

Northern Territory Skilled Occupation Priority List

Information Paper

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1. Background

The NTSOPL is an annually produced list of skilled occupations that are in high demand or considered critical by business and industry in the Northern Territory (NT).

The NTSOPL is intended to provide guidance in the following areas:

- informing business and industry workforce planning and development
- decision-making relating to occupational shortages
- defining priorities in the allocation of training funding (i.e. linking training funding to skills in demand)
- defining priorities in the allocation of employer incentives for apprentices and trainees
- informing recruitment activities
- targeting of qualified overseas workers to address skills shortages through skilled migration schemes (including the NT's Designated Area Migration Agreement).
- targeting of skills in the Territory's national workforce attraction programs
- targeting of skills in the Territory's population growth strategy

The NTSOPL was developed and first published in 2012. The NTSOPL expands on and replaces the Northern Territory Occupation Shortage List (NTOSL). The development of the NTSOPL reflects stakeholder requests for a more forward-looking list than offered by the NTOSL.

2. Introduction

This paper outlines the methodology underpinning the Northern Territory Skilled Occupation Priority List (NTSOPL).

The NTSOPL methodology has drawn extensively on the 2012 Western Australian State Priority Occupation List methodology.

This paper will set out:

- the method used to define the scope of occupations considered for inclusion on the NTSOPL
- the statistical method used to determine the initial rankings of the included occupations
- the non-statistical method employed in assessing occupations for inclusion on the NTSOPL
- the amalgamation of both statistical and non-statistical methods to determine the final NTSOPL.

A flowchart of the overall methodology is contained at *Appendix A*.

3. Methodology

The development of the NTSOPL is essentially a two-stage process. That is to:

- **define** the preliminary list of occupations that are eligible for consideration on the NTSOPL
- **determine** the occupations on the preliminary list that are included on the NTSOPL.

3.1. Stage one: Defining the preliminary list

In order for an occupation to be considered for inclusion on the NTSOPL, four criteria must be satisfied. These are:

- **Quality data**

There must be an adequate level of robust information about the occupation in order to assess and validate the occupation. Occupations must be clearly defined. That is, the occupation must have a valid Australian Bureau of Statistics (ABS) Australia and New Zealand Standard Classification of Occupations (ANZSCO) code at the six-digit level.

- **Skill level**

The occupation must have specialised skills that require extended learning and training time. Occupations that do not require post-school qualifications prior to entry will be excluded from the list – for example, labourers, process workers, and kitchen hands.

Occupations identified as ANZSCO skill level 1 through 4 meet this eligibility criterion, while most skill level 5 occupations do not.

- **Clear pathways**

The occupation must have a clear education and/or training pathway, where skills can be matched to the requirements of the occupation. Examples of occupations without pathways and hence excluded from the NTSOPL include Members of Parliament, judges and defence force personnel.

- **Occupational impact**

An occupation will be considered if any disruption in its supply would result in significant impact to the business operation, across the industry sectors or to the Territory's economy, i.e. may lead to higher unemployment and reduced productivity due to unfilled vacancies.

If the occupations have a substantiated need from multiple businesses and employers, i.e. a broad representation of an industry wide need, across both public and private industry sectors, or they may cross over into other industry groups, such as General Practitioners, Physiotherapists, Accountants or similar occupations with broad industry applications, would qualify for a priority listing if there is a proven need.

3.2. Stage two: Determining the NTSOPL

This section reflects the order of activities in developing the NTSOPL. Each section corresponds with the numbered process on the flowchart at [Appendix A](#).

3.2.1 Step 1: Refine list

The ABS ANZSCO coding structure was used to identify and analyse occupations for inclusion on the NTSOPL. ANZSCO¹ includes 1358 occupational codes at the most disaggregated level (six-digit level). From this list, a number of occupation codes were removed because they:

- were broad 'catch-all' type codes designed for the ABS Census collection and which do not refer to specific occupations
- required a lower skill-level (i.e. ANZSCO skill level 5), not requiring sufficient post-school qualifications or experience
- did not have clearly-articulated VET or higher education pathways.

A total of 690 occupations which were deemed of sufficient relevance or importance to the NT economy and therefore potential inclusion on the NTSOPL.

3.2.2 Step 2: Quantitative assessment

The 690 occupations were ranked based on their relative performance across four primary indicators.

