Vegetation Management Past Elimination to Present Integrated Approach.

Manual Brushing for Forest Vegetation Management in British Columbia: A Review of Current Knowledge and Information Needs
Land Management Report NUMBER 77
ISSN 0702-9861
MARCH 1992
FORESTRY
FRDA REPORT 165
Impacts of Glyphosate Application on Grizzly Bear Forage Production in the Coastal Western Hemlock Zone
ISSN 0835 0752
FEBRUARY 1991
SILVICULTURE
The use of physical or manual methods in forest vegetation management
No. 7
July, 1992
SILVICULTURE
Herbicides and Forest Management in B.C.
Weeding the Garden Means Better Forest Crops
SILVICULTURE
Vision® Use in Forest Management
No. 3
June, 1988
FORESTRY
FRDA HANDBOOK 008
A Guide to the Response of Common Plants in British Columbia to Management Treatments
ISSN 0835 1929
APRIL 1990
ECONOMIC & REGIONAL DEVELOPMENT AGREEMENT
Canada
BC
SILVICULTURE
Managing Vegetation with Sheep
Province of British Columbia
Ministry of Forests
Forest Plantations
Renewing The Landscape
BIOLOGICAL WEED CONTROL IN BRITISH COLUMBIA
FOREST HERBICIDE USE:
Vegetation and Small Mammals
APPROACHES TO
MAINTAINING BIOLOGICAL DIVERSITY
IN BRITISH COLUMBIA'S FORESTS
An Introduction for Resource Managers
The Centre for Applied Conservation Biology
University of British Columbia
Province of British Columbia
Ministry of Forests
Environment Canada
Environnement Canada
FRASER RIVER ACTION PLAN
Forests & Herbicides
A Guide for Forestry Crews
Province of British Columbia

Forest Vegetation Management Definition and Purpose

- Using knowledge of autecology, competition, and responses in developing prescriptions that include strategies for avoiding problems through the use of appropriate site preparation treatments and the selection and timely application of appropriate treatments.
- Art and practice of manipulating vegetation.
- Treatments applied at one or two points in time.
- Promote the growth of important crop trees by delaying the growth of competing brush and trees of little commercial value.

Integrated Vegetation Management

Integrated forest vegetation management is an organized and planned approach that utilizes all available techniques for managing forest vegetation. Integrated forest vegetation management (like Integrated Pest Management) involves the following five steps:

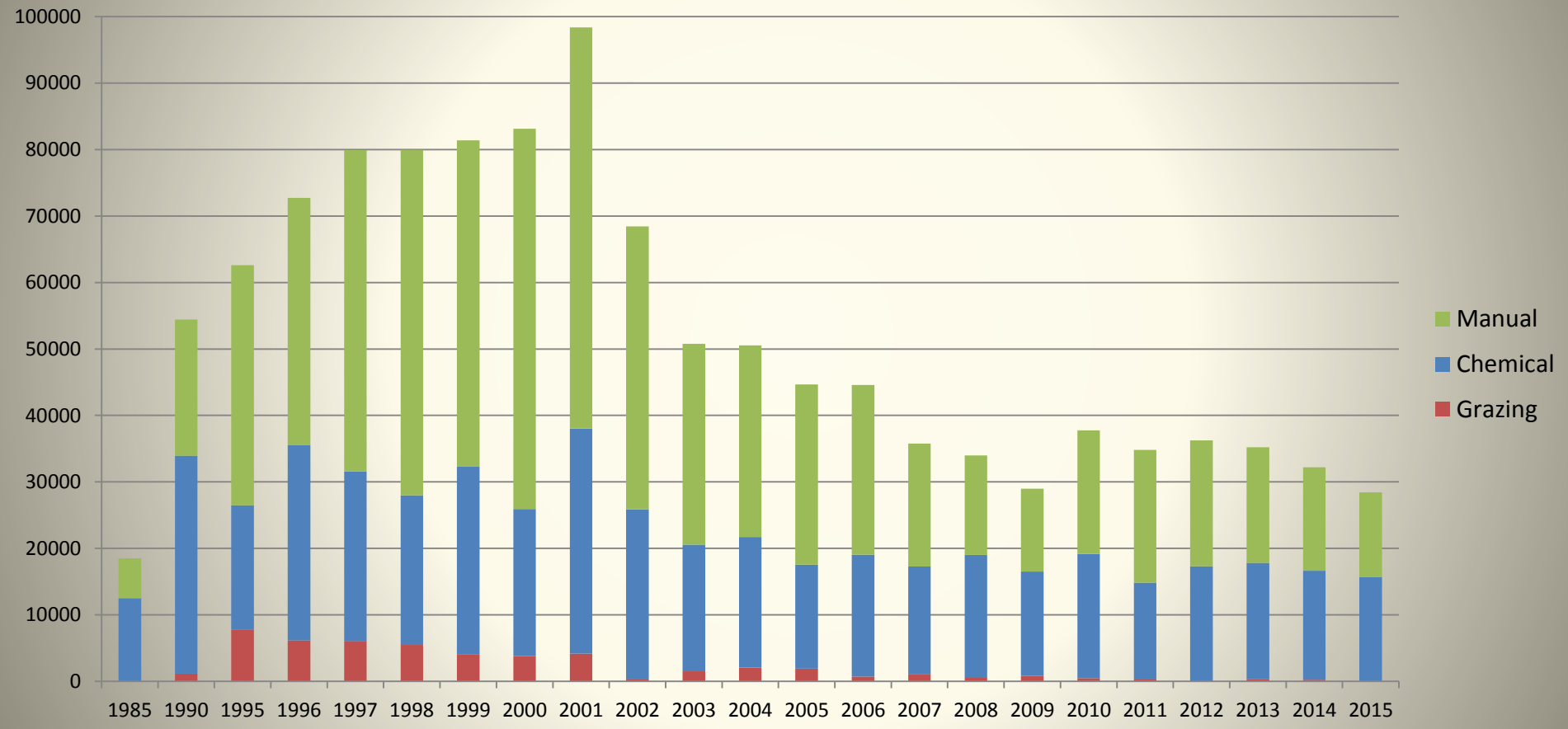
1) problem identification or diagnosis;
2) specifying injury and treatment thresholds;
3) monitoring and predicting vegetation development and young stand dynamics;
4) selecting treatment options; and,
5) evaluating treatment effectiveness and impacts.

