| 3                                                                                                                                  | New windthrown trees with roots embedded in sinking stream bank or sinking watercourse edge                  | P/A | A       |              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4                                                                                                                                  | New windthrown tree material coming onto sinking stream or sinking watercourse from outside                  | P/A | A       |              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>SOIL/GROUND DISTURBANCES</b>                                                                                                    |                                                                                                              |     |         |              |                          |                          |                          |                          |                          |
| 5                                                                                                                                  | % Recently disturbed sinking stream bank or channel                                                          | VE  | 0       |              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6                                                                                                                                  | % Bare soil within 10 m and hydrologically connected to sinking stream or sinking watercourse                | VE  | 0       |              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>INTRODUCED MATERIALS</b>                                                                                                        |                                                                                                              |     |         |              |                          |                          |                          |                          |                          |
| 7                                                                                                                                  | Logging slash on sinking stream channel or sinking watercourse                                               | VE  | 0       |              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8                                                                                                                                  | Road construction material on sinking stream channel or sinking watercourse                                  | VE  | 0       |              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |



Date: / /  Opening ID:  District:  KSU no.:

### Field Data - Sinking Streams and SWs (Cont'd)

| RESULTS FOR SINKING<br>STREAMS AND SWs | Samples         |                 |                 |                 |                 | Total<br>for<br>KSU |
|----------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|---------------------|
|                                        | SS#1 or<br>SW#1 | SS#2 or<br>SW#2 | SS#3 or<br>SW#3 | SS#4 or<br>SW#4 | SS#5 or<br>SW#5 |                     |
| Total number of "Yes's"                |                 |                 |                 |                 |                 |                     |
| Total number of "No's"                 |                 |                 |                 |                 |                 |                     |
| Total number of "NA's"                 |                 |                 |                 |                 |                 |                     |
| Total number of "D's"                  |                 |                 |                 |                 |                 |                     |

### CAUSAL FACTORS FOR DISTURBANCES

Check boxes and indicate related indicator statement by number for human-caused factors

|              |                                                      | FACTOR                                                                    | HARVEST                  | SAMPLES                  |                          |                          |                          |                          |
|--------------|------------------------------------------------------|---------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Human-caused | Harvest-related                                      | Logging                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Road construction and related activities                                  | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Introduced materials (i.e., logging slash or road construction materials) | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Burning                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Other                                                                     | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Recreation impacts                                   |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Other human-caused factors or influences             |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Natural      | Wind                                                 | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Fire                                                 | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Geomorphic (e.g., natural landslides)                | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Insects and pathogens                                | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Animal impacts (e.g., grazing, browsing, or pugging) | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Other natural disturbances                           | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |

Majority of forestry activity-related disturbances caused by: Previous harvest ☐ Most recent harvest ☐

Natural or human caused geomorphic disturbance originated in an adjacent or upland area ☐



Date: / /  Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

| Field Data - Sinkholes                                                             |                                           |               |                                                                                            |      |      |      |      |
|------------------------------------------------------------------------------------|-------------------------------------------|---------------|--------------------------------------------------------------------------------------------|------|------|------|------|
| SH-1: BASIC INFORMATION TO COLLECT FOR EACH SAMPLE<br>[net of previous harvest(s)] |                                           |               | Samples                                                                                    |      |      |      |      |
|                                                                                    |                                           |               | SH#1                                                                                       | SH#2 | SH#3 | SH#4 | SH#5 |
|                                                                                    |                                           |               | Enter values, or Yes (Y), No (N), Not Applicable (NA) or Don't Know (D) responses in cells |      |      |      |      |
| Karst Feature ID:                                                                  |                                           |               |                                                                                            |      |      |      |      |
| Location of sinkhole relative to block:                                            |                                           |               |                                                                                            |      |      |      |      |
| UTM                                                                                | Easting:                                  |               |                                                                                            |      |      |      |      |
|                                                                                    | Northing:                                 |               |                                                                                            |      |      |      |      |
| Elevation of sinkhole in m:                                                        |                                           |               |                                                                                            |      |      |      |      |
| Maximum length of sinkhole in m:                                                   |                                           |               |                                                                                            |      |      |      |      |
| Maximum width of sinkhole in m:                                                    |                                           |               |                                                                                            |      |      |      |      |
| Maximum depth of sinkhole in m:                                                    |                                           |               |                                                                                            |      |      |      |      |
| Is sinkhole part of a feature complex?                                             |                                           |               |                                                                                            |      |      |      |      |
| Is sinkhole part of a feature cluster?                                             |                                           |               |                                                                                            |      |      |      |      |
| Distance to closest other karst feature (any category) in m:                       |                                           |               |                                                                                            |      |      |      |      |
| Does a retention area surround sinkhole from rim of sinkhole outward?              |                                           |               |                                                                                            |      |      |      |      |
| If retention area (RA) present                                                     | Width of RA to North in m:                |               |                                                                                            |      |      |      |      |
|                                                                                    | Width of RA to East in m:                 |               |                                                                                            |      |      |      |      |
|                                                                                    | Width of RA to South in m:                |               |                                                                                            |      |      |      |      |
|                                                                                    | Width of RA to West in m:                 |               |                                                                                            |      |      |      |      |
|                                                                                    | % Level of harvesting in RA up to 80 m    | To North:     |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To East:      |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To South:     |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To West:      |                                                                                            |      |      |      |      |
|                                                                                    |                                           | Distribution: |                                                                                            |      |      |      |      |
|                                                                                    | % Level of new windthrow in RA up to 80 m | To North:     |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To East:      |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To South:     |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To West:      |                                                                                            |      |      |      |      |
|                                                                                    |                                           | Distribution: |                                                                                            |      |      |      |      |
| Windthrow treatment for RA:                                                        |                                           |               |                                                                                            |      |      |      |      |
| Did you take a representative photo of sinkhole? Enter photo file names.           |                                           |               |                                                                                            |      |      |      |      |
| Sketch sinkholes and retention areas in plan view using FORM - Sketches            |                                           |               |                                                                                            |      |      |      |      |



