

Mountain Pine Beetle: Infestation Update

Prepared for the Central Interior Loggers Association



Jim Snetsinger
Assistant Deputy Minister and Chief Forester
Resource Stewardship Division

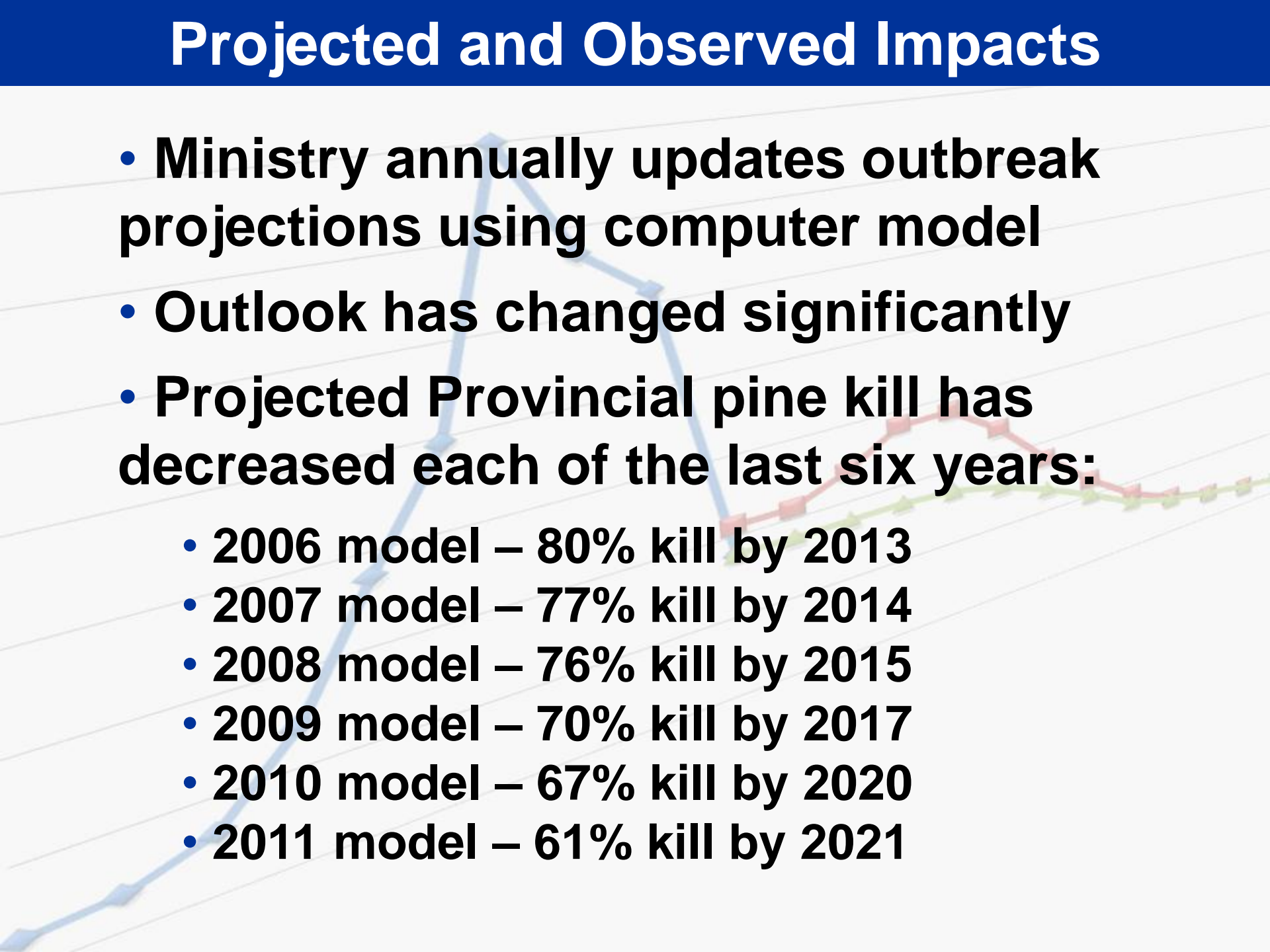
September 9th, 2011

Mountain Pine Beetle Infestation Update


Presentation Outline.

1. Projected and Observed Impacts.
2. Assessment of the 17.5 Million Impacted Hectares.
3. Government's Response to the Infestation.
4. Potential Timber Supply Impacts – Central interior TSAs.
5. Conclusion.

