

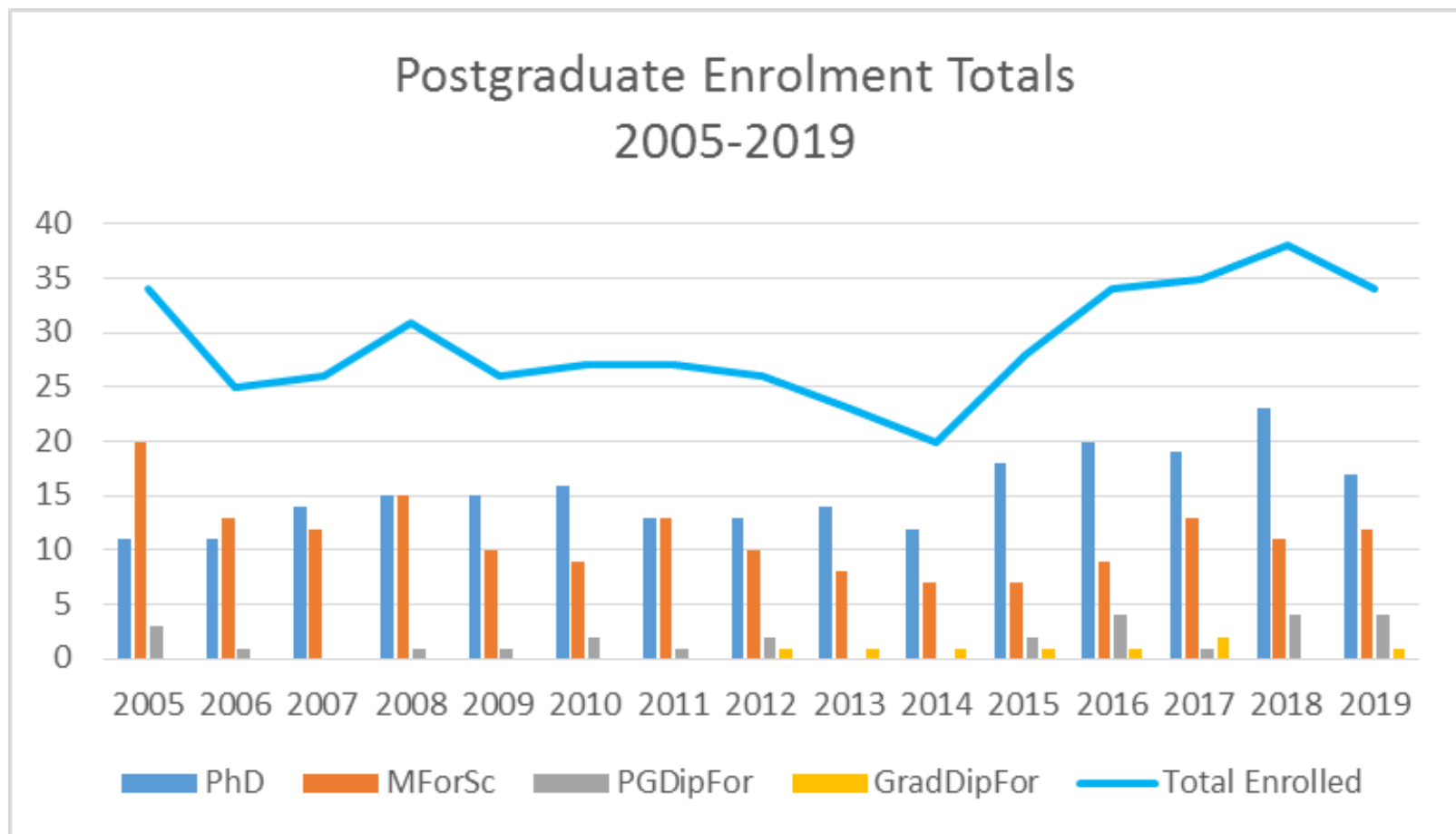
Adapting forestry education in New Zealand to a changing environment



New Zealand School of Forestry Degree programmes

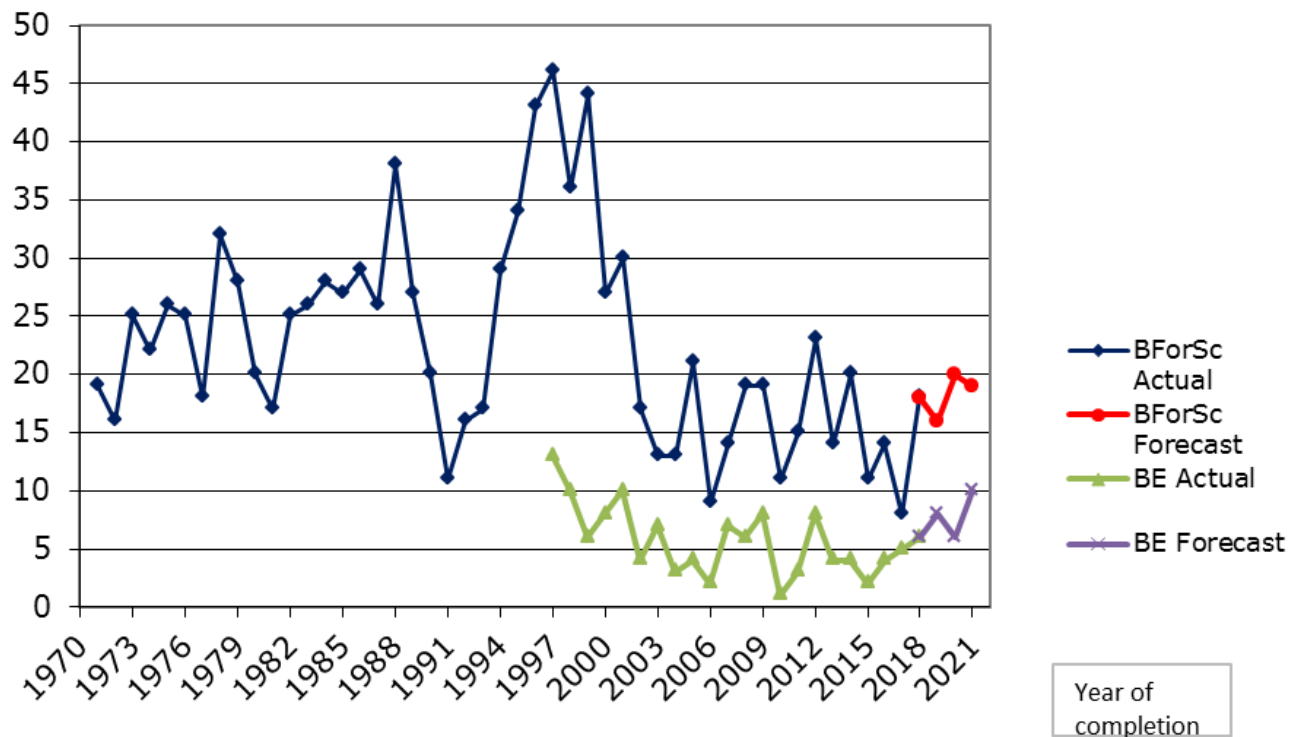
- BForSc(Hons)
- BE(Hons) – Forest Engineering
- PGDipFor
- MForSc
- PhD

