

# Consolidated Cut blocks 2017

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## Description

The consolidated cut blocks dataset spatially depicts crown land cut blocks across the Province of British Columbia and provides the estimated year of harvest for each cut block. It was designed to spatially combine the cut blocks identified in the VRI (i.e. VEG\_COMP\_POLY dataset) with the cut blocks for other sources that have not yet been included into the VRI but are known to exist. The additional cut blocks are taken from the RESULTS database and the Landsat Change Detection dataset (produced annually by the Forest Analysis and Inventory Branch).

## Dataset Use

The consolidated cut blocks datasets was designed to assists the Timber Supply Analyst in the Timber Supply Review process.

Efforts were made to remove forest reserves areas from the data but it cannot be assumed that these areas were removed in all cases. Data with Harvest dates before 2012 or that have geometry taken from the WHSE\_FOREST\_VEGETATION.RSLT\_OPENING\_SVW or WHSE\_FOREST\_VEGETATION.RSLT\_ACTIVITY\_TREATMENT\_UNIT datasets did not have reserve areas removed due to limitations in the data. **As a result, this dataset should not be used to officially determine how much area has been logged every year.**

## Inputs

Name	Source
VRI	WHSE_FOREST_VEGETATION.VEG_COMP_LYR_R1_POLY (2016)
RESULTS Forest Cover	WHSE_FOREST_VEGETATION.RSLT_FOREST_COVER_INV_SVW
RESULTS Opening	<ol style="list-style-type: none"> <li>1. WHSE_FOREST_VEGETATION.RSLT_OPENING_SVW</li> <li>2. WHSE_FOREST_VEGETATION.RSLT_OPENING_VW</li> </ol>
RESULTS Activity Treatment	WHSE_FOREST_VEGETATION.RSLT_ACTIVITY_TREATMENT_SVW ACT
Landsat Change Detection	<a href="\\spatialfiles.bcgov\archive\for\VIC\HTS\FAIB_DATA_FOR_DISTRIBUTION\Cut blocks\Harvest_change_detection_files">\\spatialfiles.bcgov\archive\for\VIC\HTS\FAIB_DATA_FOR_DISTRIBUTION\Cut blocks\Harvest_change_detection_files</a>

## Data Model

Field Name	Data Type	Description
OPENING_ID	LONG	<p>OPENING_ID is a system generated value assigned by RESULTS to uniquely identify the opening. Opening_IDs are included in the VRI to identify cutblocks.</p> <p>***Note</p> <ol style="list-style-type: none"> <li>1. The Landsat change detection data does not have an Opening ID.</li> <li>2. Some opening IDs in the VRI were inadvertently removed and therefore are Null or 0 in this data set</li> </ol>
DISTURBANCE_START_DATE	Date	<p>Derived from the first reported disturbance activity reporting. This date is used to calculate the silviculture obligation milestones.</p> <p>***Note</p> <p>The Landsat change detection data does not have a Disturbance Date.</p>
DISTURBANCE_END_DATE	Date	<p>Derived from the last disturbance activity reporting record based on the disturbance activity's completion date.</p> <p>***Note</p> <p>The Landsat change detection data does not have a Disturbance Date.</p>
DATA_SOURCE	STRING	<p>DATA_SOURCE is the highest priority source of data for the disturbance polygon. The order of priority used is VRI, RESULTS, and then Landsat Change Detection.</p>
HARVEST_YEAR	LONG	<p>HARVEST_YEAR is the year of harvest, derived from the disturbance end date of the data source or from the year</p>

		the disturbance was detected using Landsat change detection.
Notes	STRING	More detail about the source of the cut blocks. For example, this field describes whether a cut block's shape comes from the RESULTS Forest Cover table, RESULTS Opening SVW table or RESULTS Activity Treatment table.
AREA_HA	DOUBLE	The area in hectares of the cut block

