Don’t use the F-word

Deforesting Tertiary Education at the University of Melbourne

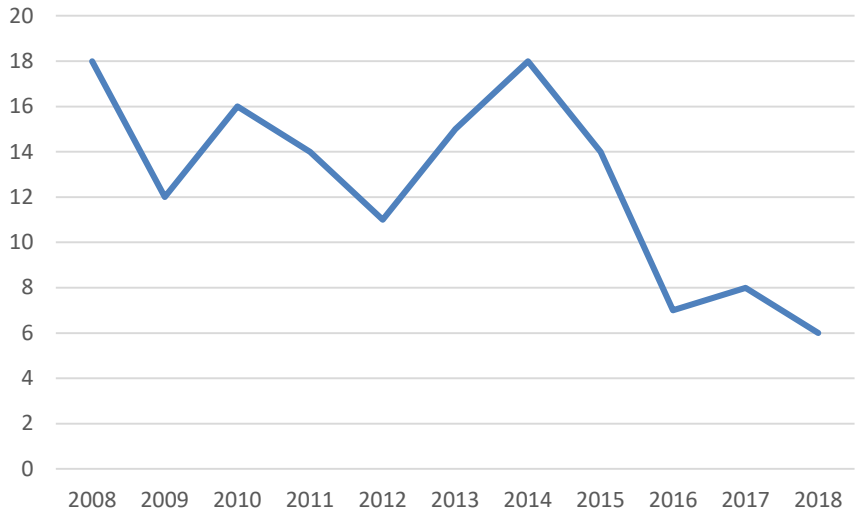
The F-word?

