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THE ARID LANDS ENVIRONMENT CENTRE ACKNOWLEDGES THE TRADITIONAL OWNERS OF THESE LANDS. WE PAY OUR RESPECTS TO THEIR ELDERS PAST, PRESENT, AND EMERGING. WE ACKNOWLEDGE AUSTRALIA'S FIRST NATIONS WERE SELF-GOVERNING IN ACCORDANCE WITH THEIR TRADITIONAL LAWS AND CUSTOMS, AND THEY NEVER CEDED SOVEREIGNTY OF THEIR LANDS, SEAS, AND WATERS.

Submission draft Interference with a waterway guideline and Surface water take wet season flows policy

The Arid Lands Environment Centre (ALEC) is Central Australia's peak community environmental organisation. It has been advocating for the protection of nature and growing sustainable communities in the arid lands since 1980.

ALEC welcomes the opportunity to comment on the interference with waterway guideline and surface water harvesting policy

This surface water policy only applies outside of the Northern Territory's arid lands. ALEC's comments are therefore limited in extent to where the policy establishes generalised principles that could be applied elsewhere and to advocate for the preservation of the Territory's free flowing rivers, which is a value held by all Territorians.

PART 1 - INTERFERENCE WITH A WATERWAY GUIDELINE

Understanding of the guideline

A permit is needed for anything which causes a material change in the shape of a waterway, the volume, speed or direction of in or into a waterway and activities that alter the stability of the bed or banks of a waterway. The guideline is proposed to apply across the Territory.

Permits are not required for activities that under the proposed classification systems result in "not material" risks. Permits are required in all other instances (low, medium or high). Determination of the need for a permit by way of self assessment.

Once the need for a permit is established the level of information required is guided by the risk level. No information is provided in the guideline as to what the information requirements are for assessment of a permit or the level of risk mitigation that needs to be achieved before a permit will be issued.

Overall

ALEC **does not** support this guideline in its current form. This guideline is not fit for purpose, lacks supporting documents and is unsuitable for arid zone waterways. It could result in a proliferation of works along or near waterways in remote areas, constructed without approvals.

ALEC would support development of a suitable guideline that enabled effective application of Part 5 of Water Act 1992, as interference with waterways is already a major issue in arid areas, which has been poorly managed resulting in severe and at times irreparable damage to many important surface water features. Examples of unacceptable interference include: urban drainage diversion works; dams on pastoral leases; sand mines on watercourses; incorrect placement and invert levels for culverts on roadways; allowing livestock to damage fragile wetlands, waterholes and waterways; and, disruption of timing and volume of scouring flows entering waterways from changes in land activities.

Specific concerns with the draft guideline.

ALEC has numerous concerns which make this guideline unsuitable, especially for arid zones. These are:

1. Considerations are different in arid zones - low order streams may be especially significant
2. Stream order approach is unsuitable for categorising risks from interfering with waterways
3. Interference to waterways and consequent impacts on wetlands and waterholes has been identified in the review of the Alice Springs Water Allocation Plan 2016-2026 as being of great concern, however it appears that some of these concerns raised in this review would be considered immaterial under this guideline
4. Environmental values, including those of receiving waterbodies and occurrence of threatened species are not required to be considered in the self-assessment
5. Risks to cultural values are not required to be considered in contrast to other statutory processes - e.g. land clearing and environmental impact assessment.
6. Self assessment of technical subject matter, involving significant environmental risks and risks to cultural sites is highly inappropriate. It is likely to result in activities occurring without notification or approval and for which remediation is impossible.
7. There is insufficient guidance to provide any consistency by which self-assessment is to be undertaken
8. It is not clear what standards need to be met for a permit to be issued
9. Consultation is inadequate to obtain informed consent from arid zone stakeholders as the draft guideline was “slipped in as part of a different consultation process targeted at Top end rivers.
10. The DEPWS based on past performance is not resourced to implement this policy