Projected and Observed Impacts

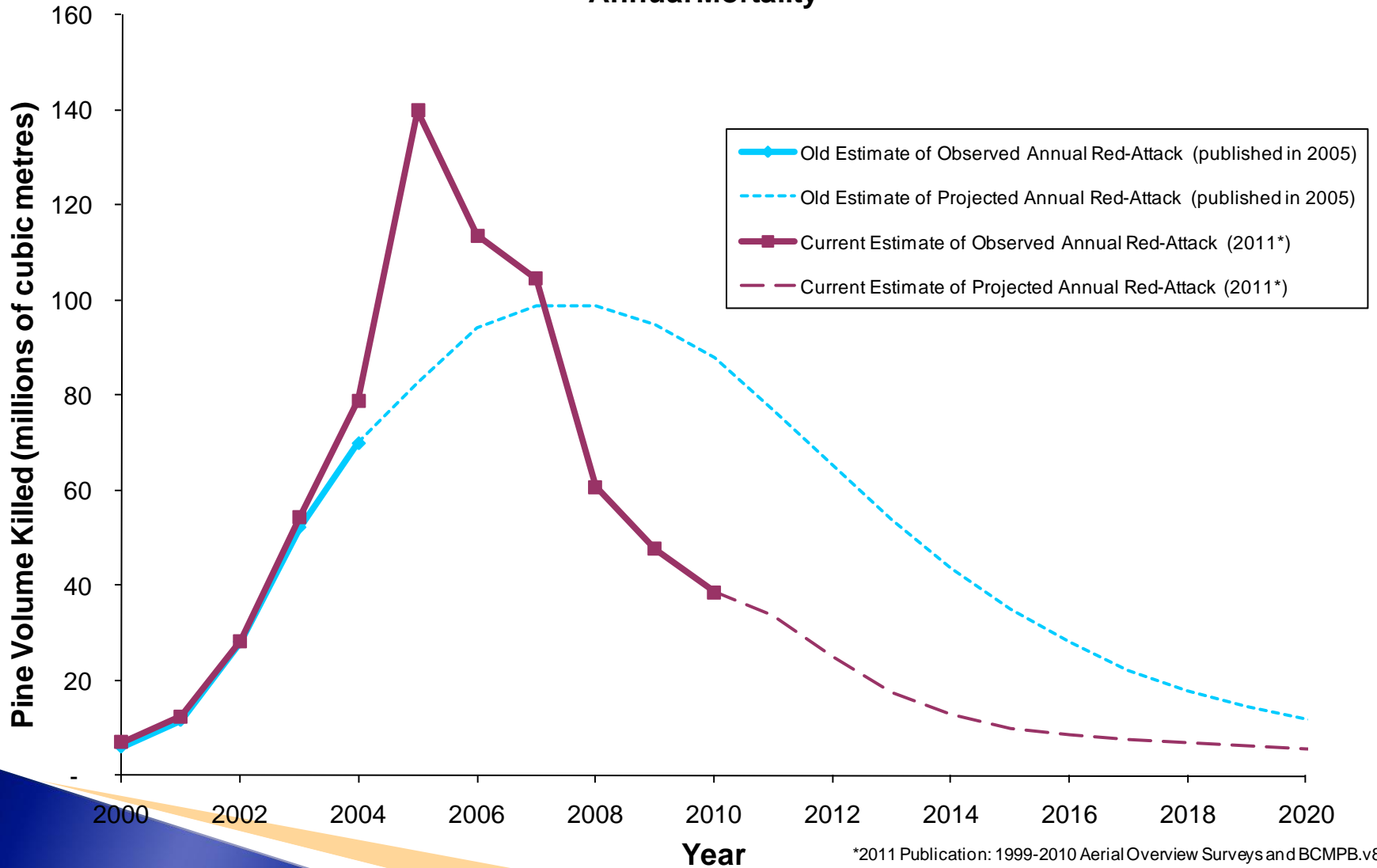
- **Ministry annually updates outbreak projections using computer model**
 - **Outlook has changed significantly**
 - **Projected Provincial pine kill has decreased each of the last six years:**
 - **2006 model – 80% kill by 2013**
 - **2007 model – 77% kill by 2014**
 - **2008 model – 76% kill by 2015**
 - **2009 model – 70% kill by 2017**
 - **2010 model – 67% kill by 2020**
 - **2011 model – 61% kill by 2021**
- 

Projected and Observed Impacts

- **51% of merchantable pine has been killed as of 2010**
 - Equates to 692 million cubic metres
 - **Worst year of infestation was 2004**
 - 140 million m³ killed that year alone
 - **Annual kill declined rapidly since then**
 - Down to 39 million m³ in 2010
 - **Projected to continue to decline**
 - Less than 5 million m³ will be killed annually by 2021
- 
- | Year | Observed Annual Kill (m ³) | Projected Annual Kill (m ³) | Projected Cumulative Kill (m ³) |
|------|--|---|---|
| 2000 | ~10 | ~10 | ~10 |
| 2001 | ~50 | ~50 | ~60 |
| 2002 | ~100 | ~100 | ~160 |
| 2003 | ~120 | ~120 | ~280 |
| 2004 | 140 | 140 | 420 |
| 2005 | ~100 | ~100 | 520 |
| 2006 | ~80 | ~80 | 600 |
| 2007 | ~60 | ~60 | 660 |
| 2008 | ~40 | ~40 | 700 |
| 2009 | ~35 | ~35 | 735 |
| 2010 | 39 | ~35 | 774 |
| 2011 | ~30 | ~30 | 804 |
| 2012 | ~25 | ~25 | 829 |
| 2013 | ~20 | ~20 | 849 |
| 2014 | ~15 | ~15 | 864 |
| 2015 | ~10 | ~10 | 874 |
| 2016 | ~8 | ~8 | 882 |
| 2017 | ~6 | ~6 | 888 |
| 2018 | ~5 | ~5 | 893 |
| 2019 | ~4 | ~4 | 897 |
| 2020 | ~3 | ~3 | 900 |
| 2021 | ~2 | ~2 | 902 |