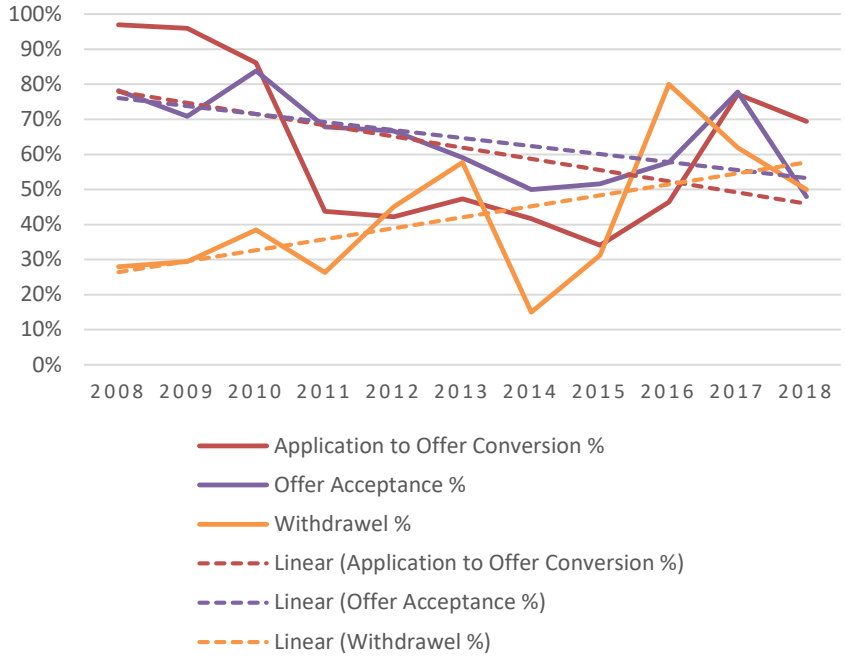
Forestry

Forestry

Long History of Forestry Education

Motivation: Student Enrolments

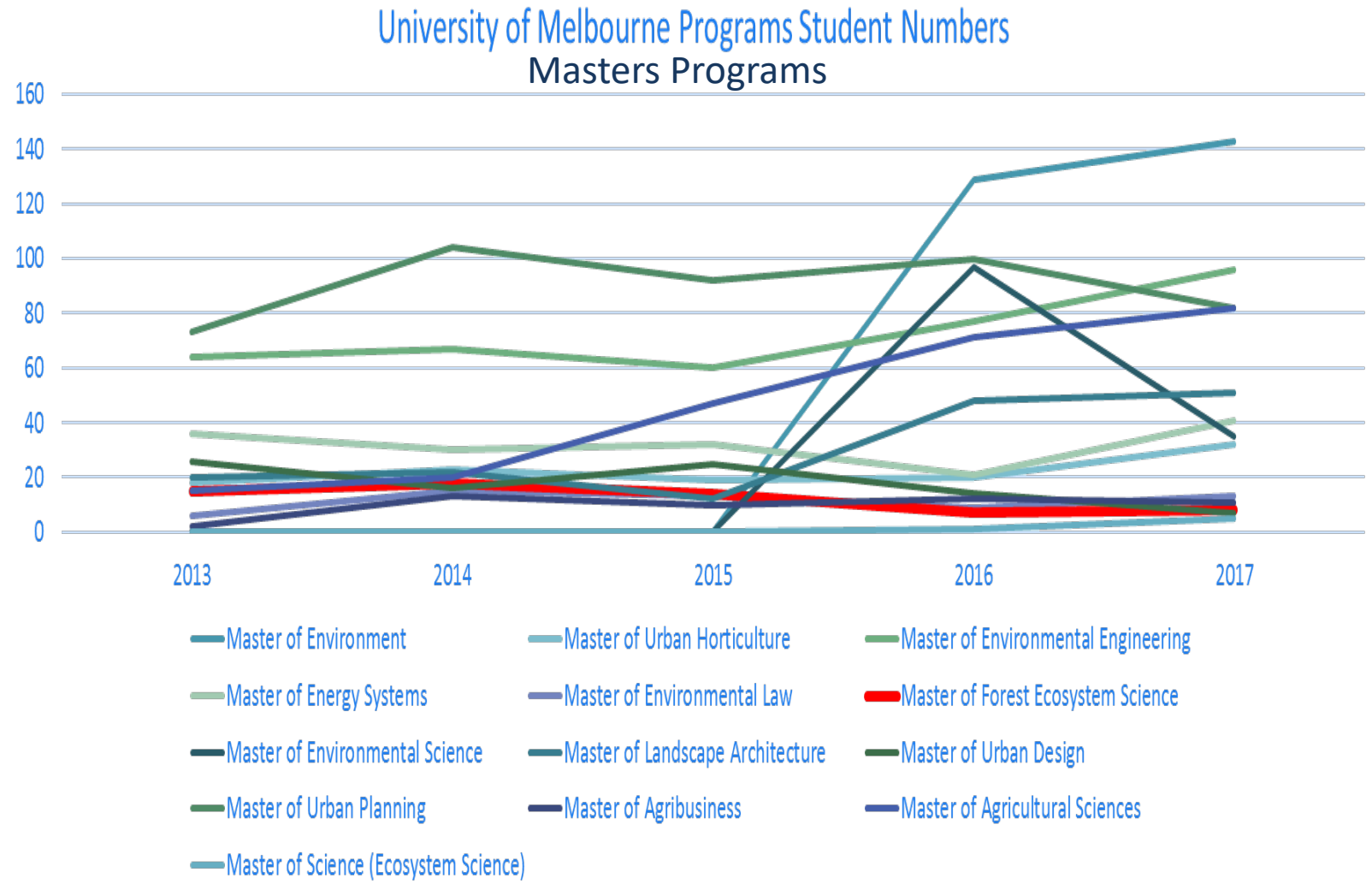




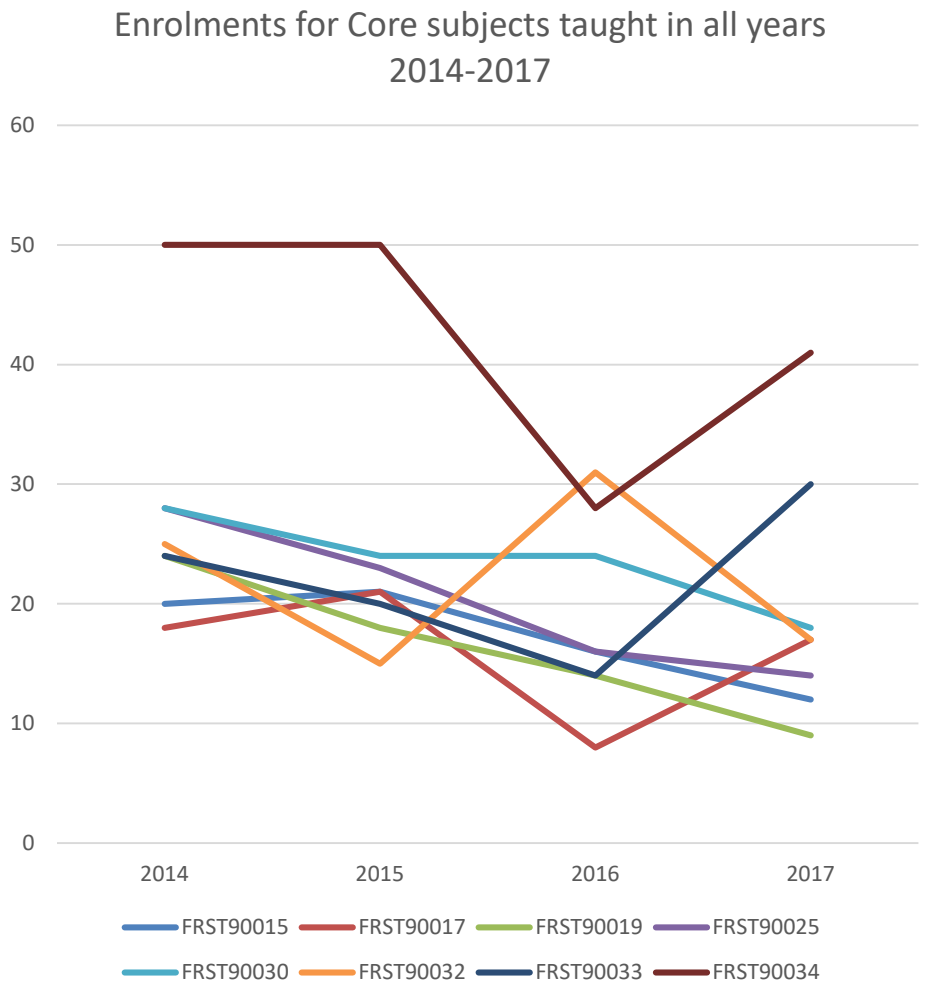
Key insights include:

- Average number of enrolment is about 13 per year with at least 139 students admitted into the course (students who had withdrawn not included in this figure).
- Number of enrolments fluctuates slightly on an annual basis, however there is a declining trend in recent years.
- Lowering application to enrolment conversions

Science Coursework Masters Programs



Core MFES subjects



Core MFES subjects Taught alternate years, combined or suspended 2014-2017

FRST90078 Conserving and Managing Native Forests (combined FRST20020 and FRST20021 and commenced in 2017)

