

myplot_RAC

This function plots **Rank-Abundance Curve**.

(each community will be presented in subplots, so cannot be embedded in subplot)

Depends on:

- my matlab utility function [mycolor](#), [mysubplot](#)

Syntax

myplot_RAC(X)

myplot_RAC(X, strs, strn, bigtitle, colorsheet, stylesheet)

- **X**: matrix of size [n, p] ; for n communities, p species
- **strs**: optional, cell array of strings or a string, the name of the "species". Default is {'spp 1', 'spp 2', ...}; will show as legends
 - if is a string: replace the 'spp' in default
- **strn**: optional, cell array of strings or a string, , the name of the "communities"; default is {'Community 1', 'Community 2', ...}; will show as title; usage is similar to **strs**.
- **bigtitle** :the bigtitle, default is 'Rank-Abundance Curve'
- **colorsheet** : 3 by p' matrix (p' > p). The color of each Species, ranked in the first row. Can also take index in **mycolor**, see example for detail.
 - if input is only 1 color, all species will have same color
- **stylesheet** :cell array of string. The style of each Species, ranked in the first row.

Example:

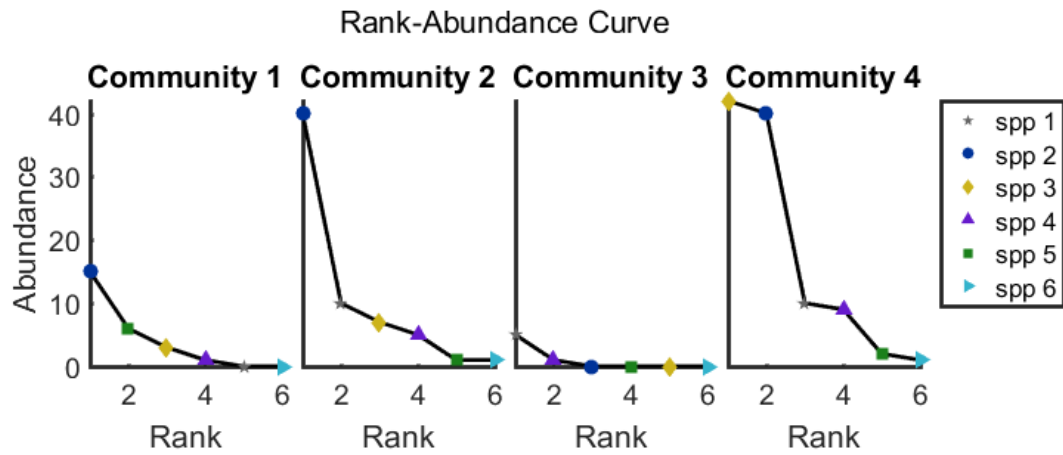
Create mock data

Assuming we have a data set of 4 communities (4 rows) with 6 species (6 columns).

```
X = [0 15 3 1 6 0; 10 40 7 5 1 1; 5 0 0 1 0 0; 10 40 42 9 2 1]
```