Postgraduates



Undergraduates

BForSc & BE Graduates 1971 - present



Changing environment

- Increased ownership of forest land by Indigenous Māori through treaty settlements
- Enactment of NZ Emissions Trading Scheme
- Implementation of One Billion Trees programme

Changing environment

- Harvesting increasingly from
 - Small-scale owners
 - Steeper sites
- Concerns with Health & Safety
- National Environmental Standard for Plantation Forests

Our response

- Greater communication with our stakeholders
 - Forest owners
 - Iwi
 - Government
 - Recent graduates & their employers
- Benchmarking
- Development of new research programmes
- Incorporation into curriculum

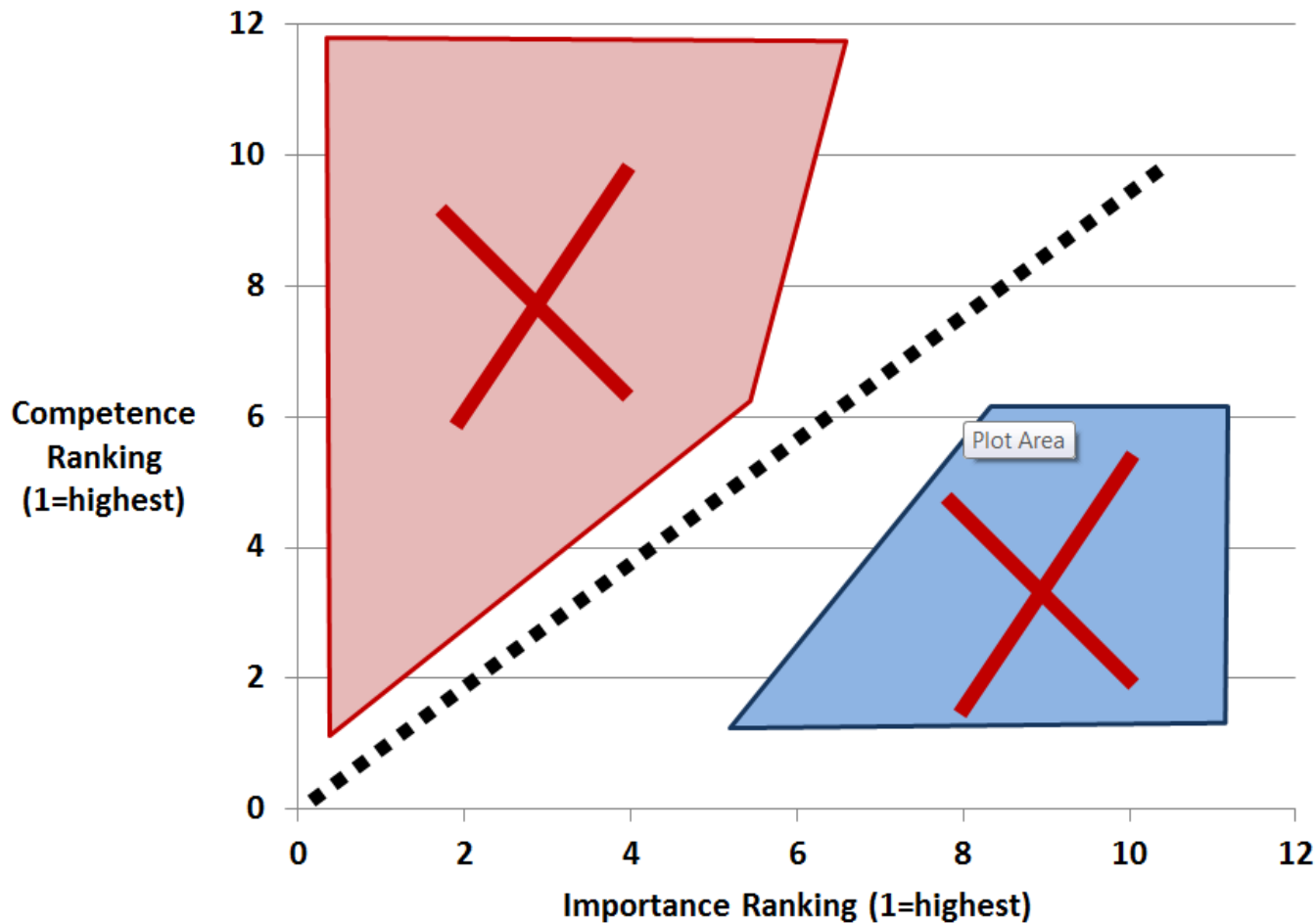
Programme reviews

- Degree programmes get reviewed every 5 years
- Informed 2013 and 2018 reviews with a survey of recent graduates and their employers