The four primary indicators are:

- employment level (ABS Census²)
- employment growth (Victoria University Employment Forecasts)
- net replacement rate (Victoria University Employment Forecasts)
- skill level (ABS ANZSCO 2013 Version 1.3).

A standard statistical score (expressed relative to a known mean and standard deviation) was calculated for each indicator for each occupation. These scores, also known as z scores, are a commonly-used measure of the spread of values in a distribution and refer to the average amount by which observations in a distribution differ from the average.

While there are a variety of methods for standardising data, z scores were preferred for their ability to compare different measures ('000, %, years, etc.) which could otherwise not be directly compared.

In statistics, a standard score (or z-score) indicates by how many standard deviations an observation is above or below the average of a data series. It is a dimensionless quantity derived by subtracting the population mean from an individual raw score and then dividing the difference by the population standard deviation. This can be expressed as the following formula:

$$z = (x - \mu) / \sigma$$

where x is the observation, μ is the mean of the population, and σ is the standard deviation of the population.

As an example, the occupation fruit or nut grower had an employment level of 138 in the NT, which is a value greater than the mean employment level for all occupations (92). Using traditional standard deviation calculations, this value represents 0.2 standard deviations above the mean.

¹ 1220.0 - ANZSCO - Australian and New Zealand Standard Classification of Occupations, 2013, Version 1.3

² Australian Bureau of Statistics Census 2016

The z score for each indicator was weighted and summed to determine an overall score for each occupation. The following weightings have been applied:

- employment level – 30%
- employment growth – 50%
- replacement rate – 20%.

The weightings were based on a pairwise comparison survey of stakeholders. Respondents were asked to comment on the relative importance of each pair of indicators. Those comparative judgements were used to assign relative weights.

Each overall score was then adjusted to a T score for pragmatic purposes. This is done using the following formula:

$$T = 10 \times (z \text{ score}) + 50.$$

A skill level dynamic was then applied to each t score. This dynamic is used to factor in the diverse economic contributions of occupations of various skill levels, the ease of accessing the occupation through a migration solution, and the training time required for each occupation.

Occupations were then ranked from 1 to 690 according to their factored total scores.

3.2.3 Step 3: Qualitative “on-the-ground” assessment

A qualitative survey involving the Industry Skills Advisory Council NT (ISAC) is undertaken concurrently with the quantitative assessment.

ISAC is provided with an eight question survey to complete for each occupation considered for inclusion on the NTSOPL. The questions require qualitative responses and directly inform an occupation’s priority tier (i.e. high priority, priority, not a priority). ISAC is required to draw on existing intelligence, networks and research to complete each survey.

ISAC is not required to answer all questions for all occupations, only for those considered a high priority or priority. However, explanatory notes and sources supporting all claims were required in order to be accepted.

A copy of the survey is contained at Appendix B.

3.2.4 Step 4: Application of business rules

Each occupation identified in survey responses as a “priority” or “high priority” occupation was assigned a preliminary priority rating based on their quantitative assessment ranking.

Occupations for which an acceptable survey response was returned but ranked relatively low on the quantitative assessment were assigned an “industry priority” rating.

In addition to the outcome of the quantitative and qualitative assessments, other sources of intelligence were also evaluated for a holistic consideration of occupational issues.

These sources include:

- if occupations were included on the previous NTSOPL.

- if the Australian Government Department of Jobs and Small Business had identified them as an occupation in demand.
- if they were included on the Australian Government's Consolidated Skilled Occupation List (persons applying for a state sponsored general skilled migration visa must nominate an occupation on this list).

Occupations that were assessed as a "priority" or "high priority" formed the draft NTSOPL.

3.2.5 Step 5: List circulated to stakeholders for feedback

The draft NTSOPL is distributed to industry associations, peak bodies, other government entities and unions for comment. Surveys were provided to these stakeholders to provide evidence of occupations that should be included on the NTSOPL.

Occupations, for which an acceptable survey response was returned, subject to the business rules, were assigned a priority rating and added to the draft NTSOPL.

Any occupation that was not identified as a priority was not included for further consideration.

3.3. Skill Level 5 Occupations

Skill level 5 occupations are generally excluded from inclusion on the NTSOPL. However, they may be considered for inclusion on a case by case basis. To be included on the NTSOPL, a skill level 5 occupation must still satisfy the criteria of data quality, a clear training pathway, and evidence of material occupational impact.