Example: default usage

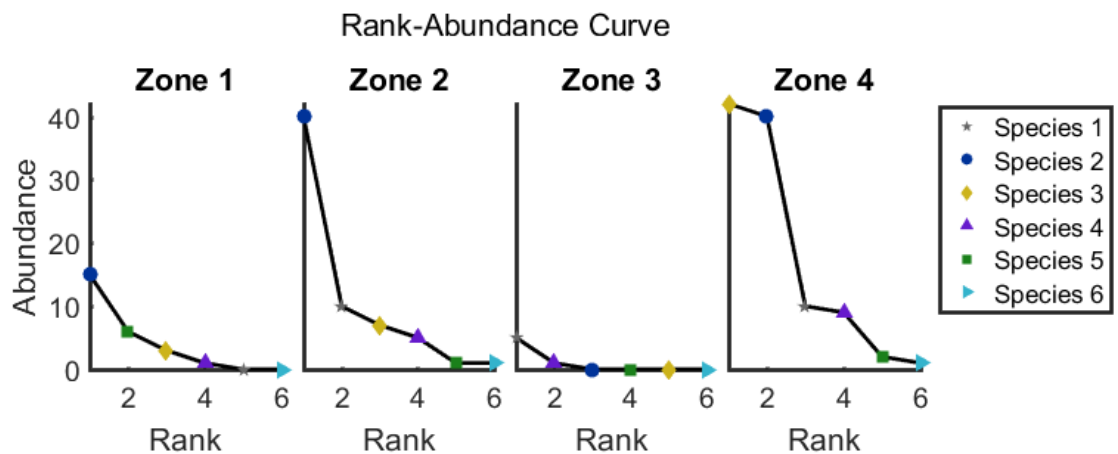
```
myplot_RAC(X);
```



Example: specify the string headers

```
myplot_RAC(X, 'Species', 'Zone');
```

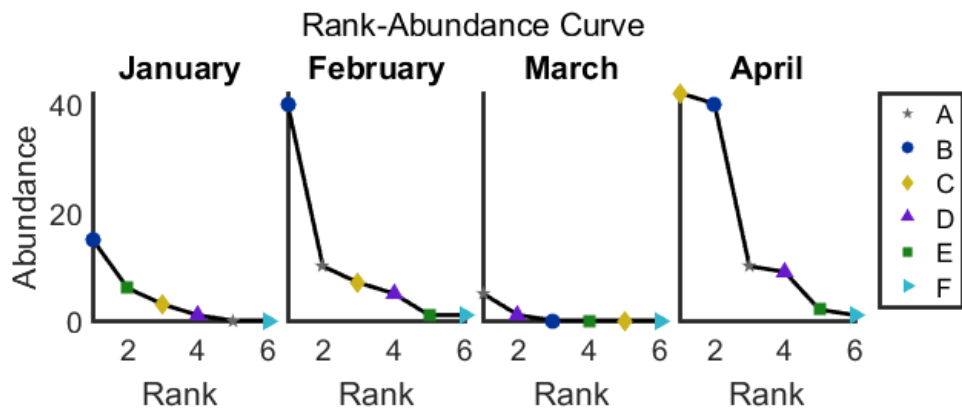
So the legends will be : **'Species 1'**, **'Species 2'**, ...; and the titles will be : **'Zone 1'**, **'Zone 2'**, ...



Example: specify the strings one by one

```
myplot_RAC(X, {'A', 'B', 'C', 'D', 'E', 'F'}, {'January', 'February', 'March', 'April'});
```

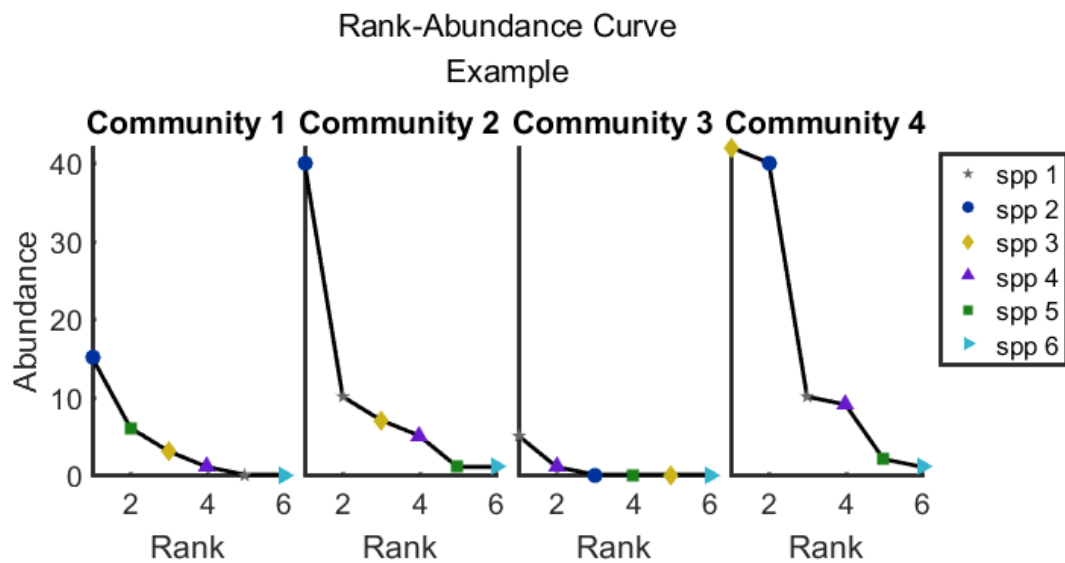
(can also use num2month)



