

Mapping Community Landscape Values and Development Preferences in and around Darwin Harbour

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Background

Darwin Harbour is a highly valued and contested place; the 'Jewel in the Crown' of the Northern Territory.

The catchment is currently experiencing significant development and further industrial and tourism development is expected, as outlined in the current draft Regional Land Use Plan¹ (Figure 1) tabled by the Northern Territory Planning Commission.

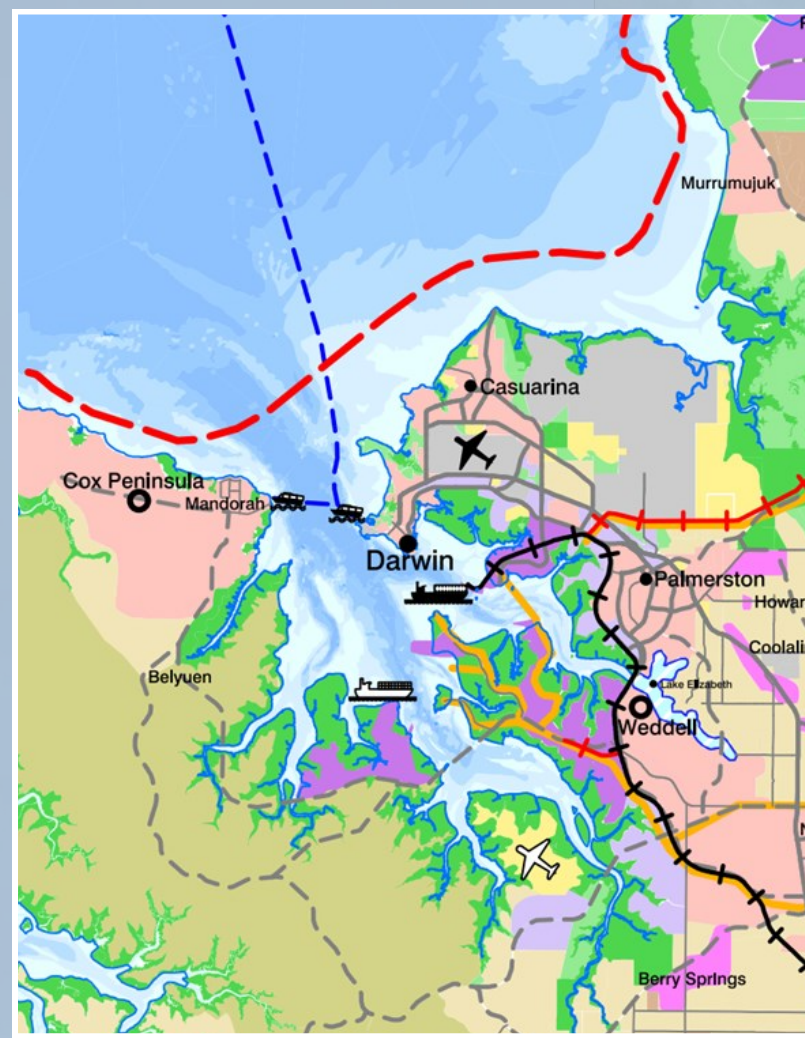


Figure 1. Darwin Harbour section of the development plan overview map¹

Despite its obvious iconic value and significant use by locals and visitors alike, there is no representative baseline data on what the residents living within the catchment most value in and around Darwin Harbour.

High quality spatial data on landscape values² (e.g. economic, biodiversity, wilderness), and development preferences (e.g. industrial, residential) will aid future development planning that considers the diversity of values and preferences held by the community.

Aim

To identify what Darwin Harbour catchment residents most value in and around Darwin Harbour and to identify where the residents would like to see particular types of development occurring, or not.

Methods

A mail survey was sent to 2000 randomly selected households from within the Darwin Harbour Catchment. The survey included questions on the households' links to Darwin Harbour, a mapping exercise to identify the households' landscape values and development preferences, and questions on respondent background (socio-demographics).

