

Technical summary

www.environment-agency.gov.uk

The Distribution, Biology and Ecology of Shad in South-West England R&D Technical Summary W1-047/TS

This project assesses the distribution and spawning status of allis and twaite shad (*Alosa alosa* and *Alosa fallax*) in south-west England. Information on biology and ecology was also collected, albeit opportunistically. The project was carried out by the Environment Agency in collaboration with English Nature (EN), and aimed to deliver specific actions on the Biodiversity Action Plan (BAP):

- 1) Identify all spawning rivers and migration routes and provide them with protection,
- 2) support a pan-European study of shad to determine the status, genetics, biology and conservation needs,
- 3) consider establishment of a monitoring scheme to record incidental catches by anglers and commercial fisheries,
- 4) confirm the status of allis shad as a breeding fish in UK waters,
- 5) seek to secure and implement favourable actions in management plans covering any confirmed spawning sites within one year of discovery.

The project was advertised in the press and media and information was sent to potential project partners, of which the key groups were commercial fishermen, fish markets, DEFRA Fisheries Officer, estuary netmen, angling clubs and conservation organisations. Data were gathered on shad distribution between January 2000 and November 2001. Allis and twaite shad were studied at sea, mainly through recording by-catches in commercial trawls and examining specimens obtained from fisherman. Shad were studied in their freshwater migration phase by liaising with estuary fishermen.

Shad were studied in their freshwater migration phase by liaising with estuary fishermen and river anglers, as well as using video footage from Environment Agency fish counters. Assessment of spawning habitat and survey for eggs and juveniles were also undertaken.

When specimens were available for examination, information was collected on sex, stomach contents, parasites and reproductive condition. Body length and weight were measured and information was collected on biological characters such as gill rakers and fin rays. Age and spawning history were determined from scale samples. The timing of shad migration at Gunnislake Fish Pass was investigated with respect to water temperature and flow; this is discussed in the technical report.

This project presents the most detailed information about shad distribution in south-west England, to date. Both species were recorded from around the South-West peninsula, particularly from winter trawls and occasionally in large numbers. In the marine phase twaite shad were recorded at about twice the frequency of allis, but allis shad were recorded far more frequently than twaite from estuaries in the South West. Allis shad were recorded from ten estuaries in south-west England (Camel, Dart, Exe, Fal/Helford, Fowey, Knightsbridge/Salcombe, Lynher, Tamar, Torridge and Yealm) and twaite shad from five (Dart, Exe, Fal/Helford, Salcombe/Knightsbridge and Torridge), of which the Dart, Exe, Fowey, Tamar and Torridge appeared to have a significant shad presence.



**ENVIRONMENT
AGENCY**

Significant advances were made towards confirming the status of allis shad as a breeding fish in the River Tamar. Shad were observed migrating upstream at Gunnislake Fish Pass and anglers and estuary netmen caught allis shad in spawning condition; one specimen was caught in freshwater, fifteen miles above the tidal limit.

Eggs, confirmed as shad and believed to be allis, were found at a site immediately below Gunnislake weir in 2000, 2001 and 2002. Confirmation that these are allis shad eggs is now a high priority. As a result of the project allis shad have been added as a designated interest feature to the Plymouth Sound and Estuaries Special Area of Conservation (SAC). Major advances have been made in raising awareness to shad conservation and the recording of shad catches in the South West, particularly among estuary netmen, who contributed a significant proportion of records of shad in their freshwater migration phase.

This R&D Technical Summary relates to information from R&D Project W1-047 reported in detail in:-

R&D Technical Report W1-047/TR – The Distribution, Biology and Ecology of Shad in South-West England

ISBN 1 84432 104 5

R&D Project Record W1-047/PR – The Distribution, Biology and Ecology of Shad in South-West England

ISBN 1 844321 103 7

Internal Status: Released to Regions
External Status: Public Domain

Project Manager(s):
Paul Smith, Conservation Officer, Southern Region

Research Contractor:
Environment Agency

Research Collaborator:
English Nature

Copies of this document are available internally from the National Library and Information Service, and externally from the Environment Agency's R&D Dissemination Centre, c/o WRc, Frankland Road, Blagrove, Swindon, Wiltshire SN5 8YF
Tel: 01793 865138
Fax: 01793 514562
Website URL: www.eareports.com

© Environment Agency
Rio House
Waterside Drive
Aztec West
Almondsbury
Bristol BS32 4UD

Tel: 01454 624400
Fax: 01454 624409