



## MINISTER FOR ENVIRONMENT

## STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED (PURSUANT TO THE PROVISIONS OF THE ENVIRONMENTAL PROTECTION ACT 1986)


## HARRIS RIVER DAM PROJECT

## WATER AUTHORITY OF WESTERN AUSTRALIA

This proposal may be implemented subject to the following conditions:

1. The proponent fulfilling the commitments given in the Environmental Review and Management Plan and in subsequent correspondence (copy of major commitments attached).
2. The proponent shall provide details of the:
  - . water pipeline alignment; and
  - . construction and proposed rehabilitation methods;to the Environmental Protection Authority's satisfaction prior to construction.
3. The proponent shall review current research projects and the existing catchment management programme, in particular the reforestation programme, with a view to:
  - . assessing the prospects for a range of alternative strategies, including tree farming, to control saline discharges from affecting areas; and
  - . assessing possible time frames for implementing further catchment management options and redirecting research and development programmes as appropriate.

The proponent shall report to the Environmental Protection Authority following this review with proposals for meeting condition 1 and the associated commitments.

  
Barry Hodge, MLA  
MINISTER FOR ENVIRONMENT

5 NOV 1987

## MANAGEMENT COMMITMENTS MADE BY THE PROPONENT

The Water Authority of Western Australia is committed to the long term objective of returning the Collie River to a salinity level such that the quality of water supplied from Wellington Reservoir is suitable for domestic water supplies.

The following management commitments were presented in the ERMP:

### CLEARING OF FOREST AND REHABILITATION

Trees and large scrub up to the full supply level will be removed before flooding the reservoir.

CALM will be contacted as early as possible to arrange for logging of suitable timber in the reservoir basin. Timber to the east of the dam could be logged at the same time. The remaining vegetation will be heaped up within the cleared reservoir basin and the immediate area of the dam wall and associated works. Full liaison will be maintained with CALM, in accordance with forest hygiene requirements.

Topsoil from the reservoir area will be stockpiled for use in rehabilitation of disturbed areas. Disturbed areas above full supply level which do not support improvements will be rehabilitated. Such areas will include cut and fill faces and construction pads which are not required for further construction activities and the Griffin sand pit. Topsoil that has been stockpiled during construction will be used to cover the disturbed areas. They will then be deep ripped to promote water infiltration, control erosion and encourage root penetration. Revegetation in the vicinity of the dam wall will conform to a landscaping plan prepared in consultation with CALM officers. Elsewhere, CALM prescriptions for rehabilitation in the jarrah forest will be adhered to.

Regular inspections of rehabilitated areas will be undertaken to identify areas requiring further treatment and maintenance. These inspections will be undertaken annually, prior to each winter season. The prescribed treatments will include:

- . control of noxious weeds;
- . repairs where signs of soil erosion are evident;
- . replanting as required.

Such treatments will be regarded as routine maintenance. It is anticipated that once satisfactory rehabilitation is achieved, it will be self-sustaining.

### SURFACE DISTURBANCE AND EROSION CONTROL

The extent of these effects will be minimised by:

- . most of the earthworks will be carried out during the summer period when runoff is normally low which will minimise the opportunities for erosion and limit the extent of sediment transport downstream;
- . early construction of the dam outlet culvert will bypass river flows around the construction site.

Elsewhere environmental impacts from surface disturbance will be minimised by:

- restricting clearing operations to the minimum required for construction and safe access;
- utilising the area upstream from the dam wall and below full supply level for borrow material and construction facilities;
- in consultation with the relevant authorities, upgrading and using existing roads for access during logging, clearing and construction;
- revegetate disturbed areas outside the storage area as soon as possible after construction is completed.

#### DUST AND NOISE

Noisy, heavy equipment will only operate during daylight hours to minimise any inconvenience to residents. Residents will be fully informed of any blasting operations and all people will be excluded from the danger area during shot firing. The sealing of the Tallanalla Road from Collie will minimise noise and dust due to heavy vehicle traffic.