FRST90022 Forests & Water (suspended for 2017)

FRST90026 Bushfire & Biodiversity (taught alternate years)

FRST90020 Silviculture & Forest Dynamics (cancelled for 2017)

FRST90021 Sustainable Forest Management (cancelled for 2017)
FRST90073 Forest Planning & Business Management (cancelled for 2016)

FRST90016 Trees in a Changing Climate (cancelled for 2017)

FRST90029 International Forest Policy (commenced in 2015)
FRST90031 Timber, Sustainable & Renewable Material (cancelled for 2017)

Deforesting the Curriculum

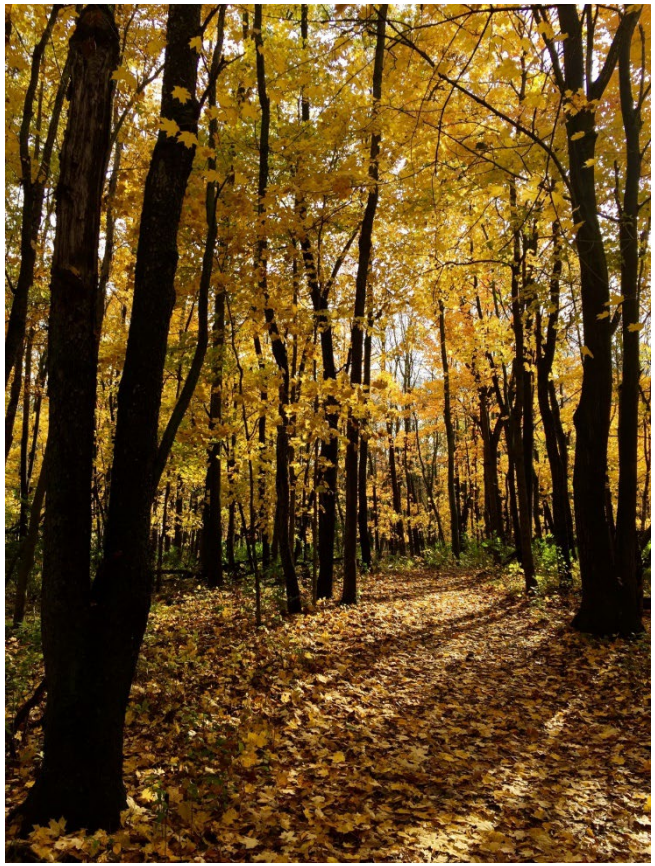
Course (2010)	Course (2023)
Farm Trees & Agroforestry	Landscape Ecology
Forest Ecosystems	Analysing Ecosystems and Their Values
Forest Resource Assessment	Patterns and Processes of Landscape Fire
Forests and Water	Ecosystem Processes of Water and Soil
Forests in the Asia Pacific Region	Spatial Tools for Ecosystem Management
Forests, Carbon and Climate Change	Landscape Governance and Policy
International Forest Policy	Communities and Ecosystem Management
Silviculture & Forest Dynamics	Sustainable Landscapes
Sustainable Forest Management	Forests in the Asia Pacific
Forest Health	Forests, Carbon & Climate Change
Forest Operations	Farm Trees & Agroforestry
Forest Planning and Business Management	Conserving and Managing Native Forests
Advanced Plantation Silviculture	Bushfire Planning & Management
Trees Growth & Development	Modelling Species Distributions & Niches
Trees in a Changing Climate	Environmental Modelling
Wood Quality	Environmental Risk Assessment
Wood Science & Technology	Research Methods For Life Sciences
Timber in the Built Environment	Social Research Methods
Bushfire & Biodiversity	Ecological Restoration
Bushfire & Climate	
Bushfire Planning & Management	
Ecological Restoration	

Deforesting the Curriculum

Ecosystem Management

Training graduates with core knowledge and skills for broad careers.

- Technical Forestry has been lost but a Forests ‘flavour’ remains.
  - Technical Forestry training via internships or on the job
- Socio-ecological systems thinking is core.



Presentation Plan

How did we get to Ecosystem Management

- Literature Review
- Course Insights
- Engagement
- Proposed Model

Has this been successful?

- Progress

Literature review

Review of key documents

Enrolment Trends More broadly

Australia

- Undergraduate degree completions declined by more than 50%, to a total of about 30 annually.
- Completions remains less than is required for sustaining the professional workforce at existing levels

USA

- Enrolment trends were highly cyclical,
  - changing by nearly 50% in a decade or less.

- Education and training challenges for the Australian forestry sector: an analysis based on recent trends in university and vocational education and training (VET) completions. J. E. Pratley , P. J. Kanowski & L. M. Bull
- Undergraduate Enrolment in Natural Resource Programs in the United States: Trends, Drivers, and Implications for the Future of Natural Resource Professions, Terry L. Sharik, Robert J. Lilieholm, Wanda Lindquist, and William W. Richardson
- The Promise and Performance of Forestry Education in the United States: Results of a Survey of Forestry Employers, Graduates, and Educators, V. Alaric Sample, R. Patrick Bixler, Maureen H. McDonough, Steven H. Bullard, and Mary M. Snieckus

Student Motivations and Drivers

- Passionate and committed individuals who express a desire to help create a better world.
- Felt that what foresters do, and the nature of the discipline, could be better communicated.
- Attracted to majoring in forestry and subsequently pursuing a career in this field by a love of nature or the outdoors
- Hesitation arose from concern over low wages and a negative public image of forestry.

