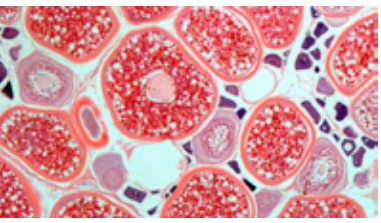
Northern Territory Government

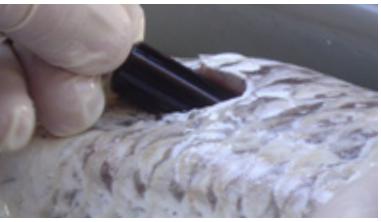
Black jewfish research

One of the top end's iconic fish

BLACK JEWFISH

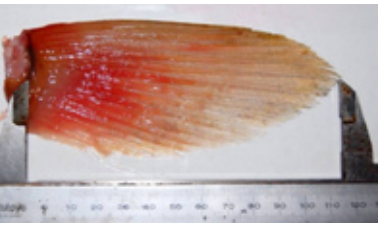


Microscopic view of ovary



Implanting an acoustic tag

Dissecting black jewfish in the laboratory



Dissected fin of black jewfish

Black jewfish are one of the Territory's largest and most popular reef fish. Recent technological advances have made it easier for fishers to target aggregations of this species and this may result in localised depletion in fishing 'hotspots'. In light of this, DRDPIFR has undertaken a range of collaborative research on black jewfish in recent years.

Key findings of recent research:

Age and reproduction studies

Otolith reading and reproductive staging of 1000 black jewfish revealed:

- Black jewfish in NT waters grow extremely fast, reaching almost 60 cm in their first year and 90 cm in their second. These fish live for up to 13 years.
- Fifty per cent of black jewfish are sexually mature at 89 cm (two years old). Spawning takes place over several months and peaks in December.

Habitat mapping and acoustic tagging studies

3-D seafloor mapping, current profiling and tagging of 84 black jewfish revealed:

- Black jewfish aggregation sites differ in terms of both bottom contour and current speed/direction.
- This species has an affinity for particular aggregation sites, but residence time at these sites does vary. Some fish are more or less permanent residents whilst others move away then return up to nine months later.

Barotrauma and morphometric studies

Autopsies conducted on over 100 black jewfish revealed:

- Black jewfish caught from less than 10 m depth showed few signs of barotrauma and were likely to survive if released. Over 15 m depth, 100% of black jewfish sustained fatal injuries.
- Fin size is closely related to body length in black jewfish which in turn allows fish size to be predicted from fin length. This provides an alternative method for size frequency monitoring of black jewfish.

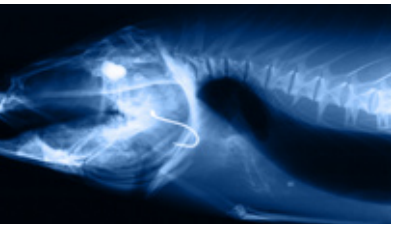
For further information call **08 8999 2144** or visit www.nt.gov.au/d/Fisheries

Northern Territory Government

Help protect our fish for the future

Black Jewfish

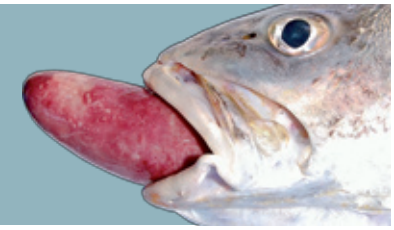
NOT SO TOUGH!



X-ray image of black jewfish with J-hook in stomach

Only shallow caught jewfish can be effectively released

Fisher cradling a black jewfish



Everted stomach (not the swim bladder)

The biology and aggregating behaviour of black jewfish make them vulnerable to over fishing. This popular species is also prone to fatal pressure change injuries when caught from deep water (>10 m) and is only suitable for targetted catch and release fishing in very shallow water.

Advice for **sustainable fishing** for black jewfish

1. **Use large, non-offset circle hooks**
   The ease of removing circle hooks, coupled with their tendency to set in the lip or mouth, allows the prompt release of fish with minimal damage. By contrast, J-hooks often set deep and are difficult to remove.
2. **Fish shallow and handle gently**
   Black jewfish are prone to pressure change injuries and can only be effectively caught and released from shallow waters (i.e. <10 m). If you do intend to release a shallow water fish, make sure to cradle it whilst handling (to support its internal organs) and minimise its time out of water.
3. **Give deep water jewfish a break**
   If you are fishing in deep water (>10 m) and have reached your preferred limit or the personal possession limit for black jewfish (i.e. two, effective 1 January 2010), move elsewhere and target other species. Releasing black jewfish caught in deep water is counter productive as many fish will have sustained irreversible injuries (e.g. everted stomach at left) and will die.
4. **Let spawners do their thing**
   Black jewfish spawn during the build-up and wet season, with a peak in December. If you do get a chance to fish along the coast during this time, consider targetting other species.

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DEPARTMENT OF
REGIONAL DEVELOPMENT, PRIMARY INDUSTRY, FISHERIES AND RESOURCES

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