Example: specify the master title

```
myplot_RAC(X, [], [], {'Rank-Abundance Curve', 'Example'});
```

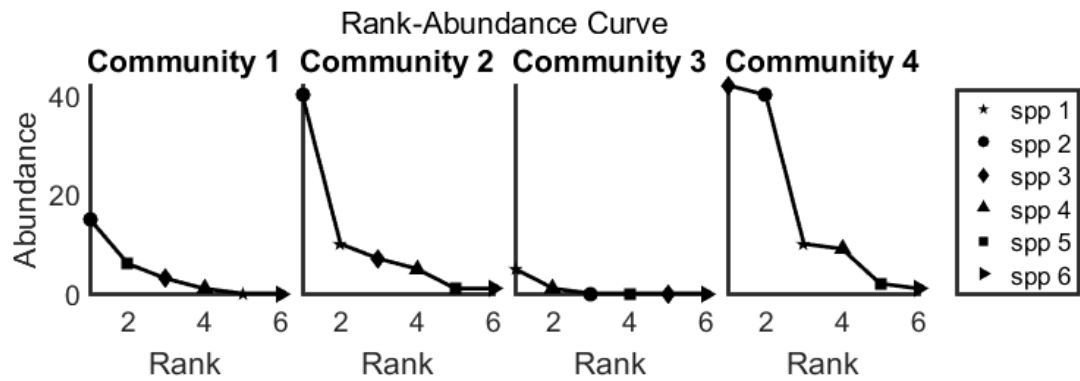
(to use default value, put [] as placeholder)



Example: specify the color

if input is only one color, all symbols will have the same color

```
myplot_RAC(X, [], [], [], [0 0 0]);
```



other usages (the 3 commands below produce identical results)

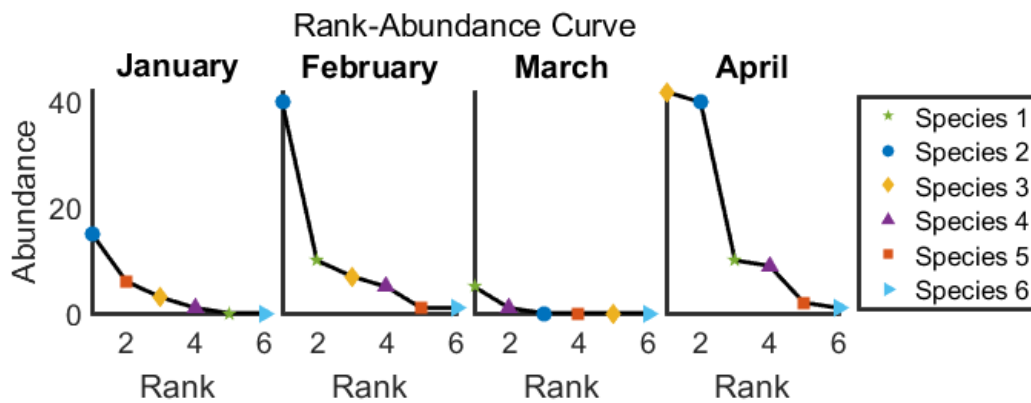
```
myplot_RAC(X, [], [], [], 'k');
myplot_RAC(X, [], [], [], mycolor(1));
myplot_RAC(X, [], [], [], 1);
```