- Student Perspectives on Enrolling in Undergraduate Forestry Degree Programs in the United States Terry L. Sharik* and Stacey L. Frisk
- Student perceptions of environmental management: profiling the future environmental manager B.A. Christie , K.K. Miller & J. Kirkhope
- Why students choose to study for a forestry degree and implications for the forestry profession. Suzette Searle and Chris Bryant

Skill and Knowledge - Themes and Trends

- Lack skills related to generic competencies
  - Leadership and management, human relations and communication
  - Differentiating performance in the workplace
- Shift from traditional consumptive NRM fields such as forestry to more interdisciplinary programs
  - Forests have shifted from purely commercial product exploitation to environmental and social.

- Global Outlook on Forest Education (GOFE) A Pilot Study Report Editors: Rekola, M., Abbas, D., Bal, T., Burns, J., Lackner, M., Rodriguez, S., Sharik, T.
- Undergraduate Enrolment in Natural Resource Programs in the United States: Trends, Drivers, and Implications for the Future of Natural Resource Professions, Terry L. Sharik, Robert J. Lilieholm, Wanda Lindquist, and William W. Richardson
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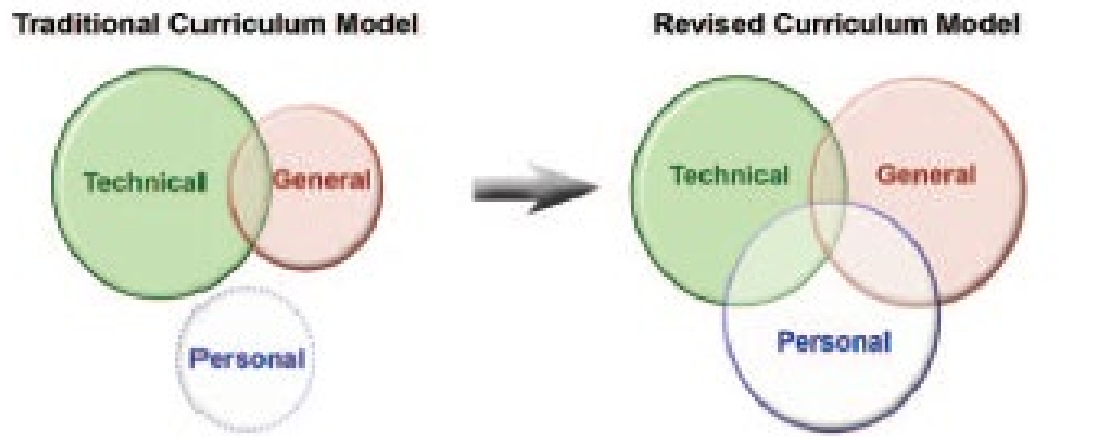
- The Future of Professional Forestry Education: Trends and Challenges from the Malaysian Perspective. Jegathcswaran RATNASINGAM', Florin IORAS, Claudia Cristina VACALIE', Lu WENMING*

Emerging theme – People

Graduates must be better prepared than they are now in communicating relevance and building relationships

'*Thinking critically, communicating effectively both orally and in writing, acquiring a sensitivity and concern for ethical issues, and learning to understand and work effectively with people of different cultures, backgrounds, and races.*'



- Forestry Curricula for the 21st Century—Maintaining Rigor, Communicating Relevance, Building Relationships. Steven H. Bullard

What are others doing

‘Forest’ prominent

Degree Title

Subjects Titles

Key points

- Most have maintained the traditional disciplines but added some new aspects to their courses
- Have used ‘interesting’ key words to help market courses.
- Shift towards holistic consideration of forests and society
- GIS, remote sensing, spatial modelling and social disciplines are present in other courses.
- Internships were a part of most programs