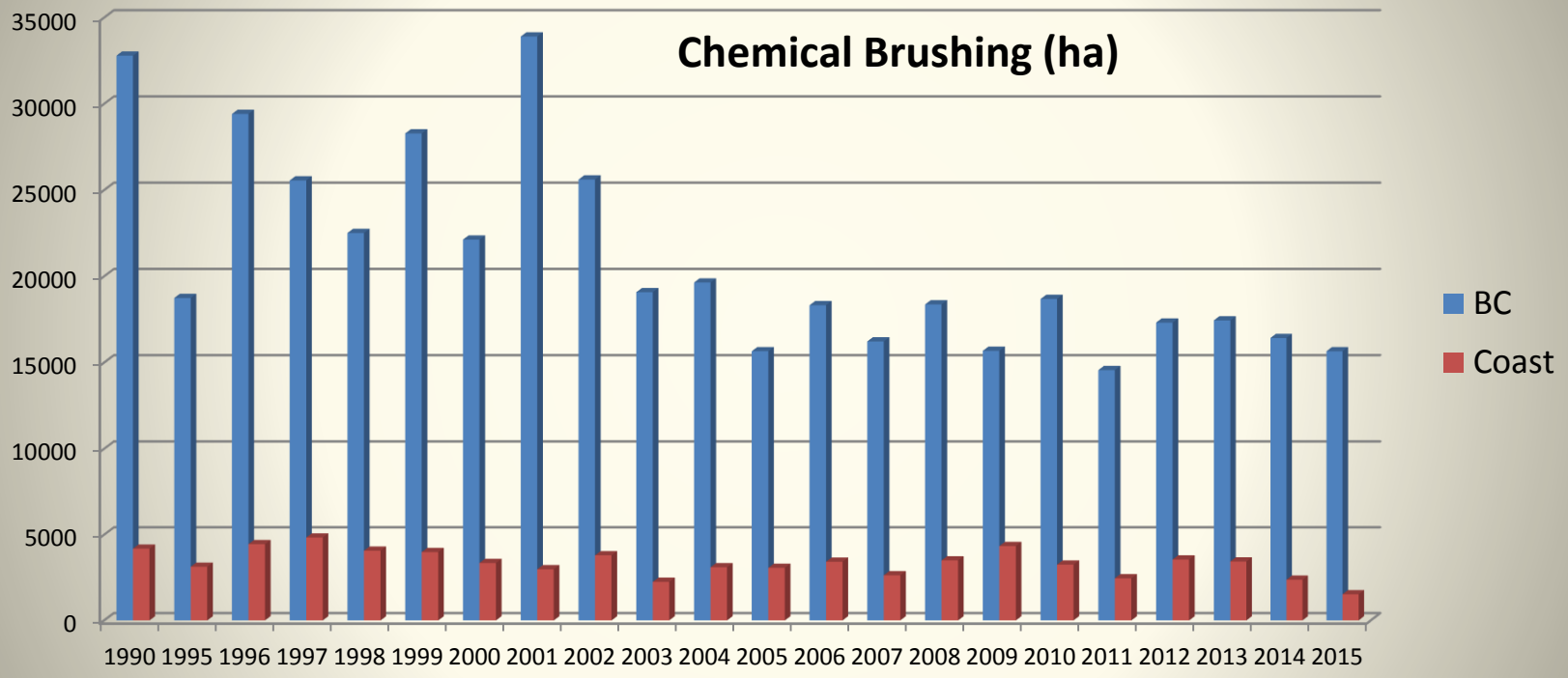
Back to the Future (1993)

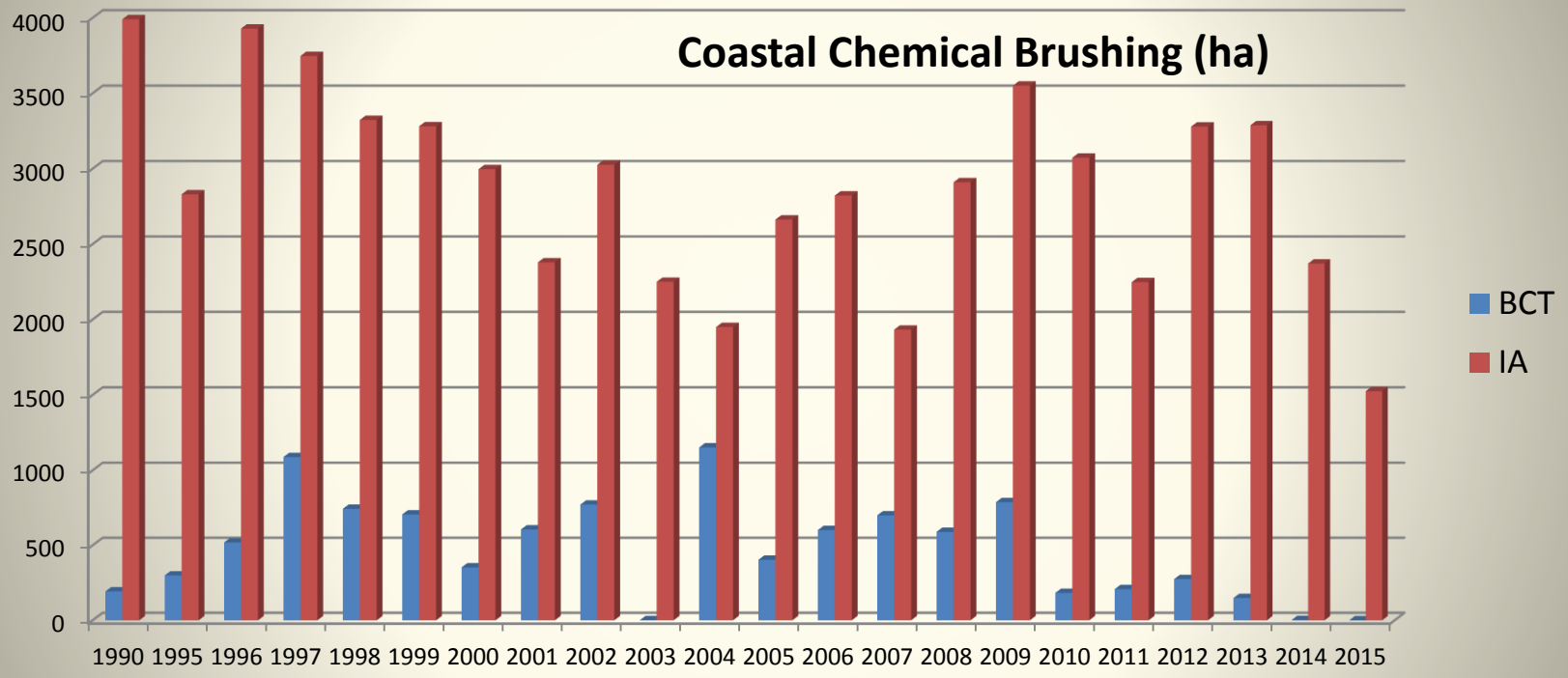
“There are many challenges still to be met in forest vegetation management in British Columbia. These include:

- improving communication with the general public
- determining the impact of brushing activities on biodiversity
- resolving concerns about worker health and safety,
- striving to build and maintain a balanced vegetation management program
- Work must also be directed at investigating the relationship between brushing and mixed hardwood/conifer mgmt.
- maintaining the treatment options that are presently available while continuing the search for new ones”

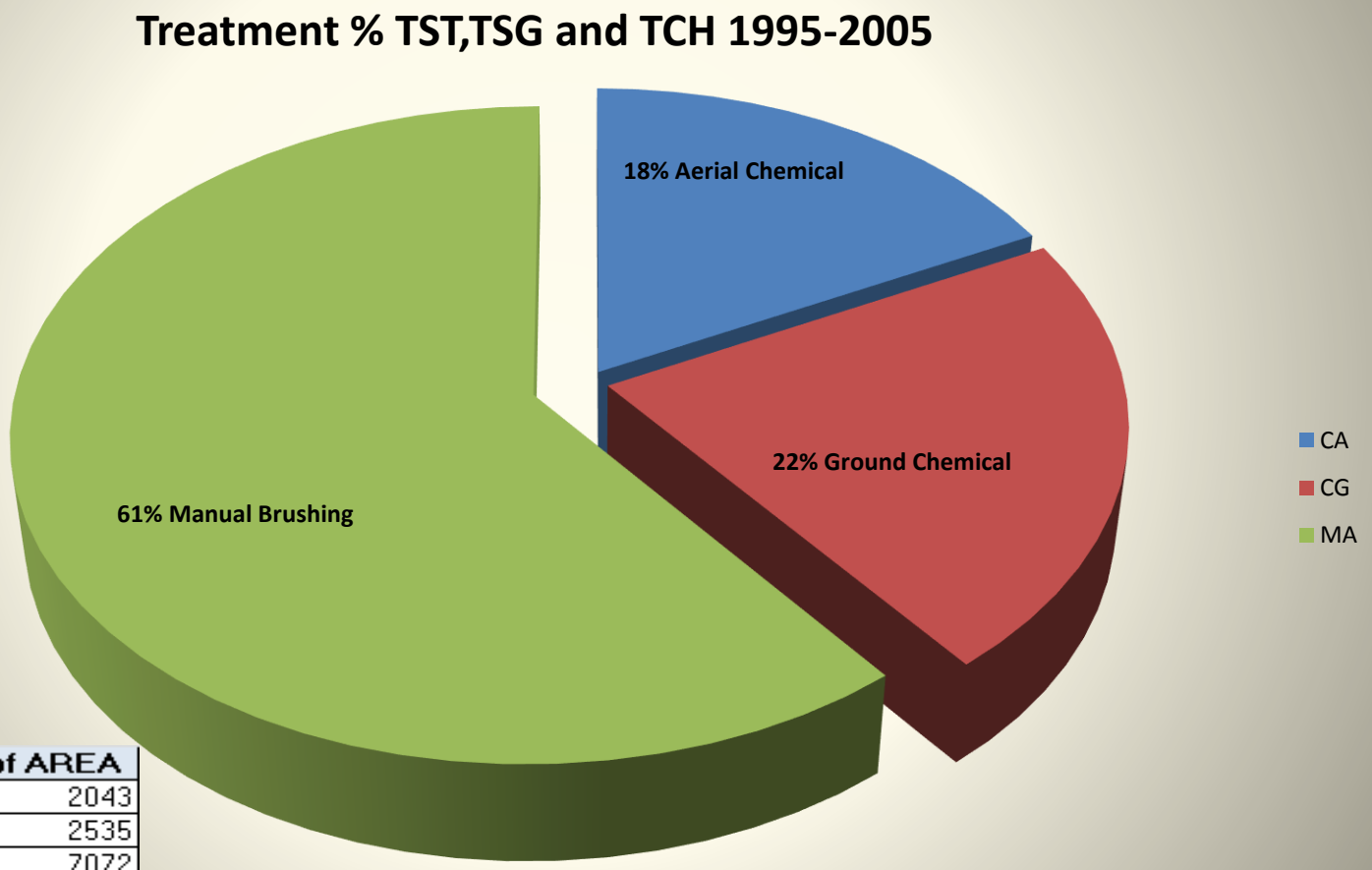
Hectares Brushed in B.C.