Date: MM/DD/YYYY Opening ID: District: KSU no.:

### Field Data - Sinkholes (Cont'd)

| SH-2: INDICATOR DATA TO COLLECT FOR EACH SAMPLE<br>[net of previous harvest(s)]        |                                                                                                      | Method | Target Value | Samples                                                                                                                            |                          |                          |                          |                          |
|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------|--------------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
|                                                                                        |                                                                                                      |        |              | SH#1                                                                                                                               | SH#2                     | SH#3                     | SH#4                     | SH#5                     |
|                                                                                        |                                                                                                      |        |              | Enter value ____, then check Yes (Y), No (N), Not Applicable (NA), or Don't Know (D) responses in the box <input type="checkbox"/> |                          |                          |                          |                          |
| <b>RETENTION</b>                                                                       |                                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
|                                                                                        | Number of standing trees                                                                             |        |              |                                                                                                                                    |                          |                          |                          |                          |
|                                                                                        | Number of cut trees                                                                                  |        |              |                                                                                                                                    |                          |                          |                          |                          |
| 1                                                                                      | % Level of retention of dominant and co-dominant trees (>12.5 cm DBH)                                | RC2    | 100          | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>WINDTHROW (ANSWER 2 IF RETENTION INITIALLY PRESENT)</b>                             |                                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
|                                                                                        | Number of standing trees                                                                             |        |              |                                                                                                                                    |                          |                          |                          |                          |
|                                                                                        | Number of old windthrown trees                                                                       |        |              |                                                                                                                                    |                          |                          |                          |                          |
|                                                                                        | Number of new windthrown trees                                                                       |        |              |                                                                                                                                    |                          |                          |                          |                          |
|                                                                                        | % Old windthrow                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
|                                                                                        | % New windthrow                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
| 2                                                                                      | % New windthrow B                                                                                    | RC2    | ≤0           | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3                                                                                      | New windthrown tree material coming in from outside                                                  | P/A    | A            | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>SOIL/GROUND DISTURBANCES</b>                                                        |                                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
| 4                                                                                      | % Disturbed ground on sideslopes                                                                     | VE     | 0            | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>INTRODUCED MATERIALS</b>                                                            |                                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
| 5                                                                                      | Concentrations of logging slash                                                                      | P/A    | A            | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6                                                                                      | Road construction material                                                                           | VE     | 0            | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>BURNING</b>                                                                         |                                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
| 7                                                                                      | Evidence of burning                                                                                  | P/A    | A            | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>NOTE: Add the following for sinkholes with a distinct microclimate:<sup>1</sup></b> |                                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
| <b>RETENTION</b>                                                                       |                                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
| 8                                                                                      | % Retention of dominant and co-dominant trees (>12.5 cm DBH) up to 80 m outward from rim of sinkhole | VE     | 100          | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| <b>WINDTHROW (ANSWER 9 IF RETENTION INITIALLY PRESENT)</b>                             |                                                                                                      |        |              |                                                                                                                                    |                          |                          |                          |                          |
| 9                                                                                      | % New windthrow up to 80 m outward from rim of sinkhole                                              | VE     | 0            | <input type="checkbox"/>                                                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

<sup>1</sup> Typically, sinkholes with a mean diameter >20 m and a maximum depth >7m



Date: / /  Opening ID:  District:  KSU no.:

| Field Data - Sinkholes (Cont'd)                                                         |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| SHADE                                                                                   |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
| 10                                                                                      | Evidence of change to pre-harvest shade level within sinkhole                                              | P/A                                                                       | A                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| NATIVE LOWER PLANT COMMUNITY                                                            |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
| 11                                                                                      | Evidence of change to native lower plant community within sinkhole (e.g., dessicated mosses)               | P/A                                                                       | A                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 12                                                                                      | Invasive plants                                                                                            | P/A                                                                       | A                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| OTHER                                                                                   |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
| 13                                                                                      | Presence of roads or other access structures, landings or quarries up to 80 m outward from rim of sinkhole | P/A                                                                       | A                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| RESULTS FOR SINKHOLES                                                                   |                                                                                                            | Samples                                                                   |                          |                          |                          |                          | Total for KSU            |                          |                          |
|                                                                                         |                                                                                                            | SH#1                                                                      | SH#2                     | SH#3                     | SH#4                     | SH#5                     |                          |                          |                          |
| Total number of "Yes's"                                                                 |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
| Total number of "No's"                                                                  |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
| Total number of "NA's"                                                                  |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
| Total number of "D's"                                                                   |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
| CAUSAL FACTORS FOR DISTURBANCES                                                         |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
| Check boxes and indicate related indicator statement by number for human-caused factors |                                                                                                            |                                                                           |                          |                          |                          |                          |                          |                          |                          |
|                                                                                         |                                                                                                            | FACTOR                                                                    | HARVEST                  | SAMPLES                  |                          |                          |                          |                          |                          |
| Human-caused                                                                            | Harvest-related                                                                                            | Logging                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                                                                                         |                                                                                                            |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                                                                                         |                                                                                                            | Road construction and related activities                                  | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                                                                                         |                                                                                                            |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                                                                                         |                                                                                                            | Introduced materials (i.e., logging slash or road construction materials) | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                                                                                         |                                                                                                            |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                                                                                         |                                                                                                            | Burning                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                                                                                         |                                                                                                            |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                                                                                         |                                                                                                            | Other                                                                     | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|                                                                                         |                                                                                                            |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| Recreation impacts                                                                      |                                                                                                            |                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
| Other human-caused factors or influences                                                |                                                                                                            |                                                                           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |



Date: / /  Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

### CAUSAL FACTORS FOR DISTURBANCES

Check boxes and indicate related indicator statement by number for human-caused factors

|         |  | FACTOR                                               | HARVEST | SAMPLES                  |                          |                          |                          |                          |
|---------|--|------------------------------------------------------|---------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Natural |  | Wind                                                 |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Fire                                                 |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Geomorphic (e.g., natural landslides)                |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Insects and pathogens                                |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Animal impacts (e.g., grazing, browsing, or pugging) |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|         |  | Other natural disturbances                           |         | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Majority of forestry activity-related disturbances caused by: Previous harvest ☐ Most recent harvest ☐

Natural or human caused geomorphic disturbance originated in an adjacent or upland area ☐



Date: / /  Opening ID:  District:  KSU no.:

| Field Data - Epikarst Exposures                                                          |                                           |                                                                                            |      |      |      |      |
|------------------------------------------------------------------------------------------|-------------------------------------------|--------------------------------------------------------------------------------------------|------|------|------|------|
| EE-1: BASIC INFORMATION<br>TO COLLECT FOR<br>EACH SAMPLE<br>[net of previous harvest(s)] |                                           | Samples                                                                                    |      |      |      |      |
|                                                                                          |                                           | EE#1                                                                                       | EE#2 | EE#3 | EE#4 | EE#5 |
|                                                                                          |                                           | Enter values, or Yes (Y), No (N), Not Applicable (NA) or Don't Know (D) responses in cells |      |      |      |      |
| Karst Feature ID:                                                                        |                                           |                                                                                            |      |      |      |      |
| Location of epikarst exposure relative to block:                                         |                                           |                                                                                            |      |      |      |      |
| UTM                                                                                      | Easting:                                  |                                                                                            |      |      |      |      |
|                                                                                          | Northing:                                 |                                                                                            |      |      |      |      |
| Elevation of epikarst exposure in m:                                                     |                                           |                                                                                            |      |      |      |      |
| Area of epikarst exposure in m <sup>2</sup> :                                            |                                           |                                                                                            |      |      |      |      |
| Are there small-scale solution openings within exposure?                                 |                                           |                                                                                            |      |      |      |      |
| Is exposure part of a feature complex?                                                   |                                           |                                                                                            |      |      |      |      |
| Is exposure part of a feature cluster?                                                   |                                           |                                                                                            |      |      |      |      |
| Distance to closest other karst feature (any category) in m:                             |                                           |                                                                                            |      |      |      |      |
| Does a retention area surround the exposure from edge of epikarst exposure outward?      |                                           |                                                                                            |      |      |      |      |
| If retention area (RA) present                                                           | Width of RA to North in m:                |                                                                                            |      |      |      |      |
|                                                                                          | Width of RA to East in m:                 |                                                                                            |      |      |      |      |
|                                                                                          | Width of RA to South in m:                |                                                                                            |      |      |      |      |
|                                                                                          | Width of RA to West in m:                 |                                                                                            |      |      |      |      |
|                                                                                          | % Level of harvesting in RA up to 80 m    | To North:                                                                                  |      |      |      |      |
|                                                                                          |                                           | To East:                                                                                   |      |      |      |      |
|                                                                                          |                                           | To South:                                                                                  |      |      |      |      |
|                                                                                          |                                           | To West:                                                                                   |      |      |      |      |
|                                                                                          |                                           | Distribution:                                                                              |      |      |      |      |
|                                                                                          | % Level of new windthrow in RA up to 80 m | To North:                                                                                  |      |      |      |      |
|                                                                                          |                                           | To East:                                                                                   |      |      |      |      |
|                                                                                          |                                           | To South:                                                                                  |      |      |      |      |
|                                                                                          |                                           | To West:                                                                                   |      |      |      |      |
|                                                                                          |                                           | Distribution:                                                                              |      |      |      |      |
|                                                                                          | Windthrow treatment for RA:               |                                                                                            |      |      |      |      |
| Did you take a representative photo of exposure? Enter photo file names.                 |                                           |                                                                                            |      |      |      |      |



Date: / /  Opening ID:  District:  KSU no.:

### Field Data - Epikarst Exposures (Cont'd)

Sketch exposures and retention areas in plan view using FORM - Sketches

| EE-2: INDICATOR DATA<br>TO COLLECT FOR<br>EACH SAMPLE [net<br>of previous harvest(s)]                                                    | Method                                                                      | Target<br>Value | Samples |                      |                      |                      |                      |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|-----------------|---------|----------------------|----------------------|----------------------|----------------------|--|--|
|                                                                                                                                          |                                                                             |                 | EE#1    | EE#2                 | EE#3                 | EE#4                 | EE#5                 |  |  |
| Enter value ____, then check Yes (Y),<br>No (N), Not Applicable (NA), or<br>Don't Know (D) responses in the box <input type="checkbox"/> |                                                                             |                 |         |                      |                      |                      |                      |  |  |
| <b>RETENTION</b>                                                                                                                         |                                                                             |                 |         |                      |                      |                      |                      |  |  |
|                                                                                                                                          | Number of standing trees                                                    |                 |         |                      |                      |                      |                      |  |  |
|                                                                                                                                          | Number of cut trees                                                         |                 |         |                      |                      |                      |                      |  |  |
| 1                                                                                                                                        | % Level of retention of<br>dominant and co-dominant<br>trees (>12.5 cm DBH) | RC2             | 100     | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| <b>WINDTHROW (ANSWER 2 IF RETENTION INITIALLY PRESENT)</b>                                                                               |                                                                             |                 |         |                      |                      |                      |                      |  |  |
|                                                                                                                                          | Number of standing trees                                                    |                 |         |                      |                      |                      |                      |  |  |
|                                                                                                                                          | Number of old windthrown<br>trees                                           |                 |         |                      |                      |                      |                      |  |  |
|                                                                                                                                          | Number of new windthrown<br>trees                                           |                 |         |                      |                      |                      |                      |  |  |
|                                                                                                                                          | % Old windthrow                                                             |                 |         |                      |                      |                      |                      |  |  |
|                                                                                                                                          | % New windthrow                                                             |                 |         |                      |                      |                      |                      |  |  |
| 2                                                                                                                                        | % New windthrow B                                                           | RC2             | ≤0      | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 3                                                                                                                                        | New windthrown tree<br>material coming in from<br>outside                   | P/A             | A       | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| <b>SOIL/GROUND DISTURBANCES</b>                                                                                                          |                                                                             |                 |         |                      |                      |                      |                      |  |  |
|                                                                                                                                          | Area of exposure in m <sup>2</sup>                                          |                 |         |                      |                      |                      |                      |  |  |
|                                                                                                                                          | Area of soil disturbance in m <sup>2</sup>                                  |                 |         |                      |                      |                      |                      |  |  |
| 4                                                                                                                                        | % Level of soil disturbance                                                 | RC2             | 0       | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| <b>INTRODUCED MATERIALS</b>                                                                                                              |                                                                             |                 |         |                      |                      |                      |                      |  |  |
| 5                                                                                                                                        | Concentrations of logging<br>slash <sup>1</sup>                             | P/A             | A       | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 6                                                                                                                                        | Logging slash in small-<br>scale solution openings                          | P/A             | A       | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 7                                                                                                                                        | Road construction material                                                  | P/A             | A       | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| <b>BURNING</b>                                                                                                                           |                                                                             |                 |         |                      |                      |                      |                      |  |  |
| 8                                                                                                                                        | Evidence of burning                                                         | P/A             | A       | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |

<sup>1</sup> Refer to REFERENCE CARD 1



Date: / /  Opening ID:  District:  KSU no.:

### Field Data - Epikarst Exposures (Cont'd)

| RESULTS FOR EPIKARST EXPOSURES | Samples |      |      |      |      | Total for KSU |
|--------------------------------|---------|------|------|------|------|---------------|
|                                | EE#1    | EE#2 | EE#3 | EE#4 | EE#5 |               |
| Total number of "Yes's"        |         |      |      |      |      |               |
| Total number of "No's"         |         |      |      |      |      |               |
| Total number of "NA's"         |         |      |      |      |      |               |
| Total number of "D's"          |         |      |      |      |      |               |

### CAUSAL FACTORS FOR DISTURBANCES

Check boxes and indicate related indicator statement by number for human-caused factors

|              |                                                      | FACTOR                                                                    | HARVEST                  | SAMPLES                  |                          |                          |                          |                          |
|--------------|------------------------------------------------------|---------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Human-caused | Harvest-related                                      | Logging                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Road construction and related activities                                  | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Introduced materials (i.e., logging slash or road construction materials) | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Burning                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Other                                                                     | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Recreation impacts                                   |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Other human-caused factors or influences             |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Natural      | Wind                                                 | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Fire                                                 | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Geomorphic (e.g., natural landslides)                | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Insects and pathogens                                | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Animal impacts (e.g., grazing, browsing, or pugging) | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Other natural disturbances                           | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |

Majority of forestry activity-related disturbances caused by: Previous harvest ☐ Most recent harvest ☐

Natural or human caused geomorphic disturbance originated in an adjacent or upland area ☐



Date: MMDDYYYY Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

| Field Data - Karst Springs                                                               |                                           |               |                                                                                            |      |      |      |      |
|------------------------------------------------------------------------------------------|-------------------------------------------|---------------|--------------------------------------------------------------------------------------------|------|------|------|------|
| KS-1: BASIC INFORMATION<br>TO COLLECT FOR<br>EACH SAMPLE<br>[net of previous harvest(s)] |                                           |               | Samples                                                                                    |      |      |      |      |
|                                                                                          |                                           |               | KS#1                                                                                       | KS#2 | KS#3 | KS#4 | KS#5 |
|                                                                                          |                                           |               | Enter values, or Yes (Y), No (N), Not Applicable (NA) or Don't Know (D) responses in cells |      |      |      |      |
| Karst Feature ID:                                                                        |                                           |               |                                                                                            |      |      |      |      |
| Location of karst spring relative to block:                                              |                                           |               |                                                                                            |      |      |      |      |
| UTM                                                                                      | Easting:                                  |               |                                                                                            |      |      |      |      |
|                                                                                          | Northing:                                 |               |                                                                                            |      |      |      |      |
| Elevation of karst spring in m:                                                          |                                           |               |                                                                                            |      |      |      |      |
| Size of outflow opening in m <sup>2</sup>                                                |                                           |               |                                                                                            |      |      |      |      |
| Estimated flow rate of rising stream at bankfull levels in L/s (see protocol):           |                                           |               |                                                                                            |      |      |      |      |
| Is karst spring part of a feature complex?                                               |                                           |               |                                                                                            |      |      |      |      |
| Is karst spring part of a feature cluster?                                               |                                           |               |                                                                                            |      |      |      |      |
| Distance to closest other karst feature (any category) in m:                             |                                           |               |                                                                                            |      |      |      |      |
| Does a retention area surround outflow opening from edge of opening outward?             |                                           |               |                                                                                            |      |      |      |      |
| If retention area (RA) present                                                           | Width of RA to North in m:                |               |                                                                                            |      |      |      |      |
|                                                                                          | Width of RA to East in m:                 |               |                                                                                            |      |      |      |      |
|                                                                                          | Width of RA to South in m:                |               |                                                                                            |      |      |      |      |
|                                                                                          | Width of RA to West in m:                 |               |                                                                                            |      |      |      |      |
|                                                                                          | % Level of harvesting in RA up to 80 m    | To North:     |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To East:      |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To South:     |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To West:      |                                                                                            |      |      |      |      |
|                                                                                          |                                           | Distribution: |                                                                                            |      |      |      |      |
|                                                                                          | % Level of new windthrow in RA up to 80 m | To North:     |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To East:      |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To South:     |                                                                                            |      |      |      |      |
|                                                                                          |                                           | To West:      |                                                                                            |      |      |      |      |
|                                                                                          |                                           | Distribution: |                                                                                            |      |      |      |      |
| Windthrow treatment for RA:                                                              |                                           |               |                                                                                            |      |      |      |      |
| Did you take a representative photo of karst spring? Enter photo file names.             |                                           |               |                                                                                            |      |      |      |      |