Engagement

Who

Students - Prospective, Current and Past

- Interviews
- Online Surveys

Staff

- Forum

Industry

- Forum
- Online Surveys
- Phone interviews

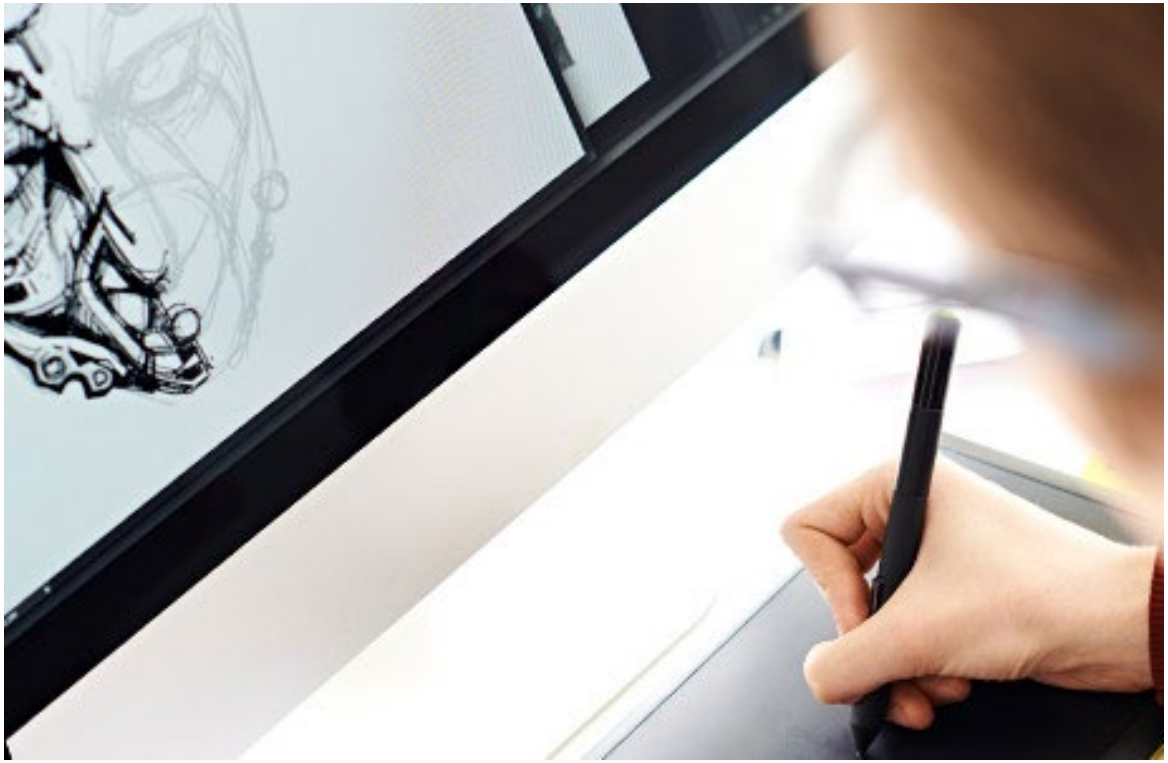
Prospective Students

- Only 50% of target students are aware of MFES
- Themes for study are around general ecosystem management interests
  - ‘Make a Difference’
- Cohort experience important

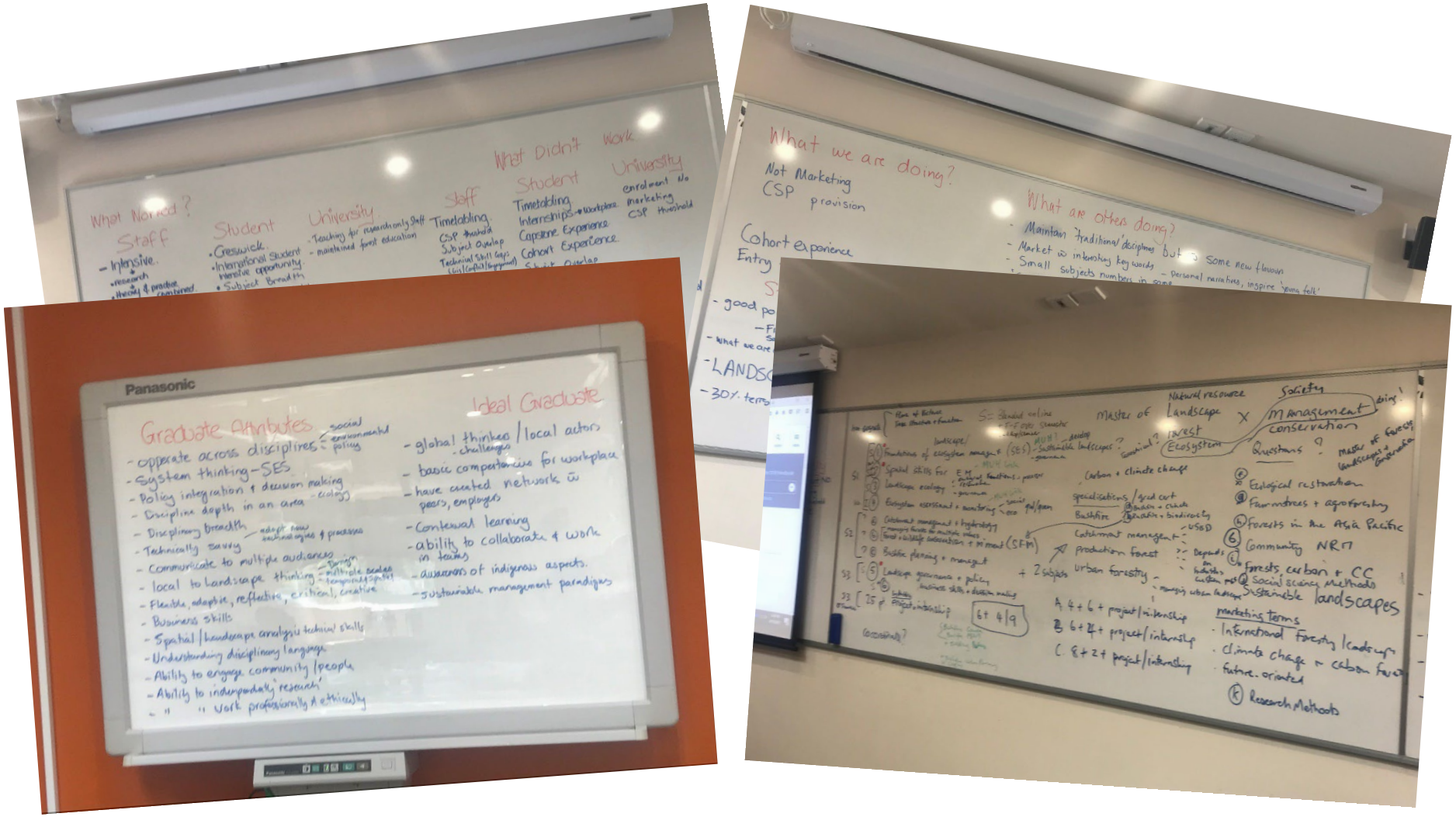
Industry Feedback

- Emergent challenges
  - Technology solutions
  - Community/engagement/ people
- Ability to communicate in multiple ways
- Business skills
- Flexible, adaptable, resilient.

