Environmental Graduate Skills and Employer Needs Survey

Australian Council of Environmental Deans and Directors (ACEDD)

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1. **Executive Summary2011**

   1.1   Aim and scope of survey:

   The aims of this project were to:
   - A Discover the nature of graduate Environmental employment in Australia
   - B Document the characteristic skills required by employers of Environmental graduates in Australia
   - C Explore the demand versus supply issue of Environmental graduates at a national level and possibly at State and regional levels

   1.2   Principal findings:

   The principal findings of the project are:
   - 1.2.1   The dominant employer of Environmental graduates in 2017 – 2018 is the private sector usually through environmental consultants.
   - 1.2.2   Over 70% of the employment of Environmental graduates occurs in the eastern states of Queensland, New South Wales and Victoria.
   - 1.2.3   Lead skills sought by employers of Environmental graduates are written and oral communication, problem solving, teamwork and critical thinking.
   - 1.2.4   At a national level the supply of Environmental graduates will probably meet supply in most years, though there is some concern re supply in 2020.

2. **Scope and Methods**

   2.1   Origin and Scope:

   The ACEDD meeting of 26 March 2010 identified a project related to nationwide demand and supply of environmental graduates from Australian Universities. Dr Richard Horsfield, a visiting fellow at the Graduate School of the Environment at Macquarie, made an initial proposal to undertake this survey. This current project is based on Dr Horsfield's original concept, focuses on skill requirements for Environmental graduates and extends it to link projected numbers in environmental graduates to respective employment destinations and thereby aims to predict over or under supply. The original scope for this project included a prediction of graduate numbers in different environmental sectors, by region. However, as will become evident, this scope was not achieved.

   2.2   Methods:

   Figure 1 illustrates the general workflow and process used in this project. In **process A** Environmental positions were reviewed on approximately a six weekly basis for the period Jan 2017 to Sept 2018, using employment web sites listed in Table 1. There were obvious overlaps between these sites and each site showed different levels of detail re each job. A sample of approximately 50 jobs, or more, per six week period were taken with data on minimum educational requirements, desirable qualifications, part time / full time mode, location and type of organisation recorded. In total details of 555 jobs were recorded with a very small sample of that recording shown in appendix A.
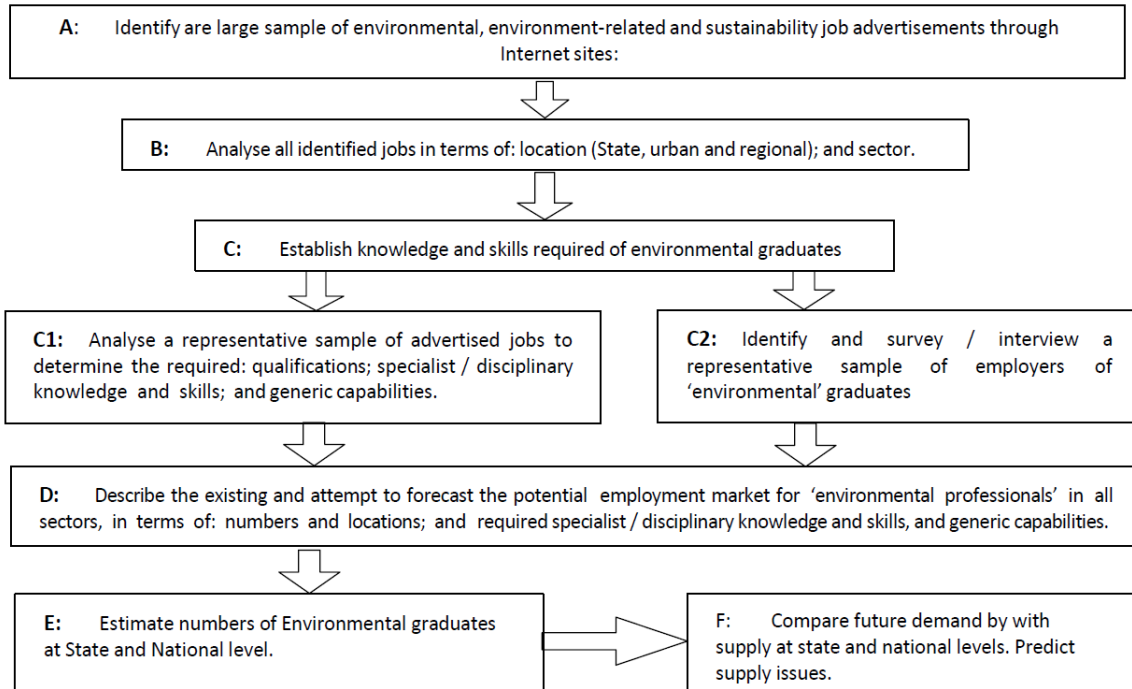
Figure 1: General workflow and process used in this project

Attributes collected for each job are listed in Table 2. Initial data collection attempted to record salary ranges, but this plan was abandoned after a) having to contact many employers for salary information and b) meeting some resistance to disclose such information. In early data collection most environmental jobs were recorded. These included jobs at the para-professional level and were quite numerous, making a reasonable contribution to claims made by job seeker web-sites such as NRM Jobs and Jora (Figure 2) re the total number of Environmental jobs in Australia in any given time period. In addition job web site were, in general, quite liberal in their interpretation of the term "environmental" with the inclusion of jobs for Civil Engineers and other related professionals being common. Thus filtering had to occur, generally at the individual job level.

