Title	Assessment of North Coast Floodplain TECs on NSW Crown Forest Estate
Alternative title(s)	North Coast Floodplain TEC survey, Classification and Mapping Completed for the NSW Environment Protection Authority
Abstract	Operational map for River-flat Eucalypt Forest: The operational map for River-flat Eucalypt Forest (RFEF) was constructed to resolve long-standing issues surrounding its identification, location and extent within the NSW State Forest estate covered by the coastal Integrated Forestry Operation Agreements. The map was constructed in two parts, with State Forests to the north of Sydney being mapped in a separate process to those to the south of Sydney. We did this to minimise the risk that relationships between regional vegetation communities and the TEC would be confounded or masked by geographical variation or other major ecological gradients, which might otherwise be a significant risk if we had treated the full latitudinal range of the TEC as a single study area. In total, we assessed 1,218,000 hectares of State Forest across coastal NSW. This consisted of 868,000 hectares of State Forest on the north coast and more than 350,000 hectares of State Forest on the south coast. In both study areas, the project's Threatened Ecological Community (TEC) Reference Panel (the Panel) preceded the assessment process by reviewing the determination for RFEF and agreeing upon a set of diagnostic parameters for its identification. The Panel found that RFEF is primarily defined by floristic plot data and that it is mostly located on coastal floodplains and associated alluvial landforms. Following on from these conclusions, we started the mapping process by mapping the distribution of floodplains and alluvial soils and thus identifying possible areas of RFEF. For both the north and the south coast we used an existing map of coastal landforms and geology in combination with several fine-scale models of alluvial landform features to determine the likely extent of floodplains and alluvial soils within our study areas. We used aerial photograph interpretation (API) to assess the floristic and structural attributes of the vegetation cover found on our modelled alluvial environments, and thus delineated polygons likely to contain RFEF. We also used API to modify the boundaries of the modelled alluvial areas using a prescribed list of eucalypt, casuarina and melaleuca species in combination with the interpretation of landform elements relevant to alluvial and floodplain environments. We then compiled floristic plot data for all State Forest areas within our modelled alluvial landforms and API polygons. For both the north and the south coast the floristic plot data was sourced from both existing flora surveys held in the OEH VIS database and from targeted flora surveys conducted specifically for this project. We compared these plots with those previously assigned to flora communities listed in the determination of RFEF. Both dissimilarity-based methods and multivariate regression methods were used for the comparison. The results of the comparison were then used to assess the likelihood that the plots in State forests belonged to one or more of the communities listed in the RFEF determination. Following this, we developed a predictive statistical model of the probability of occurrence of RFEF using plot data and a selection of environmental and remote-sensing variables. For the north coast, we used a Random Forest model, while for the south coast we used a Boosted Regression Tree model. To create the operational map, we assigned every mapped API polygon to RFEF if appropriate based on the plot data, over-storey and understorey attributes, landform features and modelled probabilities underlying each API polygon. We mapped 3819 hectares of RFEF on the south coast and 198 hectares of RFEF on the north coast. Operational map for Swamp Oak Floodplain Forest: The operational map for Swamp Oak Floodplain Forest (SOFF) was constructed to resolve long-standing issues surrounding its identification, location and extent within the NSW State Forest estate covered by the coastal Integrated Forestry Operation Agreements. The map was constructed in two parts, with State Forests to the north of Sydney being mapped in a separate process to those to the south of Sydney. We did this to minimise the risk that relationships between regional vegetation communities and the TEC would be confounded or masked by geographical variation or other major ecological gradients, which might otherwise be a significant risk if we had treated the full latitudinal range of the TEC as a single study area. In total, we assessed 1,218,000 hectares of State Forest across coastal NSW. This consisted of 868,000 hectares of State Forest on the north coast and more than 350,000 hectares of State Forest on the south coast. In both study areas, the project's Threatened Ecological Community (TEC) Reference Panel (the Panel) preceded the assessment process by reviewing the determination for SOFF and agreeing upon a set of diagnostic parameters for its identification. The Panel found that SOFF is primarily defined by floristic plot data and that it is mostly located on coastal floodplains and associated alluvial landforms. Following on from these conclusions, we started the mapping process by mapping the distribution of floodplains and alluvial soils and thus identifying possible areas of SOFF. For both the north and the south coast we used an existing map of coastal landforms and geology in combination with several fine-scale models of alluvial landform features to determine the likely extent of floodplains and alluvial soils within our study areas. We used aerial photograph interpretation (API) to assess floristic and structural attributes