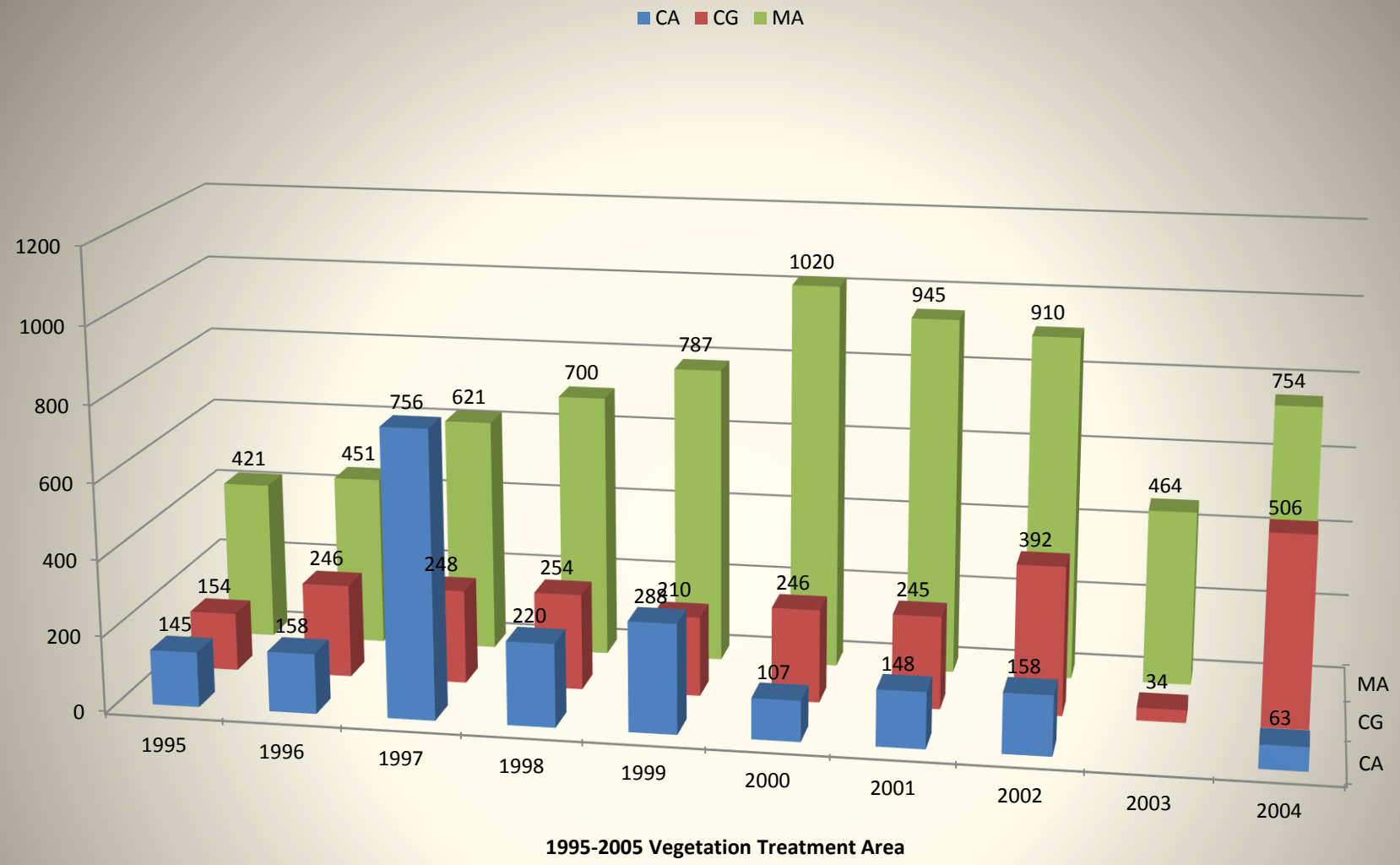

Chemical Brushing (ha)
35000
30000
25000
20000
15000
10000
5000
0
1990 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
BC
Coast


Coastal Chemical Brushing (ha)
4000
3500
3000
2500
2000
1500
1000
500
0
1990 1995 1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015
BCT
IA