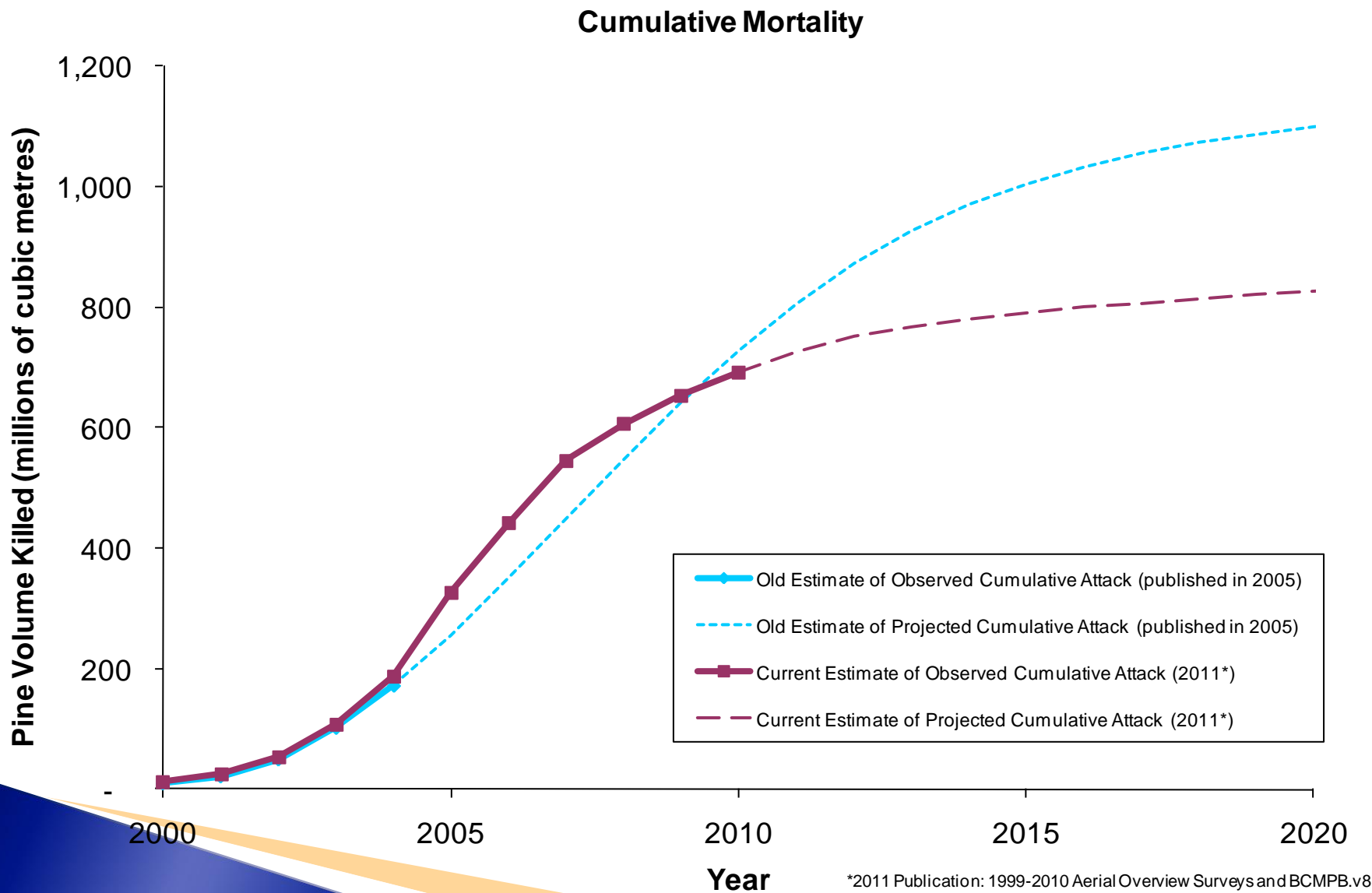
Projected and Observed Impacts

Annual Mortality

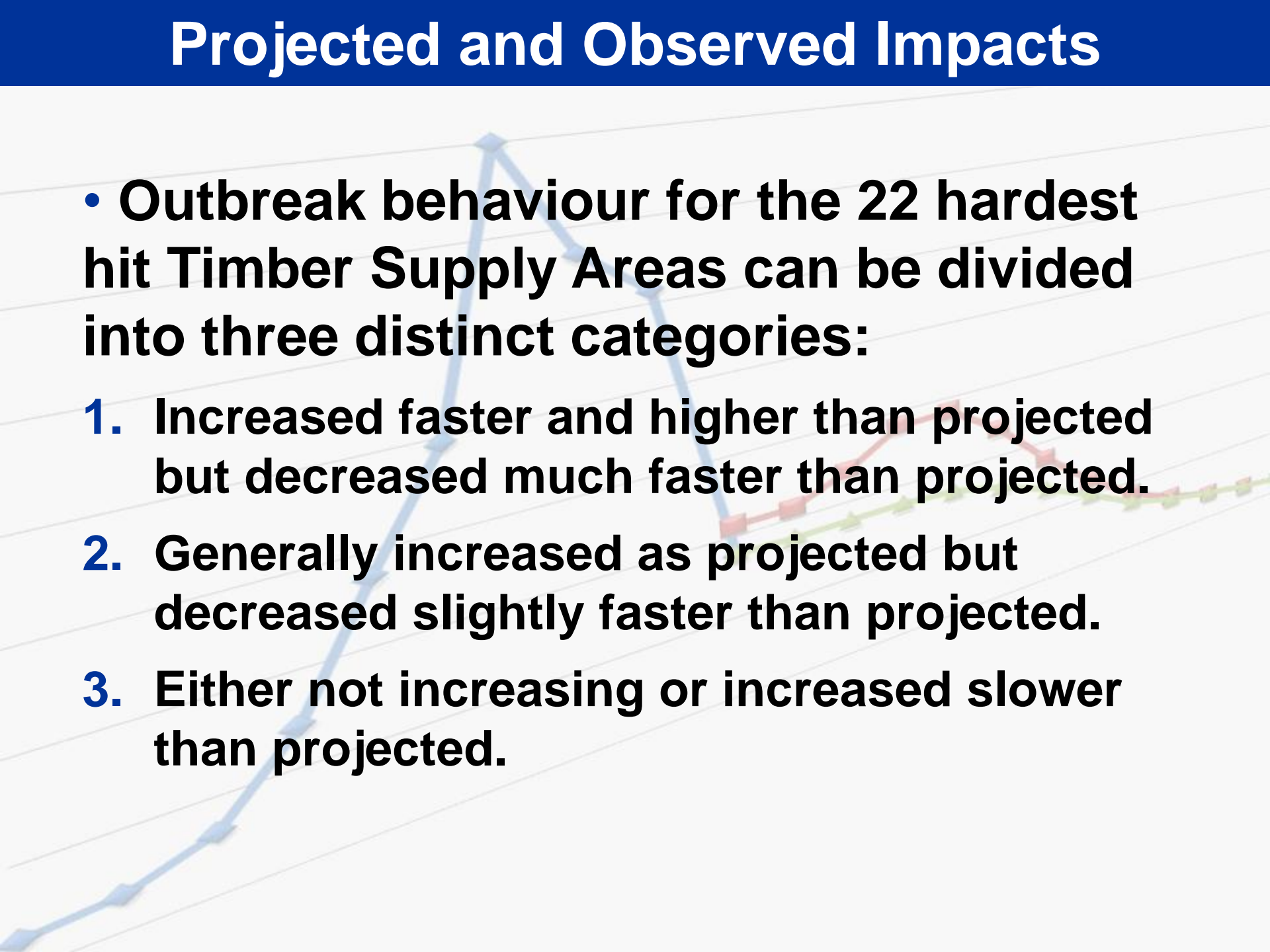


*2011 Publication: 1999-2010 Aerial Overview Surveys and BCMPB.v8

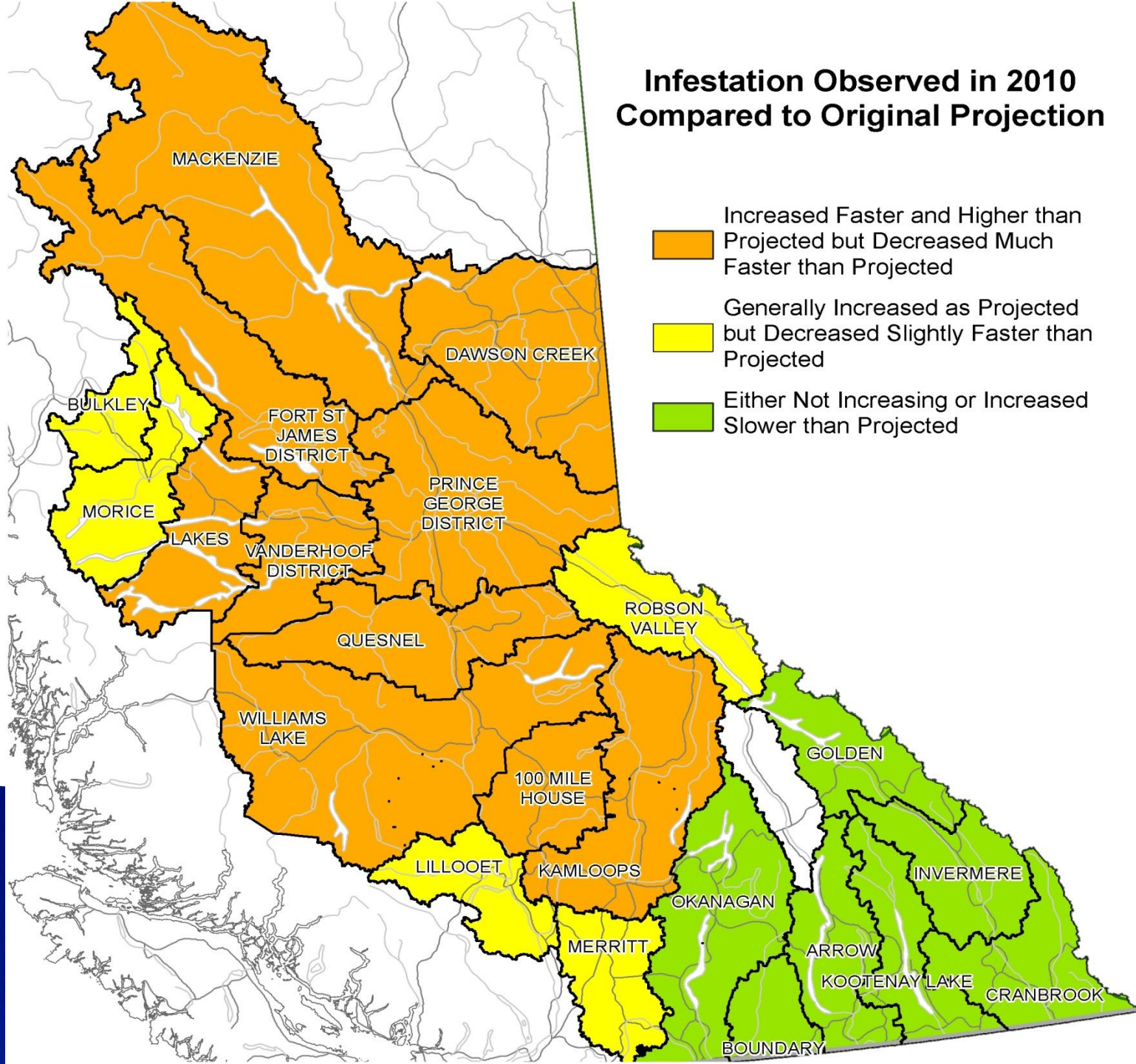
Projected and Observed Impacts



Projected and Observed Impacts

- **Outbreak behaviour for the 22 hardest hit Timber Supply Areas can be divided into three distinct categories:**
 - 1. Increased faster and higher than projected but decreased much faster than projected.**
 - 2. Generally increased as projected but decreased slightly faster than projected.**
 - 3. Either not increasing or increased slower than projected.**
- 