Design Phase



Retreat and Consultation



New Curriculum - Key features

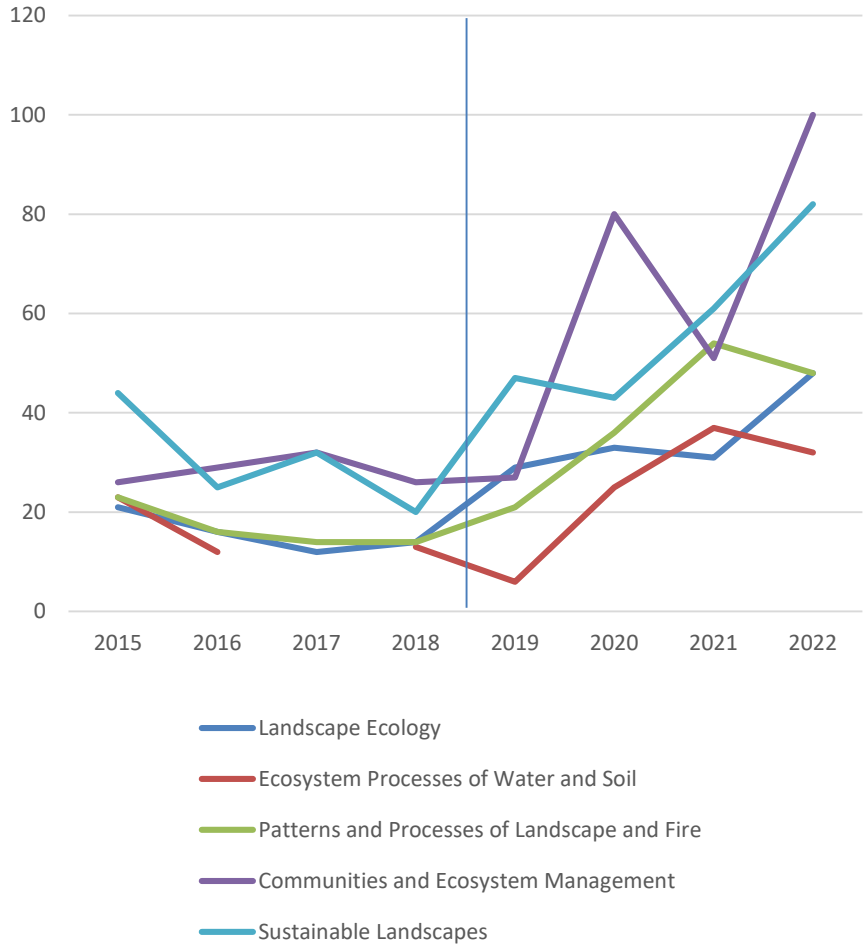
- Overall
  - Clear cognate and non-cognate pathways
  - Enhances Cohort Experience
  - Industry/employer capstone connection
  - Logical nested programs and progressio
    - Build on strengths – e.g. fire
- Core subjects
  - Interdisciplinary and Generalist Skills
  - Addresses current gaps
    - People/Social, GIS/spatial data, Business
  - Broader Appeal
- Electives
  - Builds technical skill
  - Works within Schools strengths