## Logic and SQL Queries

### 1. Determine the RESULTS Opening IDs that are harvested cut blocks and save as actTreat1 and actTreat2 tables.

```

with actTreat1 as (SELECT DISTINCT TEMP.OPENING_ID
                   FROM WHSE_FOREST_VEGETATION.RSLT_OPENING_VW VIW2,
                   WHSE_FOREST_VEGETATION.RSLT_ACTIVITY_TREATMENT_UNIT TEMP,
                   WHSE_FOREST_VEGETATION.RSLT_FOREST_COVER FC2
                   WHERE TEMP.OPENING_ID = VIW2.OPENING_ID
                   AND TEMP.OPENING_ID = FC2.OPENING_ID
                   AND (   TEMP.SILV_BASE_CODE = 'DN'
                       AND VIW2.FOREST_FILE_ID IS NOT NULL
                       AND VIW2.OPENING_CATEGORY_CODE NOT IN ('NREQ', 'NDWL', 'NDAML',
                       'NDCF', 'NDFS', 'NDVML', 'SPEX', 'SMPCF', 'SMPEX', 'SMPFS', 'SMPML', 'SMPWL'))),

```

```

actTreat2 as (SELECT distinct TR.OPENING_ID
              FROM WHSE_FOREST_VEGETATION.RSLT_ACTIVITY_TREATMENT_UNIT TR,
              WHSE_FOREST_VEGETATION.RSLT_OPENING_VW VW
              WHERE TR.OPENING_ID = VW.OPENING_ID
              AND (   (tr.silv_base_code = 'DN' AND TR.DISTURBANCE_CODE IN ('L', 'R', 'S')) OR
                  (tr.silv_base_code = 'DN' AND tr.silv_system_code IS NOT NULL AND
                  TR.DISTURBANCE_CODE <> 'E' )))

```

## 2. Get all VRI openings with a Harvest Date >= 1965:

```

SELECT VRI.HARVEST_DATE,VRI.OPENING_ID,VRI.GEOMETRY
FROM WHSE_FOREST_VEGETATION.VEG_COMP_POLY VRI
WHERE VRI.HARVEST_DATE is not Null AND (TO_CHAR(VRI.HARVEST_DATE,'YYYY') >= '1965')

```

## 3. Get all RSLT\_FOREST\_COVER\_INV\_SVW cut blocks that do not have an opening IDs in the VRI and have opening IDs in the actTreat1 and actTreat2 tables.

```

With vriSel as (
  select vri.OPENING_ID
  from WHSE_FOREST_VEGETATION.VEG_COMP_POLY vri
  where
    VRI.HARVEST_DATE is not Null
    AND (TO_CHAR(VRI.HARVEST_DATE,'YYYY') >= '1965')
    AND vri.OPENING_ID is not Null
    AND vri.OPENING_ID != 0)

SELECT
  FC.GEOMETRY,
  FC.OPENING_ID,
  RSLT.DISTURBANCE_START_DATE,
  RSLT.DISTURBANCE_END_DATE

FROM
  WHSE_FOREST_VEGETATION.RSLT_FOREST_COVER_INV_SVW FC,
  WHSE_FOREST_VEGETATION.RSLT_OPENING_VW RSLT

WHERE
  FC.OPENING_ID = RSLT.OPENING_ID(+)
  AND FC.GEOMETRY IS NOT NULL
  AND ( FC.SILV_RESERVE_CODE is null or not (FC.SILV_RESERVE_CODE in ('G') and EXTRACT(YEAR from
  fc.FOREST_COVER_WHEN_UPDATED) >= 2012))
  AND (FC.OPENING_ID IN (select * from actTreat1) OR FC.OPENING_ID IN (select * from actTreat2) )
  AND FC.OPENING_ID not in (select * from vriSel)

```

## 4. Get all the cut blocks from the RSLT\_OPENING\_SVW table that do not have an opening ID in the VRI or in RESULTS forest cover and have opening IDs in the actTreat1 and actTreat2 tables.

```

With vriSel as (
  select vri.OPENING_ID
  from WHSE_FOREST_VEGETATION.VEG_COMP_POLY vri
  where
    VRI.HARVEST_DATE is not Null
    AND (TO_CHAR(VRI.HARVEST_DATE,'YYYY') >= '1965')
    AND vri.OPENING_ID is not Null
    AND vri.OPENING_ID != 0),