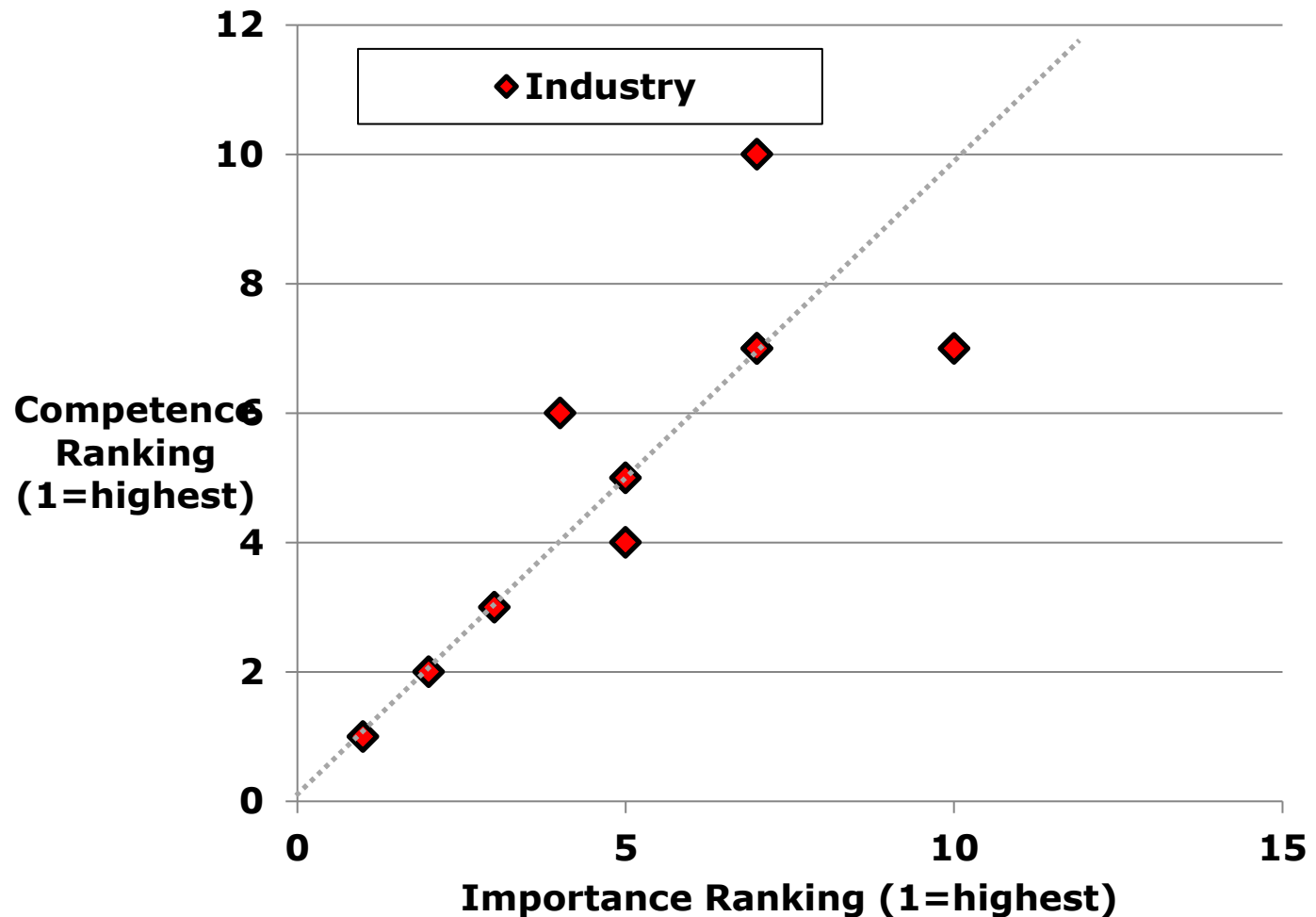
Survey of recent graduates & their employers (2013 & 2017)

- Prof Thom Erdle
 - University of New Brunswick
- Survey of
 - Knowledge Base
 - Technical skills
 - Professional abilities
 - Personal traits