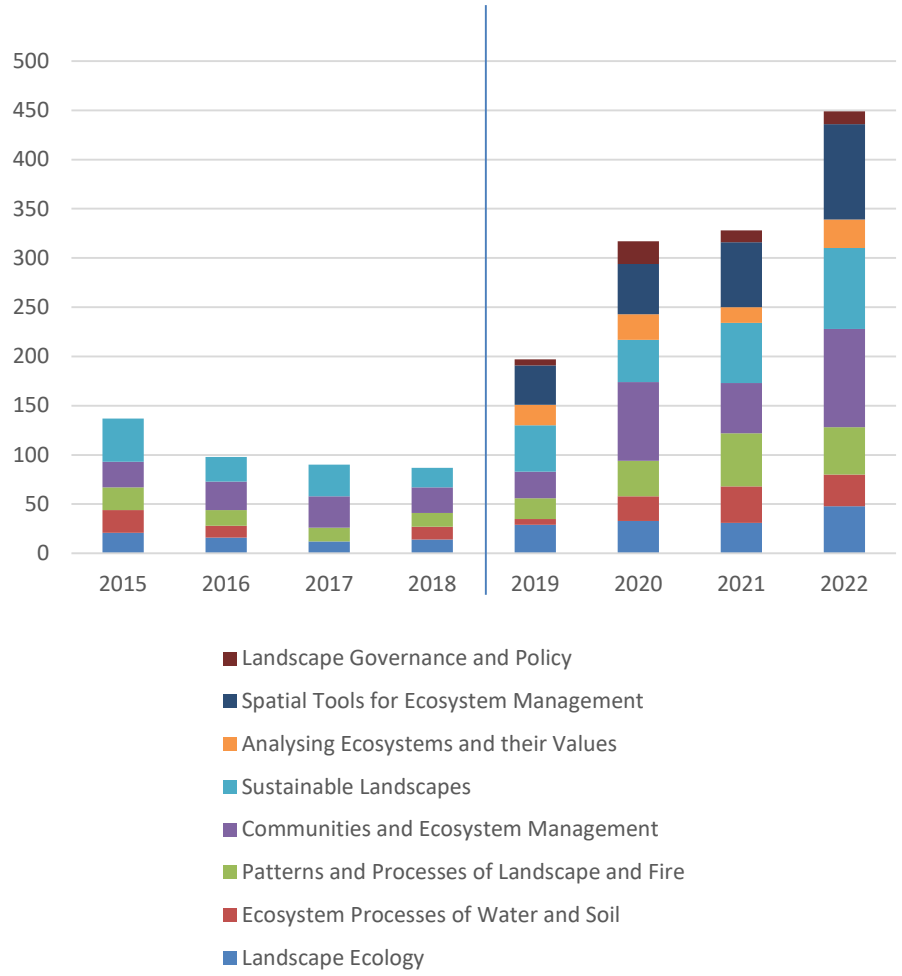
New Curriculum - Subjects

Cores
Landscape Ecology
Analysing Ecosystems and Their Values
Patterns and Processes of Landscape Fire
Ecosystem Processes of Water and Soil
Spatial Tools for Ecosystem Management
Landscape Governance and Policy
Communities and Ecosystem Management
Sustainable Landscapes

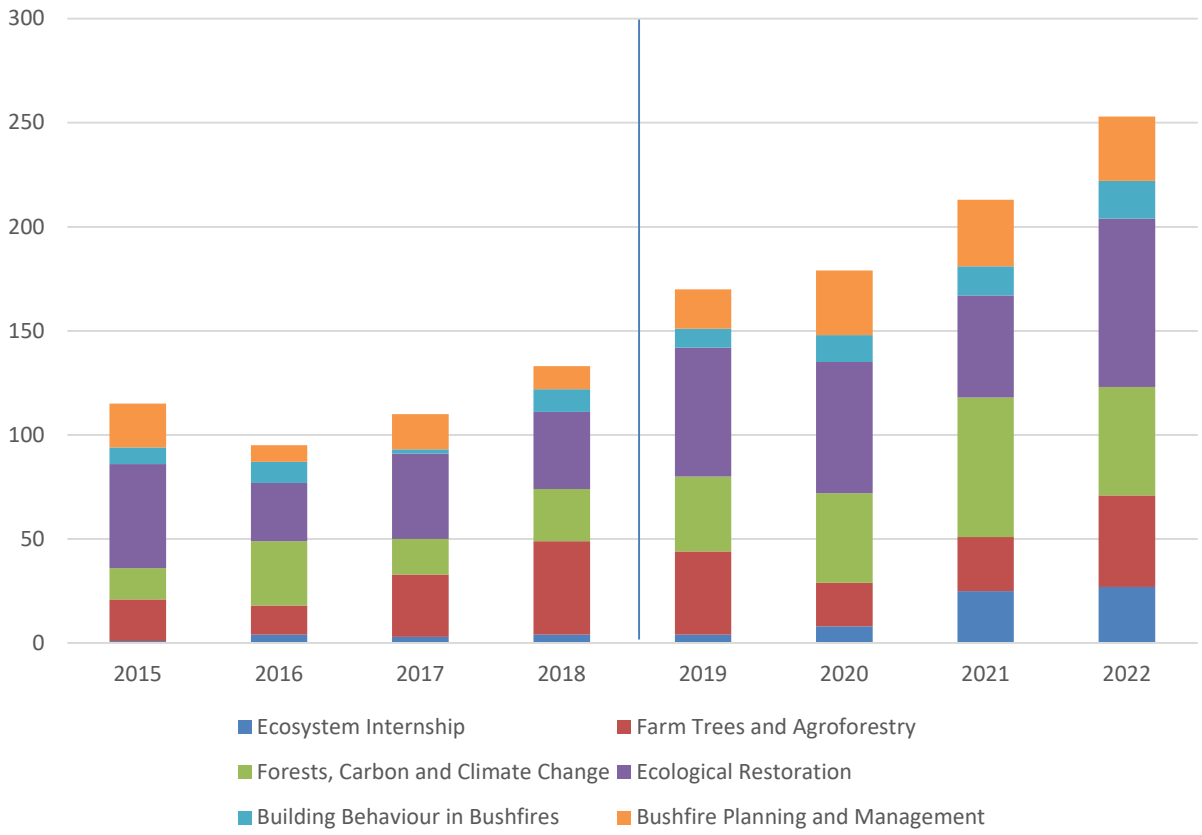
Electives
Forests in the Asia Pacific
Forests, Carbon & Climate Change
Farm Trees & Agroforestry
Conserving and Managing Native Forests
Bushfire Planning & Management
Modelling Species Distributions & Niches
Environmental Modelling
Environmental Risk Assessment
Research Methods For Life Sciences
Social Research Methods
Ecological Restoration
Ecosystem Internship