1. Significance of lower order streams in the arid zone

In arid areas low order streams rising in rocky areas generally flow more frequently than high order

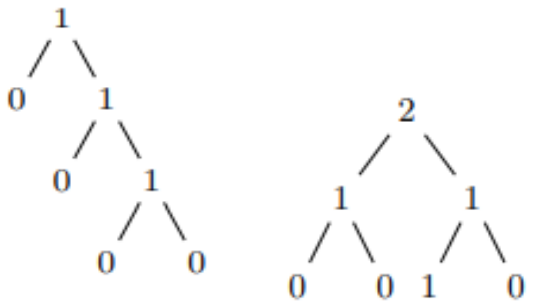
streams, in direct contrast to wetter areas. These therefore can have an especially important function in the arid areas, where water is scarce. Furthermore these low order streams may feed run on areas and wetlands which can be highly important habitats in arid zone landscapes. For example Duguid et al 2005 defines the category minor creeks and rivers which extend only a short distance from the uplands into the surrounding plains, before terminating at wetland[1]. These are unquestionably significant for arid zone ecosystems.

A study on US ephemeral streams describing the unique considerations in arid zones states:

> Some southwestern landscapes confound typical notions of where water is to be found. The recent CWA discussions generally assume that perennial streams receive water from ephemeral tributaries. But, a person dying of thirst in the Cabeza Prieta National Wildlife Refuge in southwestern Arizona will find surface water in the mountains, not in the valley floor streams. In the San Pedro Valley of southeastern Arizona, perennial and intermittent stream reaches commonly are found in the tributaries, as well as along the main stem San Pedro River (Figure 2). In the Mojave Desert of southern California, some mountain streams are physically isolated from downstream hydrologic systems. Water from these mountain streams takes hundreds or thousands of years to move into and through the regional aquifer and discharge into valley floor streams, springs and wetlands (Izbicki, 2007)[2]

2. Stream order approach is unsuitable for categorising risks from interfering with waterways

It is unclear as to the basis for the Strahler number being used to evaluate risks to waterways and the necessity to obtain a permit. Our understanding is that the Strahler number is intended as a measure for describing catchment characteristics and modelling responses, not defining management prescriptions. Elongated catchments reflecting geological structures such as rivers in rift valleys will have much higher bifurcation ratios (the ratio of a number of the stream segments of specified order and a number of streams in the next higher order), meaning that significant waterways may have relatively low orders.



This shortcoming is relevant in the Alice Springs area. Charles River is a waterway of significant local value running within a well defined valley but is only classified as stream order 2 for its entirety (see

[1] https://nt.gov.au/__data/assets/pdf_file/0018/262224/wetlands-in-the-arid-nt.pdf

[2] https://www.epa.gov/sites/default/files/2015-03/documents/ephemeral_streams_report_final_508-kepner.pdf

case study 1).

3. Interference to waterways and consequent impacts on wetlands and waterholes is identified in the review of the Alice Springs Water Allocation as being of great concern. It appears that some of the risks would be considered immaterial under this guideline

The Alice Springs Water Allocation Plan Review 2016-2026 Review report[3] found (p12) cultural values (including coolibah swamp and other swamps and waterholes) may have been impacted by works on waterways and land use changes, especially in the town area. It made the recommendation to maintain surface water flows in accordance with Part 5 of the Act (p22).

Two key sites identified in the plan review which would not be adequately protected under the guideline are:

- Ankerre Ankerre, a highly significant cultural site. It is widely recognised that diversion of drainage from Ankerre Ankerre has been a major cause of ecosystem degradation. It receives runoff from from ephemeral drainages, east of Alice Springs which in NR Maps are not assigned a stream order. The risk of interference with Ankerre Ankerre may have been assessed as minor.
- Ilparpa claypans - again depends on runoff from less than first order streams and interference with waterways draining to these would be deemed immaterial under this guideline.