Infestation Observed in 2010 Compared to Original Projection



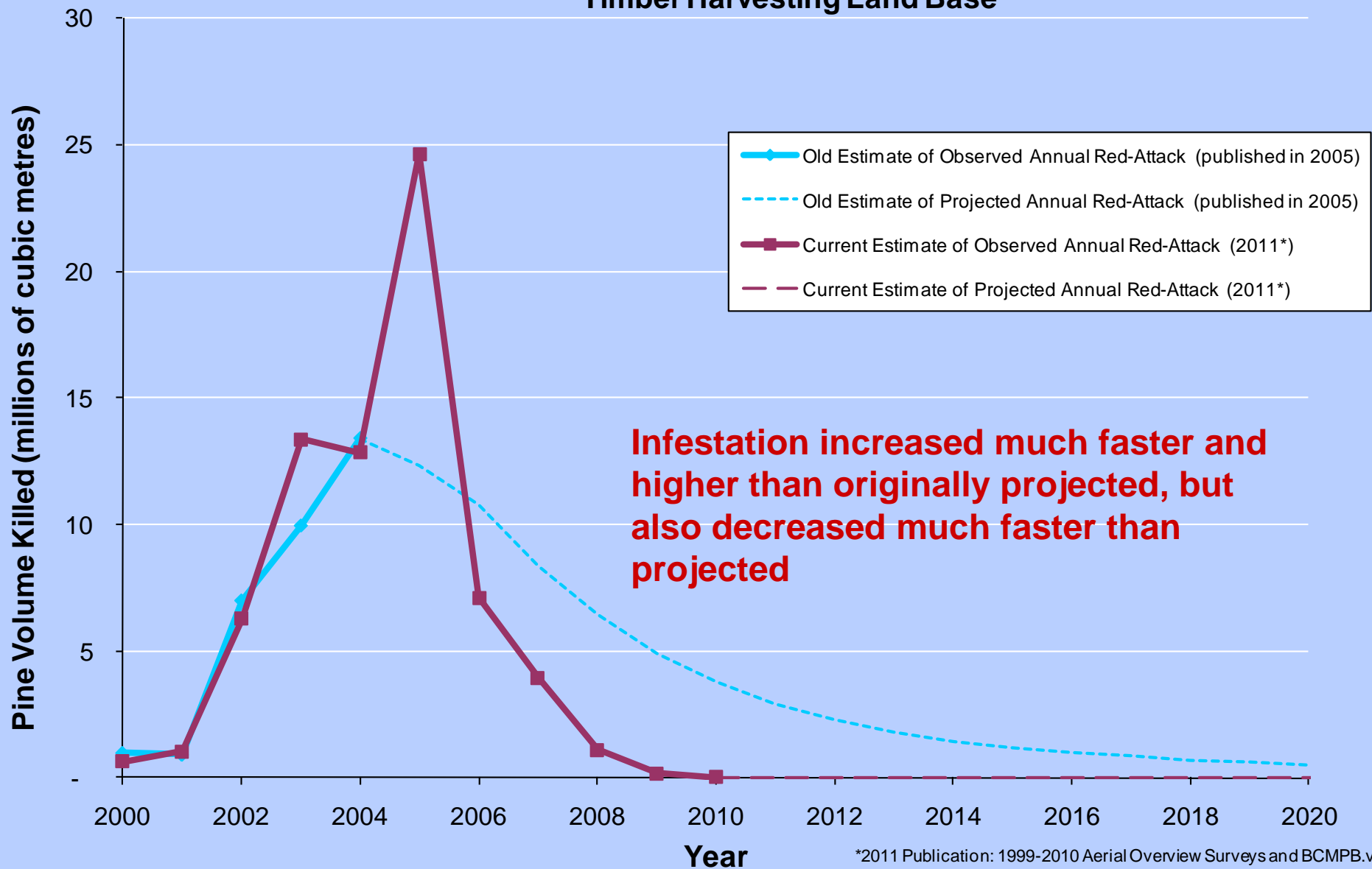
Projected and Observed Impacts

CATEGORY 1 UNITS

- 100 Mile House, Fort St. James, Kamloops, Lakes, Mackenzie, Prince George, Quesnel, Vanderhoof, Williams Lake
- Infestation increased much faster and higher than originally projected, but also decreased much faster than projected
- Flat and subdued terrain
- Moderate to high component of pine
 - 30-73% pine
- Moderate to high volumes of pine
 - 58-144 million m³