Date: / /  Opening ID:  District:  KSU no.:

### Field Data - Karst Springs (Cont'd)

Sketch karst springs and retention areas in plan view using FORM - Sketches

| KS-2: INDICATOR DATA TO COLLECT FOR EACH SAMPLE<br>[net of previous harvest(s)]                                                    |                                                                                             | Method | Target Value | Samples              |                      |                      |                      |                      |  |  |
|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------|--------------|----------------------|----------------------|----------------------|----------------------|----------------------|--|--|
|                                                                                                                                    |                                                                                             |        |              | KS#1                 | KS#2                 | KS#3                 | KS#4                 | KS#5                 |  |  |
| Enter value ____, then check Yes (Y), No (N), Not Applicable (NA), or Don't Know (D) responses in the box <input type="checkbox"/> |                                                                                             |        |              |                      |                      |                      |                      |                      |  |  |
| RETENTION                                                                                                                          |                                                                                             |        |              |                      |                      |                      |                      |                      |  |  |
| 1                                                                                                                                  | Retention of trees with roots embedded in outflow opening                                   | P/A    | P            | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 2                                                                                                                                  | % Retention of dominant and co-dominant trees (>12.5 cm DBH) within 20 m of outflow opening | VE     | 100          | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| WINDTHROW (ANSWER 3 AND 5 IF RETENTION INITIALLY PRESENT)                                                                          |                                                                                             |        |              |                      |                      |                      |                      |                      |  |  |
| 3                                                                                                                                  | New windthrown trees with roots embedded in outflow opening                                 | P/A    | A            | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 4                                                                                                                                  | New windthrown tree material at outflow opening coming in from outside                      | P/A    | A            | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 5                                                                                                                                  | % New windthrow within 20 m of outflow opening                                              | VE     | 0            | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| SOIL/GROUND DISTURBANCES                                                                                                           |                                                                                             |        |              |                      |                      |                      |                      |                      |  |  |
| 6                                                                                                                                  | % Disturbed ground on any slopes leading directly to outflow opening                        | VE     | 0            | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| INTRODUCED MATERIALS                                                                                                               |                                                                                             |        |              |                      |                      |                      |                      |                      |  |  |
| 7                                                                                                                                  | % Blockage of outflow opening with logging slash                                            | VE     | 0            | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 8                                                                                                                                  | % Blockage of outflow opening with road construction material                               | VE     | 0            | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| BURNING                                                                                                                            |                                                                                             |        |              |                      |                      |                      |                      |                      |  |  |
| 9                                                                                                                                  | Evidence of burning within 20 m of outflow opening                                          | P/A    | A            | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |

Date: / /  Opening ID:  District:  KSU no.: **Field Data - Karst Springs (Cont'd)**

| RESULTS FOR KARST SPRINGS | Samples |      |      |      |      | Total for KSU |
|---------------------------|---------|------|------|------|------|---------------|
|                           | KS#1    | KS#2 | KS#3 | KS#4 | KS#5 |               |
| Total number of "Yes's"   |         |      |      |      |      |               |
| Total number of "No's"    |         |      |      |      |      |               |
| Total number of "NA's"    |         |      |      |      |      |               |
| Total number of "D's"     |         |      |      |      |      |               |

**CAUSAL FACTORS FOR DISTURBANCES**

Check boxes and indicate related indicator statement by number for human-caused factors

|              |                                          | FACTOR                                                                    | HARVEST                  | SAMPLES                  |                          |                          |                          |                          |
|--------------|------------------------------------------|---------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Human-caused | Harvest-related                          | Logging                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                          |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                          | Road construction and related activities                                  | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                          |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                          | Introduced materials (i.e., logging slash or road construction materials) | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                          |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                          | Burning                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                          |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                          | Other                                                                     | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                          |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Recreation impacts                       |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Other human-caused factors or influences |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Natural      |                                          | Wind                                                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|              |                                          | Fire                                                                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|              |                                          | Geomorphic (e.g., natural landslides)                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|              |                                          | Insects and pathogens                                                     | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|              |                                          | Animal impacts (e.g., grazing, browsing, or pugging)                      | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |
|              |                                          | Other natural disturbances                                                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |

Majority of forestry activity-related disturbances caused by: Previous harvest ☐ Most recent harvest ☐Natural or human caused geomorphic disturbance originated in an adjacent or upland area ☐