Working areas will be sheeted with gravel or when necessary, watering will be carried out using a water tanker fitted with sprays. Watering will be minimised consistent with dieback control requirements where relevant. Employees exposed to unacceptable noise or dust levels will be issued with suitable protective equipment.

#### CONSTRUCTION OPERATIONS

Adverse impact upon the site environment will be minimised by:

- using cleared areas below full supply level, wherever feasible, for construction facilities and parking areas for workers' cars;
- removal of temporary buildings, construction refuse and hardstand material at the completion of the construction programme;
- supplying appropriate facilities for workers, with regular removal of refuse to appropriate disposal facilities.

Upgrading of Tallanalla - Collie Road will include:

- sealing the road and constructing table drains;
- drainage off the road will be controlled wherever practicable.

Care will be exercised in storage and handling of petroleum based products, as there is the potential for contamination of surface soils and water from oil or fuel spills. All oils and fuel will be stored according to the requirements of the appropriate regulations. All wastes will be collected in a sump and trucked to an approved waste disposal site.

## MANAGEMENT OF FOREST DISEASE RISK AREA

As Dam site 5 and the majority of the reservoir are located within the disease risk area stringent conditions will be enforced by the Water Authority on its staff and contractors to minimise the spread of dieback in the disease risk area. The Water Authority will establish guidelines for dieback control in consultation with CALM.

## AQUATIC ECOSYSTEMS

To protect Twenty-Two Mile Pool, the full supply level of Harris Dam has been fixed at 223.5 m. The low gradients in this area will mean that the reservoir surface will remain at least half a kilometre from the pool. To further ensure the integrity of the pool ecosystem, it is proposed to retain a buffer area of swamp vegetation below it. This will be achieved by limiting clearing in the shallow upper part of the reservoir to the 223 m contour. As this part of the reservoir will dry out annually, the existing vegetation is expected to survive since it is adapted to seasonal inundation.

Vegetation upstream of Twenty-Two Mile Pool will be protected by selection of the 223.5 m contour as full supply level.

## FAUNA

The full supply level has been set at 223.5 m to avoid the swamps above Twenty-Two Mile Pool, on which sensitive species such as the Quokka (Setonix brachyurus) depend.

Inundation of dense stream zone vegetation will reduce the habitat available to the Red-eared Firetail finch. As this species has now been shown to be more widespread than previously thought (Nichols, 1982), and there is a large area of similar habitat upstream, this loss is unlikely to significantly affect the overall status of the species.

## FOREST MANAGEMENT USE

CALM will be consulted regarding utilisation of timber remaining in the reservoir area, before the reservoir fills. Access to the east of the dam will be retained via Norm Road. The Water Authority will liaise with CALM to ascertain if direct access to the Collie-Tallanalla Road is required in the long term for fire control and reserve management.

## BEEKEEPING

The Water Authority will liaise with CALM and affected apiarists on the need to rationalise and relocate apiary sites, in keeping with the need to minimise conflict with other land uses while maintaining honey production.

## MINING

In the longer term as Bauxite Mining approaches the reservoir, the Water Authority will liaise with the relevant parties as it now does regarding sites elsewhere in the Darling Range. It is possible that constraints will be placed on future mining operations in order to maintain water quality.

### TRANSPORTATION

The following guidelines for relocation of Tallanalla Road will be used in the final design:

- . all affected authorities including CALM, Collie and Harvey Shires, SECWA, Worsley Alumina Company and property owners will be consulted regarding relocation;
- . relocation west of the current alignment will take into account the need to minimise the potential for the spread of dieback as well as maintain water quality.

Access for forestry management activities east of the dam will be provided in consultation with officers from CALM. The opportunity for further control of access may well be consistent with the conservation and disease management needs of this area. Liaison will be maintained with the Shires regarding the need for increased road maintenance due to construction traffic. It is anticipated that the unsealed portion of the Collie-Tallanalla Road will be sealed.

### DOWNSTREAM ECOSYSTEMS

The site investigations have provided baseline information for species distribution and abundance. Additional surveys after construction and reservoir flooding would provide information on changes in species diversity and abundance.