The mapping exercise required respondents to place stickers relating to landscape values and development preferences (Figure 2) on a map of the harbour and foreshore (Figure 3).

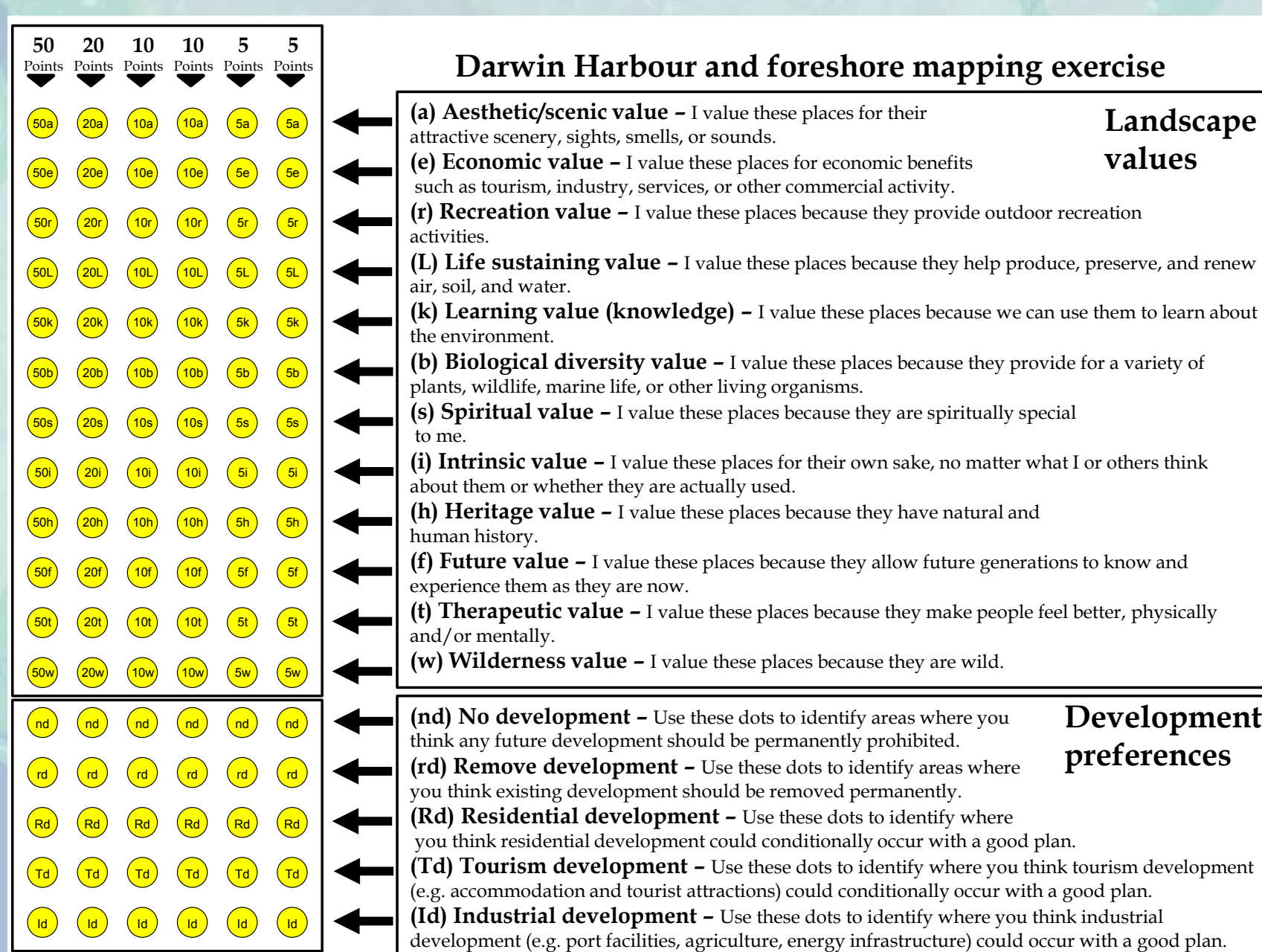
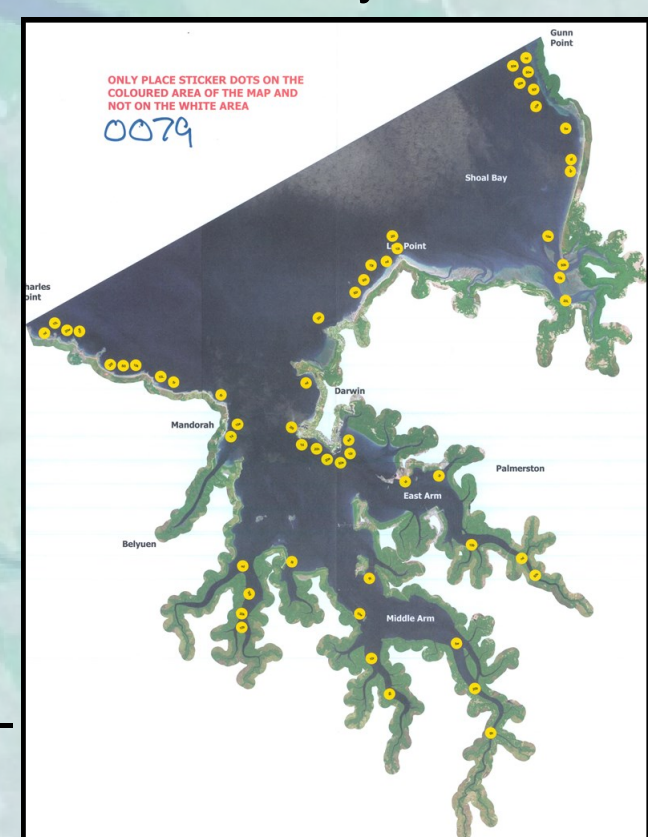