Table 1: Internet sites used to search Environmental Jobs

Employment Web Site Name	URL
NRM Jobs	http://nrmjobs.com.au/
Jora	https://au.jora.com/Environmental-jobs
Indeed	https://au.indeed.com/Environmental-Graduate-jobs
Adzuna	https://www.adzuna.com.au/environmental
Seek	https://www.seek.com.au/graduate-environmental-jobs
Environmental Jobs Network	http://environmentaljobs.com.au/
Linkedin Jobs	https://www.linkedin.com/jobs/search/?keywords=environmental&location=Australia&locationId=au%3A0
Gradconnection	https://au.gradconnection.com/graduate-jobs/environment/

Table 2: Attributes collected for each job

Attribute Abbreviation	Description
Date	Month and Year
Organisation	Name of organisation
Org Class	Type of organisation (FG – Federal Govt., SG – State Govt., LG – Local Govt., NGO – Non Govt. Org., PC – Private Consultant
State	Sate or Territory
Region	Region (if identified) e.g. North Queensland
Form of employment	Full Time (FT), Contact, or Part Time (PT)
Min Edu Qual	Minimum education qualifications; other educational qualifications sometimes appeared in Skills
Skills	List of required/ minimum skills and desirable skills
Title	Name of position
Link	URL link to job advertisement

Almost as elusive as salary information was the location of the employment: many advertisements would state a home base for the job, but would show in small print, or after further inquiry, that travel in the order of hundreds of kilometres was required. Thus genuine location of environmental jobs by region was to some extent compromised.

Skills were generally identified through minimum or desirable criteria. Most criteria were general in character, for example "knowledge of forest flora, fauna and habitat. flora and fauna survey techniques and habitat assessments" whilst more specific criteria such as "skill in protecting and enhancing aquatic ecosystems with experience in water quality monitoring and aquatic macro invertebrate sampling" were less common.
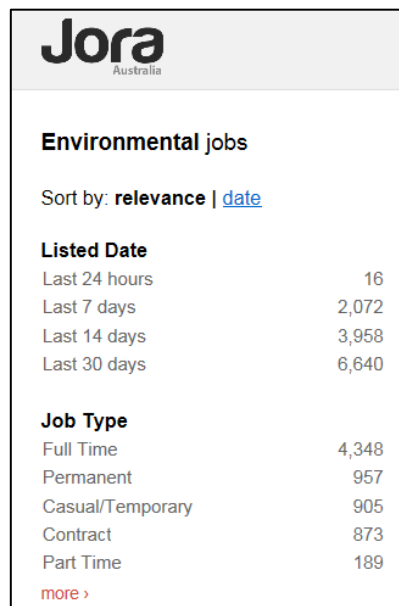

Figure 2: General information re Environmental Jobs on the Jora website
(https://au.jora.com/Environmental-jobs?sp=facet_job_type assessed 20/08/18)

In process B (Figure 1): analysis of location, it was a simple task to allocate jobs to states and then, using counting tools in MS Excel, establish proportion of jobs by state. This was undertaken on a six monthly basis thus enabling comparisons over the period of the survey. As alluded to earlier, the task of quantifying job location at a regional level was much less easy. Most job locations centered on State capital cities and a few larger regional cities regions. However, many regions were far less obvious, with many employers, particularly private consultants, requiring their employers to be very mobile.

Process C (Figure 1) - knowledge and skill of Environmental Graduates: firstly the minimum desired tertiary qualification was extracted from the desirable criteria. Then using keywords and key phrases with the common ones as listed in Table 3, a count was made of essential skills for new graduates and graduates with experience (C1 in Figure 1). This was then cross matched with results from process C2, which consisted of selected phone interviews with Environmental graduate employers.