of the vegetation cover on our modelled alluvial environments, and thus delineated polygons likely to contain SOFF. We also used API to modify the boundaries of the modelled alluvial areas using a prescribed list of casuarina and melaleuca species in combination with the interpretation of landform elements relevant to alluvial and floodplain environments. We then compiled floristic plot data for all State Forest areas within our modelled alluvial landforms and API polygons. For both the north and the south coast the floristic plot data was sourced from both existing flora surveys held in the OEH VIS database and from targeted flora surveys conducted specifically for this project. We compared these plots with those previously assigned to flora communities listed in the determination of SOFF. Both dissimilarity-based methods and multivariate regression methods were used for the comparison. The results of the comparison were then used to assess the likelihood that the plots in State forests belonged to one or more of the communities listed in the SOFF determination. To create the operational map, we assigned every mapped API polygon to SOFF based on the plot data, over-storey and understorey attributes, landform features and model output underlying each API polygon. In total, we mapped approximately 272 hectares of SOFF across our full study area.

Operational map for Swamp Sclerophyll Forest:

The operational map for Swamp Sclerophyll Forest (SSF) was constructed to resolve long-standing issues surrounding its identification, location and extent within the NSW State Forest estate covered by the coastal Integrated Forestry Operation Agreements. The map was constructed in two parts, with State Forests to the north of Sydney being mapped in a separate process to those to the south of Sydney. We did this to minimise the risk that relationships between regional vegetation communities and the TEC would be confounded or masked by geographical variation or other major ecological gradients, which might otherwise be a significant risk if we had treated the full latitudinal range of the TEC as a single study area. In total, we assessed 1,218,000 hectares of State Forest across coastal NSW. This consisted of 868,000 hectares of State Forest on the north coast and more than 350,000 hectares of State Forest on the south coast. In both study areas, the project's Threatened Ecological Community (TEC) Reference Panel (the Panel) preceded the assessment process by reviewing the determination for SSF and agreeing upon a set of diagnostic parameters for its identification. The Panel found that SSF is primarily defined by floristic plot data and that it is mostly located on coastal floodplains and associated alluvial landforms. Following on from these conclusions, we started the mapping process by mapping the distribution of floodplains and alluvial soils and thus identifying possible areas of SSF. For both the north and the south coast we used an existing map of coastal landforms and geology in combination with several fine-scale models of alluvial landform features to determine the likely extent of floodplains and alluvial soils within our study areas. We used aerial photograph interpretation (API) to assess the floristic and structural attributes of the vegetation cover on our modelled alluvial environments, and thus delineated polygons likely to contain SSF. We also used API to modify the boundaries of the modelled alluvial areas using a prescribed list of eucalypt, casuarina and melaleuca species in combination with the interpretation of landform elements relevant to alluvial and floodplain environments. We then compiled floristic plot data for all State Forest areas within our modelled alluvial landforms and API polygons. For both the north and the south coast the floristic plot data was sourced from both existing flora surveys held in the OEH VIS database and from targeted flora surveys conducted specifically for this project. We compared these plots with those previously assigned to flora communities listed in the determination of SSF. Both dissimilarity-based methods and multivariate regression methods were used for the comparison. The results of the comparison were then used to assess the likelihood that the plots in State forests belonged to one or more of the communities listed in the SSF determination. Following this, we developed a predictive statistical model of the probability of occurrence of SSF using plot data and a selection of environmental and remote-sensing variables. For the north coast, we used a Random Forest model, while for the south coast we used a Boosted Regression Tree model. To create the operational map, we assigned every mapped API polygon to SSF if appropriate based on the plot data, over-storey and understorey attributes, landform features and modelled probabilities underlying each API polygon. In total, we mapped approximately 1131 hectares of SSF across out study area.