Figure 2. Sticker sheet used in survey to allow households to identify landscape values and development preferences. Stickers are yellow dots.

Surveys were returned, maps were scanned and georeferenced, and spatial landscape values and development preferences entered into QGIS.



References

¹ Anonymous. 2014. Draft Darwin Regional Land Use Plan. Northern Territory Planning Commission.

² Brown, G. 2006. Mapping Landscape Values and Development Preferences: a method for Tourism and Residential Development Planning. Int. Journal of Tourism Research, 8: 101-113



Results

Landscape Values

To date 136 surveys have been returned from the mail-out questionnaire to 2000 homes. Preliminary data entry and analysis for spatial landscape values and development preferences has been conducted on 80 of these 136 returned surveys. A total of 2519 landscape value sticker dots were placed on the 80 supplied maps.

Recreation, Aesthetic, Biodiversity, and Wilderness values were the highest scoring landscape values (Figure 4).

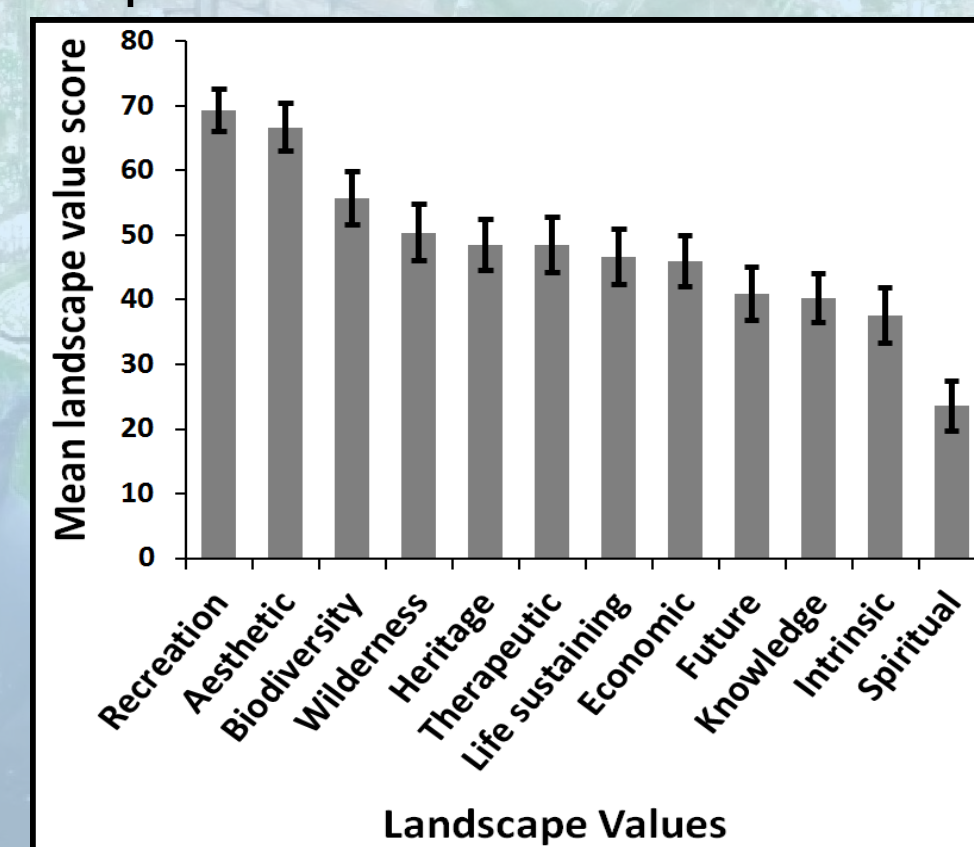


Figure 4. Average scores (of a possible 100) for each of the landscape values.

Aggregated landscape values show highest density around the most populated parts of the harbour (Figure 5).

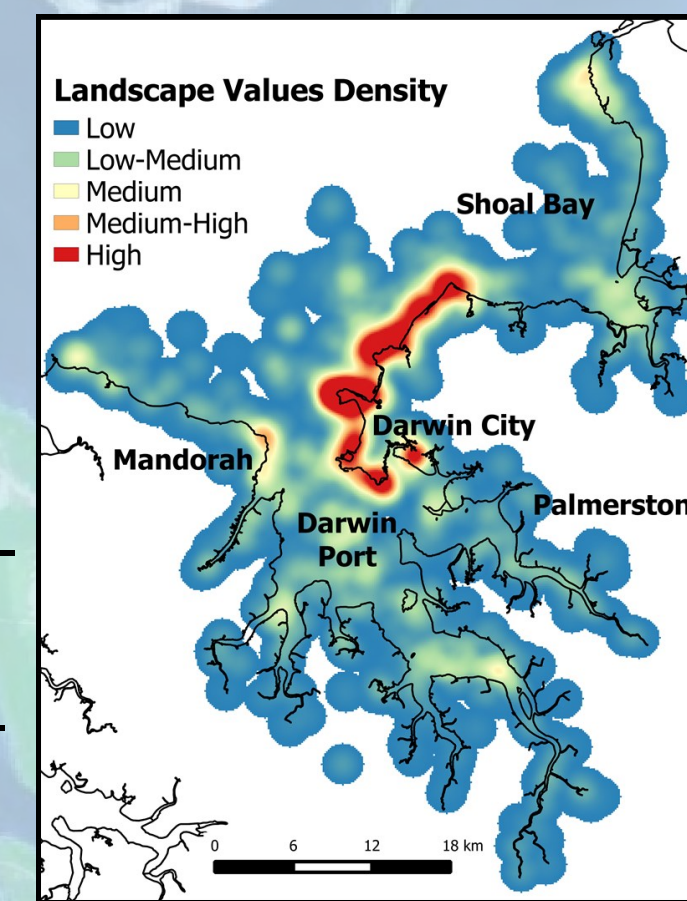


Figure 5. Distribution of all (summed) landscape values.