Date: MMDDYYYY Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

| Field Data - Other Surface Karst Features                                          |                                           |               |                                                                                            |      |      |      |      |
|------------------------------------------------------------------------------------|-------------------------------------------|---------------|--------------------------------------------------------------------------------------------|------|------|------|------|
| OT-1: BASIC INFORMATION TO COLLECT FOR EACH SAMPLE<br>[net of previous harvest(s)] |                                           |               | Samples                                                                                    |      |      |      |      |
|                                                                                    |                                           |               | OT#1                                                                                       | OT#2 | OT#3 | OT#4 | OT#5 |
|                                                                                    |                                           |               | Enter values, or Yes (Y), No (N), Not Applicable (NA) or Don't Know (D) responses in cells |      |      |      |      |
| Karst Feature ID:                                                                  |                                           |               |                                                                                            |      |      |      |      |
| Specific type of karst feature: <sup>1</sup>                                       |                                           |               |                                                                                            |      |      |      |      |
| Location of feature relative to block:                                             |                                           |               |                                                                                            |      |      |      |      |
| UTM                                                                                | Easting:                                  |               |                                                                                            |      |      |      |      |
|                                                                                    | Northing:                                 |               |                                                                                            |      |      |      |      |
| Elevation in m:                                                                    |                                           |               |                                                                                            |      |      |      |      |
| Length of feature in m:                                                            |                                           |               |                                                                                            |      |      |      |      |
| Width of feature in m:                                                             |                                           |               |                                                                                            |      |      |      |      |
| Depth or height of feature in m:                                                   |                                           |               |                                                                                            |      |      |      |      |
| Is feature part of a feature complex?                                              |                                           |               |                                                                                            |      |      |      |      |
| Is feature part of a cluster?                                                      |                                           |               |                                                                                            |      |      |      |      |
| Distance to closest other karst feature (any category) in m:                       |                                           |               |                                                                                            |      |      |      |      |
| Does a retention area surround feature from edge of feature outward?               |                                           |               |                                                                                            |      |      |      |      |
| If retention area (RA) present                                                     | Width of RA to North in m:                |               |                                                                                            |      |      |      |      |
|                                                                                    | Width of RA to East in m:                 |               |                                                                                            |      |      |      |      |
|                                                                                    | Width of RA to South in m:                |               |                                                                                            |      |      |      |      |
|                                                                                    | Width of RA to West in m:                 |               |                                                                                            |      |      |      |      |
|                                                                                    | % Level of harvesting in RA up to 80 m    | To North:     |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To East:      |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To South:     |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To West:      |                                                                                            |      |      |      |      |
|                                                                                    |                                           | Distribution: |                                                                                            |      |      |      |      |
|                                                                                    | % Level of new windthrow in RA up to 80 m | To North:     |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To East:      |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To South:     |                                                                                            |      |      |      |      |
|                                                                                    |                                           | To West:      |                                                                                            |      |      |      |      |
|                                                                                    |                                           | Distribution: |                                                                                            |      |      |      |      |
| Windthrow treatment for RA:                                                        |                                           |               |                                                                                            |      |      |      |      |
| Did you take a representative photo of feature? Enter photo file names.            |                                           |               |                                                                                            |      |      |      |      |

<sup>1</sup> Refer to Appendix D of the Karst Inventory Standards and Vulnerability Procedures for BC, and Appendix B of the Karst protocol for detailed feature descriptions.

Date: / /  Opening ID:  District:  KSU no.: **Field Data - Other Surface Karst Features (Cont'd)**

Sketch features and retention areas in plan view using FORM - Sketches

| OT-2: INDICATOR DATA TO COLLECT FOR EACH SAMPLE [net of previous harvest(s)] |                                                                       | Method | Target Value | Samples                                                                                                                            |                      |                      |                      |                      |  |  |
|------------------------------------------------------------------------------|-----------------------------------------------------------------------|--------|--------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|----------------------|----------------------|--|--|
|                                                                              |                                                                       |        |              | OT#1                                                                                                                               | OT#2                 | OT#3                 | OT#4                 | OT#5                 |  |  |
|                                                                              |                                                                       |        |              | Enter value ____, then check Yes (Y), No (N), Not Applicable (NA), or Don't Know (D) responses in the box <input type="checkbox"/> |                      |                      |                      |                      |  |  |
| <b>RETENTION</b>                                                             |                                                                       |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
|                                                                              | Number of standing trees                                              |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
|                                                                              | Number of cut trees                                                   |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
| 1                                                                            | % Level of retention of dominant and co-dominant trees (>12.5 cm DBH) | RC2    | 100          | <input type="text"/>                                                                                                               | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| <b>WINDTHROW (ANSWER 2 IF RETENTION INITIALLY PRESENT)</b>                   |                                                                       |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
|                                                                              | Number of standing trees                                              |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
|                                                                              | Number of old windthrown trees                                        |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
|                                                                              | Number of new windthrown trees                                        |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
|                                                                              | % Old windthrow                                                       |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
|                                                                              | % New windthrow                                                       |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
| 2                                                                            | % New windthrow B                                                     | RC2    | ≤0           | <input type="text"/>                                                                                                               | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 3                                                                            | New windthrown tree material coming in from outside                   | P/A    | A            | <input type="text"/>                                                                                                               | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| <b>SOIL/GROUND DISTURBANCES</b>                                              |                                                                       |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
| 4                                                                            | % Ground disturbance                                                  | VE     | 0            | <input type="text"/>                                                                                                               | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| <b>INTRODUCED MATERIALS</b>                                                  |                                                                       |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
| 5                                                                            | Concentrations of logging slash <sup>1</sup>                          | P/A    | A            | <input type="text"/>                                                                                                               | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 6                                                                            | Logging slash in small-scale solution openings                        | P/A    | A            | <input type="text"/>                                                                                                               | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| 7                                                                            | Road construction material                                            | P/A    | A            | <input type="text"/>                                                                                                               | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| <b>BURNING</b>                                                               |                                                                       |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
| 8                                                                            | Evidence of burning                                                   | P/A    | A            | <input type="text"/>                                                                                                               | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |
| <b>OTHER</b>                                                                 |                                                                       |        |              |                                                                                                                                    |                      |                      |                      |                      |  |  |
| 9                                                                            | Mechanically damaged bedrock elements                                 | P/A    | A            | <input type="text"/>                                                                                                               | <input type="text"/> | <input type="text"/> | <input type="text"/> | <input type="text"/> |  |  |

<sup>1</sup> Refer to REFERENCE CARD 1

Date: / /  Opening ID:  District:  KSU no.: **Field Data - Other Surface Karst Features (Cont'd)**

| RESULTS FOR OTHER<br>SURFACE KARST<br>FEATURES | Samples |      |      |      |      | Total<br>for<br>KSU |
|------------------------------------------------|---------|------|------|------|------|---------------------|
|                                                | OT#1    | OT#2 | OT#3 | OT#4 | OT#5 |                     |
| Total number of "Yes's"                        |         |      |      |      |      |                     |
| Total number of "No's"                         |         |      |      |      |      |                     |
| Total number of "NA's"                         |         |      |      |      |      |                     |
| Total number of "D's"                          |         |      |      |      |      |                     |