Table 3: Keywords / phrases in job essential job criteria

Keyword / phrase related to skill	Comment
Communication	Written and or verbal communication
Report writing	Includes proposal writing
Experience	Prior experience
Field Skills	These related to safety aspects of field work as well as sampling design and data collection
Ability to work with others	Capacity to work in multi-disciplinary teams
Client Relationships	Ability to establish and maintain client relationships
Problem solving	Ability to independently solve problems
Analysis	Broad term various allied but usually in a) client requirements or b) data analysis (including digital techniques)
Project Management	Usually for those jobs with requirement for previous experience
Data collection	Usually referring to filed data collection
GIS	Ability to use GIS to make maps and undertake basic geographical analysis
Driver's license	Current driver's license – preferably 4WD experience
Environmental policies and legislation	Knowledge of state and federal environmental legislation and capacity to interpret and apply at a local level
EIA experience	Experience in developing and implementing Environmental Impact Assessments
Budgets	Develop and manage budgets
Plant ID	Skills to identify and classify plants – sometime focused to specific regions / systems
Soil chemistry	Skill to sample soils and understand soil chemistry
Water quality	Skill to sample water and understand water chemistry
WHS	Awareness of WHS and capacity to undertake risk assessment (particularly in the field).

Process C2 was not very successful from both an efficiency and from a useful information perspectives. This was because getting to speak with the "right" person from a selection of NGOs, private consultants, state, local and federal Government organisations proved very time consuming and fraught with concerns that either the correct person was not being interviewed, or that information re specific jobs was confidential, beyond that which was stated in the job advertisement. Of the planned interviews with 50 plus organisations, only 13 gave useful information and this was supplied with the caveat that the source could not be identified in this report. Nevertheless, the oral discussions with the 13 employers had some merit, especially when comparisons were made with the results of process C1. Finally, the results of section C were compared with the results from Thomas & Day (2012) who undertook a 2009 survey of, amongst other things, skills required by Environmental graduates in Australia.

Processes D, E and F (Figure 1) relate to the prediction of Environmental graduates from tertiary institutes in Australia (E) with a comparison against demand and skill levels as determined in process C. Federal governmental data was used to explore the trend in the Agriculture, Environmental and Related Studies (AERS) tertiary enrollments at a national and state level. This was compared with national forecast data for Environmental employment and predictions made re supply versus demand.

3. **The Nature of Environmental Employment**
   3.1   The breadth of the environmental sector

It became evident from a review of the employment opportunities reviewed in Process A that employment of Environmental graduates is found in a diverse range of organizations. Whilst the proportion of jobs advertised by different organisations changed over time, the dominant employer was private consultants and the least dominant employer was Federal government. Table 4 shows the average percentage of jobs per organisation over the period of the review.

Table 4: Distribution of reviewed environmental jobs by organisation type (Jan 17 – Sep 18)

Type of Organisation	Percentage of total Environmental Jobs			
	Jan 17 –July 17	July 17- Jan 18	Jan 18 – Sept 18	Average
Federal Government Department	4	5	5	5
State Government Department	14	17	13	14
Local Government	12	11	12	12
NGO	12	10	9	10
Private Consultant	58	57	61	59

R1: The potential ramification of this finding is that tertiary education programs could tune both the content and the mode of education and training to suit private consultants and consider ways of partnering (e.g. internships or Work Integrated Learning) with this sector.

3.2 Professional and sub-professional environmental employment

The boundary between professional and sub / para professional Environmental and professional employment is clear at one level; that being the minimum qualification required to gain a job. Using

this criterion the minimum criterion is a "Bachelor's degree in Environmental XXXX or related degree" (where XXXX is management, studies, science, etc.). Environmental jobs requiring VET Cert III or IV are common and not the subject of this report. But it should be noted that a number of employers of professional Environmental graduates seek some skills which fall in the sub/ para professional categories. These particularly relate to field work (WHS, managing 4WD vehicles, handling of equipment, etc.).

R2: Universities delivering Environmental degrees could take note of this and opportunity and, in partnership with the VET sector, offer add-on or embedded qualifications, which will make degree graduates more employable.

3.3 The geographic distribution of environmental employment

As note previously the geographical distribution of reviewed Environmental Jobs varied through the review period. Table 6 shows distribution of Environmental jobs reviewed by state. The distribution pattern at a regional level proved too unreliable to quantify.

Table 5: Distribution by State/ Territory of reviewed Environmental jobs (Jan 17 – Sep 18). * Right hand column shows data from Australian Govt. (2018): Joboutlook.

State	Percentage of total Environmental Jobs			Data from *
	Jan 17 –July 17	July 17- Jan 18	Jan 18 – Sept 18	2017
QLD	35	22	29	26.7
NSW	22	31	24	24.7
VIC	25	23	21	22.6
NT	6	8	9	2.8
WA	5	10	9	13.8
ACT	4	3	4	2.6
SA	2	1	3	4.8
TAS	1	2	1	2.0

The temporal variability in these figures is noticeable. However, there is a general pattern which is consistent (except for NT) with Australian Govt. (2018) and should be compared with Figure 3 relating to enrollment in AERS programs by state.