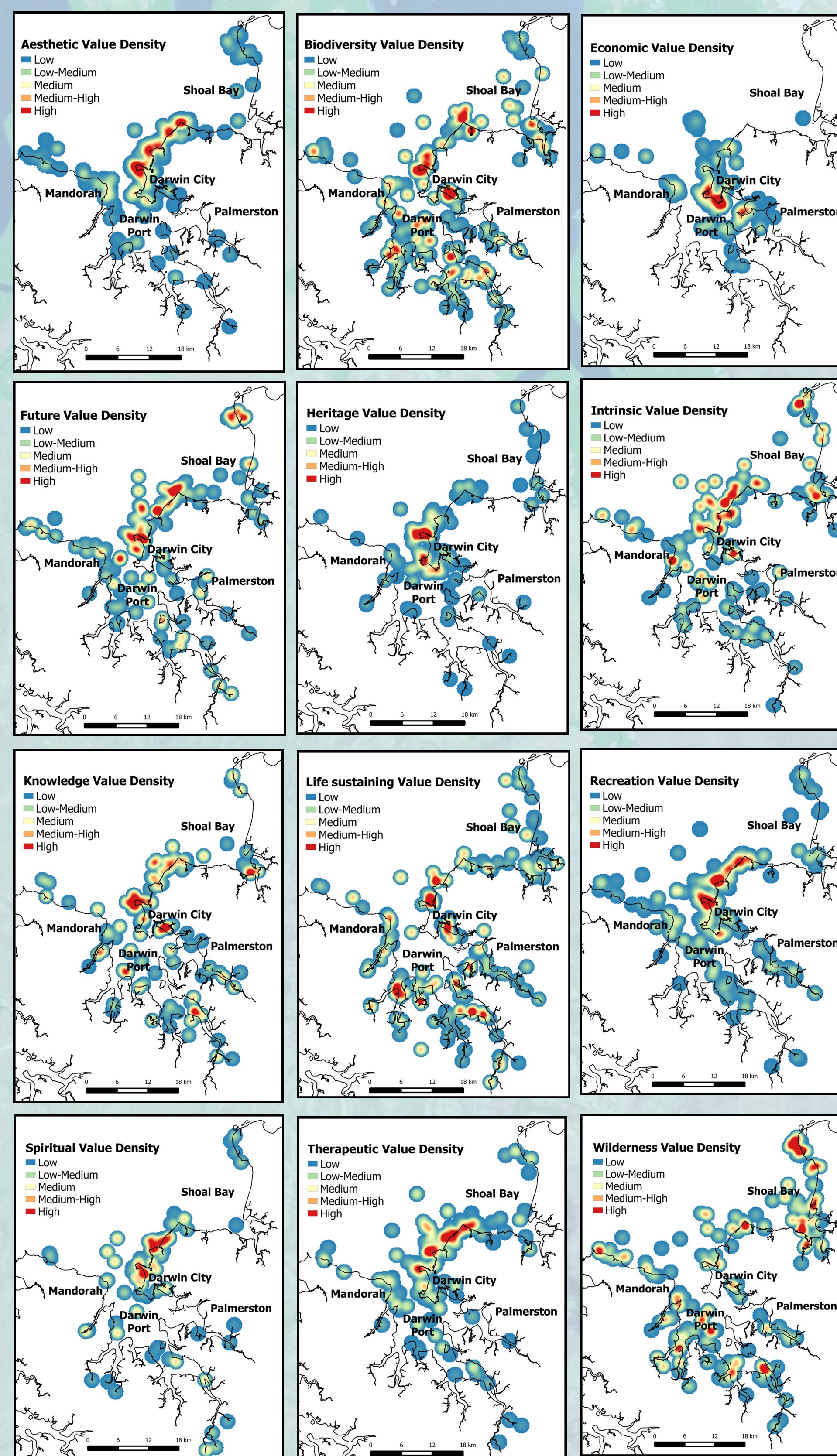


Figure 6. Individual landscape value spatial distributions.

Results

Development Preferences

A total of 647 development preference sticker dots were placed on the supplied maps by 80 respondents.

'No development' was, by far, the highest scoring development preference (Figure 7).