Category 1 Example

Vanderhoof Forest District Timber Harvesting Land Base



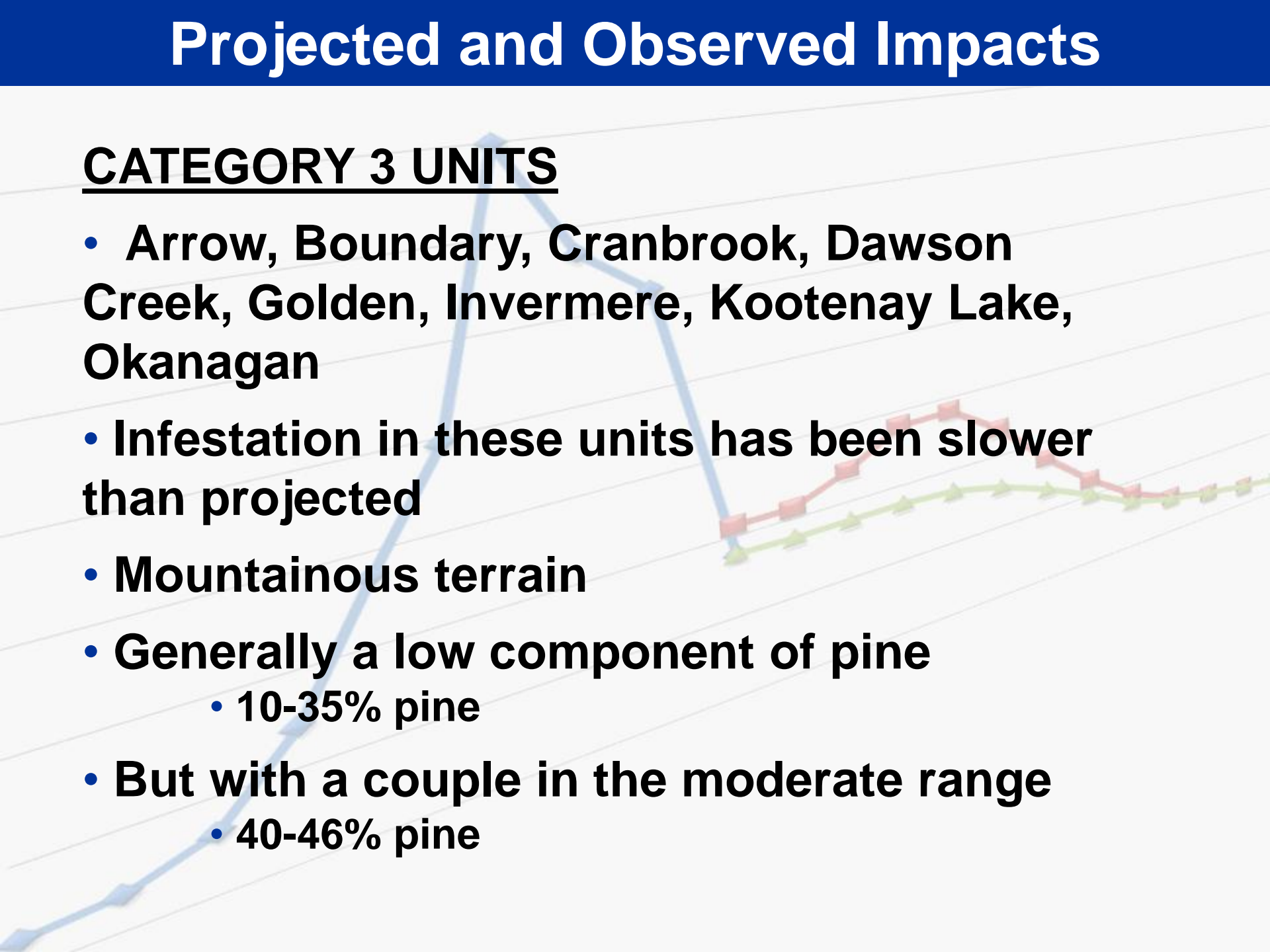
Projected and Observed Impacts

CATEGORY 2 UNITS

- **Bulkley, Lillooet, Merritt, Morice, Robson Valley**
- **Infestation has roughly increased as originally projected in 2005, but decreased slightly quicker than originally projected**
- **Low to moderate component of pine**
 - 12-50% pine
- **Low to moderate volumes of pine**
 - 6-66 million m³

Projected and Observed Impacts

CATEGORY 3 UNITS

- Arrow, Boundary, Cranbrook, Dawson Creek, Golden, Invermere, Kootenay Lake, Okanagan
 - Infestation in these units has been slower than projected
 - Mountainous terrain
 - Generally a low component of pine
 - 10-35% pine
 - But with a couple in the moderate range
 - 40-46% pine
- 
- A line graph is visible in the background of the slide. It features a blue line that starts at the bottom left, rises to a peak, and then descends. To the right of the blue line, there are two lines with markers: one with red square markers and one with green triangle markers. Both of these lines show a general upward trend from left to right, with the red line consistently above the green line.