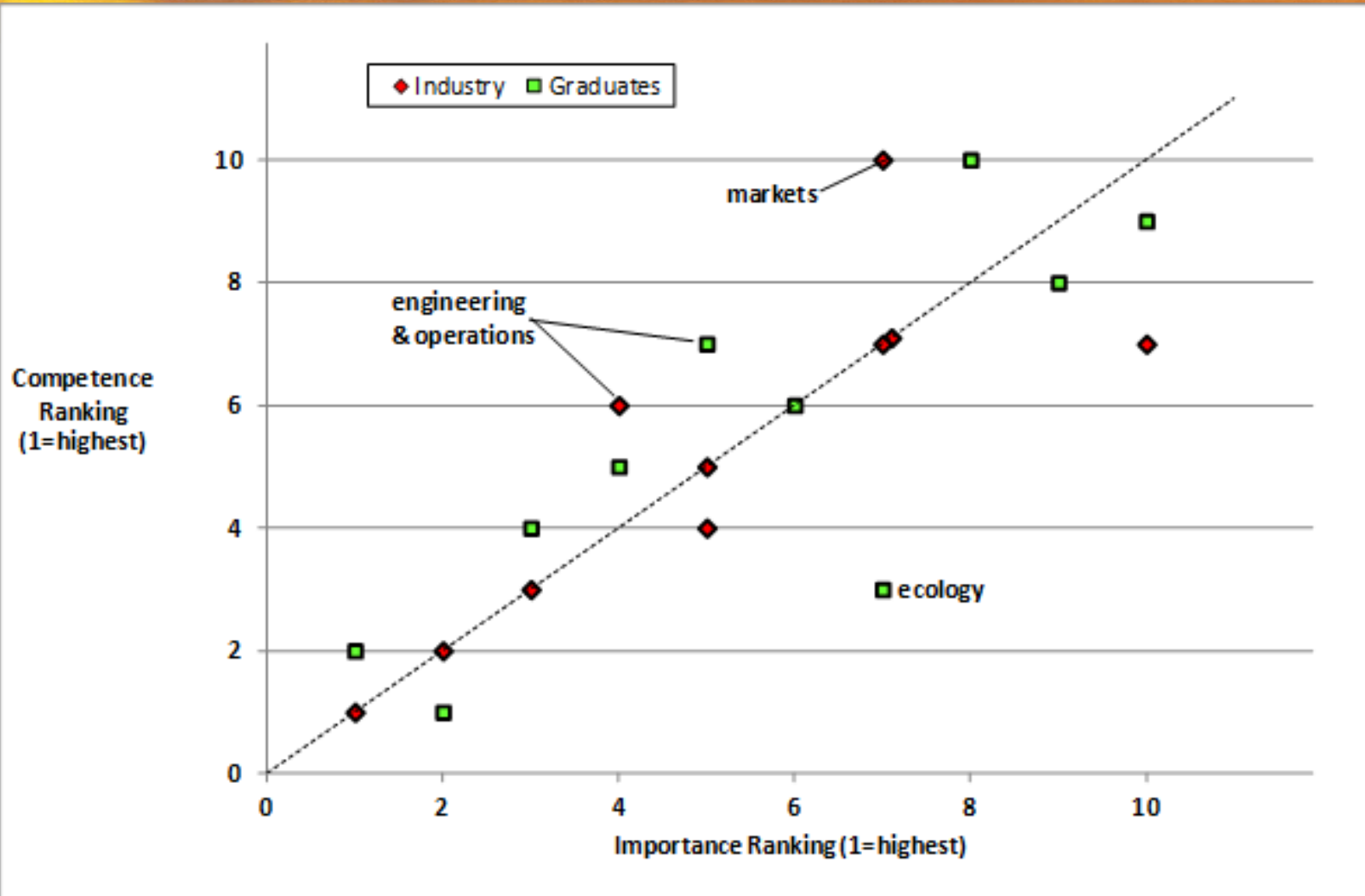
Competence vs Importance



Importance vs competence of *knowledge areas*



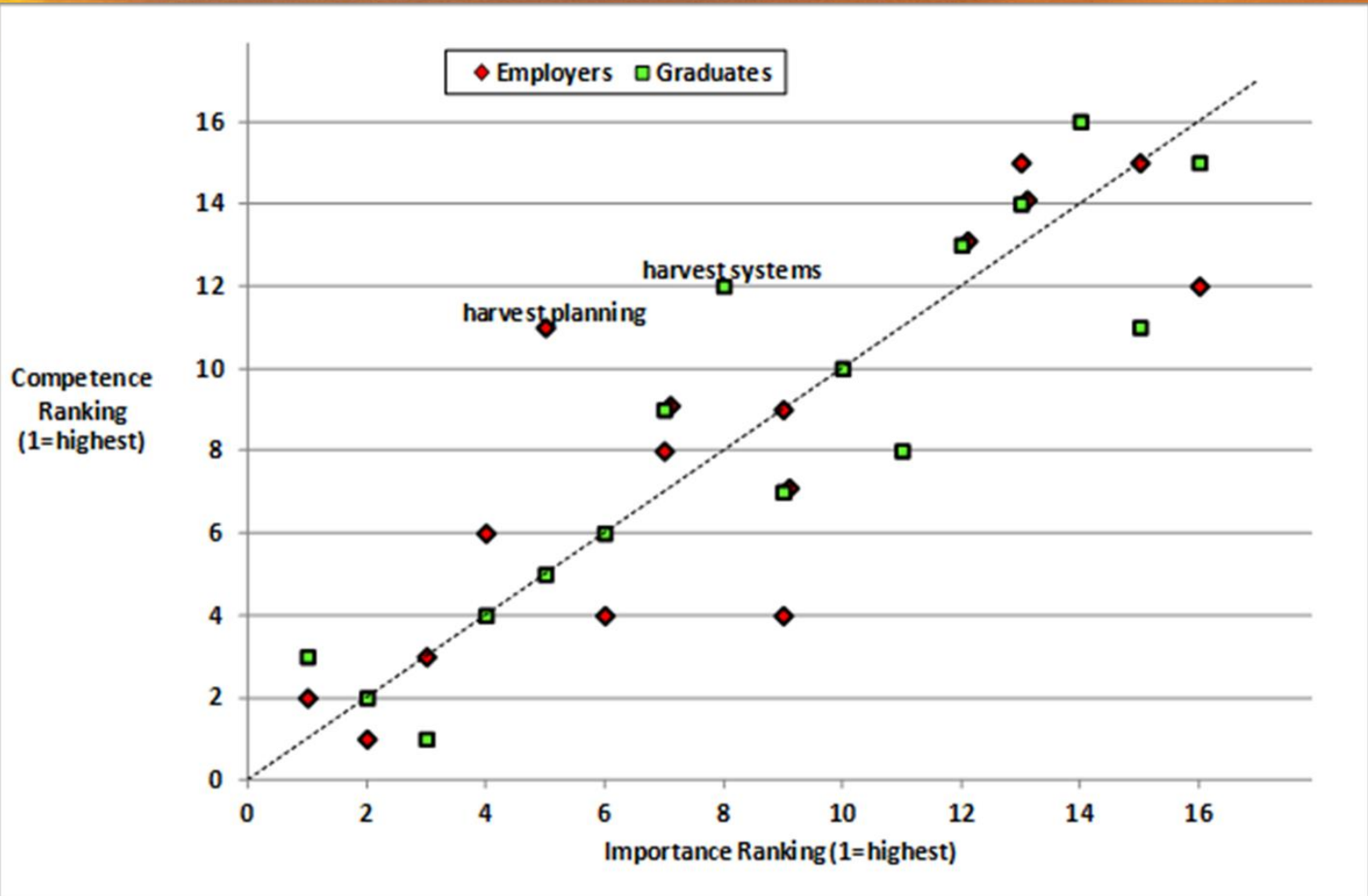
Importance vs competence of *knowledge areas*



What did we do?