History of Vegetation Control

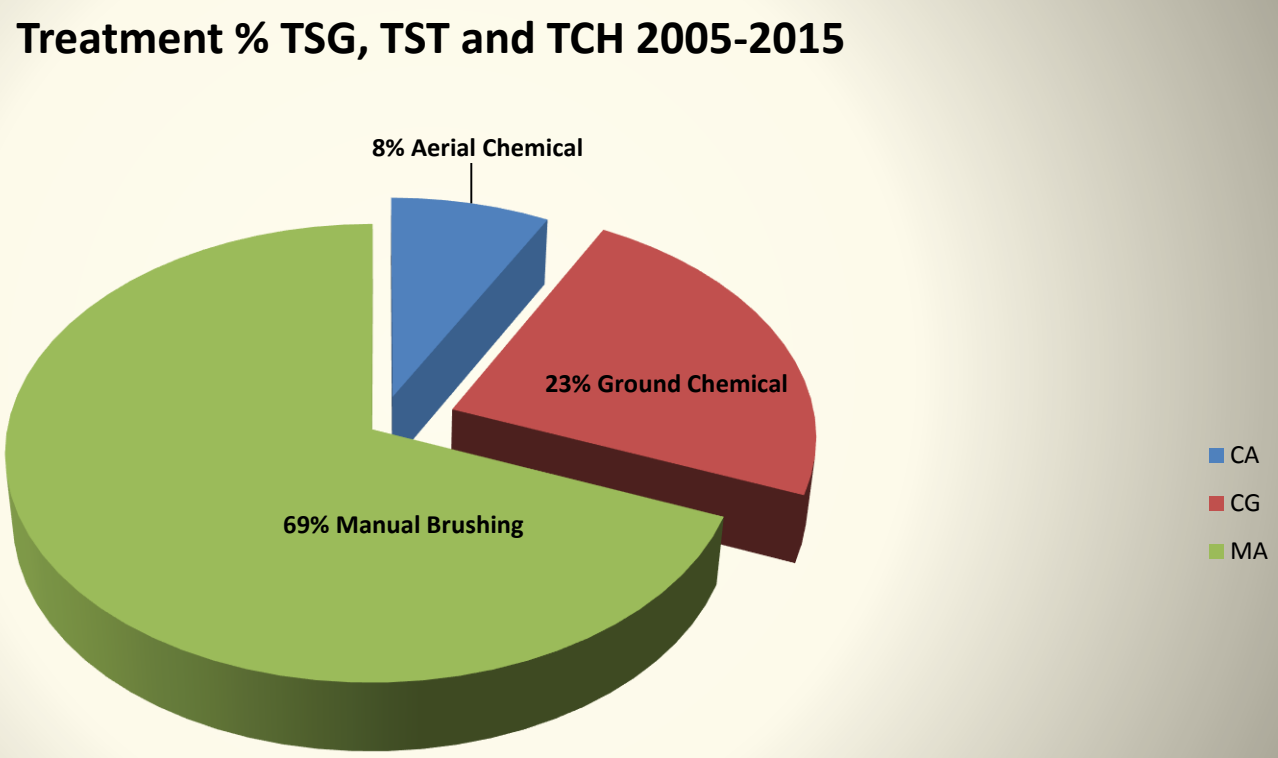


Method	Sum of AREA
CA	2043
CG	2535
MA	7072
Grand Total	**11650**

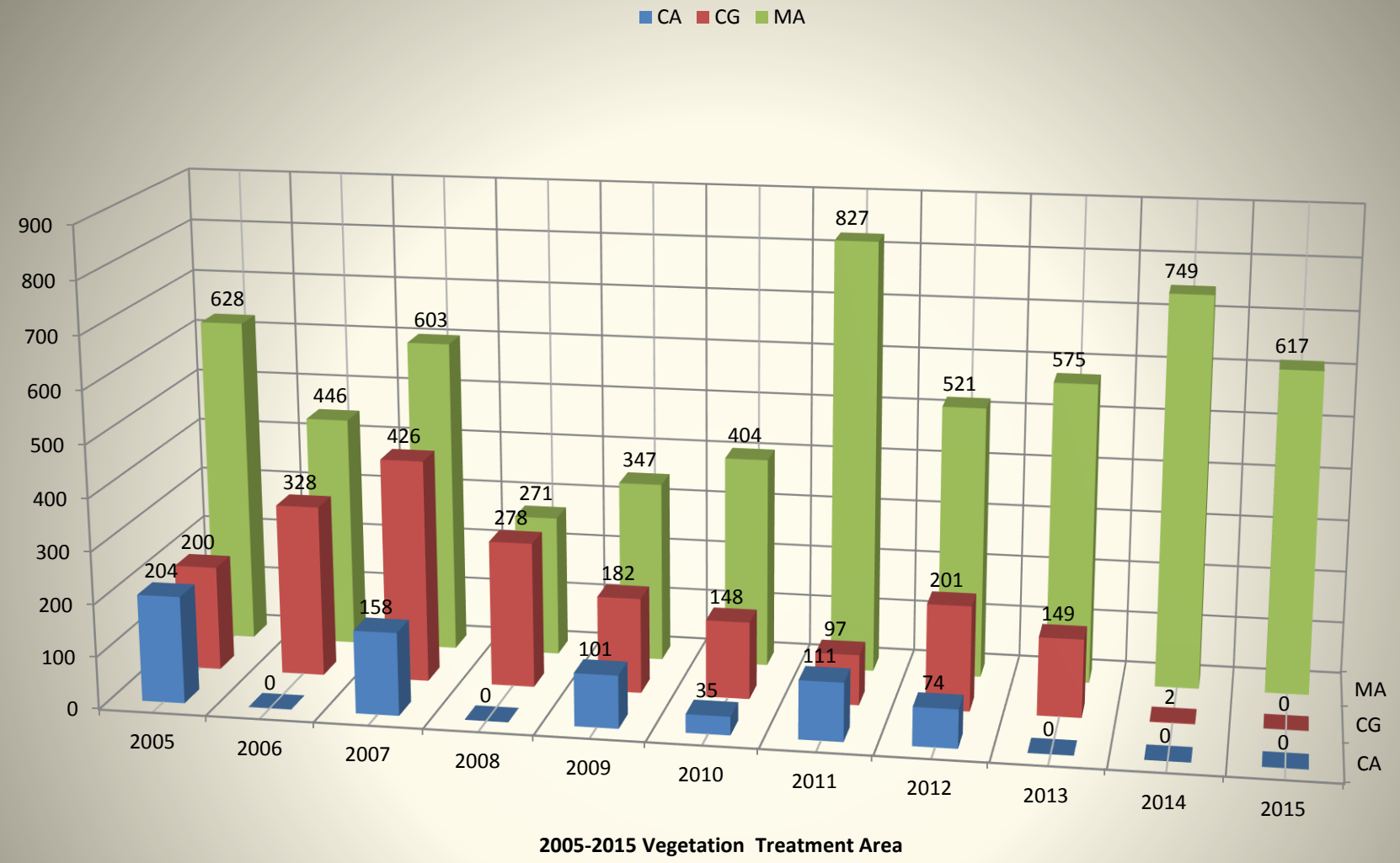


1995-2005 Vegetation Treatment Area

Last 10 Years



Technique	AREA Ha
CA	683
CG	2,012
MA	5,987
Grand Total	**8,682**



2005-2015 Vegetation Treatment Area

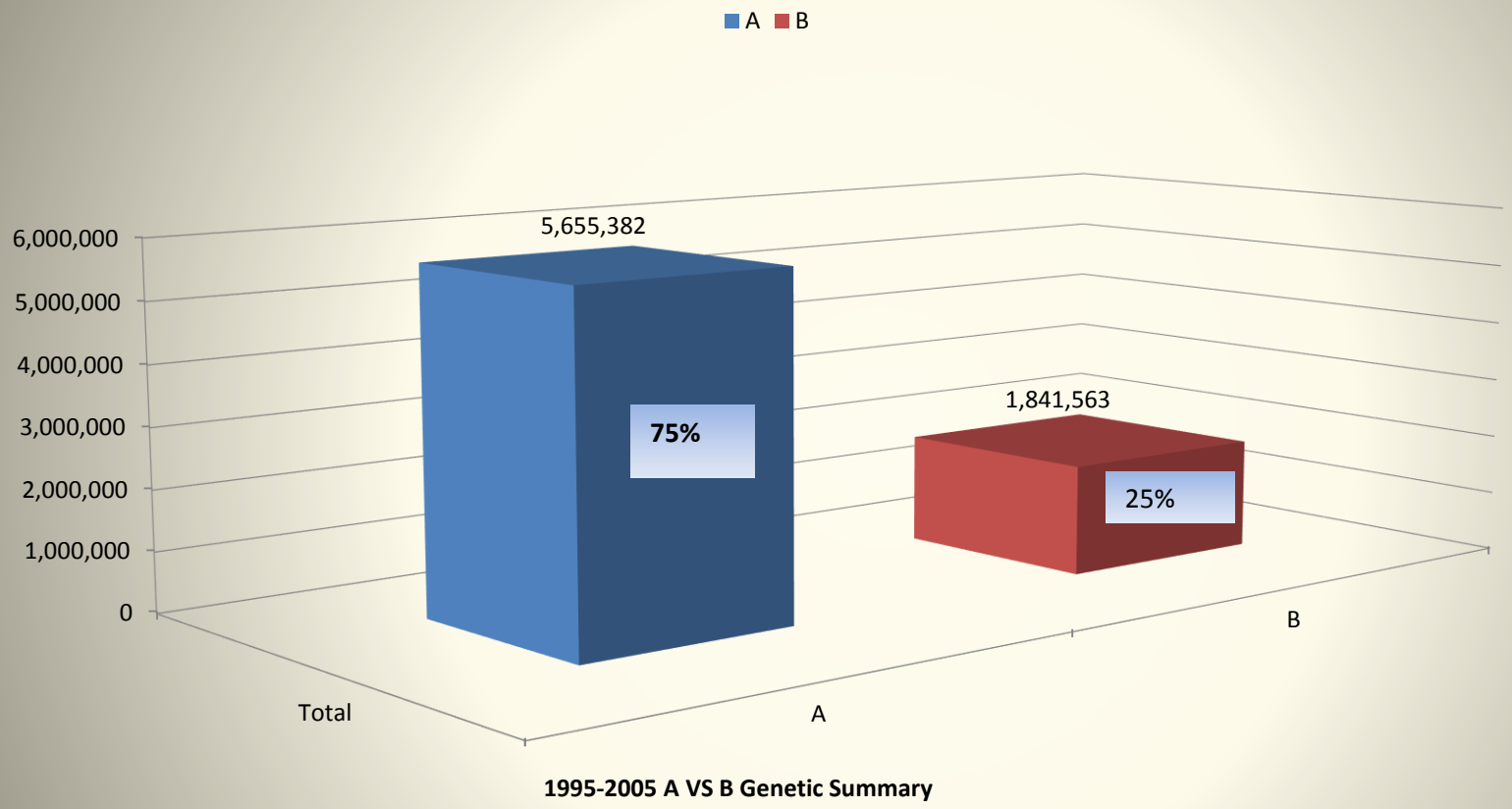
Integrated Vegetation Management approach

- So, what has been happening over time with the way that we control competing vegetation.
- - Genetically improved planting stock

Sustainable Forest Initiative (SFI)