**CAUSAL FACTORS FOR DISTURBANCES**

Check boxes and indicate related indicator statement by number for human-caused factors

|              |                                                      | FACTOR                                                                    | HARVEST                  | SAMPLES                  |                          |                          |                          |                          |
|--------------|------------------------------------------------------|---------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Human-caused | Harvest-related                                      | Logging                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Road construction and related activities                                  | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Introduced materials (i.e., logging slash or road construction materials) | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Burning                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Other                                                                     | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Recreation impacts                                   |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Other human-caused factors or influences             |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Natural      | Wind                                                 | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Fire                                                 | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Geomorphic (e.g., natural landslides)                | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Insects and pathogens                                | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Animal impacts (e.g., grazing, browsing, or pugging) | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Other natural disturbances                           | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |

Majority of forestry activity-related disturbances caused by: Previous harvest ☐ Most recent harvest ☐Natural or human caused geomorphic disturbance originated in an adjacent or upland area ☐



Date: / /  Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

## Field Data - Inter-feature Karst Terrain for KSU

### BASIC INFORMATION TO COLLECT AWAY FROM KARST FEATURES WITHIN KSU

Proportion of the KSU occupied by inter-feature karst terrain (IFKT) areas with a smooth karst roughness rating and mean soil thickness > 1 m

\_\_\_\_\_ %

Use map to indicate location of this type of area in KSU

### INDICATOR DATA TO COLLECT AWAY FROM KARST FEATURES WITHIN KSU

[net of previous harvest(s)]

Method

Target Value

Enter value \_\_\_\_, then check Yes (Y), No (N), Not Applicable (NA), or Don't Know (D) responses in the box ☐

### SOIL/GROUND DISTURBANCES

1 % occurrences of soil disturbance in the IFKT areas with a smooth karst roughness rating and mean soil thickness > 1 m

V/E

0

\_\_\_\_ ☐

2 % occurrences of ground disturbance in the IFKT areas with greater than smooth roughness ratings and/or mean soil thickness < 1 m

V/E

0

\_\_\_\_ ☐

3 % occurrences of physical disturbance to minor or small-scale surface karst features<sup>1</sup>

V/E

0

\_\_\_\_ ☐

### INTRODUCED MATERIALS

4 % occurrences of concentrations of logging slash in or on minor or small-scale surface karst features

V/E

0

\_\_\_\_ ☐

5 % occurrences of road construction material in or on minor or small-scale surface karst features away from road prism

V/E

0

\_\_\_\_ ☐

### BURNING

6 % occurrences of burning resulting in exposure of epikarst features (e.g., rundkarren or vertical solution openings)

V/E

0

\_\_\_\_ ☐

### OTHER

7 % occurrences of evidence of surface runoff from roads or other access structures, landings or quarries directed to infiltration areas with insufficient vegetation and soil cover and/or sediment traps to prevent sediment-laden runoff from contaminating karst waters and entering the subsurface

V/E

0

\_\_\_\_ ☐

<sup>1</sup> Minor surface karst features are surface karst features of relatively small size, rarely more than 5 metres in the greatest dimension (e.g., karren, small sinkholes, grikes, residual pinnacles, or other surface solutional features). Small scale surface karst features are distinguishable elements of a karst landscape with a mean size (diameter/length/width) not more than 2 m.



Date: / /  Opening ID:  District:  KSU no.:

### Field Data - Inter-feature Karst Terrain for KSU (Cont'd)

| RESULTS FOR INTER-<br>FEATURE KARST TERRAIN | Samples |        |        |        |        | Total<br>for<br>KSU |
|---------------------------------------------|---------|--------|--------|--------|--------|---------------------|
|                                             | IFKT#1  | IFKT#2 | IFKT#3 | IFKT#4 | IFKT#5 |                     |
| Total number of "Yes's"                     |         |        |        |        |        |                     |
| Total number of "No's"                      |         |        |        |        |        |                     |
| Total number of "NA's"                      |         |        |        |        |        |                     |
| Total number of "D's"                       |         |        |        |        |        |                     |

### CAUSAL FACTORS FOR DISTURBANCES

Check boxes and indicate related indicator statement by number for human-caused factors

|              |                                                      | FACTOR                                                                    | HARVEST                  | SAMPLES                  |                          |                          |                          |                          |
|--------------|------------------------------------------------------|---------------------------------------------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Human-caused | Harvest-related                                      | Logging                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Road construction and related activities                                  | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Introduced materials (i.e., logging slash or road construction materials) | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Burning                                                                   | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      | Other                                                                     | Current                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              |                                                      |                                                                           | Previous                 | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Recreation impacts                                   |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
|              | Other human-caused factors or influences             |                                                                           |                          | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Natural      | Wind                                                 | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Fire                                                 | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Geomorphic (e.g., natural landslides)                | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Insects and pathogens                                | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Animal impacts (e.g., grazing, browsing, or pugging) | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |
|              | Other natural disturbances                           | <input type="checkbox"/>                                                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |                          |                          |

Majority of forestry activity-related disturbances caused by: Previous harvest ☐ Most recent harvest ☐

Natural or human caused geomorphic disturbance originated in an adjacent or upland area ☐



Date:   /   /     Opening ID:  District:  KSU no.:

### Summary of Results for Karst Sample Unit (KSU)

### Part A: Indicator Responses

| Karst Feature Category          |                                         | Total no. of "Yes's" | Total no. of "No's" | Total no. of "NA's" | Total no. of "D's" |
|---------------------------------|-----------------------------------------|----------------------|---------------------|---------------------|--------------------|
| Caves (Cave infiltration areas) |                                         |                      |                     |                     |                    |
| Surface karst features          | Cave entrances                          |                      |                     |                     |                    |
|                                 | Sinking streams or sinking watercourses |                      |                     |                     |                    |
|                                 | Sinkholes                               |                      |                     |                     |                    |
|                                 | Epikarst exposures                      |                      |                     |                     |                    |
|                                 | Karst springs                           |                      |                     |                     |                    |
|                                 | Other surface karst features            |                      |                     |                     |                    |
| Totals for Karst Features       |                                         | = (A)                | = (B)               |                     |                    |