- Revamped marketing course
- Forest products trade & international marketing

Importance vs competence of *technical skills*

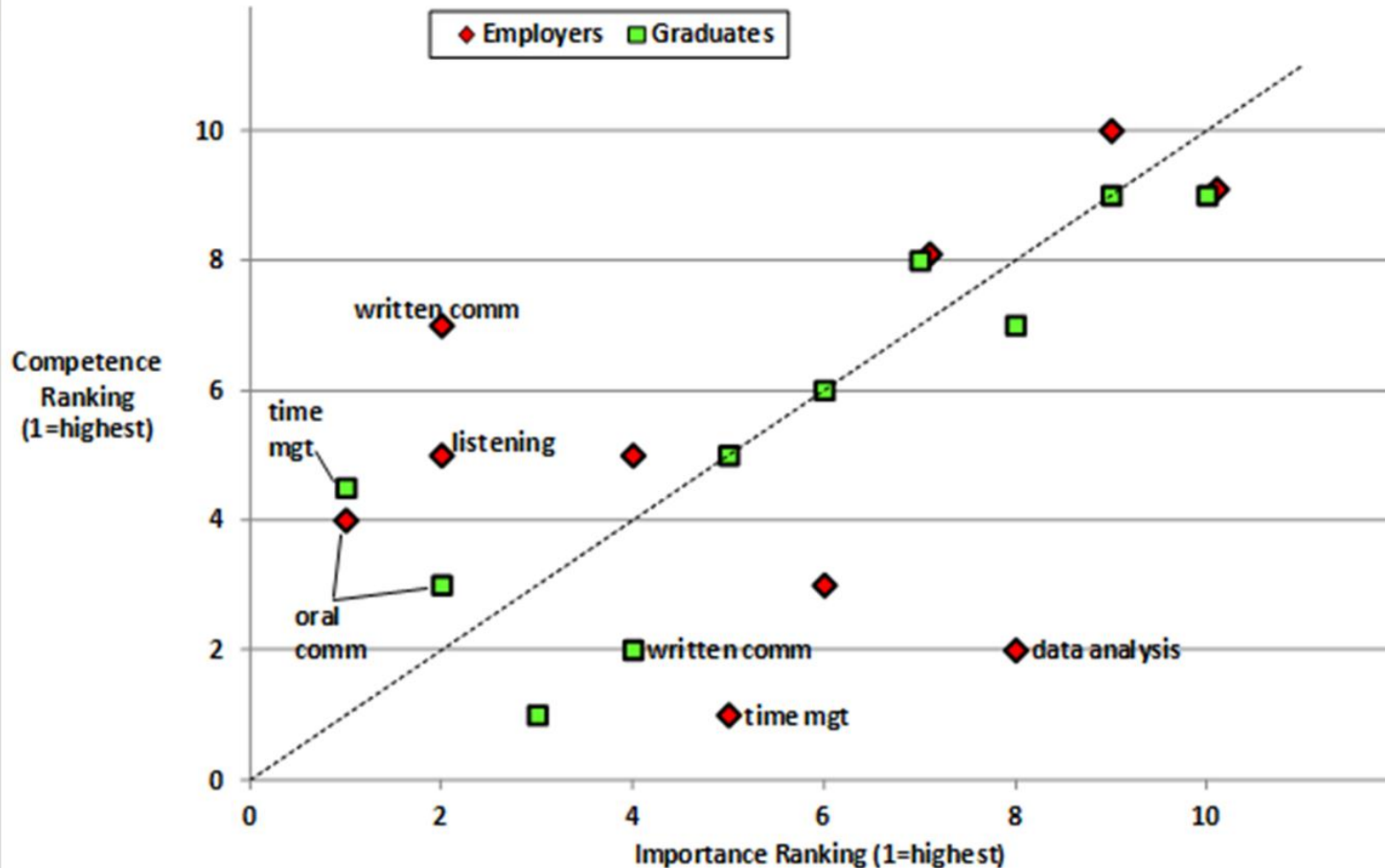


What did we do?

- Made second forest engineering course compulsory
- Forest harvest planning



Importance vs competence of *professional abilities*



What did we do?

- Reinforced teaching strands to improve
 - Written communication
 - Oral communication

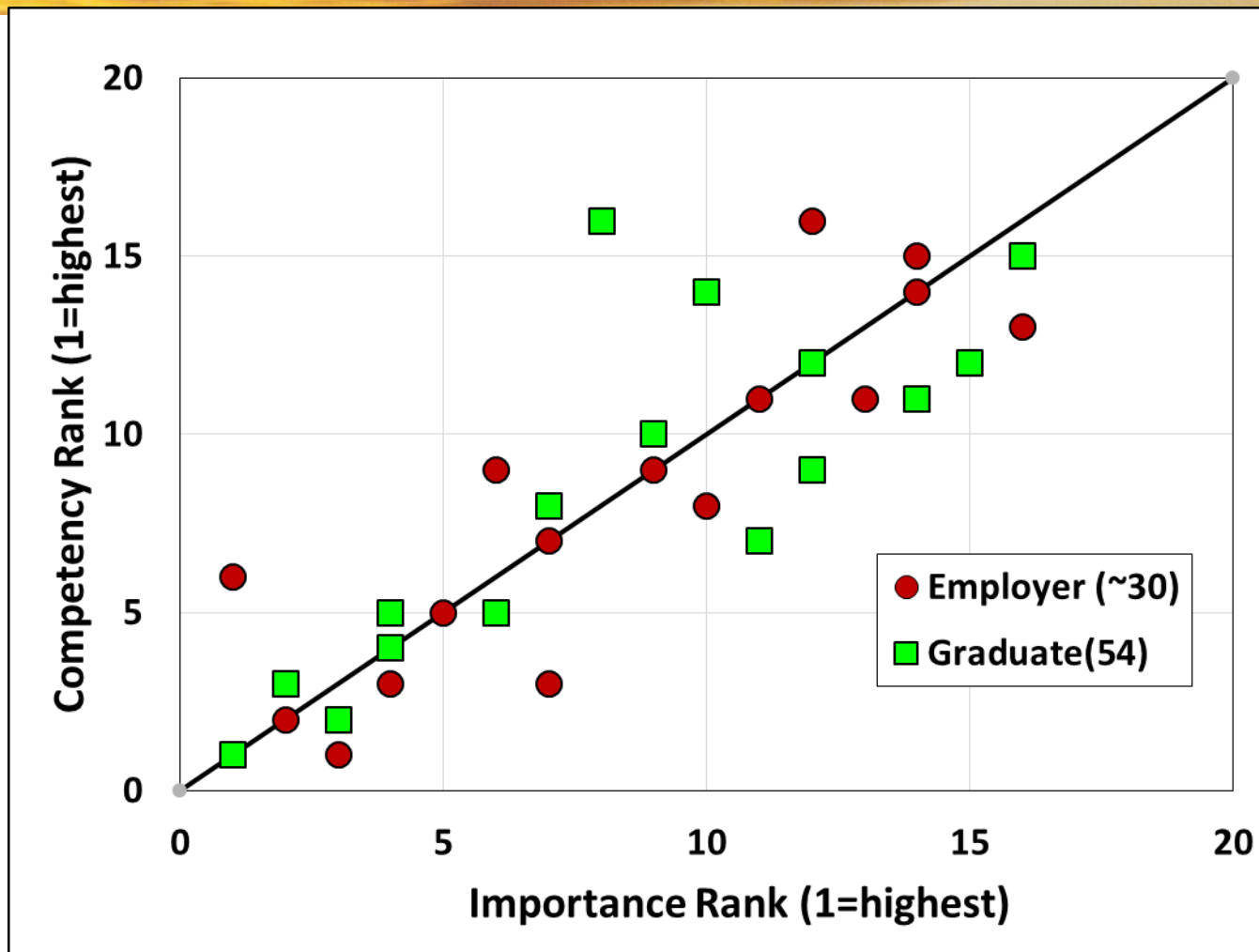
Importance of “soft” skills

- Employers also provided feedback that graduates often lacked skills in
 - Management
 - Leadership
 - Negotiation
 - Decision-making