```

```

fcSel as ( SELECT DISTINCT FC.OPENING_ID
FROM WHSE_FOREST_VEGETATION.RSLT_FOREST_COVER_INV_SVW FC
WHERE FC.GEOMETRY is not Null)

SELECT
  RESVW.OPENING_ID, RESVW.GEOMETRY, RESVW.DISTURBANCE_END_DATE,
  RESVW.DISTURBANCE_START_DATE

FROM
  WHSE_FOREST_VEGETATION.RSLT_OPENING_SVW RESVW

WHERE
  RESVW.GEOMETRY IS NOT Null
AND (RESVW.OPENING_ID IN (select * from actTreat1) OR RESVW.OPENING_ID IN (select * from actTreat2)
)
AND RESVW.OPENING_ID not in (select * from vriSel)
AND RESVW.OPENING_ID not in (select * from fcSel)

```

## 5. Get all the cut blocks from the RSLT\_ACTIVITY\_TREATMENT\_SVW table that do not have an opening ID in the VRI, RESULTS forest cover or RESULTS Openings SVW and have opening IDs in the actTreat1 and actTreat2 tables.

```

With vriSel as ( select vri.OPENING_ID
from WHSE_FOREST_VEGETATION.VEG_COMP_POLY vri
where
  VRI.HARVEST_DATE is not Null
AND (TO_CHAR(VRI.HARVEST_DATE,'YYYY') >= '1965')
AND vri.OPENING_ID is not Null
AND vri.OPENING_ID != 0),

```

```

fcSel as ( SELECT DISTINCT FC.OPENING_ID
FROM WHSE_FOREST_VEGETATION.RSLT_FOREST_COVER_INV_SVW FC
WHERE FC.GEOMETRY is not Null),
RESSel as ( SELECT DISTINCT RESVW.OPENING_ID
FROM WHSE_FOREST_VEGETATION.RSLT_OPENING_SVW RESVW
WHERE RESVW.GEOMETRY IS NOT Null)

```

```

SELECT
  ACT.OPENING_ID, ACT.ATU_START_DATE, ACT.ATU_COMPLETION_DATE, ACT.GEOMETRY

FROM
  WHSE_FOREST_VEGETATION.RSLT_ACTIVITY_TREATMENT_SVW ACT

WHERE
  ((ACT.silv_base_code = 'DN' AND ACT.DISTURBANCE_CODE IN ('L','R','S')) OR (ACT.silv_base_code = 'DN'
AND ACT.silv_system_code IS NOT NULL AND ACT.DISTURBANCE_CODE <> 'E' ))
AND ACT.GEOMETRY IS NOT NULL
AND ACT.OPENING_ID not in (select * from vriSel)
AND ACT.OPENING_ID not in (select * from fcSel)
AND ACT.OPENING_ID not in (select * from RESSel)

```

6. Merge together the Landsat Change Detection annual datasets ([\\spatialfiles.bcgov\archive\for\VIC\HTS\FAIB DATA FOR DISTRIBUTION\Cutblocks\Harvest change detection files](#)) and merge together. Where overlaps occur in the data, use the latest harvest date.
7. Remove Landsat change detection polygons where over 70 % of the cut block area intersects with cut blocks from the other datasets.
8. Union (merge) all of the cut blocks from all the data sources together (i.e. vri, Forest cover, openings, activity treatment and Landsat). Where overlaps occur, use the polygons whose data source has the highest rank (see ranking below). If overlaps occur between polygons with the same data source, use the polygon with the latest harvest year attribute.

Data Source Rank:

1. VRI
  2. RESULTS Forest Cover
  3. RESULTS Openings SWV
  4. RESULTS Activity Treatment
  5. Landsat Change Detection
9. Remove all slivers smaller than 500 metres squared that are not in the vri.