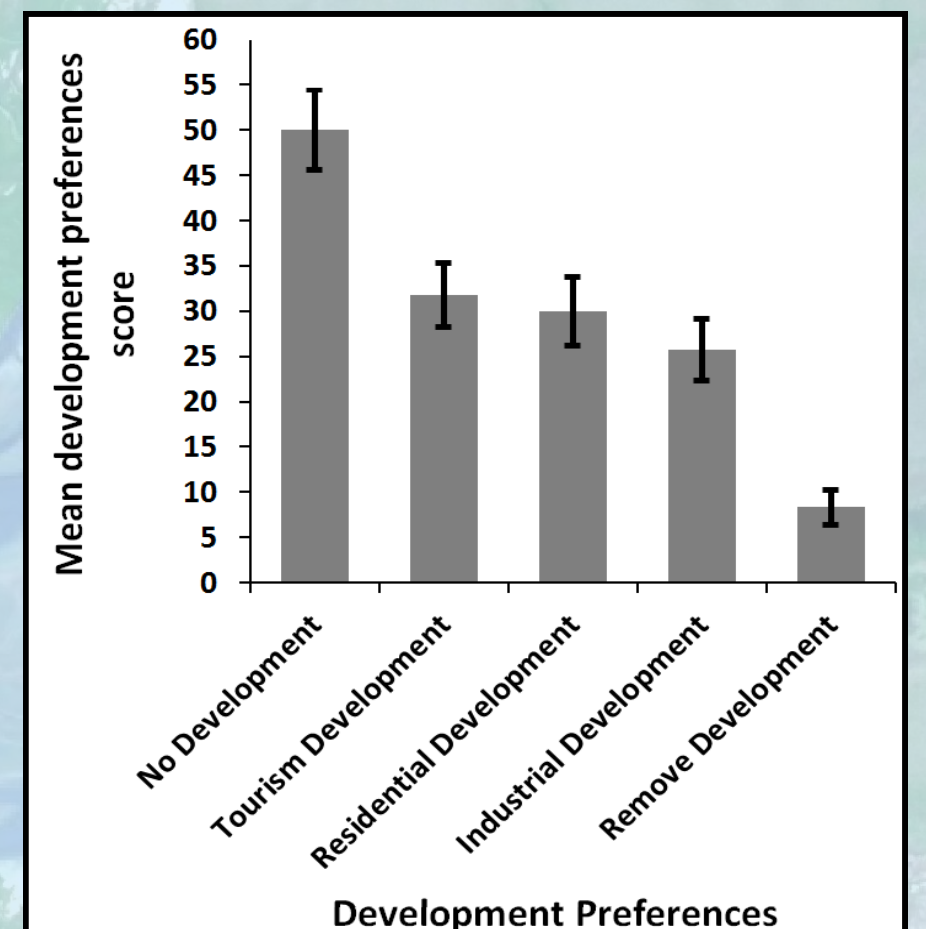


Figure 7. Average scores (of a possible 100) for each of the development preferences.