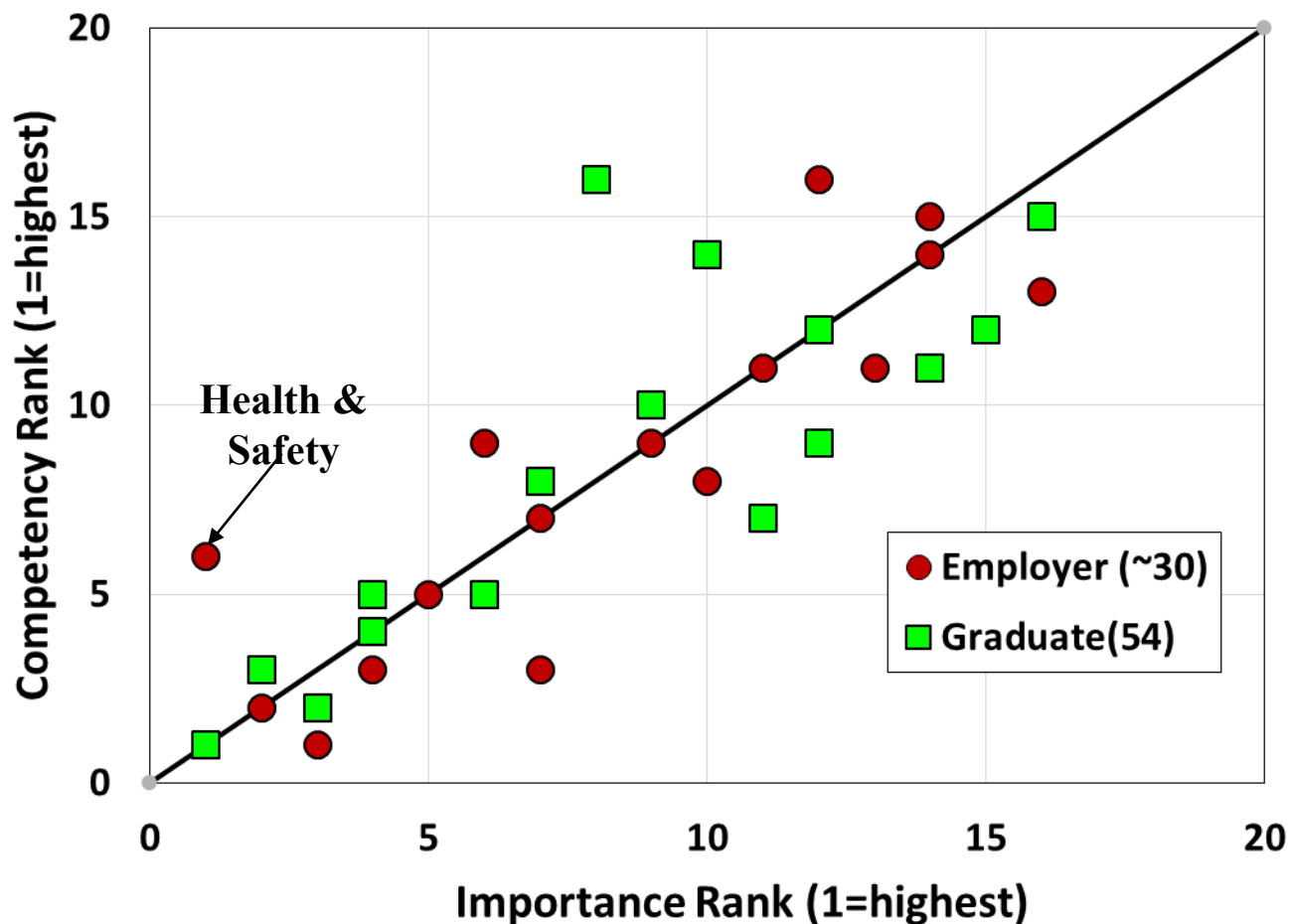
What did we do?

- Developed a human factors module taught by a specialist
 - Leadership/management/Supervision
 - Motivation
 - Teamwork/group dynamics