% Level of most recent Harvest-Related Disturbance for Karst Features =  $(B/(A+B)) \times 100 =$  \_\_\_\_ [C]

Check one using C: ☐ Lesser risk for Karst Features (0 to 20%)  
☐ Intermediate risk for Karst Features (>20 to 50%)  
☐ Greater risk for Karst Features (>50%)

|                                               |                         |                        |                        |                       |
|-----------------------------------------------|-------------------------|------------------------|------------------------|-----------------------|
| Inter-feature Karst Terrain                   | Total no.<br>of "Yes's" | Total no.<br>of "No's" | Total no.<br>of "NA's" | Total no.<br>of "D's" |
| Totals for Inter-feature Karst Terrain (IFKT) | = (D)                   | = (E)                  |                        |                       |

% Level of most recent Harvest-Related Disturbance for IFKT =  $(E/(E+D))*100 =$  \_\_\_\_\_ [F]

Check one using F: ☐ Lesser risk for IFKT (0 to 20%)  
☐ Intermediate risk for IFKT (>20 to 50%)  
☐ Greater risk for IFKT (>50%)

## Part B: Final Comments

1. Describe any forest practices used which were sensitive to management of karst resources (e.g., aerial standing stem harvesting with a high basal area retention):

[illegible]

2. Describe any karst rehabilitation activities:

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Date:   /   /     Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

**Part B: Final Comments (Cont'd)**

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3. Were Invasive Plants as defined in the Invasive Plants Regulations observed?:

☐ Yes ☐ No

(If answer Yes, please complete the Invasive Plants Field Card FS1316)

4. Comments:



Date:   /   /     Opening ID: \_\_\_\_\_ District: \_\_\_\_\_

### Sketches of Features and Retention Areas

Sketch the features and associated retention areas in plan view below. Show photo point and direction. Don't forget to show a North arrow and provide a scale bar. *Also, identify and reference the feature by Karst Feature ID, and component features by Karst Feature IDs if a feature complex.*

KSU no.: \_\_\_\_\_

Karst Feature ID: \_\_\_\_\_

KSU no.: \_\_\_\_\_

Karst Feature ID: \_\_\_\_\_



Date:   /   /     Opening ID: \_\_\_\_\_ District: \_\_\_\_\_

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Karst Feature ID: \_\_\_\_\_

KSU no.: \_\_\_\_\_

Karst Feature ID: \_\_\_\_\_



## Comparison Chart and Codes

### CODES FOR BASIC INFORMATION SECTION OF FIELD DATA TABLES

Location of a sample relative to block:

**I** = Internal   **E** = Edge   **O** = Outside   **R** = Along roads

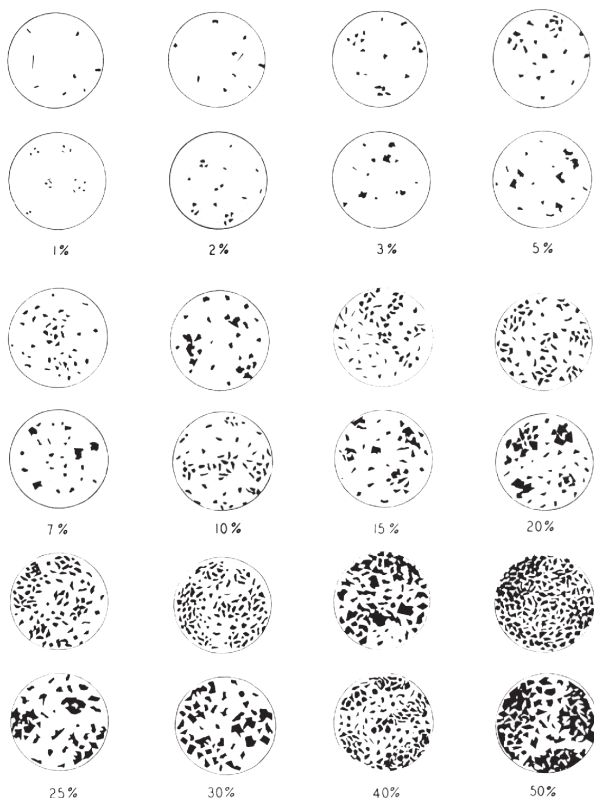
Distribution of harvesting or new windthrow in a retention area:

**I** = Internal   **E** = Edge   **IE** = Internal and edge

Windthrow treatment for a retention area:

**N** = None   **F** = Feathering   **T** = Topping   **O** = Other

Figure 1. Comparison chart for visual estimation of introduced materials





Date:    /    /     Opening ID: \_\_\_\_\_ District: \_\_\_\_\_ KSU no.: \_\_\_\_\_

## Formulas

### RETENTION

|                                    |                 |
|------------------------------------|-----------------|
| Number of standing trees           | = A             |
| Number of cut trees                | = B             |
| Level of retention of mature trees | $(A/B+A)*100 =$ |

### WINDTHROW

|                                                                 |                          |
|-----------------------------------------------------------------|--------------------------|
| Number of standing trees                                        | = A                      |
| Number of old windthrown trees                                  | = B                      |
| Number of new windthrown trees                                  | = C                      |
| % Old windthrow                                                 | $= (B/A+B+C)*100$<br>= D |
| % New windthrow                                                 | $= (C/A+C)*100 = E$      |
| % New windthrow (net of natural and/or pre-treatment windthrow) | $= (E-D)*100$            |

Old windthrow is natural pre-treatment windthrow

New windthrow is post-harvest windthrow

### SOIL/GROUND DISTURBANCES

|                                        |             |
|----------------------------------------|-------------|
| Area of sample site in m <sup>2</sup>  | = A         |
| Area of disturbances in m <sup>2</sup> | = B         |
| Level of disturbances                  | $= B/A*100$ |