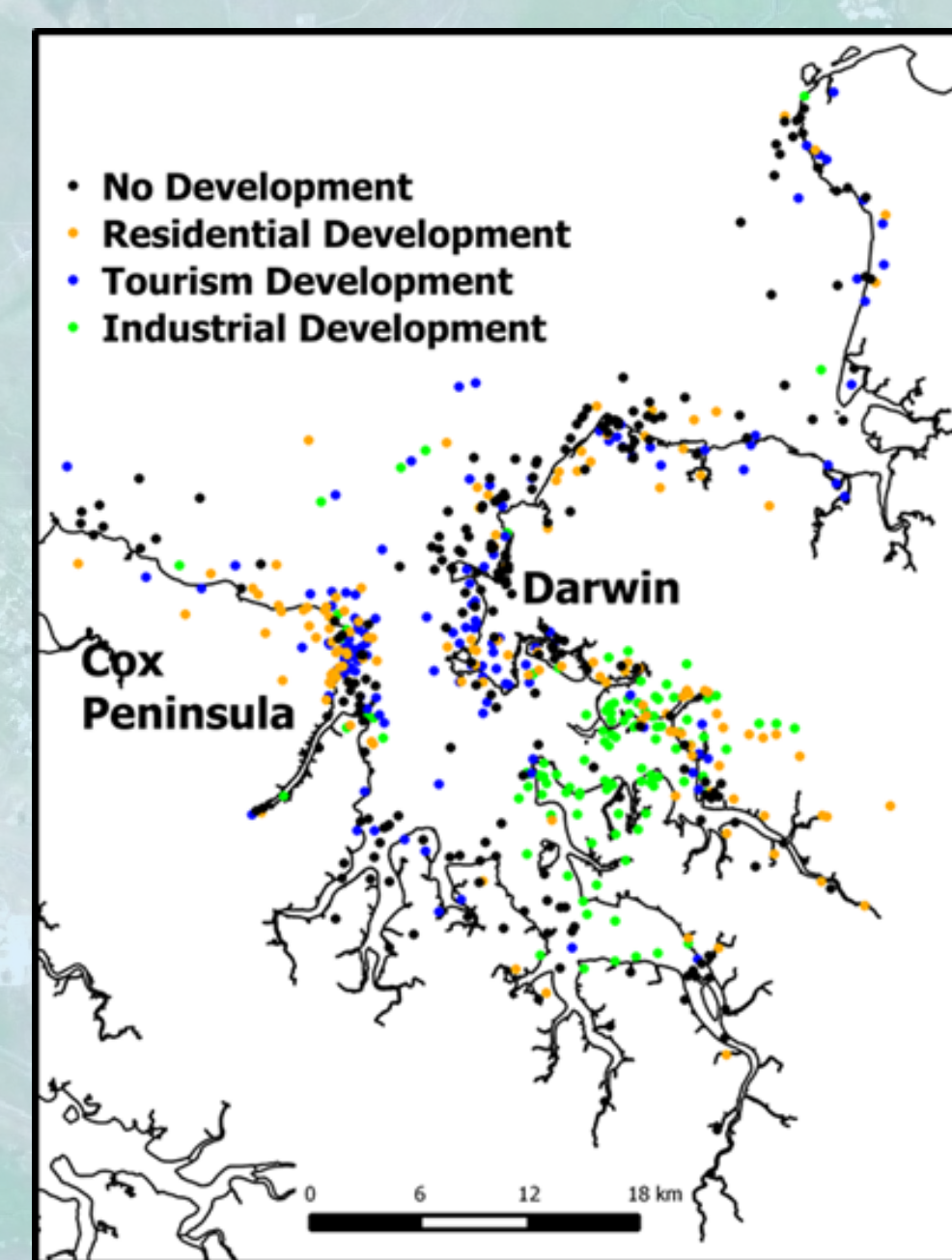


Figure 8. Distribution of development preferences from 80 respondents.

Preference for industrial development is clustered around Palmerston and East Arm (Figure 8).

Preference for residential and tourism development appears spatially correlated around Palmerston, Darwin City and Mandorah (Figure 8).

Future Directions

Data collection

Preliminary results suggest that respondents do not reflect the general population. The majority are older professionals that have lived in the region for at least 20 years. Further purposive sampling will occur with sectors of the community that have not been well represented in the data, including younger people and Larrakia people. A total sample size of ~ 300 people from within the Darwin Harbour catchment is the current goal.

Analysis

Landscape values and development preference data will be analysed for spatial correlation and spatial clustering to determine potential synergies and conflicts. Data collected in the survey, on respondent sociodemographics and respondent links to Darwin Harbour, will be used to explain respondent landscape values and development preferences. This will answer the question of what types of people value what, where, and what types of people have certain development preferences.

Further Research

Parts of the harbour and foreshore that are identified as highly valued (hotspots) will become the focus of future research into predicting threats to landscape values. The aim of this future research is to improve future harbour management.

Acknowledgements

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