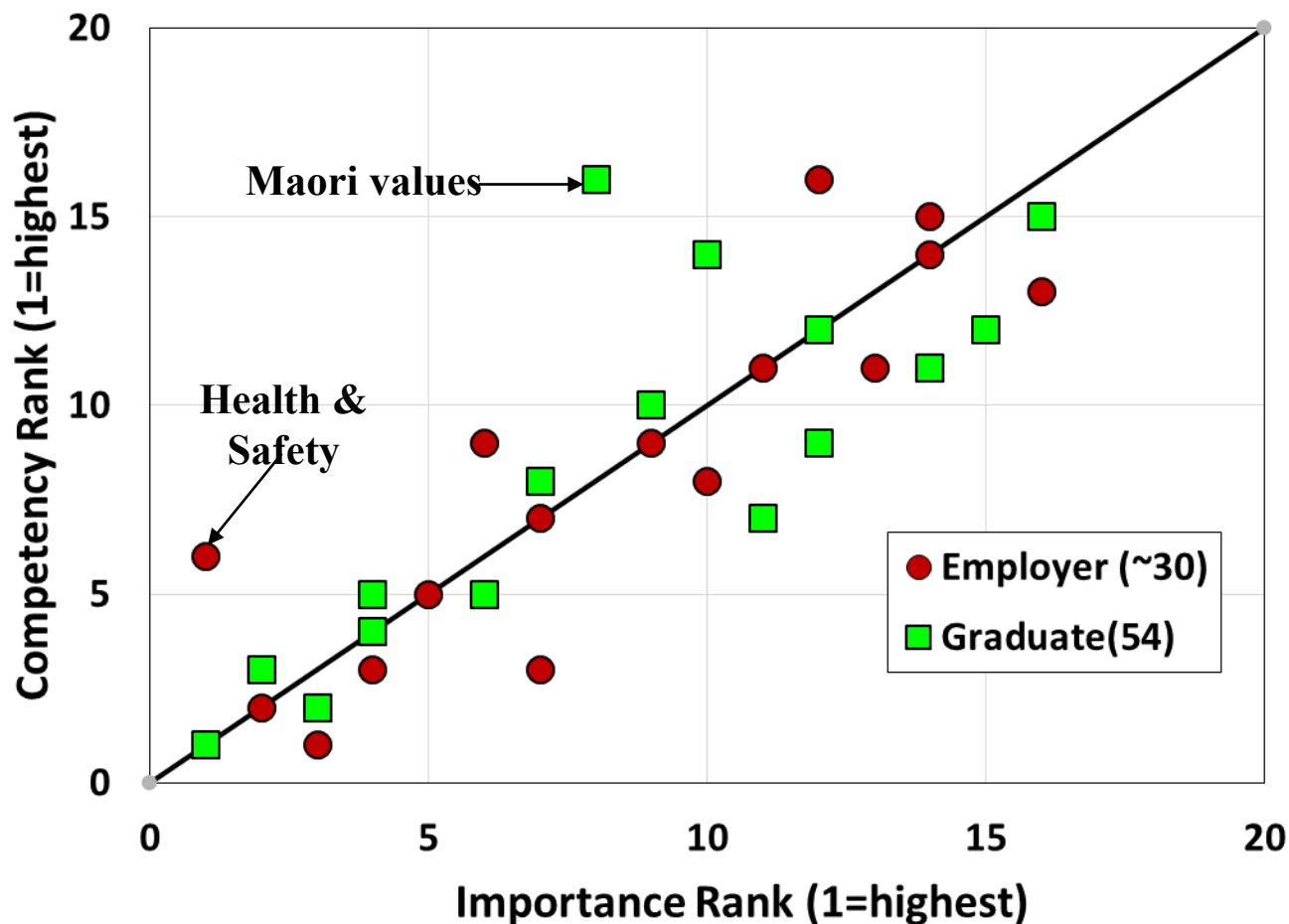
Knowledge Base: Ranking Correlation (2017 Survey)



Knowledge Base: Ranking Correlation (2017 Survey)



Knowledge Base: Ranking Correlation (2017 Survey)



What did we do?

- We had anticipated these changes
- Had increased coverage of Health & Safety legislation

Had revamped Environmental Forestry course to include a module:

FORE447- Environmental Forestry

Learning Outcome - The relationships, historic and modern, between Māori and forestry

Lectures and guest speakers on (1hr each):

- Māori, legislation and forestry
- Māori land and land-owners / stakeholder consultation - what do forestry graduates need to know
- Iwi and forestry – corporate forestry
- Iwi and forestry – Kaitiaki and forest management
- Managing plantation forests for cultural and heritage values
- Native biodiversity in primary production systems
- Indigenous forestry case studies
- Field trip – bicultural competency and confidence.











International collaboration Motivation

- School of Forestry offers only professional degree programmes in NZ
- Lack of peers means that we rely on international collaboration to ensure the quality and relevance of our programmes

Benchmarking of programme

- Benchmark what we do against:
 - Canada (UBC & UNB)
 - USA (Virginia Tech)
 - Germany (Munich & Tharandt)
 - UK (Bangor)

Benchmarking

	UC	UNB	UBC	UBC	VT
			FRM	FO	0
Basics	9	14	18	18	20
Ecology	12	28	31	21	21
Soil Sciences	3	6	3	3	5
Silviculture	15	6	6	5	6
Biometry	12	8	9	8	8
Geospatial Technologies	3	3	4	4	5
Forest Management & Economics	21	19	16	19	18
Markets	3	0	3	3	0
Forest Engineering/Operations	9	5	0	12	6
Wood & Wood Products	6	2	0	3	0
Environmental, Social, Ethical	6	9	9	5	9
	100	100	100	100	100

Benchmarking to our North American counterparts

- UC BForSc has
 - Less Basics
 - Less Ecology
 - More Silviculture
 - More Biometry

Benchmarking to our European counterparts

- Similar to result for Canada/USA
- In addition UC has
 - Less Environmental, Social, Ethical

Benchmarking

- 2013 review team concluded that differences were logical given ***difference*** in forestry ***contexts***

Programme review 2018

Recommendations

- That the School become a global leader in bicultural competence & confidence
- Develop or redesign a broad-based environment-oriented first year paper

Programme review 2018

Recommendations

- Stronger focus on professional ethics, social aspects of forestry & community engagement

Programme review 2018

Recommendations

- Increase coverage of negotiation, contract management & implementation, business planning and budgeting