New Curriculum – Progress
Core Subjects

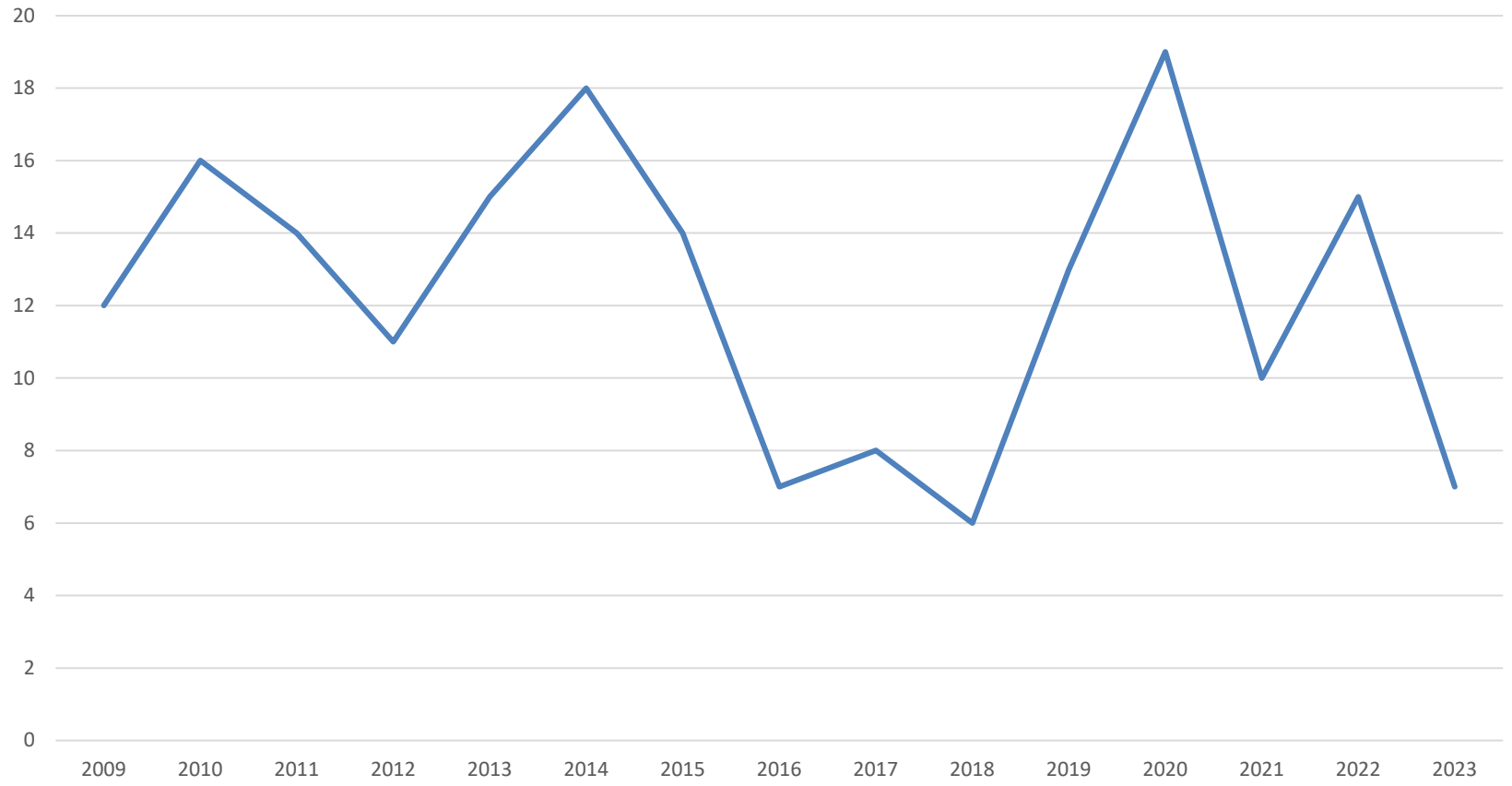




New Curriculum – Progress Elective Subjects



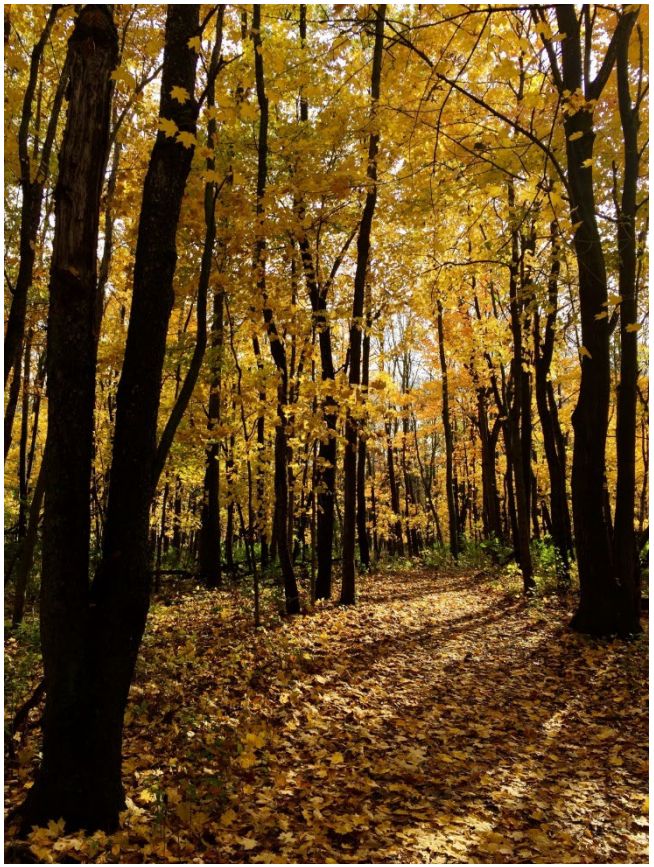
New Curriculum – Progress
Course enrolments



Wrap

Shift from Technical Forestry to Ecosystem Management Degree.

- Student motivations and need to be sustainable
- Broaden the base but a Forests ‘flavour’ remains.
- Socio-ecological systems thinking is core.



We don’t use the F-word

We use the E-word!