4. Environmental values, including those of receiving waterbodies and occurrence of threatened species are not required to be considered in the self-assessment

The values impacted by interference to a waterway are clearly essential to any evaluation of risk. Both waterways and receiving waters including low order streams can be important. For example, Duguid et al 2005 highlights the existence of many types of aquatic ecosystems depending on flows from low order streams (e.g. lowland waterholes at base of ranges fed by gullies). (See case study 2 as an example of the risks of self assessment on a stream order 2, upstream of stream order 3.)

As it stands the guideline does not require adequate consideration of these values. ALEC is also firmly of the view that it is not appropriate for self-assessment of these values, given the assessor will also be the beneficiary of the proposed interference.

5. Risks to cultural values are not required to be considered avoided in contrast to other statutory processes - e.g. land clearing and environmental impact assessment.

Refer case study 3. It is particularly concerning that self assessment process does not appear to have any regard to cultural values because

1. It is inconsistent with the approach taken in other statutory processes (e.g.pastoral land

[3] https://territorystories.nt.gov.au/10070/836114/0/12

clearing guidelines[4] and application form[5] (refer section 12)).

2. Cultural values in arid zones would be expected to frequently be concentrated near waterways
3. A permit to interfere with a waterway may be the only statutory approval needed for significant works in remote areas and these works clearly can involve risks of irreparable damage to cultural sites.

6. Self assessment of technical subject matter, involving significant environmental risks and risks to cultural sites is highly inappropriate. It is likely to result in activities occurring without notification or approval and for which subsequent remediation is impossible

In addition to the severe risks posed by interference to waterways to environmental and cultural values, predicting the impacts of interference to waterways is highly technical and small changes such as lowering an invert level can have profound consequences. In some cases physical models are needed to determine the consequences because of the range of variables.

7. There is insufficient guidance to provide any consistency by which self-assessment is to be undertaken

In addition to 6 there does not appear to be any published guidance of substance on how these self-assessments are to be undertaken or references that should be used.

8. It is not clear what standards need to be met for a permit to be issued

The Controller should give an indication as to the expectations for how risks are to be mitigated and the level of risk mitigation that is to be undertaken before a permit is to be issued.

9. Consultation is inadequate to obtain informed consent from arid zone stakeholders as the draft guideline was "slipped in" as part of a different consultation process targeted at Top End rivers.

It appears that this guideline applies across the Territory but was "slipped in" to a consultation focused on Top End rivers with vastly different considerations.

ALEC is concerned that very few stakeholders in the arid zone will have considered this document. This is inappropriate as, as was shown with the GDE guideline for the Western Davenport WCD[6], guidelines' consequences can be highly significant and be of strong public interest. The importance of full consultation on guidelines is heightened, given pressure from the DEPWS to remove enforceable details from statutory documents such as water allocation plans.

ALEC is also concerned that some information pertaining to Central Australia in the draft guideline is unhelpful and overstates the degree of regulation proposed. In particular the Todd River is described as stream order 6, however, it is a stream of order 4 through town and the rural area,

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[4] https://nt.gov.au/__data/assets/pdf_file/0003/902289/northern-territory-pastoral-land-clearing-guidelines.pdf

[5] https://nt.gov.au/property/land-clearing/pastoral-land/clearing-native-vegetation-on-pastoral-land

[6]

where many of the significant pressures to interfere with this waterway are likely to be felt.

10. The DEPWS based on past performance is not resourced to implement this policy

ALEC is aware of many examples of waterways which have been degraded through interference to waterways, however very few permits to interfere with waterways have been issued, and assessment requires specific technical expertise, which is rare in the Northern Territory. ALEC would strongly support an increase in capacity to deliver this work to a standard that is commensurate with the risk posed by interfering with waterways, noting the costs of the work should largely be recovered from the beneficiaries.