3.4 The form of environmental employment

The proportions of full time, contract and part time mode for environmental jobs, reported in Table 6, strongly supported full time employment. On speaking to employers, there was general consensus that there was a better return for investment if graduates were employed on a full time basis, with part-time or contract employment being too brief an experience for the employee to acculturate to the norms and work practices of a particular organisation, as well as to learn how to apply skills in particular projects. Table 6 shows a summary of data collected for 555 Environmental jobs over the period Jan 2017 to Sept 2018. The table also reports the breakdown (by percentage) of professional (degree and above level) versus technical (sub-degree level) qualifications required for the reviewed jobs. It must be stated however, that because the focus of this review was graduate employment, more attention was paid to this group, with not every technical job being recorded. Thus, the percentages of professional /technical is as best an estimate.

Table 6: Forms of Environmental employment.

Form of Employment	Percentage of jobs	Professional	Technical
Full time	72.7	55.0	17.7
Contract (3 mths or less)	2.3	1.5	0.8
Part time	25.0	5.4	19.6
Total	100.0	61.9	38.1

4. Knowledge and Skills Required by Environmental Graduates

Table 7 shows the ranking of skills identified by a count of keywords / phrases as identified in Table 3 combined with the comments from employer telephone interviews.

Table 7: Ranking of skills derived from counts in Environmental job advertisements

Keyword / phrase related to skill	Ranking
Communication	1
Report writing	2
Experience	3
Problem solving	4
Ability to work with others	5
Client Relationships	5
Critical Thinking	6
Field Skills	7
Data collection	8
Environmental policies and legislation	9
Project Management	10
Analysis (including digital techniques)	11
GIS	12
Plant ID	12
Soil chemistry	13
Driver's license	14
Budgets	14
Water quality	14
EIA experience	15
WHS	16

Thomas & Day (2012) reported the skills required by Environmental graduates in Australia from a 2009 survey of recent graduates, as listed in Table 8, with rankings from both surveys added to this table. What stands out as a critical skill is that employers require of Environmental graduates is communication, especially in writing reports and submissions. It is also worth noting that employers are seeking generic graduate skills (HR, critical thinking, problem solving, etc.) above more specific Environmental skills. What is assumed by employers is that these generic skills are framed around fundamental Environmental knowledge. Employers of Environmental graduates expected that graduates are effective in working in teams of related professionals and technical staff with rankings of 3 and 5 by Thomas and Day (2012) and this review respectively. Yet from personal experience of university education of environmental undergraduates, group / team work assessment is ranked poorly by students. If this experience is common across Australian universities delivering Environmental education, there is an opportunity for change so that this graduate skill better

matches expectations of employers. One minor difference noted between the Thomas & Day (2010) results and the ones reported here, is that from telephone interviews in 2017 – 2018, employers are expecting, or assuming, more technical / digital skills in working with computers to access data from loggers and recorders into tables, databases, GIS and computer based analytical tools, than in 2009 /10.

Table 8: Modified from Thomas & Day (2012), p13.

Generic employment skill	Early career, 2009 survey (n-432) (%)	Ranking	Ranking from Table 6
Communication - spoken/verbal	49	1	1
Communication – writing	45	2	2
Ability to get along with others	30	3	5
Initiative and enterprise	24	4	
Learning skills	23	5	
Critical thinking	22	6	6
Team work – coordination	19	7	5
Identifying complex problems and provide solutions	18	8	4
Judgment and decision making	16	9	
Computer skills	16	9	11
Resource management skills - management of self	12	10	10
Negotiation/persuasion/build argument	11	11	
Using scientific rules and methods to solve problems	9	12	
Communication - customer service	8	13	5
Long-term planning and organising	6	14	10
Troubleshooting	6	14	
Resource management skills - personnel	3	15	10
Team work - instructing	2	16	
Operation and control of equipment/systems	2	16	
Resource management skills - material resources	2	16	10
Equipment maintenance	2	16	
Resource management skills - financial resources	1	17	14
Technology design	1	17	
Using mathematics to solve problems	1	17	
Operation monitoring and analysis	1	17	
Installation of equipment/systems	1	17	
Other	5	18	

5. **The Supply of Environmental Graduates**

Using national statistics for total student load in the broad category of Agriculture, Environmental and Related Studies (AERS), it can be seen that:

- Nationally, total load (EFTSL) for all education categories is increasing at a small rate (2014-2015: + 2.6%, 2015-2016: +3.2%, 2016 -2017: +2.4% (half year data)). This is above the national inflation rate of 1.3% (3 yr running average) (Australian Inflation Rate History - 2008 to 2017(2018)). However, the same is not true for AERS which is experiencing a very small gain (2014-2015: + 0.1%, 2015-2016: +0.3%, 2016 -2017: 0.0% (half year data)) over the same period (Department of Education and Training (2017), (Department of Education

and Training (2018)). Figure 6 illustrates this together with commencing student load for the same period.