It may be possible, with more precise ecological information, to use the aquatic ecosystem to gauge the physical and chemical condition of the stream. Some organisms, such as the nymph, Tasmanocoensis tillyardi, may become useful biological indicators. However, the lack of information concerning aquatic biology in the southwest of Western Australia precludes this possibility for management purposes at this time.

Accordingly, the following management guidelines will be adopted for a dam located at Dam site 5.

- . release of warmer epilimnion water during the dry season and colder hypolimnion water during winter to minimise adverse thermal effects on aquatic organisms;
- . surveys to assess changes in species distribution and abundance - the results of which will be notified to appropriate government departments.

### PROPOSED SPILLWAY

The spillway will be designed to incorporate a stilling basin structure which will minimise scour where spillway flow enters the river.

### IMPACT OF THE PIPELINE ON EXISTING ENVIRONMENT

The proposed pipeline will follow the transmission line corridor and the Collie-Tallanalla Road throughout its length. Current indications are that the pipeline will be buried and the backfilled trench allowed to revegetate by separate return of stockpiled topsoil over backfilled spoil. The most likely form of river crossing will be pipebridges, although the Harris River crossing may be buried.

## IMPACT OF RESERVOIR ON WATER SUPPLY

The Harris Dam will be operated and managed to achieve:

- immediate improvement in the quality of water supplied to the GSTWS by the supply of low salinity Harris River water;
- a small improvement on average in quality of Wellington Dam water, reducing the salinity of irrigation water supplied to users in the Collie Irrigation District.

## NATURE OF PROPOSED RESERVOIR

To minimise the exposure of bare reservoir bed in the gently sloping upper reaches, it is proposed that the bed remain uncleared beyond the 223 m contour in the area of swamp immediately downstream of Twenty-Two Mile Pool. Vegetation in this area would be expected to tolerate seasonal inundation, as it does now.

## RESERVOIR HABITATS AND ECOSYSTEMS

The reservoir and its shores will be inspected to detect the introduction of any aquatic weeds and appropriate remedial measures will be implemented.

## SHORELINE HABITATS AND ECOSYSTEMS

Retention of existing vegetation down to the 223 m contour, immediately below Twenty-Two Mile Pool, will limit the extent of bare reservoir bed exposed and limit opportunities for the establishment of exotic species. Controls on public access to the reservoir margin will further limit the disturbance to the exposed bed.

## IMPACT ON AESTHETICS

It is proposed to capitalise on the aesthetic opportunities provided by a new dam by:

- landscaping the area adjacent to the dam wall;
- providing vistas across the reservoir at selected sites.

## IMPACT ON RECREATION

The Water Authority also proposes to:

- examine the suitability of the area downstream of the dam for recreation, particularly picnicking and bushwalking;
- in conjunction with other relevant authorities, give due consideration during the design stage to the tourism potential of the rerouted section of Collie-Tallanalla Road;
- restrict public access, consistent with guidelines for the protection of water quality on Class 1 catchments for public potable supplies (WA Water Resources Council, 1985). The rerouted Tallanalla-Collie Road will remain open to public access.

## WELLINGTON RESERVOIR

In conjunction with affected landholders, State and Local Government agencies and other interested parties, the Water Authority will prepare a management plan defining opportunities for recreation, on the waterbody and on the shorelines around Wellington Reservoir. This plan would indicate the locations and densities of recreational facilities and activities taking into account:

- (a) engineering services and access;
- (b) environmental issues -
  - . water quality
  - . erosion
  - . flora and fauna
- (c) landscape quality;
- (d) conflicts in recreation use;
- (e) finance, management and maintenance;
- (f) public attitudes to development of the area.

## ARCHAEOLOGICAL SITES

- . The Water Authority acknowledges its obligations to site protection as outlined in the Western Australia Aboriginal Heritage Act, 1972-80, and will comply with any directions given by the Minister.
- . Sites S1848, S1869 and S1878 will be test pitted.
- . Sites S1865 and S1871 will be recorded in detail and the archaeological material collected.
- . Any new sites discovered during the course of the work will be reported to the Registrar.