PART 2 SURFACE WATER TAKE- WET SEASON FLOWS POLICY

(ALEC is deeply opposed to floodplain harvesting for irrigated agriculture in Arid Lands. It is a poor and wasteful use of scarce water resources already needed. Our understanding is this policy does not apply to arid lands.)

ALEC **does not** support this policy. The reasons for this position follow. These focus on matters which have general implications to water allocation policy as it is applied throughout the Territory and environmental concerns held by all Territorians.

Preservation of free flowing rivers in the Top End

All Territorians value free flowing rivers. ALEC does not wish to see these put in jeopardy. Free-flowing rivers are defined as those with less than 5% alteration in their natural state in terms of longitudinal connectivity (upstream and downstream), lateral connectivity (to floodplains and riparian areas), vertical connectivity (to groundwater and atmosphere) and temporal connectivity (seasonality of flows). Full allocation and use of the wet season consumptive pool as currently defined, in combination with existing groundwater and surface water extraction in the dry season, are likely to push Northern Territory rivers over this threshold and remove their status as free-flowing rivers.

Northern Territory rivers and floodplains should be protected. These are of immense global ecological and cultural value, are the Territory's comparative advantage and source of ecosystem resilience. This policy does not provide adequate safeguards that this will be the case.

The existence of scientific research does not substitute for a water allocation plan, and consideration of community values

The draft policy states that where scientific research is available it overrides contingent allocations:

"..relevant, available scientific research establishes the maximum volume of water that may be extracted from the relevant river basin, while maintaining important hydraulic conditions, environmental and cultural water requirements."

The existence of scientific information should not be used to increase the amount of water available beyond contingent allocations, nor used to bypass the need for orderly preparation of water allocation plans.

ALEC is of the firm view that this policy and all water allocation policies should maintain fidelity to the National Water Initiative in the processes by which the amount of water available for consumptive use is determined. The NWI defines the "consumptive pool" as the "amount of water resource that can be made available for consumptive use in a given water system under the rules of the relevant water plan". Water allocation plans provide a mechanism to assist governments and the community to determine water management and allocation decisions to meet productive, environmental and social objectives secure ecological outcomes by describing the environmental and other public benefit outcomes for water systems and defining the appropriate water management arrangements to achieve those outcomes.

Allocations should not be made wholly on a first in first served basis, be spatially optimal, efficient and based on good practice in how water is taken

ALEC defers to Top End advocacy groups in judging the acceptability of the contingent allocations, however ALEC considers the draft falls short on the following policy design grounds:

- Access to water resources should be made in the public interest, not first in first served.
- Where water is taken should be spatially optimal and well distributed. If the full contingent allocation was to be heavily taken in one part of a river system then this runs the risk of significant local impacts and uneven distribution of benefits
- Captured water should not be wasted. The policy should not let valuable water resources be wasted by allowing these to be held in large shallow dams, where a high fraction of water is lost to evaporation.
- The policy should require that water is taken in ways that do not cause environmental harm.

Thank you for considering this submission.