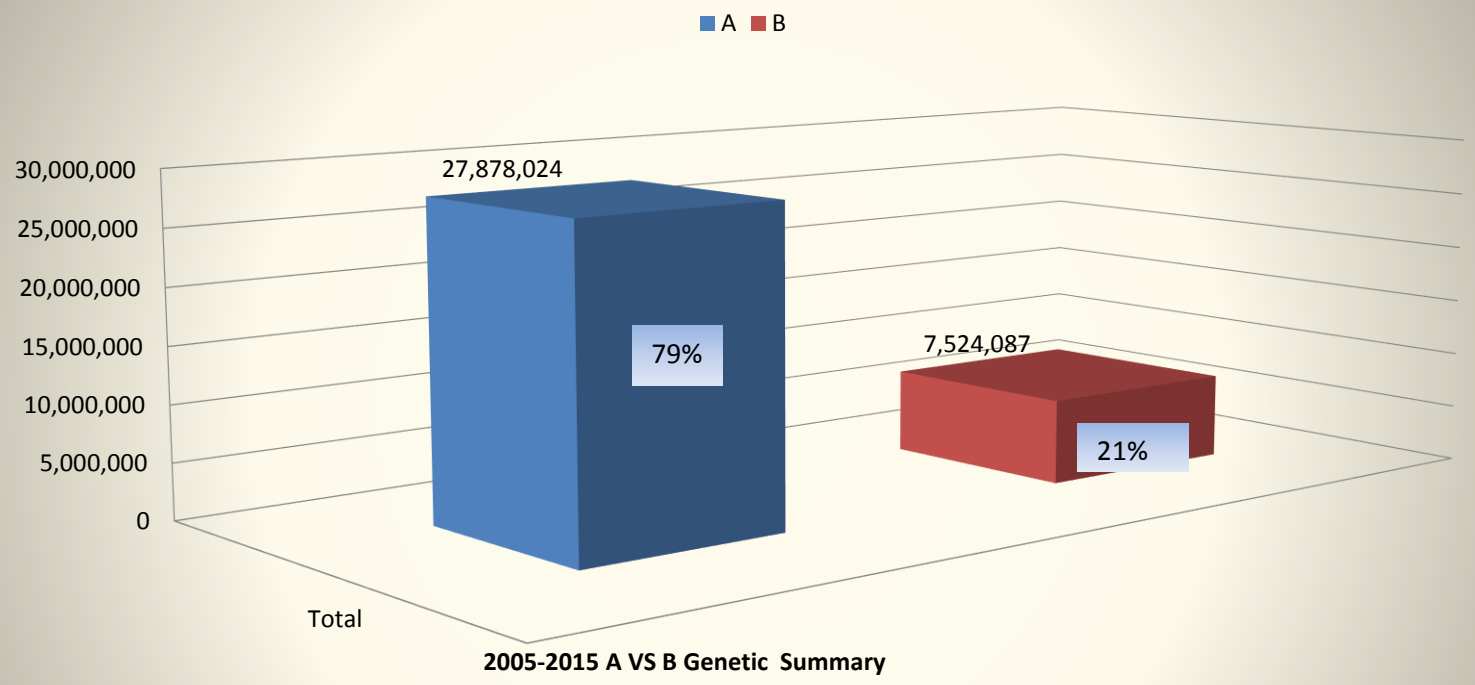
- Objective: **To ensure long-term forest**
- *productivity* **and** *conservation* **of forest resources**
- **through prompt** *reforestation***, soil** *conservation***,**
- *afforestation***, and other measures.**
- **Performance Measure 2.1.** *Program Participants*
- shall reforest after final harvest, unless delayed
- for site-specific environmental or *forest health*
- considerations, through *artificial regeneration*
- within two years or two planting seasons, or by
- planned *natural regeneration* methods within
- five years.
- **Performance Measure 2.2.** *Program Participants*
- shall *minimize* chemical use required to achieve
- management objectives while protecting employees,
- neighbors, the public, and the forest environment.
- **Indicators:**
- 1. *Minimized* chemical use required to achieve
- management objectives.
  4. Use of *integrated pest management* where feasible.