Assessment of MPB – Impacted Area

Forested and in BC

55 million ha

Area of Forests Affected by MPB

17.5 million ha

Area in THLB Affected by MPB

9.9 million ha

MPB Area in the THLB > 50% PL

5.1 million ha

MPB Area in the THLB > 70% PL

3.2 million ha

Projected Treatment Area by 2020

2.0 to 2.9 million ha

Area With Advanced Regen

Estimated at 70 to 80%

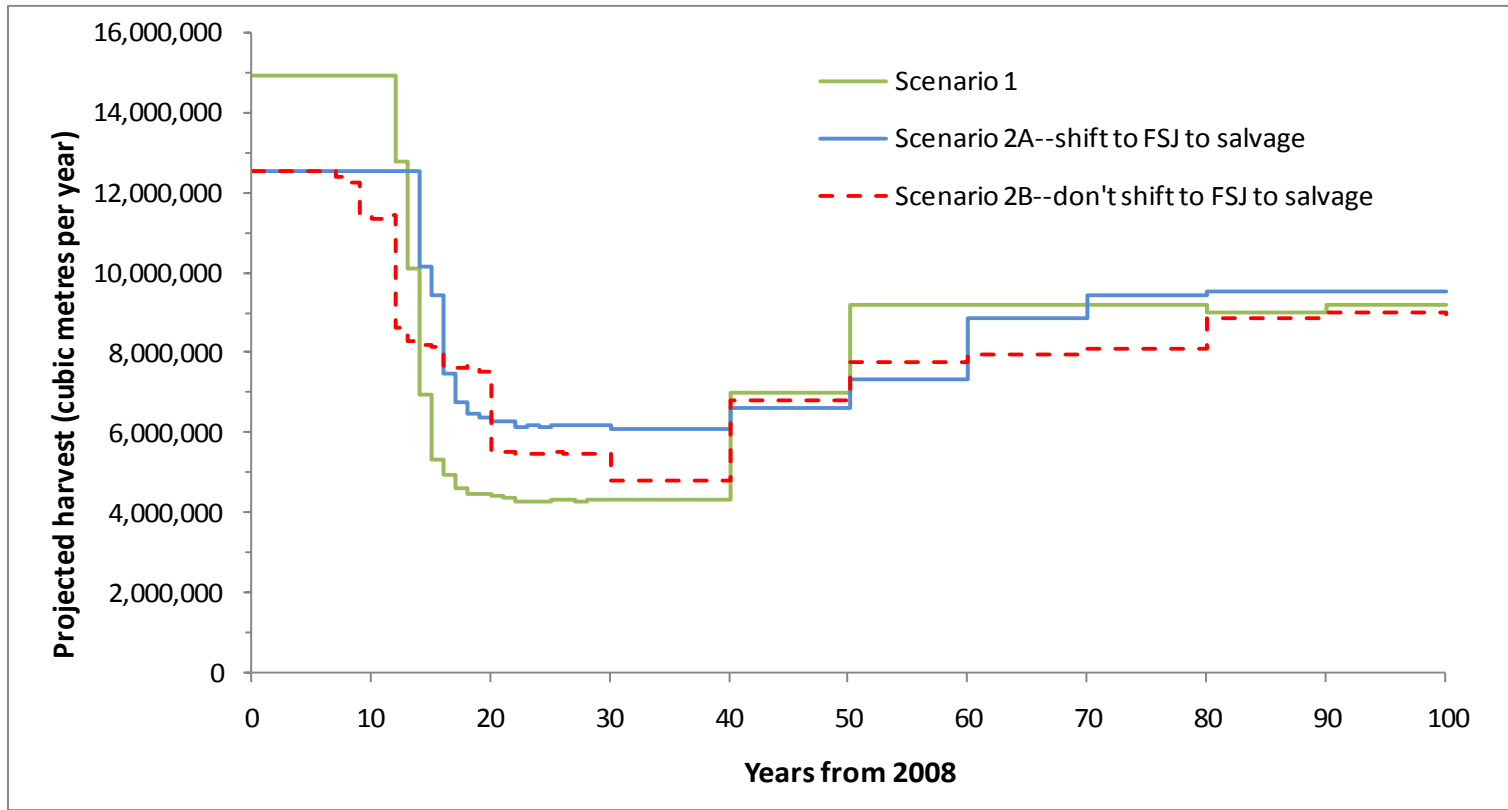
Remaining Area > 50% PL Without Regen

200,000ha to 720,000ha

Government's Response

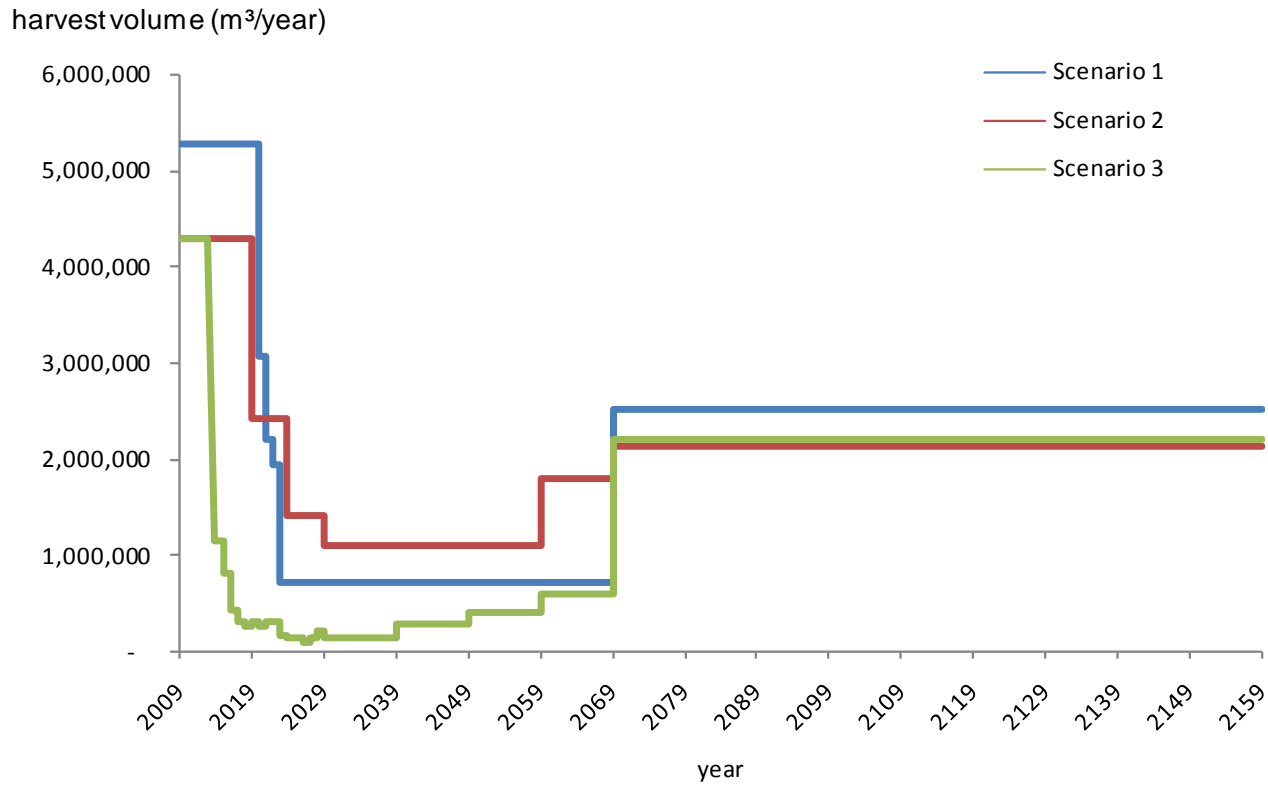
- **AAC Uplifts**
 - **Monitoring pine salvage focus**
 - **Partitioning Legislation**
- **Support for Beetle Action Coalitions**
- **FFT Silviculture Investments**
 - **Survey's, Reforestation, fertilization**
- **Capitalizing on new opportunities (e.g. Bioenergy, carbon trading)**
- **Research – Silviculture, wildfire, hydrology.**
- **Inventory Investments**