- Across all states NSW and Victoria have, by far largest proportion of AERS load in 2016. Whilst the states / territories of Western Australia, South Australia, ACT and NT experienced much lower loads (Figure 3). Generally these are in concordance with the Environmental job figures shown in Table 5.
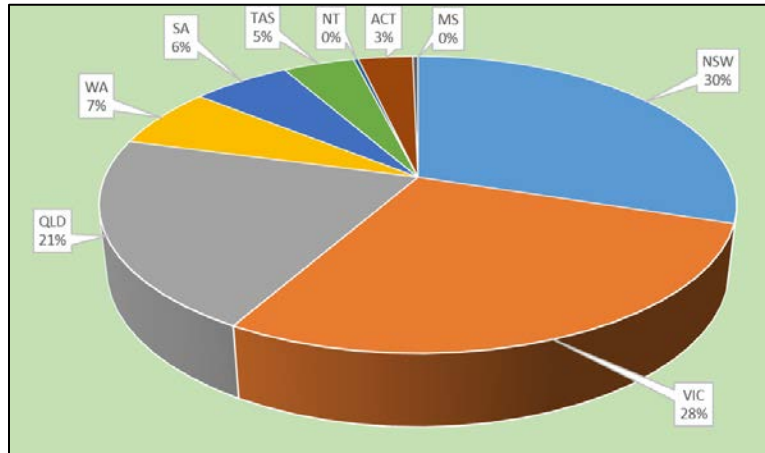

Figure 3:2016 AERS national load (EFTSL) by state. Source Department of Education and Training (2017)

At a national level in 2016 commencing AERS students, the dominant narrow discipline groups are **Agriculture** and **Environmental Studies** which, collectively, account for 87% of all EFTSL (Figure 4).
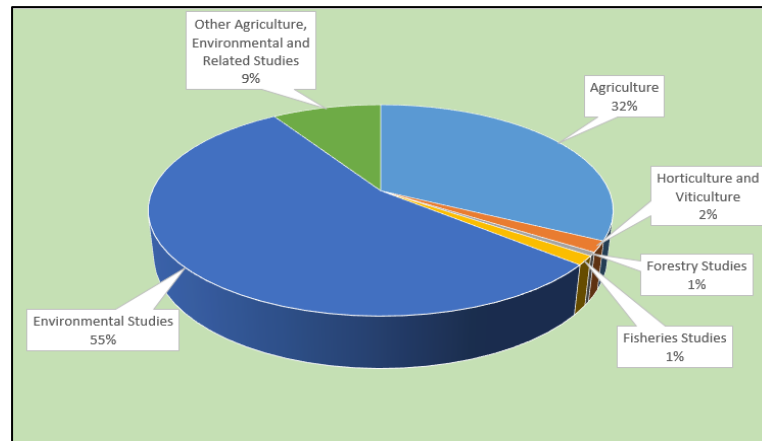

Figure 4: 2016 AERS commencing student narrow discipline distribution at a national level. Source Department of Education and Training (2017).

- At the program level the vast majority of commencing EFTSL in AERS are at the Bachelors level, with 76% of the commencing EFTSL in this level in 2016. This largely agrees with data from the environmental job survey, where the most common professional qualification required was a Bachelor's degree.

6.   Demand for Environmental Graduates

The Australian Government predicts employment for Environmental Scientists will grow from 25,900 in 2017 to 31,600 by 2022 (Australian Govt. (2018)) (Figure 5). Employment of Environmental Scientists is predominantly in the two sectors of *Professional, Scientific and Technical Services* and in *Public Administration and Safety*.
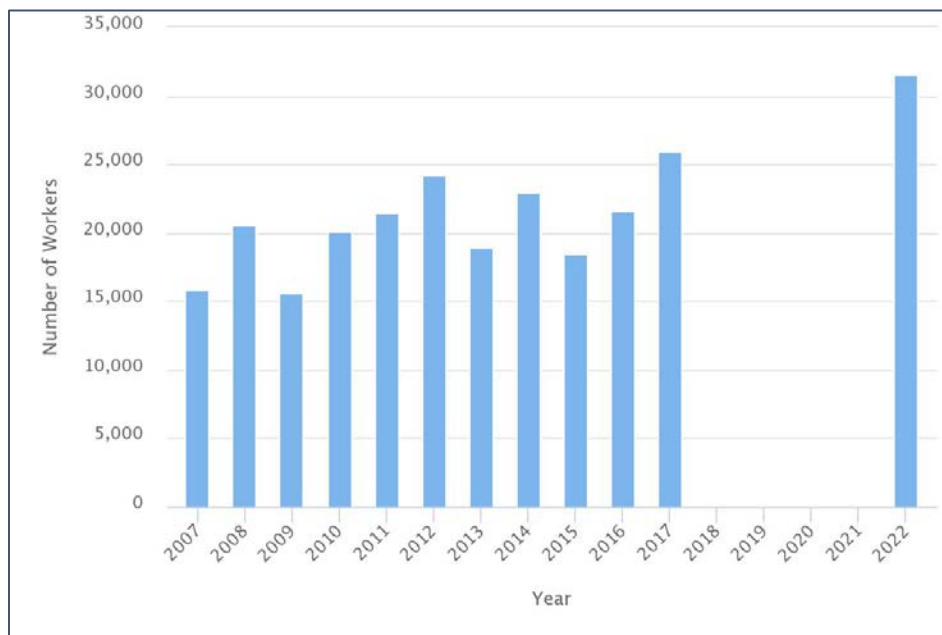