(if input is an integer, select the color from `mycolor`)

Example: specify the colors one by one

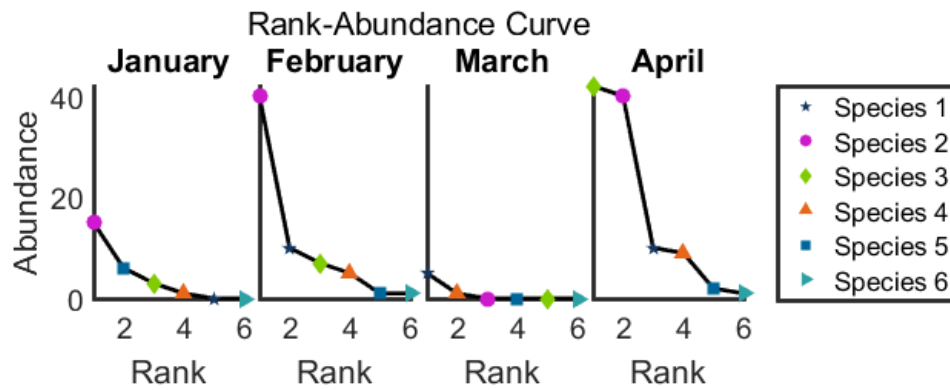
use [matlab built-in colormap](#)

```
temp = lines;
myplot_RAC(X, 'Species', num2month(1:4), [], temp(1:6,:));
```



if input is color with length \sim 3, each number will be treated as color selector from `mycolor`

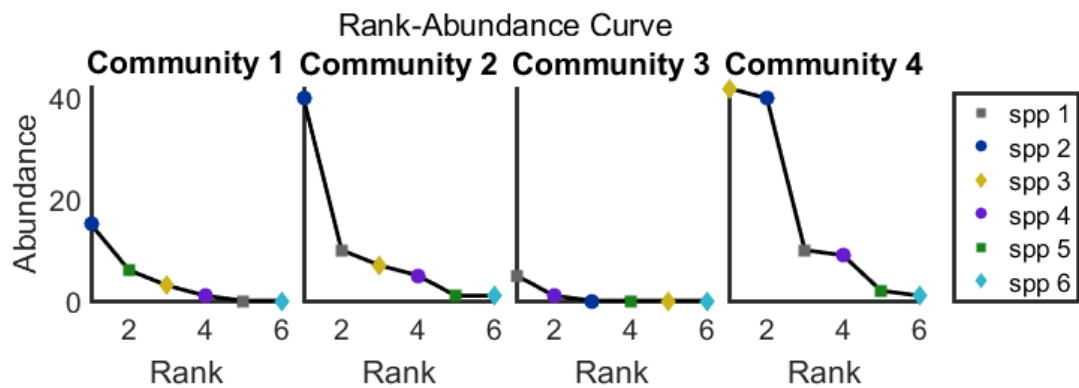
```
myplot_RAC(X, 'Species', num2month(1:4), [], 10:30);
```



Example: specify the symbol

Input symbol will be recycled if not enough

```
myplot_RAC(X, [], [], [], [], {'o', 's', 'd'});
```



if input is only one symbol, all symbols will have the same style

```
myplot_RAC(X, [], [], [], [], 'o');
```

Extra symbols will be ignored

```
myplot_RAC(X, [], [], [], [], {'o', 's', 'd', 'o', 's', 'd', '^', '<', '>'});
```

Example: cannot deal with too many species

```
X2 = [1:35; 35:-1:1];  
myplot_RAC(X2);
```

(will get an error message)