Operational map for Subtropical Coastal Floodplain Forest:

The operational map for Subtropical Coastal Floodplain Forest (SCFF) was constructed to resolve long-standing issues surrounding its identification, location and extent within the NSW State Forest estate covered by the eastern Regional Forest Agreements. The project's Threatened Ecological Community (TEC) Reference Panel (the Panel) reviewed the determination for SCFF in conjunction with the determinations of three other TECs associated with coastal floodplain environments. The Panel agreed that SCFF is primarily defined by floristic plot data and that it is mostly located on coastal floodplains and associated alluvial landforms. The operational map was constructed in several stages. Firstly, we identified candidate areas for SCFF by mapping the distribution of floodplains and alluvial soils. To do this we used an existing map of coastal landforms and geology in combination with several fine-scale models of alluvial landform features to determine the likely extent of floodplains and alluvial soils in our study area. Secondly, we compiled floristic plot data for State Forest areas within these

alluvial landforms. The floristic plot data was sourced from both existing flora surveys held in the OEH VIS database and from targeted flora surveys conducted specifically for this project. We compared these plots with those assigned to previously defined communities listed in the determinations for SCFF. Both dissimilarity-based methods and multivariate regression methods were used for the comparison. The results of the comparison were then used to assess the likelihood that plots in State forests belonged to one or more of the communities listed in the determination. Thirdly, we used aerial photograph interpretation (API) to assess both floristic and structural attributes found on the modelled alluvial and related environments. We also used API to modify the boundaries of the modelled alluvial areas using a prescribed list of eucalypt, casuarina and melaleuca species in combination with the interpretation of landform elements relevant to alluvial and floodplain environments. Fourthly, we used plot data and a selection of environmental and remote-sensing variables to develop a Random Forest (RF) model of the probability of occurrence of SCFF. To create the operational map, we assigned every mapped API polygon to SCFF if appropriate based on the plot data, over-storey and understorey attributes, landform features and modelled probabilities underlying each API polygon. In total, we mapped approximately 11,050 hectares of Subtropical Coastal Floodplain Forest. The majority of the mapped SCFF was located between Grafton and Casino.

Operational TEC Mapping have been derived by API at a viewing scale between 1-4000 using ADS40 50 cm pixel imagery and 1 m derived LIDAR DEM grids for floodplain EECs.

Resource locator

Data Quality Statement	Name: Data Quality Statement Protocol: WWW:DOWNLOAD-1.0-http--download Description: NSW Government standards direct that data should be made available with a statement regarding its quality, a so-called “Data Quality statement (DQS)”, to enable potential users to determine whether the data is suitable for their requirements. Function: download
Assessment of North Coast Floodplain TECs on NSW Crown Forest Estate	Name: Assessment of North Coast Floodplain TECs on NSW Crown Forest Estate Protocol: WWW:DOWNLOAD-1.0-http--download Description: Report on the Assessment of North Coast Floodplain TECs on NSW Crown Forest Estate Function: download
Operational Map for Subtropical Coastal Floodplain Forest Threatened Ecological Community on NSW Crown Forest Estate	Name: Operational Map for Subtropical Coastal Floodplain Forest Threatened Ecological Community on NSW Crown Forest Estate Protocol: WWW:DOWNLOAD-1.0-http--download Description: Shapefile - Operational map (Subtropical Coastal Floodplain Forest) for the Assessment of North Coast Floodplain TECs on NSW Crown Forest Estate Function: download
Operational Map for River-Flat Eucalypt Forest Threatened Ecological Community on NSW Crown Forest Estate	Name: Operational Map for River-Flat Eucalypt Forest Threatened Ecological Community on NSW Crown Forest Estate Protocol: WWW:DOWNLOAD-1.0-http--download Description: Shapefile - Operational map (River-Flat Eucalypt Forest) Assessment of North Coast Floodplain TECs on NSW Crown Forest Estate Function: download
Operational Map for Swamp Oak	Name: Operational Map for Swamp Oak Floodplain Forest Threatened Ecological Community on NSW Crown Forest Estate Protocol: WWW:DOWNLOAD-1.0-http--download