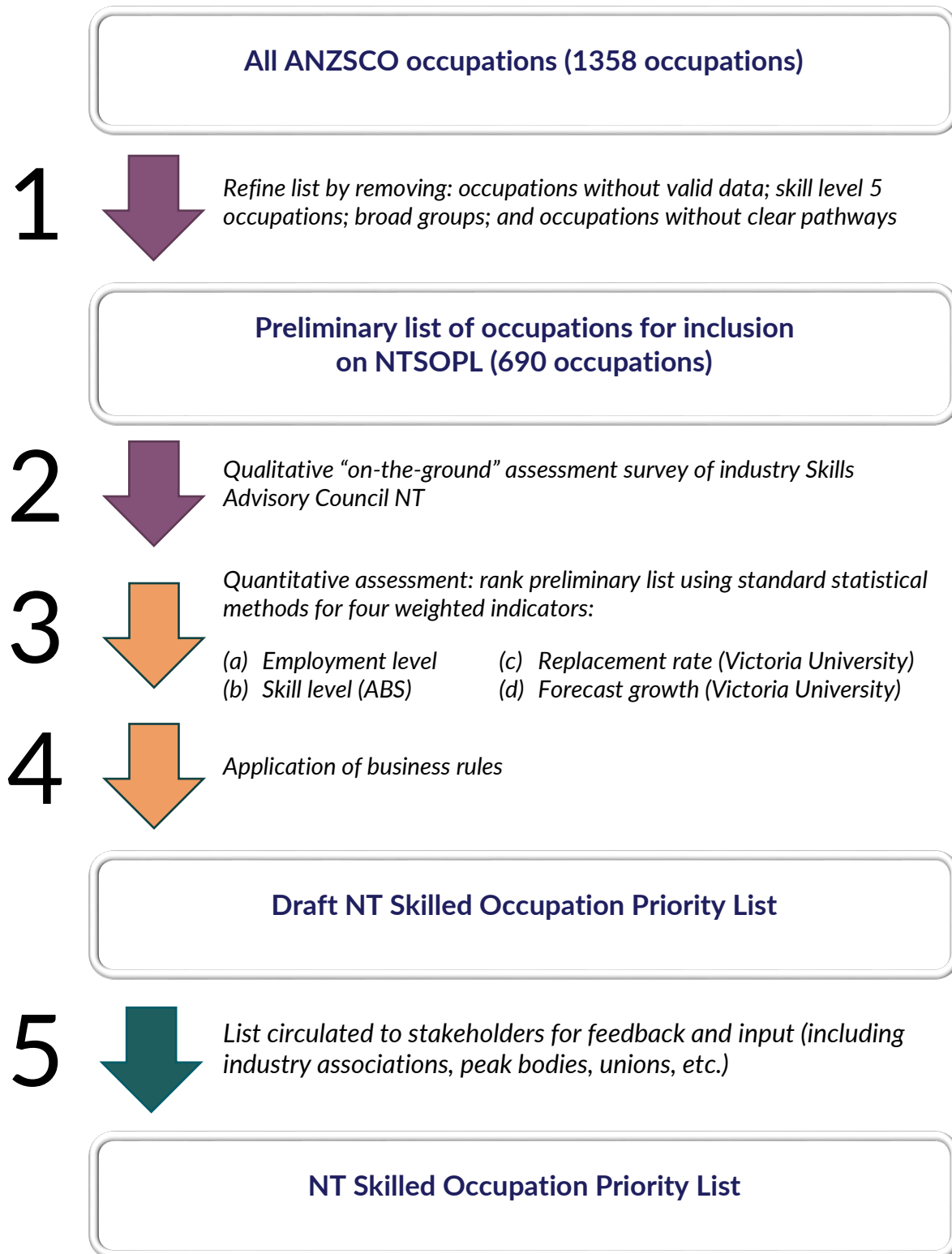
4. NT Skilled Occupation Priority List

All occupations identified by the ISAC and other stakeholders were organised according to their priority ratings (high priority, priority, industry priority) and formed the NTSOPL.

The NTSOPL is scheduled to be published in April on an annual basis. An annual review will commence in October each year.

5. Appendix A

NT Skilled Occupation Priority List Development Process



[View detailed description of development process.](#)

6. Appendix B

NT Skilled Occupation Priority List Survey

Occupation:

ANZSCO Code:

Key VET qualification code:

Key VET qualification name:

Question 1: In the previous 12 months, has the occupation been in shortage or experienced recruitment difficulties?