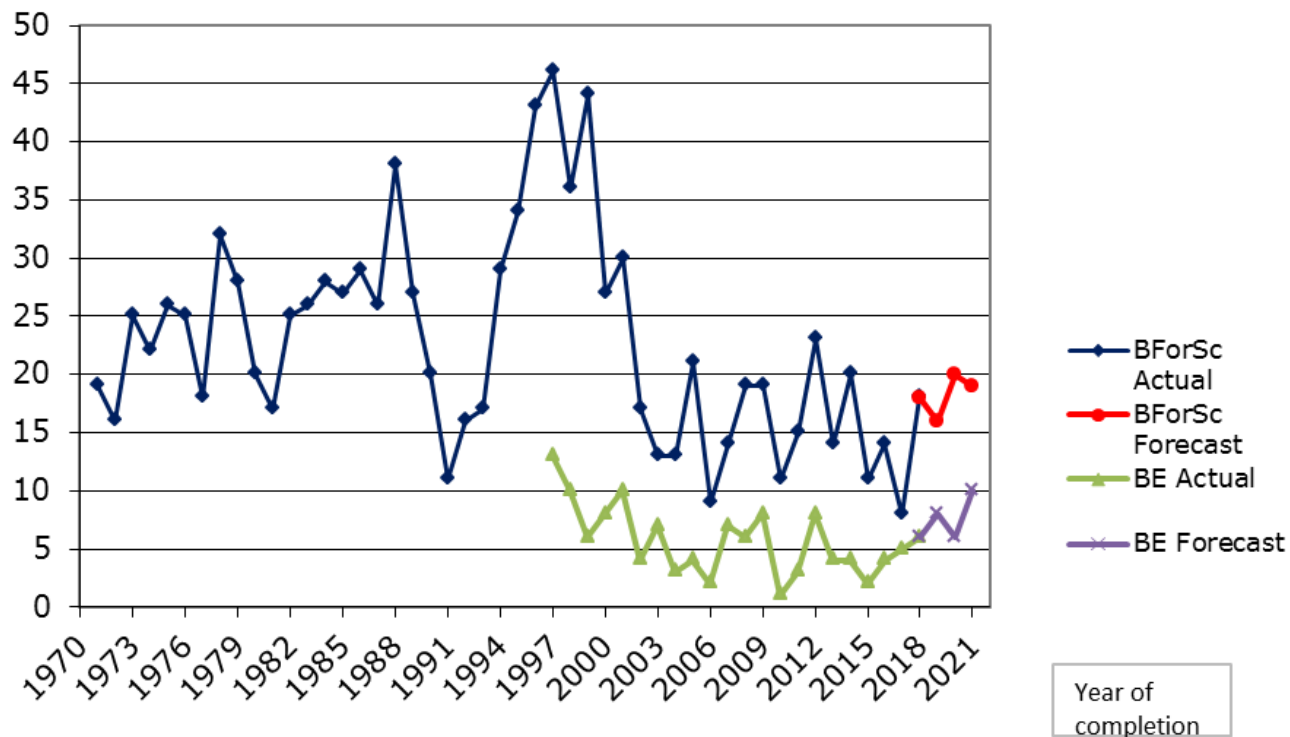
Programme review 2018

Recommendations

- Include content on the changing nature of forest & land management policies, land ownership and management arrangements

Undergraduates

BForSc & BE Graduates 1971 - present

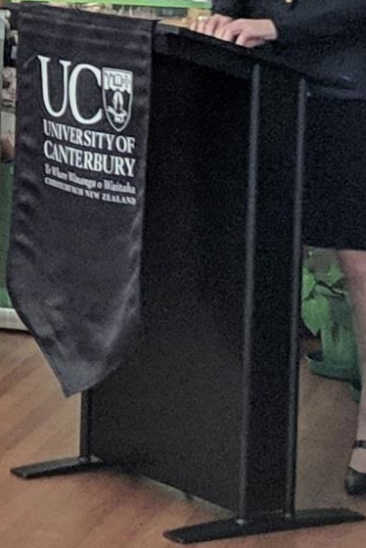


Graduates are getting good jobs



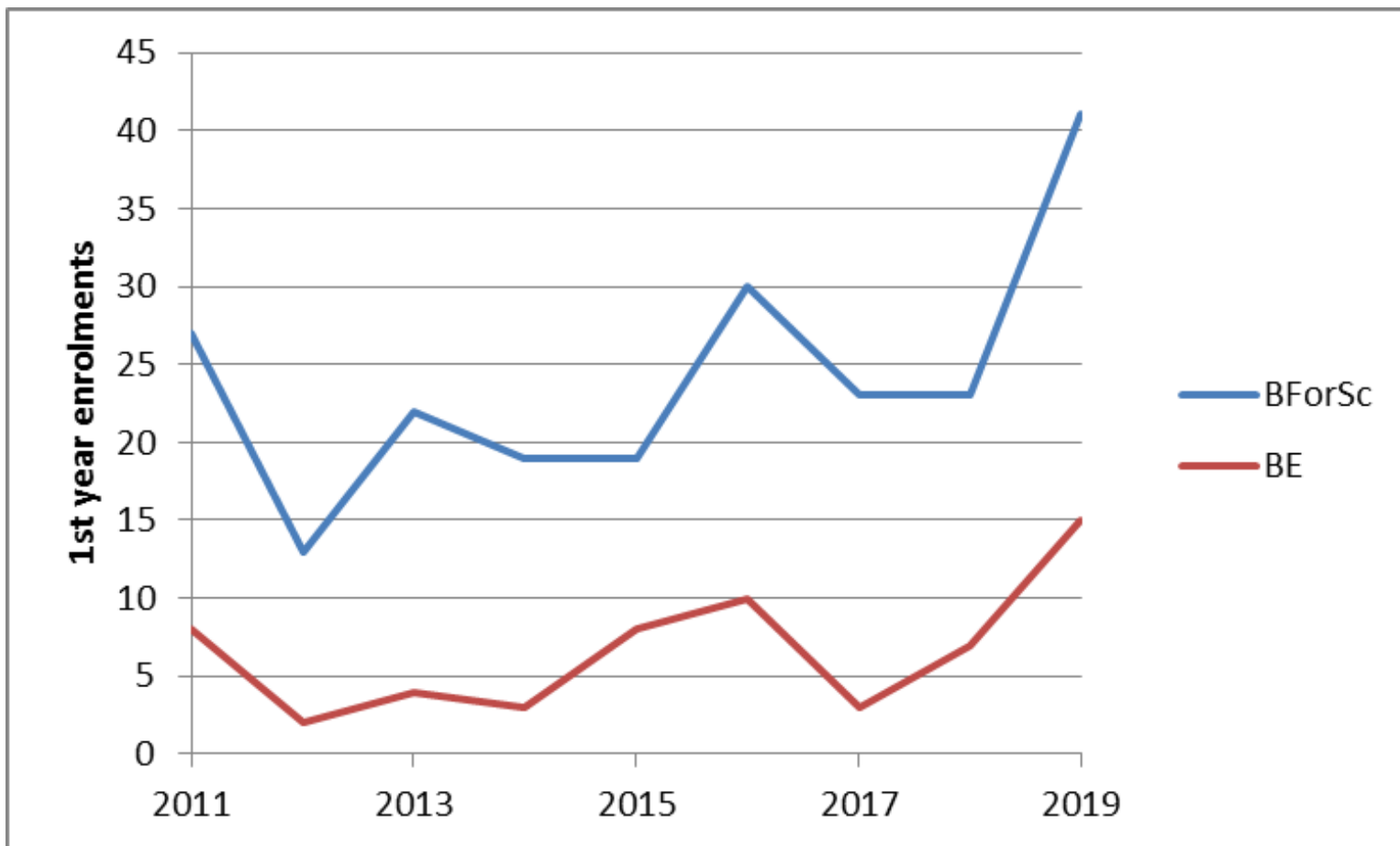
Visit by Forestry Minister Shane Jones in March 2018

- “What can I do to help you attract more students?”





1st year BForSc & 1st Pro BE enrolments



Thank you