Kind regards,

Adrian Tomlinson

Chief Executive Officer

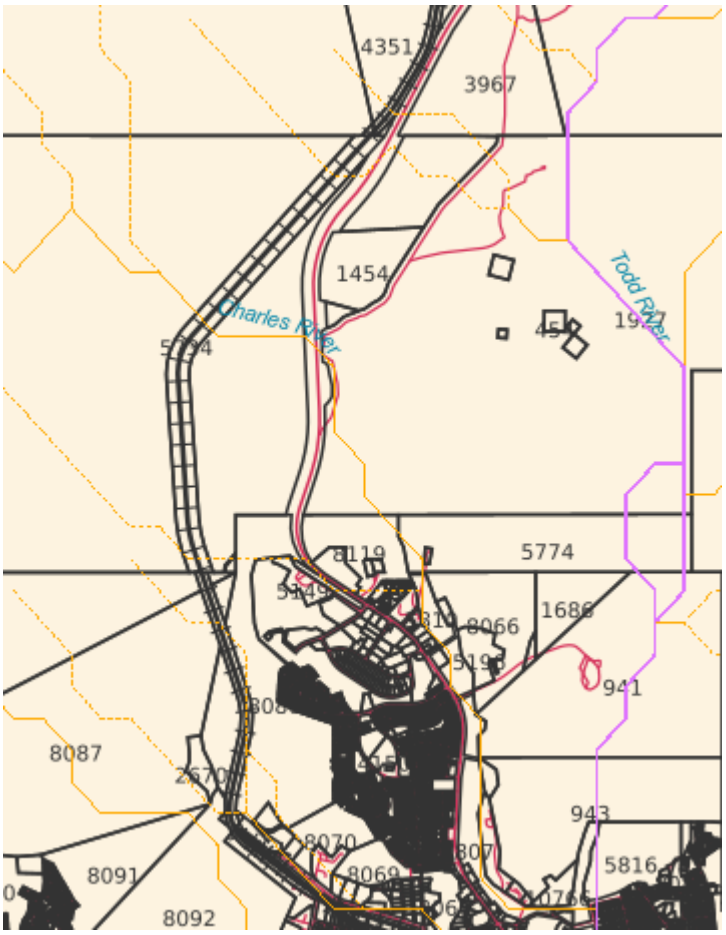
Attachment

Photographic case studies

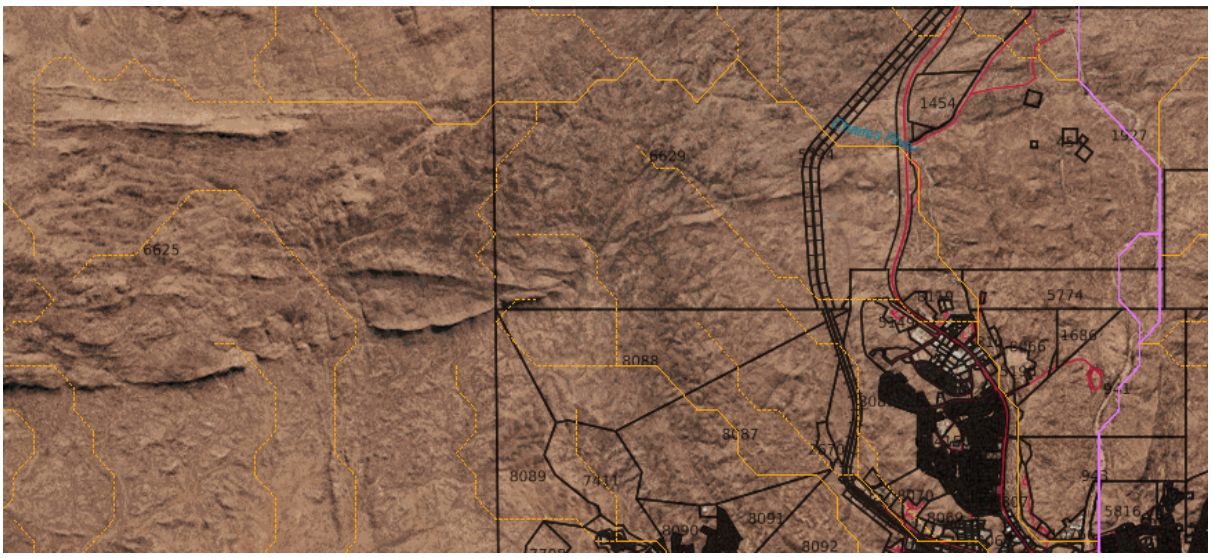
Photographic case studies

Case study 1. Charles River - underdescribed using Strahler system

Is a substantial river [7] draining through urban areas but due to the lack of inflow of any second order tributaries is a second order stream its entire length. Hence no impacts to its shape, bed and banks or direction of flow could ever be assessed as being a high risk



[7] https://www.abc.net.au/news/2021-11-13/alice-springs-wettest-november-on-record/100616212



The Charles River flows under the Stuart Highway on Wednesday. *(ABC Alice Springs: Steven Schubert)*

Case study 2 - Site on Ernest Giles Road

Dam and diversion works upstream on first and second order streams appear to have destroyed a coolibah swamp, with a record of the threatened fauna Calidris ferruginea (curlew sandpiper) and caused downstream erosion which has impacted on a third order stream and Ernest Giles Rd. This would be identified as a medium risk, if it was picked up in the self assessment at all.