Question 2: Is the occupation expected to be in shortage or experience recruitment difficulties in the next 12 months?

If the answer is 'no' to both **Question 1** and **2**, go to **Question 5**.

Question 3: In terms of overall priority within your industry area, would you say the occupation is of the highest priority (i.e. no other occupations are more critical), a priority (i.e. other occupations may be more critical), or not a priority (i.e. issues are being resolved)?

Question 3a: Why? (please provide evidence if occupation is identified as a high priority or a priority)

Question 3b: Number of businesses/employers with identified issues.

Question 4: Are the issues affecting this occupation considered to be short term (1-2 years), medium term (3-5 years) or long term (5+ years)?

Question 4a: Why?

Question 5: Total number of employees that are on temporary visa with business's that have responded or contacted?

Question 6: *Number of business that made up question 5?*

Question 7: Are you aware of any specific issues relating to this occupation in particular sub-Territory regions? Including, but not limited to, Greater Darwin, Central Australia, Katherine, Barkly, Arnhem

Question 8: Do you have any further comments about the occupation?

7. Notes

The Australian and New Zealand Standard Classification of Occupations (ANZSCO) is produced and managed by the Australian Bureau of Statistics (ABS) and has been used in censuses and surveys where occupation data are collected from 2016.

ANZSCO provides an integrated framework for the standardised collection, analysis and dissemination of occupation data for Australia and New Zealand.

The classification definitions are based on the skill level and specialisation usually necessary to perform the tasks of the specific occupation, or of most occupations in the group.

The ANZSCO structure includes five hierarchical levels: major group, sub-major group, minor group, unit group and occupation. The categories at the most detailed level of the classification are termed 'occupations'. These are grouped together to form 'unit groups', which in turn are grouped into 'minor groups'. Minor groups are aggregated to form 'sub-major groups' which in turn are aggregated at the highest level to form 'major groups'.

One, two, three, four and six-digit codes are assigned to the major, sub-major, minor and unit groups, and occupations respectively. At the six-digit level there are 1358 occupation codes.

ANZSCO also categorises occupations by five-tier skill level. These are defined in terms of formal education and training, previous experience and on-the-job training. The determination of boundaries between skill levels is based on the following definitions.

Skill level 1: a level of skill commensurate with a bachelor degree or higher qualification. At least five years of relevant experience may substitute for the formal qualification.

Skill level 2: a level of skill commensurate with AQF Associate Degree, Advanced Diploma or Diploma. At least three years of relevant experience may substitute for the formal qualifications listed above.

Skill level 3: a level of skill commensurate with AQF Certificate IV or AQF Certificate III including at least two years of on-the-job training. At least three years of relevant experience may substitute for the formal qualifications listed above.

Skill level 4: a level of skill commensurate with AQF Certificate II or III. At least one year of relevant experience may substitute for the formal qualifications listed above.

Skill level 5: a level of skill commensurate with AQF Certificate I or compulsory secondary education. For some occupations a short period of on-the-job training may be required in addition to or instead of the formal qualification. In some instances, no formal qualification or on-the-job training may be required.

For more information see: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/1220.0>

8. NT Skilled Occupation Priority List Development Process

All ANZSCO occupations (1358 occupations)

- 1 Refine list by removing: occupations without valid data; broad occupation groupings; occupations without clear pathways and majority of skill level 5 occupations (note a number of skill level 5 occupations included based on qualitative evidence provided).

Preliminary list of occupations for inclusion on NTSOPL (690 occupations)

- 2 Qualitative 'on-the-ground' assessment: survey of Industry Skills Advisory Council NT.
- 3 Quantitative assessment: rank preliminary list using standard statistical methods for four weighted indicators:
 - (a) Employment levels (ABS)
 - (b) Forecast growth (Victoria University)
 - (c) Replacement rate (Victoria University)
 - (d) Skill level (ABS).
- 4 Application of business rules: including if they were included on the Australian Government's Consolidated Skilled Occupation List (persons applying for a state sponsored general skilled migration visa must nominate an occupation on this list).

Draft NT Skilled Occupation Priority List

- 5 List circulated to stakeholders for feedback and input (including industry associations, peak bodies, unions, etc.)

NT Skilled Occupation Priority List

[Return to flowchart](#)