Timber Supply Forecasts – Prince George



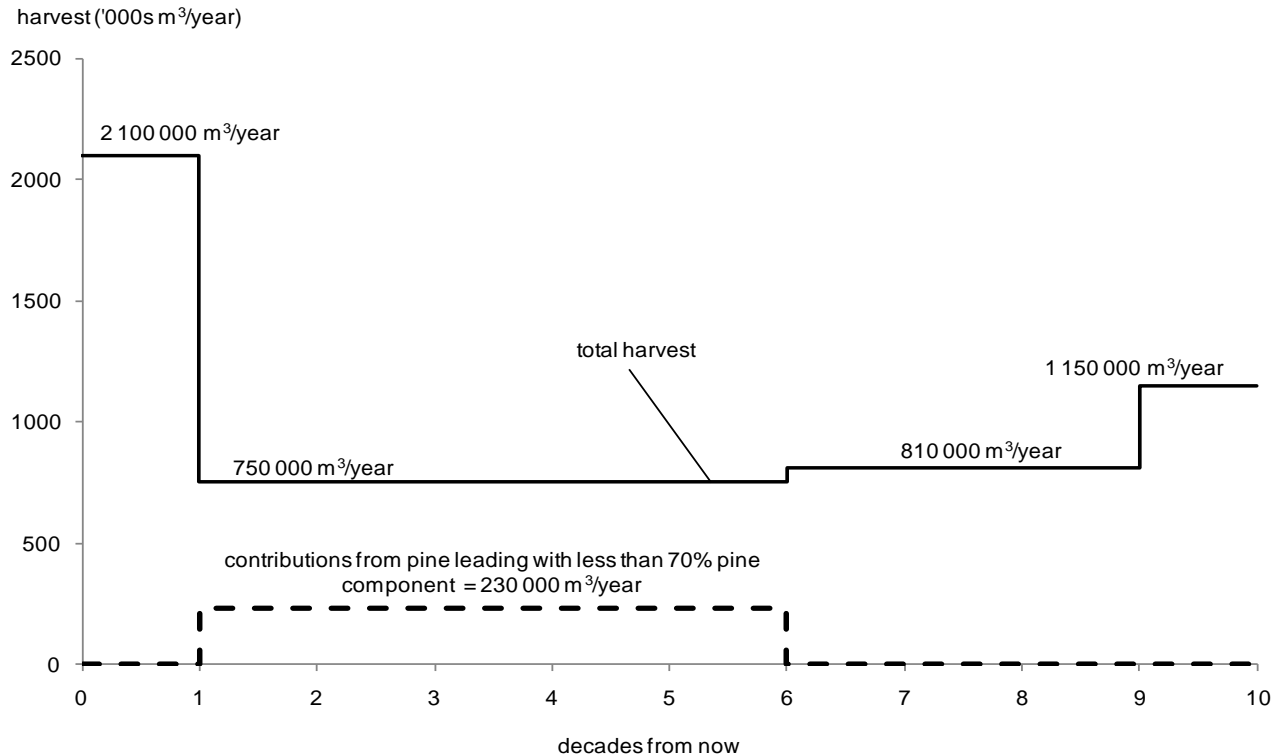
Harvest forecasts from scenarios 1, 2A and 2B

Timber Supply Forecasts – Quesnel



Harvest forecasts from scenarios 1, 2 and 3

Timber Supply Forecasts – Lakes



Harvest pure pine stands for the first 10 years. Note year zero is 2009

Conclusions

- There ultimate impacts of the infestation appear to be less than initially forecast.
- The infestation has progressed differently relative to initial projections in different parts of the province.
- Not all MPB impacted forests are dead and require reforestation to be harvestable in the future.
- Government is actively seeking new opportunities to utilize dead pine stands and preserve mid-term timber supply.
- AACs of heavily impacted MPB units will still need to be reduced in the mid-term.