Figure 5: Environmental scientist employment numbers by year (Source: Australian Govt. (2018))

From Figure 5 the growth in employment from 2015 to 2016 does not accord with the relatively static numbers in AERS tertiary load across Australia over the same time period, though there maybe latency between enrolled students and graduate employment. Half year figures for AERS commencing students (EFTSL) in 2017 (2014-2015: + 0.1%, 2015-2016: +0.3%, 2016 -2017: -4.2% (half year data)) show a concerning trend relative to projected demand (Figure 6).
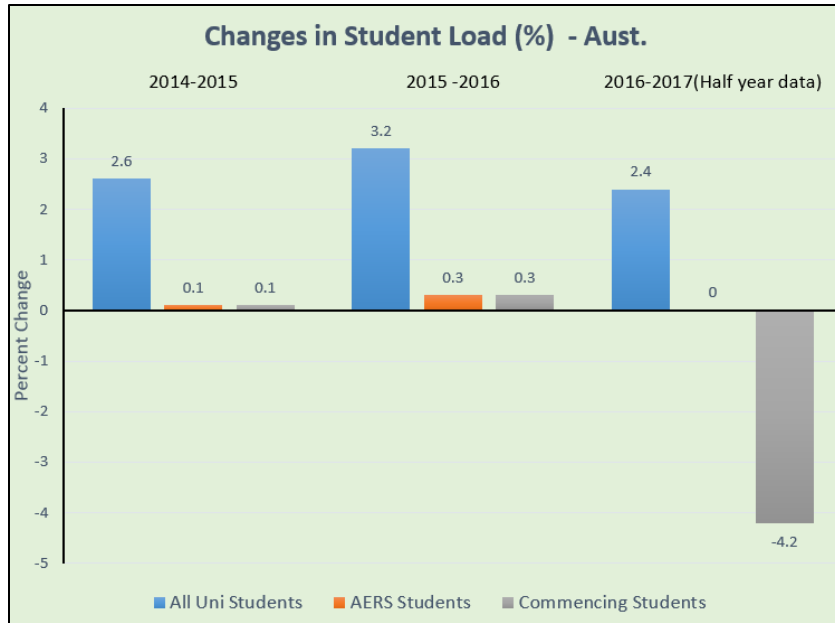
Figure 6: Changes in student load for all University load (blue), all AERS students (orange) and commencing AERS students (grey) (Department of Education and Training (2017 and 2018))

Data presented in Figure 5 is temporally variable and thus the prediction to 2022 is questionable. Fitting a linear function to the data shows where the 2022 prediction lies with respect to this linear propagation (Figure 7). Whether the 31,600 figure or the lower figure of approximately 29,000 for the 2022 target is accepted, the increase from 2017 is at least in the order of 1000 per year.
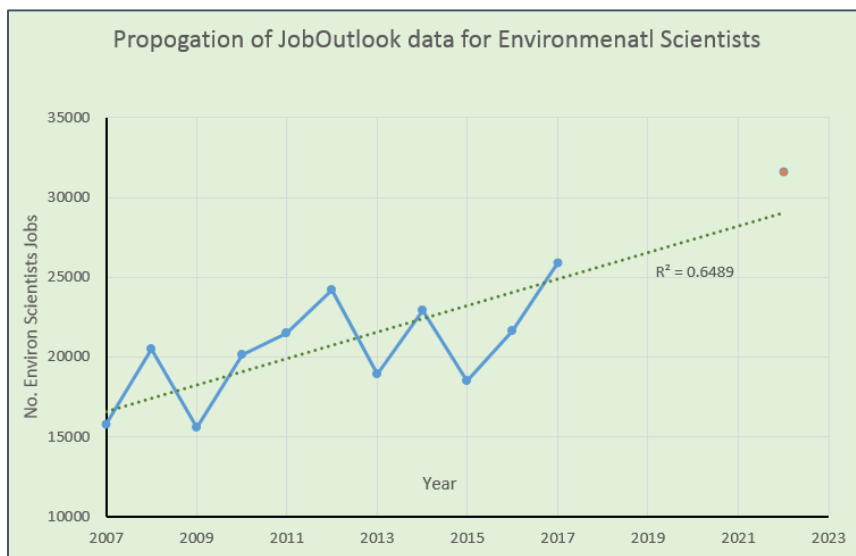

Figure 7: Environmental scientist employment numbers by year with prediction at 2022 (red data point) (Source: Australian Govt. (2018)) and linear propagation from 2007 – 2017 (black dotted line).