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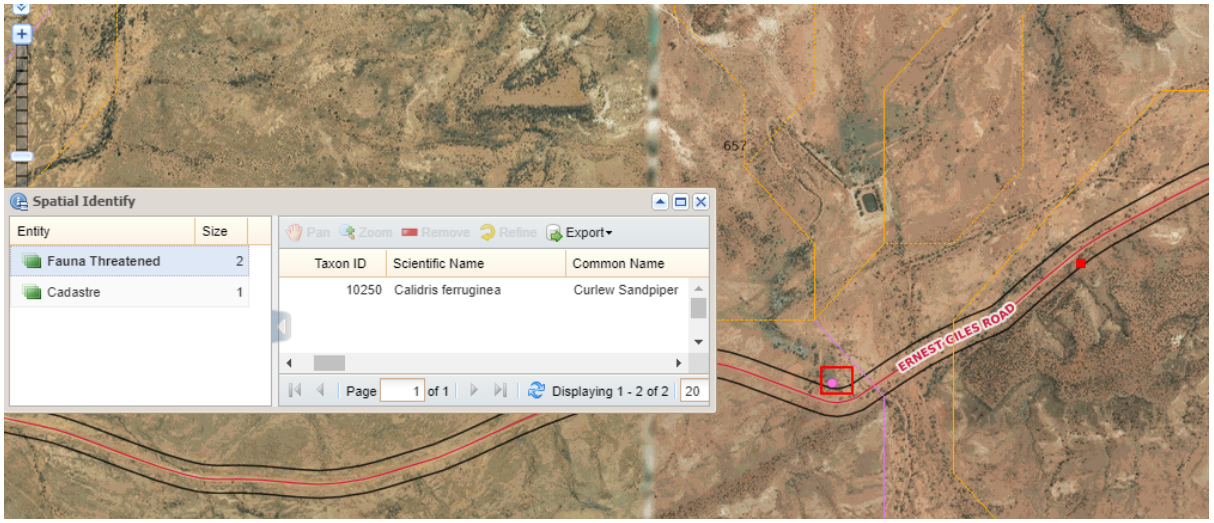

Case study 3 - Ankerre Ankerre - changing invert levels and loss of flows from low order systems, cultural and environmental significance must be taken into account

Ankerre Ankerre relied on runoff from multiple small tributaries which have been diverted. As these are not mapped as first order streams this may not have been picked up in a self-assessment. This is widely known as a key ceremony site. Any impacts should be regarded as a high risk and avoided.

Image: Water flushing out rather than into the Ankerre Ankerre wooded wetland – which isn't wet [8]

[8] https://www.alicespringslandcare.com/local-groups/ankerre-ankerre/the-swamp/

Case study 4 - Running waters - interference of a waterway by livestock

Three processes that are affecting the quality of the Running Waters ecosystems, because of it being in a confined reach are: erosion of the waterway; deposition of sediment into the waterway; and a deterioration in water and habitat quality. Uncontrolled horse and cattle access underlies all of these, despite Running Waters being within a conservation covenant between Henbury Station and the NT Government, which requires that ecologically significant features not be degraded[9].

Running Waters is important for overall regional aquatic biodiversity and the persistence of species unique to central Australia. It supports 36 macroinvertebrates, 32 of which could not have the species named because they were either new to science or not included in taxonomic keys.

[9] http://alicefieldnaturalists.org.au/19_02.pdf