A Seed VS B Seed

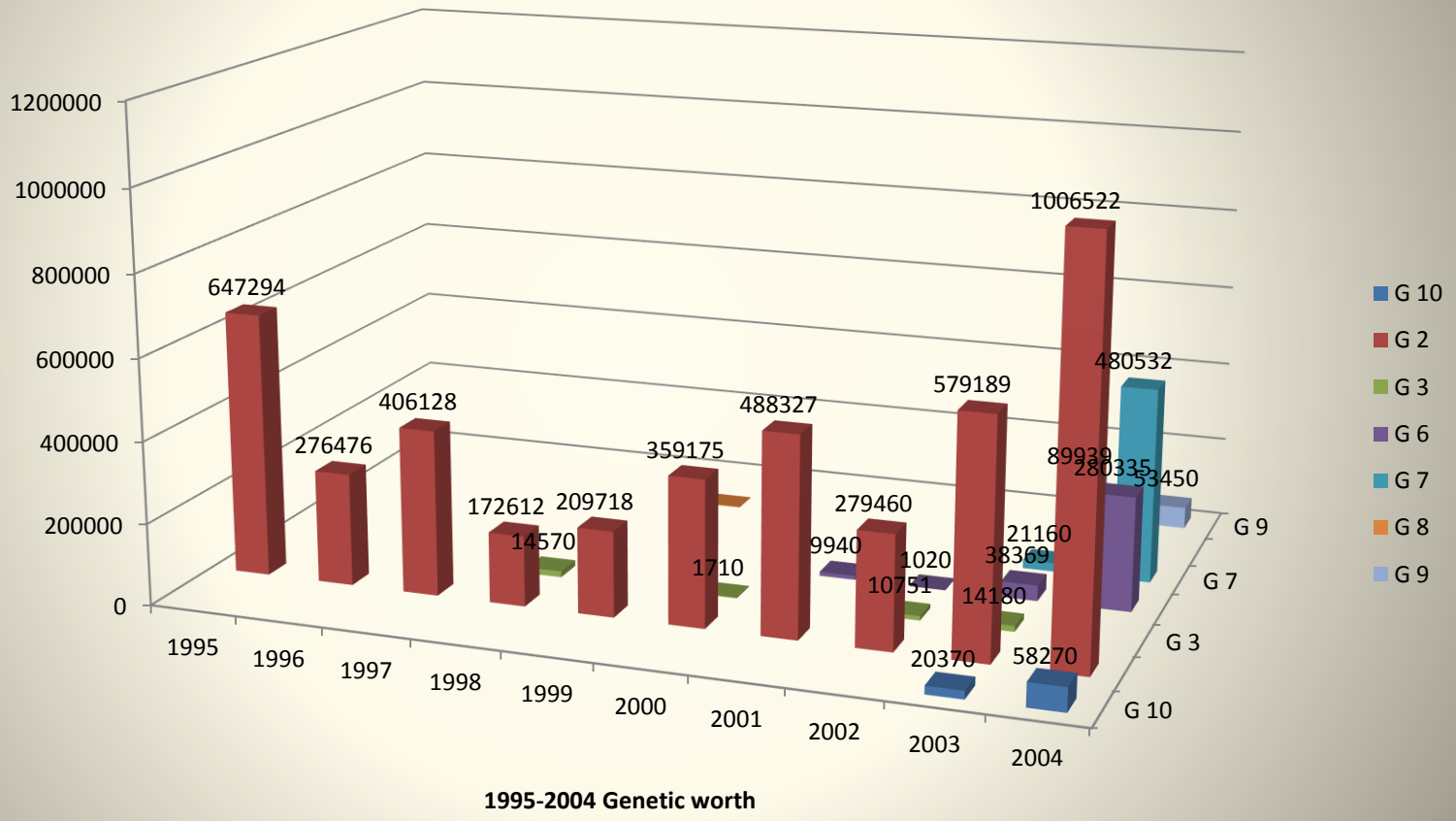


1995-2005 A VS B Genetic Summary

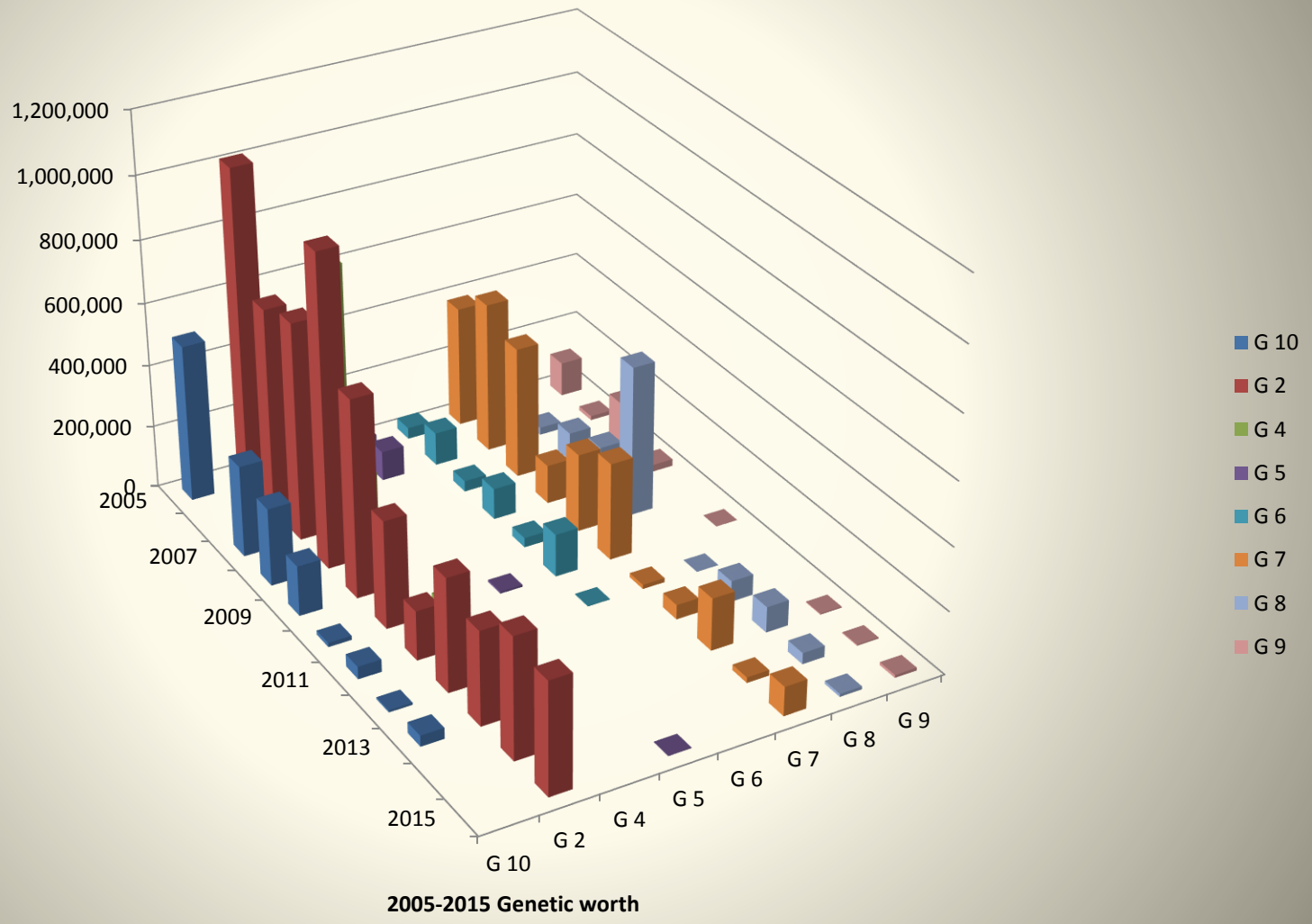
A Seed Vs B Seed



Genetic improvement



Genetic improvement



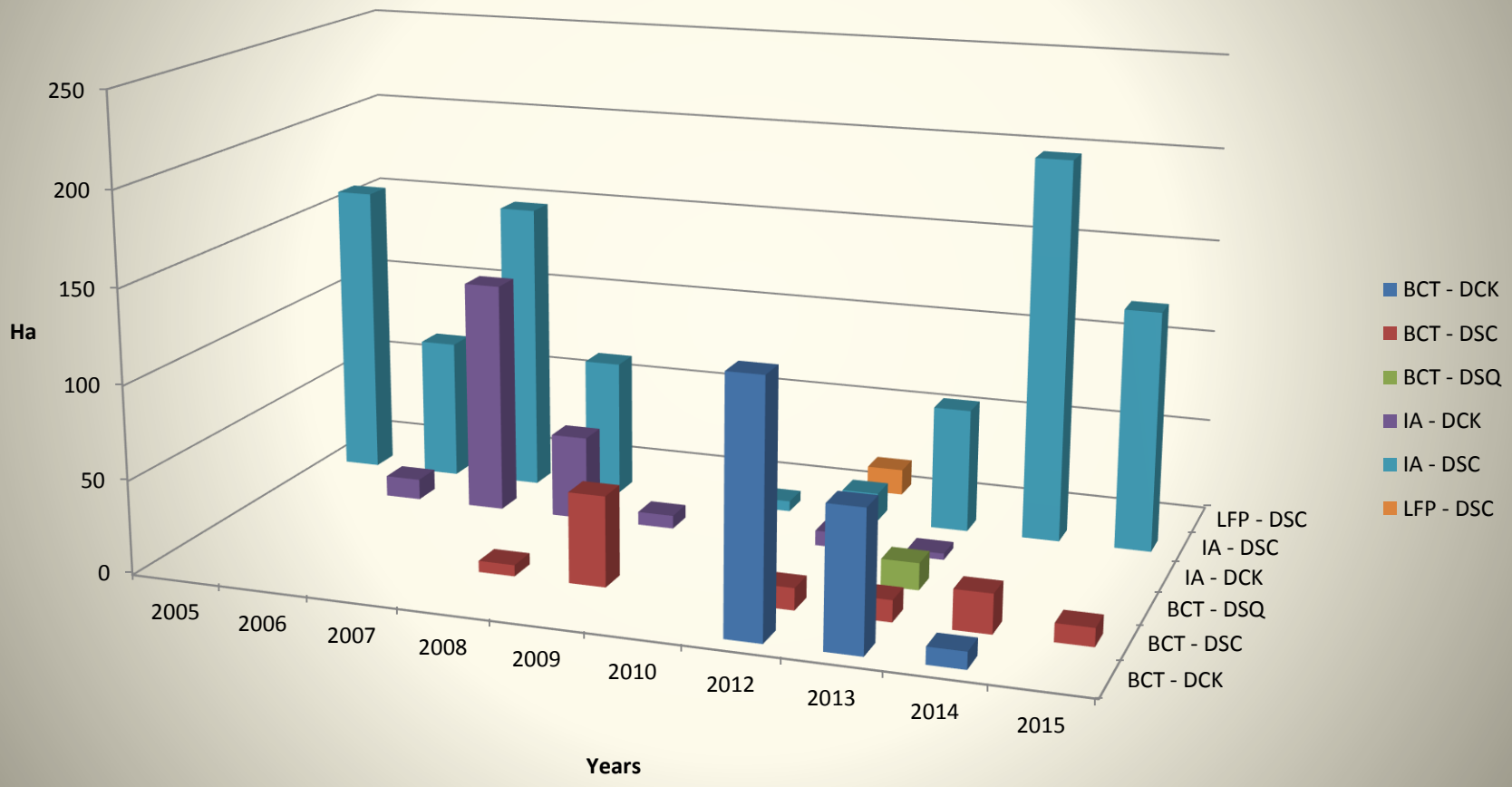
Advantages to Higher Genetic gain planting stock

- Both anecdotal and survey assessments indicate that planting stock performance generally is improving in terms of height and caliper growth in early stages of development.

Deciduous Management

- Recognition of some deciduous species particularly Alder and its importance as a mid term fibre supply as well as a better choice for those sites that are more readily adaptable to either total deciduous management and/or mixed wood management.

Alder Management



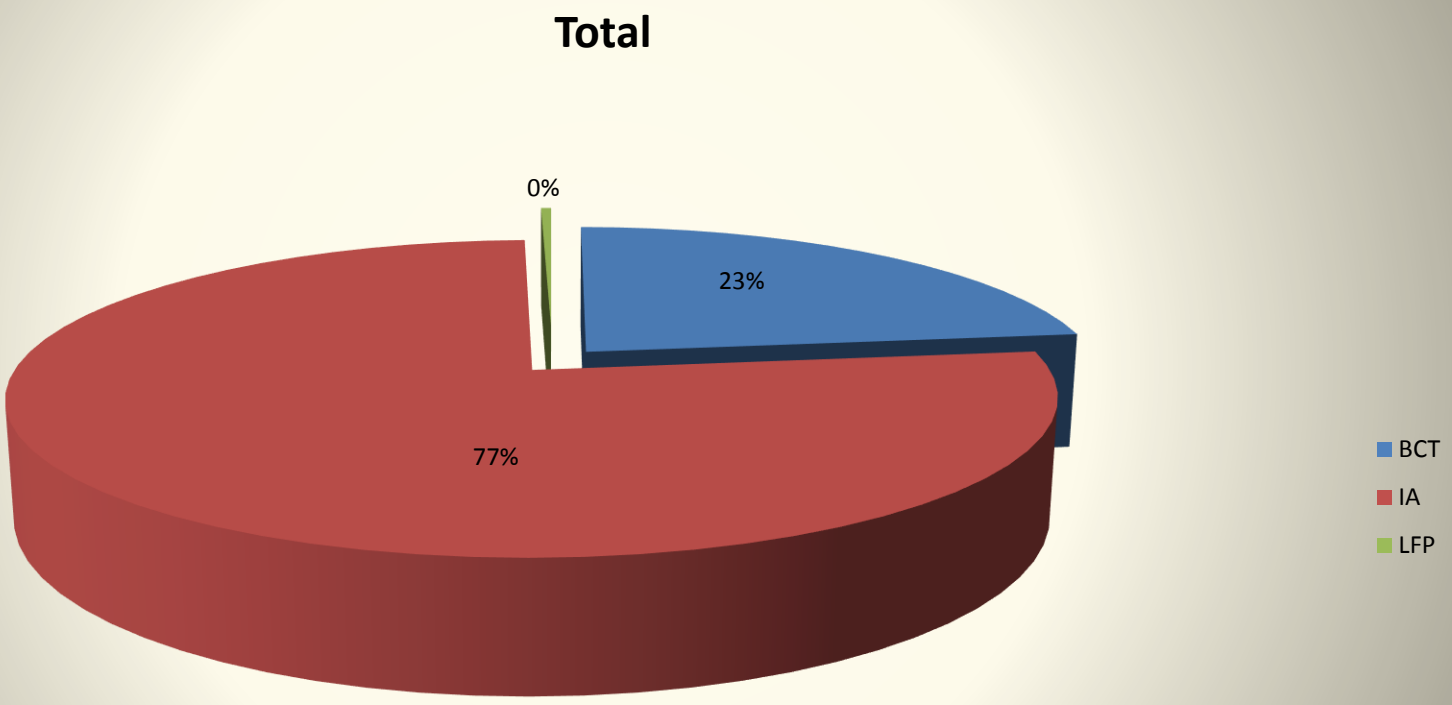
Area planted to alder

Sum of Area (Ha)	Column Labels											
Row Labels	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**Grand Total**
DCK		11	132	50				141	78	9		421
DCR	101	6	42	30	1	62	35	208	349	499	229	1561
DNI	89	32	36	10				17	88	87	188	548
DSC	159	76	151	80	48	6		41	78	226	139	1003
DSI	1	13	33	13		0		21	23			104
DSQ									15			15
Grand Total	**349**	**138**	**393**	**183**	**49**	**68**	**35**	**429**	**630**	**821**	**556**	**3651**

Target

DCK	250 ha/year
DCR	200 ha/year
DNI	200 ha/year
DSC	250 ha/year
DSI	100 ha/year
DSQ/DNC/DHG	200 ha/year

Alder Management



Integrated Veg Management Control

- Focus more on deciduous control for the conifer free growing crop tree standard.
- Species at risk management where some non crop species are purposely being left for other purposes e.g. Mtn Beaver