In 2016 a total of 12,798 EFTSL were enrolled across Australia in AERS related degrees. Assuming 10 % attrition and 25 % graduation at the end of 2016 the supply would be approximately 2,900 whilst the demand would be 4,300. (year to year figure) or approximately 1000 (long term average).

So demand exceeds supply with one figure and is less than supply with the other figure. If the current trend in enrolments (2017) continues and the demand is as predicted by the Australian Government demand could outstrip supply. This situation could be further exacerbated by the trend to employ only 60% of AERS graduates in a full time capacity (Graduate Careers Australia, 2017), though this slightly differs to the 73% figure for full time employment demand observed in the job survey undertaken in this project. But the demand / supply situation is far from clear and thus projection of demand and supply at a State or regional level would be unreliable.

7. Conclusions and Recommendations
7.1   The nature of Environmental employment in Australia

Environmental employment opportunities are dominated by the private sector with an average of 59% of job advertisements in the period of this review posted by private consultants. Recommendation R1 (page 5) should be considered. Over 70% of graduate employment destinations occur in the states of Queensland, New South Wales and Victoria, with the majority of employment opportunities in full time mode. Many opportunities request prior experience, even for supposed fresh graduates, and many jobs require reasonable mobility. Even though the focus of this report is employment of university graduates, 38% of the jobs reviewed for this report required VET/Technical qualifications. R2 (page 6) proposes that it may be beneficial for universities to consider partnering with TAFE for the delivery of some skills, particularly those associated with field work, in addition to those acquired through tertiary studies. Primarily the aim of recommendations R1 and R2 is to make university environmental graduates more employable, but a clear distinction still needs to be made by universities that environmental graduates are excellent communicators, critical thinkers and problem solvers. If, in addition, environmental graduates have practical skills and authentic industry experience, then they are more employable.

7.2   Environmental graduate skills

The key skill required by employers of Environmental graduates, who were in the main private consultants, was **communication**. Employers were seeking graduates that can write project proposals and project reports in a clear, concise and persuasive manner. The assumption was that this type of communication was informed by fundamental knowledge of Environmental issues and processes. And if the employee did not have that knowledge, that she/he would have the ability to learn and adapt published material to fill a knowledge gap. The ability to **communicate** in multi-disciplinary teams and with clients was also a sought after skill.

R3: It is recommended that University educators to review under graduate Environmental educational processes in <u>communication</u> to ensure that these skills are both taught and critically assessed.

A second important skill set that emerged was associated with critical thinking, problem solving and analysis, including their role in project management. Whilst it could be argued that fresh graduates will have few project management skills, many job advertisements required experience, which

included ability to manage small projects. All these skills are difficult to teach in a traditional university environments and probably best learnt, after some considerations of theoretical fundamentals, in authentic job like settings. These could be in field camps or in work integrated learning (WIL)

The final skill set that emerged, particularly when speaking to employers, was that associated with field work. For those jobs that required field data collection, employers expected skills not only in the traditional areas of plant and soil ID, but also in efficient digital collection, ingestion and analysis of field data. In addition they desired knowledge of safe work practices.

R4: Considering the latter two skill sets there is great potential for Universities to exploit Environmental learning outcomes though the use of experiential learning and WIL.

A number of jobs opportunities seek paraprofessional skills. In this context recommendation R2 (page 5) is made.

The methods adopted in this review to ascertain Environmental jobs skills favoured extraction of information from numerous job advertisements. Whilst this technique was informative, it tended to provide generalised comment re skills. The number of successful phone interviews with prospective employers to obtain further skill information was constrained by access and information security issues. In retrospect this process potentially would have been better achieved through the use of structured focus group sessions with selected employer groups.

7.3   Supply of and demand for Environmental Graduates

Demand for environmental graduates is averaging betwen1000 and 1100 per year across Australia. However, there are considerable temporal fluctuations caused by either variable counting / reporting procedures, or by changes to government policy and local / national economics. On the supply side Australian Universities (as a whole) are likely to meet this demand from graduates of AERS programs in most, but not all years. If half year figures for AERS commencing students in 2017 is continued into the second half of that year, there will be a decline in graduates in 2020 such that demand may not be satisfied.