Floodplain Forest Threatened Ecological Community on NSW Crown Forest Estate	Description: Shapefile - Operational Map (Swamp Oak Floodplain Forest) for the Assessment of North Coast Floodplain TECs on NSW Crown Forest Estate Function: download
Operational Map for Swamp Sclerophyll Forest Threatened Ecological Community on NSW Crown Forest Estate	Name: Operational Map for Swamp Sclerophyll Forest Threatened Ecological Community on NSW Crown Forest Estate Protocol: WWW:DOWNLOAD-1.0-http--download Description: Shapefile - Operational Map (Swamp Sclerophyll Forest) for the Assessment of North Coast Floodplain TECs on NSW Crown Forest Estate Function: download
Operational and Indicative Maps for the Assessment of Threatened Ecological Communities on NSW Crown Forest Estate	Name: Operational and Indicative Maps for the Assessment of Threatened Ecological Communities on NSW Crown Forest Estate Protocol: WWW:DOWNLOAD-1.0-http--download Description: ESRI ArcGIS Layer File - Operational and Indicative Maps for the Assessment of Threatened Ecological Communities on NSW Crown Forest Estate Function: download
Native Forestry Map Viewer	Name: Native Forestry Map Viewer Protocol: WWW:DOWNLOAD-1.0-http--download Description: The EPA Native Forestry Map Viewer enables users to view our Koala and Threatened Ecological Community mapping without the need to access a GIS system. The map viewer allows users to perform searches to locate areas of interest and export resulting map views into various image file formats. Function: download

Unique resource identifier

Code	14e778cd-aa67-4424-8f38-828e06c95966

Presentation form	Map digital
Edition	Version 1
Dataset language	English

Metadata standard

Name	ISO 19115
Edition	2016

Dataset URI	https://datasets.seed.nsw.gov.au/dataset/14e778cd-aa67-4424-8f38-828e06c95966
Purpose	Native Forestry Regulation on State Forests
Status	Completed

Spatial representation

Type	vector
Geometric Object Type	curve

Spatial reference system

Code identifying the spatial reference system	4283

Equivalent scale

1:None

Topic category

Keyword set

keyword value	Threatened Ecological Community
	Endangered Ecological Community
	Vegetation
	State Forest
	Subtropical Coastal Floodplain Forest
	EEC
	TEC
	Environment Protection Authority
	EPA
	River-flat Eucalypt Forest
	Swamp Oak Floodplain Forest
	Swamp Sclerophyll Forest

Originating controlled vocabulary

Title	ANZLIC Search Words
Reference date	2008-05-16

Geographic location

West bounding longitude	149.50438
East bounding longitude	153.28261
North bounding latitude	-37.41703
South bounding latitude	-28.97536

Vertical extent information

Minimum value	-100
Maximum value	2228

Coordinate reference system

Authority code	urn:ogc:def:cs:EPSG::
Code identifying the coordinate reference system	5711

Temporal extent

Begin position	2016-10-01
End position	N/A

Dataset reference date

Resource maintenance

Maintenance and update frequency	Irregular

Contact info

Contact position	Data Broker
Organisation name	Environment Protection Authority (EPA)
Responsible party role	pointOfContact

Lineage

Linework has been derived from manual interpretation of stereoscopic 3D ADS-40 imagery collected at a 50cm resolution. Date of photography varies across eastern NSW between 2009-2015. Interpretation has collected a range of floristic attributes including canopy species dominance, understorey attributes and assessment of landscape characteristics. Lines have been interpreted using a viewing scale between 1:2000- 1: 5000. Interpretation has been supported by field traverse (except bogs and saltmarsh), and existing field based observation data held by OEH. Final linework was assembled using combinations of aerial photo patterns, predictive TEC models, systematic plot data and where relevant fine scale topographic data derived from 1 metre resolution digital elevation model.

Limitations on public access

Scope	dataset

DQ Conceptual Consistency

Explanation	Standard API mapping pathways have been established for mappers to apply consistent interpretation of vegetation features including, size criteria and polygon attribution

DQ Topological Consistency

Explanation	Not assessed

DQ Absolute External Positional Accuracy

Explanation	Positional accuracy for operational maps has been measured using independent assessment of interpreted lines as a mean of 8.5 metres. Other influence on positional accuracy include the accuracy of field based GPS records currently tested at a mean of 9.2 metres. Some error with interpreted line from 2D to 3D environment can result in a positional shift of up to 10 metres.

DQ Non Quantitative Attribute Correctness

Explanation	Attribution is consistent

Responsible party

Contact position	Data Broker
Organisation name	Environment Protection Authority (EPA)
Responsible party role	pointOfContact

Metadata point of contact	
Contact position	Data Broker
Organisation name	Environment Protection Authority (EPA)
Responsible party role	pointOfContact
Metadata date	2024-02-26T15:31:43.319174
Metadata language	