R5: Commencing AERS student load in second half of 2017 and first half of 2018 should be watched to ascertain if the trend from first half of 2017 (-4.2% across Australia) is maintained.

AERS student load, like employment demand, is dominated by the three mainland East coast states, with 79 % of total enrollments in 2016. Universities in the remaining states and territories, with an average of 4% of the national enrollments per jurisdiction, should note this proportion, especially when multiple universities within those jurisdictions are competing for AERS load.

8.   References:

Australian Inflation Rate History - 2008 to 2017 (2018) https://www.rateinflation.com/inflation-rate/australia-historical-inflation-rate?start-year=2008&end-year=2017)

Australian Govt. (2018) Joboutlook: Environmental Scientists,
https://joboutlook.gov.au/occupation.aspx?code=2343

Department of Education and Training (2017), 2016 All student load, Australian Government, Canberra. https://docs.education.gov.au/documents/2016-all-student-load

Department of Education and Training (2018), 2017 First half year student data summary tables, Australian Government, Canberra. https://docs.education.gov.au/node/50236

Graduate Careers Australia (2017) GradStats: Employment and Salary Outcomes if Higher Education Graduates from 2016
 http://www.graduatecareers.com.au/wp-content/uploads/2017/11/GradStats-2016.pdf

Thomas, I. & Day, T. (2012) Careers in the environment in Australia, *Australasian Journal of Environmental Management*, 19:1, 5-20, DOI: 10.1080/14486563.2011.646753

Appendix A: Sample of Environmental job data gathered in April / May 2017

Date	Organisation	Org Class	State	Region	FT	Contract	PT	Min Edu Qual	Skills	Title	Link
Apr-17	Toolijooa Pty Ltd	PC	NSW	Hunter			X	Certificate level III or higher in Conservation and Land Management	Experience in revegetation Interest in bushland rehabilitationLandscape construction experience	Revegetation Crew	http://nrmjobs.com.au/jobs/10046203-Special-Projects-Crew
Apr-17	Lilly Pilly Indigenous Landscapes Pty Ltd	PC	NSW	Sydney			X	TAFE Conservation & Land Management Certificate III	6 months working in Bush Regeneration Comprehensive ID techniques in flora and fauna Experience in bush regenerator methodologies Strong interpersonal and communication skills Landscaping experience	Bush Regeneration	http://nrmjobs.com.au/jobs/10046160-Bush-Regeneration-pt
Apr-17	Eco Logical Australia	PC	NSW	Sydney, Sutherland Wollongong	X			Honours degree or higher in Environmental Science	A high level of experience in botanical survey and assessment; classify vegetation types to industry standard classification systems Exceptional written and verbal communication skills; Ability to build and nurture client relationships, manage simultaneous projects Practical and working knowledge and understanding of relevant NSW and Commonwealth legislation;	Senior Ecologist	http://www.ecoaus.com.au/uploads/Senior_Ecologists_Advert_Sydney_Metro_April_17.pdf
Apr-17	Blue Mountains City Council	LG	NSW	Katoomba			X	bachelor degree in environmental science, NRM or similar	Two yrs industry experience; experince in project management; wriiten and verbal communication; skill in protecting and enhancing aquatic ecosystems with experience in water quality monitoring and aquatic macro invertebrate sampling	Aquatic Systems Officer	http://nrmjobs.com.au/jobs/10031130-Aquatic-Systems-Officer-pt
Apr-17	Dragonfly Environmental	PC	NSW	Sydeny (Campbelltown, Fairfield, Blacktown and the Hills District.)	X			•Certificate III or Diploma in Conservation and Land Management	2+ years experience in ecological restoration/Plant ID; High level of communication skills	Natural Area Specialist	http://nrmjobs.com.au/jobs/10026164-Natural-Area-Specialist-with-Leading-Hand-Responsibilities
May-17	Office of Environment and Heritage	SG	NSW	Newcastle or Gosford	X			degree level tertiary qualifications in engineering, environmental science, marine biology, natural resource management or related discipline	knowledge of coastal zone, management policy and practice; experience in data collection, analysis and report writing.	Coast and Estuary Officer	http://iworkfor.nsw.gov.au/job/coast-and-estuary-officer-67257
Apr-17	Conservation Volunteers	NGO	QLD	Sunshine Coast	X			A Certificate IV in Training and Assessment or equivalent	Knowledge and experience in practical conservation Previous experience in working with groups of 17 to 24 year olds A Certificate IV in Training and Assessment or equivalent would be well regarded A Chemical Certificate would be desirable	Green Army Supervisor	http://conservationvolunteers.com.au/wp-content/uploads/2015/12/PD-Green-Army-Supervisor-Sept-2015.pdf